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PROJECT BLUE BOOK

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STAFF STUDY - 1952 (RUPPELT)

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Part Four - ATIC PLAN FOR FUTURE OPERATIONS

1. In the spring of 1952 it became evident that the limited ATIC staff, assigned to unidentified aerial objects, could not possibly handle all the vast number of reports which volunteer observers were sending to the Center in exceedingly increasing quantities. After several conferences of the Center's staff, the Chief of the Center submitted by letter to the D/I a plan to increase the scope of operations. On 5 June, the Deputy Director for Estimates replied to ATIC's proposal stating, in part:

"It is generally agreed that some expansion of effort is called for at this time. An advisory group composed of high-level scientific personalities would be excellent for the purpose of providing guidance to the ** working level, and as spokesman representing the Air Force to the public. *** Our recommendations ** are to supplement further ATIC effort by inviting one contractor to attempt to resolve the problem. *** It is considered that ATIC must remain the responsible D/I agency **."

2. On receipt of this directive, ATIC began consideration of plans to implement it. Dr. Von Karman was invited to assist, and designated Dr. Joseph Kaplan as his representative. These plans were presented to Dr. Kaplan on his arrival at ATIC ten days ago. Following this, ATIC conferenced with other private and Air Force agencies whose collaboration is needed. The advice of these experts, and recognition of the problem of coping with the recent very large increase in voluntary reports of sightings of UAO's, enable us to present to you at this time a workable plan for future operations.

3. I would like to preface this plan with a brief reference to ATIC intelligence procedures. The mission of our Center is to prevent technological surprise by air. Our interest in UAO's is based on the fact that they can be of foreign origin. We must then determine identifying their characteristics and performance.

When we encounter identifiable aerial objects, for example, new types of foreign aircraft missiles, we attempt to obtain their configuration, performance and characteristics by measuring and recording devices, if possible, especially if we cannot get close enough to inspect them accurately in detail. Reliable data is essential.

Only as a last and temporary resort do we use the report of an untrained non-technical person's visual observation of a complicated aerial object, especially if the information is volunteered.

4. It is of significance to note that an inquiry of technical employees of U.S. aircraft plants revealed that they could not give complete and reliable descriptions of the technical aspects of their own plants with complete accuracy. Likewise, the Air Force long ago eliminated its observers rating for crew members, supplanting these visual and audio observation duties with photographic and electronic recording devices. Any plan to determine if any UAO's are of foreign origin will require full use of measuring and recording instruments.

5. Because it is almost i possible to obtain technical intelligence from voluntary verbal reports of non-technical observers, ATIC proposes that the receipt and analysis of such reports by the USAF be discontinued in the future. Our evaluation of the enormous amount of correspondence and reports received over the past five years demonstrates that there is extremely little technical intelligence to be obtained from these voluntary sources. The plan which ATIC presents to you might be best described in the single phrase, "going on instruments".

6. Basically, any moving light source is either the result of (1) air expenditure of energy, e.g., an aircraft, missile, meteor, ionized clouds, etc., or (2) the reflection of light from another source, e.g., the sun, moon, etc., In the past, objects reflecting light from another source have been identified and eliminated from consideration only by tedious and expensive investigation and analyses by ATIC and other Defense Dept. agencies.

7. By application of the known basic laws of science, any aerial object which a foreign power might fly over the United States will require dissipation of energy. It should, therefore, be possible to detect the presence of such an object by the use of electronic, infra-red and ocular instruments, and to record its flight path and/or appearance by the use of a camera, especially if the camera is used in conjunction with a

telescope, defraction grating and radar scope, or carried aloft by aircraft. By limiting its study to only these observations, obtained or correlated by instruments, this plan will distill from the raw information technical data capable of quantitative analysis so that ATIC might determine if any UAO's are of foreign origin. This plan does not preclude consideration of sightings by competent technical observers who make such sightings as part of their regular employment (e.g., astronomers, weather observers, military and airline pilots, surveyors, trained personnel of the Army, Naval, Coast Guard, CAA, Merchant Marine, and possibly certain civilian aircraft spotters, etc.) Rather, this plan suggests that such personnel carry photographic equipment and be trained to record the technical data required of such observations so as to improve the quality of their reports.

8. By requiring the use of instruments for the collaboration of such sightings, the USAF will eliminate many needless scrambles of its interceptor aircraft (E.G., the incident near Columbus on 25 July when the UAO was identified as balloons by ATIC's Consultant Astronomer using the Ohio State University [redacted] Observatory's telescope). By designation and instrumentation of specific sources, as the field collection agencies, for data regarding UAO's, the USAF will simply speed and secure the processing of this data. (Go on to Page 4).

[redacted]

9. This plan will also relieve the military personnel who are presently engaged in these activities as additional duty in order to handle the many voluntary reports presently being submitted to the Air Force. Reliance upon instrument observations will, with the exception of meteors and meteor trains, not only provide for the positive identification of many objects, but in some cases certain performance characteristics (speed, climb, altitude and configuration) can be obtained enabling observers to eliminate reports on known objects at the source and relieve the expense and burden which would otherwise be placed on the reporting agencies and the vital military communication networks. Air Defense Command should find this quite advantageous to its "Operation Skywatch", filter centers, etc.

10. The operation of the plan is illustrated on the accompanying chart. The designated field collection agencies will hold reports of those observations which do not permit technical evaluation due to unreliable or incomplete evidence until they can be collaborated or discarded. Reports containing quantitative technical data suitable for analysis will be forwarded to ATIC.

11. The first step on receipt of a report at ATIC will be to screen it to determine whether further study is required by one or more of its special group of analysts. This screening will be based primarily on the behavior of the objects. If slow or hovering, it might be checked by the Balloon Group. The Aircraft Group would examine those objects traveling at speeds similar to those of aircraft and guided missiles, while the astronomical group would investigate objects having a performance similar to meteors, meteor trains, solar flares and astronomical bodies. Groups for other categories would be organized if required, e.g. a group familiar with the problems of radio activity

in the event the instrument program picks up any evidence of such in the observation of UAO's. The reports of the analyses performed by these special groups would be returned to ATIC.

12. The first step will identify some of the objects reported. A further study by ATIC's staff of analysts is the second step. In this phase ATIC will call on its scientific staff of specialists in electronics, geophysics, nuclear energy, photography, and photo interpretation, astronomy, missiles, aerodynamics, armament, materials, etc. When required ATIC's research staff will consult with technicians at Wright Air Development Center and other Air Research and Development Command facilities. This step will identify additional objects.

13. Those reports remaining will be processed by the third step which will be conducted by ATIC's Scientific Advisory Committee. This Committee is Chairmaned by Dr. Joseph Kaplan, who like many of the members also serves on the Air Forces Scientific Advisory Board. It is not intended to keep any committee member constantly occupied with this work nor to have the full committee meet together at less than two or three month intervals, except on receipt of technical data requiring the immediate attention of all members. It is planned that reports of UAO's will be referred individually to committeeman according to their field of interest.

14. Those incidents which are not resolved by the committee will be processed by the fifth and final step. Upon the advice and recommendation of the Committee, ATIC plans to submit to the Director of Intelligence the names of a general contractor (Rand has been suggested) and certain specialized contractors and consultants to undertake the analysis of those objects not identified by previous study. In some cases this might require considerable

time, experiment and study (even to the extent of recreating the incident if necessary), but it is planned to pursue each case until the object is identified, which is the purpose of this project.

15. As each reported sighting is identified, compatible with security, it is planned to make available to those in the field responsible for the observation, information as to the nature of the object. In addition, ATIC's monthly report of sightings will continue to be compiled. It is recommended that this be disseminated to all military establishments contributing to the work of the project. In addition, an unclassified version, e.g., the statistical summary, of this monthly report could be released to the PIO in the event the press continues to clamor for information on the adoption of this plan to have the Air Force decline voluntary reports by non-technical personnel.

16. I would like to take the remaining few minutes to discuss the overall operation and the work of collaborating agencies. It is recommended that wherever possible existing military facilities and agencies be used. Many organizations can contribute the required technical data on observations of UAO's. To minimize expense and complications, it is recommended that one organization be responsible for the field collection and transmissions of observation reports in the U.S. It is believed that ADC is the logical organization inasmuch as the command which has responsibility for intercepting enemy aerial objects should be the command which operates air observation and instrument network for spotting UAO's.

17. Major contributors to the field collection operations would be:

A. Military:

1. Air Defense Command (for CI) thru

a. Radar network (including Navy picket ships)

b. Attached Army Anti Aircraft Units

c. Intercept operations

d. Civilian Aircraft Spotters

2. Strategic Air Command

3. Tactical " "

4. Air Research and Development Command

a. AF Missile Test Center (Patrick AFB, Cocoa, Fla)

b. AF Special Weapons Center (Kirtland AFB, Albuquerque, N. Mex)

c. AF Flight Test Center (Edwards AFB, California)

d. AF Cambridge Research Center, Cambridge, Mass

e. Other Centers

5. Overseas Commands

6. Department of the Army

a. White Sands Proving Ground

7. Department of the Navy

a. Naval Observatory

8. Research and Development Board

9. Military Transport Service thru

a. Flight Service

b. Air Weather Service

Draft

B. Government Agencies

1. U.S. Weather Bureau

2. Civil Aeronautics Authority

3. Atomic Energy Commission

C. Civilian Agencies

1. Scheduled Airlines

2. Public and Private Observatories (including Departments of Astronomy at Universities and Colleges)

3. American Astronomical Society

4. American Physical Society

5. Optical Society of America

To fully utilize consistence of all these agencies it is extremely desirable that the Air Force assure them that it is making efforts to identify these objects by collection in their analysis of technical information. In the past, it has been desirable for ATIC to shield its scientists from identification with this Project in order that they might have the confidence of their professional associates. This is especially true of private organizations and ATIC plans to send out letters to them soliciting their help.

In order to accomplish the above it will be necessary for the Air Force to make a public release similar to "White Paper". In addition to explaining the Air Force policy (and proposed plan) for investigating future UFO observations, this paper should note that valuable scientific data will become available as a result of the proposed plan for implementing the collection thereof by use of instruments. It should be pointed out that only such data that is of military nature will be classified, whereas fully scientific data will be released to the scientists cooperating on the project and will be valuable to them in their studies.

As in the collection activities, so in the analyses operations it is planned to hold costs to a minimum by the employment of existing military and public agencies to a maximum. For this reason conferences have already been held with NATS to work out arrangements whereby the Balloon Screening activities will be monitored by the Air Weather Service and Aircraft Screening will be monitored by Flight Service.

The speakers who follow me will explain the technical details of the instrumentation plan.

Thank You.

Statement.

FLIGHT RESEARCH LABORATORY [CREW]

Suggested Sighting Station for Observation of Flying Saucers, Fireballs, Meteors, and other Atmospheric Phenomena.

CRITERIA:

1. The Sighting Station is cheap, transportable, easily maintained and easily operated.

2. The Sighting Station shall gather information from which can be determined:

a. Position

b. Velocity

c. Altitude

d. [redacted]

✓ e. Spectral Emission

It is proposed to build the Sighting Station component wise as follows:

a. Light gathering and focusing source is a six inch Schmidt System f 12 with a 180° field fully corrected. (This system has only been available about three months based upon the results of a Flight Research Laboratory research project with Dr. James Baker of Harvard).

b. The film travel and loading mechanism to be taken from standard Air Force cameras and adapted for spring operation. Five inch strip film would be suitable.

c. The Sighting Station box would be fabricated as desired.

d. A grating capable of being rotated by a spring drive would be placed at the focal plane. This would give the spectral characteristics of the body.

e. A shutter capable of being driven by a spring drive would be incorporated to give timing marks on any film tracks.

f. The film section would be mounted on a simple equatorial mount and rotated by a spring drive to eliminate the star tracks on the photographic [redacted]

[redacted]

Present Air Force film travel and loading mechanism for five inch film are available in quantity and have a storage capacity which can allow for an exposure every 10-12 minutes for a twenty-four hour period. It should be mentioned that ordinary film can be exposed for at least two hours at night time without excessive fogging.

The proposed Schmidt System is so completely color corrected that an accurate spectral analysis is perfectly feasible. The rotation of the grating is introduced to prevent the unfortunate case where the travel of the object would be into the spectral lines established from the previous position. At some point of the travel the spectra would be at right angles to the direction of travel if the grating were rotated.

The introduction of time by the shutter is all that is necessary during any one exposure. This comes about in the following manner and when fully understood it will be appreciated that the subterfuge introduced here will simplify the timing mechanism considerably. The [redacted] every 10 or 12 minutes should be recorded time wise. This will bracket any track found on the frame within this period. The velocity will be determined by a shutter cutting the track at a constant number per unit time. If altitude and absolute diameter of an object are to be determined the object must be seen by at least two Sighting Stations. This gives the well known triangle method of analysis. The track in space against a star background is given in both plates from the two sighting stations. Absolute time is not given. However, there is only one time that an object could have made good the trajectory as given by both plates against the star background. Thus time is determined. From this comes absolute position in space at a specified time; from this comes absolute position; from this comes altitude; from this comes absolute size of object. The velocity and spectral analysis come from the other data.

The equatorial mount and its spring drive are old friends in the Astronomical Observatory business. A drive to eliminate star travel for periods of 10-12 minutes are really quite crude according to present standards.

The use of springs to drive the mechanisms as indicated previously [redacted] perfectly feasible. Springs have been suggested to increase the independence of the Sighting Station from electrical power connections.

The estimated cost of the Sighting Station in lots of 100 would be about $3000 apiece.

JOHN S. CLEMENS
Chief, Physics Research Branch
Flight Research Laboratory
Research Division

- MATS Flying Service.
- Weather Bureau
- Air Weather Service
- Rand.

Immediate Plans

① Add personnel
② Confirm Cahan { between the 26th and 30th inst.
③ Declare Digest Act & release to PIC.
④ Send monthly rept. immediately.
⑤ Use stock questionnaire.
⑥ Assign higher rank officer.
⑦ Make definite angle with
MATS Flying Service
Weather Bureau
Air Weather Serv.
Rand.

Dr William J Kaufmann
Harvard University

Dr E C Kelbert
Chief Scientist. NRL Representative

Dr F.A. Jenkins
Prof. of Physics (optics) " " "

Dr E H Land
Dir. of Research. Polaroid Corp.
Member of SAB

Dr Irving Langmuir
General Electric Company

Dr L.N Ridenour
Private Consultant

Dr J. Straus
Prof of Physics. (atmospheric radiation) Johns Hopkins University
Member of SAB

Dr E. Teller
Prof of Physics (green-tube bulbs)
Univ of Chicago
Member of SAB

Dr F L Whipple
Prof of Astrophysics (meteors). Harvard Univ

Dr Fritz Zwicky
Prof of Astrophysics (Rockets) — CIT Pasadena.

[redacted]

In the case of a single Canidate, we believe that the interests of the project will best be served by [redacted] the active collaboration of certain other agencies such as

van Allen
Eagles

⑩ - Minneapolis
~~⑨ Tibbets~~
~~⑧ Street~~
~~⑦ Kittenhouse~~
⑥ ~~Hulbert~~
⑤ ~~Atwell~~
④ Zuncky
~~⑯ Hinchliffe~~
~~⑫ Rockets~~
~~① Van Allen~~
~~② Eagles~~

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT-PATTERSON AIR FORCE BASE
DAYTON, OHIO

[redacted]

Colonel Edward H. Porter
Deputy Director for Estimates
Directorate of Intelligence
Washington 25, D. C.

Dear Colonel Porter:

Your letter of the fifth is acknowledged. We are glad to obtain your general concurrence with our recommendations. There appear to be three possible methods of handling the situation, one of which (Proposal I) is at present utilized.

PROPOSAL I. (ATIC alone)

a. Project Blue Book would be handled by ATIC alone. There would be no organized outside help.

b. ATIC would receive all reports, consider and segregate them into two categories: (1) "ACTION," for immediate processing in a numbered folder; and (2) "NO ACTION," for ATIC reference file.

c. ATIC would be responsible for all Pro actions.

d. ATIC would prepare and furnish AFOIN-2 with a flash report, an interim report and a numbered folder containing a completed action report on each "ACTION" sighting.

e. ATIC would prepare and furnish AFOIN-2 with semi-annual reports on the situation. These reports would list all sightings during the period, with individual action, conclusion and recapitulation of origins (planet Venus, balloons, aircraft, mirages, etc., unknown).

PROPOSAL II. (ATIC plus Contract Technical Group plus Advisory Committee)

a. High Level Advisory Committee

1. Would not exceed three people

2. Would act as counselor to ATIC

3. Chairman would act as high level spokesman on Blue Book matters for USAF (material for information would be furnished by ATIC)

Colonel Edward M. Porter

7 July 1952

NOTE: Suggested areas might include: Geophysical Institute; Arthur D. Little, Inc.; a member of the scientific advisory board; others. They would be selected and appointed by ATIC.

b. Contractor Technical Group

1. Contractor would set up technical group of scientific personnel (not exceeding three persons) to whom data on all sightings would be furnished in a numbered folder for immediate consideration.

2. Group would, when necessary, conduct interrogations.

3. Group would make continuing analyses of all incoming data to determine category into which phenomena could fall.

4. Group would return to ATIC completed action numbered folders on all sightings.

5. Contractor would make available, to the technical group, members of his scientific staff as consultants in various fields (including, for example, that of psychology).

NOTE: Suggested names of contractors might include: Rand Corporation; Battelle Memorial Institute; Stanford Research Institute; others.

c. ATIC Monitoring Activity

1. ATIC would continue to monitor all phases as at present.

2. ATIC would be responsible for press releases in the early stages of all sightings.

3. ATIC would furnish the contractor technical group all data on sightings as they were received.

4. ATIC would plan the procedure to be followed and take necessary operational steps.

5. ATIC would investigate all sighting reports and prepare a folder in duplicate (1 copy for ATIC files and 1 copy for contractor technical group)

6. ATIC would furnish the high level advisory group with periodic summary reports based on the completed action numbered folders furnished by the contractor technical group. These summaries would supply the high level advisory committee with the necessary material for information releases.

NOTE: Direct communication with Contractor technical group might have to be located near or in ATIC.

2

and would eventually be prepared by the Contractor Technical Group coordinated by ATIC & forwarded before submission. This, however, would not occur until the contractor had acquired the necessary experience.

Colonel Edward L. Porter

[illegible] 1952

PLAN III. (ATIC plus Contractor)

a. Contractor Handling of Projects

1. Contractor would be given complete monitoring, planning, handling and assessing of Project Blue Book under the overall supervision of ATIC who would act as AC (Approving Official).

2. There would be two handling categories: "ACTION" and "NO ACTION." The first ("ACTION") would be sent immediately to the contractor in a numbered folder for processing. The second ("NO ACTION") would be filed at ATIC for reference.

3. Contractor would conduct all interrogations and would necessarily have to be in a position to operate with agencies in the Department of Defense since some needed actions might require collaboration by Air Force units, Weather Bureau units, etc.

4. Contractor would furnish ATIC with

(a) Flash report, based on available information, with a rapid assessment. (This would be required within a few hours of receipt of the "ACTION" folder or telephonic information of the contents of this "ACTION" folder.)

(b) Interim report

(c) Completed action report on each action sighting numbered folder

5. Contractor would furnish ATIC with semi-annual reports on the situation. These reports would list all sightings during the period with individual actions, conclusions, and recapitulation of origins (planet Venus, balloons, aircraft, mirages, etc., unknown).

b. ATIC Responsibility

1. ATIC would be responsible for all press releases and would act as spokesman for Project Blue Book. Alternately, it would furnish information to the Director of Intelligence, Headquarters USAF, for press releases or briefing actions.

Colonel Ruppert ... Porter

2 [illegible] 1952

immediate

It is considered that of the three possible methods outlined above, PROPOSAL II would yield the best results. This proposal leaves the responsibility for Project Blue Book activity with this Center, but it provides both the authoritativeness of a high level spokesman and the technical capabilities, in all scientific fields, of a reputable contractor. It is further considered that Rand Corporation, if available, would most adequately fulfil the contractual requirements. We propose, if no objections exist, to ~~attempt implementation of~~ PROPOSAL II ~~effect prompt adoption~~ adopt as soon as possible.

Sincerely,

In so far as the future is concerned, the tendency should be to increase the responsibility of the contractor in proportion to his experience & thus more closely approach the procedure outlined in PROPOSAL III.

JOHN A. O'NEAL
Colonel, USAF

4

Col Ritter - Dear Colonel Ritter:

Your letter of the fifth is acknowledged. We are glad to obtain your general concurrence with our recommendations. There appear to be three possible methods of handling the situation, one of which is at present utilized.

PROPOSAL I. (ATIC alone)

a. Project Blue Book would be handled by ATIC alone. There would be no organized outside help.

b. ATIC would receive all reports, consider and segregate them into two categories: (1) "ACTION," for immediate processing in a numbered folder; and (2) "NO ACTION," for ATIC reference file.

c. ATIC would prepare and furnish AFOIN-2 with a flash report, an interim report and a numbered folder containing a completed action report on each "action" sighting.

d. ATIC would prepare and furnish AFOIN-2 with semi-annual reports on the situation. These reports would list all sightings during the period, with individual action, conclusion and recapitulation of origins (planet Venus, balloons, aircraft, mirages, etc., unknown, etc.)

PROPOSAL II. (ATIC plus Contract Technical Group plus Advisory Committee)

a. High Level Advisory Committee

1. Would not be exceed three people
2. Would act as counselor to ATIC
3. Chairman would act as high level spokesman on Blue Book matters for USAF

NOTE: Suggested names might include General Doolittle, a member of the scientific advisory board; others. Also would be [illegible]

b. Contractor Technical Group

1. Contractor would set up technical group (not exceeding three persons) of scientific personnel to whom data on all sightings would be furnished in a numbered folder for immediate consideration.

2. Group would, when necessary, conduct interrogations.

3. Group would make continuing analyses of all incoming data to determine category into which phenomena could fall.

4. Group would return to ATIC completed action numbered folders on all sightings.

5. Contractor would make available, to the technical group, members of his scientific staff, as consultants in various fields (including, for example, that of psychology).

NOTE: Suggested names of contractors might include: Rand Corporation; Battelle Memorial Institute; ? ; and ? ; etc.:

c. ATIC Monitoring Activity

1. ATIC would continue to monitor ~~on the~~ all phases as at present.

2. ATIC would be responsible for press releases in the early stages of all sightings

3. ATIC would furnish the contractor technical group all data on sightings as they were received, ~~and~~ 4. ATIC would plan the procedure to be followed and take necessary operational steps.

~~4.~~ 5. ATIC would ~~process all sighting reports. This would consist of investigating the reports preparing~~ investigate all sighting reports and prepare a folder in duplicate (1 copy for ATIC files and 1 copy for contractor technical group)

~~5.~~ 6. ATIC would furnish the high level advisory group with periodic summary reports ~~making use of~~ based on the completed action numbered folders furnished by the contractor technical group. These summaries would supply the high level advisory committee with the necessary material for information releases.

PROPOSAL III. (ATIC plus Contractor)

a. Contractor Handling of Projects

1. Contractor would be given complete monitoring, planning, handling and assessing of Project Blue Book under the overall supervision of TIC who would act as AO (Approving Official).

2. (There would be two handling) Categories: "ACTION" and "NO ACTION." The first ("ACTION") would be sent immediately to the contractor in a numbered file for processing. The second ("NO ACTION") would be filed at ATIC for reference.

3. Contractor would conduct all interrogations and would necessarily have to be in a position to operate with agencies in the Department of Defense since some needed actions might require distribution by Air Force units.

4. Contractor would furnish ATIC with

(a) Flash report based on available information and a rapid assessment. (This would be required within a few hours of receipt of the "ACTION" folder or telephonic information of the contents of this "ACTION" folder.)

(b) Interim report

(c) Completed action report from folder on each action sighting

5. Contractor would furnish ATIC with semi-annual reports on the situation. These reports would list all sightings during the period with individual action, conclusions and recapitulation of origins (planet Venus, balloons, aircraft, mirages, etc., unknown).

b. ATIC Responsibility

1. ATIC would be responsible for all press releases and would act as spokesman for Project Blue Book. Alternately, it would furnish information to the Director of Intelligence, Headquarters USAF for press re-

releases or briefing actions.

It is considered that of the three possible methods outlined above, PROPOSAL II would yield the best results. This proposal leaves the responsibility for Project Blue Book actively with this Center, but it provides both the authoritativeness of a high level spokesman and the technical capabilities, in all scientific fields, of a reputable contractor. It is further considered that Rand Corporation, if available, would most adequately fulfil the contractual requirements. We propose, if no objections exist, to attempt implementation of PROPOSAL II.

PROPOSAL II

a. [illegible] committee [illegible]
(1) [illegible]
(2) [illegible]
[illegible]

NOTE. [illegible]

b. [illegible] Technical [illegible]
(1) [illegible] Technical [illegible]
(2) [illegible]
2, [illegible]
[illegible]
numbered [illegible]
(5) [illegible]
[illegible]
NOTE: [illegible]

c. ATIC Monitoring Activity:

(1) ATIC would [illegible]

[illegible]

[illegible]

(3) ATIC would furnish the Contractor Technical Branch [illegible] data and sightings as they were received.

(4) ATIC would process all sightings reports [illegible] investigation report. Each case folder in duplicate [illegible] ATIC file and copy to Cont T.B.).

PROPOSAL III

a. Contractor handling of [illegible]

(1) Qualified [illegible]

[illegible]

[illegible] ATIC, who would [illegible]

(2) ATIC [illegible] sightings [illegible] Contractor [illegible] Technical Branch [illegible] first "real fix" [illegible] would be [illegible] Contractor [illegible]

make all this subject of letter to Col Poole.

What to do meanwhile to help Ruppelt -

(b) - appoint committee to obtain estimate cost, not then submit DA for approval total plan & cost.

Mtg of July 10 52

Plan decided upon (Dr Blackboard Other Room)

① Discussion with Kaplan & Venkatraman if latter can be brought here. Ask Stg 12th Instr. Old will bring Venk on Inst Coast

② Decide upon Chairman of Adv. Group

③ Chairman to pick out & appoint members of Group - eg.

Meteorology	?
Physics	Langmuir - Yt.
Upper Air Res.	Kaplan
Astronomy	Vallly
Nucl. Physics	Hafstadt
Psychology	?
Applied Physics	Dr Alex. Lectures Civ Institutes

④ Convene BAB here. Brief them completely & decide upon Questionnaire. Also discuss method of procedure with a Coordinator & who. Board to Tel Av Inst Interest.

Instr. Comm. Rand? Gen. Inst? Stork? etc

Instr: Could Stork suggest Consultant by Instr

Note

Over

PROJECT BLUE BOOK STATUS REPORT

I. PROBLEM

Since 1947, the Air Force has been receiving many reports of unidentified aerial objects. These reports have emanated from individuals of varying degrees of reliability. In the five years since the first project for the investigation of the reported unidentified aerial objects was instituted, no definite conclusions have been reached as to their nature. The problem is to review the present operations of the project, point out the inadequacies, and recommend a future operational plan.

II. FACTUAL DATA

The Air Force became interested in unidentified aerial objects in the summer of 1947 when a private pilot observed nine disk-like objects over the Cascade Mountains in the State of Washington. The Air Technical Intelligence Center, or at that time the Intelligence Division of A C, made a two year study of the sightings. In August 1949, a report was made which concluded that the reports were due to:

a. Mass hysteria
b. Hallucinations, hoaxes, and people seeking publicity
c. Psychopathological persons
d. Misinterpretation of known objects

The conclusions reached in this report were not substantiated by the necessary proof evidenced by the fact that the project is still in existence and still no conclusions can be made as to the identity of a certain percentage of the reported objects. The identity of the reported objects has become a highly controversial issue with the military, the press, and the public.

In July 1951, this project was reorganized. A review of the data available at that time showed that the first three assumptions made in the 1949 report probably were not valid. The basis for this was the fact that although publicity had been at a low ebb, or nearly non-existant, between 1949 and 1951, reports from good sources continued to come in to ATIC. The fourth conclusion, that all reports are the misinterpretation of known objects may still be valid, although at this time there is not enough data to substantiate this conclusion.

Since the first of January 1952 there has been a steady increase in the number of reports received per month. This is due partly to the national publicity that has been received and partly to the more efficient military reporting system now in effect. The trend of the recent publicity is that the Air Force is seriously considering all reports. Consequently, many people, including airline pilots, who had previously feared the brand put on "flying saucer" reporters, now feel it is their duty to report.

III. DISCUSSION

A. Collection

1. ~~Air Force~~ Letter 200-5

The basis for all of the formal collection of material pertaining to observations of unidentified aerial objects is authorized by Air Force Letter 200-5. (See Tab 1) This letter states that all reports of unidentified aerial objects observed by or reported to AF personnel will be forwarded to the D/I (AF), ADC, ATIC, and other appropriate agencies by wire and that the wire message will be followed up in three days by an AF Form 112. The letter also outlines what basic information is needed by ATIC.

When the project was reorganized in July 1951, the basic premise of the reorganization was that if a large volume of complete reports could be obtained it might be possible to correlate these and possibly plot the track of an object and from triangulation obtain altitudes and size. Thus AFL 200-5 was designed to obtain all possible reports of unidentified aerial objects.

AFL 200-5 has been only moderately successful in fulfilling its purpose. It has been widely disseminated although on several occasions it has been noted that some lower echelon organizations are not aware of its presence and are reporting under old regulations.

In many instances AFL 200-5 has not been followed in reporting. A survey of 100 reports submitted in June 1952 showed that 37 reporting agencies did not follow-up the wire message with a written Form 112. In all of these cases the wire message stated that the report was in compliance with AFL 200-5 indicating that the reporting agency was familiar with the Air Force Letter. This discrepancy has been investigated to some degree and the reasons for not complying with the letter were:

a. There was a manpower shortage in typists
b. The reporting agency had no more data other than that inclosed in the initial wire message and did not have time to collect more data
c. AFL 200-5 was interpreted to mean that some other agency would submit the Form 112
d. The reporting officer did not believe in "flying saucers".

In a few instances no report of any type was submitted although the source was known to have reported the incident to an Air Force installation.

Observations by sources other than AF personnel are received in compliance with AFL 200-5 when they are reported to AF installations. Magazine and newspaper articles have stated that civilians should contact their nearest Air Force installation to report an unidentified aerial object. (This statement was not officially sanctioned by ATIC.) Civilian pilots contact CAA facilities who in turn relay the report through AACS communications nets to flight service centers who make the report in accordance with AFL 200-5.

During the peak of sightings that occurred in June and July of 1952, it became evident that AFL 200-5 was inadequate in the sense that a large percentage of the reports received did not contain enough information to evaluate or the reliability of the source was extremely doubtful. In only a very few cases did the report contain enough data to thoroughly evaluate the report. The cost of these communications in money and manpower was not balanced by the amount of useable data obtained.

2. Further Investigation of Reports

Since many reports of sightings are unclear and the information desired cannot be covered by one standard AFL, more information than that asked for in AFL 200-5 is needed. This is obtained by phone calls, wire messages, or interviews by AFIC personnel. Since a thorough field investigation by AFIC field investigators may take up to a week, the manpower situation has greatly limited these trips. Only the most outstanding incidents have been investigated. Phone calls and wire messages are only practical when a very few specific items of information are needed. The inability to send investigators on field trips is, however, not a great disadvantage. It has been found by experience that only in the most important cases does it pay to send people to obtain more data. Except during the June-July 1952 peak, most incidents which have required a field investigation have been fairly well investigated. The need for this additional personnel to make field investigations was best exemplified by the Washington D. C. radar sighting. In this instance, if AFIC had had the personnel to investigate this at being immediately the newspapers could have been given an answer and a lot of the publicity which was received would have been eliminated.

3. CIRVIS Reports

JANAP-146(b) (CIRVIS) states that any U. S. aircraft flying worldwide will report an observation they believe to be of vital intelligence nature to the nearest U. S. military installation. This concludes the reporting of sightings of unidentified aerial objects. AFIC receives such reports relayed from the D/I, as it does not receive direct distribution of such reports. In the past CIRVIS reports have not been utilized due to the fact that the information is too incomplete to evaluate.

It is understood that the recent peak of sightings of unidentified aerial objects saturated the service communication net. This is unfortunate and should be corrected because as was previously stated CIRVIS reports are generally not evaluated.

4. Letters from Civilians

Many reports are made directly to AFIC by letter. Magazines and newspapers have stated that AFIC is responsible for reports of unidentified aerial objects, consequently they are forwarded directly to AFIC by mail. This presents a major manpower problem since all such letters are acknowledged and filed. The quality of 95 percent of these letters is such that they are of no value. An attempt is being made to obtain information from these letters, however, by sending questionnaires to the sources.

5. Instruments

All reports that are substantiated by photographs or other instrument readings should be forwarded in compliance with AFL 200-5. No formal program of instrumentation by ATIC is presently in operation. On 12 June 1952, ADC requested that all its AC&W units that were equipped with radar scope cameras take action to have those cameras operational at all times when the radars were operational. A special electronics questionnaire was prepared by the Electronics Branch of ATIC and forwarded to ADC. It was requested that this questionnaire accompany all reports of radar sightings. To date, only several such scope photos have been received.

The Collection Division of ATIC is presently developing a camera equipped with the diffraction grating. A contract has been let to purchase the gratings. One hundred units will be supplied mounted in a Series VI lens attachment size. By using the grating and a lens adapter, the gratings may be attached to the camera. One hundred Wilson stereoscopic cameras have been ordered and will be delivered, equipped with a diffraction grating, to ATIC by 1 September 1952. They will be placed with observers shortly thereafter. It has not been fully decided who will use the cameras. Air Force control tower operators, CA- control tower operators, and the Ground Observer Corps are the most likely prospects.

6. Questionnaire

ATIC is now using a questionnaire developed by a civilian contractor. The questions contained in the questionnaire were developed by a group of scientists and engineers who had previously made a study of the problem of the collection of data on visual sightings of unidentified aerial objects. These questions were then rephrased and regrouped by a panel of psychologists so that they would not "lead" the source in his interpretations of what he had observed. These questionnaires are now being used on a trial basis and after a fair sampling is obtained they will be reviewed and revised if necessary.

ATIC is presently sending one of these questionnaires to the majority of observers who make a report either through military channels or by direct mail.

7. Clipping Service

ATIC has secured the services of a newspaper clipping service through its contractual agency. All incidents pertaining to unidentified aerial objects, large meteors, and other aerial phenomena are clipped from the newspapers and forwarded to ATIC. This service has been beneficial in several ways. It has provided explanations of some reports of reporting large meteors in the area of the sighting. It has supplied supporting data for sightings, (i.e, more sources) and has enabled ATIC to determine the extent of "scares" in certain local areas. In some instances, it has shown how newspaper articles or lectures have triggered a local outbreak of reports. It also serves as an idea as to the amount

of national publicity the subject of unidentified aerial objects is receiving.

In the future it is hoped it can be used to make psychological studies.

b. Analysis

The analysis of reports received by AFIC varies from a full analysis to merely filing the report. The amount of time expended on analysis is inversely proportional to the number of reports being received. When only four to five reports per week are received they can be given a relatively complete analysis. When the number of reports increase to a peak as it did in July 1952 (250 reports) the full project staff is utilized in merely sorting and filing reports and answering queries from newspapers.

Approximately 20 percent of the total of nearly 1500 reports on file at AFIC are being carried as unknown. This figure is not truly representative of the facts due to the method used in evaluating the reports. In some instances reports were investigated thoroughly and the reported object was identified or could be reasonably stated that it was unknown. This type of analysis has been given to only a small percentage of the incidents, however. In the majority of the cases, the investigation was much less extensive. In some instances if there was air traffic in the area, the conclusion was that the object was an aircraft with no further investigation. In other instances, the description of the sighting coincided with that of a sighting where the object was known and it was also classed as known. The percentage of reported objects that have actually been proven to be known objects is very low.

The same range of thoroughness of investigation applies to the unidentified 20 percent. In some cases reports were thoroughly investigated and no identification could be made. In other cases the source, circumstances under which the sighting was made, and the description of the sightings were taken into consideration and if it was not similar to any previous known report, it was classified as unknown. In all cases that do not contain relatively sufficient data for analysis, or if the source is doubtful, it is classed as having "insufficient data".

Complete weather data, which are extremely important in sightings, are presently not being obtained for each sighting. In certain instances the data are obtained from the weather section of Patterson Organizations. Obtaining weather data on each sighting is not feasible in that it would increase the workload of the weather section to a point that it would hinder its primary mission.

This method of analysis is not adequate to substantiate any definite conclusions. It is entirely possible that the percentage of

knowns and unknowns would be different if a thorough analysis of each case could be made.

1. Visual Observations

Assuming that some object or unknown natural phenomena does exist observations from one point even by a group of observers can never give accurate data. All it will establish is that at a known object or natural phenomena was sighted on a certain time, date, and at a given location. No estimates of speed, altitude or size, if they are given, are ever considered valid. It is a well known fact that the factors of speed, altitude, size, and heat are all interrelated and if two or more of these factors are unknown estimates cannot be made. Only in rare instances has an object passed under a cloud or in front of a known landmark to establish an upper limit in distance.

Data from visual observations can be used at times to establish the identity of a known object. If a known object such as a balloon, aircraft or meteor can be determined to have been in the area of the sighting the data reported by the observer can be correlated with the data of the known object to positively establish that the object viewed was a balloon, aircraft, meteor, etc. If the observer reports such items as the bearing, elevation, time of observation, a rough description, and other pertinent items, they can be used.

a. Methods of Segregating Knowns from Visual Reports

Past experience has indicated that a large percentage of the reports are due to misinterpretation of known objects, the majority of which are balloons, aircraft, and meteors. Several methods are presently being used to segregate these reports when time permits.

(1) Balloons

Balloons released in the U.S. fall into three categories:

(a) Regularly released weather observation balloons
(b) Irregularly released weather observation balloons
(c) Large balloons released for upper air research, cosmic ray research, etc.

Of these, the regularly released weather observation balloons are most generally reported as unidentified aerial objects. This type includes the pibal, rawinsonde, rawin, and radiosonde types. The pibal balloons which are about 24 inches in diameter when launched rise to medium altitudes before burst. The rawinsonde, rawin, and radiosonde balloons are from 5 to 6 feet in diameter at launch then rise to altitudes of 90,000 to 100,000 feet at which time they expand to 15 to 20 feet in diameter. Atmospheric conditions and the relationship of the balloon to the sun determine how far they can be seen. Under ideal conditions these balloons have been seen at 100,000 feet. The larger balloons

are tracked, consequently their exact flight path is known. The smaller balloons are not tracked but due to the fact that they are small, they are not often seen. All balloons released at night carry a battery-powered light. The balloons are launched at 03007, 0 007, 15007, and 21007. In a 24-hour period 80 small balloons and 40 large balloons are regularly launched in the U. S. by the Air Weather Service, the U.S. Weather Bureau, and the Navy Aerology Department.

The present method of determining whether or not a reported object is a balloon is to first check the time that the object was reported. If the sighting occurred within two hours after a scheduled balloon launch and the description of the object reported is that of a comparatively slow moving body, it is possible that the observer saw a balloon. The reported color of some are not factors as experience has shown that a balloon can appear to have various shapes and colors depending on atmospheric conditions and the position relative to the sun.

When a report is determined to possibly be a balloon, all balloon launch stations upwind of the area of the sighting are noted, the winds aloft having been obtained from the local weather station. A map of all U.S. weather observation balloon launch sites has been prepared. Wires are sent to each station that could have had a balloon in the area and the time of launch, general track, and size of burst are requested. ATIC is authorized to direct communications with these weather agencies under the authorization given in AFL 200-5.

In some instances known organizations launching research balloons are also queried, but ATIC does not have a complete file on what organizations are launching this type of balloon.

A small percentage of the balloons launched are lost and not tracked. A tracking station may break down during a run and not record a complete flight or a balloon may develop a slow leak and float for a long period of time covering a long distance and moving out of range of the tracking station. Since there is no tracking on these balloons they could be observed and a check on balloons would give negative results. It is believed, however, that this only occurs in a small percentage of reports.

The above described procedure has been successful in the majority of the cases in which it was used. It has only been used in a small percentage of the total incidents, however, due to limited manpower available.

A system should be developed whereby information needed could determine whether or not an object is a balloon.

(2) Aircraft

The determination as to whether or not a reported object is an aircraft is difficult. Attempts have been made to check back with USAF Flight Service or CAA in an attempt to examine flight plans. This has been unsuccessful due to the fact that the flight plans are not filed in a way that makes it practical to go back into old records. In addition, local flights are not filed with Flight Service.

Airline logs can be examined to determine the position of commercial airliners but this is a devious process and is only done on rare occasions.

Air Force Letter 200-5 requests that the reporting officer immediately determine what air traffic was in the area at the time of the sighting. If this is done immediately, the results are comparatively successful. Consequently, in any future directives regarding Project Blue Book, it should be emphatically stated that the reporting officer will immediately check the local area for the location of any airborne aircraft.

[redacted] it is determined that aircraft were in the area, it has been the policy to state that the observed object was possibly an aircraft. There are two exceptions to this, however. If the observer reported seeing the aircraft at the same time he saw the object and if the object passed nearly over (within 30° of the Zenith), and there was no great amount of background noise, and the observer heard no sound.

(3) Astronomical Bodies

Astronomical bodies can be divided into two categories, (a) planets and stars, and (b) meteorites or fireballs. If the observer is able to supply a rough "fix", it can be determined whether or not the object was a planet or bright star. Navigators assigned to ATIC in other duties are utilized for this purpose. Objects that are described as "large star" either hovering for long periods of time or reported to be going directly away from the observer at high speed, either in the daylight or night, are sometimes planets.

The possibility of a reported object being a meteor is difficult to establish under the present operational procedures since no astronomer is available for evaluating reports. Present practice is to analyze the description. If the source reports a rapidly moving light, either arching down or in a horizontal trajectory, with a trail or "exhaust", it is classed as "possibly a meteor". In rare instances, astronomers in the local area of the sighting will substantiate the fact that the object was a meteor. This fact is usually obtained from the newspaper clipping service. Although a contract astronomer is available, he has not been consulted as he is only a part-time consultant and cannot devote any time to screening reports. All of the screening and evaluations are done by ATIC engineers.

(4) Electronic Observations

Approximately five percent of the reports received at ATIC have involved radar. Some have been definitely established as being caused by weather, malfunctions in the equipment, interference, etc., and some of the reports have not been adequately explained.

To date most of the indications on the scope have

been verbally described by the radar operators, only in a few instances have scope photos been available. The shape, action, and location of a signal is extremely important in making an evaluation and in the past it has been necessary to rely on the operator's impressions of what they observed. In addition to the situation observed on the radar scope, data on the condition of the equipment, technical data on the set, weather conditions, etc., are needed for a complete evaluation. In the majority of the instances, this has not been available due to manpower shortages.

The Electronics Section of ATIC is charged with the evaluation of all radar sightings.

(5) Supporting Studies

In addition to the analysis of each separate report, ATIC has a contract with a civilian research organization for a statistical study of reports. A coding system for certain key items in each report has been established. Each report is being reviewed and these key items are being transferred to coding sheets. IBM punch cards will then be made. When this is complete a statistical study will be made. To date 900 reports have been reviewed and punch cards made.

(6) Photographs

All photographs that are believed to merit an analysis are analyzed and evaluated by the Photo Reconnaissance Laboratory at Wright Air Development Center. The circumstances under which the photographs were taken and the current reliability of the source are considered before determining whether or not an analysis by them is warranted. To date the work has been done on a gratis basis, consequently the evaluation has been quick and not too complete. An agreement has now been made with the Photo Reconnaissance Branch of WADC to establish a project for the evaluation of photographs of unidentified aerial objects. In this way, a more complete and thorough analysis can be given to photographs.

(7) Panel of Consultants

The civilian research institute that is acting as the contractor to ATIC on this project has available a great number of scientists and engineers. These people are on an on-call basis and can be consulted individually or as a panel on any problem that may arise. A psychologist and an astro-physicist who were not regularly employed by the institute have been retained on a consultant basis.

To date these people have been consulted on several occasions. On one occasion 12 of them were consulted as a panel on the problem of preparing the questionnaire. In two other instances, these people were consulted as a panel to aid in evaluating incidents. It was found that due to the nebulous type of data contained in the reports they could be of no aid in evaluations.

V. PUBLIC RELATIONS

The recent national publicity received on unidentified aerial objects has shown the need for carefully supervised public relations. The present policy is for the USAF PIO to request all needed information from the D/I. D/I in turn obtains it from ATIC, if necessary. In the case of personal visits to ATIC by accredited members of the press, ATIC is notified by D/I and only then are the press representatives given information.

A close working arrangement between ATIC, D/I and PIO is a necessity. It has been found in the past that the newspapers and magazines are not nearly as interested in the project as they first believed if they are given all the facts.

VI. PARTICIPATION BY OTHER COMMANDS

All Air Force Commands participate in the collection of reports as specified in AFL 200-5.

A. Air Defense Command

Air Defense Command and ATIC have worked in close coordination on this project. ADC through their ACEW units, fighter squadrons, and their contact with the Anti-Aircraft Command have provided assistance such as radar observations, radar scope photography, and fighter interception under existing ADC regulations. The Ground Observer Corps has made the observation of unidentified aerial objects a secondary objective. The potential aid that ADC has available has not been fully realized.

VII. PANEL OF SCIENTISTS

At the suggestion of Dr. Joseph Kaplan of UCLA, a panel of well-known U.S. scientists is being established to give guidance on this project and to evaluate reports. They will be furnished those reports which have been thoroughly screened by all agencies for the possibility of being a balloon, aircraft, or known astronomical phenomena.

VIII. CONCLUSIONS

It can be concluded that two courses of action are possible, either discontinue the project entirely or expand the scope of the project so that more conclusive data can be obtained and more concrete conclusions made.

A. Discontinue the Project

To date it can be concluded that the reported objects are no threat to the United States since they have committed no hostile acts.

The hypothesis that since nothing hostile has been discovered in the past nothing hostile will be discovered in the future can be followed and the project discontinued. However, with the present day technological advances, this hypothesis may involve a certain degree of risk in the future.

b. Continuing Expanded Project

1. If the project is to continue it must be expanded in scope. This would require both a limited increase in the amount of funds and personnel. Reports now being received are not thoroughly analyzed. Many sources of information that are available have not been utilized due to the limited scope of the project. The possibility of any definite conclusions as to the nature of the objects being reported will ever be reached is extremely doubtful under the present operations.

2. At the present time the objects that have been reported apparently present no threat to the United States. However, sometime in the future some unfriendly nation might conceivably develop unconventional weapons that would appear similar to the objects that are presently being reported and it is apparent from the past five years history of this project that present operations could not adequately cope with such an occurrence.

3. There are still "incredible reports by credible observers" that have not been and should be thoroughly explored.

4. An enemy could use the present flying saucer report as a psychological weapon and if an organization is not available to cope with such reports (i.e., the mere existence of such an organized project would be a counter-weapon) a certain degree of panic could result.

5. It is thought possible that all the reports of unidentified objects are due to misinterpretation of known objects. The continuance of an expanded project will provide the necessary data to arrive at more definite conclusions as to this possibility.

Recommended Action

It is recommended that the project be continued and a maximum effort made to eliminate as many nebulous reports as possible, thoroughly evaluate reports that appear credible and to obtain more qualitative data. To accomplish this, it is recommended that the following action be taken. Such action would give a flow of reports as shown in Tab .

A. Present directives regarding unidentified aerial objects be modified to give reporting agencies more background on the subject of reporting unidentified aerial objects, and to instruct them to be more selective in deciding which reports will be forwarded. (see Tab G).

B. A survey be made of qualified astronomical observatories in the U.S., one selected, and a contract negotiated for assistance to ATIC in evaluating reports and in contacting other observatories. (see Tab E).

C. Air Weather Service be contacted and a more positive system for obtaining weather and balloon data be worked out for both future and past balloon and weather data. (see Tab E).

D. It be determined what agencies in the U.S. are launching high altitude research balloons (i. ., all balloons except regularly launched weather observation balloons) and determine how ATIC can get this data on the flights. (see Tab F).

E. A survey be made of the potentialities of the Air Defense Command radar net, ground observer corps, fighter aircraft, and the Anti Aircraft command to determine how they can be utilized without detracting from the basic ADC mission.

F. A survey be made of the potentialities of presently instrumented test areas in the United States, beginning with the AF installations at Holloman Air Force Base, Patrick Air Force Base, and Edwards Air Force Base, and determine how they could be utilized in this program. (see Tab F).

G. A project be established with the Photo Reconnaissance Laboratory of Wright Air Development Center (WCRRP) to evaluate supposedly valid photographs of airborne objects (i.e., not radar scope or spectrum photos) that are submitted to ATIC.

H. ATIC continue to have Project Stork produce supporting studies and that the following studies be initiated in addition to the present statistical analysis and development of a questionnaire.

1. Possible correlation between sightings from Bible times to 1947 with sightings after 1947.

2. Correlation of radiation measurements with unidentified aerial object reports.

3. Preliminary studies on the psychological aspects of the subject of unidentified aerial objects.

4. Time-space study of reports.

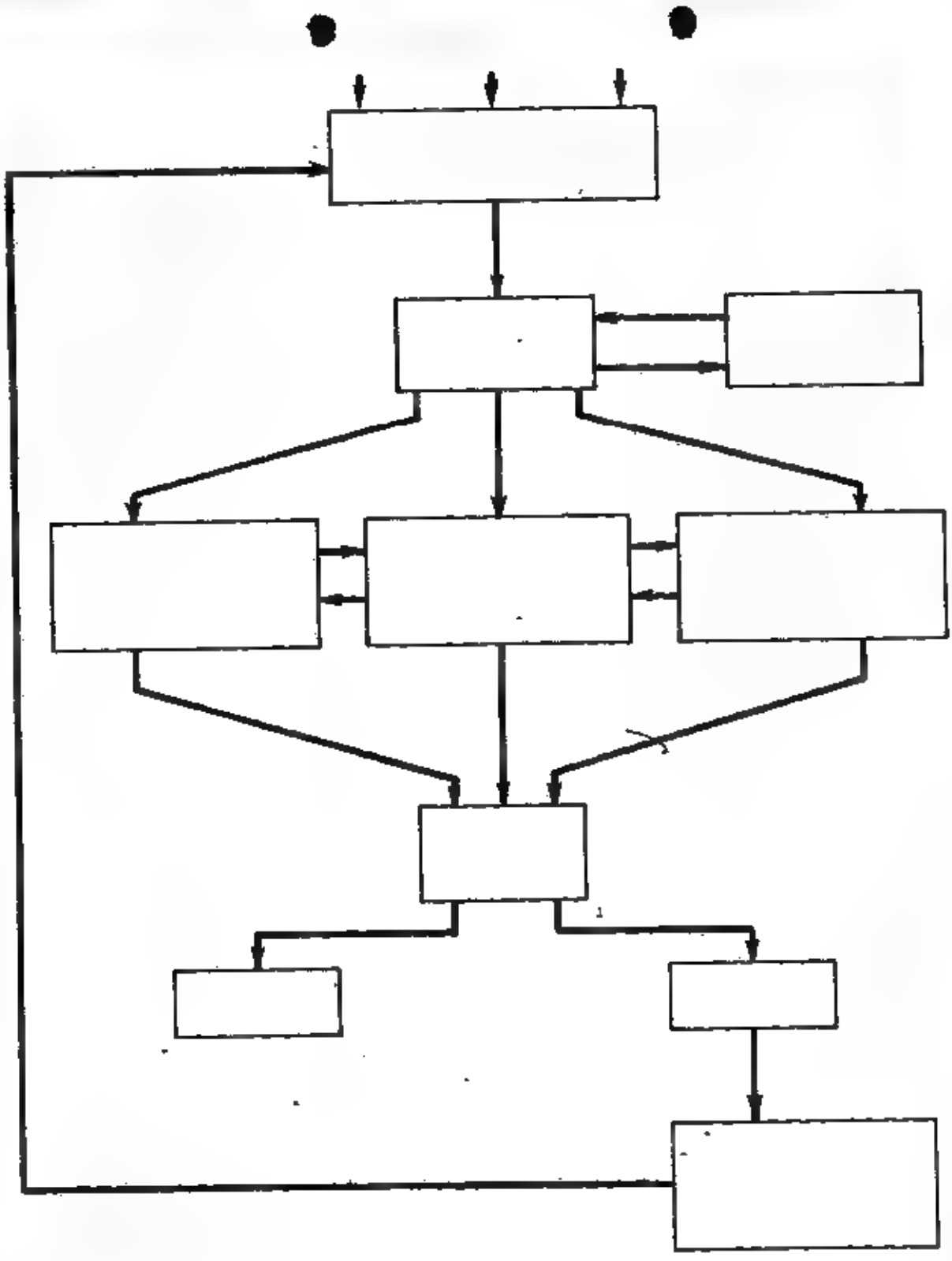
I. A preliminary survey be made to determine the possibilities of negotiating a contract to estimate the type, degree and cost of an expanded instrumentation program (i.e., other than diffraction grating cameras). (see Tab B).

Concurrences:

AFIAA _____

AFIA _____

AFI _____



TAB C

I. FACTUAL DATA

The directive for establishing all collection operations in conjunction with this project is AFL 200-5, dated 29 April 1952, subject: (Unclassified) Unidentified Flying Object Reporting (Short Title: UNCLASSIFIED) (See Tab A). It has been found that by revising the directive or issuing a supplemental instruction, the effectiveness of the directive could be increased.

II. DISCUSSION

The following changes in AFL 200-5 which are inclosed as Tab A are recommended:

A. Paragraph 1 of AFL 200-5 be changed so that the second sentence reads, "All significant incidents will be reported . . . . ."

B. Paragraph 2 of AFL 200-5

No recommended changes.

C. Paragraph 3 of AFL 200-5 be expanded to give the reporting officer or agency a more complete background on the entire subject of unidentified aerial objects. At the present time many persons in lower echelon agencies are not aware of the true nature of the project and have derived their knowledge solely from newspapers, magazines, and popular books. It is believed that a more thorough knowledge of the subject of unidentified aerial objects will increase the efficiency of the reporting.

D. Paragraph 4 of AFL 200-5 be expanded to include more data on how preliminary screening of reports can be accomplished so that ATIC will only receive those reports that are considered to have sufficient information to evaluate.

E. Paragraph 5 of AFL 200-5

No recommended changes.

F. Paragraph 6 of AFL 200-5

No changes recommended.

G. Paragraph 7 of AFL 200-5 be expanded to require more accurate data to more clearly define what data are required and to explain why certain items are needed for evaluation.

TAB D

I. FACTUAL DATA

There is a definite need for the contractual aid of a qualified astronomical observatory to assist ATIC in evaluating reports that appear to involve astronomical phenomena and to contact astronomical observatories and societies in the United States and to enlist their aid in making possible voluntary observations.

II. DISCUSSION

A. Assisting ATIC in the Evaluation of Reports

Many of the observations of unidentified aerial objects that are reported to ATIC possibly involve astronomical phenomena. Such reports would be forwarded to the contractor for evaluation either by comparing the data of the report to known meteor data or by arriving at a conclusion solely from the data included in the report.

B. Contacting Other Observatories, Astronomers, and Astronomical Societies

The largest and most qualified group of observers of the sky are the professional and amateur astronomers. It is believed that if these people are approached by members of their own profession they would voluntarily be on the alert for any unknown phenomena or objects, make all possible observations and immediately report these observations. The contractor could approach these people and enlist their aid, establish communication channels and handle all correspondence with these people.

III. RECOMMENDED CONCLUSIONS

A. It is recommended that the following steps be taken as soon as possible:

1. Dr. Joseph Kaplan be contacted by wire as soon as possible requesting suggested contractors and obtaining comments on already suggested contractors. Dr. Wylie of the University of Iowa and Father Hyden of Georgetown University have been suggested as possible contractors.

2. Contact Observatories or Astronomy Departments suggested by Dr. Kaplan and determine whether or not they would accept such a contract.

3. Obtain a contract with selected contractor.

TAB D

Tab E

I. FACTUAL DATA

An estimated 15 percent of the reports received by ATIC are evaluated as possibly or probably being balloons. It is highly probable that if more positive information could be obtained on balloon launches in the United States this percentage would increase and more positive identification could be made.

II. RECOMMENDED PROCEDURES

It is recommended that the attached proposal be forwarded through channels to Air Weather Service and that, if the proposal is concurred upon by AWS, action be taken to initiate a transfer of funds.

TAB E

TO: (Headquarters, Air Weather Service
Andrews Air Force Base
Washington 25, D.C.

SUBJECT: Aid in Evaluating Reports of Unidentified Aerial Objects

1. A survey of reports of unidentified aerial objects received by the Air Technical Intelligence Center indicates that approximately 15 percent of these reports can be evaluated as probably or possibly being balloons. It is believed that if more complete data on balloon launches and weather data were available, this percentage would increase. It is proposed by the Air Technical Intelligence Center that Air Weather Service establish a project to thoroughly screen these reports to establish whether or not the objects observed may have been a balloon.

2. To accomplish such a screening, it would be necessary to have all data on balloon launches in the United States. It is understood that the data on Air Weather Service, U.S. Weather Bureau and Navy weather balloon launches are readily available. A survey of all government and private agencies launching research balloons (i.e., all balloons except those regularly launched, weather observation balloons) would have to be made. Communication channels to obtain data on all research balloons would have to be established.

3. When a report is received at AFIC it would be given a preliminary screening. If there was any probability that the object reported might have been a balloon, it would be forwarded to Air Weather Service by phone, wire or mail, depending upon the urgency of obtaining an evaluation. Air Weather Service would then determine whether or not a balloon of any type was in the area of the sighting and from a plot of the track of the balloon determine whether or not the reporting observer saw a balloon. It is believed that in some cases, the existence of a balloon can be definitely established while in other cases there may be some degree of doubt as to the possibility that the object was a balloon. In all incidents submitted for screening, written conclusions with the necessary supporting data would be required. Wherever possible, actual plots of balloon traces should be submitted to substantiate conclusions that the object was a balloon.

4. The exact volume of reports that would be submitted to AWS for screening cannot be predicted; however, it is estimated that the volume would be approximately 20 per week. If current sightings drop below this total, the difference will be made up with reports dating back to January 1958.

5. It is requested that this proposal be studied and comments made as soon as possible. A transfer of funds from AFIC to AWS can be made if necessary.

COLONEL O'[illegible]A

ENCLOSURE TO TAB E

TAB F

I. FACTUAL DATA

A. At the present time there are a number of instrumented test installations throughout the United States that are capable of tracking aerial objects. Such installations are Holloman Air Force Base, Edwards Air Force Base, Patrick Air Force Base, etc.

II. DISCUSSION

A. It is suggested that these installations be contacted and their capabilities for assisting in this project be determined. It may be possible that by slightly altering present operational procedures the tracking equipment could be utilized in this project.

III. RECOMMENDED PROCEDURES

A. Contact the Air Research and Development Command and request permission to visit the above-mentioned facilities to determine how they could be utilized, hours per week the tracking equipment is operational, etc.

B. Determine whether or not it would be feasible to establish coordination between these tracking facilities and ground observers such as the GOC, Security Patrols, etc.

C. Submit a proposed plan for utilizing tracking facilities in conjunction with reported visual sightings.

D. As soon as a plan for the utilization of AF facilities is established, approach the Army and the Navy with the same plan.

TAB Q

I. FACTUAL DATA

Since 1947 the Air Force has received nearly 1500 reports of unidentified aerial objects. Of the 20 percent of these reports that remain unexplained none contain enough technical data to adequately evaluate them. The only possible means of gathering useable data on unidentified aerial objects are to obtain the data from instruments. Some useable data may be obtained from sightings made at presently instrumented test installations. (See Tab F). At the present time the only instrumented test program being conducted by AFIC is the use of diffraction grating cameras.

II. DISCUSSION

At some future time it may become desirable to initiate a program for more extensive instrumentation than the diffraction grating cameras. If this situation should ever arise it would be desirable to have some indication as to the scope, cost and type of program that would be necessary to achieve certain results. It is believed that it would be advisable to obtain a contract with some civilian organization that is familiar with the design of tracking and detection equipment and have them outline a plan for instrumentation. In arriving at this plan they would use all available data on unidentified aerial objects to determine the type of equipment that could possibly be used. Two plans would be requested, such as:

A. An instrumentation program using already designed equipment needing only minor modifications, such as cinetheodolites, aerial cameras, etc.

B. An instrumentation program using specially designed equipment.

These programs possibly will never be used; however, if the occasion should ever arise that such an instrumentation program was urgently needed, these studies would provide a starting point for additional planning.

III. RECOMMENDED PROCEDURES

A. Determine what civilian organizations, if any, could undertake such a contract.

B. Contact these organizations and discuss the proposal with them, requesting that they submit a proposal on the contract.

C. If the cost is not excessive, negotiate a contract for such a study.

TAB R

RESTRICTED

In reply refer to
AFLAC-5

SUBJECT: Briefing of Air Forces and Divisions on Project Blue Book (Incl)

TO: Commanding General
Air Defense Command
ATTN: ADC/I
Ent Air Force Base
Colorado Springs, Colorado

1. During a visit to Headquarters Air Defense Command on 16 October 1951, Capt Edward J. Ruppelt of ATIC discussed with Col Burgess the feasibility of briefing all Air Defense Forces and Divisions on Project Blue Book. Since this visit the project has been given more study, and it is believed that such a series of briefings would be highly advantageous. Similar briefings have been given to various Air Force units and have resulted in a better understanding of the objectives and operations of the project and in more efficient, accurate reporting. By presenting such briefings, many insignificant, nebulous reports can be eliminated while the significant reports will be more complete and contain more usable data.

2. The proposed plan for the briefings would be first to present the briefing to Hq ADC, if this is desired. A tour would then be made through each Air Defense Force area, briefing first the ADF Hq Force then each separate Air Division. At the Division level, selected personnel from each unit subordinate to the Division (i.e. ACW Squadrons, Fighter Intercepter Squadrons, etc.) would be called in for the briefing. If the Division is a tenant organization on the base, persons other than AAF personnel with an official interest could be chosen by the Division Commander and invited to attend. The number of people to be briefed would be limited only by the available space and security. The classification of the briefing will be Secret. The briefing in general will consist of:

a. A brief history of Project Blue Book.
b. The philosophy of the project.
c. Methods of quickly gathering data with available facilities at an air base.
d. How a preliminary analysis of reports can be made in the field.
e. Preparation of a report for forwarding to Wash and Hq USAF.
f. How ATIC processes field rpts.

AFLAC-5 File

10033 5

[redacted]

RESTRICTED

ATIC ATIAA Subject: Briefing of A.C Forces and Divisions on Project Blue Book (Uncl)

3. An attempt would be made to cover one Air Defense Force area per trip necessitating three trips at the rate of one trip per month starting in December 1952.

4. The Air Technical Intelligence Center requests your approval and/or comments concerning this proposed briefing at Air Defense Forces and Divisions.

HEADQUARTERS
AIR DEFENSE COMMAND
ENT AIR FORCE BASE
COLORADO SPRINGS, COLORADO

9 January 1953

Air Technical Intelligence Center
ATTN: Col. Ray McDuffee,
Chief, Technical Analysis Division
Wright-Patterson Air Force Base, Ohio

Dear Ray:

In thinking over our telephone conversation, I am not certain whether you said Capt. Ruppelt would be here on the 23rd or 24th of January. I seem to recall that you have him scheduled for arrival 0930 hours on the 24th. We have the conference scheduled for 0815 local time. It is obvious that Ruppelt would need to arrive the day before. It will be most convenient for us if he could arrive at about 0930 on the 23rd and spend a full day in the office before his presentation Saturday morning. In any case, please bear in mind the 0815 time on Saturday 24 January.

Regards,

C. A. HELLER
Colonel USAF

COPY

In reply refer to,
AFOIN-ATIA

Colonel McDuffee/66310/ bls

SUBJECT: Briefing on Aerial Phenomena to be Given by Captain E. J. Ruppelt at Hq ADC, 24 January 1953

TO: Commanding General, Air Defense Command
Ent Air Force Base
ATTN: Major Vernon L. Sadowski
Intelligence Division
Colorado

1. Reference telephone call from Major Vernon L. Sadowski at 1200 hours, 7 January 1953.

2. Captain E. J. Ruppelt will be at Hq Air Defense Command, Ent Air Force Base, Colorado, on or before 0900, 24 January 1953, to present a one hour briefing at Officers Call. His estimated time of arrival and mode of travel will be furnished later.

ATIC ATIAE-5 Subject: (Unal) Utilization of 4602nd AISS Personnel in Project Blue Book Field Investigations

3. Project Blue Book is acquainted with the physical location of all 4602nd AISS units and will use discretion in requesting investigations where long distance travel is required.

4. If this proposed plan is concurred with, Project Blue Book will provide 4602nd AISS personnel with guidance material for investigations reports of Unidentified Flying Objects.

5. Concurrence and/or comments on the plan proposed in paragraph 2 are requested.

FOR THE COMMANDING GENERAL:

Robert Brown
[illegible]
Air Adj. Gen.

ADDRE 319.1 (5 Mar 53) 1st Ind

HQ AIR DEFENSE COMMAND, Ent AFB, Colorado Springs, Colorado

TO: Commanding General, Air Technical Intelligence Center, Wright-Patterson Air Force Base, Dayton, Ohio

This headquarters concurs with plan as proposed in paragraph 2 of basic letter.

FOR THE COMMANDING GENERAL:

JOSEPH D. HORNSBY
Lt Col, USAF
Asst Adj Gen.

10512

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT-PATTERSON AIR FORCE BASE
OHIO

In reply refer to
AFOIN-ATIAE-5

5 MAR 1951

SUBJECT: (Uncl) Utilization of 4602nd AISS Personnel in Project Blue Book Field Investigations

TO: Commanding General
Air Defense Command
ATTN: Director of Intelligence
Ent Air Force Base
Colorado Springs, Colorado

1. During a recent conference attended by personnel of the 4602nd AISS and Project Blue Book the possibility of utilizing 4602nd AISS field units to obtain additional data on reports of Unidentified Flying Objects was discussed. It is believed by this Center that such a program would materially aid ATIC and give 4602nd AISS personnel valuable experience in field interrogations. It would also give them an opportunity to establish further liaison with other governmental agencies, such as CAA, other military units, etc., in their areas.

2. To utilize these people the following plan is proposed:

a. When ATIC receives a report of an Unidentified Flying Object that it deems advisable to further investigate, the Commanding Officer, 4602nd AISS, will be notified by wire or phone. He will be given the details of the report and suggestions for follow-up questioning that Project Blue Book personnel may believe pertinent. He will then assign one of his units to the investigation.

b. If the investigation cannot be completed within three calendar days of its request by ATIC, ATIC will be notified by wire. This notification will briefly state the status of the investigation and when it is expected to be completed. This wire will come directly to the Commanding General, Air Technical Intelligence Center, Attn: ATIAE-5, Wright-Patterson Air Force Base, Ohio, with an information copy to whomever the Commanding Officer, 4602nd AISS deems necessary.

c. Upon completion of the investigation, or if the reported object is identified during the investigation, ATIC will be notified as to the pertinent facts by wire, the same as mentioned in paragraph 2b. This wire will briefly state what courses of investigation were followed, such as checking the locations of balloons and aircraft, the possibility of meteors being observed, possible radar contacts, etc. The wire will be followed by a complete written report.

10372

ATIC ATIAR-5 Subject: (Uncl) Utilization of 4602nd AISS Personnel in Project Blue Book Field Investigations

3. Project Blue Book is acquainted with the physical location of all 4602nd AISS units and will use discretion in requesting investigations where long distance travel is required.

4. If this proposed plan is concurred with, Project Blue Book will provide 4602nd AISS personnel with guidance material for investigations reports of Unidentified Flying Objects.

5. Concurrence and/or comments on the plan proposed in paragraph 2 are requested.

FOR THE COMMANDING GENERAL

/S/ Robert C. Brown
ROBERT C. BROWN
Major, USAF
Air Adj. Gen.

ADDRE 319.1 (5 Mar 53) 1st Ind

HQ AIR DEFENSE COMMAND, Ent AFB, Colorado Springs, Colorado

TO: Commanding General, Air Technical Intelligence Center, Wright-Patterson Air Force Base, Dayton, Ohio

This headquarters concurs with plan as proposed in paragraph 2 of basic letter.

FOR THE COMMANDING GENERAL:

JOSEPH D. [illegible]
Lt Col
Asst Adj Gen

2

10512

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D. C.

21 JUL 1959

MEMORANDUM FOR MAJOR GENERAL CHARLES B. DOUGHER, ATIC

SUBJECT: UFO Program

1. Your letter of 22 June, subject as above, has been reviewed with interest. The problems involved in the reporting and investigating aspects of the ATIC UFO program are fully appreciated and it appears that steps of the type discussed in paragraph 2 of your letter will do much toward improving the reporting procedure. Utilization of the 1006th AISS, which you suggest as a means for improving the investigative function, however, presents some problems.

2. "Geographical deployment" is indicated in your letter as a primary reason for having the 1006th AISS perform the investigative function. Actually, the unit's present geographical deployment is considerably less extensive than it was, when, as the 4602d AISS (ADC), it had 19 field units available for UFO investigations. The total number of the 1006th AISS field units, now 10, is being reduced to 6, and whereas each of the 4602d AISS units was manned by 7 to 10 personnel, the 1006th AISS field detachments will have only one officer and two airmen each. Another important factor to be considered is that the smaller and fewer 1006th AISS field units perform extensive active peacetime functions in support of the AFCIN domestic collection program and the Air Intelligence reserve programs as opposed to the former 4602d AISS function of training for a wartime mission. The workload on the 1006th AISS field units is such that, if the scope of the squadron's present UFO investigative responsibilities were expanded to the extent suggested in your letter, the investigations would probably have to be accomplished by personnel from the headquarters at Fort Belvoir, Virginia.

3. In view of the sharply reduced personnel resources of the 1006th AISS and a limited advantage afforded by geographical deployment of a small number of field units performing full time intelligence functions, it is not considered advisable to increase the UFO investigative responsibilities currently assigned to the 1006th AISS by Air Force Regulation 200-2. It is suggested that measures of the type outlined in paragraph 2

24 JUL 1959
COMDR ATIC
AFCIN-4
AFCIN-4X
AFCIN-4X1
AFCIN-4X2

Memo for ATIC, Attn: Major Gen Charles B. Dougher, Subj: UFO Program (cont'd)

of your letter, coupled with continued use of ATIC's existing authority to call upon the 1006th AISS for follow up or detailed UFO investigations might prove the most effective alternative to full time use of the 1006th AISS for UFO investigations.

Harold E. Watson

HAROLD E. WATSON
MAJOR GENERAL, USAF
DEPUTY ASSISTANT CHIEF OF STAFF,
INTELLIGENCE

JOINT MESSAGEFORM

SECURITY CLASSIFICATION: UNCLASSIFIED

SPACE BELOW RESERVED FOR COMMUNICATION CENTER

PRECEDENCE		TYPE MSG (Check)			ACCOUNTING SYMBOL	ORIG. OR REFERS TO	CLASSIFICATION OF REFERENCE
		BOOK	MULTI	SINGLE			
ACTION	ROUTINE		X		AF	ORIG	UNCL
INFO	ROUTINE						

FROM: COMDR, ATIC

TO: COMMANDER, 1006TH AISS, ENT AFB, COLORADO

INFO TO: HED, USAF, ACS/I, AFCIN-X1, WASH., D. C.

/UNCLASSIFIED/FROM: AFCIN-4E4

CONFIRMING TELEPHONE CONVERSATION BETWEEN COL GLASER OF ATIC AND MAJ ZEALAND OF THE 1006TH AISS. SUGGEST THE DETACHMENTS OF THE 1006TH AISS BE AUTHORIZED TO FORWARD INFO COPIES OF THEIR REPORTS OF UFO SIGHTINGS DIRECTLY TO THE ATIC. THE ATIC WILL NOT TAKE OFFICIAL ACTION ON THE BASIS OF THESE REPORTS UNLESS THE INCIDENT IS OF SUCH GRAVITY AS TO REQUIRE IMMEDIATE ACTION, AND THEN TELEPHONE COORDINATION WILL BE ACCOMPLISHED WITH THE COMMANDER OF THE 1006TH AISS. THE INFO COPIES OF THE REPORT WILL ALLOW THE ATIC TO ACCOMPLISH MANY OF THE ROUTINE FUNCTIONS REQUIRED FOR ANALYSIS, THEREBY ELIMINATING MUCH OF THE TIME NECESSARY TO GET USEFUL INTELLIGENCE DISSEMINATED TO THE REQUIRED GOVERNMENT AGENCIES. THE ATIC INTERPRETS THIS AS THE INTENT OF PAR # 13, OF AFR 200-2, DTD 5 FEB 58. IF UNABLE TO SUPPLY THIS SUPPORT, PLEASE ADVISE.

SPECIAL INSTRUCTIONS:

DATE: 10 | TIME: 1400 | MONTH: OCT | YEAR: 1958

COORDINATION:

AFCIN-4E4 Col Glaser DATE 10 Oct 58 AFCIN-4E DATE 10/10

SYMBOL: AFCIN-4E4

TYPED NAME AND TITLE: MAJ ROBERT J. FRIEND

PHONE: 6-9216 | PAGE NR. 1 | NO. OF PAGES 1

SECURITY CLASSIFICATION: UNCLASSIFIED

SIGNATURE

TYPED NAME AND TITLE: MARY L. STORM, Captain, USAF, Authenticating Officer

DD FORM 1 MAY 50 173 REPLACES DD FORM 173, 1 OCT 48, WHICH WILL BE USED UNTIL EXHAUSTED

AIR TECHNICAL INTELLIGENCE CENTER
UNITED STATES AIR FORCE
WRIGHT-PATTERSON AIR FORCE BASE
OHIO

8 OCT 1952

AFCIN-4

SUBJECT: UFO Investigation Reports

TO: Commander
1006th Air Intelligence Service Squadron
Ent Air Force Base, Colorado

1. The Air Technical Intelligence Center has been hampered in the analysis and evaluation of unidentified flying object incidents due to the late receipt of investigation reports from AISS detachments. It is the understanding at this Center that AISS detachment reports are sent to squadron headquarters for distribution, which results in this delay.

2. The rapid and accurate completion of the analysis of unidentified flying objects reports is of great importance to the Air Force, due primarily to its possible military value and secondarily to its possible impact on Air Force public relations.

3. It is suggested that if the policy of these reports being initiated from squadron headquarters continues, that the detachments be authorized to send an information copy of their report to the ATIC. These information copies would allow this Center to conduct preliminary analysis, and possibly eliminate some of the delay in getting the appropriate information into the hands of interested Air Force agencies.

4. It is further pointed out that authorization for the detachments to deal directly with the ATIC would enhance the operation of this Center in the rapid and accurate analysis of UFO incidents.

FOR THE COMMANDER:

H. K. GILBERT
Colonel, USAF
Deputy for Science and Components

AFCIN-4, Air Tech Intel Center, 9 Oct 58, Subj: UFO Investigation Reports

ADGR 1st Ind 22 OCT 1958

1006th Air Intelligence Service Squadron, Ent Air Force Base, Colorado Springs, Colorado

TO: Commander, Air Technical Intelligence Center, Wright-Patterson Air Force Base, Ohio

1. Initially it should be observed that the commanders of Air Force Bases nearest the location of a reported UFO sighting have the responsibility for conducting all investigative action necessary to submit a complete initial report.

a. Only as an exception to this responsibility would the reports from other investigative agencies affect initial analysis and findings and then only when additional investigation is determined necessary (paras 4a, b, and c, AFR 200-2). At this point 1006th AISS participation may be requested by ATIC.

b. Subsequent data required may be requested by ATIC of the [redacted] Forces activity making the initial report (para 6b, AFR 200-2).

c. The 1006th AISS is in the category of "other Air Force activities" and will normally be called upon to participate only when further field investigation is requested by ATIC and when the base initially concerned cannot accomplish such investigation from within its own resources. The 1006th AISS thus becomes a secondary investigative and reporting agency.

2. From the above it can be concluded that paragraph 1 of your letter is somewhat invalid since the AISS-UFO reporting procedure does not constitute a principal stumbling block hampering timely analysis and evaluation.

3. It is believed that only under very unusual and isolated circumstances would AISS investigators be able to provide a service which would not be available at a given Air Force Base. AFR 200-2, and the ATIC guide of July 1953, if made current and distributed to all Air Force installations, provide sufficient guidance for the accomplishment of UFO investigations and reports.

4. 1006th AISS participation in UFO investigations will be requested by ATIC through the Commander, 1006th AISS only. If such participation is determined necessary, ATIC may be provided with information contained in the field notes prepared by the individual

investigator. The finalization and publication of reports will still be accomplished by headquarters 1006th AISS. It should also be incidentally observed that several of the field elements of the 1006th AISS do not have an administrative capability for preparation of finalized reports. Direct contacts between ATIC and field elements of the 1006th is authorized only after approval of the Commander, 1006th AISS has been obtained for utilization of squadron personnel.

JOHN W. MEADOR
Colonel, USAF
Commander

4E4

1006TH AIR INTELLIGENCE SERVICE SQUADRON
United States Air Force
Ent Air Force Base, Colorado

8 October 1957

SUBJECT: Processing of Reports of Unidentified Flying Object Sightings

TO: Commander
Air Defense Command
ATTN: ADOOI
Ent Air Force Base, Colorado

Assistant Chief of Staff, Intelligence
Headquarters, USAF
ATTN: AFOIN-1A1
Washington 25, D. C.

1. The following discussion and recommendations on the Air Force UFO program, and the 1006th AISS participation therein, are submitted for your consideration.

2. OBJECTIVE. To eliminate duplication of effort which currently exists in processing reports of unidentified flying object (UFOB) sightings.

3. CURRENT PROCEDURES.

a. Air Defense Command. When a report of a UFOB sighting is received at Air Defense Command, it is routed directly to the 1006th AISS for processing. Other than signing correspondence prepared by the 1006th AISS relating to UFOB matters, Air Defense Command assumes no further responsibility for processing UFOB reports.

b. The 1006th AISS. Upon receipt of a UFOB report, the 1006th AISS logs the report, completes a UFOB Index Card (reference Inclosure 1) and forwards a copy of the completed Index Card to ATIC. If the report indicates a need for investigation, the local detachment of the 1006th AISS or squadron headquarters conducts the investigation and the results are forwarded to ATIC, Assistant Chief of Staff, Intelligence, and other interested agencies. (The investigative activities of the 1006th AISS have been curtailed through lack of funds. The above description of procedures of the 1006th AISS are based on availability of funds. However, investigations which can be conducted with no TDY involved are always carried out.)

c. Air Technical Intelligence Center. Upon receipt of a UFOB report, an index card, practically identical to Inclosure 1, is prepared. If insufficient information exists on the initial report, or if certain aspects of the sighting indicate a need for investigation, a request is made to Commander, 1006th AISS, through the

1308, 1 Oct 57, Subj: Processing of [redacted] Unidentified Flying Object Sightings

Alexander, Air Defense Command, for the investigation. Since ATIC has sources of information other than the 1006th AISS, ATIC actually requires fewer investigations than the 1006th AISS normally conducts.

b. In brief. The procedures as outlined in paragraphs 3b and 3c above are a duplication of effort by ATIC and the 1006th AISS. As has been shown above, the UFOB Index Card (Inclosure 1) is in use both by ATIC and this organization. Ordinarily, if the analysis of the 1006th AISS disagrees with that of ATIC, the analysts at ATIC will accept their own analysis. Furthermore, any investigation that is conducted without a requirement by ATIC is a waste of time and money. Finally, disregarding the time spent by detachment personnel of the 1006th AISS in processing the UFOB reports received by the detachments, it is a full time job for one man to process the UFOB reports received by this organization. In addition, supervisory and other personnel normally necessary for administrative functions are required to spend time on the equivocal UFOB program.

5. RECOMMENDATIONS:

a. It is recommended that the 1006th AISS be relieved of the responsibility for routine processing of UFOB reports. All written UFOB reports (all reports submitted in other than message form) received by Air Defense Command would be forwarded directly to ATIC. ATIC would request such investigation desired, giving necessary details of the sighting in the request. This organization would then conduct the investigation and report the results in accordance with current procedures.

b. The above recommendations could be carried out by administrative agreement. No change in existing regulations is necessary.

1 Incl
UFOB Index Card

Copy furnished:
Comdr, ATIC

JOHN W. MEADOR
Colonel, USAF
Commander

HEADQUARTERS
4602d AIR INTELLIGENCE SERVICE SQUADRON (ADC)
ENT AIR FORCE BASE
COLORADO SPRINGS, COLORADO

AISOP

23 November 1954

SUBJECT: Report of Visit of ATIC Representatives

TO: Commander
Air Technical Intelligence Center
ATTN: ATIAE-5
Wright-Patterson Air Force Base
Dayton, Ohio

1. On 17 and 18 November 1954, the Commander, 4602d AISS and his staff met with Captain Charles Hardin, ATIC, and Doctor Allen Hynek, USAF Contract Astronomer, for the purpose of discussing ATIC-4602d AISS relationships in the investigation and processing of Unidentified Flying Objects reports. During the course of the conference general information was exchanged relative to the UFOB program, procedures were developed relative to the handling of UFOB reports and the criteria for evaluation of reports and conducting investigations were discussed.

2. The evaluation of all UFOB reports as well as the lines of inquiry of investigations, will be governed by the application of certain hypotheses to the data available. In the majority of cases, provided the information concerning the sightings is sufficiently complete, the data will suggest that the sighting was probably some known object or natural phenomenon. For example, the data available might suggest to the investigator the hypothesis that the sighting was an aircraft. A check list will then be applied to the data using the hypothesis that the sighting was an aircraft. The check list will contain those items which, in combination, characterize aircraft from other possible objects or phenomena. For example, if the object was an aircraft, then there should have been noise, there should have been radar observation in certain areas, etc. The application of these check lists will suggest the lines of follow-up investigation in the event the data is insufficient to satisfy the elements of proof necessary to identification. ATIC will furnish the 4602d AISS with the check lists referred to above which will assist in the identification of UFOB's, and will cover, for example, aircraft, balloons, astronomical phenomena, guided missiles, etc. In addition a special evaluation of preliminary UFOB reports must be made to determine whether follow-up investigations can reasonably be expected to result in additional reliable and usable data.

3. Evaluation of Preliminary Reports:

a. ATIC will furnish the 4602d AISS with "rule of thumb" criteria to be used by the Squadron Headquarters in determining the necessity for

a follow-up, field investigation of a UFOB report. These criteria will cover, among others, the following subjects:

(1) Duration of sighting.

(2) Number of persons reporting the sighting.

(3) Distance from location of sighting to nearest 4602d AISS field unit.

(4) Reliability of person or persons reporting the sighting.

(5) Number of independent sightings reported.

(6) The value of obtaining additional information immediately.

(7) Existence of physical evidence (photographs, material, hardware).

b. It was noted that a single extraordinary circumstance might require follow-up, field investigation even though the general application of the criteria furnished by AFOIN indicates that further investigation would probably yield little additional information.

c. In general follow-up field investigation of a preliminary UFOB report will not be warranted when the hypothesis suggested by the preliminary report of the incident cannot be tested by facilities available.

4. Exhaustion of Effort in the Investigation of UFOB's: Effort will be considered as exhaustive when every logical, physical hypothesis suggested by a qualified report of the incident has been tested by the facilities available.

a. Qualified preliminary reports shall be considered to be those which merit further investigation under the criteria set forth in paragraph 3 above.

5. Unsolved Cases: A case shall be considered unsolved after every suggested hypothesis has been tested by available facilities and a large percentage of the data in the report does not correlate with the characteristics of known objects or natural phenomena.

6. The following procedures were agreed upon:

a. In case a UFOB sighting is reported initially by non-Air Force sources in letter form to either ATIC or the 4602d AISS, the file card will be made in duplicate by the recipient, and one copy forwarded to the other agency. This card will indicate that the UFOB was reported by letter and will show the action taken.

b. ATIC will be forwarded a file card indicating the action taken by the 4602d AISS on preliminary reports transmitted to the 4602d by electrical means.

c. The results of follow-up field investigations made by the 4602d AISS and reported on AF Form 112 will, in all cases, be sent to ATIC, D/I USAF, and such other agencies as the Commander, 4602d AISS, deems necessary.

d. ATIC may require specific information for aid in analyzing a reported UFOB sighting which can be furnished by a field unit of the 4602d AISS. Provided travel is not involved, ATIC may contact the appropriate unit directly. In case ATIC desires detailed investigation or action which would necessitate travel, request will be made by ATIC to the Commander, 4602d AISS.

e. File cards reflecting action taken or conclusions reached by ATIC on either a preliminary or follow-up UFOB report will be sent to Commander 4602d AISS under the following circumstances:

(1) When conclusions of ATIC relative to identification of the sighting are at variance with those reached by 4602d AISS.

(2) When additional action is initiated by ATIC following the completion of action by the 4602d AISS.

7. Exchange of information: As a result of the ATIC experience in the field of investigation of UFOB reports, information of a general interest was discussed during the visit of ATIC representatives and will be furnished to the 4602d AISS on a continuing basis. Examples of such information follow:

a. Grid cameras. Information relative to the present distribution of grid cameras and changes in the current distribution.

b. Statistics. Consolidation of statistics reflecting trends,

Hq, 4602d AISS, Ent AFB, Colorado Springs, Colo. subj: 'Report of Visit of ATIC Representative

total reports and studies conducted by contract agencies.

c. Examples of proper and improper UFOB reporting.

d. List of standard replies to letters requesting action or information concerning reported sightings.

5. It is requested that the guides for evaluation of reports referred to in paragraphs 2 and 3 above be furnished at the earliest practicable date. Concurrence or comments relative to the procedures and agreements contained herein are solicited.

JOHN M [illegible] JR
Colonel, USAF
Commander

[illegible] 51 18 18.24

4.

X-M.O.T.-L
OFFICIAL FILE COPY
10073
ELECTRONICS BRANCH
Office of Record

ATIAE5/CAH/wa/69216

14 JAN 1955

SUBJECT: (U) Unidentified Flying Object Guide

TO: Commander
ADCOM AIRS (AMC)
Ent Air Force Base
Colorado Springs, Colorado

1. Attached for your convenience is the "UFOB Guide" (Unidentified Flying Object Guide) which was prepared as a result of the conference held on 17 and 18 November 1954 between the commander and staff of the ADCOM AIRS and personnel of ATIC.

2. The "UFOB Guide" is divided into two parts. Part I contains the criteria for use in determining the feasibility of making follow-up investigations. Part II contains hypotheses or examples for use in identifying the objects or phenomena reported.

3. It is suggested that, after a reasonable period of use, a part III be added to the "UFOB Guide" incorporating the definitions and procedures as agreed upon in the conference and as outlined in your letter subject "Report of Visit of AIRS Representatives" dated 23 [redacted]. This could then be printed or mimeographed and [redacted] the ADCOM AIRS and the AIRS as standard operating procedure.

FOR THE COMMANDER

MARY L. STORM
1st Lt. USAF
Assistant Adjutant

Encl
UFOB Guide

COORDINATION:

ATIAE-5 _____ DATE 1/12/55
Capt C.A. Hardin

ATIAE _____ DATE 13 Jan
Lt Col H.C. Johnston

ATIA _____ DATE 13 Jan
Col W.L. O'Hern

ATIAE5 OFFICIAL FILE COPY

#M91 — 10073

Hq. 4602d AISS, Ent AFB, Colorado Springs, Colo. subject: Report of Visit of ATIC Representative

total reports and studies conducted by contract agencies.

c. Examples of proper and improper UFOB reporting.

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/s/ John M. White, Jr.
Colonel, USAF
Commander

ATIAB-5 1st Ind

AIR TECHNICAL INTELLIGENCE CENTER, Wright-Patterson Air Force Base, Ohio

10 DEC 1954

TO: Commander, 4602d AISS (ADC) Ent Air Force Base, Colorado Springs, [redacted]

1. The Air Technical Intelligence Center concurs in the agreements and procedures as outlined in basic letter.

2. A "Standard Operating Procedure" is being prepared for use in the unidentified flying object program. This will be furnished to Hq 4602nd AISS as a suggested guide.

3. The SOP will include the procedures listed in basic letter together with guides for evaluation of reports and criteria for determining the necessity for field investigations.

FOR THE COMMANDER

COORDINATION:

ATIAB5 C. A. Hardin DATE 12/9/54
Capt. C. A. Hardin

ATIAE [illegible] DATE [illegible]
Lt. Col. [illegible] C. Johnston

ATIA [illegible] DATE 9 Dec
for Col. W. L. O'Hern

R. G. SCHAM
CWO, USAF
Asst. Adj.

ATIAB5 OFFICIAL FILE

COPY

COPY

HEADQUARTERS
4602d AIR INTELLIGENCE SERVICE SQUADRON (ADC)
ENT AIR FORCE BASE
COLORADO SPRINGS, COLORADO

AISOP

23 November 1954

SUBJECT: Report of Visit of ATIC Representatives

TO: Commander
Air Technical Intelligence Center
ATTN: ATIAE-5
Wright Patterson Air Force Base
Dayton, Ohio

1. On 17 and 18 November 1954, the Commander, 4602d AISS and his staff met with Captain Charles Hardin, ATIC, and Doctor Allen Hynek, USAF Contract Astronomer, for the purpose of discussing ATIC-4602d AISS relationships in the investigation and processing of Unidentified Flying Objects reports. During the course of the conference general information was exchanged relative to the UFOB program, procedures were developed relative to the handling of UFOB reports and the criteria for evaluation of reports and conducting investigations were discussed.

2. The evaluation of all UFOB reports as well as the lines of inquiry of investigations, will be governed by the application of certain hypotheses to the data available. In the majority of cases, provided the information concerning the sightings is sufficiently complete, the data will suggest that the sighting was probably some known object or natural phenomena. For example, the data available might suggest to the investigator the hypothesis that the sighting was an aircraft. A check list will then be applied to the data using the hypothesis that the sighting was an aircraft. The check list will contain those items which, in combination, characterize aircraft from other possible objects or phenomena. For example, if the object was an aircraft, then there should have been noise, there should have been radar observation in certain areas, etc. The application of these check lists will suggest the lines of follow-up investigation in the event the data is insufficient to satisfy the elements of proof necessary to identification. ATIC will furnish the 4602d AISS with the check lists referred to above which will assist in the identification of UFOB's, and will cover, for example, aircraft, balloons, astronomical phenomena, guided missiles, etc. In addition a special evaluation of preliminary UFOB reports must be made to determine whether follow-up investigations can reasonably be expected to result in additional reliable and usable data.

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a follow-up, field investigation of a UFOB report. These criteria will cover, among others, the following subjects:

(1) Duration of sighting.

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(5) Number of independent sightings reported.

(6) The value of obtaining additional information immediately.

(7) Existence of physical evidence (photographs, material, hardware).

b. It was noted that a single extraordinary circumstance might require follow-up, field investigation even though the general application of the criteria furnished by ATIC indicates that further investigation would probably yield little additional information.

c. In general follow-up field investigation of a preliminary UFOB report will not be warranted when the hypothesis suggested by the preliminary report of the incident cannot be tested by facilities available.

4. Exhaustion of Effort in the Investigation of UFOB's: Effort will be considered as exhaustive when every logical, physical hypothesis suggested by a qualified report of the incident has been tested by the facilities available.

a. Qualified preliminary reports shall be considered to be those which merit further investigation under the criteria set forth in paragraph 3 above.

5. Unsolved Cases: A case shall be considered unsolved after every suggested hypothesis has been tested by available facilities and a large percentage of the data in the report does not correlate with the characteristics of known objects or natural phenomena.

6. The following procedures were agreed upon:

a. In case a UFOB sighting is reported initially by non-Air Force sources in letter form to either ATIC or the 4602d AISS, the file card will be made in duplicate by the recipient, and one copy forwarded to the other agency. This card will indicate that the UFOB was reported by letter and will show the action taken.

b. ATIC will be forwarded a file card indicating the action taken by the 4602d AISS on preliminary reports transmitted to the 4602d by electrical means.

c. The results of follow-up field investigations made by the 4602d AISS and reported on AF Form 112 will, in all cases, be sent to ATIC, D/I USAF, and such other agencies as the Commander, 4602d AISS, deems necessary.

d. ATIC may require specific information for aid in analyzing a reported UFOB sighting which can be furnished by a field unit of the 4602d AISS. Provided travel is not involved, ATIC may contact the appropriate unit directly. In case ATIC desires detailed investigation or action which would necessitate travel, request will be made by ATIC to the Commander, 4602d AISS.

e. File cards reflecting action taken or conclusions reached by ATIC on either a preliminary or follow-up UFOB report will be sent to Commander 4602d AISS under the following circumstances:

(1) When conclusions of ATIC relative to identification of the sighting are at variance with those reached by 4602d AISS.

(2) When additional action is initiated by ATIC following the completion of action by the 4602d AISS.

7. Exchange of Information: As a result of the ATIC experience in the field of investigation of UFOB reports, information of a general interest was discussed during the visit of ATIC representatives and will be furnished to the 4602d AISS on a continuing basis. Examples of such information follow:

a. Grid cameras. Information relative to the present distribution of grid cameras and changes in the current distribution.

b. Statistics. Consolidation of statistics reflecting trends,

DIVISION OF RESPONSIBILITY ATIC-ADC

AGREEMENT:

An agreement was concluded in December 1953 between the Air Technical Intelligence Center and Air Defense Command whereby, in the future, the 4602d Air Intelligence Service Squadron will process and make on-the-spot investigations on all initial UFO reports originating in the ZI. The 4602d AISS is a definite intelligence activity which is widespread in the field. In some cases, ATIC will join ADC in field investigations.

[redacted]

At the conclusion of investigations by 4602d AISS, Air Defense Command will furnish information to ATIC on all closed (identified) cases and will forward all material and reports of investigations on the cases which remain as unknowns.

FINAL ANALYSIS:

The ATIC retains the responsibility for final analysis of these unknowns originating in the ZI, together with all cases from overseas.

AIR FORCE REGULATION 200-2 (NEW):

This program will be formally initiated with the publication of a new AFR 200-2 which is forthcoming.

AIR TECHNICAL INTELLIGENCE CENTER
UNITED STATES AIR FORCE
WRIGHT-PATTERSON AIR FORCE BASE
OHIO

REPLY TO
ATTN OF: AFCIN-4E4

SUBJECT: UFO Program

TO: AFCIN-4 (Colonel John O. Eriksen)

THRU: AFCIN-4E

1. The Problem Area

a. All of the problems associated with the Air Force's UFO Program seem centered around the "reaction capability" (reporting and investigation). There is a need to increase the speed of processing reports and of initiating investigations and to improve the quality of both.

2. Discussion

a. The 1006th AISS which, outside of the ATIC, is probably the most logical and qualified organization to perform the investigation function is approximately 33% under T/O strength. The squadron is presently undergoing reorganization in order to perform a new mission of such high priority that consideration is being given to deleting the mission for which the 1006th was originally organized from the new charter. The UFO investigation mission was not included in the original charter and there are no plans to include it in the new one.

b. In order to carry out this new mission, it will be necessary to have more than 50% of the squadron personnel physically located at the squadron headquarters at Ft. Belvoir, Va. There are no plans to reduce the number of detachments below the present ten, but to reduce the number of officers and airmen assigned by approximately 50%, therefore limiting still further the personnel available for field investigations.

c. Colonel Colforth of AFCIN-1A1 informed Major Friend of AFCIN-4E4g that if ATIC would provide the personnel the 1006th AISS would be happy to house, feed, and administer them in support of the UFO Program.

3. Suggested Solution

a. Reporting (See Atch Nr. 2)

(1) Change AFR 200-2 to spell out in detail the responsibilities of the base commanders and other organization commanders, and expand information required in initial report as spelled out in AFR 200-2. (Copy of 0-86 which has been sent to AFCIN-X1 requesting these changes is Atch Nr. 2)

(2) AFR 200-2 be made a "special subject regulation" of air inspectors for a period of one year.

b. Investigations (See Atch Nr. 1)

(1) The 1006th AISS be made primarily responsible for conducting UFO investigations and this function be included in the organization's charter.

(2) The T/O of the 1006th AISS be expanded to man the squadron sufficiently to undertake UFO investigation in addition to its other missions. It is desireble that the strength of each detachment be increased by two, one commissioned officer and one airmen.

(3) One individual in each detachment of the 1006th AISS, a commissioned officer preferred, be given special training and made specifically responsible for UFO investigation.

c. Training (See Atch Nr. 3)

(1) The ATIC to establish and present the training course for the individuals selected at each detachment as being responsible for the UFO investigation mission.

4. Suggested Actions

a. The memorandum to M/General Watson, Subject: "UFO Program" and its attachment (Atch Nr. 1) be approved and forwarded.

b. Approval of the letter (Atch Nr. 3) to AFCIN-4X4 establishing requirement for a training program, pending AFCIN approval of the 1006th AISS as primarily responsible for UFO investigations.

Vincent C. Reithman

VINCENT C. REITHMAN
Colonel, USAF
AFCIN-4X4

3 Atch
1. Memo to M/Gen Watson w/Atch
2. Cy of 0-86 to AFCIN-X1
3. Ltr to AFCIN-4X4 w/Atch

AFCIN-4

UFO Program

ACS/I (Major General Harold E. Watson)

1. As you know, this Center is responsible for performing a complete analysis and evaluation of all UFO reports in accordance with the provisions of AFR 200-2, dated 5 Feb 58. This analysis and evaluation, of necessity, can be no better than the reported information with which we must work. It has been determined at this Center that the problems associated with this program are centered around the Air Force's "reaction capability" (reporting and investigation). There is a need to increase the speed of processing reports and of initiating investigations and to improve the quality of both.

2. The reporting problem for the most part can be corrected by changes to AFR 200-2. These changes will effectively spell out in detail the responsibilities of the base commanders and other organization commanders, and expand on the information required in the initial report. It is also contemplated making AFR 200-2 a "special subject regulation" of air inspectors for a period of one year following the effective date of these changes.

3. AFR 200-2 presently spells out the nearest Air Force base commander as responsible for the investigation of UFO's. As has already been pointed out this has proved unsatisfactory. The 1006th AISS, due to its geographical deployment is the most logical organization to perform the investigative function. It is suggested that AFCIN-1A1 be instructed to include the investigation of UFO sightings in the new charter for the 1006th AISS.

4. The ATIC will make provisions to give special training to at least one individual from each detachment, preferably a commissioned officer, who will then become primarily responsible for UFO investigations.

5. If responsibility for UFO investigation is delegated to the 1006th AISS, it will require certain changes to AFR 200-2, dated 5 February 1958, to make this directive compatible. Attachment Nr. 1, Subj: "AFR 200-2 (Unidentified Flying Objects)" is a draft of correspondence to APCIN-XI outlining the required changes.

6. It is suggested that the attached letter be forwarded to APCIN-XI for implementation.

CHARLES B. DOUGHER
Major General, USAF
APCIN-4

1 Atch
Ltr, Subj: "AFR 200-2
(Unidentified Flying Objects)

AFR 200-2 (unidentified flying objects)

AFCIN-A-1, Attn: Major Byrne

AFCIN-4E

khh/maj No. 3. Orient/ea/69216/Hdq. 463

1. The following changes and additions to AFR 200-2, dated 5 February 1953, are suggested in an effort to improve the Air Force's reaction capability as it applies to the UFO Program.

a. Par. 3b. Technical and scientific, changed to read as follows: The Air Force will continue to collect and analyze reports of UFO until all can be scientifically or technically explained or until such time as it is determined that the full potential of a sighting has been exploited. In performance of this task the following features should be kept in mind: (subparas. 3b (1) through (4) will remain unchanged.

b. The word "unknown" as it applies to an unidentified object should be changed to "unidentified" throughout the regulation.

c. Par. 5a. The following should be added to this paragraph: Investigators will be authorized to make telephone calls directly to the ATIC (Collect, Code 69216) at Wright-Patterson Air Force Base, which from the standpoint of time is of the purpose of these calls to report high priority sightings.

d. Par. 5a. The following should be added to this paragraph: When it is known that a witness is completely familiar with certain aspects of a sighting, his name and specific qualifications should be indicated.

e. The following should be added as Par. 5b: Whenever possible, an investi-

dual selects an Air Force sighting investigator should have a scientific or technical background as well as experience as an investigator.

f. Para 6a. should be changed to read as follows: Air Force activities will conduct the investigations to the extent necessary for their required reporting action (see para 4, 5, and 17). However, investigations should not be carried beyond this point, unless such action is directed by Assistant Chief of Staff, Intelligence, Headquarters, United States Air Force, or if in the opinion of the reporting officer the magnitude (intelligence significance or public relations) of the case is such to warrant full scale investigation. Telephone contact should be made with the AFOIN ([illegible] Extn 57616) of Project Gatoreen Air Force Base, Ohio to obtain verbal authority for continued investigation. This should be so noted in the preliminary report (foreign activities will proceed on their own judgment and so advise the AFOIN in the preliminary message.

g. Eliminate all reference to the Ground Observers Corps from the regulation.

h. The following should be added as Para 15(7), temperature gradient.

i. Para 15j should be changed to read as follows: location, approximate altitude, and general direction of flight of any air traffic or balloon releases in the area which could possibly account for the sighting.

j. Para 15k should be changed to read as follows: position title, name, telephone number and comments of the preparing officer, including his preliminary analysis of the possible cause of the sighting(s).

k. Para 17, Reporting Physical Evidence. The following should be added to this paragraph: All physical evidence forwarded to the AFOIN should be marked for the attention of [illegible].

[illegible]
Colonel, USAF
[illegible]

[illegible]
AFSC [illegible]

SUBJECT: AFR 200-2 (Unidentified Flying Objects)

TO: [illegible] (Major [illegible])

1. The Assistant Chief of Staff/Intelligence has delegated the responsibility for investigating UFO sightings within the [illegible] to the Commander of the 1006th [illegible] in lieu of the Air Force base commanders. The following changes and/or additions to AFR 200-2, dated 5 February 1[illegible], are required to make this directive compatible with this change. The referenced paragraphs are from the regulation:

a. Par. 4a, Reporting, should be changed to read: Commanders of Air Force bases will report all information and evidence of UFO sightings, including that received from other services, government agencies, and civilian sources. Reporting action will be in accordance with the applicable paragraphs of this directive (see paragraphs 14 through 19).

b. Par. 4b, Investigation, should be changed to read: The 1006th AISS will be responsible for conducting a complete investigation of an UFO sighting when: (1) the initial report sent by the base commander does not contain sufficient information to allow an analysis, (2) the intelligence significance of the case warrants an investigation, (3) evaluation of the source indicates a very high degree of reliability, (4) the report is direct to the AFIC from a civilian source. The AFIC will contact the Commander of the 1006th by telephone and/or TWX when investigation of a case is desired.

c. Par. 5a should be changed to read: All Air Force activities will comment on investigations to the extent necessary for their required reporting action (see paragraphs 15, 16 and 17); however, investigations should not be carried beyond this point.

d. Par. 5c should be changed to read: Direct communication is authorized between AFIC and other Air Force activities in matters pertaining to [illegible].

AFCIN-4X

UFO Training Program

AFCIN-4X4

1. A letter has been forwarded to AFCIN requesting that the responsibility for the investigation of UFO sightings within the ZI be delegated to the Commander of the 1006th AISS.

2. In an effort to improve on the data gained from these investigations, one officer or NCO from each detachment is to be given a twenty hour course of instruction as generally outlined in Attachment 1.

3. It is understood that Mr. Hawes of your office has already discussed this proposed program with Major Friend of the Air Sciences Division.

4. It is desired that maximum support be given to this program of training consistent with present capability upon approval of the plan by AFCIN.

WILLIAM E. BOYD
Colonel, USAF
AFCIN-4X

1 Atch
Outline of Proposed
UFO Trng Program

Reply To
Attn Of: AFCIN-4X

Subject. UFO Training Program

To: AFCIN-4X4

1. The 1006th AISS has been delegated the responsibility for the investigation of UFO sightings.

2. In an effort to improve on the data gained from these investigations one officer or NCO from each detachment is to be given a twenty hour course of instruction as generally outlined in Inclosure #1 hereto.

3. It is understood that Mr. Howes of your office has already discussed this proposed program with Major Friend of the Air Sciences Division.

4. It is desired that maximum support be given to this program of training consistent with present capability.

WILLIAM E. BOYD
Colonel, USAF
AFCIN-4X

1 Atch
Outline of Proposed
UFO Training Program

TRAINING PROGRAM
(UFO INVESTIGATION)
(20 Hours)

1. Introduction	3 Hours
a. Background and History of the UFO Program	1
b. Philosophy	1
c. Public Relations	1
2. Investigation	Hours
a. Procedures	
b. Techniques	
3. Interrogation	Hours
a. Philosophy	
b. Procedure	
c. Techniques	
d. Psychology	
4. Equipment	5 Hours
a. Geiger Counter	2
(1) Purpose	
(2) Method of Operation	
(3) Operation	1
b. Camera	
(1) Purpose	
(2) Operation	45 Minutes
c. Compass	
(1) Purpose	
(2) Operation	15 Minutes
d. Binoculars	
(1) Purpose	
(2) Operation	1 Hour
e. Misc. Equipment	Hours
5. General Information	
a. Astronomy	
b. Balloons	
c. Satellites	
Etc.	
6. Reporting	2 Hours
7. Summary	1 Hour

DRAFT DRAFT DRAFT

For
HEADQUARTERS 4602D AISS
Ent Air Force Base
Colorado Springs, Colorado

GUIDE TO IDENTIFICATION

Unidentified Flying Objects

1. PURPOSE: This publication is designed for the use of Ground Observer Corps personnel, and is published to familiarize observers with common phenomena which are sometimes misinterpreted as Unidentified Flying Objects (UFOB's).

2. DEFINITIONS:

a. Unidentified Flying Object (UFOB)-- Relates to any airborne object which by performance, aerodynamic characteristics, or unusual features does not conform to any presently known aircraft or missile type, or which cannot be positively identified as a familiar object.

b. Familiar Objects-- Include balloons, astronomical bodies, birds, etc.

3. OBJECTIVE: Due to the prolonged observation of the sky during both daylight and night time hours, familiar objects such as meteors, aircraft, balloons, astronomical bodies, searchlights, birds, etc., will be frequently observed by GOC personnel. Due to atmospheric conditions (temperature inversions, dust, clouds, etc.,), reflections, sound (or

3. OBJECTIVE (Contd):

lack of sound), speed, position, etc., common phenomena may sometimes be misinterpreted as UFOB's. It is highly desirable that all UFO phenomena be identified or explained. In this respect, the observer requires some "rule-of-thumb" to assist him in this identification.

The object of this publication is to familiarize the Ground Observer with the appearance(s) of common objects under one or more of the circumstances listed above.

4. GUIDANCE: Attached is a list of common phenomena to which Ground Observers may be exposed during their tours of duty. It is recommended that you become thoroughly familiar with these criteria, as they may enable you to identify objects with a greater degree of accuracy.

BALLOONS

1. Shape: Round, cigar, pinpoint, or bowling pin.
2. Size: Balloons up to a hundred feet will generally appear from pinpoint to size of a pea held at armlength.
3. Colour: Silver, white or many tints. It may possibly appear dark as when projected against the clouds. Sometimes transparent.
4. Speed: Large scale erratic speed ruled out. In general hovering to slow apparent speed.
5. Formation: Single to cluster.
6. Trail: None.
7. Sound: None
8. Course: Straight with a general gradual ascent, unless falling.
9. Time in Sight: Generally long. Note: Balloon may suddenly burst and disappear.
10. Lighting Conditions: Night or day but especially at sunset or sunrise.

WIND EFFECT: BALLOONS HAVE [illegible] THE SPEED AND DIRECTION OF THE PREVAILING WIND IN THE AREA AND ALTITUDE. IF BALLOONS BECOME TO BE IN VIEW WITHOUT REFERENCE POINTS, AND COURSES GENERALLY WITH THE PREVAILING WIND OF THAT ARE REPORTED, THEN THE ORIGIN THAT OBJECT WAS A BALLOON [illegible]

AIRCRAFT

1. Shape: From conventional to circular or elliptical.

2. Size: Pinpoint to actual.

3. Color: Silver to bright yellow (night - black or color of lights). Jet exhaust yellow to red. Under certain conditions aircraft too far distant to be visible to the naked eye, will reflect sunlight from wings or fuselage.

4. Speed: Generally only angular speeds can be observed. This depends on distance but small objects crossing major portion of sky in less than a minute can be ruled out. Aircraft will not cross major portion of sky in less than a minute whereas a meteor certainly will.

5. Formation: Two to twenty. Numbers greater than 20 more likely birds than aircraft.

6. Trails: May or may not have (vapor and exhaust).

7. Sound: Zero to loud shrill or low depending on altitude and winds aloft. Under certain conditions, aircraft may be observed at high altitudes, without making any sound.

8. Course: Steady, straight or gently curving (not erratic - may appear still if approaching head-on). Right angle turns and sudden reversals, abrupt changes in altitude ruled out.

9. Time in Sight: More than 15 seconds, generally of the order of a minute or two.

10. Lighting Conditions: Night or Day.

METEOR

1. Shape: Round to elongated.
2. Size: Pinpoint to size of moon.
3. Color: Flaming yellow with red, green or blue possible.
4. Speed: Crosses large portion of sky in few seconds except if coming head-on.
5. Formation: Generally single - can break into shower at end of trajectory. Occasionally (but rare) small groups.
6. Trail: At night almost always a luminous train which can persist as long as a half hour (rarely). Daytime meteors are much less frequently observed. In daytime, leaves a whitish to dark smoke trail.
7. Sound: None
8. Course: Generally streaking downward, but not necessarily sharply downward. Can on rare occasion give impression of slight [redacted]
9. Time In Sight: Longest reported about 30 seconds, generally less than 10.
10. Lighting Conditions: Day or Night. Mostly night.
11. Other: An exceptionally bright meteor is called a fireball. These are rare but extremely spectacular and on occasion have been known to light surroundings to the brightness of daylight.

STARS OR PLANETS

[redacted]

The planets, Venus, Mars, Jupiter, and Saturn are generally brighter than any star, but they twinkle very much less (unless very close to horizon). Stars twinkle a great deal and when near the horizon can give impression of flashing light in many colors.

1. Shape: Pinpoint - starlike.
2. Size: Never appreciable.
3. Color: Yellow with rainbow variations.
4. Speed: Stars apparent speeds carry them from east to west in the course of the night but they are often reported as erratic. The effect is psychological, most people being unable to consider a point as being stationary. Occasionally turbulence in the upper atmosphere can cause a star to appear to jump (rare) but somehow twinkling gives the impression of movement to many people.
5. Formations: There are no clusters of very bright stars but faint stars are grouped in their familiar constellations.
   Note: A report of 4 or 5 bright clustering lights would rule out stars.
6. Trail: None.
7. Sound: None.
8. Course: Always describe 24 hour circle around pole or sky from east to west.
9. Time In Sight: When clear, stars are always visible. Most stars rise or set during the course of the night. Stars low in western

sky set within an hour or two. Stars in east, always go higher in sky.

10. Lighting Conditions: Night - Twilight.

SEARCHLIGHTS

1. Shape: Round to elliptical.
2. Size: Pea at arms length to large luminous glow, dependent upon cloud height.
3. Colors White fluorescent.
4. Speed: Stationary to fantastic.
5. Formation: Usually only one but occasionally two or three.
6. Trail: None.
7. Sound: None.
8. Course: Circling, straight, stationary or erratic. Note: Scattered clouds can give impression of object disappearing and reappearing in a different portion of the sky in a few seconds.
9. Time in Sight: Generally long.
10. Lighting Conditions: Night

OPTICAL PHENOMENA

[redacted]

This can cover a multitude of things.

Optical phenomena which have been reported as UFOBs run from reflections on clouds and layers of ice crystals (sundogs) to the many types of mirages. No one set of optical phenomena can be set down as representation for the whole class.

There is no limit to the speed of optical phenomena. Reflections can travel from incredible speed, as in the case of a search-beacon on high clouds to stationary.

1. Shape: Generally round but can be elliptical or linear.
2. Size: Starlike to large luminous glow.
3. Color: Generally yellow
4. Speed: Stationary to fantastic.
5. Formations: Any.
6. Trail: None.
7. Sound: None.
8. Course: Any.
9. Time In Sight: Any.
10. Lighting Conditions: Day and night.
11. Other: One of the standard types is the "sundog". In this a large luminous halo is seen around the sun with one to four images of the sun placed along the halo circle at intervals of 90 degrees. Another report often has to do with a bright planet or even the moon shining through a light overcast. Mirages reflections are said to occur frequently when temperature inversions exists in the atmosphere.

USE GUIDE

This guide is designed for use in determining the feasibility of follow-up investigation of Unidentified Flying Object reports and in identifying the objects or phenomena concerned.

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT PATTERSON AIR FORCE BASE, OHIO

PART I

FOLLOW-UP INVESTIGATIONS

GENERAL

An UFOB report is worthy of follow-up investigation when it contains information to suggest that a positive identification with a well known phenomenon may be made or when it characterizes an unusual phenomenon. The report should suggest almost immediately, largely by the coherency and clarity of the data, that there is something of identification value and/or scientific value.

In general, reports which should be given consideration are those which involve several reliable observers, together or separately, and which concern sightings of greater duration than one quarter minute. Exception should be made to this when circumstances attending the report are considered to be extraordinary.

Special attention should be given to reports which give promise of a "fix" on the position and to those reports involving unusual trajectories.

RULES OF THUMB

Every UFOB case should be judged individually but there are a number of "rules of thumb," under each of the following headings, which should prove helpful in determining the necessity for follow-up investigation.

1. Duration of Sighting

When the duration of a sighting is less than 15 seconds, the probabilities are great that it is not worthy of follow-up. As a word of caution, however, should a large number of individual observers concur

on an unusual sighting of a few seconds duration, it should not be dismissed.

When a sighting has covered just a few seconds, the incident, when followed-up in the past, has almost always proved to be a meteor or a gross mis-identification of a common object owing to lack of time in which to observe.

2. Number of Persons Reporting the Sighting

Short duration sightings by single individuals are seldom worthy of follow-up.

Two or three competent independent observations carry the weight of 10 or more simultaneous individual observations. As an example, 25 people at one spot may observe a strange light in the sky. This, however, has less weight than two reliable people observing the same light from different locations. In the latter case a position-fix is [redacted]

3. Distance from Location of Sighting to Nearest Field Unit

Reports which meet the preliminary criterion stated above should all be investigated if their occurrence is in the immediate operating vicinity of the squadron concerned.

For reports involving greater distances, follow-up necessity might be judged as being inversely proportional to the square of the distances concerned. For example, an occurrence 150 miles away might be considered to have four times the importance (other things being equal) than one that is 300 miles away.

4. Reliability of Person or Persons Reporting

In establishing the necessity of follow-up investigation only "short term" reliability of individuals can be employed. Short term reliability is judged from the logic and coherency of the original report and by the age and occupation of the person. Particular attention should be given to whether the occupation involves observation reporting or technical knowledge.

5. Number of Individual Sightings Reported

Two completely individual sightings, especially when separated by a mile or more constitutes sufficient cause for follow-up, assuming previous criterion have not been violated.

6. The Value of Obtaining Additional Information Immediately

If the information cannot be obtained within seven days, the value of such information is greatly decreased.

It is of great value to obtain additional information immediately if previously stated criteria have been met. Often, if gathered quickly, two or three items (weather conditions, angular speed, changes in trajectory, duration, etc.) are sufficient for immediate evaluation.

If investigation is undertaken after weeks or months the original observers cease to be of value as far as additional new information is concerned. Generally, late interrogation yields only bare repetition of facts originally reported plus an inability on the part of the observer to be objective.

7. Existence of Physical Evidence (Photographs, Material, Hardware)

In cases where any physical evidence exists, a follow-up should

be made even if some of the above criteria have not been met.

CONCLUSIONS - Part I

It is understood that all above criteria must be evaluated in terms of "common sense." The original report, from its wording and clarity will almost always suggest to the reader whether there is any "paydirt" in the report.

PART II

IDENTIFICATION CRITERIA -

GENERAL

When an UFO report meets, in large measure, the criteria projected in Part I and a follow-up investigation is instituted, then the interrogator should ask what physical object or objects might have served as the original stimulus for the report. The word "object" here includes optical phenomena such as reflections from clouds, sundogs, etc.

Frequently one or perhaps two solutions will be immediately suggested by the nature of the report. The word "solution" cannot be used here in the scientific sense. A solution in UFOB work means that a hypothesis has been arrived at which appears to have the greatest probability of having given rise to the given report.

Following is a group of hypotheses or examples which should prove helpful in arriving at solutions. A check should be made to see how many of the items are satisfied by the report and how many are missing. An effort should be made to obtain any missing items as soon as possible.

Each typical hypothesis is listed on a separate page.

AIRCRAFT

1. Shape: From conventional to circular or elliptical.
2. Size: Pinpoint to actual.
3. Color: Silver to bright yellow (night - black or color of lights).
4. Speed: Generally only angular speeds can be observed. This depends on distance but small objects crossing major portion of sky in less than a minute can be ruled out. Aircraft will not cross major portion of sky in less than a minute whereas a meteor certainly will.
5. Formation: Two to twenty. Numbers greater than 20 more likely birds than aircraft.
6. Trails: May or may not have (vapor and exhaust).
7. Sound: Zero to loud shrill or low depending on altitude.
8. Course: Steady, straight or gently curving (not erratic - may appear still if approaching head-on). Right angle turns and sudden reversals, changes in altitude ruled out. Note: Although report may indicate erratic course, if other items check, follow-up should proceed on basis of aircraft because of psychological tendencies of excited people to exaggerate course changes.
9. Time In Sight: More than 15 seconds, generally of the order of a minute or two.
10. Lighting Conditions: Night or Day.
11. Radar: Should show normal aircraft returns.

BALLOONS

1. Shape: Round to cigar or pinpoint.
2. Size: Balloons up to a hundred feet will generally appear from pinpoint to size of a pea held at armslength.
3. Color: Silver, white or many tints. It may possibly appear dark as when projected against the clouds.
4. Speed: Large scale erratic speed ruled out. In general hovering to slow apparent speed.
5. Formation: Single to cluster.
6. Trail: None.
7. Sound: None.
8. Course: Straight with a general gradual ascent, unless falling.
9. Time In Sight: Generally long. Note: Balloon may suddenly burst and disappear.
10. Lighting Conditions: Night or day but especially at sunset.
11. Radar: No return except when carrying sonde equipment.

METEOR

1. Shape: Round to elongated.
2. Size: Pinpoint to size of moon.
3. Color: Flaming yellow with red, green or blue possible.
4. Speed: Crosses large portion of sky in few seconds except if coming head-on.
5. Formation: Generally single - can break into shower at end of trajectory. Occasionally (but rare) small groups.
6. Trail: At night almost always a luminous train which can persist as long as a half hour (rarely). Daytime meteors are much less frequently observed. In daytime, leaves a whitish to dark smoke trail.
7. Sound: None, although occasionally reported (believed psychological).
8. Course: Generally streaking downward, but not necessarily sharply downward. Can on rare occasion give impression of slight rise.
9. Time in Sight: Longest reported about 30 seconds, generally less than 10.
10. Lighting Conditions: Day or Night. Mostly night.
11. Radar: Return from meteor itself is highly improbable, however, the train left by a meteor, is a good radar reflector.
12. Other: An exceptionally bright meteor is called a fireball. These are rare but extremely spectacular and on occasion have been known to light surroundings to the brightness of daylight.

STARS OR PLANETS

[redacted]

The planets, Venus, Mars, Jupiter, and Saturn are generally brighter than any star, but they twinkle very much less (unless very close to horizon). Stars twinkle a great deal and when near the horizon can give impression of flashing light in many colors.

1. Shape: Pinpoint - starlike.
2. Size: Never appreciable.
3. Color: Yellow with rainbow variations.
4. Speed: Stars apparent speeds carry them from east to west in the course of the night but they are often reported as erratic. The effect is psychological, most people being unable to consider a point as being stationary. Occasionally turbulence in the upper atmosphere can cause a star to appear to jump (rare) but somehow twinkling gives the impression of movement to many people. Note: Just because the report says the light moves does not rule out the possibility of it being a star unless motion is from one part of sky to another in relatively short time.
5. Formation: There are no clusters of very bright stars but faint stars are grouped in their familiar constellations. Note: A report of 4 or 5 bright clustering lights would rule out stars.
6. Trail: None.

7. Sound: None.

8. Course: Always describe 24 hour circle around pole of sky from east to west.

9. Rise In Sight: When clear, stars are always visible. Most stars rise or set during the course of the night. Stars low in western sky set within an hour or two. Stars in east, always go higher in sky.

10. Lighting Condition: Night - Twilight.

11. Radar: None.

OPTICAL PHENOMENA

[redacted]

This can cover a multitude of things. Original scanning of the report should be made to attempt to determine whether it more likely describes a material object or an optical phenomenon.

Optical phenomena which have been reported as UFOBs run from reflections on clouds and layers of ice crystals (sundogs) to the many types of mirages. No one set of optical phenomena can be set down as representative for the whole class.

There is no limit to the speed of optical phenomena. Reflections can travel from incredible speed, as in the case of a search-beacon on high clouds, to stationary.

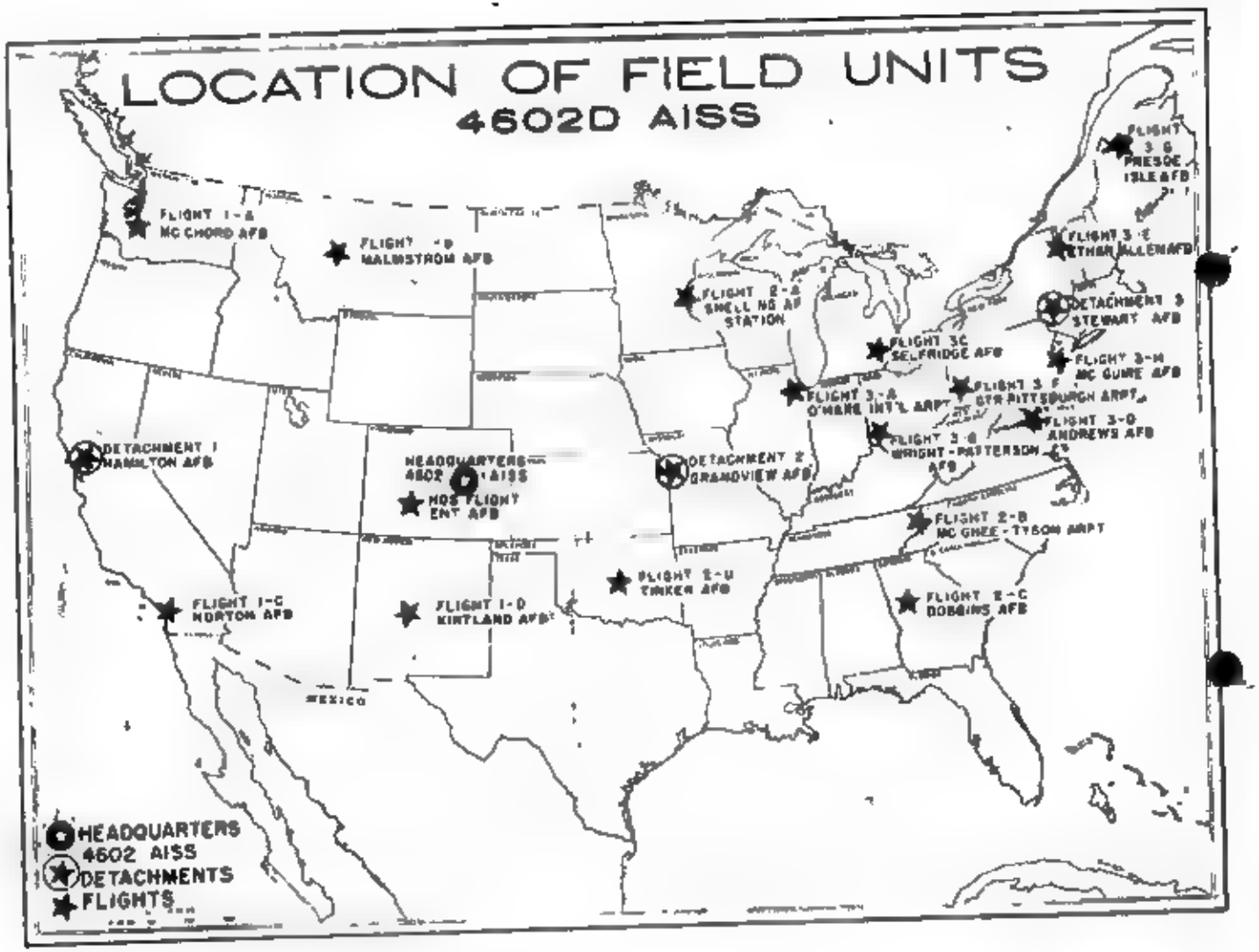
These cases if well reported will almost always warrant follow-up. Their variety and connection with upper atmospheric conditions make these observations especially valuable scientifically.

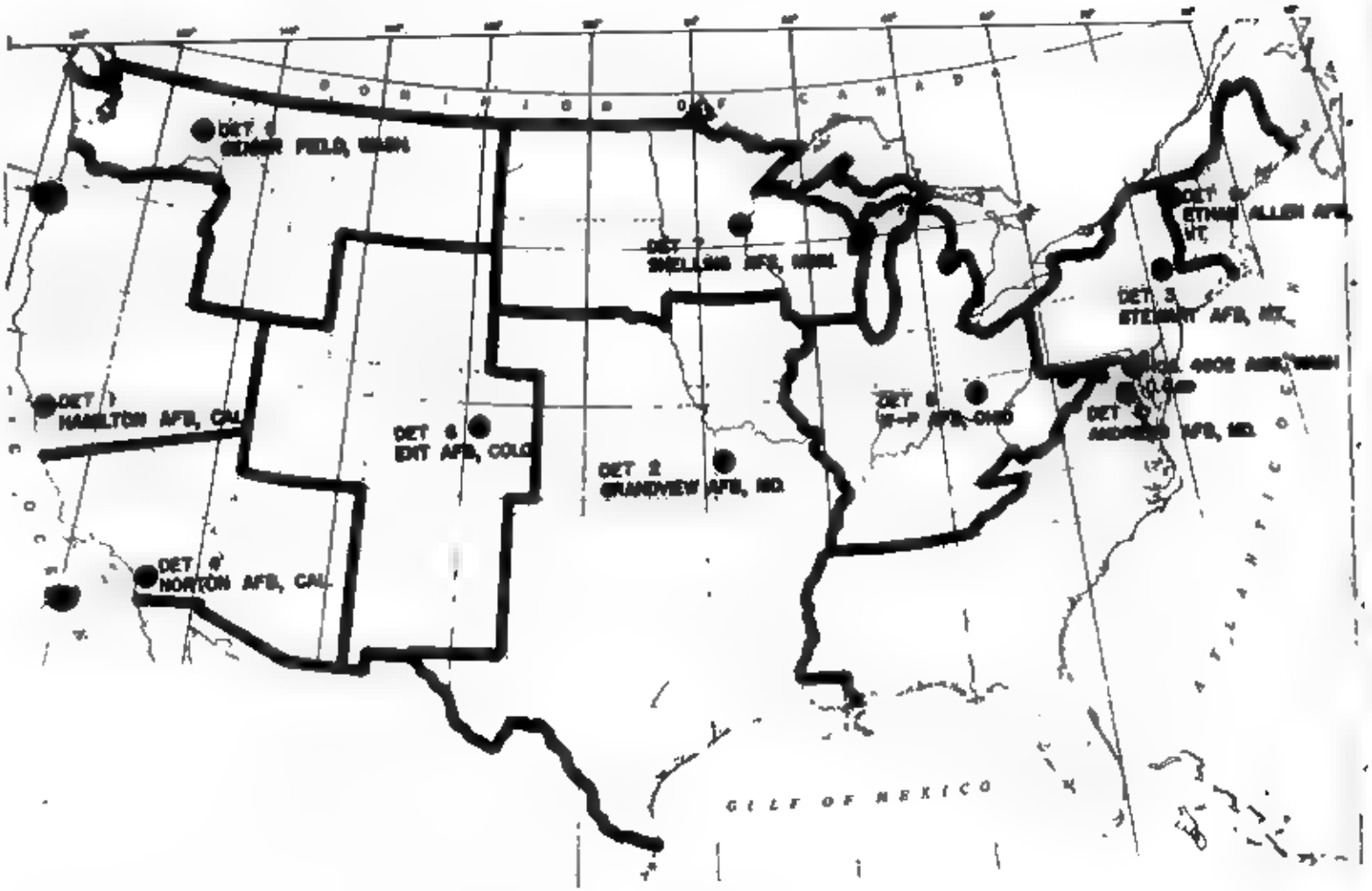
1. Shape: Generally round but can be elliptical or linear.
2. Size: Starlike to large luminous glow.
3. Color: Generally yellow.
4. Speed: Stationary to fantastic.
5. Formation: Any.
6. Trail: None.
7. Sound: None.
8. Course: Any.
9. Time In Sight: Any.

10. Lighting Conditions: Day and night.

11. Radar: No return. In special cases radar response will occasionally have to do with unusual clouds, and meteorological phenomena such as described in Minnaert's book "Light and and Color in the Open Air."

12. Other: One of the standard types is the "sundog." In this a large luminous halo is seen around the sun with one to four images of the sun placed along the halo circle at intervals of 90 degrees. Another report often has to do with a bright planet or even the moon shining through a light overcast. Mirage reflections are said to occur frequently when temperature inversions exists in the atmosphere. If an optical phenomenon is suspected, routine check of the meteorological records should be made to establish whether such inversions existed.


LOCATION OF FIELD UNITS
4602D AISS
FLIGHT 1-A
MC CHORD AFB
FLIGHT 1-B
MALMSTROM AFB
FLIGHT 2-A
SMELL NG AF
STATION
FLIGHT 3-G
PRESQUE
ISLE AFB
FLIGHT 3-E
ETHAN ALLEN AFB
DETACHMENT 3
STEWART AFB
FLIGHT 3C
SELFRIDGE AFB
FLIGHT 3-H
MC GUIRE AFB
FLIGHT 3-A
O'HARE INT'L ARPT
FLIGHT 3-F
GTR PITTSBURGH ARPT
FLIGHT 3-G
WRIGHT-PATTERSON
AFB
FLIGHT 3-D
ANDREWS AFB
DETACHMENT 1
HAMILTON AFB
HEADQUARTERS
4602 AISS
MOS FLIGHT
ENT AFB
DETACHMENT 2
GRANDVIEW AFB
FLIGHT 2-B
MC GHEE-TYSON ARPT
FLIGHT 2-U
TINKER AFB
FLIGHT 1-C
NORTON AFB
FLIGHT 1-D
KIRTLAND AFB
FLIGHT 2-C
DOBBINS AFB
MEXICO
HEADQUARTERS
4602 AISS
DETACHMENTS
FLIGHTS


DET 1
HAMILTON AFB, CAL
DET 2
GRANDVIEW AFB, MO
DET 4
NORTON AFB, CAL
GULF OF MEXICO

[redacted] UNCLASSIFIED

SMIC

[redacted] UNCLASSIFIED

[redacted] UNCLASSIFIED

[redacted]

AFCIN-X /

UNCLASSIFIED 13 Feb 58

undtd C/S

New AFCIN-4 Plan on UFOBs

Chief, AFCIN-X

Chief, AFCIN-X/ 4

1. The revised AFR 200-2, Unidentified Flying Objects (UFO), dated 5 February 1958 (attached) has been disseminated this date to all major air commands. Promulgation of the new UFO Regulation is the final action achieving the goals set forth in paragraph 3, Comment No. 1. It is anticipated that the UFO project will hereafter be conducted in an orderly manner, requiring a minimum of attention by AFCIN-X and X1. However, there will be no let-up by AFCIN-X1 in monitoring all Air Force UFO activities.

2. The following is a brief review of that which has been accomplished toward assigning and delineating responsibilities Air Force wide for the conduct of UFO investigation, analysis, and release of information to the public:

a. The responsibility for investigating UFO sightings is no longer that of ADC alone. Due to the loss of the 4602nd (1006th) AISS by ADC, and the additional mission responsibilities levied on the 1006th AISS by AFCIN, reappraisal of investigative responsibilities resulted in:

(1) An Air Force wide responsibility for UFO investigations with each AF base commander responsible for conducting initial investigations of UFO sightings in the locale of his base.

(continued)

UNCLASSIFIED

[redacted]

C/S, subj: New AFCIN-4 Plan on UFOBs, Comment No. 4 (Cont)

(2) ADC directly participating only when a UFO sighting is considered a hostile air vehicle; however, ADC will continue to render investigative assistance as required.

(3) More extensive follow-up investigation, when considered necessary by ATIC, to be accomplished by the 1006th AISS.

The above realignment of responsibilities should effect more economical utilization of the 1006th AISS and provide for more timely UFO reports since local AF base commanders can investigate on the spot.

b. ATIC's responsibility is clearly confined to analysis and evaluation; however, ATIC may conduct follow-up investigations as necessary to further its findings.

c. The responsibility for release of UFO information to the public and Congress is assigned to SAFIS and SAFLL respectively. AFCIN will continue to furnish information to SAFIS and SAFLL as required; however, there will be few such occasions since SAFIS has been furnished assorted UFO information as a basis for most public inquiries.

d. Coordination on UFO matters between AFODC and AFCIN ceased with the departure of Colonel J. C. Nottingham from ODC. MOI 11-37, referenced in paragraph 3d, Comment No. 1, applies only to SAFIS-AFODC relations.

e. As previously stated, AFCIN is now completely divorced from public relations. All inquiries from the public and press are forwarded to SAFIS for appropriate action. In two recent instances, ATIC has worked with a T.V. producer and magazine writer, but through a SAFIS representative. The material compiled is now in package form and available to all solicitors. There is no reason for ATIC to personally be associated in the future with UFO feature writers. This arrangement with SAFIS is the result of excellent cooperation developed between AFCIN and SAFIS. Major Tacker, SAFIS, is to be commended for his aggressive and conscientious effort to satisfy the clamor of press and public.

3. In addition, the following significant developments are brought to your attention:

a. The UFO Scientific Panel Report conclusions of 1953, sponsored by CIA, were in part declassified for public knowledge. It was necessary for CIA to contact each of the panel members to accomplish the declassification.

C/S, subj: New AFCIN-4 Plan on UFOBs, Comment No. 4 (Cont)

b. SAFIS has reported that the press is completely satisfied with the periodic UFO "fact sheets" made available to them and the Air Force responses to specific UFO sightings.

c. The reaction from the CBS T.V. program, "UFO, Enigma of the Skies," Circle Theater, 22 January 1958, has been beyond expectation. Only six letters criticizing the program were received by the Air Force - all were from so-called "cranks". Mr. Donald Kehoe, President of the National Investigative Committee on Aerial Phenomena (NICAP), alienated himself with the press by going beyond the T.V. script in an attempt to criticize the Air Force.

d. Several meetings between representatives of SAFRD, SAFIS, SAFLL, and Major Byrne, AFCIN, took place to formulate an Air Force response to a request by the Senate's Government Operations Sub-Committee on Investigations to conduct "open hearings" on the Air Force conduct of UFO investigations. Acting Chief Council, Mr. O'Donnel, had informed Mr. Horner, SAFRD, that the public should be informed through the Congressional Committee hearings that the Air Force was doing its job. This unprecedented approach was favorably looked upon by all but the AFCIN member who maintained that the uncontrolled publicity that could result would undo all that the Air Force has recently accomplished in winning public confidence. The proponents of extra-terrestrial vehicles, as witnesses referring to several of the existing sensational "unknown" UFO cases, could arouse a new interest in the existence of "flying saucers". Dr. H. P. Robertson, OSD, R&E, Chairman of the 1953 UFO Scientific Panel on UFO's, agreed with the AFCIN view which was passed on to Mr. Horner who apparently then recognized the inherent dangers and informed Mr. O'Donnel that "it was not in the best interest of the Air Force to participate in an 'open hearing'". Mr. O'Donnel replied that "there was no longer any reason to continue the investigation," and he would "advise the sub-committee to drop it." The permanent investigator of the sub-committee, Mr. Healy, has informed SAFLL that he is completely satisfied with the Air Force conduct of UFO investigations and analysis.

4. In view of the above, there is no longer any basis for congressional, press, or public criticism of Air Force UFO activities. This has in part been evidenced by public complacency regarding UFOs during the past 60 days. The number of UFO inquiries has been drastically reduced since the launching of Sputnik II. It may be assumed that with a better public understanding of the current U.S. pioneering in outer space, public thinking will be more realistically conditioned, transcending from fantasy to fact.

5. It is recommended that the foregoing be used as a basis for briefing of General Lewis.

C/S, Subj: New AFCIN-4 Plan on UFOBs, Comment No. 4 (Cont)

6. Additional Comment: Reference paragraph 3d above, a memorandum is being prepared for General Kelly's signature requesting the Senate sub-committee to issue a statement to the effect that preliminary findings of that committee regarding Air Force UFO activities do not warrant further investigation. Such a statement would be a valuable reference in replies to future public or congressional inquiries. In any event, Mr. Horner has consented to represent the Air Force in all future congressional inquiries regarding UFOs.

c/s comments 2 & 3 are
When inclosure No. ---------- is (now)
withdrawn or not attached, the
classification on this correspondence
will be changed to UNCLASSIFIED in
accordance with Par 25a, AFR 205-1.

UNCLASSIFIED

[redacted] SHEET

SUSPENSE

ORIGIN OR SYMBOL: AFOIN-X

DATE: undtd

TYPE: C/S

NO: 1

SUBJECT: New AFOIN-4 Plan on UFOBs

ROUTINE

Initial "IN" column to denote review prior to action. Initial "OUT" column to denote review of completed action. (X for action ✓ for coordination)

IN	OFFICE	OUT	IN	OFFICE	OUT	IN	OFFICE	OUT	IN	OFFICE	OUT	IN	OFFICE	OUT
	DIN-1			DIN-2			DIN-3			DIN-4			AFOIN	
	DIN-1B			DIN-2A			DIN-3A			DIN-4A			AFOIN-1	
													AFOIN-2	
													AFOIN-2A	
													AFOIN-2B	
													AFOIN-3	
													AFOIN-4	
													AFOIN-4A	
													AFOIN-4B	
													AFOIN-5	
													AFOIN-6	
													CAMLIB	
													FILE	
													DISPATCH	

TO: Chief, AFOIN-X1

DATE: 15 May 57

FROM: Chief, AFOIN-X

COMMENT NO.: 3

Comments (Use reverse, if necessary)

1. I have reviewed this file and signed the attached Memo No. 2 addressed to AFOIN-4. Please have Col Hurley initial the green sheet and dispatch.

2. This has been a long, involved and difficult task. I would like to express appreciation to Major Byrne and Mr. Sanderson for their most effective efforts in getting this thing back in proper focus.

3. When the new regulation is published, it may be a good idea to wrap up a short briefing for Gen Lewis to advise him of our progress in realignment of roles and missions.

4. Further, until the new concept takes hold, I suggest Major Byrne continue to watch the situation for AFOIN. If and when it starts to go off the track again (or if inappropriate and misrouted communications arrive in AFOIN), he, as the most knowledgable officer, can take immediate action to request proper adherence to our intra-Air Force agreements.

UNCLASSIFIED

[redacted]
FRANK B. CHAPPELL
Colonel, USAF
AFOIN-X

AF/O FORM 0-86 PREVIOUS EDITIONS OF THIS FORM MAY BE USED

OVER SHEET

SUSPENSE

DATE

ADD ORIG BY

NO.

DATE OF DOC

UNCLASSIFIED

DATE

TYPE

SUBJECT

/ New AFOIN-4 Plan on UFOBs

ROUTING

Initial "IN" column to denote review prior to action. Initial "OUT" column to denote review of completed action. (X for action, ✓ for coordination.)

IN	OFFICE	OUT	IN	OFFICE	OUT	IN	OFFICE	OUT	IN	OFFICE	OUT	IN	OFFICE	OUT
	DIN-1			DIN-2			DIN-3			DIN-4			AFO N	
	DIN-13			DIN-26			DIN-32			DIN-AF			AFO N-1	
													AFOIN-2	
													AFO N-21	
													AFO N-22	
													AFOIN-23	
													AFO N-24	
													AFO N-25	
													AFOIN-4	
													CABLES	
													FILE	
													DISPATCH	

TO: AFOIN-1 COLONEL CRAPPELL

DATE: 10 May 1957

FROM: AFOIN-41

COMMENT NO.: 2

COMMENTS (Use reverse, if necessary)

Maj Byrne/bjr/74903

1. The attached proposed revision of AFR 200-2 is submitted for transmittal to AFIC-for final coordination. HQ USAF coordination has been accomplished and since changes originating with AIC have been incorporated, the Regulation is ready for publication.

2. No substantive changes have been made to the most recent AFIC revision which would vitiate the purpose for accomplishing the revision as stated in paragraph 3 of Comment 1. Other than deleting minor redundancy and ensuring clarity, the most recent changes attempt to delete any and all portions of the Regulation which might provoke misconception or misinterpretation of the subject. As pointed out by members of SAFIS all unclassified Air Force regulations are made available to the Press. Because of public interest in UFOs, the subject regulation would receive close examination for any material that either in or out of context might reflect an undesirable change in Air Force attitude or policy regarding UFOs. In every instance where by inference the Air Force might appear trivial in an attempt to reassure the public, the fact has been removed or altered. At most, the effect of such deletions or alterations would sacrifice informative material designed for the convenience of the user of the Regulation.

[redacted]

UNCLASSIFIED

(OVER)

AFHQ FORM 0-86 PREVIOUS EDITIONS OF THIS FORM MAY BE USED

GPO 908344

[redacted]

UNCLASSIFIED

3. The subject of U.S. persons using the UFO hysteria for personal gain has been informally brought to the attention of the FBI. Documented cases where officials or deceptive devices or methods are used by individuals to arouse public interest in UFOs should be made available to the FBI through the OSI. This subject is being studied by AFOIN-X1 and further development will be brought to your attention.

4. Concurrently with the publication of Report Nr. 14 as an Air Force Pamphlet, the publication of AFR 200-2, revised, should be much toward the relief of AFOIN in the UFO program.

CHARLES HUFLET
Colonel, USAF
AFOIN-X1

1 Incl
Memo Ed. 2 to Director, AFOIN-4
w/Incl

old Report No. 14 not published due to lack of funds.

[redacted]

UNCLASSIFIED

COVER SHEET

SUSPENSE

ORIGIN OR SYMBOL

DATE

ASSIGNED BY

NO.

DATE

TYPE

SUBJECT

New AFOIN-4 Plan on UFOBs

ROUTING

(Initial "IN" column to denote routing prior to action. Initial "OUT" column to denote routing of completed action. OX for action. ✓ for coordination.)

IN	OFFICE	OUT	IN	OFFICE	OUT	IN	OFFICE	OUT	IN	OFFICE	OUT	IN	OFFICE
	OIN-4			OIN-7			OIN-1			OIN-4			AFOIN
	OIN-IX			OIN-IX			OIN-IX			OIN-AX			AFOIN-1
													AFOIN-2
													AFOIN-3
													AFOIN-IX
													AFOIN-X
													AFOIN-4
													AFOIN-40
													AFOIN-7
													CABLES
													FILE
													DISPATCH

TO: **AFOIN-X1 COLONEL HURLEY**

DATE

COMMENT NO. 1

FROM: **AFOIN-2**

COMMENTS (Use reverse, if necessary)

1. The time has arrived for X1 to take a good look at what OIN-4 is planning on this subject.

2. The inclosed memorandum from AFOIN-4 represents their efforts to bring about a distinct change of plan in handling this subject. Thi file also represents an attempt to align the new program with stated policy of AFODC and SAFIS.

3. Briefly, ATIC wants to accomplish the following (See AFR 200-2

a. More clearly assign and define the responsibility for investigation to ADC.

b. More clearly assign and define the responsibility for analysis and evaluation to AFOIN-4.

c. More clearly assign and define the responsibility for public information to SAFIS.

d. More clearly establish coordination between AFOIN and AFODC (Colonel J. C. Nottingham) on this subject. (See HOI 11-37 attached).

AFHQ FORM NOV 50 0-55 PREVIOUS EDITIONS OF THIS FORM MAY BE USED

e. Eliminate AFOIN-X and the Scientific Advisor, AFOIN-4, from the information services business.

4. The briefing book prepared by AFOIN-4 for General Lewis and one copy of Report 14 (both items mentioned is basic) were handed to Colonel John D. Nottingham, Room 4E-1015, Ext. 79429, Special Asst to General Everest, for his study. Colonel Nottingham has recently mentioned that SAFIS is continuing to ask him about our recommendations for release to the public of Report 14 through the Government Printing Office.

5. Some concern has been expressed by certain individuals in AFOIN-4 that an Air Force release to the public, accompanied by the necessary news release conference with certain selected media would only serve to make it more difficult for AFOIN-4 by increasing the number of inquiries received by them.

6. Request you appoint a project officer to consolidate, coordinate, and follow up with DCS/O (Col. Nottingham) on the AFOIN position and consider, as well, the question of release of the pleadings to SAFIS for government printing and subsequent release to the public of Report 14.

7. This action will require a further indorsement of this basic to DCS/O. Request you prepare for General Lewis to sign.

VAGIA-XI

2 Incls
1. Memo from ATIC, dtd 4 Jan 57
2. AFR 200-2
3. SOI 11-37

UNCLASSIFIED

COVER SHEET

SUSPENSE

ORIGIN OF BASIC [redacted]

DATE

ASSIGNED BY

NO.

DATE

TYPE

SUBJECT

New AFOIN-4 Plan on UFOs

ROUTING

Initial "IN" column to denote review prior to action. Initial "OUT" column to denote review of completed action. (X for action, ✓ for coordination.)

N	OFFICE	OUT	IN	OFFICE	OUT	N	OFFICE	OUT	IN	OFFICE	OUT	IN	OFFICE	OUT
	OIN-1			OIN-3			OIN-5			OIN-4			AFOIN	
	OIN-12			OIN-EX			O-N-3R			OIN-4K			AFOIN-1	
													AFOIN-2	
													AFOIN-17	
													AFO-N-32	
													AFOIN-33	
													AFOIN-34	
													AFOIN-35	
													AFOIN-2	
													CABLES	
													FILE	
													DISPATCH	

TO: AFOIN-X COLONEL CHAPPELL

DATE: 10 May 1957

FROM: AFOIN-12

COMMENT NO.: 2

COMMENTS (Use reverse, if necessary)

Maj Byrne/bjr/74903

1. The attached proposed revision of AFR 200-2 is submitted for transmittal to AFIC for final coordination. No USAF coordination has been accomplished and since changes originating with ADC have been incorporated, the Regulation is ready for publication.

2. No substantive changes have been made to the most recent AFIC revision which would vitiate the purpose for accomplishing the revision as stated in paragraph 3 of Comment 1. Other than deleting minor redundancy and ensuring clarity, the most recent changes attempt to delete any and all portions of the Regulation which might provoke suspicion or misinterpretation by the public. As pointed out by members of SAFIS all unclassified Air Force regulations are made available to the Press. Because of public interest in UFOs, the subject Regulation would receive close examination for any material that either in or out of context might reflect an unfavorable change in Air Force attitude or policy regarding UFOs. In every instance where by inference the Air Force might appear critical of or attempt to deceive the public, THE text has been removed or altered. At most, the effect of such deletions or alterations would sacrifice informative material supplied for the convenience of the user of the Regulation.

[redacted]

UNCLASSIFIED

(OVER)

AFHQ FORM MAY 58 0-86 PREVIOUS EDITIONS OF THIS FORM MAY BE USED. GPO 986344

[redacted]

3. The subject of U.S. persons using the UFO hysteria for personal gain has been informally brought to the attention of the FBI. Documented cases where illicit or deceptive devices or methods are used by individuals to arouse public interest in UFOs should be made available to the FBI through the OSI. This subject is being studied by AFOIN-XI and further development will be brought to your attention.

4. Concurrently with the publication of Report Nr. 14 as an Air Force Pamphlet, the publication of AFR 200-2, revised, should do much toward the relief of AFOIN in the UFO program.

1 Incl
Memo No. 2 to Director, AFOIN-4
w/Incl

CHARLES HUSLEY
Colonel, USAF
AFOIN-XI

[redacted]

UNCLASSIFIED

[redacted]

AFOIN-XIA/Major Byrne/bjr/74903
Written 10 May 1957

SUBJ: Publication of UFO Special Report Nr. 14

TO: Director, AFOIN-4

MEMO NO. 2
AFOIN-XIA/Major Byrne/bjr/74903

1. The attached proposed revision of AFR 200-2 is submitted for final coordination. Hq USAF coordination has been accomplished and since changes originating with ADC have been incorporated, the Regulation is ready for publication.

2. No substantive changes have been made to the most recent ATIC revision which would vitiate the purpose for accomplishing the revision. Other than deleting minor redundancy and ensuring clarity, the most recent changes attempt to delete any and all portions of the Regulation which might provoke suspicion or misinterpretation by the public. As pointed out by members of SAFIS all unclassified Air Force regulations are made available to the Press. Because of public interest in UFOs, the subject Regulation would receive close examination for any material that either is or out of context might reflect an unfavorable change in Air Force attitude or policy regarding UFOs. In every instance where by influence the Air Force might appear critical of or attempt to deceive the public, the text has been removed or altered. At most, the effect of such deletions or alterations would sacrifice informative material supplied for the convenience of the user of the Regulation.

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4. Concurrently with the publication of Report Nr. 14 as an Air Force Pamphlet, the publication of AFR 200-2, revised, should do much toward the relief of AFOIN in the UFO program.

3 Incls
1 & 2 w/d
Added 1 incl
3. Proposed Revision of AFR 200-2

D/I File
D/I Cross Ref
XIA Cubk
XIA Staytk

COORDINATION: AFOIN-XI
Col Hurley
Lt Col Perlberg
Major Byrne
Mr. Sanderson

[redacted]

UNCLASSIFIED

STAFF STUDY
DECEMBER 1958

UNCLASSIFIED

[redacted]

7-3745 – 4.04
1003826

SMC

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UNCLASSIFIED

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DOCUMENT RECEIPT	REGISTRY OR CONTROL NUMBER	DATE DISPATCHED
		18 Dec 1958

TO:

FROM: (Return signed original receipt)

AFCIN-4E4

SECRET

Each entry listed below will describe a document and its inclosures, and will be separated by a horizontal line drawn from margin to margin. Each entry will include:

1. Description of Basic Material: File number, type (number of copies and copy numbers,) source, addressee, date, subject (short title, if subject is classified.)

2. Number of Indorsements: Number of copies and copy numbers of each and other unclassified identifying data (as applicable.)

3. Number of Inclosures: Subject (short title, if subject is classified,) and other unclassified identifying data, including number of copies and copy number of each (as applicable.)

4. Date of latest action.

DESCRIPTION OF DOCUMENTS (Avoid any identification which might necessitate classification of this receipt.)

Folder containing following classified and unclassified material

T58-33342 (S) Memo for Comdr, 17 Dec 58 (1-6p) Subj: (U) UFO Program, Cy Nr. 1 w/6 Incls
Incl #1 - (S) Memo to ACS/I (Draft) undtd (1-5p) Subj: UFO Program (T58-33343, Cy Nr. 1) w/1 Incl
#1 - (S) T58-33345, Draft of proposed message (1-2p) Cy Nr. 1
Incl #2 - (C) DF to AFCIN-4A,B,C,D,E,F,H,J2, undtd Subj: Support of the UFO Program
Incl #3 - (C) DF to AFCIN-4H, undtd, Subj: UFO Program w/1 Uncl Incl
Incl #4 - Uncl DF to 4J5
Incl #5 - (C) DF to AFCIN-4J6, undtd, Subj: UFO Program w/1 Uncl Incl
Incl #6 - (C) Ltr to Comdr, WPAFB, 17 Dec 58, Subj: UFO Program

Tab A - Conf List of UFO Organizations
Tab B - Uncl Fitzgerald Report
Tab C - Uncl Cy of Ltr
Tab D - News Release (U)
Tab E - Uncl Training Program
Tab F - Uncl Basis of Estimate
Tab G - Conf Memo for the Record, 16 Dec 58 re UFO meeting

RETURN TO:
Director
Aerospace Studies Inst
ATTN: Archives Branch
Maxwell AFB, Alabama

4

1003823

TOTAL NUMBER OF ENTRIES LISTED:		
RECEIPT FOR DOCUMENT(S) DESCRIBED ABOVE IS ACKNOWLEDGED		DATE RECEIVED
RECEIVING AGENCY	TYPED NAME, GRADE, OR TITLE	SIGNATURE

AF FORM 310a 25 JAN 55 REPLACES AF FORM 310 WHICH MAY BE USED AND AF FORM 646 WHICH IS OBSOLETE IN THE USAF

☆ U.S. GOVERNMENT PRINTING OFFICE : 1956—[illegible]

UNCLASSIFIED

18 December 1958

MEMORANDUM FOR THE COMMANDER, AIR TECHNICAL INTELLIGENCE CENTER

THRU: APCIN-4E
APCIN-4X1

[redacted] (U) UFO Program

1. The attached study summarizes the UFO problem in ATIC as we see it. Even though responsibilities in this program are well defined the scope of the operation seems to have grown by topsy rather than design. The fact that the USAF has the only governmentally sanctioned activity engaged in UFO analysis and evaluation, brings us reports from all over the world - including some countries behind the Iron Curtain. This fact plus the amount of public interest involved essentially places ATIC in a rather uncomfortable focal position.

2. For those reasons indicated above we must I believe, lay on the line certain shortcomings of the program and request those actions necessary to make the USAF position a defensible one. If Headquarters cannot approve those nominal things that we ask for then, at least we may force a decision on how much of the taxpayers money should be spent on this program, or cause other action to be taken against questionable UFO organizations to reduce the scope of USAF activity.

3. The approval of program outlined in basic study is recommended.

LEONARD T. GLASER
Colonel, USAF
APCIN-4E4

1 Incl
Folder containing
classified UFO
[redacted]

Classification Cancelled
(or ~~changed to~~)
Auth
By
Date

DOWNGRADED AT 3 YEAR INTERVALS
DECLASSIFIED AFTER 12 YEARS.
DOD DIR 5200.10

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UNCLASSIFIED

AIR TECHNICAL INTELLIGENCE CENTER
UNITED STATES AIR FORCE
WRIGHT-PATTERSON AIR FORCE BASE
OHIO

Classification Cancelled
(or changed to ____)
Auth: ____
By ____
Date ____

17 December 1958

AFCIN-4E4

MEMORANDUM FOR COMMANDER, AIR TECHNICAL INTELLIGENCE CENTER

THRU: AFCIN-4E
AFCIN-4X1

SUBJECT: UFO Program

1. After some four months of working with the UFO Program, as outlined in AFR 200-2, I find certain deficiencies in this Program which in my opinion must be corrected if we are to fulfill adequately those responsibilities assigned to ATIC.

2. In order to appreciate the deficiencies in the UFO Program as presently constituted, certain background facts are necessary. These are:

a. AFR 200-2, dated 5 February 1958, essentially stipulates the following:

(1) The objectives of the UFO Program are to first, determine the possible threat of UFO's to the security of the United States and its forces; second, to determine the technical or scientific characteristics of any such UFO's; third, to explain or identify all UFO sightings.

(2) Reporting and investigation of UFO's is the responsibility of Commanders of the Air Force Base nearest the point of sighting as supplemented by the 1006th AISS.

(3) ATIC will analyze and evaluate all reports of UFO's emanating from the ZI and overseas areas. ATIC may independently, or in participation with pertinent USAF activities, conduct supplementary investigations.

(4) The Office of Information Services of the Secretary of the Air Force (SAFIS) will handle public relations and press releases pertaining to the UFO Program. The Office of Legislative Liaison will handle Congressional inquiries. Both of these agencies look to ATIC for specific answers pertaining to sightings and evaluations thereof.

(5) Prompt reporting and rapid identification of UFO's is essential in the Air Force and public interest.

Page 1 of 6
1 2

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2. b. During the year ending 1 November 1958, 1069 sightings of UFO's were reported to ATIC. One hundred and ten of these were foreign sightings leaving 959 reported within the ZI. Of these 959, approximately 20%, or 192, should have been investigated further by trained and equipped experts to remove them from the unknown or insufficient data category. (Most I.D. or UNK UFO's are classed as such only because specific data does not exist to classify them otherwise)

c. Forty-nine (49) UFO organizations (See Tab A) exist in the ZI in addition to many individual self-proclaimed experts whose affiliations or specific intentions are not clear. It is clear, however, that for various reasons these individuals and agencies such as NICAP, CSI, APRO, etc, feel a need for, and do everything possible to discredit the Air Force, its investigations, and its ultimate evaluation of reported sightings. These organizations, and for the most part individuals, are well equipped, and do in fact conduct a very comprehensive, although biased, field investigation. These generally result in well documented reports which are used for their chosen purposes (See Tab B). Some, such as Mr. Haber (See Tab C) for reasons known only to him, take advantage of every opportunity to incite others.

d. The people reporting UFO's are for the most part honest American citizens ranging all the way from relatively uninformed men in the street to eminent authorities, such as Mr. Townsend, Assistant to the Assistant Secretary of Defense for Research and Engineering, who recently reported a sighting from the Washington, D. C. area. These people feel strongly about what they saw and normally report sightings in a strictly patriotic interest. A prompt investigation, sound analysis, and accurate report relating to what they saw leaves them with a feeling of pride in what they did and in the service that is most concerned with their defense. A sloppy investigation, evaluation based upon inadequate facts, and subsequent effort to discredit their story makes them vulnerable to propaganda expounded by the various UFO organizations.

e. Some of the UFO organizations, such as NICAP, well know the deficiencies in the Air Force Program and take advantage of every opportunity to place us in a defensive position. In fact, it is understood that Captain Ruppelt, who was responsible for the ATIC part of the UFO Program from early 1951 until September 1953, is now affiliated with NICAP. In this organization alone ex-marine corps Major Keyhoe, a political adventurist, and Captain Ruppelt, an ex-ATIC specialist, represent a formidable team from which plenty of trouble can be expected in the future. Both appear to be in the business for the money involved. Comparable conditions involving eminent authorities of questionable intentions exist in other of the 49 UFO organizations.

3. In light of the background information provided above these deficiencies take on their proper meaning.

a. Investigations conducted by various Air Force installations in many cases (and particularly those claiming close observation or landing of UFO's) are inadequate to serve our needs for prompt and accurate evaluation. This is apparently so for these reasons:

3. a. (1) Due to knowledge of the official Air Force position that we have yet to uncover a specific threat from outer space (See Tab D) a degree of complacency has crept into the program resulting in something less than a positive, aggressive, approach to uncover the facts we so badly need to make prompt and comprehensive evaluations.

(2) As a result in part from the complacency indicated above, considerable time is lost in getting investigations under way, and all too frequently the investigation, once conducted and reported on, appears to have been performed by the most available individual without regard to his competence as an investigator, and ability to properly handle the public relations aspect so important to this program. We have in fact received reports where well skilled investigators, either private or affiliated with UFO organizations, have beat us to the scene, primed the key witnesses on what to say, and actually remained present during the investigations by Air Force representatives.

(3) As indicated in paragraph 2c above, many of the private and organized UFO investigators apparently in competition with the Air Force appear on the scene well equipped to conduct a field investigation. Invariably they have geiger counters, magnetometers and various sampling equipment with them and they use it. Not that this means much, but it is impressive to the uninitiated, and particularly so when the Air Force investigator later appears on the scene armed with nothing but a notebook and pencil for use in interrogating witnesses. Some basic factual information obtained from instrument readings would indeed be useful in many cases.

(4) Investigators selected apparently with some degree of random from Air Force installations, and in some cases obviously unskilled in conducting a comprehensive investigation, appear only too often to be guided merely by the questions posed in AFR 200-2. When these are answered they consider their job done without regard to the overall questions that must in the final analysis be answered. (i.e. - what was it? does it represent a threat? etc.)

(5) The final preparation and routing of investigative reports through devious command and mail channels is excruciatingly slow especially in those highly publicized cases wherein DOD starts getting inquiries for analysis type information as soon as public press, radio, and television releases have been made. In many cases in the past this pressure for information has built up to Congressional inquiries prior to ATIC having the basic information from which a decent appraisal of the sighting could be made.

(6) In numerous instances in the past UFO sightings that have drawn a great amount of public interest (have been publicized widely in the press, on radio, television, etc.) have never been officially reported to ATIC. Invariably it is this type of case that is used by the UFO organizations to point up the inadequacy of the job the Air Force is doing. Furthermore, they bring these same cases up time and time again in an effort to force us to reveal our findings because they know full well that we have none. When a reply goes back that the particular case

cited has never been officially reported to the Air Force, it strengthens their case that they're doing a better job for the country than the Air Force supported by their taxes, ad infinitum.

4. The information and deficiencies outlined above appear pretty grim and they are. There is a solution, however, to our problem and I believe that it can be had by quite simply applying an aggressive approach, and by committing a nominal amount of resources to the job. Fundamentally, I believe that if we are going to properly fulfill ATIC's responsibility in the UFO Program in the public interest, then we must come up with scientifically valid facts which cannot be readily refuted. These should cover as many cases as possible, and particularly those of prime public interest. The following proposals are offered and discussed:

a. That we "fire up" the investigative and reporting action at base level through the medium of an all major commands message from Hq., USAF. This to:

(1) Reaffirm the urgency of prompt and adequate investigative and reporting action.

(2) Require official reporting and investigation of sightings announced by local press, radio, or television.

(3) Require use of basic assay type instrumentation in conduct of investigations.

(4) Advise of early distribution of investigative and interrogation SOP addendum to AFR 200-2 for use in conduct of field investigations.

b. That we address ourselves immediately to preparation of a comprehensive SOP which will properly guide otherwise unskilled investigators at base level in the proper conduct of an UFO type investigation. This to be distributed as an addendum to AFR 200-2 with local reproduction authorized.

c. That from presently available resources within ATIC we create a volunteer force of some 18-20 military personnel to aid in field investigation of the more critical UFO cases.

(1) We propose here to use company grade and non-commissioned officers who do not have much opportunity for TDY travel and field work during the course of their duties at ATIC. This group will be given a twenty hour course of instruction by our military training department under the overall guidance of the Aerial Phenomena Group of the Air Science Division, with emphasis on investigative and interrogative procedures and the proper use of equipment pertinent thereto (See Tab E).

(2) Two members of the ATIC UFO volunteer group will be placed on alert each week and will be on call for critical investigative work required during the week. Rotation of alert duty will be handled on a duty roster maintained by the Aerial Phenomena Group. It is estimated

4. c. (2) that each man may expect to investigate 5 cases per year. TDY will in each case be for approximately 5 days.

(3) Approximately six sets of investigative equipment will be made up into suit-case type flyaway kits. These will be kept in a constant state of readiness by the Aerial Phenomena Group and will be promptly issued to investigators for use in each case. These sets will include the following items of equipment:

(a) Tape recorder.

(b) Assay type geiger counter.

(c) Camera and film.

(d) Transit or compass.

(e) Swipe test filter papers.

(f) Earth and swipe test sample containers.

(g) Binoculars.

(h) USC and GS maps of the area of interest.

(i) Interrogation and investigative SOP's.

(j) Necessary paper, pencils, etc.

(4) Orders for TDY-travel will be initiated by the Aerial Phenomena Group as required for travel of members of the volunteer group. These orders will cite TDY funds which should be made available for sole support of this program. Assuming primarily military air lift (see following paragraph), and maximum support from nearest Air Force facilities as stipulated in AFR 200-2, we estimate per annum TDY costs in support of this program at $5,000.00 (See Tab F for basis of estimate). These funds should be programmed and made available directly to the Aerial Phenomena Group in support of this program.

d. To keep costs down, and at the same time to allow prompt movement to Air Force bases nearest to scene of critical sightings it is proposed that a project nicknamed "Horse Fly" (akin to "Blue Fly") be established. Essentially this project will provide for priority movement of ATIC UFO investigators to nearest Air Force facilities using CRF aircraft and pilots. Crew and aircraft will stand by for investigations taking less than one day. Return flights will pick up investigators where more than one day is required.

5. Due to the many ramifications of the program presented herein a conference regarding feasibility was held on 16 December 1958 (See Tab G). This meeting confirmed the feasibility of the program as out-

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lined provided proper command approval is obtained and resources committed in support thereof.

6. Recommendations:

a. It is recommended that present deficiencies in the UFO Program be corrected by adoption of the program outlined herein. Such approval to be acknowledged by authentication of specific draft documents attached as inclosures 1 through 6. These are.

(1) Specific request to ACS/I for message from USAF to all USAF commands regarding support of UFO Program as outlined in AFR 200-2.

(2) Approval of DF's to ATIC-directors and separate staff offices soliciting volunteers for UFO investigative group.

(3) Approval of DF to AFCIN-4X4 establishing requirement for training of volunteer group.

(4) Approval of DF to AFCIN-4X5 regarding equipment required in support of UFO investigative program.

(5) Approval of DF to AFCIN-4X6 directing establishment of program for and allocation of TDY funds in support of the UFO investigative effort.

(6) Approval of DF to Commander, Wright-Patterson AFB requesting CRF support of the UFO investigative program.

6 Incls:

LEONARD T. GLASER
Colonel, USAF
AFCIN-4E4

Classification Cancelled
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Auth.
By
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DOWNGRADED AT 3 YEAR INTERVALS;
DECLASSIFIED AFTER 12 YEARS.
DOD DIR 5200.10

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DRAFT 16 Dec 58 UNCLASSIFIED

Classification Cancelled
(or changed to ____)
Auth: ____
By ____
Date ____

SUBJECT: UFO Program

TO: Assistant Chief of Staff/Intelligence
Headquarters, USAF
Washington 25, D. C.

1. As you know, this Center is responsible for performing a scientific and technical evaluation of all reports of unidentified flying objects in accordance with the provisions of AFR 200-2, dated 5 February 1958. These evaluations of necessity can be no better than the reported information with which we must work.

2. Prior to going into any discussion of deficiencies in the present program as we see it, I believe a brief review of some background information is in order:

a. Forty-nine (49) UFO organizations exist in the Zone of Interior in addition to many individual self-proclaimed experts whose affiliations or specific intentions are not clear. It is clear, however, that for various reasons these individuals and agencies such as National Investigations Committee on Aerial Phenomena, Civilian Saucer Intelligence and Aerial Phenomena Research Organization, etc., feel a need for, and do everything possible to discredit the Air Force, its investigations, and its ultimate evaluation of reported sightings. These organizations, and for the most part individuals, are well equipped, and do in fact conduct a very comprehensive field investigation.

b. The people reporting UFO's are for the most part honest American citizens ranging all the way from relatively uninformed men in the street to eminent authorities, such as Mr. Townsend, Assistant to the Assistant Secretary of Defense for Research and Engineering, who recently reported a sighting from the Washington, D. C. area. These people feel strongly

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about what they saw and normally report sightings in a strictly patriotic interest. A prompt investigation, sound analysis, and accurate report relating to what they saw leaves them with a feeling of pride in what they did and in the service that is most concerned with their defense. A sloppy investigation, evaluation based upon inadequate facts, and subsequent effort to discredit their story makes them vulnerable to propaganda expounded by the various UFO organizations.

c. Some of the UFO organizations, such as the National Investigations Committee on Aerial Phenomena, well know the deficiencies in the Air Force Program and take advantage of every opportunity to place us in a defensive position. In fact, it is understood that Captain Ruppelt, who was responsible for the ATIC part of the UFO Program from early 1951 until September 1953, is now affiliated with NICAP. In this organization alone an ex-marine corps Major Keho[redacted] and Captain Ruppelt, an ex-ATIC specialist, represent a formidable team from which plenty of trouble can be expected in the future. Both appear to be in the business for the money involved. Comparable conditions involving eminent authorities of questionable intentions exist in other of the 49 UFO organizations.

3. In light of the background information provided above, these deficiencies take on their proper meaning.

a. Investigations conducted by various Air Force installations in many cases (and particularly those claiming close observation or landing of UFO's) are inadequate to serve our needs for prompt and accurate evaluation. This is apparently so for these reasons:

(1) Due to knowledge of the official Air Force position that we have yet to uncover a specific threat from outer space, a degree of complacency has crept into the program resulting in something less than

a positive aggressive approach to uncover the facts we so badly need to make prompt and comprehensive evaluations.

(2) As a result in part from the complacency indicated above, considerable time is lost in getting investigations under way, and all too frequently the investigation, once conducted and reported on, appears to have been performed by the most available individual without regard to his competence as an investigator, and ability to properly handle the public relations aspect so important to this program.

(3) As indicated in paragraph 2c above, many of the private and organized UFO investigators apparently in competition with the Air Force appear on the scene well equipped to conduct a field investigation. Invariably they have geiger counters, magnetometers and various sampling equipment with them and they use it. Not that this means much, but it is impressive to the uninitiated, and particularly so when the Air Force investigator later appears on the scene armed with nothing but a notebook and pencil for use in interrogating witnesses. Some basic factual information obtained from instrument readings would indeed be useful in many cases.

(4) Investigators selected, apparently with some degree of random from Air Force installations, and in many cases obviously unskilled in conducting a comprehensive investigation, appear only too often to be guided merely by the questions posed in AFR 200-2. When these are answered they consider their job done without regard to the overall questions that must in the final analysis be answered (i.e. - what was it? does it represent a threat? etc).

(5) The final preparation and routing of investigative reports through devious command and mail channels is ~~excruciatingly~~ fairly slow especially in those highly publicized cases wherein DOD starts getting inquiries for

analysis type information as soon as public press, radio, and television releases have been made. In many cases in the past this pressure for information has built up to Congressional inquiries prior to ATIC having the basic information from which a decent appraisal of the sighting could be made.

(6) In numerous instances in the past UFO sightings that have drawn a great amount of public interest (have been publicized widely in the press, on radio, television, etc.) have never been officially reported to ATIC. Invariably it is this type of case that is used by the UFO organizations to point up the inadequacy of the job the Air Force is doing. Furthermore, they bring these same cases up time and time again in an effort to force us to reveal our findings because they know full well that we have none. When a reply goes back that the particular case cited has never been officially reported to the Air Force it strengthens their case that they're doing a better job for the country than the Air Force supported by their taxes, ad infinitum.

4. In order to strengthen ATIC support of the UFO Program, I have directed some internal actions which should minimize certain existing deficiencies. These are:

a. Development of a small but competent trained and equipped group of investigators within ATIC to provide supplementary investigative capability in those cases involving keen scientific or public interest.

b. Established arrangements wherein ATIC investigators may move to and from Air Force installations nearest scene of sightings rapidly using CRF aircraft and crews.

c. Preparation of an SOP addendum to AFR 200-2 which will guide base level and other investigators in seeking out the facts we need to properly evaluate a UFO sighting. This SOP will be ~~coordinated with your~~ [illegible]

along with a request that the coordinated version be published and distributed to Air Force activities.

5. In addition to those actions indicated in paragraph 4 above, I feel strongly that we must move to button up the implementation of AFR 200-2 in the field and at the same time obtain some additional cost information which may ultimately be used in our defense if such becomes necessary. I have attached hereto a suggested all major commands message which I recommend be dispatched for this purpose.

1 Incl:
Draft of
Proposed Msg

CHARLES B. DOUGHER
Major General
AFCIN-4

Page 5 of 5
Cy 1 of 2
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By _____
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DRAFT of Proposed Message to all Major Commands:

This Message in 5 Parts.

PART I. Reference Air Force Regulation 200-2, dated 5 February 1958, subject: "Unidentified Flying Objects," as amended by AFR 200-2A, dated 3 July 1958.

PART II. In spite of the fact that the USAF has yet to uncover specific evidence of Unidentified Flying Objects that represent a threat from outer space, considerable public interest and pressure on this particular program continues. At the present time some 49 UFO organizations and many self-proclaimed experts are actively engaged in exploiting UFO sightings for their own, and in some cases, questionable interests. For reasons known best to them they all seem intent upon discrediting the job the USAF is doing in this program. In spite of this we must maintain a positive approach to uncover specific information of scientific or technical interest to the nation.

PART III. To insure understanding and compliance with the existing provisions of AFR 200-2, as amended, the following elements of that directive are re-emphasized and clarified.

a. Prompt reporting and investigation of all UFO sightings by the AF installation nearest to the point of sighting is the responsibility of the commander of that installation. Such reporting and investigation includes those cases publicized in the press or on radio and television in the vicinity of that installation even though no report of the incident has been otherwise received. In all cases copies of reports will be referred directly and expeditiously to ATIC.

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PART III. b. Selection of competent investigators, capable of applying guidance outlined in par. 5 of referenced regulation is essential. In all cases the investigator should be authorized direct telephone contact with the Aerial Phenomena Group, Headquarters, ATIC, Wright-Patterson AFB, Ohio, extension 6-9216, for the purpose of reporting high priority findings or preliminary conclusions.

PART IV. The following instructions supplement the provisions of referenced regulation.

a. Where witnesses report close proximity to UFO's (within 100 yards), or claim evidence of radiation, investigators will be equipped with rad-safe type radiation detectors to measure intensity of radiation in vicinity of sighting. Where such instrumentation is employed, report to ATIC will include type and model of instrument used, specific points where measurements were taken, intensity of radiation, and relationship to normal background in the area.

b. In all reports to ATIC the name and rank of the investigator and the telephone number at which he can be reached will be included.

c. All final reports of UFO sightings will include a brief statement of the total USAF resources consumed in investigation of this particular sighting. This to include man hours, dollars spent, miles traveled in military aircraft or vehicles, material damaged, destroyed or consumed.

PART V. For information SOP addendum to AFR 200-2 which will provide further guidance to commanders and UFO investigators ~~are in work~~ and should be distributed early 1959.

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Page 2 of 2 Pages
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DISPOSITION FORM

SECURITY CLASSIFICATION (If any)

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FILE NO.

SUBJECT: (U) Support of the UFO Program

TO: AFCIN-4A
AFCIN-4B
AFCIN-4C
AFCIN-4D
AFCIN-4E
AFCIN-4F
AFCIN-4X4
AFCIN-4X2

FROM: AFCIN-4B4

DATE

COMMENT NO. 1

Classification Cancelled
(or changed to [redacted])
Auth Director ISO
By
Date 25 Jul 69
AFR 205-1, para 2-11c
2 Jan 68

1. During the past year the investigation of UFO sightings as outlined in AFR 200-2 has left much to be desired. We are taking positive action to correct present deficiencies in the investigative program; however, it is deemed essential that an ATIC task force be established to supplement base level investigations in those cases where considerable scientific or public interest exists.

2. To provide a flexible investigative force which will not cause a particular drain on any one office within ATIC the Commander has approved the establishment of a volunteer force which will work under the direction of the Aerial Phenomena Group of the Air Science Division when actually engaged in field investigation of UFO sightings. The general ground rules for their employment are as follows:

a. A total group of from 18 to 20 volunteers will be selected from company grade officers and NCO's presently assigned within ATIC. This group will for the most part be people who do not have much opportunity to travel during the normal course of their duties at ATIC. Once selected they will be given a 20 hour course of instruction in interrogative and investigative procedures and will be checked out on equipment pertinent thereto. Once trained two of these individuals

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DD FORM 96 REPLACES DD FORM 96, 1 OCT 48, WHICH MAY BE USED

will be placed on alert each week to undertake such investigations as may arise during the week. Orders required for TDY travel will be processed by the Aerial Phenomena Group citing funds programmed by that Group for such travel. A separate project nick-named "Horse Fly" will be established to provide military airlift for investigators to and from the nearest Air Force installation to point of UFO sighting. Flyaway kits of equipment will be issued by and specific flight arrangements will be made by the Aerial Phenomena Group.

b. It is estimated that each investigator can plan on about 5 TDY trips of 3 days duration per year.

3. It is my desire that you ascertain the names of interested and available personnel within your staff office and advise the Aerial Phenomena Group of the Air Science Division accordingly by not later than 1 January 1959.

WILLIAM E. BOYD
Colonel, USAF
Chief of Staff, ATIC

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DISPOSITION FORM

SECURITY CLASSIFICATION (If any)

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FILE NO. | SUBJECT: (U) UFO Program

TO: AFCIN-4A4 | FROM: AFCIN-4B4 | DATE | COMMENT NO. 1

1. The Commander has approved establishment of a volunteer group of 18-20 UFO investigators from resources within ATIC. These persons are to be given a twenty hour course of instruction as generally outlined in inclosure 1 hereto.

2. I understand that Mr. Hawes of your office has already discussed this proposed program with Colonel Glaser and Major Friend of the Air Science Division. They will meet with you shortly to work out further details regarding this training.

3. It is my desire that you give maximum support to this program of training consistent with your present capability.

1 Incl
Training Program

WILLIAM E. BOYD
Colonel, USAF
Chief of Staff, ATIC

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(or changed to ———)
Auth: Dirgctr Def IDP
By
Date

At 12 yrs - 1 year 2-17a
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DD FORM 1 FEB 50 96 REPLACES AAF FORM 96, 1 OCT 43, WHICH MAY BE USED

U. S. GOVERNMENT PRINTING OFFICE

TRAINING PROGRAM
(UFO INVESTIGATOR)
(20 Hours)

1. Introduction	3 Hours
a. Background and History of the UFO Program	1
b. Philosophy	1
c. Public Relations	1
2. Investigation	3 Hours
a. [redacted]	
b. Techniques	
3. Interrogation	3 Hours
a. Philosophy	
b. Procedure	
c. Techniques	
d. Psychology	
4. Equipment	6 Hours
a. Geiger Counter	2
1. [redacted]	
2. Method of Operation	
3. Operation	
b. Camera	1
1. Purpose	
2. Operation	
c. Compass	45 Minutes
1. Purpose	
2. Operation	
d. Binoculars	15 Minutes
1. Purpose	
2. Operation	
e. Misc. Equipment	1
1. Purpose	
5. General Information	3 Hours
a. Astronomy	
b. Balloons	
c. Satellites	
Etc.	
6. Reporting	1 Hours
7. Summary	1 Hour

DISPOSITION FORM

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FILE NO.

SUBJECT (U) Support of the UFO Program

TO APCIN-4X5

FROM APCIN-4X

DATE

COMMENT NO. 1

1. AFR 200-2, dated 5 February 1958, outlines ATIC responsibilities in the UFO Program. Those responsibilities are such that field investigation of UFO sightings by specially trained ATIC investigators sometimes becomes necessary to establish all facts bearing on a particular case.

2. The Commander has just approved the establishment of a volunteer force from existing ATIC resources to expand our investigative capabilities. This force of approximately twenty military personnel will be trained and equipped to properly conduct field investigations.

3. Major R. J. Friend of the Aerial Phenomena Group (APCIN-4B4) will contact you shortly regarding equipment required for preparation of six flyaway investigative kits. It is my desire that you give Major Friend maximum support in obtaining required instruments and equipment. Insofar as possible all items required will be drawn from existing USAF resources.

WILLIAM B. BOYD
Colonel, USAF
Chief of Staff, ATIC

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Incl #4

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Auth Director ITD ltr
By _____
Date 6 Oct 59

DISPOSITION FORM

FILE NO. | SUBJECT (U) UFO Program

AFR 200-1 para 2-17a

TO: AFCIN-4K6 | FROM: AFCIN-4E4 | DATE | COMMENT NO. 1

1. The Commander has just approved establishment of a volunteer force of 18-20 UFO investigators from personnel resources presently available to ATIC. This group will be locally trained and equipped, and will be used to perform primary or supplementary investigation of UFO sightings of the greatest scientific or public interest.

2. Due to remoteness of many areas of UFO sightings, tentative arrangements have been made to employ CNT aircraft and crews to move these people to and from the AF installation nearest to the point of sighting. Further support required will be provided by that installation as outlined in AFR 200-2 dated 5 February 1958.

3. It has been determined that TDY costs to support this investigative force will run in the order of $5000.00 per annum. (See basis for estimate attached hereto). These funds should be programmed and allocated as a separate entity to the Aerial Phenomena Group in support of the UFO Program. In this regard the Aerial Phenomena Group is attempting to compile valid cost data pertaining to overall USAF support of the UFO Program as stipulated in AFR 200-2. Such cost data obtained from all participating agencies plus ATIC will be used to force a decision on just how far the Air Force should go in the UFO Program when compared to all other programs essential to Air Force defense of the nation.

4. It is desired that you advise on the amount of TDY funds which could be made available in support of this program during the 3rd and 4th quarters of FY1959 and what if any problems you envision in allocating $5000.00 for support of this program during FY1960.

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[redacted]
WILLIAM E. BOND
Colonel, USAF
Chief of Staff, ATIC

1 Incl

DD FORM 96 REPLACES AAF FORM 31, 1 OCT 45, WHICH MAY BE USED

U.S. GOVERNMENT PRINTING OFFICE 1948 O - 636171

BASIS OF ESTIMATE

TDY TRAVEL OF UFO VOLUNTEER INVESTIGATIVE GROUP

Persons involved	-	20	
Trips per person per year	-	5	
Trips per annum		100	
Estimated days per trip		3	
Total days TDY per annum		300	
TDY costs at $12.00 per day			$3,600.00
Miscellaneous costs due to remote nature of many areas of sightings - includes reimbursable telephone costs, unforeseen commercial travel in area of sighting, etc.			1,400.00
Total cost per annum			$5,000.00

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UNCLASSIFIED

17 December 1958

Classification Cancelled
(or changed to ____)
[signature]

SUBJECT: (U) UFO Program

TO: Commander
ATTN: Brig. General Howe
Wright Patterson Air Force Base
Ohio

1. In accordance with the proviaions of AFR 200-2 dated 5 February 1958, Subject: Unidentified Flying Objects, this Center is charged with scientifically and technically analyzing and evaluating all reports of UFO's. Additionally we are allowed to make such primary and supplementary field investigations as are necessary to establish the facts from which an adequate analysis and evaluation can be made.

2. Certain shortcomings in investigative endeavors during the past year have made it necessary to establish a group of some 18-20 specially trained and equipped investigators from personnel resources presently available to ATIC. These people will be held in ready reserve and moved into the field on fairly short notice to assist in, or conduct, investigation of those sightings of particular public or scientific interest.

3. Due to the difficulty in rapidly reaching certain USAF facilities by commercial means, and stringent limitations which have been imposed on TDY travel funds this year, I find it necessary to seek out those other possible means of transport which would offer some possibility in support of the UFO investigative program.

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Specifically we would like to make maximum use of CRT aircraft and crews for delivery and pick up of an occasional 1-2 investigators to Air Force installations in the ZI. Under AFR 200-2 the AF installation nearest the point of UFO sighting will provide further support required from there.

4. Past experience has shown that the bulk of our most critical sightings have taken place in the Northeast portion of the United States. It is envisioned that a maximum of 50 delivery and pick up flights would occur during any given year or roughly four per month. Distances should normally not exceed 6-800 miles each way.

5. We have tentatively established a project nick-named "Horse Fly" which will have to do with movement of investigators to and from points of interest. That nick-name would be used in any request for military CRT aircraft associated with UFO investigations.

6. With your concurrence I would like very much to have Colonel L. T. Glaser of our Air Science Division brief you further on the needs of our UFO program. This we will do at your convenience. After such a briefing I would be interested in knowing your views relative to amount and priority of support we may expect to obtain through the local CRT media.

CHARLES B. DOUGHER
Major General, USAF
Commander

[redacted]

[redacted]

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UFO ORGANIZATIONS AND CLUBS IN THE UNITED STATES

1. Aerial Phenomena Research Organization
   $9.00 per year

2. Borderline Sciences Research Associates
   Supposedly non-profit. Has bi-monthly publication.

3. Celestial Vehicle Investigation Committee
   Little known re this organization.

4. Civilian Research, Interplanetary Flying Objects
   Publication 50¢ monthly. Claims 5000 members.
   (Stringfield's organization)

5. Civilian Saucer Intelligence
   Membership $1.00. Dues 50¢ for bulletin

6. Civilian Saucer Investigation
   Quarterly bulletins - 50¢ per copy

7. College of Universal Wisdom
   Religious fanatical. Bi-monthly publication $1.50 per copy.

8. Cup and Saucer Net
   Little known re this organization.

9. Detroit Astronomical Society
   Little known re this organization.

10. Essenes of Kosmon
    Religious fanatical. Monthly report 50¢ per copy.

11. Extra-Terrestrial Research Organization
    Claims to be non-profit.

12. Fate Magazine (Club)
    Monthly magazine 35¢ per copy.

13. Flying Saucer Club of Detroit
    Claims membership of over 2000.

14. Flying Saucer Investigative Associates
    Little known re this organization

15. Flying Saucer International
    Los Angeles organization. Claims 10,000 membership.
    Monthly report 25¢

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(or changed to ____)
Auth [illegible]
By [illegible]
Date [illegible]

[redacted]

UNCLASSIFIED

16. Flying Saucer News
$2.00 per year subscription.

17. Flying Saucer Researchers
Subscription and 5 copies $1.00. 700 members

18. Flying Saucer Research Society
Little known re this organization

19. Fortean Society
Oldest society. Philosophical and metaphysical.

20. Gravity Foundation
Little known, but active.

21. Great Lakes UFO Association
Little known. Attempting to organize better

22. Holloway School of Philosophy, Health and Religion
4 publications from 50¢ to $1.00

23. International Flying Saucer Bureau
Very little known

24. Interplanetary News Digest
South California group. Little known.

25. Library Research Group
Little known, but active

26. Little Listening Post
Little known

27. Orgone Energy Institute (W. Reich Foundation)
Director now before Supreme Court for defrauding Government.

28. The 71 Research Association
Headed by individual claiming trip in flying saucer.

29. Saucer and Unexplained Celestial Events Research Society
Little known

30. Saucer Research Foundation of Los Angeles
Little known

31. Saucer Phenomena and Celestial Enquiry
Little known

32. Saucer Sentinel
Little known

[redacted]

33. Spheres, Incorporated (Los Angeles)
Rabble rousing type of organization

34. The Roundhouse
Little known, but active.

35. UFO Research Organization
Claim to be scientists, but indicates low-level of education.

36. Waterbury Saucer Center
Publisher of (extremely sensational) quarterly. 50¢ per copy.

37. Wixcels Labs of the Chemicraft Science
Claims to be non-profit

38. Space Observers League
Newly formed. Little Known

39. Flying Saucer Council of America
Claims 2000 members.

40. Amarillo Flying Saucer Sighting Center
Newly formed

41. Saucer Research Bureau
Little known re this organization

42. Telonic Research Center
Quarterly bulletin 50¢ issue

43. Satellite Science
Membership $2.00 per year.

44. Institute of Interplanetary Arts & Sciences
The Director of this impressive sounding organization
is not a scientist but a night watchman !!

45. UFO Research Council
Have written to President Eisenhower. Active but few details.

46. NICAP (National Investigative Committee on Aerial Phenomena)
Cleverly organized. Man 'behind the scenes' is Keyhoe.
Soliciting well-known personalities as members.

47. Pacific Lemurian Society. Founder and Director -W. Gordon Allen
Periodical: 'Space-Craft Digest'

48. National Committee for Investigation of UFO's
Director - K. T. Pflock

49. Saucer Research Bureau of Rockville Center, N. Y.

[redacted]

UNCLASSIFIED

[redacted]

FOREIGN CIVILIAN UFO ORGANIZATIONS

1. Australian Flying Saucer Investigating Committee
   Australia

2. Australian Flying Saucer Bureau
   Australia

3. British Flying Saucer Bureau
   England

4. Civilian Saucer Investigation
   New Zealand

5. Civilian Saucer Investigation of New Zealand
   New Zealand

6. Flying Saucer Club
   England

7. Flying Saucer Investigation Club
   New Zealand

8. Flying Saucer Investigators
   New Zealand

9. Flying Saucer Club of Umtali
   Rhodesia

10. Hamilton Flying Saucer Investigation Society
    New Zealand

11. Interplanetary Research Group
    Tasmania

12. New Zealand Interplanetary Society
    New Zealand

13. Ouvance Societe
    France

14. Radar
    [redacted]

15. South Australia Branch of the Australian Flying Saucer Bureau
    Australia

16. Wigan Flying Saucer Club
    England

17. Flying Saucer Society
    Brazil

18. CIOVI - Center for Investigating Unidentified Flying Objects
    Uruguay

Classification Cancelled
(or changed to _____)
Auth
By
Date

UNCLASSIFIED [redacted]

DOWNGRADED AT 3 YEAR INTERVALS
DECLASSIFIED AFTER 12 YEARS
DOD DIR 5200.10

Mansfield, Ohio
RFD #3
Sept. 22, '58

Mrs. William H. Fitzgerald,
934 East Drive.,
Sheffield Lake, Ohio

Dear Madam,

The report of your unusual sighting has been noted in this morning's Cleveland Plane Dealer. I am a private researcher in the field of Unidentified Flying Objects (UFO's) and have many questions in my mind to ask you but will direct this note to just one problem.

Our studies have indicated that some people have had their eyes strained or hurt as well as other physical ailments which presumable resulted from observing UFO's at close range and for an extended period of time. However, you viewed the object only a short time and it is suspected and hoped that you will suffer no ill effects. However, if you have any aftereffects at all, I am suggesting that you secure the immediate services of a Doctor. If you then and can secure an affadavit that your ailment is due to the viewing of a UFO this can be of great protection and value to the American people.

Our trouble, Madam, is that your and my government tries to tell us that UFO's do not exist,- or that you saw nothing. We know better, and we do know that this situation is not a desirable one. Hence, our efforts at present is directed to securing any lever to pry open the truth from our government departments, primarily the Air Force and the Defense Departments.. Such an affadavit that I have suggested could be of utmost value.

Too, if you wish I would like to know if any government agent covered your visinity with a geiger counter.

Most sincerely,

/s/ Dan E. Haber
Dan E. Haber

C
P
Y

IMMEDIATE RELEASE October 6, 1958 NO. 986-58
LI 5-6700 Ext. 75131

FACT SHEET

UNIDENTIFIED FLYING OBJECT "UNKNOWNS"
STILL BELOW 2 PERCENT IN LATEST 1270 CASES

According to latest information tabulated by Air Force authorities charged with investigation of Unidentified Flying Objects, 1270 new UFO reports were investigated during the period July 1, 1957 through July 31, 1958. More than 84 percent of the reported UFO sightings were definitely established as natural phenomena, hoaxes, birds, or man-made objects. Insufficient data was available to thoroughly analyze and evaluate 14 percent of the reports and less than 2 percent were classied as unknowns.

Although investigations were completed on these "unknown" cases without positive or final conclusions, nothing was found to substantiate any claims that such sightings were interplanetary visitors, or so-called "Flying Saucers".

A sighting is considered unknown when the report contains sufficient information to draw at least one valid conclusion from the facts available but when the description of the reported object or its movements cannot be related to the norm. Refinements in Air Force investigative processes, however, have resulted in a steady decline in the number of UFO reports placed in this category. During the early months of the Air Force's investigation, some 20 percent of the reports were classified as unknown. These unknowns were reduced to 9 percent in 1953 and 1954, 3 percent in 1955, and 1.8 percent during the first six months of this year. It is believed that specific conclusions could be drawn for all reports if additional observational data were provided by individuals originating these reports. Also, the Air Force believes that there will always be a small number of unknowns due to high altitude phenomena which are strange to the untrained eye.

The 1270 new reports during the past thirteen months increases the total Air Force investigations conducted since June 1947 to more than 6,000.

All investigations of reported unusual aerial objects are conducted by the U.S. Air Force Air Defense Command personnel. These reports are reviewed by a select scientific advisory group at the Air Technical Intelligence Center which analyzes and evaluates, by scientific means, all information assembled by investigative teams.

MORE

TAB D

Dr. J. Allen Hynek, Professor of Astrophysics and Astronomy at Ohio State University, is the chief scientific consultant to the Air Force on the subject of Unidentified Flying Objects.

His services and those of other eminently qualified civilian scientists are utilized if deemed necessary by the Air Force to further its investigation of individual cases or to perform detailed studies of the general subject. As an example, a panel of scientific consultants was called upon by the Air Force in 1953 to make an over-all examination of investigative procedures and findings on specific reports.

The panel said at that time "the evidence presented on UFOs showed no indication that these phenomena constitute a direct threat to national security." Further there was no "residuum of cases which indicates phenomena which are attributable to foreign artifacts capable of hostile acts." The panel concluded that "national security agencies should take immediate steps to strip the Unidentified Flying Objects of the special status they have been given and the aura of mystery they have unfortunately acquired."

In line with this recommendation, the Air Force periodically has made available through the national press and radio-television agencies, information on investigations and findings pertaining to cases which have received national attention. Only in a few instances were sighting reports classified to keep from compromising some elements in our Air Defense System, and no reports of sightings have been classified because they contain some authentic proof or even reasonable inferences that UFOs were real. Moreover, there are no Air Force documents which prove the existence of flying saucers or show that the earth is being observed, visited or threatened by machines from other planets.

However, because of limited personnel resources and to preclude possible embarrassment to individuals who have assisted Air Force investigators or who have originated reports later found to be erroneous, the Air Force does not honor individual requests for detailed analyses of specific cases.

A tabulation and evaluation of UFO report statistics follows:

1. The following represent the results of the evaluation of world-wide UFO reports investigated, processed and analyzed during the period July 1, 1957 through December 31, 1957, under pertinent categories:

UFO Report Evaluations -- By Category and Percentage Breakdown:

Total Reports 928

	Totals	Percent
Balloons	143	15.41
Aircraft	214	23.06
Astronomical	265	28.56
Others (Hoax, Lights, Birds, etc.)	152	16.38
Insufficient Data	139	14.98
Unknown	15	1.61
Sum Total	928	100.00

MORE

2. The following represents the results of the evaluation of world-wide UFO reports investigated, processed and analyzed during the period January 1, 1958 through July 31, 1958, under pertinent categories:

UFO Report Evaluations -- By Category and Percentage Breakdown:

Total Reports 342

	Totals	Percent
Balloons	51	14.9
Aircraft	76	22.2
Astronomical	89	26.0
Others (Hoax; Lights, Birds, etc.)	72	21.1
Insufficient Data	48	14.0
Unknown	6	1.8
Sum Total	342	100.0

3. UFO Evaluations -- Category Breakdown by Months: July 1957 - July 1958

	Balloons	A/C	Astro	Other	Insuf Data	Unknown
July	16	26	7	6	9	1
Aug.	18	29	27	9	17	1
Sept.	15	10	8	18	8	2
Oct.	25	19	37	17	13	3
Nov.	49	105	112	74	70	4
Dec.	20	25	74	28	22	4
Jan.	5	13	18	11	9	-
Feb.	7	11	15	9	5	1
March	9	3	13	13	8	1
April	7	17	12	10	8	1
May	7	8	9	7	4	1
June	5	8	9	8	4	1
July	11	16	12	14	8	1
Totals	194	290	353	224	185	21

E N D

TRAINING PROGRAM
(UFO INVESTIGATOR)
(20 Hours)

1. Introduction	3 Hours
a. Background and History of the UFO Program	1
b. Philosophy	1
c. Public Relations	1
2. Investigation	3 Hours
a. Procedures	
b. Techniques	
3. Interrogation	3 Hours
a. Philosophy	
b. Procedure	
c. Techniques	
d. Psychology	
4. Equipment	6 Hours
a. Geiger Counter	2
1. Purpose	
2. Method of Operation	
3. Operation	
b. Camera	1
1. Purpose	
2. Operation	
c. Compass	45 Minutes
1. Purpose	
2. Operation	
d. Binoculars	15 Minutes
1. Purpose	
2. Operation	
e. Misc. Equipment	1
1. Purpose	
5. General Information	3 Hours
a. Astronomy	
b. Balloons	
c. Satellites	
Etc.	
6. Reporting	1 Hours
7. Summary	1 Hour

E

BASIS OF ESTIMATE

TDY TRAVEL OF UFO
VOLUNTEER INVESTIGATIVE GROUP

Persons involved	-	20	
Trips per person per year	-	5	
Trips per annum		100	
Estimated days per trip		3	
Total days TDY per annum		300	
TDY costs at $12.00 per day			$3,600.00
Miscellaneous costs due to remote nature of many areas of sightings - includes reimbursible telephone costs, unforseen commercial travel in area of sighting, etc.			1,400.00
Total cost per annum			$ 5,000.00

F

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UNCLASSIFIED

16 December 1958

Classification Cancelled
(or changed to _____)
By _____
Date _____

MEMORANDUM FOR THE RECORD

1. At 1300 hours this date, a meeting was held in the Air Science Division regarding the feasibility of establishing a volunteer force of UFO investigators from existing ATIC resources. Persons in attendance at this meeting were:

Colonel L. T. Glaser	- AFCIN-4E4
Major R. J. Friend	- AFCIN-4E4
Captain T. C. James	- AFCIN-4X5c
Captain E.R. Martin	- AFCIN-4X5b
CWO W.T. Thomas	- AFCIN-4X4a
Mr. H. E. Reeves	- AFCIN-4X4b

2. Colonel Glaser briefed all conferees on present shortcomings within the UFO Program as outlined under the provisions of Air Force Regulation 200-2. He then revealed to the conferees the essence of our proposed plan for improving reports and investigations within the overall UFO Program.

3. CWO Thomas indicated that he could foresee no particular difficulty in obtaining necessary volunteers to carry out our proposed program, provided that the people were sufficiently briefed on shortcomings within the UFO Program and the need for further ATIC participation in this program. Mr. Reeves could foresee no particular difficulty in setting up a twenty hour training program for UFO investigators provided he received the active support of the Aerial Phenomena Group. The main problem that he could see was one of scheduling which we all felt could be satisfactorily worked out once the program was approved. Captain Martin could foresee no particular difficulty in providing the basic equipment necessary for six flyaway kits of UFO investigative equipment. He indicated that due to lack of procurement money at this time we would of necessity have to provide standard Air Force stock equipment for these kits. Captain James indicated that the CRT aircraft situation was not too good at this time and that we could anticipate some difficulty because of the number of pilots to be serviced by the few aircraft available. Nevertheless he felt that some support could be obtained through CRT channel, provided that the necessary Command approval was obtained, and provided that our requirements were made known to the Base Commander of Wright Patterson Air Force Base. In this regard he indicated that we would probably be able to move a lot faster if we could provide the necessary money for commercial transportation. He pointed out that in view of the nominal nature of the program being proposed and the present limitations on TDY funds, this would probably not be an acceptable solution at this time and that our only recourse for a nominal program would probably be to make the best use that we could of CRT capability.

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4. This meeting adjourned at 1420 hours this date.

LEONARD T. GLASER
Colonel, USAF
AFCIN-4E4

DOWNGRADED AT 3 YEAR INTERVALS,
DECLASSIFIED AFTER 12 YEARS
DOD DIR 5200.10

UNCLASSIFIED

[redacted]

ADVISORY PANEL
AERIAL PHENOMENA GROUP

CHAPLAIN

Chaplain (Lt/Col) Richard M. ~~Graham~~
EWH, Phone 60317

Chaplain (Capt) Mervin R. Johnson
EWH, Phone 60317

PUBLIC RELATIONS

Mr. Theodore J. Hieatt
AFCIN-4X3, Phone ~~55266~~

Mr. Spencer Whedon
AFCIN-4X3, Phone 57136

PSYCHOLOGY

Major Leroy D. Pigg
WCLDPPM, Phone 38278

PHYSICIST

Mr. V. J. Handmacher
~~RDZSTP~~, Phone ~~53964~~ WWRPXO

[redacted]

Dr. L. V. Robinson ~~60376~~
AFCIN-4E4, Phone ~~70226~~

OFFICIAL FILE COPY

AFCIN-4b2x/Maj Friend/69216

Unidentified Aerial Phenomena Panel

cWH Cys sent to: 4X3, WCLDPPM, ADZSXD

1. The next meeting of the UFO panel will be held during the month of September 1960. You will be informed of the exact date by telephone.

2. All during the life of the Air Force program to investigate and evaluate sightings of unidentified phenomena or objects, it has been recognized that the names "Unidentified Aerial Phenomena" or "Unidentified Flying Objects" were not appropriate. In many instances nothing associated with the sighting indicated aerial or flying and reports have been made of both objects and phenomena. Reports which are pure figments are, of course, excluded. Further, these names tend to stimulate the public to the natural extension of associating the term "flying saucer" to a greater degree.

3. You are requested to consider as an official name for the program "Unidentified Phenomena/Objects" or "Unidentified Phenomena or Objects". As for the alphabetized name, this would result in "UPO," not too different from the present "UFO".

4. You are not restricted to the names mentioned above, and at the meeting you should suggest any which you feel to be more appropriate.

5. Our sincere appreciation is offered to you and your organization for the aid which you gave to this panel during the past year. Such a hearty attitude toward cooperation between organizations can only result in successful completion of our assigned mission.

Richard K. Sharp Maj

PHILIP G. EVANS
Colonel, USAF
AFCIN-4E

COORDINATION:

AFCIN-4B2x Robert Friend Maj Date 9 Aug 60

AFCIN-4A2 R K Sharp Maj Date 9 Aug 60

21 June 1960

MEMORANDUM FOR RECORD

SUBJECT: UFO Panel Meeting, 16 June 1960

1. On 16 June 1960, a UFO Panel Meeting was held at ATIC. The following members of the panel were present:

Mr Theodore Hicatt, ATIC
Dr J. Allen Hynek, Consultant
Mr V Handmacher, WADD
Chaplain William Thorensen, WPAFB
Major Robert J. Friend, ATIC

2. The following subjects were on the agenda for this meeting:

a. Dalton, Massachusetts ice fall, 25 March 1960.

b. Redmond, Oregon UFO sighting, 24 September 1959.

c. LaCamp, Louisiana UFO sighting, 12 April 1960.

d. Proposed study by the Aerial Phenomena Group.

3. a. The Dalton, Massachusetts case (ice fall), 25 March 1960. A 30 pound chunk of ice dug a deep hole in the yard of Mr Larry Roche of Dalton, Massachusetts. When the case was reported Mr Roche was requested to put a large piece of the ice in his freezer, to save it for analysis. The recovered ice was shaved off its outer cover in order to insure that only its original composition was analyzed and it was forwarded to ATIC in a sealed container for this purpose. The sample was analyzed at the physics laboratory of WADD to determine its composition. A copy of the report of this analysis is attachment #1 to this document. The analysis has not contributed any information or clues as to the origin of the ice. A report of this case and the laboratory report is to be forwarded to government agencies who may have interest in this area. NASA and Army Engineers, Ft Belvoir, Va.

b. On 24 September 1959, a UFO was sighted at Redmond, Oregon by a policeman and an employee of the FAA facility. The FAA installation at Seattle, upon receiving a report from FAA, Redmond, contacted the Air Force GCI sight at Kemo AFB near Klamath Falls, Oregon to determine if a target was observed near Redmond. The observer on duty at Kemo replied in the affirmative to FAA, Seattle. USAF interceptors and civilian aircraft were scrambled, but were unsuccessful in their attempts at interception. Subsequent to 24 September 1959, the GCI site has had similar returns from the Redmond area. The GCI site did not consider there was a relationship between the visual and radar sighting, but the FAA logs carried them as one report. No report of this case was made

to AFIC. However, Major Keyhoe, NICAP, obtained a copy of the FAA logs and has since used this case against the Air Force. A telephone investigation by AFIC revealed that the radar sighting was probably caused by a gap filler antenna and that the visual sighting was probably due to a refraction of the planet Venus which was in a position that coincided with that reported by the witnesses. SAFLL briefed the Space and Aeronautics Committee on this case and used the finding determined by AFIC. The panel concurs on the probable cause of this sighting.

c. On 12 April 1960, an object struck the ground at LaCamp, Louisiana causing a loud explosion, a flash of bright light and leaving several deep holes in the ground. The light was observed by one witness but the explosion was heard by many. The Air Force investigators took samples from the ruptured ground and forwarded them to AFIC along with the report. Analysis of the samples is complete and the report is being forwarded to AFIC by a contractor. A telephoned brief of the report indicates that the residue in the holes was metal and increases the mystery in this case. Stereoscopic photographs of the ruptured ground are presently being processed. It is hoped that these photographs coupled with the analysis report will shed some light on the cause for this case. No conclusion was reached or suggested by the panel.

d. The panel was unanimous in the opinion that a comprehensive study of the year 1957 would be more beneficial than a cursory examination of the period January, 1953 to the present. The information to be charted on the IBM cards used for the study was discussed. Dr Hynek is reviewing the information for discussion at the next panel meeting.

4. The panel unanimously reaffirmed a previous recommendation by Dr Hynek that adequate investigators be made available to the Aerial Phenomena Group. It continues to be apparent that the investigation problem requires individuals who are familiar with the special nature of the UFO problem. Investigators should have background in atmospheric optics, astronomical techniques, and general information concerning astronomy and physics as well as in good investigative techniques. These investigators would be used on those cases which give indication of having greatest promise of intelligence or scientific value; i.e., LaCamp, Louisiana sighting.

ROBERT J. FRIEND
Major, USAF
AFCIN-4B2

AIR TECHNICAL INTELLIGENCE CENTER
UNITED STATES AIR FORCE
WRIGHT-PATTERSON AIR FORCE BASE
OHIO

REPLY TO
ATTN OF: AFCIN-4E

15 April 1960

SUBJECT: Meeting of UFO Panel, 7 April 1960

TO: AFCIN-4B2 (Colonel Shoop)
Major Friend

I find your UFO Panel, 7 April 1960 report most interesting. I share your concern about "scientific potential" of sightings. I have the following guidance:

a. My policy is still to divest 4E of responsibility as rapidly as possible.

b. Reference I-B investigations must be within the current limited TDY funds available to 4E2.

c. Reference I-C determine with 4D if this is within current equipment and manpower resources available to them, if not see me before commitment.

PHILIP G. EVANS
Colonel, USAF
AFCIN-4E

1 Atch
Memo for Record 4/12/60
Subj: Meeting of UFO Panel

MEMORANDUM FOR RECORD 12 April 1960

SUBJECT: Meeting of UFO Panel, 7 April 1960

I. Discussion:

A. The following topics were discussed: Redirection of program with emphasis toward possible scientific value, filing system, and a case of falling ice which took place at Dalton, Massachusetts.

B. For the past 13 years ATIC has coped with the intelligence and public relations problems presented by reports of so-called UFO's. In the latter days of the 1940's there was some reason surely to fulfill the defense obligations or to determine whether the reported phenomena would in any way affect national defense. This was, and has continued to be, the primary concern of ATIC in this respect. During the dozen or more years in which ATIC has been the recipient of a total of over 8000 reports, there has been at no time any evidence that those residual reports that could not easily be ascribed to the misidentification of common objects such as aircraft, balloons, etc., showed any hostile intent or were devices of a military character.

C. The conviction has grown on the part of the people directly concerned, and of the panel on UFO's, that it has become pointless to continue the type of "score-keeping" and monitoring of UFO sightings on the basis of hostile intent. This is not held to mean that our first look at UFO reports should not be to determine if they give evidence of possible threat to national security, for this is a primary concern; but rather that this should not be the final step in cases which give further indication of having some greater value because of their scientific potential. Further, the cases should not be considered individually only, but their collective value should be given equal consideration; i.e., frequency and numbers of fireballs. One might ask why any attention whatever should be paid to this small but steady flow of UFO sightings. To cease all attention would first be deliberately to close an important Air Force function of monitoring aerial phenomena. One can never tell when a newly launched enemy device might first come to our attention as an UFO report; secondly, the public fully expects the Air Force, as the defense service that has obvious cognizance of aerospace, to monitor and be aware of evidence in the upper atmosphere. A great loss in public confidence in the Air Force might result from complete abrogation of the UFO program.

D. Furthermore, it is now clear to the panel that UFO activities are not confined to the United States, but considerable such activity has occurred in France, Italy, Brazil, and of late, we understand through private sources, even Russia is not without similar activities. Indeed, the panel understands that there are some Russian scientists who are giving careful attention to aerial phenomena, broader in general scope than UFO's, but nonetheless including what we normally hear called UFO phenomena. It would be most embarrassing if, in view of the many years already spent by the United States Air Force on this subject, some other

group should, in their relatively short attention to this subject, find or discover any Scientific Potentia.. It is the panel's firm belief, based on examined evidence, that the so-called unknown sightings are the result of insufficient and inadequate reporting of natural but unusual physical phenomena, often perhaps of a meteorological or astronomical character.

E. The panel further recognizes that in the next decade sky surveyors, electronic and optical, will of necessity increase many fold. New detection devices, such as the Baker Nunn Camera and large telescopes and radio telescopes are already in operation, and in particular new electronic devices; e.g., image conversion devices are in the process of development. It follows, therefore, that in the next few years surveillance groups will have to contend with many of the phenomena which heretofore have been reported to ATIC. The development of this equipment will of necessity be influenced by its ability to discriminate between natural occurring phenomena and space probe objects (rockets and missiles). While these surveillance devices will be used for possible scientific progress, it must be realistically recognized that they are also, possibly with refinements, the equipment upon which we will depend for the first steps in defense-detection; and it does not call for much imagination, in view of recent developments in the space age, to realize that our ever decreasing time allowance for effective reaction in event of an attack will depend upon the reliability and speed of these detecting devices. It is equally dangerous to think of taking aggressive action due to misidentification of an object such as a meteor for an enemy missile as it is not to take action if our detection devices dismiss an enemy missile as a meteor. In order to realize such delicate differences, the physical and chemical characteristics of various phenomena which have missile-like qualities must be exactly determined. Other important patterns such as frequency of occurrence must also be determined, for this is an indication of how often our detecting device would be called upon to eliminate such phenomena. It is difficult to imagine a device which would be able to detect missiles or other such objects and not be disturbed by a bright meteor. The differentiating factors would be small; therefore, the numbers of characteristics and those which are at greater variance should be considered to help increase reliability of such a detector. This, of course, necessitates greater knowledge of the characteristics of both these phenomena and missiles, etc. There is a wealth of material already in the ATIC files, but it requires further processing for its scientific value.

II. Recommendations:

A. The panel hereby recommends a review of past material in light of accrued experience, and a thorough scientific analysis be made of those cases which are determined to be the more outstanding and having a high scientific potential.

B. It is recommended that in future, after consideration has been given to the threat possibilities, that those cases which give indication

AFCIN-4E4g

UFO Advisory Panel

8 September 1959

DGM

1. Attached for your information is a folder containing an agenda and a proposed program for bringing Special Report #14 (Project Blue Book) up to date.

2. Please be reminded that the UFO Advisory Panel meeting day has been changed to the last Thursday of each month, which will make the next scheduled date 24 September 1959.

RICHARD R. SHOOP
Colonel, USAF
AFCIN-4E4g

1 Atch:
n/c

UFO ADVISORY PANEL MEETING
27 July 1959

I. Members Present - Dr. L. V. Robinson, AFCIN-4E4, Astronomer
Mr. Theodore J. Hieatt, AFCIN-4X3, Public Relations
Mr. V. J. Sandmacher, RDZSXD, Physicist
Major Leroy D. Figg, WCLDPPM, Psychologist
Captain R. Fritz, BMB, Chaplain
Major Robert J. Friend, AFCIN-4H4E

II. Introduction. The purpose of this meeting was as follows:

a. Introduce Dr. Hynek, Air Force consultant on the UFO Program, to the panel.

b. Hear an account of Dr. Hynek's meeting with Aime Michel, French author of "Flying Saucers and the Straight Line Mystery".

c. Discuss the trends in the program as derived from the statistics of the six month period 1 January 1959 to 30 June 1959.

d. Discuss the outstanding cases for the month of July 1959.

e. Discuss latest activities of the private UFOites.

III. Discussion:

a. The meeting was opened by Major Friend, who outlined the objectives of the meeting.

b. Dr. Hynek related the events of his visit with Aime Michel, French writer on the subject of UFO's, and author of "Flying Saucers and the Straight Line Mystery". It was pointed out that Michel is an engineer with the French telephone company, is very sharp, very definitely not a crackpot, but is indeed very biased in his attitude toward UFOs. Aime Michel's opinion is that scientific investigation was not the province of the government, but could be done better by private individuals. In answer to a query as to what should be done, Michel replied that someone who had access to all the data sit down and think about it. Dr. Hynek also brought out the following facts resulting from his meeting with Michel:

(1) More serious scientists interested in the UFO Subject in France than in the United States. This group is, however, small.

(2) Report of disc-shaped objects began in France in 1942.

(3) French general public does not take much interest in UFO's while in the United States it does.

c. Major Friend pointed out to the panel that the most significant information gained from the six month statistics 1 January 1959 to 30 June 1959, was the fact that the slope of the curve was generally the same as for the same period in 1958, and that the number of cases was approximately 50% of the 1958 total for the period.

d. The outstanding cases for the month which were discussed are as follows:

(1) Airline pilot sighting, area of Hawaii. 11 July 1959. The panel agreed with the conclusion that the object responsible for this sighting was a meteor of the fireball class.

(2) Photograph of an unidentified flying object taken by Mrs. William F. Barrett of Great Barrington, Massachusetts while visiting Norway 24 July 1957. The panel could come to no conclusion on the cause and recommended that the photograph be sent to Eastman Kodak for possible analysis.

e. The publicity being given to the UFO sighted by Captain Killian, American Airlines pilot, his crew and 39 passengers, and other airline pilots on 25 February 1959, was discussed. The panel, while agreeing that the probable cause of the sighting was jet refueling, felt that this case, as do others, indicates incomplete investigation due to the fact that no Air Force representative ever interrogated the principal witnesses. The panel recommended that even after this lapse Captain Killian and his co-pilot be questioned for the record. (See attachment #1)

IV. Suggested Actions:

a. That a qualified individual representing the ATIC be sent to question Captain Killian of American Airlines even at this late date, and a full report be made to the panel at an early date.

b. That in the future the OIC of Project Blue Book be authorized to institute similar investigations at the earliest moment when, in his judgment, a case warrants such immediate attention.

ROBERT J. FRIEND
Major, USAF
AFCIN-3Eig

The Aerial Phenomena Advisory Panel, at its regular meeting on 27 July 1959, reviewed in detail current critical cases of reported aerial sightings; in the course of their discussion it became apparent that the current program of UFO investigation remains open to serious potential criticism by the public and can possibly place the ATIC in an inexcusable light in the event of close examination. To wit; it occurs too frequently that inadequate investigations have been made of cases that could become (and in many cases have already become) celebrated cases. In some cases, indeed, the principals in the case were not interrogated because of lack of adequate personnel. A case in point is that of Captain Killion, his crew, and 39 passengers, who on 25 February 1959, witnessed an unexplained sighting of three lights that reputedly followed their American Airlines plane. The case has already become a well-publicized case and is likely to remain one of the perplexing "unknowns" in the eyes of the public to harass ATIC in future years. There is some evidence, however, that this sighting may have been the result of a refueling operation.

The panel therefore recommends that even after the lapse of six months, it is urgent that the principals in this case be interrogated by a competent individual or individuals representing ATIC, and that a full report be made to the panel at an early date. It further recommends that Major Friend be authorized to instigate similar investigations at the earliest possible moment when, in his judgment, a case warrants such immediate attention in view with its nuisance or scientific value.

Dr. L. V. Robinson, AFCIN-4E4, Astronomer

Mr. Theodore J. Hiestt, AFCIN-4X3, Public Relations

Mr. V. J. Handmacher, RDZSXD, Physicist

Major Leroy D. Pigg, WCLDPRM, Psychologist

Captain R. Fritz, EWH, Chaplain

Major Robert J. Friend, AFCIN-4E4g, Aerial Phenomena

Dr. J. Allen Hynek, Air Force Consultant

AFCIN-4E4g Weekly Activity Report

SUBJECT: UFO Program 27 May 1959

1. An UFO Advisory Panel meeting was held in the office of the Aerial Phenomena Group on Monday, 25 May 1959. Possible approaches which would possibly make an extension of Special Report #14 more meaningful were discussed. It was concluded that the Aerial Phenomena Group would immediately give consideration to making time line analysis of particular events to determine their possible effect on the number of UFO reports. A talk by Frank Edwards on 6 June 1959, at Akron, Ohio was decided to be used as an initial event for this study on UFO's.

(PPT-5771, Maj. R. J. Friend, 69216)

(UNCLASSIFIED)

[illegible] Project [illegible]
25 May 1959

Members - Dr. L. V. Robinson, [illegible], Astronomer
Mr. Theodore J. Sheutt, AFCIN-4A3, Public Relations
Dr. V. J. Handmacher, [illegible], Physicist
Major Leroy M. Figg, AFCIN-2, Psychologist
Captain A. Orita, USN, Chaplain
Major Robert J. Friend, AFCIN-4B4

Introduction:

The purpose of this meeting was to determine the type of information which should be used for correlation in bringing Special Report #14 up to date.

All members of the panel were present.

Discussion:

Major Friend opened the meeting with general background information on the program and specifically Special Report #14. It was explained to the panel that the information contained in the report was almost a pure statistical study and that for the most part the information gained was negative in nature. The meeting was then opened to the members as to an approach which would possibly make an extension of this study more meaningful. After discussion, it was decided that further examination of this area would be continued at the next meeting after the members were able to make a more thorough study of the report (Special Report #14). However, the following tentative suggestions were made and discussed by the panel:

Major Figg - time line analysis after some major event which could possibly effect the number of UFO sightings. Frank Edwards is to give a presentation on Unidentified Flying Objects on 6 June 1959, at Akron, Ohio, and this was selected as our first event. If a consistent lag occurs after such an event before there is an increase in the number of UFO reports, it would allow the Air Force to anticipate these surges and possibly take preventive action.

Dr. Robinson - Suggested that predictable astronomical events (i.e. meteor showers, be correlated with the UFO sightings. In conjunction with this it was also suggested that the annual weather cycle be correlated, since during periods of extreme cloudiness these astronomical events would probably not be observed.

Captain Fritz - Suggested that periods of extreme public anxieties be correlated with UFO sightings. These periods of anxieties may be political, economic, religious, etc. Capt. Fritz further pointed out that people are generally gullible, especially sincerely religious people, and are easily taken in.

Mr. Hendrscher - Suggested that the sighting may be an extension of the "cold war". He also indicate that the AVRO (disc shaped aircraft) was to start flying soon and that this could cause an increase in reports. Mr. Hendrscher to supply us with a date and location, if possible.

Summary:

It was concluded that the Aerial Phenomena Group would immediately give consideration to Major Figg's suggestion of a time line analysis using the "Frank Edwards" talk as an initial event.

The other suggestions would be studied until the next meeting of the panel when all members would be more familiar with Special Report #14.

Mr. Hieatt is to show the moving pictures of the UFO show which was on the Armstrong Circle Theater TV program.

ROBERT J. FRIEND
Major, USAF
AFCIN-4Ehg

AFCIN-4E4g Weekly Activity Report

SUBJECT: UFO Program

9 May 1959

1. On Wednesday, 5 May 1959, the newly formed UFO Advisory Panel had its first meeting. The purpose of this meeting was to brief the members on the UFO Program and the purpose of the panel.

2. The Panel consists of men qualified in diversified fields:

Lt. Col. Richard M. Graham, Chaplain, EMH
Mr. Theodore J. Hieatt, Public Relations, 4X3
Maj. Leroy D. Pigg, Psychology, [illegible]
Mr. V. J. Handmacher, Physicist, RDZSXD
Dr. L. V. Robinson, Astronomer, 4E4

The organizations to which these men belong graciously allowed their services on a voluntary basis.

3. The purpose of the panel is to review the more troublesome cases, spot trends in the program, and make suggestions as to the future outlook. The regular meeting time of this panel is tentatively the last Monday of each month.

(PPT-5771, Maj. R. J. Friend, 6-9216)
(UNCLASSIFIED)

CYS SENT TO: WCLDPPM, Maj Pigg
RDZSXD, Mr. Handmacher

UFO Advisory Panel Meeting, 6 May 1959

8 May 1959

ATIC
AFCIN-4Fhg/2, R. J. Friend/ec/69[illegible]6

EWH
ATTN: Chaplain Graham

1. A copy of the briefing given at the initial meeting of the UFO Advisory Panel, and a folder containing some general statistical information are inclosed for your information and retention.

2. The intention of AFCIN-4Ehg is to schedule the meeting of the panel on the last Monday of each month.

3. The next scheduled meeting of the panel is 0900, Area "A", Bldg. 263, Hangar "A" South, Room Nr. 3.

4. The main topic of discussion will be "Procedure for A Statistical Study of the UFO Program".

JER 11 May 59

VINCENT G. RUTHERAN
Colonel, USAF
AFCIN-4E4

2 Incls:
1. Cy of Briefing
2. Folder of Stats

Robert J. Friend Major
AFCIN Hdqs 8 May 59

CYS TO: [illegible] - Chaplain Graham
[illegible] - Maj Pl[illegible]
RDZSAD - Mr. [illegible]kmacher
AFCIN-4EL - [illegible] Robinson

[illegible]

[illegible]

1. The first meeting of the [illegible] Advisory Panel is to be held on [illegible] 1965, 1:00 P.M., in [illegible] South, Bldg. [illegible], room [illegible].

2. The purpose of this meeting is to brief the members of the panel on the program, our method of operation, and the purpose of the panel.

3. The information to be discussed will not exceed a classification of [illegible].

4. This is a follow-up to the telephone notice of this meeting.

5. If unable to attend, notify [illegible] by telephone, Ext. 69[illegible].

6. We still plan to hold these meetings on the last Monday of each month. However, we are deviating, at this time in an effort to get the Advisory Panel under way.

[illegible]
Colonel, [illegible]
[illegible]

DISPOSITION FORM

SECURITY CLASSIFICATION (If any)

FILE NO. | SUBJECT: Unidentified Flying Objects Advisory Panel

TO: WCLDT ATTN: Lt/Col Parris | FROM: ATIC APCIN-4Eh/Maj Friend/ac/69216/Bldg 828 | DATE: 16 Mar 59 | COMMENT NO. 1

1. The Air Technical Intelligence Center is responsible for the Air Force's Unidentified Flying Objects Program. The interest in this area is threefold, to determine if UFO's constitute a threat to national security or are a danger in any way, to determine if there are any areas of scientific interest and the public relations aspects.

2. In an effort to improve our method of handling this program the ATIC proposes the formation of an advisory panel composed of persons qualified in the following areas:

Psychology
Physics
Astronomy
Religion
Public Relations.

The personnel for this panel to be provided on a voluntary basis by Wright-Patterson Air Force Base and the tenant organizations.

3. This panel to meet one day each month for the purpose of detecting possible trends in the program and to make recommendations for possible improvements in the method of operation. Tentatively the panel will meet on the last Monday of each month. Members of the panel will be notified by phone and/or D.F. when a meeting is scheduled.

4. It is requested that WCLDT support this effort with the service of a Psychologist to be utilized as stipulated above.

5. It is further requested that this office be notified if the requested support is to be granted, and the name and telephone number of the individual assigned, if in the affirmative.

H. K. GILBERT
Colonel, USAF
Deputy for Science and Components
Air Technical Intelligence Center

DD FORM 96 REPLACES AGO FORM 95, 1 OCT 48, WHICH MAY BE USED

DISPOSITION FORM

SECURITY CLASSIFICATION (If any)

FILE NO.

SUBJECT: Unidentified Flying Objects Advisory Panel

TO: ATIC
ATTN: AFCIN-4E4
Maj. Friend

FROM: RDZSXD

DATE: 4 Apr 59

COMMENT NO. 1

Mr. R. D. Hodge/jem
51324/R14/Rm124

1. Mr. V. J. Handmacher, Space Systems Office, (RDZSXD), will be available to participate on subject panel.

RALPH D. HODGE
Chief, Space Systems
Office of the Deputy for
Advanced Systems
Directorate of Systems Management

DD FORM 96

SUBJECT: Unidentified Flying Objects Advisory Panel

TO: ATIC WE-4J FROM: WCLDPP DATE: 27 March 1959 COMMENT NO. 2
Mr. Warrick/bao
22228/B248/R200-C

1. The Behavioral Sciences Division of the Aero Medical Laboratory nominates Major Leroy D. Pigg, 21724A, to serve as a member of the subject panel. Major Pigg is a trained psychologist and is rated a Command Pilot. He has a clearance for Secret granted 24 March 1951.

2. It is understood that participation in the activities of the advisory panel is voluntary and subject to limitation by priority obligations on the time of the nominee.

3. Major Pigg, symbol: WCLDPPM, extension 38278, should be advised directly of the details of the first meeting.

Howard L. Parris

HOWARD L. PARRIS
Lt. Col. USAF
Chief, Behavioral Sciences Division
Aero Medical Laboratory

ATIC, Subject: Unidentified Flying Objects Advisory Panel, 16 Mar 59

TO: ATIC FROM: HdH DATE: 20 Mar 59 COMMENT NR. 2
AFCIN-4E4c

Ch (Lt Col) Graham/60317/ac

1. The Chaplains Section is very much interested in basic communications.

2. Chaplain (Captain) Marvin R. Johnson or the undersigned will be responsible for attending all called meetings of the proposed panel. The telephone extension for both is 6-0317.

Richard M. Graham
RICHARD M. GRAHAM
Chaplain (Lt Colonel), USAF
Installation Chaplain

SUBJECT: Unidentified Flying Objects Advisory Panel, 16 Mar 59

TO: AFCIN-4A4 FROM: AFCIN-4A3 DATE: 19 Mar 59 COMMENT NR 2
Mr Hiett/dmt/55266/Bldg 263

AFCIN-4A3 enthusiastically indorses this proposal and concurs in appointment of Mr. Hiett to the panel. We suggest that Mr. Gheon be listed as an alternate.

LEE R. STRAND
Deputy Chief
4A3

DISPOSITION FORM

SECURITY CLASSIFICATION (If any)

FILE NO.

SUBJECT: Unidentified Flying Objects Advisory Panel

TO: EWH
ATTN: Lt/Col R. M. Graham

FROM: ATIC
AFCIN-4E4/Maj Friend/ac/69216/Bldg 828

DATE: 16 Mar 59

COMMENT NO. 1

1. The Air Technical Intelligence Center is responsible for the Air Force's Unidentified Flying Objects Program. The interest in this area is threefold, to determine if UFO's constitute a threat to national security or are a danger in any way, to determine if there are any areas of scientific interest and the public relations aspects.

2. In an effort to improve our method of handling this program the ATIC proposes the formation of an advisory panel composed of persons qualified in the following areas:

Religion
Psychology
Physics
Astronomy
Public Relations

The personnel for this panel to be provided on a voluntary basis by Wright-Patterson Air Force Base and the tenant organizations.

3. This panel to meet one day each month for the purpose of detecting possible trends in the program and to make recommendations for possible improvements in the method of operation. Tentatively the panel will meet on the last Monday of each month. Members of the panel will be notified by phone and/or D. F. when a meeting is scheduled.

4. Many of the cases reported to the ATIC have as a basis religious belief or at least strong religious overtones. It is requested that EWH support the ATIC with the services of a Chaplain to be utilized as stipulated above.

5. It is further requested that this office be notified if the requested support is to be granted, and the name and telephone number of the individual assigned, if in the affirmative.

H. K. GILBERT
Colonel, USAF
Deputy for Science and Components
Air Technical Intelligence Center

DD FORM 1 FEB 50 96 REPLACES DD FORM 96, 1 OCT 48, WHICH MAY BE USED

DISPOSITION FORM

SECURITY CLASSIFICATION (If any)

FILE NO.

SUBJECT: Unidentified Flying Objects Advisory Panel

TO: AFCIN-4X3

FROM: AFCIN-4E4

DATE: 16 Mar 59

COMMENT NO. 1

4E4/Maj Friend/ac/69216/Bldg 828

1. The Air Technical Intelligence Center is responsible for the Air Force's Unidentified Flying Objects Program. The interest in this area is threefold, to determine if UFO's constitute a threat to national security or are a danger in any way, to determine if there are any areas of scientific interest and the public relations aspects.

2. In an effort to improve our method of handling this program the ATIC proposes the formation of an advisory panel composed of persons qualified in the following areas:

Public Relations
Psychology
Physics
Astronomy
Religion

The personnel for this panel to be provided on a voluntary basis by Wright-Patterson Air Force Base and the tenant organizations.

3. This panel to meet one day each month for the purpose of detecting possible trends in the program and to make recommendations for possible improvements in the method of operation. Tentatively the panel will meet on the last Monday of each month. Members of the panel will be notified by phone and/or D.F. when a meeting is scheduled.

4. It is requested that AFCIN-4X3 support AFCIN-4E4 with the services of Mr. Hieatt. Mr. Hieatt will serve as the Public Relations expert on the panel described above.

5. It is further requested that AFCIN-4E4 be notified if 4X3 is unable to support this effort.

Leonard T. Glaser

LEONARD T. GLASER
Colonel, USAF
AFCIN-4E4

DD FORM 1 FEB 50 96 REPLACES AAF FORM 96, 1 OCT 43, WHICH MAY BE USED

U.S. GOVERNMENT PRINTING OFFICE 1949 O 768112

Unidentified Flying Objects Advisory Panel

ATIC 16 Mar 59
AFCIN-4E4/Maj Friend/ec/69216/Bldg 828

XX THRU: RDZSA
ATTN: Col Holm
TO: RDZSXD
ATTN: Mr. Ralph Hodge

1. The Air Technical Intelligence Center is responsible for the Air Force's Unidentified Flying Objects Program. The interest in this area is threefold, to determine if UFO's constitute a threat to national security or are a danger in any way, to determine if there are any areas of scientific interest and the public relations aspects.

2. In an effort to improve our method of handling this program the ATIC proposes the formation of an advisory panel composed of persons qualified in the following areas:

Physics
Religion
Psychology
[redacted]
Public Relations

The personnel for this panel to be provided on a voluntary basis by Wright-Patterson Air Force Base and the tenant organizations.

3. This panel to meet one day each month for the purpose of detecting possible trends in the program and to make recommendations for possible improvements in the method of operation. Tentatively the panel will meet on the last Monday of each month. Members of the panel will be notified by phone and/or T. F. when a meeting is scheduled.

4. It is requested that RDZSXD support the Air Technical Intelligence Center with the services of a Physicist to be utilized as stipulated above.

5. It is further requested that this office be notified if the requested support is to be granted, and the name and telephone number of the individual assigned, if in the affirmative.

H. K. Gilbert

H. K. GILBERT
Colonel, USAF
Deputy for Sciences and Components
Air Technical Intelligence Center

Robert J. Friend Design
AFCIN 464 16 March 59

REVIEW OF MOTION PICTURE
"UNIDENTIFIED FLYING OBJECTS"

7-3748 - 388

1003861

U-I EXPERIMENTING WITH NEWSPAPER AD PROGRAM

More Space Set For Weekends

Universal-International has begun what David Lipton, v.-p., terms "a radical departure from established advertising patterns" in newspapers in Los Angeles, New Orleans and several smaller cities throughout the country. The experiment is primarily a switch in the timing of the largest sized ad-vertisements.

Instead of staging campaigns on pictures so that all the large ads appear prior to the actual opening of a film, the new format calls for at least one of the major sized ads to appear on the Friday or Saturday immediately following the mid-week opening.

According to Lipton, the experiment was prompted by noticeable differences in the week-day against weekend performances of certain pictures that have particularly high appeal to the youth and family trade. These films appealing to the youth family trade in some instances receive as high as 80 per cent of their take on weekends. On the other hand the so-called women's pictures are not getting the special newspaper ad treatment.

The U-I executive said that it is still too early to draw any definite conclusions as to consistent boxoffice results and he emphasized that the experiment is being conducted with the complete cooperation of the theatres involved.

U-I Global Meet

(Continued from Page 1)

Lipton, v.-p. Attending from the U-I foreign department in New York will be Ben M. Cohn, assistant foreign manager, Felix Sommer, v.-p., Fortunat Baronet, foreign publicity director, Joseph Mazer, head of the 16mm department, and Irving Weiss, manager of the service department.

Also included in the domestic delegation are Herman Gluck, v.-p. of United World Films, Charles Simonelli, eastern advertising and publicity director, Clark Ramsay, executive assistant to David A. Lipton, Jack Diamond, studio publicity director, William Gordon, production code administrator, Louis Blaine, head of the foreign branch of the studio publicity department, and Maurice Myron, head of foreign transportation.

Heading the overseas delegates are K. N. Hargreaves, joint assistant managing director of JARRO U-I, distributor in the United Kingdom; A. W. Perry, president of Empire Universal Films, U-I distributor in Canada; Herc McIntyre, Australasian supervisor; John Spires, Continental supervisor; A. Lowe, Latin American supervisor; Arthur Doyle, Far Eastern supervisor.

TRAVEL-LOG

American Airliners, Alfred Hitchcock from NY yesterday. Edgar Bergen to NY today.

TWA-ers Mike Todd, Milton Berle to NY last night, Red Skelton to Paris today.

William Nutt, RKO story editor, has returned from 10 days of conferences in New York with Dan Moore, eastern story head.

Joan Fontaine, who finished in "Beyond a Reasonable Doubt" for director Fritz Lang yesterday, planes to NY with husband Collier Young today for two weeks.

Marion Jordan, Continental sales manager, and John Marshall, Middle East and Scandinavian supervisor.

Overseas delegates include Enrique Pardo, Argentina manager; Reg Perry, Adelaide, Australia, branch manager; Joseph Denis, Belgium manager; Rudi Gottschalk, Brazil manager; O. S. Mariano, Burma manager; Raul Vilancos, Chile manager; Ramon Garcia, Cuba manager; K. E. Jorgensen, Denmark manager; Jose Gonzalez, Dominican Republic manager; Francisco Puig, Ecuador manager; Andre Saleh, Egypt manager; Timo Makela, U-I distributor in Finland; Charles Zue, Formosa manager; Bernard Coleman, France, North Africa and Switzerland district manager; Rene Delcourt, France sales manager; L. Scherer, Germany sales manager; Douglas Granville, U-I home office representative in Great Britain; V. Michaelides, co-manager of Dimitrakinos & Michaelides, U-I distributor in Greece; Ginam Lao, Hong Kong manager; Geoffrey Boret, India manager; E. P. Sullivan, Indonesia manager; David Marish, U-I distributor in Israel; Emanuele Zanna, Italy manager; Oscar Nasuti, Italy sales manager; Rodolfo Bocchi, Italy assistant manager; W. W. Brown, Japan manager; C. Nakatani, Japan sales manager; Cesar Abaid, Mexico manager; B. J. Schimmel, Netherlands manager; B. F. Olander, Norway manager; H. Severs, Pakistan manager; Sig. Acosta Pereira, manager Alejandro Undurraga, Peru manager; Maurice Casey, Philippines manager; A. Belga, co-manager of Copperfilms, U-I distributor in Portugal; Harold Dudoff, Puerto Rico manager; Wally Orr, Singapore manager; Enrique Aguilar, Spain manager; Karl Jungmarker, Sweden manager; Charles Ochsner, Switzerland manager; Leo de Jesus, Thailand manager; Walter Lamb, Trinidad manager; Max Perlowitsky, U-I home office representative in Uruguay and Orlando Calvo, Venezuela manager.

Coffee, Bloom Get 'Cash' Assignments

Lenore Coffee has been signed to script "Cash McCall," it was announced yesterday by William Dozier, RKO's v.-p. in charge of production.

Dozier further revealed that he has assigned William Bloom as producer. Bloom also has RKO's recently announced Space Satellite science fiction thriller on his production slate.

Thomas in London For Next Cinerama Film

New York.—Lowell Thomas is now in London preparing for production of the fourth Cinerama adventure spectacle to be directed by Otto Lang. Equipment and the Cinerama crew are being flown to New Delhi, India, where the expedition will begin a trek through country which has been called the roof of the world.

Para. Gets a Countess

Countess Jacqueline de Cadenet, London-born blonde who recently divorced the French count, has been signed by Paramount for an important supporting role with Audrey Hepburn and Fred Astaire in the VistaVision musical "Funny Face."

Stephen to 'Wimpole'

Susan Stephen, well known to European filmgoers for her performances in several British films, makes her debut in an American film in MGM's "The Barretts of Wimpole Street."

Ballard on 'The King'

Lucien Ballard has been signed by Russ-Field Productions as cinematographer for the Clark Gable starrer "The King and Four Queens," which will be released by UA.

Black Set for Two

Tom Black is set to play important roles in two more "Texas Ranger" TV films, starting early in May.

Lona

London. MGM's ... and Kerr topping the London Palladium ... acclamation of any ... part of the year's ... Working numbers for musicals "Oklahoma," "Your Own Kiss Me" ... that ... finds ... this great ... friendly ... really brought the how ... minded us of those ... when ... standouts ... the ... Sinatra caused a stam... Ladium boxoffice Otis ... at this theatre for the ... the baffling illusionist ... three King Bros., and ... clearing of all winter ... Worth. Add to that ... Brothers, making a ... visit after five years ... vacation, again adag... Cordas ... acrobats, Eva ... and agaue host Tommy ... produce everybody and ... going.

Standing on the ... last year the municipal ... scored such a ... Dorothy Dandridge ... her four-week floor-sh... in the Savoy Hotel ... the head nets on a big ... meal in London and ... getting a sitting up ... Carmen Jones. She ... she smooched onto the ... flaring white dress ... last dollars. Down went ... forks and up went the ... assembled hash hitters ... ovation. Then ... was broken. The ... doesn't, sing: O dear ... disappointment you ... But you were lovely ... white tight-fitting dress ... eyeful.

England's first ... have producer Betty ... signed by the Rank ... and direct ... pact is director Ralph ... whom Betty was ... making of "Doctor in ... Doctor at Sea" ... are in Italy to ... on the Pinewood pictu... which will star Anth... Odile Versois ... 20th ... set" was launched at th... with a spectacular ... Jones flew over spec... personal appearance ...

MGM Play

(Continued from ...

work closely with ... and M. Dietz in the ... might also utilize MGM ... writing assignments who ... salary but without p... agreements.

The Phillips appointm... in a row by MGM ... Silverstein having been ... producer ... here that Barry Weitz ... the TV division.

'ERED' CAPTIVATING FILM; ECTS' TOP-RATE PICTURE

.t - Brooks mly Human

'ERED AFFAIR"

Cedric Gibbons, Paul

Edwin B. Willis, Hugh

Richard Brooks, with a "The Black-

or, and his warm sym- ...ities in their daily lives ...ho were captivated by ...l find much to laugh at ... in this one.

...exhibitor may find yet ...to catch his customers, ...women of the country ... splendors of Grace ...a nuptials and the su-

...ng acting will make it ...l in many future years.

...ipped to marry a young ...) and the sensible ... a simple church ... one present but their ..., who, it seems they

...at she has been patron- ...mizes that the function ...ered affair. Goaded on ... delightful Irishman ... grandeur. (Bern

...ering and subtly modu- ...

... love her and you want ... As in a great novel, the

Hey Rube

...Hippodrome

We thought Edward Everet Horton was bright and finicky as a gentleman burglar and that the rest of the cast: Louise Larimer, Adrianna Tierre, Laura

will find no bright discoveries there because the best talent would be dimmed by the frame. Blame the three-act situation comedy on writers L. duGarde Peach and Ian Hay.

Lesser parts were filled with a cute performance by Wallace Acton and a try by Jim Cox, Carolyn Kearney and Benny Fitzgerald.

"White Sheep of the Family" is well destined for greener pastures.

—Lee Zahn

RKO Purchases New Mercer Novel

William Dozier RKO v.-p. yesterday announced the purchase of the ... of its to 'Rachael Cade,' by Charles Mercer for filming next year. 'Rachael Cade' will appear shortly as a serial in the Women's Home Companion prior to its publication as a novel in the fall by G. P. Putnam's Sons. It will also be the Literary Guild selection for October.

Three Strikes Winding

Four Star producer Warren Lewis this week wraps up 'Three Strikes and Out' episode for 'Hall of Stars'-'Stage 7' teaming Dan O'Herlihy, Lee Van Cleef and Alan Hale, Jr. Jack Wilkes and Tad de Corsia are featured in the Leon Ware teleplay directed by ...

She is driven by an ugly vanity, a ... to do something ...

and the psychological drunkenness that comes to a pinch-penny woman who, she at last starts to spend. She walks through almost every moment of the film with every platitude having its undertone of humor and heartache ...

The untitled may feel that she gives Bergnine, but she doesn't. His ... playing is excellent and his regret ... are so violent as to destroy the promise of a happy ending. Sanity is ... when the daughter puts her foot down and refuses to see her father's dream destroyed. There is a great and moving ... scene of climax when ... dreamer sacrifices her dream for his ...

(Continued on Page 6)

Greene-Rouse Film Exploitable Fare

"UNIDENTIFIED FLYING OBJECTS"

Presented by Clarence Greene, Russell Rouse

Producer ....Clarence Greene
Director ..... Winston Jones
... Francis Martin
... Chester Schaeffer
Photographers. ..Howard A. Anderson, Ed Fitzgerald, Bert Spielvogel
Assistant to producer ... Paul Stone
Music by..... Ernest Gold
Conducted by ..... Emil Newman
Sound recorder ..... Hal Overton
Rerecording mixer ....Buddy Myers
Music mixer ..... Vinton Vernon
Aspect ratio—1.85
(Running time —91 minutes)

Until the first one lands and they take over this is probably the definitive work on the so-called flying Unidentified Fly ng Obj

... the fir... ...me taken of ...

Jones.

There will be no attempt here to ... the controversial nature of ... presented ...

a good future ...

Unidentif...

As to its authenticity and impact this will depend largely on the customer's previous state of mind. Speaking for only one reaction, that of a man who up till he saw the picture had no opinion on the subject, where before he leaned to disbelief he now has a mind wide open—and one eye on the sky.

Towers is no actor but his association with the film undoubtedly adds to its values, shoring up the authenticity. Otherwise the credits are all technical. Greene, and Fernando Carrere the latter as associate producer, should get credit for faith in the enterprise and genuine daring in prying the Air Force loose from some of this footage. Paul Stone, as assistant to Greene, also should share in the production credit.

Continued on Page 8)

'Oklahoma!' to Be Roadshowed Abroad

AO will be opened as a roadshow attraction in Paris, Berlin, Rome, Milan and Duesseldorf early this fall. It was announced yesterday by George Skouras, president of Magna Theatre Corp.

Skouras said:

The Magna Theatres president said he anticipates many new engagements for "Oklahoma!" in key cities here as result of the perfection of the Todd-AO special printer, the all purpose projector and all-purpose adjustable screens at greatly reduced costs. Some prices have been cut as much as 55 percent. The Todd-AO all-purpose projector has now been reduced to $7500 ... $15,000 a pair. The cost of the ... purpose adjustable screen is now $2700.

Skouras also spoke on the dual purpose camera developed for simultaneous photography of curved and flat ... around the ... switch control be ... frames per second for ... frames per second for normal screening. From a single negative a Todd-AO curved and a flat version can be obtained. Flat version can be used for ... and standard ...

'Old Man and the Sea' Into Production Today

Havana.— "The Old Man and the Sea," dramatization of Ernest Hemingway's story of the Cuban fisherman, goes into action here today after more than a year of preparation. It is a Leland Hayward production for Warners, starring Spencer Tracy and directed by Fred Zinnemann.

The WarnerColor picture has a three-month location schedule in Cuba with most scenes to be filmed at the fishing harbor of Cojimar, where Hemingway originally backgrounded his Nobel and Pulitzer Prize novel, and at Boca de Jaruca and Santa Maria, out- ...

McGuire Checks In

Dan McG... ... for Paramount to write and direct a farce-... a comedy starring Dean Martin and Jerry Lewis. Based on an original idea by Jerry Lewis, the film, as yet untitled, concerns a policeman who devotes his life to combating juvenile delinquency. Scheduled to start in Oc- ... the comedy will be a Para- ...

Lollobrigida Will Sing

... to compose five numbers for Allied Artists' "Notre Dame De Paris," which stars Gina Lollobrigida and Anthony Quinn. Each will be sung by Miss Lollob ...

Keim Returns to Graduate

Betty Lou Keim, her role with James Cagney, Barbara Stanwyck and Walter Pidgeon in MGM's "Somewhere I'll Find Him" completed, returns to New York today to graduate from high school. Actress is a student at Lodge Tutoring School in New York City.

Flying Saucer Problem Reviewed In New Film

The subject of flying saucers is reviewed in an alleged documentary movie, "Unidentified Flying Objects" that is just as controversial as the mysterious objects it attempts to cover.

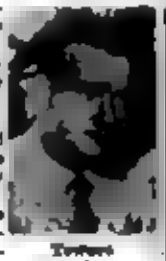
The movie opens today at Loew's theater and I should prove particularly interesting because a former Daytonian, Al Chop, is the central character.

Chop worked as a reporter for The Dayton Daily News and for Aeme Aluminum Alloys in public relations before getting a job at Wright-Patterson Air Force base in the public information office.

Chop worked there as a writer, and later in the Pentagon at Washington, and the picture contends he devoted much of his time to writing about and handling news releases on flying objects.

The man who plays Chop, Tom Towers, a Los Angeles newspaperman, serves as narrator and star of the film pulling all of the links together.

Another key figure is Capt. Edward J. Ruppelt now with an aircraft company reportedly in charge of the flying saucer investigation project at the field during Chop's time, the early 1950's.



Towers

The picture covers the subject in documentary fashion, although it does not have the blessing or the support of the Air Force.

Through the eyes of Chop the movie viewers witness interviews of persons who allegedly sighted saucers. Two reported movies made of distant saucers are shown for the first time.

Particularly suspenseful are the scenes taken in the Fort Knox flight tower, where observers are following a group of unidentified objects being chased by pilots one of whom is killed and at a Washington airport where a number of objects are caught on the radar screen as they fly over the city.

In an effort to substantiate the story the picture makes no effort to show closeups of flying saucers and admits a great majority of the reports of saucers have been explained, that only a few objects remain unidentified.

The picture does provide some interesting moments, and provokes some thoughts as well as some skepticism, particularly in this writer when Chop before taking the job at the base, talks with his former managing editor and is told:

"You certainly should come back to work with the paper. Things have changed since you were here. We now have blonde office girls and get three hours for lunch."

That is the point at which we choked.

Supporting film is "Patterns," a movie version of the TV play written by Rod Serling, former Antioch college graduate. The story attracted so much attention when it was shown on TV the first time that it was repeated within three weeks.

BRAINARD PLATT

Razor Is Named By School Unit

Floyd Razor assistant superintendent of Montgomery county schools, is the new president of the Southwestern Ohio County School Superintendents association.

Others elected at a meeting at Wilmington were Rollo Webster

VICTORY Comfortably Cool
NOW SHOWING
2 SUPER COOPER HITS!
GARY COOPER
DISTANT DRUMS
GARY COOPER
RUTH ROMAN
DALLAS
COCHRAN

the birds and the bees
COLOR BY TECHNICOLOR
REGINALD GARDINER • FRED CLARK
—LAST TIMES TODAY—
"JUBAL" CINEMASCOPE TECHNICOLOR

NOW! THE TRUTH ABOUT FLYING SAUCERS!

You'll see his "top secret" films of them for the first time!

This plane crashed trying to catch them!

This radar screen "captured" them over Washington, D.C.

This jet fought a fantastic dogfight with one of them!

He "caught" them with his camera!

He almost collided with one of them!

SEE IT ALL AS IT ACTUALLY HAPPENED!...and is still happening!

THE MOTION PICTURE SCOOP OF THE CENTURY!

UFO

CLARENCE GREENE and RUSSELL ROUSE present

UNIDENTIFIED FLYING OBJECTS

STARTS-TODAY
LOEW'S
DOORS OPEN 11:15 A.M.—MATINEE 50c—EVENING 75c

AND CO-FEATURE

VAN HEFLIN IN
"PATTERNS"
...OF POWER!

Re: Washington Radar Sightings

"Investigation of these sightings by both ATIC and CAA definitely established that the phenomena are to temperature inversions, a common occurrence over the Washington area"

Comment by Capt. Harding
31 May 1952

RE Original material on File with Kennedy Trust Co.
Always known — however, there may not be an agreement with report to Gray & USAF and available released data.

RE. Footage released by the house

Comments: always known, private property — USAF borrowed it only.

MEMO ROUTING SLIP	NEVER USE THIS FOR APPROVALS, DISAPPROVALS, CONCURRENCES, OR SIMILAR ACTIONS

	NAME OR TITLE / ORGANIZATION AND LOCATION	INITIALS / DATE		
1	Hqrs Capt Gregory 4E4			CIRCULATE
				COORDINATION
2				FILE
				INFORMATION
3				NECESSARY ACTION
				NOTE AND RETURN
4				SEE ME
				SIGNATURE

REMARKS

FROM NAME OR TITLE / ORGANIZATION AND LOCATION	DATE / TELEPHONE
Dr Dienek 4X3	26 Apr

DD FORM 1 FEB 64 95 Replaces DA AGO Form 895, 1 Apr 48, and AFHQ Form 13, 19 Mar 47, which may be used.

Dayton D News 24 may 56

Amusements

By GEE MITCHELL

'Patterns' And 'Diabolique' Merit Attention Along With Cool Snap

YOU can't beat the weather for newspaper readership value or conversation material, but at least two of the five new motion pictures that hit Dayton screens simultaneously with the mercury's nosedive Wednesday are as worthy of note as the cool snap.

Mitchell

Out - hallyhooed by its companion feature at Loew's, the screen version of Rod Serling's television repeater, Patterns, sort of sneaked in the back door. It merits admittance at the front entrance.

Diabolique, the French chiller-diller by Henri-Georges Clouzot bowed on at the Art and measured up to its advance notices in every respect.

Diabolique stands alone as the feature attraction at the Art Patterns could at Loew's end, actually does. Inasmuch as the documentary Unidentified Flying Objects (UFO) falls considerably short of being what it's cracked up to be.

UFO, in fact, has little to justify its existence unless you consider its "local angle" in that light. It purports to be a factual account of one man's association with flying saucers. The man in question is Al Chop, former Daily News staffer. There are frequent references to Dayton and to Wright-Patterson Air Force base and even one shot of the Daily News building. Of flying saucers, however, there's little in the picture that hasn't made its appearance in print at one time or the other.

Serling's big business powerhouse, however, lacks only the usual feature length running time since it consumes less than an hour and a half. Padding it out to greater length could only reduce its punching power. As it stands it throws a hefty wallop

'FLYING SAUCERS' DEPICTED IN FILM

Movie Being Released Next Month Has Actual Photos of 'Unidentified Objects'

24 Apr 50

By THOMAS M. PRYOR

Special to The New York Times.

HOLLYWOOD, Calif., April 23 —The public will soon be able to see for the first time in a motion picture scenes of so-called "flying saucers" in action. The footage is contained in an assertedly factual movie history of unexplained aerial phenomena reported from many parts of the country since 1947.

Actual color footage of bright disk-like objects moving at high speed over Utah and Montana is contained in the documentary-type feature, "Unidentified Flying Objects," which was previewed here today.

Made by Greene-Rouse productions, the picture is scheduled to be released next month to theatres by United Artists.

Also seen in the picture is a reproduction of unidentified objects as they assertedly were picked up on radarscopes at Washington International Airport on July 29, 1952. Jet interceptors pursued the objects for six hours without establishing contact.

A foreword to the movie states: "Every fact presented in 'Unidentified Flying Objects' is fully documented with the original documents supporting them now in the custody of the Title Insurance and Trust Company of Los Angeles. They are open to your inspection at any time."

Clarence Greene, the co-producer, said that assistance in compiling the picture, in preparation for more than two years, was given by former Air Force officers and civilians assigned to the investigation of U F O.—unidentified flying objects.

The actual brief motion picture clips of the objects were photographed in Utah, July 2, 1952, by Warrant Officer Delbert C. Newhouse, Navy Chief Photographer, and in Montana, Aug. 15, 1950, by Nicholas Mariana.

The footage was at first classified by the Air Force and subsequently declassified "quietly," Mr Greene stated. He said he obtained rights to the footage used in the movie from Newhouse and Mariana. They also tell of their experience on the screen.

Hollywood Producers Preview Movie Of Illusive "Saucers"

By BOB THOMAS
Associated Press Writer

HOLLYWOOD, April 23—What was described as official Pentagon movies of "unidentified flying objects" was previewed for the press today and so-called flying saucers proved tfi be bright, white and highly illusive.

Producers Clarence Greene and Russell Rouse said their soon-to-be released film is the first full-scale movie treatment of unexplained air phenomena.

The real meat of the 20-minute movie is a few seconds of sketchy filming of bright objects against a blue sky. The producers declined to explain how the films were released to them.

Film clip No. 1 was taken by Nicholas Mariana, general manager of the Great Falls, Mont., baseball club, at the ball park Aug. 15, 1950. The film shows two white spherical objects moving laterally and at the same distance from each other.

Film clip No. 2 was photographed by Delbert C. Newhouse, Navy chief photographer on the Utah desert July 2, 1952. It shows a dancing formation of from 7 to 16 white spots. As with the Montana pictures, these appear to be in the shape of two inverted saucers.

The movie declares the Pentagon decided these objects were neither aircraft, balloons, nor birds. The final decision on their identity is officially "unknown."

The Greene-Rouse movie, titled "Unidentified Flying Objects," documents the entire flying saucer controversy including the presence of 14 unidentified flying objects tracked by radar over Washington, D. C., on July 27, 1952.

Aiding in the film were Albert M. Chop, former press information specialist at the Pentagon, Capt. Edward J. Ruppelt, former chief of "Project Blue Book," code name for Air Force investigation of unidentified flying objects, and Maj. Dewey J. Fournet Jr., liaison officer between the Pentagon and Project Blue Book.

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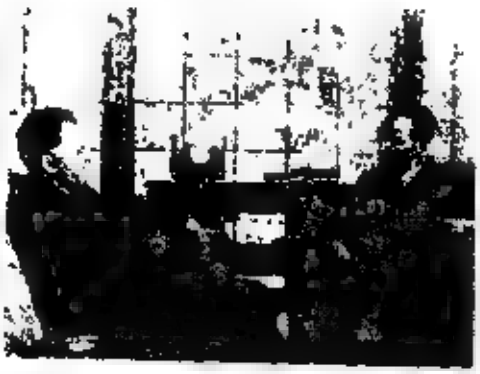

1. Al Chop (played by Tom Tomaro), appointed Press Chief, Air Material Command, disclaims saucer reports as "unadulterated bunk." Later Chop is transferred to the Pentagon, and assigned to "Project Blue Book."

2. Nicholis Mariana describes, to USAF intelligence officers, two UFO's he photographed on 16mm color film over Great Falls, Montana

3. Chop and top "Bluebook" staff view the Delbert C. Newhouse (Tremonton, Utah, saucer film. Intelligence chief exclaims, "How about that?" Official report concludes: "Not aircraft, not birds, not balloons, not faked."

4 Chop awakes to startling news, via morning headline

5 Chop and top Air Force brass watch UFO's maneuver on Washington radar scope.

6. "Red Dog One" is surrounded by group of six UFO's on simulated radar screen.

* ("Unidentified Flying Objects" is a Crown-Rouse Production, of United Artists release Photos courtesy United Artists Corp.)

PENTAGON SHOTS SHOWN

Flying Saucer Movie To Be Released May 9

HOLLYWOOD, April 24.—(AP)—A movie made up of a documentary-type story of the flying saucer controversy is scheduled for release May 9.

Producers Clarence Green and Russell Rouse said at a press preview yesterday that the film brings out "one indisputable fact, that flying saucers are here."

However, Air Secretary Donald Quarles announced last October that an eight-year Air Force investigation of nearly 3000 sightings produced "no evidence of the existence of the popularly termed flying saucers." The Air Force said all but 3 per cent were identified.

The 20-minute movie, "Unidentified Flying Objects," is pegged to what are described as official Pentagon film clips of unidentified objects in flight. The producers declined to say how the Pentagon shots were released to them.

* * *

CLIP NO. 1 was taken by Nicholas Mariana, general manager of the Great Falls, Mont., baseball club, at the ballpark Aug. 15, 1950. It shows two white spherical objects moving laterally and at the same distance from each other.

Clip No. 2 was photographed by Navy Chief Photographer Delbert C. Newhouse on the Utah desert July 2, 1952. It shows a dancing formation of from 7 to 16 white spots.

The picture says the Pentagon decided those objects were neither aircraft, balloons nor birds and classified them officially as "unknown."

The movie centers on the story of Albert M. Chop who as a public information specialist was assigned to the flying saucer study by the Pentagon and the Air Materiel Command. The part of Chop is played by Tom Towers, aviation writer for the Los Angeles Examiner. Chop, now a public relations man at Douglas Aircraft Co., is a former Dayton Daily News staff writer.

*865

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By BOB THOMAS
Associated Press Writer

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Composer Acquitted

Air Defense Command Forbids GOC Link with Film

An Air Defense Command order which banned Ground Observer Corps efforts to publicize a documentary UFO film has recently been revealed to NICAP. The ADC action followed a request by the 4674th Ground Observer Squadron, Miami, to use a GOC display in connection with the moving picture "Unidentified Flying Objects."

A copy of the order follows:

Headquarters
4674th GROUND OBSERVER SQUADRON
United States Air Force
Dobbins Air Force Base
Marietta, Georgia

O&T 17 May 1957

SUBJECT United Artists Film "UFO"

TO: Commander, All Detachments
4674th Ground Observer Squadron

The following message from ADC is quoted for your information and guidance

"ADHIS 22573. Disapprove requests for GOC Display in connection with commercial film pertaining to the controversial subject of flying saucers. Use of Display would involve the risk that Air Force could be considered as endorsing subject matter and authenticity of the filmed version of flying saucers."

BY ORDER OF THE COMMANDER:

/S/
DONALD A. ZEINE, Major USAF
Adjutant

The official request to tie in the GOC program with the documentary United Artists film was made by Capt. William B. Walburn, USAF, Commander of Detachment 8, 4674th Squadron.

The ADC refusal seems to answer, once and for all, the question which NICAP members have frequently asked:

Was the documentary film "Unidentified Flying Objects" produced with Air Force cooperation—or against its wishes?

From letters received, it appears that less than half of NICAP's members saw this moving picture, which includes the famous Tremonton, Utah film taken by Warrant Officer D. C. Newhouse, and the movie of two UFO's taken by Nick Mariana at Great Falls, Montana.

Even those who did see the picture may be unaware of the steps which led to public use of the Newhouse and Mariana shots.

The action for narrative purposes in the film is centered on Albert M. Chop, former Air Force public relations official who handled UFO information in the Pentagon. (Chop is now a NICAP Special Adviser.) Cleared for secret reports, Chop learned of the officially analyzed Mariana film taken on August 15, 1950, which shows two silvery-looking discs flying over the Great Falls baseball park.

In 1952 Chop learned of the Newhouse moving picture taken on July 2, a color film which shows a formation of UFO's maneuvering over Utah. Later Newhouse described the objects as resembling two ple pans, one inverted on top of the other. The film was secretly analyzed for months, first by the Air Force then by the Navy. Conclusion: The UFO's were not conventional objects.

Al Chop also took part in the story that made headlines in July 1952 during the UFO sightings over Washington National Airport. With Major Dewey Fournet (now a member of NICAP's Board of Governors) he watched Control Center radar experts track a group of mysterious objects. Both he and Fournet also heard an AF jet pilot's tense radio report that the UFO's were closing in on him—an incident later related in the documentary film.

When Chop resigned in 1953 to take a public relations job with an aircraft firm, he and Captain Edward Ruppelt met in California with film producer Clarence Green and the idea of the movie "U.F.O." was born. By this time Ruppelt was on inactive duty and free, like Chop, to express his personal beliefs. Green, senior partner of Green-Rouse Productions, was strongly interested because he had seen a UFO a few years before.

Working together, Ruppelt, Chop and Clarence Green persuaded Warrant Officer

(Continued on Page 15)

Scene from United Artist release, "UNIDENTIFIED FLYING OBJECTS." Left to right: D. Holden, Navy radar expert; Albert M. Chop, Air Force press official, Major Dewey Fournet, Pentagon Liaison Officer; and CAA Air Traffic Controller Harry Barnes. Chop was portrayed in the film by Tom Towers, Aviation Editor of the Los Angeles Examiner, who has been interested in UFO's for some time and often writes on the subject in his columns. The other roles were played by actors.

UFO FILM from Page 14

Newhouse and Nick Mariana to let their UFO films be used. Since the Air Force had publicly stated that the films were the personal property of these men, there was no violation of security, though the Air Force still refused to let the press and the public see the official copies.

Though Producer Green offered the Air Force full cooperation, the official analysis reports of the two films were not released to him. Some Air Force officers privately favored giving Green—and the public—all available evidence, but they were overruled.

After the documentary film was released the Air Force denied it had cleared, sponsored, or in any way coordinated any motion pictures on UFO's. The recent Air Defense Command action, cited at the start of this story, should end all conjecture that this was an official step toward "educating the public."

Despite this, the picture has performed a great service. Many former skeptics have reported their conviction as to the reality of UFO's after seeing this film. NICAP urges members who have not seen it to secure repeat runs at local theaters. In several cases, UFO clubs or groups have arranged for special showings at low rates, usually at hours when theaters normally have small audiences.

We believe this factual revelation of UFO evidence will be well worth any special efforts required, for despite the lack of an Air Force blessing, this is an important step toward ending official secrecy. ●

SECRET SAUCER MOVIES FINALLY TO BE SEEN BY PUBLIC: It was announced recently that Greene-Rouse Productions of Hollywood will release a full-length documentary movie on saucers some time in May. The documentary will contain two actual motion picture clips of saucers; one taken on July 2, 1952, by Warrant Officer Delbert C. Newhouse (the famous Tremonton film which Keyhoe talks so much about in his "Flying Saucers from Outer Space"); and the other taken in Montana on August 15, 1950, by Nicholas Mariana. These films were kept from the public by the Air Force for a long time. Now that they are finally available, they should be of great interest to all people interested in the subject of saucers.

MOVIE "UFO" REVEALS NEW EVIDENCE

Many readers have written in suggesting I comment on the late movie, "UFO" While the movie is self exploratory the cause for wonderment lies in identifying its true sponsor Most material used is "old hat" and known to most saucerites, but as we see it, it is not so much the vintage of the cases portrayed as it is the release of new evidence surrounding these cases, notably the Washington D.C. radar episode of 1952. Also of interest is the release of the Tremonton and Montana films, long suppressed from public review. But, no one seems willing to tell how such film was finally extracted from super secrecy or how and why the facts were disclosed regarding the intelligent maneuver of UFO's in the Washington radar affair Curious, the writer wrote to the Air Force Press Desk asking many questions. He got this laconic reply, dated June 5, 1956, from Major William James "I am sorry that the Air Force is unable to comment on the movie "UFO." This movie was not submitted to the Air Force prior to release."

Just as simple as that! But upon seeing the Tremonton film, I find the offical explanation for that film not as simple. A letter received from Captain R C White, OPI dated Nov 17, 1955 read "No definite analysis of the Tremonton film has ever been made and it is considered as an unknown. However we think the two specks represent migratory birds. It is doubtful that any conclusive determination will ever be made since there is so little to go on."

Those who saw the film should be able to determine for themselves if the specks were birds. According to Capt Ruppelt's late book, the photographer, Delbert Newhouse, says they were not and CRIFO concurs.

ng Saucers' and the Papagos

'Objects' and Indians in Previewed Films

Hollywood Letter

By [illegible]
Hollywood

Within two days I have seen previews of two new films which show the wide range of subject matter the documentary can survey—and the wide variety of public impact the documentary can be expected to achieve.

"Unidentified Flying Objects" [illegible] worth of certain unexplained sightings of so-called "flying saucers." It tells a somewhat [illegible] but exciting story about [illegible] unknown." It [illegible] the future [illegible] United Artists [illegible] at May [illegible] in Los Angeles, and it probably will pick up [illegible]

* * *

"Papago," on the other hand, is a quiet little short subject about the history of an Indian tribe. Primarily a study of the tribe's present in its relation to the past, it has a strangely comfort[illegible] quality in contrast to the other film [illegible] But a [illegible] be [illegible] and will probably [illegible] to great public interest.

The making of the flying saucer picture followed the availability of two motion-picture records of "flying saucers." These are among the 15 per cent of reported observations which have not yet been explained away by military authorities as natural phenomena.

Clarence Greene (who has produced, with Russell Rouse, such diverse films as "The Well," "The Thief," and [illegible]) is evidently a man of considerable tenacity and persuasion.

Four years ago he [illegible] in the sky. He got in touch with the Air Force [illegible] The latter [illegible] the Air Force [illegible] Capt. Edward J. Ruppelt [illegible] investigation [illegible] Mr. Greene's [illegible]

Mr. Greene was able to get the two films from the men who [illegible] Great Falls, Mont., [illegible] Brooklyn Dodgers [illegible] farm team [illegible] while he was at the [illegible] camera. Navy Chief Photographer Delbert C. Newhouse [illegible] 12 [illegible] in different directions [illegible]

* * *

The two color films were analyzed for many days at the Pentagon. I was [illegible] the films, [illegible] that the objects were not birds, balloons, or aircraft [illegible] unknowns."

Long afterward, he came [illegible] the films were returned to [illegible] Mr. Greene [illegible] down but then [illegible] documentary [illegible] (three times) [illegible] them with the Title Insurance and Trust Company of Los Angeles.

The rest of his story is a dramatization of Mr. [illegible] public information [illegible] to the [illegible] 1952 [illegible] with intelligence [illegible] space.

Part of the story is the [illegible] of a [illegible] Washington, D.C., on July 26, 1952. At an early stage [illegible] President Truman was [illegible] and he [illegible] informed the public that it was [illegible] by a temperature inversion. Mr. Greene's advisers [illegible] charts of the period [illegible] such a theory, and that the theory was discarded at the time.

Until the completed film was shown to the press here in Hollywood, Mr. Greene [illegible] to keep his operations a secret [illegible] the Pentagon [illegible] the military [illegible] Perhaps [illegible] public [illegible] any [illegible]

* * *

What can a [illegible] Hollywood [illegible] AL [illegible] the [illegible] four years ago, he [illegible] as follows: "[illegible] that."

I [illegible] his [illegible]

Yet, I can't help recalling certain remarkably relevant scenes in that other gentler documentary about the Papago Indians of Arizona (produced and directed [illegible] by [illegible]) [illegible] documentary [illegible] the lives of the Papagos in covered wagon [illegible]

In [illegible] years—[illegible] we have [illegible] Indians before [illegible] of an American [illegible]

This is a tribe which [illegible] the United States [illegible] with them. These friendly [illegible] Indians were [illegible] by the [illegible] their own [illegible] they were persuaded by their white [illegible] trucks and refrigerators.

[illegible] the Papagos [illegible] a different approach to religious reverence and a different set of material [illegible]

[illegible] only two [illegible] Papago [illegible] one of these [illegible] carry symbolic birds; the men carry home-made "clouds." (All are outfitted [illegible] in sensible modern garb. Here and there the nimble feet are [illegible])

Note!

FOR THE FIRST TIME!

THE MOTION PICTURE SCOOP OF THE CENTURY!

UFO

UNIDENTIFIED FLYING OBJECTS

Written by FRANCIS MARION • Produced by CLARENCE GREENE • Directed by WINSTON JONES
Released thru United Artists • With the people who actually lived the story of the U.F.O.

STARTS TOMORROW COOL **LOEW'S**

LADY DAY
"ALEXANDER THE GREAT"

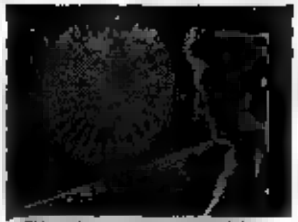
AND CO-FEATURE **"PATTERNS"** VAN HEFLIN EVERETT SLOANE

NOW! THE TRUTH ABOUT FLYING SAUCERS!

You'll see his "top secret" films of them for the first time!

He "caught" them with his camera!

This plane crashed trying to catch them!



This radar screen "captured" them over Washington, D.C.

He almost collided with one of them!

This jet fought a fantastic dogfight with one of them!

SEE IT ALL AS IT ACTUALLY HAPPENED!...and is still happening!

THE MOTION PICTURE SCOOP OF THE CENTURY!

U F O

CLARENCE GREENE and RUSSELL ROUSE present

UNIDENTIFIED FLYING OBJECTS

STARTS–TODAY

LOEW'S

DOORS OPEN 11:15 A.M.—MATINEE 50c—EVENING 75c

AND CO-FEATURE

VAN HEFLIN in

"PATTERNS"

...OF POWER!

Flying Saucer Problem Reviewed In New Film

The subject of flying saucers is reviewed in an a loged documentary movie, "Unidentified Flying Objects," that is just as controversial as the mysterious objects it attempts to cover.

The movie opens today at Loew's theater, and it should prove particularly interesting because a former Daytonian, Al Chop, is the central character.

Chop worked as a reporter for The Dayton Daily News and for Acme Aluminum Alloys in public relations before getting a job at Wright-Patterson Air Force base in the public information office.

Chop worked there as a writer, and later in the Pentagon at Washington, and the picture contends he devoted much of his time to writing about and handling news releases on flying objects.

The man who plays Chop, Tom Towers, a Los Angeles newspaperman, serves as narrator and star of the film pulling all of the links together.

Another key figure is Capt. Edward J. Ruppelt now with an aircraft company, reportedly in charge of the flying saucer investigation project at the field during Chop's time, the early 1950's.

Towers

The picture covers the subject in documentary fashion, although it does not have the blessing or the support of the Air Force.

Through the eyes of Chop the movie viewers witness interviews of persons who allegedly sighted saucers. Two reported movies made of distant saucers are shown for the first time.

Particularly suspenseful are the scenes taken in the Fort Knox flight tower, where observers are following a group of unidentified objects being chased by pilots, one of whom is killed, and at a Washington airport where a number of objects are caught on the radar screen as they fly over the city.

In an effort to substantiate the story, the picture makes no effort to show closeups of flying saucers and admits a great majority of the reports of saucers have been explained, that only a few objects remain unidentified.

The picture does provide some [illegible] eresting moments, and provoke[illegible] ne thoughts as well as some [illegible] pticism, particularly in this [illegible] ter when [illegible] g [illegible] s

story attracted so much attention when it was shown on TV the first time that it was repeated within three weeks.

—BRAINARD PLATT

21 May 1956

MEMORANDUM FOR: The Scientific Advisor

SUBJECT: Report on Preview of Motion Picture "Unidentified Flying Objects

1. Through the personal assistance of Col. Cross, Chief, Office of Information Services, ARC, an advance copy of the film "Unidentified Flying Objects" was previewed by pertinent members of ATIC on Friday, 18 May 1956, in Bldg 167, Area B, Wright Patterson Air Force Base.

2. The following represent the general comments and opinions with regard to the film previewed:

a. The film, purporting, to be factual and documentary, appears to over dramatize each case sighting, and, by padding, makes a brief documentary into a full-length feature.

b. The film strives, through its showing, to maintain the impression that an unknown menace or super-intelligent being, alien to this world, is constantly in the background.

c. The case sightings and the individuals portrayed (the acting was very amateurish for a Hollywood production) was factual to a certain extent. However, the conclusions, specific or implied, are those of the producer's and not those of the Air Force.

d. In each instance of the portrayal of a case, the film dramatically, and with great suspense, presents the incident and circumstances surrounding the sighting, then abruptly drops the matter. [redacted] This is, of course, the desired effect, calculated to let the viewer form his own (influenced) conclusions.

3. The following represent the specific comments or conclusions with reference to each case portrayed by the film, as supported by official materiel or data:

a. Great Falls (Marianna Case): We do not agree with the films conclusion "not aircraft, not balloons, not birds." An extremely able and very detailed analyses performed by the scientific laboratory of one of America's largest aircraft companies, indicated, in conclusion, that, "aircraft reflections might possibly look like the images on the film." Supporting photos from the same analyses also indicate that an aircraft 100 feet in length, when observed from 10 to 12 miles looked exactly like the individual "white blops" shown. The absence of sound cannot be construed that the object is not an aircraft. As any personal experience will show, an aircraft may often be observed in the air at some distance, yet no sound may be heard.

NOTE: Ruppelt, Chop and Fournet were portrayed by actors, but were mentioned in the credits as Technical Advisors to the Producer. General Garland was represented by an actor, but not named. General Samford's news reel was dubbed in. W/O Newhouse, USN and Mr. Marianna played themselves.

other than that both appeared to be wingless and somewhat cylindrical. This case is classed as an "unknown" by virtue of the high credibility given to observer's of this type.

f. Washington Radar Sighting:

(1) In the Department of Defense "Minutes of Press Conference Held by Major General John A. Samford", 29 July 1952, copy in file at both ATIC and PIO, it was explained to the press that these sightings (pages 5 through 17) may have been the result of a combination of factors: temperature inversions, moisture lapses, and atmospheric conditions which bend radar rays in such a manner that undetected ground targets become visible on the radar screen, in a random manner from one antenna rear to the next, thus allowing some misinterpretation that these stationary targets were moving.

(2) It should be emphasized that no photos or motion pictures were ever made of the radar screen, as shown in the motion picture.

(3) The attempt to represent the blips as possible interplanetary space ships, gleefully playing "tag" with our jet aircraft over Washington, undoubtedly will produce the desired dramatic mood and suspense. However, the incident over the radar scope was unscientific, not supported by fact, nor the conclusions of the Air Force.

g. Sperry Case: This office has no file on this particular case, regarding an observer, an airline pilot.

George T. Gregory

GEORGE T. GREGORY
Captain, USAF
Project Monitor - UFO

COORDINATION: (In turn)

C. D. Hill

M/Sgt. C. D. Hill, AFOIN-4E4

Robert M. Buckmaster

Major Robert M. Buckmaster
Chief, Photographic Branch

Roy E. James

Mr. Roy E. James
Actg Chief, Electronics Division

William F. Willner

Major William F. Willner
Chief, Photo Analysis Branch

b. Trenonton (Newhouse Case).

(1) We do not agree with the film's conclusion "not aircraft, not balloons, not birds." A comparative analyses was made of a copy from the original film strip, and that shown by Green-Rouse by Major Willner and Major Buckmaster, ATIC photo specialists. The original film shows the presence of sea gulls on a number of frames. This is not shown in the Hollywood version.

( ) Further, it is not necessary to state that a particular species of sea gull are prominent in certain parts of Utah. It should be pointed out that the Utah species is almost pure-white in color, in contrast to its smoky or grey-marked sea-coast cousin.

(3) In the opinion of ATIC photo specialists, any under exposure of these sea gulls against a high-lighted sky would tend to "wash out" details of the body and wing outline of the gulls, giving them a white circular appearance at a distance. (Officer Newhouse openly admitted in the film that he under exposed his "shots".)

(4) This is confirmed by the original analysis in our files, made in early 1953 by the Photo Reconnaissance Laboratory, WADC. These reports were not shown to Majors Willner and Buckmaster for review until after their analyses (items 1, 2, and 3 above) were completed.

c. Mantell Case: Conclusions of the Air Force are that Capt. Mantell was apparently trying to intercept a fast riding "Sky Hook" balloon. The "Sky Hook" project was known only to few people at that time. Unlike weather balloons "Sky Hook" balloons were huge (100 feet in diameter), coinciding with Capt. Mantell's statement that "it's tremendous in size! Capt. Ruppelt confirms the fact that it was a balloon in his book "Report on UFOs", page 60, 3rd paragraph.

d. Fargo Case. Our files indicate that this was undoubtedly an erratic moving balloon which Lt. Gorman encountered. Capt. Ruppelt also confirms this in his book, page 67, top.

e. Airline Pilots Case: As portrayed on the screen this is an apparent attempt to document the "Chiles-Whitted Case". If so, our comment: A description of the UFO alleged to have been closely observed by each of these veteran Eastern airlines pilots will be found in page 81 of the Project Bluebook's Report Nr. 14 "Analysis of Unidentified Flying Objects". Although both observer's were sitting next to each other and observed the same object together, the sketch made by each pilot separately cannot be said to be similar,

Review of 1st Ltr. June 1956

5 June 1956

MEMORANDUM FOR: Office of the Scientific Advisor

SUBJECT: Final Report - Preview of Motion Picture "Unidentified Flying Objects"

1. Reference is made to memorandum from this office, dated 21 May 1956, which was in the nature of a preliminary report on the UFO preview of subject UFO film shown privately on 16 May 1956. A copy of the preliminary report is attached.

2. In view of the fact that the first report was hurriedly prepared in order to immediately provide the Directorate of Intelligence and PIO with some advance comments and analysis of the film, a second, more careful review of this film was subsequently made at a local theater. The exact sequence, dates and localities of the UFO sightings portrayed were recorded, providing this office with exact data upon which to make a better comparison with the facts and material in the UFO project files.

3. The following represent the general and specific comments of this office, as compared with those made on the preliminary report referenced in par. 1 above (in order of sightings shown):

a. General Comments: The general comments and opinions stated in the preliminary report, par. 2a. through 2d. are substantially correct.

b. Specific Comments and Conclusions of Each UFO Case, (in order shown):

(1) Kenneth Arnold Case (Mt. Rainier, Wash.): This was the first UFO case in the U.S., and the one which, undoubtedly, triggered off the rest from that time on. It was not commented on in the preliminary report. The following is a technical analysis made of this case by Dr. Hynek on the basis of Mr. Arnold's own statements: Arnold made drawings of objects showing definite shape, and stated that objects seemed about 20 times as long as wide, estimating them as 45-50 feet long. He also estimated the distance as 20-25 miles and clocked them as going 47 miles in 102 seconds (1700 MPH). These statements are mutually contradictory: If the distance were correct, then in order for details to be seen, objects must have been of the order of 100 x 2000 feet in size. If, we adopt a reasonable size - Arnold's own estimate, in fact, of 50 feet long, hence about 3 feet wide, the objects must have been closer than a mile, obviously contrary to his statement. If we adopt a reasonable limiting size to the objects of 20 X 400 feet, objects must have been closer than six miles to have shown the detail indicated by Arnold. At this distance, angular speed observed corresponds to a maximum speed of 400 MPH. In all probability, therefore, objects were much closer than thought, and moving at definitely "sub-sonic" speeds. Note: Observational data taken from original Arnold files. There were no witnesses or other observers to this sighting.

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7 JAN 48 (2) Mantell Case (Godman Field, Ky.): This office maintains the comments made on the preliminary report, par. 3c.

(3) Sperry Case (Wash. D.C.): This office does not have this case on file. UFO project files were reorganized and records disposition action was undoubtedly taken many times since 1947. It is also possible that this case was not formally or officially submitted to ATIC. Investigative or analytical action on UFO cases is not initiated merely by a report or mention of the sighting in a newspaper or magazine. The undersigned project officer has found a magazine article excerpt of the case; however, a detailed search of records did not disclose any material on this case.

29 MAY 50

(4) Sioux City Case (Iowa): This was erroneously commented upon as resembling the "Chiles-Whitted" case (See par. 3c. of preliminary report). After a second review of the motion picture version, it has been determined that this UFO sighting made by two airline pilots, Vinther and Bachmeier, after their take-off from the Sioux City airport was on the night of 20 January 1951. The "Chiles-Whitted" and "Vinther-Bachmeier" cases resemble each other. Both airline pilot crews observed "a long, slender cigar shaped object." In the Sioux City sighting, the object was described as "one-half times the size of a B-29 fuselage, lights similar to running lights being blinked - and a bright light similar to a landing light visible for a short period..." Our comments, on the basis of UFO records: The description appears to describe a B-36 as seen from another aircraft at night. It could have been a B-36, slightly off course, orbiting over the airport, making a visual check in the vicinity for training purposes, or other similar reasons. It was determined by ATIC that at that time (1951) SAC did not maintain records of their training flights within the ZI.

(5) Goddard Case (Atlanta, Georgia): Briefly mentioned in the UFO film. No record of this particular sighting (by name or locality) in our files. No date of sighting was given in the film.

10 Aug 50

(6) Marianne Case (Great Falls, Mont.): The conclusions made in the preliminary report are substantially correct. The following is a final conclusion derived by Dr. Hynek and undersigned, and verbally transmitted toyour office from Ohio State University on the evening of 29 May 1956, per your request: In 1950, after an ATIC interrogation of witnesses and evaluation of data, and our opinion at that time was that the UFO's apparently were two F-94 aircraft. In support of this contention, a few weeks ago an extremely

able and very detailed analysis was made by a private laboratory of the film strip in question. Their conclusions, in part, were that, "photographs of the UFO's indicate that airplane reflections might possibly look like the images shown on the film. The fact that the images do fade is reminiscent of airplane reflective phenomena." Also, strong corroborative evidence is given by simulated photographs of aircraft at various distances made by this laboratory which show that aircraft can look similar to the two white blops shown on the Montana films. There is, therefore, no compelling reason to alter our original evaluation analysis of Marianna Case - attached in files and signed by Dr. J. A. Hynek and undersigned.

(7) Newhouse Case (Tremonton, Utah): The conclusions made in the preliminary report are substantially correct. The following is a final conclusion derived by Dr. Hynek and undersigned, and verbally transmitted to your office from Ohio State University on the evening of 29 May 1956, per your request: Movies were studied by Photo Reconnaissance Laboratory (ADC) in 1952, shortly after sighting took place. Their considered opinion was that there was a strong possibility that these were sea gulls soaring thermal air currents, and appearing as bright spots of light similar to those shown in the movie. Our files show that this report was counter-signed by Capt. Ruppelt. Also, our original evaluation was based, in part, on movies of sea gulls taken at various distances which showed that the sea gulls appeared similar to the objects in the film. This film was shown by Capt. Ruppelt at a private showing in Washington which was also attended by Dr. Hynek. Further, a critical analysis made a few days ago of this film strip by ATIC photo specialists, without their knowledge of the original evaluation, resulted in the same opinion i.e. that these were sea gulls. It should also be pointed out that in our copy of the original film, sea gulls appeared in a number of frames. This, however, isnot shown in the Hollywood version of the film. Therefore, there is in this case also no compelling reason to change our original opinions.

2 Jul 52

(8) Fargo Case (Lt. Gorman, N.D.): This office maintains the comments made on the preliminary report, par. 3d.

/Advs

(9) Washington Radar Sightings (29 July 1952, 26 July 1952): This office maintains the comments made on the preliminary report, par. 3f.

1 Incl:
Cy, Memo, dtd 26 May 1956

GEORGE T. GREGORY
Captain, USAF
Chief, Aerial Phenomena Group

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT-PATTERSON AIR FORCE BASE
OHIO

1 June 1956

MEMORANDUM FOR DIRECTOR OF INTELLIGENCE
Attn Lt Colonel T. R. Johnson, AFOIN-X

SUBJECT: (Uncld) UFO Movie

1. The following statements concerning two of the UFO sightings described in the recently released movie, are submitted in response to Mr. Monts' request of 29 May 1956.

a. The Marianna Case - Montana - 1950. The original Air Force conclusion, based on the interrogation of witnesses and the evaluation of the data, was that the UFOs were, in all probability, two Air Force F-94 fighter aircraft known to be in the vicinity at the time.

Simulated photographs of aircraft at various distances, made by an aircraft manufacturing firm in a recent independent and unsolicited analysis of the Marianna film, show striking similarity to the two white blops in this film.

Based on the degree of credibility accorded this early ATIC evaluation and the strong corroborative evidence supplied by the recent independent analysis, the Air Force has no compelling reason to alter its original conclusion.

b. The Newhouse Case - Utah - 1952 The original film was analyzed by an Air Force Photo Reconnaissance Laboratory shortly after the sighting The conclusion reached was that a strong possibility existed that the bright spots of light appearing on the film were caused by seagulls soaring in thermal air currents. The credibility of the conclusion was undoubtedly supported by the presence of identifiable seagulls in some of the frames.

This conclusion was further strengthened by movies of seagulls, taken at various distances, which showed them as bright spots of light similar to those in the Newhouse film.

WX91

WASHINGTON, MAY 29.--(UP)--HOLLYWOOD PRODUCER CLARENCE GREENE DROPPED INTO TOWN TODAY WITH A FILM PURPORTING TO SHOW FLYING SAUCERS IN THE SKY.

GREENE WAS UNABLE TO PERSUADE THE DEFENSE DEPARTMENT TO SEND A REPRESENTATIVE TO VIEW THE PICTURE ENTITLED "UNIDENTIFIED FLYING OBJECTS." THE DEPARTMENT HAS CONCLUDED AFTER A THOROUGH INVESTIGATIONS THAT FLYING SAUCERS DO NOT EXIST.

~~GREENE ALSO TRIED, TO NO AVAIL, TO CONTACT SEN.~~

GREENE ALSO TRIED, TO NO AVAIL, TO CONTACT SEN. RICHARD B. RUSSELL (D-GA.) ABOUT A REPORT THAT HE SIGHTED UNKNOWN OBJECTS IN THE SKY IN EUROPE SEVERAL YEARS AGO.

THE MOVIE, WHICH PURPORTS TO BE FACTUAL, IS BASED ON TWO SHOTS OF THE ALLEGED SAUCERS AND STATEMENTS BY PERSONS WHO CLAIM TO HAVE EITHER OBSERVED THEM IN THE AIR OR ON RADAR SCOPES.

GREENE SAID THE SHOTS OF THE SAUCERS WERE OBTAINED FROM THE AIR FORCE WHICH "SECRETLY DECLASSIFIED THEM." HE SAID THEY WERE MADE BY NICHOLAS MARIANA, A MONTANA BUSINESSMAN, AND NAVAL CRIME PHOTOGRAPHER DELBERT NEWHOUSE IN MONTANA AND UTAH TWO YEARS AGAIT.

GREENE SAID OFFICIAL GOVERNMENT SOURCES HAD VIEWED THE FILMS AND CONCLUDED THEY DEPICTED UNIDENTIFIABLE FLYING OBJECTS.

MANY OF THE CHARACTERS IN THE FILM PORTRAY THEMSELVES AND GREENE CONTENDS THAT EVERY FACT IN IT IS DOCUMENTED.

HE SAID HE HAD ABOUT $1 MILLION INVESTED IN THE PICTURE AND ADMITTED HE WAS OUT TO SELL IT. BUT, HE SAID, HE ALSO WANTS TO PROVE THAT THERE IS SOMETHING TO THE FLYING SAUCER REPORTS. HE SAID HE HAD SEEN ONE HIMSELF.

KO156A5/29

Note

"Secretly" declassified ???

FILE CLASS
OFFICIAL FILE COPY

22 May 56 OFFICE OF RECORD

AFOIN-4

MEMORANDUM FOR: The Scientific Advisor

SUBJECT: Report on Preview of Motion Picture "Unidentified Flying Objects"

AFOIN-4X2b

1. Through the personal assistance of Col. Cross, Chief, Office of Information Services, AMC, an advance copy of the film "Unidentified Flying Objects" was previewed by pertinent members of ATIC on Friday, 18 May 1956, in Bldg 167, Area B, Wright Patterson Air Force Base.

AFOIN-4X3

2. The following represent the general comments and opinions with regard to the film previewed:

AFOIN-4X4a

a. The film, purporting, to be factual and documentary, appears over dramatize each case sighting.

AFOIN-4A

b. The film strives, through its showing, to maintain the impression that an unknown menace or super-intelligent being, alien this world, is constantly in the background.

AFOIN-4B

c. The case sightings and the individuals portrayed (the acting was very amateurish for a Hollywood production) was factual to a certain extent. However, the conclusions, specific or implied, are those of the producer's and not those of the Air Force.

AFOIN-4C

d. In each instance of the portrayal of a case, the film dramatically, and with great suspense, presents the incident and circumstances surrounding the sighting, then abruptly drops the matter in a "lady or the tiger" technique. This is, of course, the desired effect, calculated to let the viewer form his own (influenced) conclusions.

AFOIN-4D

3. The following represent the specific comments or conclusions with reference to each case portrayed by the film, as supported by official material or data:

AFOIN-4E

a. Great Falls (Marianna Case): We do not agree with the films conclusion "not aircraft, not balloons, not birds." An extremely able and very detailed analyses performed by the scientific laboratory of one of America's largest aircraft companies, indicated, in conclusion, that, "aircraft reflections might possibly look like the images on the film." Supporting photos from the same analyses also indicate that an aircraft 100 feet in length, when observed from 10 to 12 miles looked exactly like the individual "white blops" shown. The absence of sound cannot be construed that the object is not an aircraft. As any personal experience will show, an aircraft may often be observed in the air at some distance, yet no sound may be heard.

AFOIN-4F

NOTE: Doppelt, Chop and Pearson were portrayed by actors [illegible] is the credit to Technical Advisors to the Produ[illegible] was represented by an actor, but not named. Genera[illegible] reel was dubbed in. W/O Bruhoise, USN and Mr. Marian[illegible]

OTH

DD FORM [illegible] [illegible]

b. Tremonton Case:

(1) We do not agree with the film's conclusion 'not aircraft, not balloons, not birds." A comparative analyses was made of a copy from the original film strip, and that shown by Green-House by Major Willmer and Major Buchmaster, ATIC photo specialists. The original film shows the presence of sea gulls on a number of frames. This is not shown in the Hollywood version.

( ) Further, it is not necessary to state that a particular species of sea gull are prominent in certain parts of Utah. It should be pointed out that the Utah species is almost pure-white in color, in contrast to its smoky or grey-marked sea-coast cousin.

(3) In the opinion of ATIC photo specialists, any under exposure of these sea gulls against a high-lighted sky would tend to "wash out" details of the body and wing outline of the gulls, giving them a white circular appearance at a distance. (Officer Newhouse openly admitted in the film that he under exposed his "shots".)

(4) This is confirmed by the original analysis in our files, made in early 1953 by the Photo Reconnaissance Laboratory, WADC. These reports were not shown to Majors Willmer and Buchmaster for review until after their analyses (items 1, 2, and 3 above) were completed.

c. Mantell Case: Conclusions of the Air Force are that Capt. Mantell was apparently trying to intercept a fast riding "Sky Hook" balloon. The "Sky Hook" project was known only to few people at that time. Unlike weather balloons "Sky Hook" balloons were huge (100 feet in diameter), coinciding with Capt. Mantell's statement that "it's tremendous in size!" Capt. Ruppelt confirms the fact that it was a balloon in his book "Report on UFOs", page 60, 3rd paragraph.

d. Fargo Case: Our files indicate that this was undoubtedly an erratic moving balloon which Lt. Gorman encountered. Capt. Ruppelt also confirms this in his book, page 67, top.

e. Airline Pilots Case: As portrayed on the screen this is an apparent attempt to document the "Chiles-Whitted Case". If so, our comment: A description of the UFO alleged to have been closely observed by each of these veteran Eastern Airlines pilots will be found in page 81 of the Project Blue Book Report Nr. 14 "Analysis of Unidentified Flying Objects". Although both observer's were sitting next to each other and observed the same object, together, the sketch made by each pilot separately cannot be said to be similar.

FOR	
90 DAYS	
INITIAL	

FILE CLASS: _____
OFFICIAL FILE COPY

OFFICE OF RECORD

AFOIN-4

AFOIN-4X2b

AFOIN-4X2c

AFOIN-4X3

AFOIN-4X4

AFOIN-4A

AFOIN-4B

AFOIN-4C

AFOIN-4D

AFOIN-4E

AFOIN-4F

OTHERS

other than that both appeared to be wingless and somewhat cylindrical. This case is classed as an "unknown" by virtue of the high credibility given to observer's of this type.

f. Washington Radar Sighting:

(1) In the Department of Defense "Minutes of Press Conference Held Major General John A. Samford", 29 July 1952, copy in file at both AFIC and PIO, it was explained to the press that these sightings (pages 5 through 17) may have been the result of a combination of factors: temperature inversions, moisture lapses, and atmospheric conditions which bend radar rays in such a manner that undetected ground targets become visible on the radar screen, in a random manner from one antenna rear to the next, thus allowing some misinterpretation that these stationary targets were moving.

(2) It should be emphasized that no photos or motion pictures were ever made of the radar screen, as shown in the motion picture.

(3) The attempt to represent the blips as possible interplanetary space ships, gleefully playing "tag" with our jet aircraft over Washington, undoubtedly will produce the desired dramatic mood and suspense. However, the incident over the radar scope was unscientific, not supported by fact, nor the conclusions of the Air Force.

g. Sperry Case: This office has no file on this particular case, regarding an observer, an airline pilot.

GEORGE T. GREGORY
Captain, USAF
Project Monitor - UFO

COORDINATION: (In turn)

Maj. O. D. Hill, AFOIN-4BA

Major Robert N. Buckmaster
Chief, Photographic Branch

Mr. Roy L. Jones
Actg Chief, Electronics Division

Major William F. Willmer
Chief, Photo Analysis Branch

PERM	
TEMP	
90 DAYS	
INITIAL	

TIC FORM 144 (REV 20 FEB 50) ROUTING AND COORDINATION SHEET AF-DFD-D-29 MAR 54 2500

ROUTING / COORDINATION

AFOIN-2

AFOIN-4X2b

AFOIN-4X2

AFOIN-4X3

AFOIN-4

AFOIN-4

AFOIN-4

AFOIN-4

AFOIN-4

AFOIN-4

AFOIN-4

OTHERS

FILE CLASS
OFFICIAL FILE COPY

OFFICE OF RECORD

17 May 1956

MEMORANDUM FOR AFOIN-4X1
ATTN: Mr. Archer

SUBJECT: Special Showing of UFO Film for ATIC, 1430 hours, Friday, 18 May 1956

1. During the last one and one-half months the undersigned UFO Project Officer has made numerous attempts, and repeated contacts with outside agencies, without success to either obtain a copy, or arrange for a preview of a film entitled "Unidentified Flying Objects", which was known to have the middle of May as its release date to the general public (see attached press clippings).

2. This film may stir up a storm of public controversy similar to that which USAF was subjected to in 1952 with regard to UFOs, as result of the unwarranted sensationalism generated by so-called "UFO experts", writers, and publishers.

3. The problem was personally presented to Col. Cross, Chief, Office of Information Services, and the gravity of the situation explained. Through his personal efforts, and contacts with certain officials in the motion picture industry, Col Cross was somehow able to obtain one copy of the film. This film must be shown and returned to the unknown lender immediately.

4. This film, purports, by implication, to have official USAF sanction, in that three former UFO project personnel are the technical advisors to the film.

5. In conferences held with Lt Col Johnson of General Sanford's office, Dr. Hynek, Prime UFO consultant, Scientific Advisor's office and other pertinent personnel, it was agreed by all that ATIC should review this film before any wide-scale release to the public, for purposes of "countermeasures", that is, the preparation of some official comment to be kept in readiness to queries which will undoubtedly arise.

6. ATIC Photo Specialists, Major Buckmaster and Major Willner, were given copies of the original "Marianna" and "Tremonton" films, with request that they review these strips for the purpose of making some comparative analysis, after the Hollywood version is shown.

Dr. Hynek, has been contacted, and will leave Columbus in sufficient time to review the film. Comments resulting from discussions between Dr. Hynek and photo specialists, should be most helpful in drafting some final comment reflecting the USAF viewpoint.

1

PERM

90 DAYS

INITIAL

TIC FORM 144 (REV 30 FEB 50) ROUTING AND COORDINATION SHEET AF-WP-0-30 MAR 56 [illegible]

ROUTING / COORDINATION

AFOIN-4

AFOIN-4X2b

AFOIN-4X2c

AFOIN-4X3

AFOIN-4X4

AFOIN-4A

AFOIN-4B

AFOIN-4C

AFOIN-4D

AFOIN-4E

AFOIN-4F

OTHERS

FILE CLASS:
OFFICIAL FILE COPY

OFFICE OF RECORD

6. Film will be shown in Bldg 167, Area B, in a projection room reserved for ATIC. The ANC auditorium was unavailable. A 35MM projector is required for this film.

9. It is presumed that you will attend. Possibly General Watson, Col Eriksen or other members of ATIC which you feel should attend can be contacted by your office.

GEORGE T. GREGORY
Capt., USAF
Project Monitor

2

[redacted]	
TEMP	
90 DAYS	
INITIAL	

ATIC FORM 144 (REV 20 FEB 56) ROUTING AND COORDINATION SHEET AF-WP-O-R MAR 56 12m

Kenneth Arnold Case [illegible] 14 [illegible] in width [illegible] objects [illegible] definite [illegible] stated that objects seemed [illegible] estimating them [illegible] feet [illegible].

He [illegible] estimated [illegible] timed them as covering 47 miles in 102 seconds. (1,700 [illegible].)

These statements are mutually contradictory.

If the distance were correct, [illegible] detail to be seen, objects must have been of the order of [illegible] x [illegible] feet in size.

If, we accept [illegible] size [illegible], in fact, of [illegible]0 feet long, hence [illegible], they [illegible] closer than [illegible] miles, obviously contrary to his statement.

If we adopt a reasonable limiting size to the objects of 20 x 400 feet, objects must have been closer than six miles to have shown the detail indicated by Arnold. At this distance, angular speed observed corresponds to a maximum speed of 400 mph.

In all probability, therefore, objects were much closer than thought, and moving at definitely "sub-sonic" speeds.

Most of the mentioned data taken from original Arnold files. There were **no** witnesses or other observers to this sighting.

s/ J. A. H.
J. Allen Hynek

Memo. Dr. Hynek & I worked at the observatory from 1230 to 0900 PM on these "old" (?) cases. With regard to Arnold all we have is his word, with his constant emphasis that he is a highly capable and reliable observer (presumably in the sense of the UFO sighting). Therefore, using his own words, and data --- we came up with the above.

P.S. Received a call from Mr Arnold about 1630 as to the progress being made. Informed him our results would be ready next day - - -

Capt. Gregory

Newhouse-Utah Case. Movies were studied by Photo Reconnaissance Laboratory (WADC) in 1952, shortly after sighting took place. Their considered opinion was that there was a strong possibility that these ~~where~~ sea gulls soaring thermal air currents, and appearing as bright spots of light similar to those shown in the movie. Our files show that this report was counter-signed by Captain Ruppelt. Also, our original evaluation was based, in part, on movies of sea gulls taken at various distances which showed that the sea gulls appeared similar to the objects in the film. This film was shown by Captain Ruppelt at a private showing in Washington which was also attended by Dr. Hynek. Further, a critical analysis made a few days ago of this film strip by ATIC photo specialists, without their knowledge of the original evaluation, resulted in the same opinion i. e. that these were sea gulls. It should also be pointed out that in our copy of the original film, sea gulls appeared in a number of frames. This, however, is not shown in the Hollywood version of the film. Therefore, there is in this case also no compelling reason to change our original opinions.

George T. Gregory, Capt USAF
29 May 1956

Memorandum For: Scientific Advisory Panel
Subject: Additional Information - Report on Showing of Motion Picture "Unidentified Flying Objects"

1. Reference is made to memorandum submitted to your office dated 21 May 1954, subject, "Report on Showing of Motion Picture "Unidentified Flying Objects".

2. A second, more detailed review of the film, during a showing at the local theatre, was made by the undersigned. Purpose was to obtain more detailed data as to the exact names, dates, and locales of the UFO sightings, while the original showing permitted only a cursory review. These will be furnished attached to this memorandum.

3. In the previous memorandum, the case of the two airline pilots (names not given in film) was commented on as the "Chiles-Whitted" case, because of the similarity of the sightings i.e. "long slender fuselage, no wings, etc." However, the second review of the film revealed this to be the "Sioux City Airline Pilots" sighting.

Sioux City Case:

4. A UFO, in this case, was observed by Mid-Continent Airline Pilots, Lt. V. Viethers, and co-pilot O. F. Radmiers.

Described in appearance as one-and-one half times larger than B-29, long, cigar-shaped fuselage, long slender straight wing, [redacted] engines. One filer indicate the following:

a. Description appears to describe a B-36 as viewed from underneath at night.

b. Inquiry to SAC Headquarters disclosed that that Headquarters [redacted] maintain a record of SAC training flights in the ZI.

b. Both pilots agree that UFO was airspeed shaped light of huge size, that lights similar to running lights were bright (which would indicate a jet), and a bright light similar to a landing light was shone for a short duration.

d. Possible that AC encountered flight of B-36's on routine and possibly orbiting for a mid-air refueling

Mr. A. M. Rochlen
Vice President - Public Relations
Douglas Aircraft Company, Inc.
Santa Monica, California

Dear Mr. Rochlen:

This office is in receipt of the extremely able analysis performed by the Douglas Aircraft Company on the film of an unidentified flying object photographed by Mr. Nicholas Mariana in August 1950, and interposes no objections to the release of this report, in whole or in part, to the Green-Rouse Studios.

The position of the Air Force with regard to UFOs is that the opinions of individuals or private enterprises regarding UFOs are their own, and do not necessarily represent those of the Air Force.

We agree with the conclusions stated in the second paragraph of page 8 of your report. However, the statement attributed to Mr. Mariana (3rd par., page 1) that a number of frames had been removed from the film while in the possession of the Air Force is without foundation. In fact, official Air Force files indicate that the film was in damaged condition when received, and that this was acknowledged by both Mr. Mariana and the local Air Force representative. The Air Force requested Mr. Mariana's permission to repair the film, advising him at the same time that a frame or two might be lost in the process. Mr. Mariana wired permission the following day through the local Air Force representative.

We greatly appreciate you sending us your report, the conclusions of which will be reflected in the next release of the Air Force's "Bluebook" project report on UFOs. The previous release of this report "Analysis of Reports of Unidentified Aerial Objects" represented the critical analyses of all reports and sightings from 1947 to 1955. It includes the efforts of many highly competent scientists, analysts, investigators and specialists. Reports used were derived from all sources - ranging from well-known scientists and experienced pilots to the average man-on-the-street. This report is available for examination by the general public.

concern of the Air Force who will continue to investigate them regardless of how low this percentage may become. However, we wish to reiterate the conclusions of all these studies with regard to the "unknowns":

1. There is total lack of evidence that the phenomena observed have inimical or hostile forces behind them.

2. There is a total lack of evidence that they are interplanetary vehicles.

3. There is a total lack of evidence that they represent technological developments outside the range of present day scientific knowledge.

4. There is a total lack of evidence that they constitute any threat to the security of our country.

We must apologize for the delay in [redacted] replying to your letter. ~~providing you the authority to release your report to the Green Bonar Studies.~~ Unfortunately, we did not receive your letter until the 26th of April.

Sincerely,

HAROLD E. WATSON
Brigadier General, USAF
Commander

[redacted]

UNCLASSIFIED

FILE CLASS: AFI 5-1
OFFICIAL FILE COPY
OFFICE OF RECORD

AFOIN-4

AFCIN-4E

AFOIN-4B Program

General Dougher
AFCIN-4

AFOIN-4C

1. It is my impression that General Walsh is interested in producing the maximum of aerospace intelligence with the minimum expenditure of funds & utilization of manpower. Toward that goal we have already witnessed the necessity for reducing ATIC efforts in those areas indirectly applicable to the aerospace problem.

AFOIN-4A

2. I have conducted a review of the functions of AFCIN-4E, and feel that the time is now upon us when we must seriously consider whether to continue performing the UFO mission. Since 1947 the Air Force, and more specifically ATIC, has been responsible to determine the nature of unidentified flying objects. At that time it was felt that the assignment should be made to Intelligence since it was possible that these objects might pose a threat to the national security. After 12 years experience ATIC has yet to uncover any positive evidence that UFO's constitute any such threat.

AFOIN-4B

3. The attached study clearly indicates that this program has cost us much in both manpower and money. It further points out that at this time it does not properly belong in the intelligence community, but rather it should be regarded as a scientific phenomenon, coming within the purview of ARDC.

AFOIN-4C

4. If after reviewing the study you concur, the attached letter to General Walsh will be prepared in final form.

AFOIN-4D

Philip D. Evans
PHILIP D. EVANS
Colonel, USAF
AFCIN-4E

AFOIN-4E

2 Atchs:
1. Staff Study by 4E4
2. Proposed Ltr to Gen Walsh

100-32-2

If inclosure 1 is withdrawn (or not attached), the classification of this correspondence will be downgraded to UNCLASSIFIED in accordance with AFR 205-1.

AFOIN-4F

OTHERS

PERM	
TEMP	
90 DAYS	
INITIAL	

UNCLASSIFIED

[redacted]

ATIC FORM 144 (REV 20 FEB 56) ROUTING AND COORDINATION SHEET AF-WP-O-30 NOV 58 20M

5 5

DRAFT

SUBJECT: UFO Program

TO: AFCIN (General Walsh)

1. In 1947 the Air Force, and more specifically the ATIC, assumed responsibility for a program designed to determine if unidentified flying objects were a national threat. This program at its inception was designed to determine first, if UFO's were hostile, and second, had any possible scientific value. A tertiary objective was to determine the nature of each of these objects. With the passage of time, the absence of positive indication that these objects were hostile or had any scientific value, and the coming of the private UFO organizations, the third objective began to take on more stature. Today this objective has grown to such an extent that we are fast reaching the point where the tail may wag the dog. This is damaging to Air Force prestige and has a detrimental effect upon intelligence operations.

2. The attached study offers as a solution transfer of the UFO project to an agency with a scientific capability. I concur with the views outlined in the study that such a move would be beneficial to both the intelligence community and to the UFO program. Disassociation with intelligence would do much to strip the aura of mystery from the UFO program, and the same disassociation would eliminate a project from intelligence which is more or less open to public inspection.

3. It is recommended that the attached study be approved and the necessary steps taken to effect transfer of the UFO project to ARDC.

CHARLES B. DOUGHER
Major General, USAF
AFCIN-4

1 Atch:
Study by AFCIN-4E4

28 September 1959

[illegible] PROGRAM

I. Brief History.

A. In the fall of 1947 the United States Air Force took official notice of reports of unidentified flying objects, the so-called "flying saucers," because they represented a possible threat to national security, and has become a subject of public concern. The Air Force was designated the responsible agency due to the fact that most of the objects were reported to be flying.

B. On 30 December 1947, the Air Material Command at Wright-Patterson AFB, Ohio was directed to establish a project to collect and evaluate all available facts concerning sightings of unidentified flying objects. The objectives of this project to be as follows:

1. Determine if these objects constitute a threat to national security.

2. Determine if any scientific and/or technical information was available from the sightings.

3. Identify and/or explain all UFO sightings.

C. From 1947 until February 1949, the program was identified as Project "Sign". In February 1949, the name of the project was changed to "Grudge," remaining so until March 1952, when it was further changed to "Blue Book," the present identification. In the summer of 1952, when the intelligence department of ADC took its first step toward growing into what is now the Aerospace Technical Intelligence Center (ATIC), the program was reviewed at the request of Headquarters, USAF. Recommendations which resulted from the review were that the reporting, investigation, and analysis procedures be improved where possible.

D. As of 30 June 1959, after 12 years of investigating and analyzing every unidentified flying object which was brought to its attention, the Air Force has accumulated a file of 4152 cases. The number of reports received number more than 8000, for many objects were reported by more than one witness, and from different sources. While the general trend of the number of sightings over the past three years has been downward, the totals for the more recent years are still far above the totals for the initial years of the program (TAB-E). The breakdown of the cases since 1 January 1956, is shown in TAB F. Another factor which adds to manpower requirements is that individual cases are being given more attention by the public, and balloon into a major problem for the Air Force.

II. Method of Operation.

A. The method of operating the UFO program has been generally the same since its birth; reporting, investigating, analyzing, and public relations. It is only in which agencies of the Air Force have performed each of these functions, and to what extent, that the program has changed. The program as presently conducted under the provisions of AFR 200-2, dated 14 September 1959, is as follows:

1. Reporting - nearest Air Force or other government or military facility submits reports to the Aerospace Technical Intelligence Center. Some reports are forwarded directly to the Air Force by civil agencies or by private citizens.

2. Investigations are conducted by the air base or station nearest the scene of the sighting; either upon receiving the report, or upon being notified of the sighting by the ATIC. In the more unusual or seemingly important cases the investigation, upon ATIC request, is conducted by the 1127th r/A Group, an intelligence organization. In some rare instances the investigation is conducted by the ATIC.

3. Monitoring the program, analysis, and maintaining the records is the responsibility of the ATIC.

4. The release of all information pertaining to UFO's, which is for public consumption, is the responsibility of the Secretary of the Air Force's Information Services (SAFIS).

B. The Program Today.

1. The present efforts extended in the conduct of the UFO project are directed toward specific goals:

a. To explore each sighting thoroughly for possible intelligence and/or scientific information.

b. To eliminate the defensive attitude which has been allowed to creep into the program's public relations philosophy (the attitude of trying to prove that each object sighted is not a space vehicle of some type).

c. To inform the public that a specific program, such as the UFO project, to evaluate each and every sighting is not essential to national security. The USAF, in the conduct of its overall mission, will consider each and every report of an unidentified flying object, and those which indicate a need for further exploitation, due to possible intelligence and/or scientific value will receive this added attention.

d. To strip the shrouds of mystery from the program, the haze through which many innocent people are duped by those who are using the UFO for personal gain, by a program of public education. This public

education program, using the media of the newspapers, to inform the public of the probable causes for those sightings which receive widespread publicity and other general information on the program.

2. To heighten the probability of accomplishment of these specific goals, the Air Force directive AFR 200-2, dated 14 September 1959, governing this project has been rewritten. The new directive should improve the reporting procedures and investigation techniques of the responsible field organizations. A study program has been established which is designed to publish a sequel to "Project Blue Book" (Special Report #14), a statistical study of the program covering the years 1947-1952. A panel of experts has been formed to assist with the study program, the analysis of the more stubborn cases, and to make suggestions as to how the project could be generally improved. This panel is composed of experts in physics, psychology, astronomy, religion, and public relations. The members of the panel, who volunteer their time, are from ARDC, AADC, and Wright-Patterson Air Force Base.

28 September 1959

TIME AND RESOURCES CHARGE TO PROJECT 5771 (BLUE BOOK)

1. While no accurate measure can be made of the manhours charged to this program, the following is a reasonable estimate gauged on a day to day basis. These estimates were based on known figures locally and on estimates for field allocations to each report received. This estimate was kept for the six months period from 1 January 1959 to 30 June 1959:

Manhours -

Military (Administrative and Scientific)	6861
Civilian " "	3538
Total	10,399

If we assume that this rate continues, then we have 20,798 manhours directly attributed to the UFO program during a year.

2. The other additions to overhead which are directly attributable to the UFO program are beyond measure, but to mention a few:

a. TDY funds for investigators.

b. Utilization of Air Force equipment during investigation (cars, etc).

c. Facilities used for analysis of material reported as part of a space craft.

d. Telephone calls and T-X's.

e. Military aircraft for intercept, transport of personnel, and/or equipment.

3. Scientific consultant for the program - the annual average for consultant services has been $1500 per year for a period of 11 years, or a total of $26,500.

4. As a supplement to the program the Air Force had a statistical study conducted by a civilian contractor in 1952. This study cost the Air Force approximately $100,000.

TAB - A

OBJECT SIGHTINGS
1947 - 1959

YEAR	# OBJECTS SIGHTED AND REPORTED
1947	79
1948	143
1949	186
1950	169
1951	121
1952	1,001
1953	425
1954	429
1955	404
1956	778
1957	1,178
1958	590
1 Jan - 30 June 1959	150
TOTAL	6,162

[redacted]TISTICS - 1 January 1959 - 30 [redacted] 1959

	Jan	Feb	Mar	April	May	June	TOTAL
Astro	14	10	15	10	9	7	65
Aircraft	3	5	4	4	4	5	25
Balloon		3		1	3	1	8
Other	5	2	6	4	4	4	25
Insuff Data	5	5	3	4	4	13	34
Unidentified	___	___	1	1	___	___	2
	27	25	29	24	24	30	159

During this reporting period the Aerial Phenomena Group instituted a policy of automatically including all reports of only one witness in the insufficient data category. This is in keeping with good intelligence and scientific precepts - if substantiation cannot be found, this decreases in value the information.

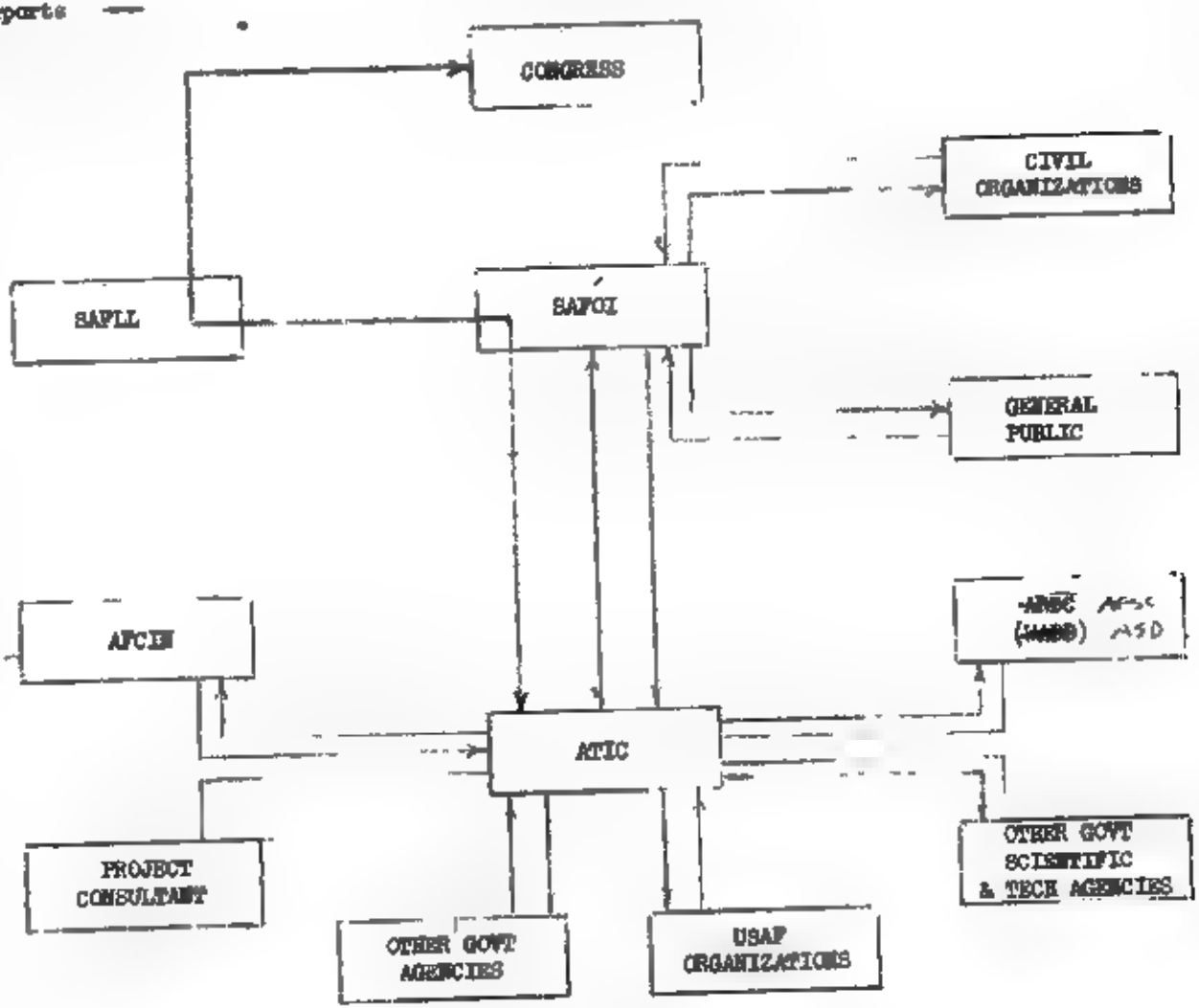
UFO STATISTICS FOR CALENDAR YEARS 1956, 1957, 1958

	1 Jan - 31 Dec 1956		1 Jan - 31 Dec 1957		1 Jan - 31 Dec 1958		TOTAL	%
	# OBJ	%	# OBJ	%	# OBJ	%		
Astro	205	26.3	326	27.7	197	33.4	728	28.50
Aircraft	192	24.6	286	24.2	110	18.6	588	23.00
Balloons	203	26.0	209	17.7	68	11.5	480	19.12
Insuff Data	109	14.1	169	14.4	104	17.6	382	14.96
Other	52	6.8	168	14.3	95	16.1	315	12.33
Satellites					11	1.9	11	0.44
Unidentified	17	2.2	20	1.7	5	.9	42	1.65
	778		1178		590		2546	

LEGEND

Cong Requests ——
Reports ——
Analysis ——
Information Resulting from Reports ——

FLOW CHART
(CURRENT)



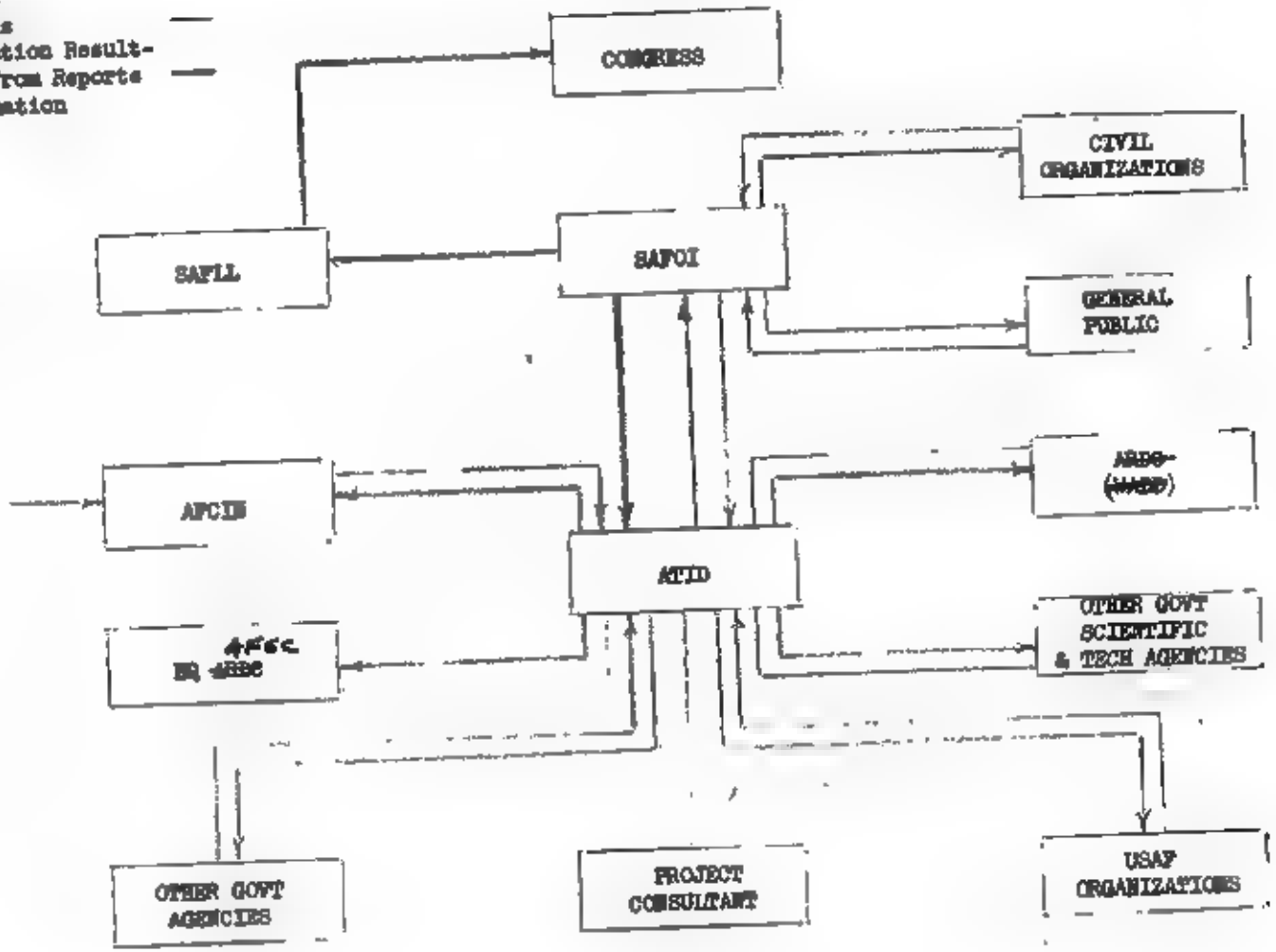
Atch #1

UFO Project

LEGEND

Cong Requests —
Reports —
Analysis —
Information Resulting from Reports —
Coordination

FLOW CHART
(PROPOSED)



AFSC
ASD

Atch #2

HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
UNITED STATES AIR FORCE
Andrews Air Force Base
Washington 25, D.C.

5 FEB 1960

REPLY TO ATTN OF: RDRRC

SUBJECT: Transfer of USAF Aerial Phenomena Program

TO: HQ USAF (AFCIN)
Wash 25, D. C.

1. Reference is made to your letter of 7 December 1959, subject as above, and to our interim reply of 23 December 1959.

2. Our review of the USAF Aerial Phenomena Program, including the AFCRC Study, has been completed. We find that more than half of the program relates to phenomena of a non-scientific nature. The remaining portion, while possibly associated with scientific processes, does not include qualitative data and is therefore of limited scientific value. Considering the quality of data available from other sources, exploitation of the aerial phenomena observations would not significantly enhance our research programs.

3. For the reason stated above, I do not believe that the transfer of the USAF Aerial Phenomena Program to ARDC is in the best interest of the Air Force.

James Ferguson

JAMES FERGUSON
Major General, USAF
Vice Commander

Copy to:
AFCRC

SUBJECT: (U) Transfer of Aerial Phenomena Program

TO: Lt Gen Bernard A. Schriever
Air Research-Development Command
[redacted]
Washington 25, D.C.

1. Reference Air Force Regulation No 200-2, subject, "Unidentified Flying Objects (UFO)," dated 14 September 1959.

2. In 1947 the USAF assumed responsibility for a program of investigation and analysis of unidentified flying objects over the United States. This program was designed to determine if these phenomena represented a threat to our national security. At its inception the program was directed toward determining first, if these phenomena were hostile, and second, had any possible scientific value. A tertiary objective was to determine the nature of each of these reported objects.

3. With the passage of time there has been no indication that these phenomena were hostile or posed a threat to the security of the United States. After review of the twelve year record of the UFO program it is clear that the program has developed along lines progressively more remote from intelligence interests. However during the life of the project there have been indications of possible scientific value. Our experience with this program indicates exploitation may be desirable in the following scientific and/or technical areas:

a. Slow moving and erratic meteors.
b. Fireballs.
c. Space vehicles (general).
d. Missiles.
e. Radar.
f. Static electricity.
g. Meteorology.
h. Upper air physics.

4. It is my opinion that any future value to the Air Force lies in exploitation of these phenomena for scientific purposes rather than as an intelligence function. With your concurrence I propose to initiate action to transfer the aerial phenomena program which now involves three full-time USAF personnel and one scientific consultant to such agency within your command that you may deem appropriate.

COORDINATION

AFCIN-4B4 RMSharp DATE 1 Dec 59

AFCIN-4B [illegible] DATE 1 Dec 59

AFCIN-4 _____ DATE _____

AFCIn-4

(U) Transmittal of Letter

AFCIN (Major General Walsh)

The attached letter is forwarded for your approval and signature.

1 Atch
Letter to AFDC

SUBJECT: (U) Transfer of USAF Aerial Phenomena Program

TO: Lt Gen Bernard A. Schriever
Air Research-Development Command
[redacted] AFB
Washington 25, D.C.

1. Reference Air Force Regulation Nr 200-2, Subject, "Unidentified Flying Objects (UFO)," dated 14 September 1959.

2. In 1947 the USAF assumed responsibility for a program of investigation and analysis of unidentified flying objects over the United States. This program was designed to determine if these phenomena represented a threat to our national security. At its inception the program was directed toward determining first, if these phenomena were hostile, and second, had any possible scientific value. A tertiary objective was to determine the nature of each of these reported objects.

3. With the passage of time there has been no indication that these phenomena were hostile or posed a threat to the security of the United States. After review of the twelve year record of the UFO program it is clear that the program has developed along lines progressively more remote from intelligence interests. However during the life of the project there have been indications of possible scientific value. Our experience with this program indicates exploitation may be desirable in the following scientific and/or technical areas:

a. Slow moving and erratic meteors.
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f. Static electricity.
g. Meteorology.
h. Upper air physics.

4. It is my opinion that any future value to the Air Force lies in exploitation of these phenomena for scientific purposes rather than as an intelligence function. With your concurrence I propose to initiate action to transfer the aerial phenomena program which now involves three full-time USAF personnel and one scientific consultant to such agency within your command that you may deem appropriate.

REFERRAL NOTICE

DATE: 7 March 1960

SUSPENSE DATE: None

SUBJECT (or Identification): (Uncl) Transfer of USAF Aerial Phenomena Program

FROM: Assistant Chief of Staff, Intelligence, PIA

TO:											
	AFCIN-X		AFCIN 1		AFCIN 2		AFCIN 3		AFCIN-XA	⇒	AFCIN-L
	AFCIN-X1								AFCIN-XN		
	AFCIN-X2								AFCIN-Y		
	AFCIN-X3										
	AFCIN-X4										
	AFCIN-X5										

ATTENTION:

TYPE OF ACTION

	APPROPRIATE ACTION		PREPARATION OF APPROPRIATE FORWARDING CORRESPONDENCE		ACTION ASSIGNED TO:
	COMMENTS AND/OR RECOMMENDATIONS		INFORMATION ON WHICH TO BASE REPLY		ACS/I HAS/HAS NOT SEEN
	NOTE AND RETURN		PREPARATION OF REPLY (for signature of ACS/Intelligence)		AFCIN-X HAS ORIGINAL
	INFORMATION AND/OR FILE		PREPARATION OF REPLY (for signature of Deputy, ACS/Intelligence)		FOR ADDITIONAL INFORMATION CONTACT (indicate name and extension)
	COORDINATION		PREPARATION OF REPLY (for signature of:)		
	DIRECT REPLY (with copy to AFCIN-X)		INFORMATION COPIES FORWARDED TO:		

COMMENTS (Use reverse and blank sheets if more space is required)

1. The attached letter from Hq, ARDC, dtd 5 Feb 60, subject as above, is forwarded for your information and continuing appropriate action.

2. ARDC has concluded that it is not in the best interests of the USAF for ARDC to assume responsibility for the USAF Aerial Phenomena Program.

Aaron J. Boggs

AARON J. BOGGS
Colonel, USAF
AFCIN-PIA

1 Atch
Ltr ARDC 5 Feb 60
Trans USAF Aerial Phenom Prog

COORDINATION (Initials, Last name and Grade)	SIGNATURE

GPO 672302

AFHQ FORM MAR 59 0-86 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

DRAFT

28 September 1959

SUBJECT: UFO Program

TO: AFCIN (General Walsh)

1. Since 1947 the Air Force, and more specifically the ATIC, has been responsible for a program designed to determine if unidentified flying objects were a national threat or had any scientific value. This program at its inception was designed to determine if UFO's were hostile, and had any possible scientific value. A tertiary objective was to determine the nature of each of these objects. With the passage of time the absence of positive indication that these objects were hostile or had any scientific value, and the coming of the UFOites the third objective began to take on more stature. Today this objective has grown to such an extent that we are fast reaching the point where the tail may wag the dog. This is a possible great danger to the Air Force prestige and certainly a danger to the intelligence community.

2. The attached study offers as a solution transfer of the UFO project to ARDC with aims toward eventual complete elimination as a special project. I concur with the views outlined in the study that such a move would be beneficial to both the intelligence community and to the UFO program. Dissassociation with intelligence would do much to strip the aura of mystery from the UFO program, and the same dissassociation would eliminate a project from intelligence which is more or less open to public inspection.

3. It is suggested that the attached study be approved and forwarded to the Air Force Chief of Staff with a recommendation for consideration and possible implementation.

CHARLES B. DOUGHER
Major General, USAF
AFCIN-4

1 Atch:
Study by AFCIN-4Ek
28 Sep 59

STUDY BY AFOIN-4A4
UNIDENTIFIED FLYING OBJECTS - PROJECT 5771 (Blue Book)

28 September 1959

AFOIN-4A4

1. Since the fall of 1947, the Air Force has conducted a project designed to determine if unidentified flying objects constitute a threat to national security, or if they offer any scientific and/or technical information which would be beneficial. This program, far from the original intent, has become an unproductive burden upon the Air Force, and specifically the Aerospace Technical Intelligence Center. The program requires financing and manning, and has resulted in unfavorable publicity for the Air Force, and again more specifically the Aerospace Technical Intelligence Center. The Air Force needs to eliminate this costly, and to date unproductive, program. Complete elimination is desirable, but it should certainly be disassociated with the intelligence community where it is extremely dangerous to prestige.

FACTORS BEARING ON THE PROBLEM:

2. As of 30 June 1959, after 12 years of investigating and analysing every unidentified flying object which was brought to its attention, the Air Force has accumulated a file of 6152 cases. The number of reports number better than 8000, for many objects were reported by more than one witness and from different sources (Tab - A). From this vast experience with UFO's, the Air Force has not had the slightest evidence that these objects constitute a threat to national security, or are space vehicles controlled by men or alien beings from another world; nor has any real scientific and/or technical knowledge resulted.

3. There are 50 private UFO organizations in the US whose members exploit unidentified flying objects for financial gain, religious or other more devious reasons at the expense of the Air Force (Tab - B). There have been instances when the members of these organizations have actually competed with the Air Force during the investigation of a case. When not satisfied with the Air Force handling, these private investigators have, on occasion, incited the witness to complain to their Congressman. These complaints have resulted in Congressional hearings, unfavorable publicity, and always an increase of the work load imposed upon the ATIC (TAB -C).

4. The methods by which UFO reports are forwarded is by TWX or telephone from military installations, and by letter or phone from civil organizations or private citizens (TAB - D). This, when compared with the reaction time necessary for survival in event of an attack using modern weapons, is ridiculous. The ATIC interest in these objects, in view of the foregoing, can only be its intelligence or scientific and/or technical significance after successful defense action has been accomplished by another agency.

5. Approximately 80% of the effort in the UFO program is directed toward the public relations objective.

6. The ATIC has a staff of three people who work full time on the UFO program, and there are two at USAFIS who spend considerable time with the

program. In addition to these full time, or nearly full time people, there are a great number in the field who must meet the problems of this program on a day to day basis (TAB - C). Since 1947 the program has contracted the services of a scientific consultant in the person of Dr. J. Allen Hynek. The annual average for Dr. Hynek's services has been $1500. In 1952 a statistical study of the program was performed by a civilian contractor. This study cost the Air Force approximately $100,000. In addition to the above listed expenses must be added the operating expenses which can be directly attributed to the UFO program. For all of this expense, to date we have only bought a small amount of good will from a small minority of the public.

DISCUSSION:

7. Immediate elimination of the program. To do this would result in destroying every advantage gained in the past 12 years. It would not only supply fuel for the confirmed cultists, but would also provide avenues for propagandists. In addition to arousing the confirmed UFO believers, it could encourage the wrath of those citizens who took no active part, but tolerated their society, in the fact that the Air Force was on the job. While the eventual elimination is to be sought as a goal, it must be understood that the public must first be conditioned in order that they be receptive of the idea. Disbandment of the program as a project assigned to a specific agency by no means infers that the Air Force will not continue this effort. Every agency in the Air Force, as a matter of doing its part toward accomplishment of the overall Air Force mission, would give proper attention to reports of any objects which may prove hostile or of intelligence and/or scientific and technical value. The only objective which would suffer as a result of eliminating this program would be the public relations aspects.

8. Remove the UFO program from the intelligence community with plans for eventual complete elimination following a program of public education. By moving the project out of the intelligence community several problems associated with the program would be eased. First, the public tends to exaggerate the importance of any operation which is in any way connected with military intelligence. Second, it would eliminate as an intelligence responsibility a program which is open to public inspection. Third, the program, in the absence of potential national threat and scientific returns, has been one mainly of public relations. The program could be moved to the Washington area and made the direct responsibility of one of the branches of the USAFIS. The long range plan to educate the public would use the media of the press, television, radio, and possibly movies, to inform the public of the various aspects of the program. The public should be made aware of the phenomena and/or man-made objects which have been misidentified and reported as UFO's. Within the limits of security, all rocket, satellite launching, etc., should be made public knowledge. The public should be made aware that the Air Force will still be accomplishing the two major objectives of this program; determining if UFO's constitute a national threat, and if they are of any scientific and/or technical value as a routine part of its overall mission. A study program should be undertaken by the persons conducting the UFO project which would be more than the pure statistical study, which was accomplished for Special Report #14. This study should make specific correlations to determine, if possible, the cause for

surges of reports (this would serve a dual purpose by allowing anticipation of surges and also possible prevention by known causes). The study should contain specific information as to the types of phenomena and/or man-made objects which have been responsible for the sightings. The report should also give heavy consideration to the psychological aspects of the program. Removal of the program from the intelligence community would not mean that the objectives of the program have changed, but only that more discretion will be given to which cases are possibly of intelligence significance, or are of possible scientific value. Liaison between the UFO office and the appropriate sub-division of AFCIN, AUC, or ARDC would tend to maintain the high level of these objectives. A rated officer with a technical background and intelligence experience should be assigned as OIC of this program to allow a high degree of accomplishment in the analysis of the cases, to insure that scientifically significant cases will be recognized, and that cases which may have intelligence value will be given the proper attention. The main disadvantages of this plan are the relatively great expense which may be incurred during the initial phases of the public education program, moving of the UFO office away from the scientific and technical facilities of the ATIC and the WADC, and the loss of prestige which would result by removing the organization from the responsibility of an organization with scientific and technical capability to another whose main concern is public information. When viewed properly, it will be realized that the expense incurred in the public education program will more than pay for itself if this eventually leads to deactivation of the program. As for the scientific and technical assistance, this is available in the Washington, D. C. area from ARDC, NACA, etc.

9. A third solution is essentially the same as that outlined under paragraph eight. The only recommended change is that the UFO program be associated with an organization such as ARDC which has a scientific and technical capability. Liaison then would be accomplished between the UFO office and SAFIS, AFCIN, and AUC. This solution would do away with the problem of the possible loss of prestige which could result from the disassociation with an organization having scientific and technical capability while retaining all of the advantages.

CONCLUSION:

10. The best immediate solution to the UFO program is to disassociate the project with the intelligence community and to assign responsibility for the program to the ARDC with SAFIS, AFCIN, and AUC liaison. The program under ARDC guidance to be directed toward active public education and the eventual elimination of the program as a special project.

ACTION RECOMMENDED:

11. It is recommended that this study be approved and forwarded to the ACS/I for consideration, with a recommendation that it be approved and forwarded to the Air Force Chief of Staff for consideration and possible implementation. Such approval to be acknowledged by authentication of the draft document which is attachment number one to this study.

RICHARD R. SHOOP
Colonel, USAF
AFCIN-4E4
3

STUDY OF AFCIN-4E4
UNIDENTIFIED FLYING OBJECTS PROGRAM
PROJECT #5772 (BLUE BOOK)

I. PROBLEM:

A. Examine the current unidentified flying objects program, as conducted by the United States Air Force, to determine its proper orientation within the Air Force structure.

II. FACTORS BEARING ON THE PROBLEM:

A. In 1947 the Air Force established a project whose purpose was to collect, collate, evaluate, and distribute to interested government agencies and contractors all information concerning sightings and phenomena in the atmosphere which could be construed to be of concern to national security. As of 30 June 1959, after 12 years of investigating and analyzing every unidentified flying object sighting brought to its attention, the Air Force has accumulated a file of 6452 cases. The total reports received number better than 8000, for many objects were reported from more than one source (TAB-A). From this vast experience with UFO's, the Air Force has not had the slightest evidence that these objects are a threat to national security or are space vehicles controlled by man or aliens from another world. This same experience has not revealed any scientific and/or technical information which would be beneficial to the United States.

B. The UFO program, far from its original intent of determining the intelligence and scientific and/or technical value of these objects, has seemingly acquired a primary objective of providing public information. This distortion, of what was a lesser objective, is probably due to the fact that public interest in the UFO has appeared to gain momentum each year since 1947. In the US there are 50 private UFO organizations whose members exploit unidentified flying objects for financial gain, or religious, or other more devious reasons (TAB-B). There have been instances when members of these organizations have actually competed with the Air Force during the investigation of a case. When not satisfied with Air Force handling, these private investigators have, on occasion, incited the witness to complain to their Congressmen. These complaints have resulted in Congressional hearings, unfavorable publicity, and an increase of the work load imposed upon ATIC (TAB-C).

C. The UFO project requires manpower and resources which ATIC might use more constructively on other programs. ATIC presently has a staff of three people who work full time on the UFO project, and several others who must allocate part of their time. In addition to these full time, or nearly full time people, there are a great number in the field who must meet the problems of this program on a day to day basis (TAB-C). Since 1948 the project has contracted the services of a scientific consultant

in the person of Dr. J. Allen Hynek. The annual average for Dr. Hynek's services has been $1500. In 1952 a statistical study of the program was performed by a civilian contractor. This study cost the Air Force approximately . In addition to the foregoing expenses, the operating costs which can be directly attributed to the UFO program must be added.

III. DISCUSSION:

A. Several solutions to the problem of proper orientation of the UFO program are as follows:

1. Retain the program at ATIC and direct the major efforts associated with the program toward accomplishment of the original objectives. The major advantage of this solution is that the project has been assigned to the intelligence community since its birth and all Air Force experience in handling the program belongs to ATIC. There would be no requirement to establish new lines of communication and/or liaison. This solution would require no new directives and the sub-divisions of the Air Force are familiar with the present method of operation and know their responsibilities to the program. This solution has several disadvantages. The public tends to exaggerate the importance of any operation which is in any way associated with military intelligence. The UFO program is more or less open to public inspection, and the association of such a wide-open project with ATIC has a tendency to reduce the prestige of the intelligence community. The project requires manpower and resources which might be used more constructively on other programs.

2. Transfer the UFO project from the intelligence community to another agency of the Air Force which has a scientific and technical capability; i.e., Air Research and Development Command. Such a change would allow a fresh approach by an organization which would not be burdened by problems which are bred from familiarity. The scientific objectives of the project, in the absence of evidence that UFO's pose a threat to national security could possibly take on greater stature, and association with an agency such as ARDC could enhance this possibility. The UFO program would not suffer any loss of prestige due to its disassociation with the scientific capabilities of ATIC. There are certain disadvantages which could result from the reassignment of the UFO program. There would be a requirement for establishing new lines of communication and/or liaison, new directives, and for the sub-divisions of the Air Force becoming familiar with new operating procedures and responsibilities.

3. Transfer the UFO project to one of the sub-divisions of SAFIS. This solution would effect the transfer of the project to an agency which is presently responsible for the public information aspects of the program. Responsibility for the full program could probably be accomplished by expansion of the present office. The project would be assigned to an agency which has some familiarity with the program. A program of public education on the UFO program could best be conducted by SAFIS. There are some disadvantages however, since extensive coordination would be required

between the UFO office and AFCIN, ADC, and AMC in order to accomplish the primary objectives of the project. There would also be a requirement for new directives, and the sub-divisions of the Air Force would have to become familiar with new responsibilities and a new method of operation. In addition, the UFO program could lose prestige due to its association with an agency which has no scientific capability.

B. Elimination of the direct association between the intelligence community and the UFO project would be mutually healthy. The intelligence community should not be burdened with this program which has such strong overtones of public relations. Also, it has been pointed out more than once during the 12 year life of this project that positive steps should be taken to strip this program of its aura of mystery. The disassociation with intelligence would do much to accomplish this aim because of the public's cloak and dagger attitude toward military intelligence. The UFO program to date has revealed no evidence which indicates these phenomena are a threat or potential threat to our national security. In the absence of such evidence the only possible positive gain from this project would be the scientific and/or technical knowledge which might be available. This objective would be within the scope of the normal mission of ARDC. If this project was moved to SAMS, the primary objectives would be further subjugated and in time the UFO project would probably degenerate into a complete public relations program.

IV. CONCLUSION:

A. Assignment of the UFO project to an agency with a scientific capability; i.e. ARDC, is the most logical orientation of the program within the Air Force structure. When the UFO project was conceived in 1947, a major consideration was national security; therefore, its assignment to intelligence was very logical. Experience to date with the UFO has not revealed any evidence that these phenomena are a threat to national security, and their only possible value to the Air Force is scientific information. To enhance the success of this reassignment, the scientific objectives of the project should be more clearly defined.

V. ACTION RECOMMENDED:

A. It is recommended that this study be approved and the necessary steps taken for possible implementation. Such approval should be acknowledged by authentication of the draft document which is Attachment #1 to this study.

30 November 1957

Ltr to General Schriever from General Walsh

1. In the fall of 1947 the United States Air Force took official notice of reports of unidentified flying objects. Responsibility for the UFO project was assigned to the Intelligence community.

2. The project as established was to determine first, if UFO's were hostile, second, had they any possible scientific value, and third, to determine the nature of each of these objects. After 12 years, 6152 cases, and more than 8000 reports, the Air Force has not discovered any evidence which would indicate that UFO's are inimical or pose a security threat in any way.

3. During the life of this project there have been indications of its possible scientific value. Dr. D. H. Robey of Convair-Astronautics, in his study on "Slow Moving Green Fireballs," uses UFO reports as possible substantiating evidence; Dr. Charles P. Olivier, President of The American Meteor Society, has on several occasions requested information from the Air Force to be used for his studies on "fireballs". Dr. Olivier claims the Air Force information is more complete than his own reports. The UFO files contain reports of cases which were analyzed as being due to rare scientific phenomena such as "ball lightning".

4. In the absence of a security threat from UFO's, it is my opinion that the project's value to the Air Force lies in exploitation of its scientific information. In order to accomplish this goal the UFO program should be transferred to ARDC, and its scientific objectives more clearly defined.

[illegible]
[illegible]
PROJECT 5773 (BLUE BOOK)

I. [illegible]

A. Examine the current unidentified flying objects program, as conducted by the United States Air Force, to determine its proper orientation within the Air Force structure.

II. [illegible]

A. In 1947 the Air Force established a project whose purpose was to collect, collate, evaluate, and distribute to interested government agencies and contractors all information concerning sightings and phenomena in the atmosphere which could be construed to be of concern to national security. As of 30 June 1959, after 12 years of investigating and analyzing every unidentified flying object sighting brought to its attention, the Air Force has accumulated a file of 6152 cases. The total reports received number better than 8000, for many objects were reported from more than one source (TAB-A). From this vast experience with UFO's, the Air Force has not had the slightest evidence that these objects are a threat to national security or are space vehicles controlled by men or aliens from another world. This same experience has not revealed any scientific and/or technical information which would be beneficial to the United States.

B. The UFO program, far from its original intent of determining the intelligence and scientific and/or technical value of these objects, has seemingly acquired a primary objective of providing public information. This distortion, of what was a lesser objective, is probably due to the fact that public interest in the UFO has appeared to gain momentum each year since 1947. In the US there are 20 private UFO organizations whose members exploit unidentified flying objects for financial gain, or religious, or other more devious reasons (TAB-B). There have been instances when members of these organizations have actually competed with the Air Force during the investigation of a case. When not satisfied with Air Force handling, these private investigators have, on occasion, incited the witness to complain to their Congressmen. These complaints have resulted in Congressional hearings, unfavorable publicity, and an increase of the work load imposed upon ATIC (TAB-C).

C. The UFO project requires manpower and resources which could be more constructively on other programs. ATIC presently has a staff of three people who work full time on the UFO project, and several others who must allocate part of their time. In addition to these full time, or nearly full time people, there are a great number in the field who must meet the problems of this program on a day to day basis (TAB-C). Since 1948 the project has contracted the services of a scientific consultant

in the person of Dr. J. Allen Hynek. The annual average for its [illegible] services has been [illegible]. In 1954 a statistical study of the program was performed by a civilian contractor. This study cost the Air Force approximately [illegible]. In addition to the foregoing expenses, the operating costs which can be directly attributed to the UFO program must be added.

III. DISCUSSION

A. Several solutions to the problem of proper orientation of the UFO program are as follows:

1. Retain the program at ATIC and direct the major efforts associated with the program toward accomplishment of the original objectives. The major advantage of this solution is that the project has been assigned to the intelligence community since its birth and all Air Force experience in handling the program belongs to ATIC. There would be no requirement to establish new lines of communication and/or liaison. This solution would require no new directives and the sub-divisions of the Air Force are familiar with the present method of operation and know their responsibilities to the program. This solution has several disadvantages. The public tends to exaggerate the importance of any operation which is in any way associated with military intelligence. The UFO program is more or less open to public inspection, and the association of such a wide-open project with ATIC has a tendency to reduce the prestige of the intelligence community. The project requires manpower and resources which might be used more constructively on other programs.

2. Transfer the UFO project from the intelligence community to another agency of the Air Force which has a scientific and technical capability; i.e., Air Research and Development Command. Such a change would allow a fresh approach by an organization which would not be burdened by problems which are bred from familiarity. The scientific objectives of the project, in the absence of evidence that UFO's pose a threat to national security could possibly take on greater stature, and association with an agency such as ARDC could enhance this possibility. The UFO program would not suffer any loss of prestige due to its disassociation with the scientific capabilities of ATIC. There are certain disadvantages which could result from the reassignment of the UFO program. There would be a requirement for establishing new lines of communication and/or liaison, new directives, and for the sub-divisions of the Air Force becoming familiar with new operating procedures and responsibilities.

3. Transfer the UFO project to one of the sub-divisions of [illegible]. This solution would affect the transfer of the project to an agency which is presently responsible for the public information aspects of the program. Responsibility for the full program could probably be accomplished by expansion of the present office. The project would be assigned to an agency which has some familiarity with the program. A program of public education on the UFO program could best be conducted by [illegible]. There are some disadvantages however, since extensive coordination would be required

between the two offices and [illegible], ARDC, and AFOIN in order to accomplish the primary objectives of the project. There would also be a requirement for new directives, and the sub-divisions of the Air Force would have to become familiar with new responsibilities and a new method of operation. In addition, the UFO program could lose prestige due to its association with an agency which has no scientific capability.

B. Elimination of the direct association between the intelligence community and the UFO project would be mutually healthy. The intelligence community should not be burdened with this program which has such strong overtones of public relations. Also, it has been pointed out more than once during the 12 year life of this project that positive steps should be taken to strip this program of its aura of mystery. The disassociation with intelligence would do much to accomplish this aim because of the public's cloak and dagger attitude toward military intelligence. The UFO program to date has revealed no evidence which indicates these phenomena are a threat or potential threat to our national security. In the absence of such evidence the only possible positive gain from this project would be the scientific and/or technical knowledge which might be available. This objective would be within the scope of the normal mission of ARDC. If this project was moved to SAMIS, the primary objectives would be further subjugated and in time the UFO project would probably degenerate into a complete public relations program.

IV. CONCLUSIONS:

A. Assignment of the UFO project to an agency with a scientific capability; i.e. ARDC, is the most logical orientation of the program within the Air Force structure. When the UFO project was conceived in 1947, a major consideration was national security; therefore, its assignment to intelligence was very logical. Experience to date with the UFO has not revealed any evidence that these phenomena are a threat to national security, and their only possible value to the Air Force is scientific information. To enhance the success of this reassignment, the scientific objectives of the project should be more clearly defined.

V. ACTION RECOMMENDED:

A. It is recommended that this study be approved and the necessary steps taken for possible implementation. Such approval should be acknowledged by authentication of the draft document which is Attachment 1 to this study.

CONFIDENTIAL

~~CONFIDENTIAL~~

UNCL

TAB-A	Object Sightings 1947-30 June 1959
TAB-B	UFO Organizations
TAB-C	Fitzgerald Case (CONF) W. Thadeus
TAB-D	History
TAB-E	Graph of Sightings 1947-30 June 1959
TAB-F	Statistics for Calendar Years 1956, 1957 & 1958 & 1 Jan-30 June 1959
TAB-G	Manpower Estimates

(This page is unclassified; however, it is stamped CONFIDENTIAL in keeping with the classification of TAB-C (Fitzgerald Case))

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~~CONFIDENTIAL~~

TAB - A

OBJECT SIGHTINGS
1947 - 1959

YEAR	# OBJECTS SIGHTED AND REPORTED
1947	79
1948	143
1949	186
1950	169
1951	121
1952	1,501
1953	425
1954	429
1955	404
1956	778
1957	1,178
1958	590
1 Jan - 30 June 1959	159
TOTAL	6,162

UFO ORGANIZATIONS AND CLUBS IN THE UNITED STATES

1. Aerial Phenomena Research Organization
   $3.00 per year

2. Borderline Sciences Research Associates
   Supposedly non-profit. Has bi-monthly publication.

3. Celestial Vehicle Investigation Committee
   Little known re this organization.

4. Civilian Research, Interplanetary Flying Objects
   Publication 50¢ monthly. Claims 5000 members.
   (Stringfield's organization)

5. Civilian Saucer Intelligence
   Membership $1.00. Dues 50¢ for bulletin

6. Civilian Saucer Investigation
   Quarterly bulletins - 50¢ per copy

7. College of Universal Wisdom
   Religious fanatical. Bi-monthly publication $1.50 per copy.

8. Cup and Saucer Net
   Little known re this organization.

9. Detroit Astronomical Society
   Little known re this organization.

10. Essenes of Kumran
    Religious fanatical. Monthly report 50¢ per copy.

11. Extra-Terrestrial Research Organization
    Claims to be non-profit.

12. Fate Magazine (Club)
    Monthly magazine 35¢ per copy.

13. Flying Saucer Club of Detroit
    Claims membership of over 2000.

14. Flying Saucer Investigative Associates
    Little known re this organization

15. Flying Saucer International
    Los Angeles organization. Claims 10,000 membership.
    Monthly report 25¢

16. Flying Saucer News
    $2.00 per year subscription.

17. Flying Saucer Researchers
Subscription and 5 copies $1.00. 700 members.

18. Flying Saucer Research Society
Little known re this organization.

19. Fortean Society
Oldest society. Philosophical and metaphysical.

20. Gravity Foundation
Little known, but active.

21. Great Lakes UFO Association
Little known. Attempting to organize better.

22. Holloway School of Philosophy. Health and Religion
Four publications from 50¢ to $1.00.

23. International Flying Saucer Bureau
Very little known.

24. Interplanetary News Digest
South California group. Little known.

25. Library Research Group
Little known, but active.

26. Little Listening Post
Little known.

27. Orgone Energy Institute (W. Reich Foundation)
Director now before Supreme Court for defrauding government.

28. The 71 Research Association
Headed by individual claiming trip in flying saucer.

29. Saucer and Unexplained Celestial Events Research Society
Little known.

30. Saucer Research Foundation of Los Angeles
Little known.

31. Saucer Phenomena and Celestial Enquiry
Little known.

32. Saucer Sentinel
Little known.

33. Spheres, Incorporate (Los Angeles)
Rabble rousing type of organization.

34. The Roundhouse
Little known, but active.

35. UFO Research Organization
Claim to be scientists, but indicates low-level of education.

36. Waterbury Saucer Center
Publisher of (extremely sensational) quarterly, 50¢ per copy.

37. Nixcels Labs of the Chemicraft Science
Claims to be non-profit.

38. Space Observers League
Newly formed. Little known.

39. Flying Saucer Council of America
Claims 2000 members.

40. Amarillo Flying Saucer Sighting Center
Newly formed.

41. Saucer Research Bureau
Little known re this organization.

42. Telemis Research Center
Quarterly bulletin 50¢ issue.

43. Satellite Science
Membership $2.00 per year.

44. Institute of Interplanetary Arts and Sciences
The director of this impressive sounding organization is not a scientist, but a night watchman! !

45. UFO Research Council
Have written to President Eisenhower. Active, but few details.

46. NICAP (National Investigative Committee on Aerial Phenomena)
Cleverly organized. Man 'behind the scenes' is Keyhoe.
Soliciting well-known personalities as members.

47. Pacific Lemurian Society. Founder and Director - W. Gordon Allen
Periodical: 'Space-Craft Digest'.

48. National Committee for Investigation of UFO's
Director - K. T. Pflock.

49. Saucer Research Bureau of Rockville Center, N. Y.

50. Interplanetary Intelligence of Unidentified Flying Objects
Oklahoma City, Oklahoma, Associate Director: Hayden Howes.

MEMO ROUTING SLIP

1	INFORMATION
2	NECESSARY ACTION
3	NOTE AND RETURN
4	SIGNATURE

REMARKS

[illegible] report [illegible] investigative procedures.

Please prepare a basis for reply for General Wianer as soon as possible as the suspense date of this item is 21 Dec. 1965.

FROM NAME OR TITLE

DATE

ORGANIZATION AND LOCATION

DD FORM 95

MEMO ROUTING SLIP

NEVER USE FOR APPROVALS, DISAPPROVALS, CONCURRENCES, OR SIMILAR ACTIONS

1 NAME OR TITLE: AFIS	INITIALS	DATE: 3	CIRCULATE
ORGANIZATION AND LOCATION			COORDINATION
2			FILE
			INFORMATION
3		X	NECESSARY ACTION
	ALL INCLS		NOTE AND RETURN
4			SEE ME
			SIGNATURE

REMARKS

SUBJECT: CONC: UFO'S
Inquiry by Mr. Fred A, Kirsch

ACTION: Req memo w/proposed reply per HOI 10-20 and indicate AO name & ext on ret memo

SUSPENSE: ASAP - not later than 18 Dec 58

SAFLL: 75805 (Gen Fisher)

INCLS: Ltr fr Mr. Kirsch dd 7 Dec 58 to Gen Fisher
prev corres file (SAFLL 63453)
prev corres file (SAFLL 69306)
Inclosure to Mr. Kirsch's ltr of 7 Dec is a folder re Fitzgerald sighting.

FROM NAME OR TITLE	DATE: 11 Dec 58
ORGANIZATION AND LOCATION	TELEPHONE: 78092

DD FORM 1 FEB 50 95 Replaces DA AGO Form 895, 1 Apr 48, and AFHQ Form 12, 10 Nov 4 which may be used.

The Unidentified Flying Objects Research Committee

Major General W. F. Fisher
Director, Legislative Liaison
Department of the Air Force
Washington, D.C.

Dear General Fisher

Enclosed is a complete report on a U.F.O. sighting. It includes a description of the sighting, the Air Force investigation, the conclusions of ATIC as given in your letter of 9 September, an analysis of the Air Force conclusions and our investigation.

In the analysis of the Air Force treatment of the case our group has charged the investigation team with criminal misbuilding. We feel that this case is typical of all UFO cases and that our charges apply generally to the Air Force UFO project.

You have answered many inquiries from members of the U.S. Congress with statements to the effect that the Air Force is conducting a fair, honest, and scientific investigation of the UFO reports. Therefore, we are presenting you with this report which proves that your statements have been false and misleading. The original documents are available for your inspection if that should be necessary.

After reading the enclosed report, please send us your answer to the following questions:

(1) What action will be taken to discipline the ATIC investigation team which handled this case?

(2) What action will be taken to make a proper investigation and evaluation of this particular report (Fitzgerald, 21 Sept. 1955)?

(3) What action will be taken to insure that all future reports of unidentified flying objects will be properly investigated and evaluated?

A copy of this letter is being sent to Senator John W. Bricker. I request that you send a copy of your reply to the above three questions to Senator Bricker.

Sincerely,

Fred A. Hirsch
for the UFO Research Committee

[redacted] VANDY	CONGRESSMAN RICHER, John Jos	CONTROL NUMBER
[redacted]	FWD A. RICHER ltr info relating thm to the AF investigation of unidentified objects.	

DATE RECEIVED	REFERRED TO	DATE FORWARDED	FINAL SIGNATURE	ETHICAM SIGNATURE	ACKNOWLEDGED SIGNATURE
1 Aug 58	[redacted]	1 Aug 58			

1st Ltr sent to Gen Pickett; 22 Oct 58
1st Ltr to Mr. Richer to Sec, 22 Oct 58

DATE RECEIVED IN BRANCH	ACTION OFFICER		
DATE	TO	DUE DATE	RECEIVED
DATE	TO	DUE DATE	RECEIVED
DATE	TO	DATE ORIGINATED	

Apt 58

Dear Mr. [illegible]

Your inquiry to Secretary [illegible] concerning unidentified flying objects [illegible] Force for a quick reply.

The Air Force investigation to date reported sightings of unidentified flying objects has revealed no evidence or data to substantiate the existence of extraterrestrial spacecraft.

The formal report of the investigation referred to has not been fully declassified. The technical portion of the report deals with other matters of intelligence which affect the national security and are specifically classified. It is my considered opinion that the Air Force should not make unnecessary efforts or that it should release all U.S. information to the general public.

The United States does not possess a flying saucer such as you describe. However, any devices which we do possess could be mistaken for unidentified flying objects under unusual conditions.

MR:
Rcd LL 1 Aug/Faded 4 Aug to SAFIS
w/ms of 11 Aug. Returned to SAFIS
for more responsive reply re 4 Aug
Final ltr prep/faded 4 Sept based on
draft of ltr fr Maj Tucker SAFIS, 17309/
per Buck Slip dd 5 Aug 58
CORRES: ltr fr Sen to Sen Fisher
dd 31 Jul and ltr fr Mr
Kirsch to Sen of Jul 5

cc: GOCRJ
ICSEK
SAFIS
DARIAC

[illegible]

MEMO ROUTING SLIP

1 NAME OR TITLE
WAAC Rec Det, SAC
ORGANIZATION AND LOCATION
HQ AAFSAC

2

3

4

INITIAL FOR CLEARANCE

NECESSARY ACTION

NOTE AND RETURN

SEE ME

SIGNATURE

REMARKS

She was 19 years and 4 mos old!

FROM NAME OR TITLE

DATE
6 Aug 58

ORGANIZATION AND LOCATION

TELEPHONE
73386

DD FORM 1 FEB 50 95 Replaces DA AGO Form 895, 1 Apr 48, and AAF AG Form 12, 10 Nov 47, which may be used

DRAFT

Dear Mr. Kirsch:

Your letter dated 26 July 1965 addressed to Senator Bricker on the subject of unidentified flying objects has been referred to this office for reply.

The report referred to in your first question is not available. The Air Force has continually stated that there is a complete lack of evidence to substantiate the existence of interplanetary space ships.

The formal report of the scientific panel referred to in your second question has not been fully declassified for security reasons. However, the classified portion of the Panel's Formal Report does not deal specifically with UFO's but on other matters of intelligence significance which affect the national security. The releasable portion of the report which you already have does deal with unidentified flying objects.

Also, I can assure you that the Formal Report of the Panel does not recommend that the Air Force quadruple its UFO investigative efforts and release all UFO information to the general public.

Your third question is rather difficult to answer. The United States does not research a flying saucer as such. However, as you mentioned in your letter, many devices which we do possess, such as weather balloons, jet aircraft and missiles can be mistaken for an unidentified flying object under unusual circumstances.

DRAFT

MEMO ROUTING SLIP

	NAME OR TITLE	INITIALS	CIRCULATE
1	SAFIS		COORDINATION
2	ORGANIZATION AND LOCATION		FILE
3			INFORMATION
4			NECESSARY ACTION
5			NOTE AND RETURN
6			SEE ME
			SIGNATURE

REMARKS

SUBJECT: Congressional Inquiry
Unidentified Flying Objects

ACTION: Request memo w/proposed reply per AOI 20-10 and indicate action officer's name and tel number

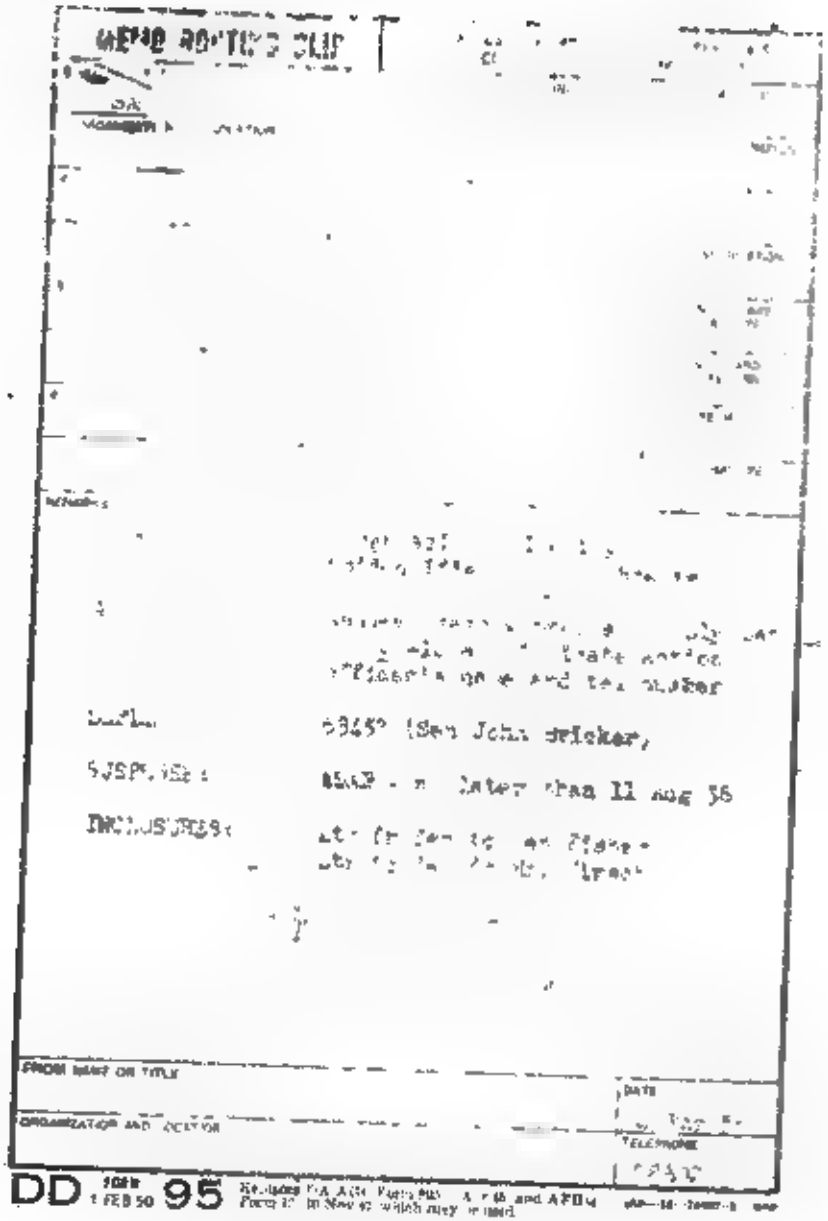
SAFLL 69459 (Sam John Brinker)

SUSPENSE: ASAP -- no later than 11 Aug 58

ENCLOSURES: Ltr fr Sen to Gen Fisher
Ltr to Sen fr Mr. Kirsch

FROM NAME OR TITLE	DATE
	4 Aug 58
ORGANIZATION AND LOCATION	TELEPHONE
	78692

DD FORM 1 FEB 60 95 Replaces DA AGO Form 895, 1 Apr 48, and AFHQ Form 17, 15 Nov 47, which may be used.



DD FORM 1 FEB 50 95

Intel
answer
flying objects
Sheet 1
Captain
situation", compiled by
him on the ufo project. According to Ruppelt, this report
stated that the ufo are interplanetary spacecraft. This
report was written sometime in late 1948, and Ruppelt says
that
Sheet 2
report that had been
This
the existence
the facts in the
The report
Tacker
are

DPS UFO

SUBJECT	CONGRESSMAN	CONTROL NUMBER
UFO	RAYBURN, S. T., Rep	

RE: object that came down in the yard of REP. WILLIAM FITZGERALD, R Sep 58

INTERIM SUSPENSE DATE	FINAL SUSPENSE DATE

DATE RECEIVED	REFERRED TO	DATE FORWARDED	FINAL SIGNATURE	INTERIM SIGNATURE	ACKNOWLEDGED SIGNATURE
1 Oct 58	H/O	1 Oct 58			

Rq fr Rep to AAFAir, 1 Oct 58
ltr fr Rayb RLO, 1 Oct 58
cy ltr fr Hon. Fitzgerald to Rep 25 Sep 58

DATE RECEIVED IN BRANCH	ACTION OFFICER		
DATE	TO	DUE DATE	RECEIVED
DATE	TO	DUE DATE	RECEIVED
DATE	TO	DATE signed	

Dear Mr. Bramblett

I refer to your inquiry dated [illegible] of Mrs. William Fitzgerald of Smithfield Lane, [illegible], concerning an Identified Flying Object she reported [illegible].

Air Force investigative [illegible] conducted [illegible], culminating with Mr. [illegible] the purpose of an investigation is [illegible].

The investigation revealed that [illegible] a train near the home of Mrs. Fitzgerald. The time of Mrs. Fitzgerald's sighting, a train passed the home at approximately the same hour as the reported sighting. The train had a rotating beacon light which, under some conditions, would produce unusual effects. Contact was also made with Chief Boatswain Mate William Schmidt of the Coast Guard Station, Lorain, Ohio. Chief Schmidt reported that he was using his spotlight in an attempt to attract the attention of another ship, but that the light was directed toward shore in the general direction of Mrs. Fitzgerald's home. The time and date of this incident coincide with those reported by Mrs. Fitzgerald. Mrs. Steward of Lorain, Ohio, a witness listed in Mrs. Fitzgerald's report, could not recall anything unusual on the night of the reported sighting. Mr. Cragg of Lorain, another witness, was not available for interview. The weather at the time of the incident was a misty rain with haze and smoke.

The conclusion of Air Force investigators was that the combination of moving lights, noise of the train and prevailing weather account for the illusion experienced by Mrs. Fitzgerald. The Air Technical Intelligence Center, after evaluating the evidence in this case, concurred with the conclusion of the investigators.

Rad 11 3 Oct/Rated 6 Oct to SAFIS.
Final ltr prep.from 29 Oct rated on draft of reply prep by Maj Ivester 73328.
CORRES: [illegible] w/photocopy ltr [illegible] 29 Sept 69

[illegible] CC: ADJGEN
COMAC
SAFIS
CINCLANT
N.G
[illegible]
Legal Counsel, OSD
Director
Legislative Liaison

Honorable A. D. Bramblett, Jr.

House of Representatives

[illegible]
COORDINATION
OFFICE

for Smith

[illegible] Mrs. [illegible]

[illegible]

[illegible]

[illegible]

Air For[illegible]

contacted [illegible]

to possibly [illegible]

Investigat[illegible] Mrs.

Fitzgerald. The sight of Mrs. Fitzgerald [illegible] phase [illegible] at approximately the same hour of the reported [illegible]. The train has a rotating headlight which under some [illegible] unusual effects. Contact was also made with Chief Boatn Mate [illegible] Schott of the Lorain Coast Guard Station. Chief Schott reported that he was using his spotlight in an attempt to attract the attention of another ship, and that the light was directed toward shore in the general direction of Mrs. Fitzgerald's house. The time and date of this incident coincide with those reported by Mrs. Fitzgerald. Mrs. Steward of Lorain, Ohio, a witness listed in Mrs. Fitzgerald's report, couldn't recall anything unusual on the night of the reported sighting. Mr. Grego, another witness of Lorain, Ohio was not available for interview. The weather at the time of the incident was a misty rain with haze and smoke.

Conclusion of Air Force investigators was that the combination of moving lights, noise of the train and prevailing weather account for the illusion experienced by Mrs. Fitzgerald. The Air Technical Intelligence Center, after evaluating the evidence in this case, concurred with the conclusion of the investigators.

For your information, I am inclosing the latest Department of Defense fact sheet on the subject of unidentified flying objects, dated 6 October 1958. This fact sheet clearly outlines the Air Force position with respect to unidentified flying objects.

Sincerely,

MEMO ROUTING SLIP	NR'S USE FOR APPROVALS, DISAPPROVALS, CONCURRENCES, OR SIMILAR ACTIONS		
1 NAME OR TITLE SAFIE	INITIALS		CIRCULATE
ORGANIZATION AND LOCATION	DATE		COORDINATION
2			FILE
			INFORMATION
3		X	NECESSARY ACTION
	INCLS		NOTE AND RETURN
4			SEE ME
			SIGNATURE

REMARKS

SUBJECT: CONGRESSIONAL INQUIRY
(Object landed in yard of Mrs. William Fitzgerald - Sheffield, Ohio)

SAFIE: 69306 ... (O/M A. D. Rumbert)

SUSPENSE: ASAP - not later than 14 Oct 58

ACTION: Req memo w/proposed reply per NOI 10-20 and indicate AO name & telephone number.

INCLS: ltr fr O/M to AF IAL 2 Oct 58
ltr fr Mrs. Fitzgerald to O/M 29 Sept

FROM NAME OR TITLE	DATE 6 Oct 58
ORGANIZATION AND LOCATION	TELEPHONE 78692

DD FORM 95 Replaces DA AGO Form 895, Apr 48, and AFHQ Form 2, 10 Nov 47, which may be used. 16-46487-4 GPO

[illegible] Head Of [illegible] Branch

Date _____

[illegible] Attention:
_____ Inmen Branch
_____ Officer Branch
_____ WAC Branch

****

HLO Interest:
_____Col Jack A. Sims
_____Lt Col Albert H. Burleigh
_____Maj Zane Corbin
_____Capt Ann Brien
_____June Griffith
_____Edith Johnson
_____Virginia Kocur

****

_____Acknowledged by HLO
_____Interims through HLO
_____Finals through HLO

****
REMARKS OR OTHER GUIDANCE FOR SAFLL AO:

HOUSE LIAISON OFFICE

Congress of the United States
House of Representatives
Washington D. C.

Dec 1991

DIS/11/96

28 September 1959

USAF UFO PROGRAM

I. Brief History.

A. In the fall of 1947 the United States Air Force took official notice of reports of unidentified flying objects, the so-called "flying saucers," because they represented a possible threat to national security, and has become a subject of public concern. The Air Force was designated the responsible agency due to the fact that most of the objects were reported to be flying.

B. On 30 December 1947, the Air Materiel Command at Wright-Patterson AFB, Ohio was directed to establish a project to collect and evaluate all available facts concerning sightings of unidentified flying objects. The objectives of this project to be as follows:

1. Determine if these objects constitute a threat to national security.

2. Determine if any scientific and/or technical information was available from the sightings.

3. Identify and/or explain all UFO sightings.

C. From 1947 until February 1949, the program was identified as Project "Sign". In February 1949, the name of the project was changed to "Grudge," remaining so until March 1952, when it was further changed to "Blue Book," the present identification. In the summer of 1952, when the intelligence department of AMC took its first step toward growing into what is now the Aerospace Technical Intelligence Center (ATIC), the program was reviewed at the request of Headquarters, USAF. Recommendations which resulted from the review were that the reporting, investigation, and analysis procedures be improved where possible.

D. As of 30 June 1959, after 12 years of investigating and analyzing every unidentified flying object which was brought to its attention, the Air Force has accumulated a file of 6152 cases. The number of reports received number more than 8000, for many objects were reported by more than one witness, and from different sources. While the general trend of the number of sightings over the past three years has been downward, the totals for the more recent years are still far above the totals for the initial years of the program (TAB-E). The breakdown of the cases since 1 January 1956, is shown in TAB F. Another factor which adds to manpower requirements is that individual cases are being given more attention by the public, and balloon into a major problem for the Air Force.

II. Method of Operation.

A. The method of operating the UFO program has been generally the same since its birth; reporting, investigating, analyzing, and public relations. It is only in which agencies of the Air Force have performed each of these functions, and to what extent, that the program has changed. The program as presently conducted under the provisions of AFR 200-2, dated 5 February 1958, is as follows:

1. Reporting - nearest Air Force or other government or military facility submits reports to the Aerospace Technical Intelligence Center. Some reports are forwarded directly to the Air Force by civil agencies or by private citizens.

2. Investigations are conducted by the air base or station nearest the scene of the sighting; either upon receiving the report, or upon being notified of the sighting by the ATIC. In the more unusual or seemingly important cases the investigation, upon ATIC request, is conducted by the 1127th F/A Group, an intelligence organization. In some rare instances the investigation is conducted by the ATIC.

3. Monitoring the program, analysis, and maintaining the records is the responsibility of the ATIC.

4. The release of all information pertaining to UFO's, which is for public consumption, is the responsibility of the Secretary of the Air Force's Information Services (SAFIS).

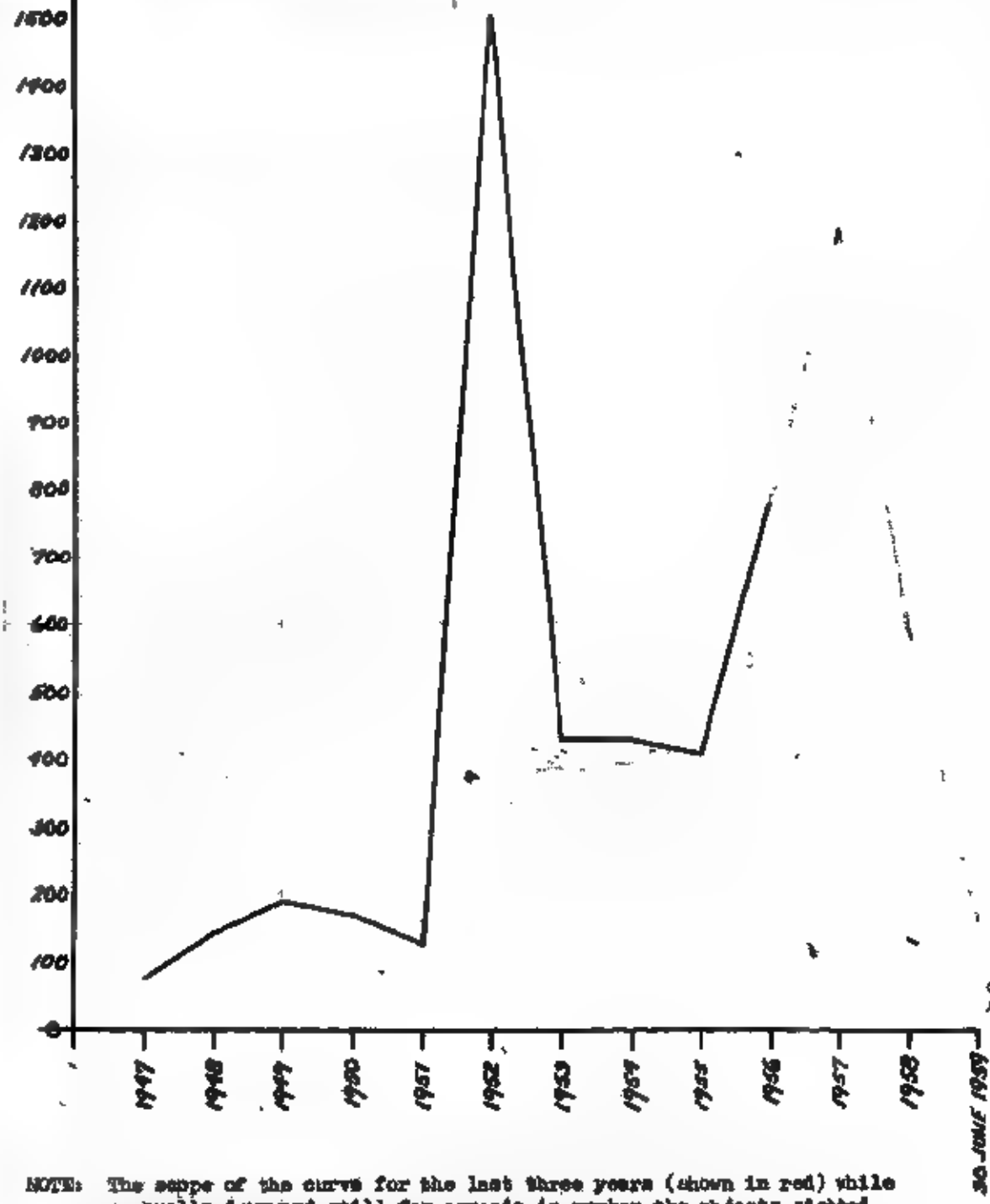
B. The Program Today.

1. Today one of the major aims in the conduct of this program is to eliminate the defensive attitude which has been allowed to creep into the program's public relations philosophy (the attitude of trying to prove that each object sighted is not a space vehicle of some type). These aims to be accomplished by a program designed to educate the public. Inform the public that a specific program, such as the UFO project, to evaluate each and every sighting is not essential to national security. The Air Force, in the conduct of its overall mission, will consider each and every report of an unidentified flying object, and that those which indicate a need for further exploitation; due to possible intelligence and/or scientific value will receive this added attention. To strip the shrouds of mystery from the program, the hate through which many innocent people have been duped by those who are using the UFO for personal gain. Other methods used in an attempt to accomplish this goal have been to form a panel of experts to advise on the various aspects of the program. This panel is composed of experts in the following areas:

Physicist
Chaplain
Psychologist
Astronomer
Public Relations

These men volunteer their time to this panel. A program is also in the mill to publish a sequel to Special Report #14. The information to be contained in this report is all directed toward the aims outlined above.

Graph of objects sighted and reported to the ATIC from 1947 to 30 June 1959



NOTE: The scope of the curve for the last three years (shown in red) while generally downward still far exceeds in number the objects sighted during the initial years of the program. Extrapolation of the sightings for 1959 through the end of the year would indicate an approximate total of 8/900 sightings.

STATISTICS - 1 January 1959 - 30 June 1959

	Jan	Feb	Mar	April	May	June	TOTAL
Astro	14	10	15	10	[redacted]	7	65
Aircraft	3	5	4	4	4	5	25
Balloon		3		1	3	1	8
Other	5	2	6	4	4	4	25
Insuff Data	5	5	3	4	4	13	34
Unidentified	___	___	1	1	___	___	2
	27	25	29	24	24	30	159

During this reporting period the Aerial Phenomena Group instituted a policy, of automatically including all reports of only one witness in the insufficient data category. This is in keeping with good intelligence and scientific precepts - if substantiation cannot be found, this decreases in value the information.

UFO STATISTICS FOR CALENDAR YEARS 1956, 1957, 1958

	1 Jan - 31 Dec 1956		1 Jan - 31 Dec 1957		1 Jan - 31 Dec 1958			
	# OBJ	%	# OBJ	%	# OBJ	%	TOTAL	%
Astro	205	26.3	326	27.7	197	33.4	728	28.50
Aircraft	192	24.6	285	24.2	110	18.6	588	23.00
Balloons	203	26.0	209	17.7	68	11.5	480	19.12
Insuff Data	109	14.1	169	14.4	104	17.6	382	14.96
Other	52	6.8	168	14.3	95	16.1	315	12.33
Satellites					11	1.9	11	0.44
Unidentified	17	2.2	20	1.7	5	.9	42	1.65
	778		1178		590		2546	

28 September 1959

TIME AND RESOURCES CHARGE TO PROJECT 5771 (BLUE BOOK)

1. While no accurate measure can be made of the manhours charged to this program, the following is a reasonable estimate gauged on a day to day basis. These estimates were based on known figures locally and on estimates for field allocations to each report received. This estimate was kept for the six months period from 1 January 1959 to 30 June 1959:

Manhours -

Military (Administrative and Scientific)	6861
Civilian " "	3538
Total	10,399

If we assume that this rate continues, then we have 20,798 manhours directly attributed to the UFO program during a year.

2. The other additions to overhead which are directly attributable to the UFO program are beyond measure, but to mention a few:

a. TDY funds for investigators.

b. Utilization of Air Force equipment during investigation (cars, etc).

c. Facilities used for analysis of material reported as part of a space craft.

d. Telephone calls and TWX's.

e. Military aircraft for intercept, transport of personnel, and/or equipment.

3. Scientific consultant for the program - the annual average for consultant services has been $1500 per year for a period of 11 years, or a total of $26,500.

4. As a supplement to the program the Air Force had a statistical study conducted by a civilian contractor in 1952. This study cost the Air Force approximately $100,000.

PROPOSED TRANSFER TO S.FOI

7-3745 - 366

1003820

AIR TECHNICAL INTELLIGENCE CENTER
UNITED STATES AIR FORCE
WRIGHT-PATTERSON AIR FORCE BASE
OHIO

REPLY TO ATTN OF: AFCIN-4E/Col Evans/lf

SUBJECT: Transfer of UFO

29 April 1960

TO: AFCIN-4E2
Colonel Shoop

Attached correspondence has been returned by the Secretary, and is being forwarded to your office for information and compliance.

The space authorization for the clerk stenographer in that group will now remain there.

PHILIP G. EVANS
Colonel, USAF
AFCIN-4E

1 Atch
Memo fr AFCIN-4 Mr. Arcier
w/ 1 Atch Memo 4E 3/31/60
2/ Draft of Ltr to Gen Walsh

Director
Aerospace
Army
Maxwell AFB, Ala.
RETURN

SECRET

10038 C

AFCIN-4E

Transfer of USAF Aerial Phenomena Program

AFCIN-4 (A/Gen Dougher)

1. In keeping with a policy of producing the maximum of aerospace intelligence with a minimum expenditure of funds and utilization of manpower, AFCIN-4E in December 1959, recommended the transfer of the Aerial Phenomena Program to Air Research and Development Command. It was pointed out at that time that after 12 years of experience ATIC has yet to uncover any positive evidence that UFO's constitute a threat to national security. It was further pointed out that the UFO program's only potential value to the United States Air Force was due to its scientific and/or technical aspects. ARDC, after reviewing the program, declined the transfer indicating that the data available was not qualitative and therefore of limited scientific value. It is my opinion that the data available is limited qualitatively only because of the volume of UFO traffic required to be handled by this organization. In an effort to continue meeting the USAF obligations to this program and also to disassociate it with intelligence, it is suggested that the Aerial Phenomena Program be transferred to SAFOI. The attached draft of a letter to General Walsh clearly indicates the benefits which might be derived from such a transfer.

2. If you concur with these suggestions, it is recommended that the draft of the attached letter be authenticated and forwarded to AFCIN.

PHILIP G. EVANS
Colonel, USAF
AFCIN-4E

1 Atch:
Draft of ltr to Gen Walsh
w/Atch

COORDINATION:

Lt Col Maj. 9 Mar 60 15 Mar 60
RM Sharp Col 25 Mar 60

D R A F T Ltr to Gen Walsh fr M/Gen Dougher

SUBJECT: Transfer of USAF Aerial Phenomena Program

1. During December 1959, a study was conducted by AFCIN-1E, ATIC, recommending the transfer of the Aerial Phenomena Program to the Air Research and Development Command. It was pointed out that 12 years experience with the UFO program had failed to reveal any threat to national security, and that any value from the program would be derived from exploitation of its scientific and technical aspects. After review of the program, ARDC declined the transfer indicating the data available was not qualitative and therefore was of limited scientific value. It is the opinion of ATIC that the data available is limited qualitatively only because of the volume of UFO traffic required to be handled by this organization. If the cases which give indication of possessing scientific and/or technical value were to be exploited fully, it is believed that they would be of benefit to the USAF. It was further pointed out in the study, and by ARDC, that the great majority of these cases are valuable to the Air Force only as statistics and as they relate to the public relations aspects of the program. The Air Force must continue its responsibility for operation of this project; however, in view of the fact that this program, for the most part, deals with public relations it is suggested that it be transferred to SAFOI. SAFOI is presently responsible for the public relations portion of the program and this transfer would only entail expansion of the branch within SAFOI responsible for this function.

2. This program could operate without the loss of its possible military and scientific value if conducted as follows:

a. The reports will by regulation be forwarded to SAFOI for initial evaluation and storage. An officer with a technical background, and preferably with intelligence experience, will be assigned to that branch of SAFOI charged with this responsibility and will conduct this initial evaluation.

b. Those reports which reach SAFOI which give indication of having possible intelligence value or scientific and technical possibilities will be forwarded to AFCIN and/or ARDC for further evaluation and/or exploitation.

c. The conduct of the program in the field (investigations) will still be the responsibility of the Air Force bases. At the bases it will still be preferably the intelligence function which will be responsible for these investigations.

3. The advantages of this transfer are:

a. SAFOI is familiar with the Aerial Phenomena Program.

b. Reports will be evaluated immediately at the office responsible for public relations.

c. The reports which show promise of additional value, either from an intelligence and/or scientific viewpoint, will be forwarded to specializing agencies for further exploitation. Under this method of operation the number of reports which agencies such as ATIC and ARDC are required to handle would be cut to a minimum, allowing for more man-hours per report and consequently better analysis and evaluation.

d. The program will lose some of the aura of mystery which surrounds it due to its association with intelligence.

e. ATIC will be free to apply man-hours, previously applied to the UFO project, to other programs more beneficial to the Air Force.

f. ATIC prestige will lose the damaging effects which can be attributed to its association with a program so much in the public eye.

4. There are certain disadvantages associated with this change, the magnitude of which will decrease as the agencies concerned become familiar with the new method of operation:

a. The requirement for the office handling this program to establish the necessary security measures for handling classified intelligence reports.

b. It will be the responsibility of one individual not directly concerned with intelligence to determine which reports are of possible intelligence value.

c. Possibility of delay of reports with intelligence value getting into proper channels and the resulting delay of evaluation and dissemination of intelligence information.

d. The necessity for familiarizing sub-units of the Air Force with a new method of operating the Aerial Phenomena Program.

5. It has been pointed out that there would possibly be a lag in intelligence information finding its way into the proper channels. However, it should be immediately obvious that reports which originate from intelligence sources would remain primarily in intelligence channels with information copies of these reports, when deemed necessary due to their relation with the Aerial Phenomena Program, forwarded to the office in SAFOI which handles the project. The program should suffer little from being severed from an organization with a scientific and technical capability. The office within SAFOI responsible for this program could request the services of any agency within the government complex, which has a scientific

and/or technical capability, for assistance in the evaluation of these reports.

6. The officer presently conducting the program for ATIC is available for transfer along with the project. This officer is capable of performing the function spelled out in Par. 2a of this document.

7. Dr. J. Allen Hynek, Astrophysicist and Director of the Observatory at Northeastern University should be retained as the scientific consultant to this program. Dr. Hynek's experience with the aerial phenomena program spans the entire 12 years that the Air Force has conducted this program, and this experience would be invaluable to any future Air Force efforts in this area.

8. It is believed that this method of operating the Aerial Phenomena Program would be the most beneficial to the USAF. The long range aims are to eliminate this costly program completely as an Air Force responsibility. The first step, however, is to eliminate the most unproductive aspects of this program (i.e. hoax and garden variety UFO reports) as a responsibility of intelligence.

9. If you concur with the recommendations of this letter, it is suggested that the necessary steps be taken to effect the transfer of the Aerial Phenomena Program to SAFOI. (Draft of letter to M/Gen Luehman of SAFOI recommending the transfer is attached)

D R A F T Ltr to M/Gen A. H. Luchman fr Gen Walsh

SUBJECT: Transfer of USAF Aerial Phenomena Program

1. In the fall of 1947, the USAF took official notice of reports of unidentified flying objects. Responsibility for the UFO project was assigned to the intelligence community.

2. The project, as established, was to determine if UFO's were hostile, had any possible scientific value, and to determine the nature of each of these objects. After 12 years and more than 8000 reports, the Air Force has not discovered any evidence which would indicate that UFO's are inimical or pose a security threat in any way.

3. In the absence of evidence to indicate a possible security threat the scientific and public relations aspects of the program gained stature. It becomes obvious that with these new objectives the program's assignment to intelligence is no longer practical. Experience during the same 12 years has indicated that the program is more a public relations program than anything else. The few reports that may have intelligence and/or scientific and technical value have a tendency to become lost in the volume of UFO traffic. In an effort to overcome this shortcoming, it is my opinion that the aerial phenomena project should be assigned to SAFOI.

4. To prevent the loss of valuable information; intelligence, scientific, and/or technical, it is suggested that an individual with a technical and intelligence background be assigned to the branch of SAFOI which becomes responsible for the program. All reports which have indication of value in the intelligence and/or scientific areas would be routed to the appropriate agency for exploitation. The officer presently

conducting the program for ATIC is available for transfer along with the project. This officer is capable of performing the function spelled out in Par. 2a of this document.

5. It is suggested that Dr. J. Allen Hynek, Astrophysicist and Director of the Observatory at Northwestern University, be retained as the scientific consultant to the program. Dr. Hynek has performed in this capacity for ATIC since 1947, and his experience and "know how" would be invaluable to Air Force efforts in conducting the aerial phenomena program.

6. With your concurrence, I propose to initiate the action to transfer the aerial phenomena program to SAFOI.

AIR TECHNICAL INTELLIGENCE CENTER
UNITED STATES AIR FORCE
WRIGHT-PATTERSON AIR FORCE BASE

REPLY TO ATTN OF: AFCIN-4E

SUBJECT: Transfer of USAF Aerial Phenomena Program

TO: AFCIN-4 (M/Gen Dougher)

1. In keeping with a policy of producing the maximum of aerospace intelligence with a minimum expenditure of funds and utilization of manpower, AFCIN-4E in December 1959, recommended the transfer of the Aerial Phenomena Program to Air Research and Development Command. It was pointed out at that time that after 12 years of experience ATIC has yet to uncover any positive evidence that UFO's constitute a threat to national security. It was further pointed out that the UFO program's only potential value to the United States Air Force was due to its scientific and/or technical aspects. ARDC, after reviewing the program, declined the transfer indicating that the data available was not qualitative and therefore of limited scientific value. It is my opinion that the data available is limited qualitatively only because of the volume of UFO traffic required to be handled by this organization. In an effort to continue meeting the USAF obligations to this program and also to disassociate it with intelligence, it is suggested that the Aerial Phenomena Program be transferred to SAFOI. The attached draft of a letter to General Walsh clearly indicates the benefits which might be derived from such a transfer.

2. If you concur with these suggestions, it is recommended that the draft of the attached letter be authenticated and forwarded to AFCIN.

PHILIP G. EVANS
Colonel, USAF
AFCIN-4E

1 Atch:
Draft of ltr to Gen Walsh
w/Atch

AFCIN-4X1 1 April 1960

Subject: Transfer of UFO

MEMORANDUM TO MAJOR GENERAL DOUGHER

1. My comments on the transfer proposed in Colonel Evans' memorandum of 31 March 1960 are as follows.

2. I have tried during the last ten years of close association with this program to get it out of ATIC, for most of the reasons given in Colonel Evans' letter and its attachment. However, I have some additional comments:

a. This program has a high psychological warfare potential (an example being the H. G. Wells "War of the World" put on as a radio show by Orson Wells some years ago). Defense against this is not a function of intelligence.

b. I do not agree that, as stated in paragraph 4e, "loss of prestige to UFO program" is a disadvantage. In fact, I have been trying to bring this about totally.

3. Major Tacker of SAFOI is about to publish a book on UFO. This would surely destroy the claim of objectivity which the Air Force has made.

4. This transfer would certainly ease the 4X3 personnel problem.

5. If a transfer of personnel is involved in this matter, I recommend that Major R. J. Friend or Captain George T. Gregory go with the program; that is, if they are awaiting reassignment or if they can be spared. A better alternative might be to have either of these officers named ATIC representative in an advisory capacity only and upon call. A much better alternative, and the one I recommend, would be for Dr. J. Allen Hynek to be retained by SAFOI as the scientific advisor on this subject.

A. FRANCIS ARCIER
AFCIN-4X1

1 Atch
4E ltr 31 Mar 60, subj Transfer of USAF Aerial Phenomena Program

AEROSPACE TECHNICAL INTELLIGENCE CENTER
UNITED STATES AIR FORCE
WRIGHT-PATTERSON AIR FORCE BASE
OHIO

REPLY TO ATTN OF: AFCIN-4

SUBJECT: Transfer of USAF Aerial Phenomena Program

TO: AFCIN (Major General Walsh)

1. During December 1959, a study was conducted by AFCIN-4B, ATIC, recommending the transfer of the Aerial Phenomena Program to the Air Research and Development Command. It was pointed out that 12 years experience with the UFO program had failed to reveal any threat to national security, and that any value from the program would be derived from exploitation of its scientific and technical aspects. After review of the program, ARDC declined the transfer indicating the data available was not qualitative and therefore was of limited scientific value. It is the opinion of ATIC that the data available is limited qualitatively only because of the volume of UFO traffic required to be handled by this organization. If the cases which give indication of possessing scientific and/or technical value were to be exploited fully, it is believed that they would be of benefit to the USAF. It was further pointed out in the study, and by ARDC, that the great majority of these cases are valuable to the Air Force only as statistics and as they relate to the public relations aspects of the program. The Air Force must continue its responsibility for operation of this project; however, in view of the fact that this program, for the most part, deals with public relations it is suggested that it be transferred to SAFOI. SAFOI is presently responsible for the public relations portion of the program and this transfer would only entail expansion of the branch within SAFOI responsible for this function.

2. This program could operate without the loss of its possible military and scientific value if conducted as follows:

a. The reports will by regulation be forwarded to SAFOI for initial evaluation and storage. An officer with a technical background, and preferably with intelligence experience, will be assigned to that branch of SAFOI charged with this responsibility and will conduct this initial evaluation.

b. Those reports which reach SAFOI which give indication of having possible intelligence value or scientific and technical possibilities will be forwarded to AFCIN and/or ARDC for further evaluation and/or exploitation.

c. The conduct of the program in the field (investigations) will still be the responsibility of the Air Force bases. At the bases it will still be preferably the intelligence function which will be responsible for these investigations.

3. The advantages of this transfer are:

a. SAFOI is familiar with the Aerial Phenomena Program.

b. Reports will be evaluated immediately at the office responsible for public relations.

c. The reports which show promise of additional value, either from an intelligence and/or scientific viewpoint, will be forwarded to specializing agencies for further exploitation. Under this method of operation the number of reports which agencies such as ATIC and ARDC are required to handle would be cut to a minimum, allowing for more man-hours per report and consequently better analysis and evaluation.

d. The program will lose some of the aura of mystery which surrounds it due to its association with intelligence.

e. ATIC will be free to apply man-hours, previously applied to the UFO project, to other programs more beneficial to the Air Force.

f. ATIC prestige will lose the damaging effects which can be attributed to its association with a program so much in the public eye.

4. There are certain disadvantages associated with this change, the magnitude of which will decrease as the agencies concerned become familiar with the new method of operation:

a. The requirement for the office handling this program to establish the necessary security measures for handling classified intelligence reports.

b. It will be the responsibility of one individual not directly concerned with intelligence to determine which reports are of possible intelligence value.

c. Possibility of delay of reports with intelligence value getting into proper channels and the resulting delay of evaluation and dissemination of intelligence information.

d. The necessity for familiarizing sub-units of the Air Force with a new method of operating the Aerial Phenomena Program.

5. It has been pointed out that there would possibly be a lag in intelligence information finding it way into the proper channels. However, it should be immediately obvious that reports which originate from intelligence sources would remain primarily in intelligence channels with information copies of these reports, when deemed necessary due to their relation with the Aerial Phenomena Program, forwarded to the office in SAFOI which handles the project. The program should suffer little from being severed from an organization with a scientific and technical capability. The office within SAFOI responsible for this program could request the services of any agency with the government complex, which has a scientific and/or technical capability, for assistance in the evaluation of these reports.

6. The officer presently conducting the program for ATIC is available for transfer along with the project. This officer is capable of performing the function spelled out in paragraph 2a of this document.

7. Dr. J. Allen Hynek, Astrophysicist and Director of the Observatory at Northwestern University should be retained as the scientific consultant to this program. Dr. Hynek's experience with the aerial phenomena program spans the entire 12 years that the Air Force has conducted this program, and this experience would be invaluable to any future Air Force efforts in this area.

8. It is believed that this method of operating the Aerial Phenomena Program would be the most beneficial to the USAF. The long range aims are to eliminate this costly program completely as an Air Force responsibility. The first step, however, is to eliminate the most unproductive aspects of this program (i.e. hoax and garden variety UFO reports) as a responsibility of intelligence.

9. If you concur with the recommendations of this letter, it is suggested that the necessary steps be taken to effect the transfer of the Aerial Phenomena Program to SAFOI.

1 Atch
Draft of ltr to M/Gen Luehman

AFCIN-4

Transfer of USAF Aerial Phenomena Program

AFCIN (Major General Walsh)

1. During December 1959, a study was conducted by AFCIN-4E, ATIC, recommending the transfer of the Aerial Phenomena Program to the Air Research and Development Command. It was pointed out that 12 years experience with the UFO program had failed to reveal any threat to national security, and that any value from the program would be derived from exploitation of its scientific and technical aspects. After review of the program, ARDC declined the transfer indicating the data available was not qualitative and therefore was of limited scientific value. It is the opinion of ATIC that the data available is limited qualitatively only because of the volume of UFO traffic required to be handled by this organization. If the cases which give indication of possessing scientific and/or technical value were to be exploited fully, it is believed that they would be of benefit to the USAF. It was further pointed out in the study, and by ARDC, that the great majority of these cases are valuable to the Air Force only as statistics and as they relate to the public relations aspects of the program. The Air Force must continue its responsibility for operation of this project; however, in view of the fact that this program, for the most part, deals with public relations it is suggested that it be transferred to SAFOI. SAFOI is presently responsible for the public relations portion of the program and this transfer would only entail expansion of the branch within SAFOI responsible for this function.

2. This program could operate without the loss of its possible military and scientific value if conducted as follows:

a. The reports will by regulation be forwarded to SAFOI for initial evaluation and storage. An officer with a technical background, and preferably with intelligence experience, will be assigned to that branch of SAFOI charged with this responsibility and will conduct this initial evaluation.

b. Those reports which reach SAFOI which give indication of having possible intelligence value or scientific and technical possibilities will be forwarded to AFCIN and/or ARDC for further evaluation and/or exploitation.

c. The conduct of the program in the field (investigations) will still be the responsibility of the Air Force bases. At the bases it will still be preferably the intelligence function which will be responsible for these investigations.

3. The advantages of this transfer are:

a. SAFOI is familiar with the Aerial Phenomena Program.

b. Reports will be evaluated immediately at the office responsible for public relations.

c. The reports which show proxies of additional value, either from an intelligence and/or scientific viewpoint, will be forwarded to specializing agencies for further exploitation. Under this method of operation the number of reports which agencies such as ATIC and AMSC are required to handle would be cut to a minimum, allowing for more man-hours per report and consequently better analysis and evaluation.

d. The program will lose some of the aura of mystery which surrounds it due to its association with intelligence.

e. ATIC will be free to apply man-hours, previously applied to [redacted] project, to other programs more beneficial to the Air Force.

f. ATIC prestige will lose the damaging effects which can be attributed to its association with a program so much in the public eye.

4. There are certain disadvantages associated with this change, the magnitude of which will decrease as the agencies concerned become familiar with the new method of operation:

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b. It will be the responsibility of one individual not directly concerned with intelligence to determine which reports are of possible intelligence value.

c. Possibility of delay of reports with intelligence value getting into proper channels and the resulting delay of evaluation and dissemination of intelligence information.

d. The necessity for familiarizing sub-units of the Air Force with a new method of operating the Aerial Phenomena Program.

5. It has been pointed out that there would possibly be a lag in intelligence information finding it way into the proper channels. However, it should be immediately obvious that reports which originate from intelligence sources would remain primarily in intelligence channels with information copies of these reports, when deemed necessary due to their relation with the Aerial Phenomena Program, forwarded to the office in SAFOI which handles the project. The program should suffer little from being severed from an organization with a scientific and technical capability. The office within SAFOI responsible for this program could request the services of any agency with the government complex, which has a scientific and/or technical capability, for assistance in the evaluation of these reports.

6. The officer presently conducting the program for ATIC is available for transfer along with the project. This officer is capable of performing the function spelled out in paragraph 2a of this document.

7. Dr. J. Allen Hynek, Astrophysicist and Director of the Observatory at Northwestern University should be retained as the scientific consultant to this program. Dr. Hynek's experience with the aerial phenomena program spans the entire 12 years that the Air Force has conducted this program, and this experience would be invaluable to any future Air Force efforts in this area.

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9. If you concur with the recommendations of this letter, it is suggested that the necessary steps be taken to effect the transfer of the Aerial Phenomena Program to SAFOI.

1 Atch
Draft of ltr to M/Gen Luehman

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D. C

REPLY TO
ATTN OF: AFCIN (Major General Walsh)

SUBJECT: Transfer of USAF Aerial Phenomena Program

TO: SAFOI (Major General A. H. Luehman)

1. In the fall of 1947, the USAF took official notice of reports of unidentified flying objects. Responsibility for the UFO project was assigned to the intelligence community.

2. The project, as established, was to determine if UFO's were hostile, had any possible scientific value, and to determine the nature of each of these objects. After 12 years and more than 8000 reports, the Air Force has not discovered any evidence which would indicate that UFO's are inimical or pose a security threat in any way.

3. In the absence of evidence to indicate a possible security threat the scientific and public relations aspects of the program gained stature. It becomes obvious that with these new objectives the program's assignment to intelligence is no longer practical. Experience during the same 12 years has indicated that the program is more a public relations program than anything else. The few reports that may have intelligence and/or scientific and technical value have a tendency to become lost in the volume of UFO traffic. In an effort to overcome this shortcoming, it is my opinion that the aerial phenomena project should be assigned to SAFOI.

4. To prevent the loss of valuable information; intelligence, scientific, and/or technical, it is suggested that an individual with a technical and intelligence background be assigned to the branch of SAFOI which becomes responsible for the program. All reports which have indication of value in the intelligence and/or scientific areas would be routed to the appropriate agency for exploitation. The officer presently conducting the program for ATIC is available for transfer along with the project. This officer is capable of performing the function spelled out in this paragraph.

5. It is suggested that Dr. J. Allen Hynek, Astrophysicist and Director of the Observatory at Northwestern University, be retained

as the scientific consultant to the program. Dr. Hynek has performed in this capacity for ATIC since 1947, and his experience and "know how" would be invaluable to Air Force efforts in conducting the aerial phenomena program.

6. With your concurrence, I propose to initiate the action to transfer the aerial phenomena program to SAFOI.

REPLY TO
ATTN OF: AFCIN (Major General Walsh)

SUBJECT: Transfer of USAF Aerial Phenomena Program

TO: SAFOI (Major General A. H. Luehman)

1. In the fall of 1947, the USAF took official notice of reports of unidentified flying objects. Responsibility for the UFO project was assigned to the intelligence community.

2. The project, as established, was to determine if UFO's were hostile, had any possible scientific value, and to determine the nature of each of these objects. After 12 years and more than 8000 reports, the Air Force has not discovered any evidence which would indicate that UFO's are inimical or pose a security threat in any way.

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5. It is suggested that Dr. J. Allen Hynek, Astrophysicist and Director of the Observatory at Northwestern University, be retained

as the scientific consultant to the program. Dr. Hynek has performed in this capacity for ATIC since 1947, and his experience and "know how" would be invaluable to Air Force efforts in conducting the aerial phenomena program.

6. With your concurrence, I propose to initiate the action to transfer the aerial phenomena program to SAPOI.

D R A F T Ltr to Gen Walsh fr M/Gen Dougher

SUBJECT: Transfer of USAF Aerial Phenomena Program

1. During December 1959, a study was conducted by AFCIN-4E, ATIC, recommending the transfer of the Aerial Phenomena Program to the Air Research and Development Command. It was pointed out that 12 years experience with the UFO program had failed to reveal any threat to national security, and that any value from the program would be derived from exploitation of its scientific and technical aspects. After review of the program, ARDC declined the transfer indicating the data available was not qualitative and therefore was of limited scientific value. It is the opinion of ATIC that the data available is limited qualitatively only because of the volume of UFO traffic required to be handled by this organization. If the cases which give indication of possessing scientific and/or technical value were to be exploited fully, it is believed that they would be of benefit to the USAF. It was further pointed out in the study, and by ARDC, that the great majority of these cases are valuable to the Air Force only as statistics and as they relate to the public relations aspects of the program. The Air Force must continue its responsibility for operation of this project; however, in view of the fact that this program, for the most part, deals with public relations it is suggested that it be transferred to SAFOI. SAFOI is presently responsible for the public relations portion of the program and this transfer would only entail expansion of the branch within SAFOI responsible for this function.

2. This program could operate without the loss of its possible military and scientific value if conducted as follows:

a. The reports will by regulation be forwarded to SAFOI for initial evaluation and storage. An officer with a technical background, and preferably with intelligence experience, will be assigned to that branch of SAFOI charged with this responsibility and will conduct this initial evaluation.

b. Those reports which reach SAFOI which give indication of having possible intelligence value or scientific and technical possibilities will be forwarded to AFCIN and/or ARDC for further evaluation and/or exploitation.

c. The conduct of the program in the field (investigations) will still be the responsibility of the Air Force bases. At the bases it will still be preferably the intelligence function which will be responsible for these investigations.

3. The advantages of this transfer are:

a. SAFOI is familiar with the Aerial Phenomena Program.

b. Reports will be evaluated immediately at the office responsible for public relations.

c. The reports which show promise of additional value, either from an intelligence and/or scientific viewpoint, will be forwarded to specializing agencies for further exploitation. Under this method of operation the number of reports which agencies such as ATIC and ARDC are required to handle would be cut to a minimum, allowing for more man-hours per report and consequently better analysis and evaluation.

d. The program will lose some of the aura of mystery which surrounds it due to its association with intelligence.

e. ATIC will be free to apply man-hours, previously applied to the UFO project, to other programs more beneficial to the Air Force.

f. ATIC prestige will lose the damaging effects which can be attributed to its association with a program so much in the public eye.

g. There are certain disadvantages associated with this change, the magnitude of which will decrease as the agencies concerned become familiar with the new method of operation:

a. The requirement for the office handling this program to establish the necessary security measures for handling classified intelligence reports.

b. It will be the responsibility of one individual not directly concerned with intelligence to determine which reports are of possible intelligence value.

c. Possibility of delay of reports with intelligence value getting into proper channels and the resulting delay of evaluation and dissemination of intelligence information.

d. The necessity for familiarizing sub-units of the Air Force with a new method of operating the Aerial Phenomena Program.

5. It has been pointed out that there would possibly be a lag in intelligence information finding its way into the proper channels. However, it should be immediately obvious that reports which originate from intelligence sources would remain primarily in intelligence channels with information copies of these reports, when deemed necessary due to their relation with the Aerial Phenomena Program, forwarded to the office in SAFOI which handles the project. The program should suffer little from being severed from an organization with a scientific and technical capability. The office within SAFOI responsible for this program could request the services of any agency within the government complex, which has a scientific

and/or technical capability, for assistance in the evaluation of these reports.

6. The officer presently conducting the program for ATIC is available for transfer along with the project. This officer is capable of performing the function spelled out in Par. 2a of this document.

7. Dr. J. Allen Hynek, Astrophysicist and Director of the Observatory at Northwestern University should be retained as the scientific consultant to this program. Dr. Hynek's experience with the aerial phenomena program spans the entire 12 years that the Air Force has conducted this program, and this experience would be invaluable to any future Air Force efforts in this area.

8. It is believed that this method of operating the Aerial Phenomena Program would be the most beneficial to the USAF. The long range aims are to eliminate this costly program completely as an Air Force responsibility. The first step, however, is to eliminate the most unproductive aspects of this program (i.e. hoax and garden variety UFO reports) as a responsibility of intelligence.

9. If you concur with the recommendations of this letter, it is suggested that the necessary steps be taken to effect the transfer of the Aerial Phenomena Program to SAFOI. (Draft of letter to M/Gen Luehman of SAFOI recommending the transfer is attached)

4

D R A F T Ltr to M/Gen A. H. Luehman fr Gen Walsh

SUBJECT: Transfer of USAF Aerial Phenomena Program

1. In the fall of 1947, the USAF took official notice of reports of unidentified flying objects. Responsibility for the UFO project was assigned to the intelligence community.

2. The project, as established, was to determine if UFO's were hostile, had any possible scientific value, and to determine the nature of each of these objects. After 12 years and more than 8000 reports, the Air Force has not discovered any evidence which would indicate that UFO's are inimical or pose a security threat in any way.

3. In the absence of evidence to indicate a possible security threat - the scientific and public relations aspects of the program gained stature. It becomes obvious that with these new objectives the program's assignment to intelligence is no longer practical. Experience during the same 12 years has indicated that the program is more a public relations program than anything else. The few reports that may have intelligence and/or scientific and technical value have a tendency to become lost in the volume of UFO traffic. In an effort to overcome this shortcoming, it is my opinion that the aerial phenomena project should be assigned to SAFOI.

4. To prevent the loss of valuable information; intelligence, scientific, and/or technical, it is suggested that an individual with a technical and intelligence background be assigned to the branch of SAFOI which becomes responsible for the program. All reports which have indication of value in the intelligence and/or scientific areas would be routed to the appropriate agency for exploitation. The officer presently

conducting the program for ATIC is available for transfer along with the project. This officer is capable of performing the function spelled out in Par. 2a of this document.

5. It is suggested that Dr. J. Allen Hynek, Astrophysicist and Director of the Observatory at Northwestern University, be retained as the scientific consultant to the program. Dr. Hynek has performed in this capacity for ATIC since 1947, and his experience and "know how" would be invaluable to Air Force efforts in conducting the aerial phenomena program.

6. With your concurrence, I propose to initiate the action to transfer the aerial phenomena program to SAFOI.

AFCIN-4

Transfer of USAF Aerial Phenomena Program

~~AFCIN (Major General Walsh)~~

1. During December 1959, a study was conducted by AFCIN-4H, ATIC, recommending the transfer of the Aerial Phenomena Program to the Air Research and Development Command. It was pointed out that 12 years experience with the UFO program had failed to reveal any threat to national security, and that any value from the program would be derived from exploitation of its scientific and technical aspects. After review of the program, ARDC declined the transfer indicating the data available was not qualitative and therefore was of limited scientific value. It is the opinion of ATIC that the data available is limited qualitatively only because of the volume of UFO traffic required to be handled by this organization. If the cases which give indication of possessing scientific and/or technical value were to be exploited fully, it is believed that they would be of benefit to the USAF. It was further pointed out in the study, and by ARDC, that the great majority of these cases are valuable to the Air Force only as statistics and as they relate to the public relations aspects of the program. The Air Force must continue its responsibility for operation of this project; however, in view of the fact that this program, for the most part, deals with public relations it is suggested that it be transferred to SAPOI. SAPOI is presently responsible for the public relations portion of the program and this transfer would only entail expansion of the branch within SAPOI responsible for this function.

2. This program could operate without the loss of its possible military and scientific value if conducted as follows:

a. The reports will by regulation be forwarded to SAPOI for initial evaluation and storage. An officer with a technical background, and preferably with intelligence experience, will be assigned to that branch of SAPOI charged with this responsibility and will conduct this initial evaluation.

b. Those reports which reach SAPOI which give indication of having possible intelligence value or scientific and technical possibilities will be forwarded to AFCIN and/or ARDC for further evaluation and/or exploitation.

c. The conduct of the program in the field (investigations) will still be the responsibility of the Air Force bases. At the bases it will still be preferably the intelligence function which will be responsible for these investigations.

3. The advantages of this transfer are:

a. SAPOI is familiar with the Aerial Phenomena Program.

b. Reports will be evaluated immediately at the office responsible for public relations.

c. The reports which show promise of additional value, either from an intelligence and/or scientific viewpoint, will be forwarded to specializing agencies for further exploitation. Under this method of operation the number of reports which agencies such as AFIC and ARDC are required to handle would be cut to a minimum, allowing for more man-hours per report and consequently better analysis and evaluation.

d. The program will lose some of the aura of mystery which surrounds it due to its association with intelligence.

e. AFIC will be free to apply man-hours, previously applied to the UFO project, to other programs more beneficial to the Air Force.

f. AFIC prestige will lose the damaging effects which can be attributed to its association with a program so much in the public eye.

4. There are certain disadvantages associated with this change, the magnitude of which will decrease as the agencies concerned become familiar with the new method of operation:

a. The requirement for the office handling this program to establish the necessary security measures for handling classified intelligence reports.

b. It will be the responsibility of one individual not directly concerned with intelligence to determine which reports are of possible intelligence value.

c. Possibility of delay of reports with intelligence value getting into proper channels and the resulting delay of evaluation and dissemination of intelligence information.

d. The necessity for familiarizing sub-units of the Air Force with a new method of operating the Aerial Phenomena Program.

5. It has been pointed out that there would possibly be a lag in intelligence information finding it way into the proper channels. However, it should be immediately obvious that reports which originate from intelligence sources would remain primarily in intelligence channels with information copies of these reports, when deemed necessary due to their relation with the Aerial Phenomena Program, forwarded to the office in SAFOI which handles the project. The program should suffer little from being severed from an organization with a scientific and technical capability. The office within SAFOI responsible for this program could request the services of any agency with the government complex, which has a scientific and/or technical capability, for assistance in the evaluation of these reports.

6. The officer presently conducting the program for ATIC is available for transfer along with the project. This officer is capable of performing the function spelled out in paragraph 3a of this document.

7. Dr. J. Allen Hynek, Astrophysicist and Director of the Observatory at Northwestern University should be retained as the scientific consultant to this program. Dr. Hynek's experience with the aerial phenomena program spans the entire 12 years that the Air Force has conducted this program, and this experience would be invaluable to any future Air Force efforts in this area.

8. It is believed that this method of operating the Aerial Phenomena Program would be the most beneficial to the USAF. The long range aims are to eliminate this costly program completely as an Air Force responsibility. The first step, however, is to eliminate the most unproductive aspects of this program (i.e. hoax and garden variety UFO reports) as a responsibility of intelligence.

9. If you concur with the recommendations of this letter, it is suggested that the necessary steps be taken to effect the transfer of the Aerial Phenomenon Program to SAFOI.

1 Atch
Draft of ltr to M/Gen Luehman

REPLY TO
ATTN OF: AFCIN (Major General Walsh)

SUBJECT: Transfer of USAF Aerial Phenomena Program

TO: SAFOI (Major General A. H. Luebben)

1. In the fall of 1947, the USAF took official notice of reports of unidentified flying objects. Responsibility for the UFO project was assigned to the intelligence community.

2. The project, as established, was to determine if UFO's were hostile, had any possible scientific value, and to determine the nature of each of these objects. After 12 years and more than 8000 reports, the Air Force has not discovered any evidence which would indicate that UFO's are inimical or pose a security threat in any way.

3. In the absence of evidence to indicate a possible security threat the scientific and public relations aspects of the program gained stature. It becomes obvious that with these new objectives the program's assignment to intelligence is no longer practical. Experience during the same 12 years has indicated that the program is more a public relations program than anything else. The few reports that may have intelligence and/or scientific and technical value have a tendency to become lost in the volume of UFO traffic. In an effort to overcome this shortcoming, it is my opinion that the aerial phenomena project should be assigned to SAFOI.

4. To prevent the loss of valuable information; intelligence, scientific, and/or technical, it is suggested that an individual with a technical and intelligence background be assigned to the branch of SAFOI which becomes responsible for the program. All reports which have indication of value in the intelligence and/or scientific areas would be routed to the appropriate agency for exploitation. The officer presently conducting the program for AFIC is available for transfer along with the project. This officer is capable of performing the function spelled out in this paragraph.

5. It is suggested that Dr. J. Allen Hynek, Astrophysicist and Director of the Observatory at Northwestern University, be retained

[redacted] scientific [redacted] to the program. Dr. Hynek has performed in this capacity for ATIC since 1947, and his experience and "know how" would be invaluable to Air Force efforts in conducting the aerial phenomena program.

6. With your concurrence, I propose to initiate the action to transfer the aerial phenomena program to [redacted].

AFCIN-4E

Transfer of USAF Aerial Phenomena Program

AFCIN-4 (M/Gen Dougher)

1. In keeping with a policy of producing the maximum of aerospace intelligence with a minimum expenditure of funds and utilization of manpower, AFCIN-4E in December 1959, recommended the transfer of the Aerial Phenomena Program to Air Research and Development Command. It was pointed out at that time that after 12 years of experience ATIC had yet to uncover any positive evidence that UFO's constitute a threat to national security. It was further pointed out that the UFO program's only potential value to the United States Air Force was due to its scientific and/or technical aspects. ARDC, after reviewing the program, declined the transfer indicating that the data available was not qualitative and therefore of limited scientific value. It is my opinion that the data available is limited qualitatively only because of the volume of UFO traffic required to be handled by this organization. In an effort to continue meeting the USAF obligations to this program and also to dissassociate it with intelligence, it is suggested that the Aerial Phenomena Program be transferred to SAFOI. The attached draft of a letter to General Walsh clearly indicates the benefits which might be derived from such a transfer.

2. If you concur with these suggestions, it is recommended that the draft of the attached letter be authenticated and forwarded to AFCIN.

PHILIP O. EVANS
Colonel, USAF
AFCIN-4E

1 Atch:
Draft of ltr to Gen Walsh
w/Atch

D R A F T Ltr to Gen Walsh fr M/Gen Dougher

SUBJ: Transfer of USAF Aerial Phenomena Program

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a. The reports will by regulation be forwarded to SAFOI for initial evaluation and storage. An officer with a technical background, and preferably with intelligence experience, will be assigned to that branch of SAFOI charged with this responsibility and will conduct this initial evaluation.

b. Those reports which reach SAFOI which give indication of having possible intelligence value or scientific and technical possibilities will be forwarded to APCIN and/or ARDC for further evaluation and/or exploitation.

c. The conduct of the program in the field (investigations) will still be the responsibility of the Air Force bases. At the bases it will still be preferably the intelligence function which will be responsible for these investigations.

3. The advantages of this transfer are:

a. SAFOI is familiar with the Aerial Phenomena Program.

b. Reports will be evaluated immediately at the office responsible for public relations.

c. The number of reports which show promise of additional value either from an intelligence and/or scientific viewpoint will be cut to a minimum, thereby allowing specialising agencies to devote more man hours per report.

d. The program will lose some of the aura of mystery which surrounds it due to its association with intelligence.

e. ATIC will be free to apply more hours, previously applied to the program, to other programs more beneficial to the Air Force.

f. ATIC prestige will lose the damaging effects which can be attributed to its association with a program so much in the public eye.

4. There are certain disadvantages associated with this change, the magnitude of which will decrease as the agencies concerned become familiar with the new method of operation:

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b. It will be the responsibility of one individual not directly concerned with intelligence to determine which reports are of possible intelligence value.

c. Possibility of delay of reports with intelligence value getting into proper channels and the resulting delay of evaluation and dissemination of intelligence information.

d. The necessity for familiarizing sub-units of the Air Force with a new method of operating the Aerial Phenomena Program.

e. Loss of prestige to the Aerial Phenomena Program due to its association with an agency having no specific scientific or technical capability.

5. It has been pointed out that there would possibly be a lag in intelligence information finding its way into the proper channels. However, it should be immediately obvious that reports which originate from intelligence sources would remain primarily in intelligence channels with information copies of these reports, when deemed necessary due to their relation with the Aerial Phenomena Program, forwarded to the office in SAFOI which handles the project. The program should suffer little from being severed from an organization with a scientific and technical capability. The office within SAFOI responsible for this program could request the services of any agency within the government complex, which has a scientific and/or technical capability, for assistance in the evaluation of these reports.

6. It is believed that this method of operating the Aerial Phenomena Program would be the most beneficial to the USAF. The long range aims are to eliminate this costly program completely as an Air Force responsibility. The first step, however, is to eliminate the most unproductive aspects of this program (i.e. hoax and garden variety UFO reports) as a responsibility of intelligence.

7. If you concur with the recommendations of this letter, it is suggested that the necessary steps be taken to effect the transfer of the Aerial Phenomena Program to SAFOI. (Draft of letter to M/Gen Luehman of SAFOI recommending the transfer is attached)

D R A F T of lt [redacted] to M/Gen A. H. Luebman fr Gen W[redacted]h

SUBJ: Transfer of USAF Aerial Phenomena Program

1. In the fall of 1947, the USAF took official notice of reports of unidentified flying objects. Responsibility for the UFO project was assigned to the intelligence community.

2. The project, as established, was to determine if UFO's were hostile, had any possible scientific value, and to determine the nature of each of these objects. After 12 years and more than 8000 reports, the Air Force has not discovered any evidence which would indicate that UFO's are inimical or pose a security threat in any way.

3. In the absence of evidence to indicate a possible security threat the scientific and public relations aspects of the program gained stature. It becomes obvious that with these new objectives of the program that its assignment to intelligence is no longer practical. Experience during the same 12 years has indicated that the program is more a public relations program than anything else. The few reports that may have intelligence and/or scientific and technical value have a tendency to become lost in the volumes of UFO traffic. In an effort to overcome this shortcoming, it is my opinion that the aerial phenomena project should be assigned to SAFOI.

4. To prevent the loss of valuable information; intelligence, scientific, and/or technical, it is suggested that an individual with a technical and intelligence background be assigned to the branch of SAFOI which becomes responsible for the program. All reports which have indication of value in the intelligence and/or scientific areas would be routed to the appropriate agency for exploitation.

5. With your concurrence, I propose to initiate the action to transfer the Aerial Phenomena Program to SAFOI.

[redacted]

[redacted]

[redacted]

HEADQUARTERS
FOREIGN TECHNOLOGY DIVISION
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

REPLY TO ATTN OF: TD-E

SUBJECT: Unidentified Aerial Phenomena

TO: TD-G (Colonel Carlisle)

Director
Aerospace Studies Inst
ATTN: Archives Branch
Maxwell AFB, Alabama
RETURN TO

1. Reference our letter to AFCIN-P, subject: "Project Blue Book (Unidentified Flying Objects)," dated 20 April 1962, relating information concerning the briefing on unidentified flying objects given to Mr. Edward R. Trapnell, Assistant for Public Relations to the Secretary of the Air Force.

2. Paragraph 6 of the referenced letter expressed that in the opinion of FTD the UFO program should be discontinued as a special project and the function absorbed by the Air Force in the conduct of its overall mission. Investigating and evaluating UFO sightings should be the responsibility of the Air Force facility nearest the scene of the incident. Attempts should be made to determine the cause for all sightings, but the primary objective would be directed toward determining the threat potential of the occurrence.

3. Our opinion that the UFO program should be discontinued as a special project is drawn from the following:

a. During the past 15 years the USAF has studied over 7300 cases of sightings of unidentified flying objects without discovering one shread of evidence indicating that UFO sightings are due to interplanetary space vehicles.

b. Discontinuation of the UFO project would not result in the loss of valuable information. For those incidents which may be significant other than as UFO sightings, reports are made to other Air Force elements through channels completely independent for those spelled out for UFO reports.

c. Based on experience gained from handling thousands of cases, it is believed that field organizations could determine the causes for approximately 75 percent of the cases and evaluate the threat potential of them all.

d. Due to the time element and familiarity with the local environment, field organizations are often in a better position to determine the cause for sightings, such as those which result from the misidentification of aircraft, balloons launched locally, etc., than is FTD with the present method of operation.

4. Some of the sightings which take place during a year require more sophisticated treatment than some field units are capable of giving; however, in these instances the field unit should recognize the significance of the sighting and notify some agency with a specialized capability, e. g., the

1003221

Smithsonian Institute, in the instance of suspected meteorite impacts. In other cases it should only be necessary for the field unit to collect the data and forward it to some interested agency for analysis, e. g., radar scope films to RADC.

5. Before the UFO program could be discontinued as a special project, the public would have to be educated to accept this new philosophy. The following information would have to be brought to their attention:

a. The USAF's primary interest in UFO's is to determine their threat potential and/or military value.

b. Positive determination of the causes for all sightings is desirable, but to accomplish this would require extensive investigation and study of all sightings, in most cases placing an unnecessary strain on the Air Force's budget.

c. Probable causes for sightings based on limited information should be accepted.

d. The Air Force should not be required to disprove the claims of independent UFO organizations or investigators that sightings are due to interplanetary space vehicles.

6. If, contrary to our suggestion, the UFO program is continued as a special project, the following is offered as an alternate solution:

a. The UFO project office be divorced from any connections with intelligence and assigned to some organization within the Air Force's scientific structure.

b. The project office be staffed with personnel who have the proper backgrounds to analyze the sightings, conduct the investigations of significant incidents, and to conduct an effective public-relations program.

c. A public education program designed to allow discontinuance of the program as a special project after a specified time period, be a part of the mission of the project office.

EDWARD H. WYNN
Colonel, USAF
Deputy for Science
and Components

591

MEMO ROUTING SLIP

USE FOR APPROVALS, DISAPPROVALS, CONCURRENCES, OR SIMILAR ACTIONS

	INITIALS	CIRCULATE
1 TO: TD-E	DATE	COORDINATION
2 ~~Cof W, NR~~		FILE
3 [illegible]		INFORMATION
4		NOTE AND RETURN
		PER CONVERSATION
		SEE ME
		SIGNATURE

ACTION

REMARKS

1. I prefer your alternate solution
2. I have no objection to using people in the field provided they are specifically prohibited from making releases to news media.

RD

FROM

DATE

PHONE

DD FORM 1 OCT 60 95 Replaces DD Form 94, 1 Feb 49 and DD Form 96, 1 Feb 50 which will be used until exhausted.

☆ GPO: [illegible]

HEADQUARTERS
FOREIGN TECHNOLOGY DIVISION
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

REPLY TO ATTN OF: TD-E/Lt Col Friend

SUBJECT: Trip Report (UFO)

9 APR 1962

TO: TD-E (Colonel Wynn)

1. On 6 April 1962 Lt. Colonel Friend, TD-E, visited DOD to participate in a briefing on the Air Force's unidentified aerial phenomena program for Mr. Edward R. Trapnell, Assistant for Public Relations to the Secretary of the Air Force. Also present were Dr. J. Allen Hynek, Project Consultant, and Major C. R. Hart, SAFOI-3b. Mr. Trapnell requested this briefing after his interest in the matter was whetted by a statement by Dr. Robert Calkins, President of Brookings Institute. The gist of Dr. Calkins' statement was that it was unfortunate the Air Force must suffer the bad publicity associated with unidentified flying objects, with a suggestion that some private agency might relieve the Air Force of the problem.

2. During the briefing Mr. Trapnell was informed of the origin of the program, the Air Force method of handling it, conclusions and recommendations regarding it by such groups as the Robertson Committee of January 1953, Air Force conclusions after 15 years of study, current problems, and recommendations for solving them. The foremost conclusion was that no evidence has become available to the Air Force indicating that UFO's constitute a threat to national security or are interplanetary vehicles bearing life or intelligence of any sort. The outstanding recommendation was that definite steps be taken to carry out the recommendations of the Robertson Committee; to wit, that the UFO program be stripped of the aura of mystery and put into its proper prospective and that a program designed to inform the public regarding UFO's be instituted. In the eyes of the lay public anything associated with intelligence assumes an air of great secrecy; therefore, it was suggested that the first step toward stripping UFO's of their cloak of mystery would be to divorce the program from its connections with the intelligence community.

3. Mr. Trapnell was amazed to learn that the UFO traffic today was three times that of the early years of the program and observed that this could grow into a life-time job unless headed off in some manner. He stated that following a planned meeting with Mr. Zuckert, Secretary of the Air Force, Dr. B. McMillian, SAFRD, and Dr. Calkins, Brookings, one of the following actions might be taken.

a. The UFO program will be transferred to some agency such as NASA, NSF, or Smithsonian and pursued under an entirely different title such as Atmospheric Physics.

b. Transferred within the Air Force from technical intelligence to a strictly scientific complex and contracted to some private organization, such as Brookings.

c. Contracted to some private organization, such as Brookings, which will make positive statements regarding the program and the Air Force's handling of it in the past and make recommendations regarding its future, i.e., disban the program completely or handle it as outlined in A or B above.

4. Following his planned meeting with Mr. Zuckert, Dr. McMillian, and Dr. Calkins, Mr. Trapnell plans to visit FTD with Dr. Calkins for an informal discussion prior to a decision regarding the UFO program. No date has been set for this visit. Mr. Trapnell suggested that the UFO files be put into order to allow transfer of the complete office at a moment's notice.

5. It is my opinion that it will prove very difficult, if not impossible, to transfer this program to another agency because none of them want to inherit the public relations problem that goes with it. The final solution will probably be either to disban the project entirely and allow the Air Force to absorb it in the normal course of its overall mission or to contract it to some private organization, the contract being monitored by some agency within the Air Force's scientific structure.

Robert J. Friend

ROBERT J. FRIEND
Lt. Colonel, USAF

I recently sat beside Dr. Robert Calkins, president of Brookings, at dinner. Among the items we discussed was the UFO business. He feels that the Air Force should get somebody to take an independent look at this thing, probably some kind of a citizen committee which could review the matter and issue a report in such a way as to get the Air Force off the spot it seems to think we are on.

I have agreed to sit down with him some time and discuss the possibilities. He says Brookings would be willing to help in whatever way it can. In the meantime, I would like to have your views on what might be done constructively in this connection.

EDWARD TRAPNELL
ASST PUBLIC AFFAIRS
(MR ZUCKERT)

1

TD-E/Lt Col Friend/vw/69216

Project Blue Book (Unidentified Flying Objects)

Hq USAF
[redacted]
Wash 25 DC

1. On 6 April 1962 FTD participated in a briefing on the USAF unidentified flying objects project which was given to Mr. Edward R. Trapnell, Assistant for Public Relations to the Secretary of the Air Force. This briefing was requested by Mr. Trapnell, following a casual conversation between him and Dr. Robert Calkins of Brookings Research Institute where the latter made a remark regarding how unfortunate it was that the Air Force was forced to suffer the bad publicity associated with unidentified flying objects.

2. During the briefing Mr. Trapnell was informed of the history of the program, the Air Force's method of handling the project, and the major problems which have been encountered. He was also informed of the study conducted in 1953 by a panel of scientists headed by Dr. H. P. Robertson of California Institute of Technology. This panel concluded that UFO's did not constitute a threat to the security of the United States and recommended that a program designed to educate the public and strip the aura of mystery from UFO's be instituted. Mr. Trapnell was informed that our continued study of UFO's since 1953 had not revealed any evidence which would change the conclusion of the Robertson Committee.

3. It was pointed out that a major step toward stripping the air of mystery from UFO's would be accomplished if it were divorced from any association with intelligence. Mr. Trapnell went a step further and stated that the program was out of place with the Air Force, and indicated that he intends to talk the matter over with Mr. Zuckert, Secretary of the Air Force, with a view toward accomplishing one of the following:

a. Transfer of the UFO project to another agency such as NASA, NSF, or the Smithsonian Institute and have it conducted as a program to study atmospheric physics.

b. Divorce the project from any association with intelligence and hire a contractor to conduct the program under Air Force monitorship.

c. Contract a private organization to study the material which has been accumulated to date and recommend a course of action. This recommendation could be to completely disban the program as a special project and allow it to be absorbed by the Air Force in the conduct of its overall mission; or a modification of A or B above.

4. Mr. Trapnell plans to visit FTD prior to a final decision as to what course of action should be pursued. However, he did instruct FTD verbally to get the UFO files in an order which would allow transfer at a moment's notice. It is our intention to review all reports with a view toward downgrading and declassifying as many as possible. The provisions of AFR 205-1, 10 June 1960 with changes, AFR 205-2, 1 March 1961, and AFR 200-17, 12 January 1961 will be adhered to during this exercise.

5. The plans to transfer the UFO project to some other government agency or to contract it to some private organization are not considered feasible for the following reasons:

a. The Air Force would still be burdened with handling the communication of all reports except the few which would be mailed directly to the agency or contractor by private citizens.

b. Transfer of the program to some agency such as NASA would only serve to convince a larger segment of the public that sightings are due to visits to earth by interplanetary space vehicles.

c. Contracting the program would be many times more expensive to the Air Force than the present method of operating and would not relieve the Air Force of the responsibility. The public would still feel that an organization under contract to the Air Force was directed to make certain statements. We have experienced this on a smaller scale regarding statements made by Dr. J. Allen Hynek, the present project consultant.

d. A contractor would serve principally as an analyzing agency, and the Air Force would still find it necessary to investigate the majority of the cases.

e. It would be necessary to provide a contractor with specialized information such as missile, satellite, and balloon data; information regarding special programs and/or operations; and other specialized information to support their analysis effort.

f. Air Force personnel would be required to monitor the contract and provide support to the contractor.

6. It is the FTD opinion that the UFO program should be discontinued as a special project and the function absorbed by the Air Force in the normal conduct of its overall mission. Each sighting would be the responsibility of the Air Force facility nearest to the scene of the incident. The investigating unit would evaluate the occurrence with a view toward determining if the object is a potential threat to national security. Determination of the actual cause of the incident should be attempted but is only of secondary importance. UFO reports which originate as compliance with JANAP-146D should continue to be processed in the manner outlined in this directive.

7. Although FTD is now the office of primary interest regarding reports of unidentified flying objects, this letter is being forwarded to AFCIN due to its earlier association with this project and the fact that some of the reports are on IR's.

FOR THE COMMANDER

EDWARD H. WINN
Colonel, USAF
Deputy for Science
and Components

SMITHSONIAN INSTITUTION
ASTROPHYSICAL OBSERVATORY

OFFICE OF THE DIRECTOR
ASTROPHYSICAL OBSERVATORY
60 GARDEN STREET
CAMBRIDGE 38, MASSACHUSETTS

March 24, 1960

Major Robert J. Friend
Aerospace Technical Intelligence Center
Wright-Patterson Air Force Base
Dayton, Ohio

Dear Major:

I believe you might be interested in the enclosed reply to my letter to General Holzman.

Cordially,

J. Allen Hynek
Associate Director

JAH:ps

Enclosure

February 17, 1960

Office of the Commander
Air Force Research Division
Air Research and Development Command
United States Air Force
Washington 25, D. C.

Dear General Holzman:

Thank you very much for your letter of 14 January 1960 in which you informed me of your appointment by Lieutenant General B. A. Schriever as Director of the new Air Force Research Division. It is my understanding that the Air Force Research Division is now one of the four major divisions of the Air Force devoted to scientific work, and that it has cognizance over the Air Force Office of Scientific Research, the Aeronautical Research Laboratory at Dayton and certain basic research activities at the Geophysics Research Directorate and at other research centers. I understand also that Colonel A. P. Gagge, of whom I have heard many good reports, will assume Directorship of the Office of Scientific Research.

I wish to thank you for your invitation to offer advice and suggestions with respect to the policies and operations of the new Air Force Research Division. Since I continue to have close contact with both the Geophysics and Electronics Research Directorates at Cambridge and with the Air Force Office of Scientific Research, as well as with the Aerospace Technical Intelligence Center, I welcome this opportunity to congratulate you on your new position of great responsibility and to offer, if I may, a few comments and suggestions.

At present under the sponsorship of GRD I supervise an unmanned balloon project directed toward the study of stellar scintillation and image motion at high altitudes. With the Air Force Office of Scientific Research I am presently directing the scientific aspects of a series of high altitude manned balloon flights. Our pilot is Captain Joe Kittinger, and the work is being done under the careful eye of Dr. Wennersten. I should like to report that I have found Dr. Wennersten a most amiable and capable person with whom to work, and I hope that our association continues well into the future. I have recently directed to Dr. Wennersten an

informal summary and outline of what, in my opinion, the future of scientific research from high atmospheric altitudes holds. I should be pleased to direct a copy to your attention should you so wish.

I should also like to comment with pleasure on the immense (that seems to be the most appropriate word for it) enthusiasm and skill of Captain Kittinger. I consider myself extremely fortunate to be associated with Captain Kittinger in the execution of the balloon flights.

I have no specific recommendations with respect to our balloon work, which is doing well, except, of course, to express the hope that as it continues to develop it will receive your personal good wishes and support. I do, however, have some specific recommendations in connection with a totally different aspect of my work with the Air Force.

For more than a decade I have been consultant to the Aerospace Technical Intelligence Center at Dayton. During this time I have been primarily concerned with the problem of Unidentified Flying Objects, particularly their astronomical aspects.

As you well know, the Air Force has attempted to do as creditable a job on this touchy matter as was within their province. However, much of their work has been misunderstood by the public, and all too often such public opinion has been unfavorable to the Air Force. It seems that the wishful thinking portions of the public are all too ready to accuse the Air Force of covering up the evidence and misleading the public. This is most unfortunate, but is in part a natural outcome of placing this problem in an intelligence division of the Air Force rather than in an out-and-out scientific department. By this I in no way imply an unfavorable comparison; I merely point out that the objectives of an intelligence division are necessarily somewhat different than those, say, of the Geophysics Research Directorate.

Since you have been kind enough to ask for my suggestions, I would, therefore, acting in my capacity as consultant to the Air Force, but entirely on my own responsibility, like to recommend that the scientific aspects of the UFO problem be transferred from ATIC to a division more directly concerned with atmospheric physics, perhaps to the Geophysics Research Directorate.

The subject of Unidentified Flying Objects more logically belongs in a scientific office rather than in an intelligence center. My reasons for saying this are these: I think it is amply clear by now that those relatively few sightings that are puzzling are related to upper atmosphere phenomena and may offer interesting examples of meteorological and atmospheric optics phenomena and, as such, be worthy of study in themselves. Quite apart from the public interest in such matters, which should be kept quite separate from the Air Force's scientific offices, and should properly be the province of the public information office, there may well be nuggets of scientific value in the often well reported sightings which continue to come into the office of ATIC. I need only remind you that less than two centuries ago the entire province of meteorites was kept out of legitimate astronomy because stories of "stones that fell from the sky" were regarded as old wives tales. Had these accounts been given careful attention by the scientists of that day, the productive branch of astronomy which we now know as meteoritics would have been born well over a century earlier than it was.

I do not maintain that there is necessarily any parallel between the "stones that fell from heaven" and the many "flying saucer" stories we hear today. What I do say, however, is that since the Air Force, because of its defense obligation to the nation to keep track of potentially hostile objects in the sky, must take account of such reports, that certain of those reports which are deemed to have possible scientific value should be brought to the cognizance of scientific offices most directly able to cope with them. With its excellent roster of physicists and upper atmosphere specialists, it seems to me that the Geophysics Research Directorate might well undertake this aspect of the UFO problem. I do believe that with their staff of scientists many of the reported sightings which remain "unknown" and develop into political headaches for the Air Force (since it so frequently happens that the public is quick to write to its congressional representatives that these sightings are not getting a square deal from the Air Force) would be quickly cleared up; and secondly, and of greater importance to me as a scientist, many such reports, properly examined, might add a rich chapter to atmospheric optics and upper atmosphere research.

I do, therefore, recommend that consideration be given to the transfer of the scientific aspects of the Unidentified Flying Object problem to the cognizance of the Geophysics Research Directorate or another appropriate scientific division of the Air Force.

HEADQUARTERS
AIR FORCE RESEARCH DIVISION
AIR RESEARCH AND DEVELOPMENT COMMAND
UNITED STATES AIR FORCE
WASHINGTON 25, D. C.

8 March 1960

Dr. J. Allen Hynek
Astrophysical Observatory
[redacted]
60 Garden Street
Cambridge 38, Massachusetts

Dear Dr. Hynek:

I was very happy to receive your letter of 17 February. I have read with interest your suggestion that the study of UFO's be transferred from intelligence channels to the scientists.

Accordingly, I am forwarding a copy of your letter to Headquarters, Air Research and Development Command with a request that it consider your suggestion.

Again, my appreciation for your thoughtfulness.

Sincerely,

B [redacted]
Brigadier General, USAF
Commander

DEPUTY DIRECTOR FILE
JANUARY 1961

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2. The directives which are applicable to this program are AFR 200-2, dated February 1959 (Tab A) and AFR 200-2 (Intelligence), dated October 1959 (Tab B). ATIC responsibilities, defined in paragraph of AFR 200-2, require analysis and evaluation of the reports of sightings of unidentified flying objects as well as overall monitorship of the program. The Office of Information Services, Office of the Secretary of the Air Force, is responsible for releasing information on sightings and for answering public correspondence regarding UFO's. The Office of Legislative Liaison is responsible for answering Congressional inquiries. Comments from the Air Force are prepared by the appropriate staff agency.

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[illegible] scientific community [illegible] reports. [illegible] of the program [illegible]

[illegible] summary [illegible] program. [illegible] of the program pertaining to public [illegible] indicated that the method of [illegible] for the [illegible] little when the transfer of [illegible]

Robert J. Friend
ROBERT J. FRIEND
Major, USAF

CANADIAN - UNITED STATES COMMUNICATIONS INSTRUCTIONS FOR REPORTING VITAL INTELLIGENCE SIGHTINGS (CIRVIS / MERINT)

JANAP 146 (D)

THE JOINT CHIEFS OF STAFF
MILITARY COMMUNICATIONS - ELECTRONICS BOARD
WASHINGTON 25, D.C.
February 1959

ORIGINAL

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JANAP 146(D)

MILITARY COMMUNICATIONS-ELECTRONICS BOARD
WASHINGTON 25, D C

1 February 1959

LETTER OF PROMULGATION TO:

The Department of the Army
The Department of the Navy
The Department of the Air Force

Subject: JANAP 146(D)

1. JANAP 146(D), CANADIAN UNITED STATES COMMUNICATIONS INSTRUCTIONS FOR REPORTING VITAL INTELLIGENCE SIGHTINGS, is an unclassified non-registered publication, prepared by the US Military Communications-Electronics Board in conjunction with the Canadian JCEC(W), for Joint and Canadian use

2 JANAP 146(D) supersedes JANAP 146(C), and is effective upon receipt for the U.S. JANAP 146(D) will become effective for the Canadian Forces when directed by the appropriate implementing agency.

3. This publication contains military information and is for official use only.

4 Copies and extracts may be made from this publication in the preparation of official publications.

5. Comments and recommendations concerning this publication should not be addressed to the Military Communications-Electronics Board, but to one of the following, as appropriate:

a. Chief Signal Officer, U S. Army.
b. Chief of Naval Operations (DNC), U.S. Navy.
c. Director of Communications-Electronics, U.S. Air Force.

FOR THE CHAIRMAN, MILITARY COMMUNICATIONS-ELECTRONICS BOARD:

JOSEPH BUSH
Colonel, USAF

E. H. FARRELL
Commander, USN

Secretaries

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LIST OF EFFECTIVE PAGES

Subject Matter	Page Numbers	Change in Effect
Title Page	I (Reverse Blank)	Original
Letter of Promulgation to JANAP 146(D) dated 1 February 1959	III (Reverse Blank)	Original
List of Effective Pages	V (Reverse Blank)	Original
Record of Changes	VII (Reverse Blank)	Original
Table of Contents	IX , X	Original
Text		
Chapter 1	1-1 (Reverse Blank)	Original
Chapter 2	2-1 to 2-9 (Reverse Blank)	Original
Chapter 3	3-1 to 3-8	Original

RECORD OF CHANGES

Identification of Change or Correction and date of same	Date Entered	By whom entered (Signature; rank, grade or rate, name of command)

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GENERAL DESCRIPTION AND PURPOSE OF COMMUNICATION
[redacted]TRUCTIONS FOR REPORTING VITAL INTELLIGENCE SIGHTINGS

TABLE OF CONTENTS

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CHAPTER I

GENERAL DESCRIPTION AND PURPOSE OF COMMUNICATION INSTRUCTIONS FOR REPORTING VITAL INTELLIGENCE SIGHTINGS

101. Purpose. - The purpose of this publication is to provide uniform instructions for the peacetime reporting of vital intelligence sightings and to provide communication instructions for the passing of these intelligence reports to appropriate military authorities.

102. Scope. -

a. This publication is limited to the reporting of information of vital importance to the security of the United States of America and Canada and their forces, which in the opinion of the observer, requires very urgent defensive and/or investigative action by the US and/or Canadian Armed Forces.

b. The procedures contained in this publication are provided for:

(1) US and Canadian civil and commercial aircraft.

(2) US and Canadian government and military aircraft other than those operating under separate reporting directives.

(3) US and Canadian merchant vessels operating under US and Canadian registry.

(4) US and Canadian government and military vessels other than those operating under separate reporting directives.

(5) Certain other US and Canadian vessels including fishing vessels.

(6) Military installations receiving reports from civilian or military land based or waterborne observers unless operating under separate reporting directives.

(7) Government and civilian agencies which may initiate reports on receipt of information from land-based, airborne or waterborne observers.

103. Message Identification. -

a. Reports made from airborne and land-based sources will be identified by CIRVIS pronounced SUR VERS as the first word of the text. (Refer Chapter II).

b. Reports made by waterborne sources will be identified by MERINT pronounced as MUR ENT as the first word of the text. (Refer Chapter III).

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CHAPTER II

CIRVIS REPORTS

SECTION I - GENERAL

201. Information to be Reported and When to Report. -

a. Sightings within the scope of this chapter, as outlined in Article 102b(1), (2), (6) and (7), are to be reported as follows:

(1) While airborne (except over foreign territory - see paragraph 210) and from land based observers. NOTE: Canada and the United States are not considered foreign territory for either country for the purposes of this publication.

(a) Hostile or unidentified single aircraft or formations of aircraft which appear to be directed against the United States or Canada or their forces.

(b) Missiles.

(c) Unidentified flying objects.

(d) Hostile or unidentified submarines.

(e) Hostile or unidentified group or groups of military surface vessels.

(f) Individual surface vessels, submarines, or aircraft of unconventional design, or engaged in suspicious activity or observed in a location or on a course which may be interpreted as constituting a threat to the United States, Canada or their forces.

(g) Any unexplained or unusual activity which may indicate a possible attack against or through Canada or the United States, including the presence of any unidentified or other suspicious ground parties in the Polar region or other remote or sparsely populated areas.

(2) Upon landing.

(a) Reports which for any reason could not be transmitted while airborne.

(b) Unlisted airfields or facilities, weather stations, or air navigation aids.

(c) Post-landing reports.

SECTION II - PROCEDURES

202. General. - Communications procedures to be employed will be basically those prescribed for the communications system or service used. Continuing efforts will be made by an aircraft originating a CIRVIS report to insure that each CIRVIS message is received by an appropriate station

203. Precedence (priority or transmission). -

a. To avoid delays by aircraft in rendering a CIRVIS report to a ground facility, the word "CIRVIS" spoken three (3) times will be employed, preceding the call, to clear the frequency(ies) over all other communications, except DISTRESS, URGENCY and SAFETY, to insure its expeditious handling.

b. Should instances occur, when use of the above procedure fails to clear the frequency(ies) over all other communications in progress except as provided for in 203a, the International Urgency Signal "XXX" transmitted three (3) times or "PAN" spoken three (3) times will be employed to facilitate disposition of the message to the receiving facility.

c. The following precedence will be employed in the transmission of all CIRVIS reports, as appropriate, commensurate with the communications facilities used

Tabulation

Circuit clearance	CIRVIS CIRVIS CIRVIS
International Urgency Signal (alternate)	XXX XXX XXX or PAN PAN PAN
Military precedence	Y or Emergency
Commercial class of service Indicator	RAPID US GOVT for US Government activities or RUSH for Canadian Government activities (to be used only when refiled with commercial companies)

204 Contents of CIRVIS Reports. -

a. Airborne CIRVIS reports will be similar to routine aircraft position reports transmitted by either radiotelephone or radiotelegraph. The appropriate procedures to be employed will be those applicable to communications facilities utilized. The reports should contain the following information, when appropriate, in the order listed.

(1) CIRVIS Report.

(2) Identification of reporting aircraft or observer as appropriate.

(3) Object sighted. Give brief description of the sighting which should contain the following items as appropriate.

(a) Number of aircraft, vessels, missiles, submarines, etc.

(b) Category of object, general description, e.g., size, shape, type of propulsion, etc.

(4) The position of the object. This can be indicated by any of the following methods:

(a) Latitude and Longitude.

(b) Over a radio fix.

(c) True bearing and distance from a radio fix.

(d) Over a well-known or well-defined geographic point.

(e) True bearing and distance from a geographic point.

(5) Date and time of sighting (GMT).

(6) Altitude of object.

(7) Direction of travel of object.

(8) Speed of object.

(9) Any observed identification, insignia, or other significant information. Every reasonable effort should be made to positively identify the object sighted.

Example of an air/ground radiotelephone transmission:

(Aircraft) CIRVIS CIRVIS CIRVIS - KINDLEY THIS IS AIR FORCE TWO FIVE NINE THREE SIX - CIRVIS REPORT - OVER

(Aeronautical Station) AIR FORCE TWO FIVE NINE THREE SIX THIS IS KINDLEY - GO AHEAD

(Aircraft) EMERGENCY - CIRVIS REPORT - AIR FORCE TWO FIVE NINE THREE SIX SIGHTED FORMATION OF SIX JET BOMBERS - CONFIGURATION IS SWEPT WING WITH EIGHT JET ENGINES - TWO HUNDRED MILES EAST OF BERMUDA ON THIRTEEN MAY AT ONE THREE FIVE ZERO ZULU - ALTITUDE THREE FIVE THOUSAND - HEADING TWO SEVEN ZERO DEGREES - NO MARKINGS OBSERVED - OVER

(Aeronautical Station) KINDLEY - ROGER - OUT

Example of an air/ground radiotelegraph transmission:

(Aircraft) XXX XXX XXX AFA3 DE A48207

(Aeronautical Station) A48207 DE AFA3 K

(Aircraft) Y - CIRVIS REPORT. A48207 SIGHTED ... .ETC.

(Aeronautical Station) A48207 DE AFAR AR

205. Additional CIRVIS Reports. -

a. Additional reports should be made if more information becomes available concerning a previously sighted object. These reports should contain a reference to the original report sufficient to identify them with the original sighting.

Example of an air/ground radiotelephone transmission:

(Aircraft) CIRVIS CIRVIS CIRVIS - KINDLEY THIS IS AIR FORCE TWO FIVE NINE THREE SIX - CIRVIS REPORT - OVER

(Aeronautical Station) AIR FORCE TWO FIVE NINE THREE SIX - THIS IS KINDLEY - GO AHEAD

(Aircraft) EMERGENCY - THE SIX JET BOMBERS PREVIOUSLY REPORTED AT ONE THREE FIVE ZERO ZULU BY AIR FORCE TWO FIVE NINE THREE SIX ARE NOW ONE THREE ZERO MILES WEST OF BERMUDA AT ONE FOUR THREE FIVE ZULU - HEADING TWO SEVEN ZERO DEGREES - OVER

(Aeronautical Station) KINDLEY ROGER OUT

NOTE: In radiotelegraph transmission, the same procedures would apply as prescribed in para 204.

b. Cancellation reports should be made in the event a previously reported sighting is positively identified as friendly or that it has been erroneously reported. Such reports should be transmitted as a brief message cancelling the previous report(s).

Example of an air/ground radiotelephone transmission:

(Aircraft) CIRVIS CIRVIS CIRVIS - KINDLEY THIS IS AIR FORCE TWO FIVE NINE THREE SIX - CIRVIS REPORT OVER

(Aeronautical Station) AIR FORCE TWO FIVE NINE THREE SIX THIS IS KINDLEY - GO AHEAD

7

(Aircraft) EMERGENCY - CANCEL CIRVIS REPORT OF ONE THREE FIVE ZERO ZULU BY AIR FORCE TWO FIVE NINE THREE SIX - SIX JET BOMBERS POSITIVELY IDENTIFIED AS AIR FORCE BRAVO FORTY SEVENS AT ONE FOUR FOUR SIX ZULU - OVER

(Aeronautical Station) KINDLEY - ROGER - OUT

NOTE: In radiotelegraph transmission, the same procedures would apply as prescribed in para 204

c. A post-landing report is desired immediately after landing by CINCNORAD or RCAF-ADC to amplify the airborne report(s). This may be filed with either the military or civil communications facility located at the place of landing. If the landing is not made in Canadian or United States territory the report should be made to the nearest Canadian or United States military or diplomatic representative in that area. The post-landing report will refer to the airborne report(s) and, in addition, contain a brief resume of weather conditions at the time of sighting(s), verification of the sighting(s) by other personnel and any other information deemed appropriate. If the sighting was identified as friendly, and a report so stating was filed while airborne, no post-landing report is required.

(1) If no airborne report was made as a result of inability to reach a communications station or due to being over foreign territory (see paragraph 210), the post-landing report will contain all the information available concerning the sighting.

206. Addressing. -

a. Aircraft. - It is imperative that all CIRVIS reports reach the appropriate military commands as quickly as possible. The reports, therefore, shall be transmitted as soon as possible after the sighting. Ground procedures have been established to handle CIRVIS reports by either military or civil facilities, so the same procedures as those now established and in use by pilots for air traffic control shall be followed. When contact by civil or military pilots cannot be established with any ground communications station, maximum effort shall be made to relay the CIRVIS reports via other aircraft with which communication is possible

(1) Post-landing reports should be addressed to CINCNORAD, Ent AFB, Colorado Springs, Colorado, or RCAF-ADC, St. Hubert, Quebec whichever is the more convenient if the sighting occurred within or adjacent to the North American continent. Whichever of these headquarters receives the report will immediately notify the other and also all other addressees of the original report(s). If the sighting(s) occurred in other areas, the post-landing report should be made to the nearest US or

Canadian military or diplomatic representative in that area who will forward the report as prescribed in subparagraph 206b(1)(a).

b. Communications Stations. - Communications stations (to include any civil or military facility such as control tower, naval shore radio station, approach control, ARTC center, or any other communications facility) receiving CIRVIS reports will immediately after receipt ing process the report as follows (for additional instructions to US military fixed communications stations in Canada, Alaska and Greenland see subparagraph (2) (a) below):

(1) US military fixed communications stations will multiple-address the CIRVIS report to the following address designations:

(a) For sightings in overseas areas - reports will be forwarded to:

1. Addressees as prescribed by Area Commanders. (Normally, these addressees are the operating service commands concerned).

2. Commander-in-Chief, North American Air Defense Command (CINNORAD), Ent AFB, Colorado Springs, Colorado.

3. Chief of Staff, United States Air Force (COFS, USAF), Washington, D. C.

(2) Canadian and US military fixed communications stations will multiple address the CIRVIS reports to the following address designations:

(a) For sightings within or adjacent to the North American continent, reports will be forwarded to:

1. Commander of the nearest joint air defense division, command or group.

2. CINCNORAD, Ent AFB, Colorado Springs, Colorado.

3. Appropriate Sea Frontier Command

a. Commander, Western Sea Frontier (COMWEST-SEAFRON), San Francisco, California.

b. Commander, Eastern Sea Frontier (COMEAST-SEAFRON), New York, N. Y.

4. Chief of Staff, United States Air Force (COFS, USAF) Washington, D. C.

5. RCAF Air Defense Command (CANAIRDEF) St. Hubert, Montreal, Canada.

6. Appropriate Flag Officer in Command:

a. Canadian Flag Officer, Atlantic Coast, (CANFLAGLANT), Halifax, Nova Scotia.

b. Canadian Flag Officer, Pacific Coast, (CANFLAGPAC), Esquimalt, British Columbia.

(3) Civil communications stations will handle CIRVIS reports received from either aircraft or other communications stations as follows:

(a) Air Carrier company stations will pass the CIRVIS report, exactly as received, to the nearest CAA or DOT ARTC center in the same manner as air traffic control information.

(b) CAA or DOT communications stations, upon receipt of a CIRVIS report will immediately pass the report to the appropriate ARTC center.

(c) CAA or DOT ARTC Centers. Upon receipt of CIRVIS reports, ARTC centers will forward them immediately to the appropriate military facility as prescribed by agreement with the appropriate military commander.

207. Acceptance of and Responsibility for CIRVIS Reports. -

a. The following activities have responsibilities as follows:

(1) CONCNORAD or RCAF-ADC will review all CIRVIS reports to ascertain that they have been addressed in accordance with paragraph 206 and forward reports to any omitted addressees in the United States and Canada respectively. These headquarters are the normal points of contact between the two countries and are responsible for passing CIRVIS reports of interest, including post-landing reports, to each other.

(2) United States or Canadian military or diplomatic authorities in receipt of CIRVIS reports that have not been previously forwarded should take the action indicated in paragraph 206 without delay by the most rapid means available.

(3) Chief of Staff, USAF, will disseminate CIRVIS reports to appropriate agencies in the Washington, D. C. area.

(4) RCAF-ADC and the Canadian Flag Officers will be responsible for notifying Canadian military headquarters in Ottawa concerning CIRVIS reports.

(5) Sea Frontier Commanders will be responsible for notifying Chief of Naval Operations and appropriate Fleet Commanders concerning CIRVIS reports.

b. Fixed and mobile military communications facilities and military personnel having occasion to handle CIRVIS reports must lend assistance in all cases required in expediting CIRVIS reports. All civilian facilities and personnel are also urged to do so. Maximum effort must be made by all persons handling CIRVIS reports to insure positive immediate delivery.

c. WHEN A STATION RECEIVES A PARTIAL CIRVIS REPORT AND THE REMAINDER IS NOT IMMEDIATELY FORTHCOMING, IT WILL BE RELAYED OR DELIVERED IN THE SAME MANNER AS A COMPLETE REPORT.

SECTION III - SECURITY

208. Military and Civilian. - Transmission of CIRVIS reports are subject to the U. S. Communications Act of 1934, as amended, and the Canadian Radio Act of 1938, as amended. Any person who violates the provisions of these acts may be liable to prosecution thereunder. These reports contain information affecting the National Defense of the United States and Canada. Any person who makes an unauthorized transmission or disclosure of such a report may be liable to prosecution under Title 18 of the US Code, Chapter 37, or the Canadian Official Secrets Act of 1939, as amended. This should not be construed as requiring classification of CIRVIS messages. The purpose is to emphasize the necessity for the handling of such information within official channels only.

SECTION IV - EVALUATION REPORTS

209. Action by Activities. -

a. All investigative measures and evaluation processes instituted by addressees, and by originating authorities where applicable, will be handled in accordance with existing procedures and reported in accordance with these instructions, insuring that appropriate commands as listed in paragraph 206 are kept fully informed of investigative results and evaluations. These evaluations shall be expressed in terms indicating the reported sighting as being Positive, Probable, Possible, or No Threat insofar as being a threat to the security of the United States of America or Canada or their forces, or an explanation of the subject reported when known.

b. The first two words of the text of an evaluation report shall be "CIRVIS EVALUATION" followed by the date-time-group and/or other identification of the CIRVIS report(s) being evaluated.

SECTION V - SPECIAL CONSIDERATIONS

210. Radio Transmission Restrictions. - CIRVIS reports will not be transmitted by radio while over foreign territory, other than Greenland or Iceland, but will be transmitted as soon as practicable upon leaving foreign territorial boundaries. In accordance with special permission from the Danish government, reports may be transmitted while traversing Greenland. Foreign territory includes all territory except international water areas and territory under the jurisdiction of the United States of America and Canada.

SECTION VI - COMMERCIAL CHARGES

211. Charges. -

a. All charges incurred in handling CIRVIS reports through U. S. facilities will be charged to the U. S. Department of the Air Force (accounting symbol "AF"). Insofar as practicable, CIRVIS reports so handled should be forwarded RAPID US GOVT COLLECT.

b. All charges incurred in handling CIRVIS reports through Canadian facilities will be charged to the Royal Canadian Air Force. Insofar as practicable, CIRVIS reports so handled will be forwarded "RUSH COLLECT".

c. Any or all questions of charges will be resolved after traffic has been handled. In no case should CIRVIS reports be delayed because of communication handling charges.

ORIGINAL
(Reverse Blank)

CHAPTER III

MERINT REPORTS

SECTION I - GENERAL

301. Information to be Reported and When to Report. -

a. Sightings within the scope of this chapter, as outlined in Article 102b, (3), (4), (5) and (6) are to be reported as follows:

(1) Immediately (except when within territorial waters of nations other than Canada or the USA as prescribed by International Law).

(a) Hostile or unidentified single aircraft or formation of aircraft which appear to be directed against Canada or the United States or their forces.

(b) Missiles.

(c) Unidentified flying objects.

(d) Hostile or unidentified submarines.

(e) Hostile or unidentified group or groups of military surface vessels.

(f) Individual surface vessels, submarines, or aircraft of unconventional design, or engaged in suspicious activities or observed in an unusual location.

(g) Any unexplained or unusual activity which may indicate possible attack against or through Canada or the United States, including the presence of any unidentified or other suspicious ground parties in the Polar Region or other remote or sparsely populated areas.

SECTION II - PROCEDURES

302. General. - Communication procedures to be employed will be basically those prescribed for the communications system or services used. Merchant ships will employ normal international commercial communication procedures and utilize existing commercial or military facilities as appropriate. Every effort will be made to obtain an acknowledgment for each MERINT message transmitted. Canadian or U. S. vessels which are manned by military or civil service personnel will use military communication procedure.

303. Precedence (priority of transmission). - Transmission of MERINT reports shall be preceded by the word "MERINT" spoken three times OR by its alternate, the international "Urgency Signal". Additionally, the military precedence of "Emergency" shall be used if the report is addressed to military activities. Governmental precedence of "Rapid U. S. Government" for reports addressed to other U. S. Government activities, or Canadian "Rush", for reports addressed to Canadian Government activities shall be used.

Tabulation

Circuit clearance	MERINT MERINT MERINT
International Urgency Signal (Alternate)	XXX XXX XXX or PAN PAN PAN
Military Precedence	Y or Emergency
Commercial Class of Service Indicator	RAPID US GOVT for US Government activities or RUSH for Canadian Government activities (to be used only when refiled with commercial companies)

304. Contents of MERINT Reports. -

a. MERINT reports should contain the following as applicable in the order listed.

(1) "MERINT" will always be the first word of the text.

(2) Name and call letters of reporting ship.

(3) Object sighted. Give brief description of the sighting which should contain the following items as appropriate:

(a) Number of aircraft, vessels, missiles, submarines, etc.

(b) Category of object, general description, e.g., size, shape, type of propulsion, etc.

(4) Ship's position at time of sightings.

(5) Date and time of sighting (GMT)*

(6) Altitude of object expressed as Low, Medium or High.

(7) Direction of travel of object.

(8) Speed of object.

(9) Any observed identification, insignia, or other significant information. Every reasonable effort should be made to positively identify the object sighted.

(10) Conditions of sea and weather.

* "0714302" is an example of a complete date-time group (DTG). When broken into component parts (07) is the day of the month, followed by (14) the hour in 24 hour time, followed by (30) the minutes of the hour, followed by (Z) the time zone. "Z" signifies that Greenwich Mean Time has been used in composing the date-time group.

Day of Month	Hour Expressed in 24 hour time	Minutes of the hour	Indication that GMT is being used

EXAMPLE of a Radiotelephone Transmission:

MERINT MERINT MERINT - WHISKEY ZULU TANGO - THIS IS KILO HOTEL WHISKEY MIKE - OVER
KILO HOTEL WHISKEY MIKE - THIS IS - WHISKEY ZULU TANGO - OVER
WHISKEY ZULU TANGO - THIS IS - KILO HOTEL WHISKEY MIKE
MERINT SS TUNA KILO HOTEL WHISKEY MIKE SIGHTED FORMATION OF SIX JET BOMBERS LAT 40N 50E AT 2115QOZ ALTITUDE MEDIUM HEADING 270 DEGREES TYPE OF AIRCRAFT NOT OBSERVED BEFORE WIND FORCE 3 SEA CALM -
OVER

EXAMPLE of a Radiotelegraph Transmission:

MERINT MERINT MERINT CFH DE KHWM K
KHWM DE CFH K
CFH DE KHWM
"RAPID U S GOVERNMENT" or CANADIAN "RUSH"
MERINT (REMAINDER OF TEXT)
2115132 JONES KHWM
K

305. Additional MERINT Reports. -

a. Amplifying Reports. -

(1) When additional information becomes available to any observer and is of importance, it is to be transmitted as a "MERINT AMPLIFY" report.

(2) Amplifying reports are to be handled in the same way as the original report except that the first two words of the text will be "MERINT AMPLIFY" followed by the date and time of filing of the MERINT report being amplified.

(3) Amplifying reports on aerial objects normally consist of additional information pertaining to the sighted object's size, shape; description of jet or rocket streams; color, sound; if multiple objects, the number, type, method of propulsion; number of engines, insignia and estimated speed.

(4) Amplifying reports on submarines or surface sightings normally consist of additional information on the state of sea and weather, including visibility; actions of object (course, speed, evasive maneuvers, etc.) identification marks, (flags, signals, numbers, exchange of communication); closest range at which object observed; any further remarks, (dived, surfaced, commenced snorkling, stopped snorkling, etc.)

b. Cancellation Reports. -

(1) Cancellation reports should be made in the event a previously reported sighting is positively identified as friendly, erroneous or false.

(2) MERINT cancellations are to be handled in the same manner as the original MERINT report except that the first two words shall be "MERINT CANCEL" followed by the date and time of filing of the MERINT report being cancelled and, in brief, the information on which the cancellation is based.

c. Delayed Reports. - In the event a MERINT report cannot be made by radio, the Master is requested to report the details of the MERINT sightings to the appropriate Canadian or United States military authorities. If the port of arrival is outside of Canada or USA, the report is to be made to the nearest Canadian or US military or diplomatic representative in the area. This report should be submitted immediately upon arrival in port by any available means and should be in the format prescribed in paragraph 304.

306. Addressing. -

a. Vessels. -

(1) It is imperative that all MERINT reports reach the appropriate military commands as quickly as possible. The reports, therefore, shall be transmitted as soon as possible after the sighting. All Canadian or U.S. vessels listed under Para 102b, (3), (4), and (5) are to transmit in plain language all MERINT reports to the nearest Canadian or U. S. military, government or commercial radio station, regardless of whether the vessel is Canadian or U. S. registered.

(2) Naval vessels which intercept MERINT reports from merchant vessels shall copy the report and immediately relay EXACTLY AS RECEIVED to the appropriate Canadian or U. S. Navy-Shore Radio Station with relay instructions.

b. Communications Stations. - Communications Stations (to include any commercial, government or military facility such as coastal marine radio station, telegraph offices, naval or coast guard shore radio station or any other communication facility) receiving MERINT reports will immediately after receipting process the report as follows.

(1) Canadian or U. S. commercial or government communications stations will handle MERINT reports received from either vessels or other communications stations by immediately forwarding them to a Canadian or U. S. military fixed communication facility as prescribed by agreement with the appropriate military commander.

(2) U. S. military fixed communications stations will multiple-address the MERINT report to the following address designations:

(a) For sightings in overseas areas - reports will be forwarded to:

1. Addressees as prescribed by Area Commanders. (Normally, these addressees are the operating Service commands concerned).

2. Commander-in-Chief, North American Air Defense Command (CINCNORAD), Ent AFB, Colorado Springs,

3. Chief of Staff, United States Air Force (COFS, USAF), Washington, D. C.

(3) Canadian and U. S. military communications stations will multiple-address the MERINT reports to the following address designations:

(a) For sightings within or adjacent to the North American continent, reports will be forwarded to:

1. Commander of the nearest joint air defense division, command or group

2. CINCNORAD, Ent AFB, Colorado Springs, Colorado.

3. Appropriate Sea Frontier Command:

a. Commander, Western Sea Frontier (COMWESTSEAFRON), San Francisco, Calif

b. Commander, Eastern Sea Frontier (COMEASTSEAFRON), New York, N. Y.

4 Chief of Staff, United States Air Force, (COFS USAF), Washington, D. C.

5. RCAF Air Defense Command (CANAIRDEF), St. Hubert, Montreal

6. Appropriate Flag Officer in Command:

a. Canadian Flag Officer, Atlantic Coast, (CANFLAGLANT), Halifax, Nova Scotia.

b. Canadian Flag Officer, Pacific Coast, (CANFLAGPAC), Esquimalt, British Columbia.

307. Acceptance of and Responsibility for MERINT Reports.

a. The following activities have responsibilities as follows

(1) CINCNORAD or RCAF-ADC will review all MERINT reports to ascertain that such reports have been addressed in accordance with paragraph 306 and forward reports to any omitted addressees in U. S. and Canada respectively. These headquarters are the normal points of contact between the two countries and are responsible for passing MERINT reports of interest, including delayed reports, to each other.

(2) Canadian or United States military or diplomatic authorities in receipt of MERINT reports will take the action indicated in paragraph 306 without delay by the most rapid means available.

(3) Chief of Staff, USAF, will disseminate MERINT reports to appropriate agencies in the Washington, D. C. area.

(4) RCAF-ADC and the Canadian Flag Officers will be responsible for notifying Canadian military headquarters in Ottawa concerning MERINT reports.

(5) Sea Frontier Commanders will be responsible for notifying Chief of Naval Operations and the appropriate Fleet Commanders concerning MERINT reports.

b. Fixed and mobile military communications facilities and military personnel having occasion to handle MERINT reports must lend assistance in all cases required in expediting MERINT reports. All civilian facilities and personnel are also urged to do so. Maximum effort should be made by all persons handling MERINT reports to insure positive immediate delivery.

c. WHEN A STATION RECEIVES A PARTIAL MERINT REPORT AND THE REMAINDER IS NOT IMMEDIATELY FORTHCOMING, IT WILL BE RELAYED OR DELIVERED IN THE SAME MANNER AS A COMPLETE REPORT.

SECTION III - SECURITY

308. Military and Civilian. - Transmission of MERINT reports are subject to the Communications Act of 1934, as amended, and the Canadian Radio Act of 1938, as amended. Any person who violates the provisions of these acts may be liable to prosecution thereunder. These reports contain information affecting the National Defense of the United States and Canada. Any person who makes an unauthorized transmission or disclosure of such a report may be liable to prosecution under Title 18 of the US Code, Chapter 37, or the Canadian Official Secrets Act of 1939, as amended. This should not be construed as requiring classification of MERINT messages. The purpose is to emphasize the necessity for the handling of such information within official channels only.

SECTION IV - EVALUATION REPORTS

309. Action by Activities. -

a. All investigative measures and evaluation processes instituted by addressees, and by originating authorities, where applicable, will be handled and reported in accordance with existing procedures, insuring that appropriate commands as listed in paragraph 306 are kept fully informed of investigative results and evaluations. These evaluations shall be expressed in terms indicating the reported sighting as being Positive, Probable, Possible or No Threat insofar as being a threat to the security of the United States of America or Canada or their forces, or an explanation of the subject reported when known.

b. The first two words of the text of an evaluation report shall be "MERINT EVALUATION" followed by the date-time-group and/or other identification of the MERINT report(s) being evaluated.

SECTION V - SPECIAL CONSIDERATIONS

310. Radio Transmission Restrictions. - MERINT reports will not be transmitted by radio other than Canadian or U. S. or international waters.

SECTION VI - COMMERCIAL CHARGES

311. Charges. -

a. All charges incurred in handling MERINT reports through U. S. facilities will be charged to the U. S. Department of the Navy (accounting symbol NAVY). Insofar as practicable, MERINT reports so handled should be forwarded RAPID US GOVT COLLECT.

b. All charges incurred in handling MERINT reports through facilities will be charged to the Royal Canadian Navy. Insofar

as practicable, MERINT reports so handled will be forwarded "RUSH COLLECT".

c. Any or all questions of charges will be resolved after traffic has been handled. In no case should MERINT reports be delayed because of communication handling charges.

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AIR FORCE REGULATION
NO. 200–2

DEPARTMENT OF THE AIR FORCE
Washington, 14 September 1959

Intelligence

UNIDENTIFIED FLYING OBJECTS (UFO)

This regulation establishes the responsibility and procedure for reporting information and evidence on unidentified flying objects (UFO) and for releasing pertinent information to the general public.

SECTION A—GENERAL

SECTION B—PUBLIC RELATIONS, INFORMATION, CONTACTS, AND RELEASES

SECTION C—PREPARING AND SUBMITTING REPORTS

SECTION A—GENERAL

1. Background Information. The Air Force investigation and analysis of UFO's over the United States are directly related to its responsibility for the defense of the United States. Because prompt reporting and rapid identification are necessary to carry out the second of the four phases of air defense—detection, identification, interception, and destruction, the Air Force maintains the Unidentified Flying Object Program. Successful implementation of the program requires strict compliance with this regulation by all commanders.

2. Definitions. To insure proper and uniform usage in UFO screenings, investigations, and reportings, the objects are defined as follows:

a. *Familiar or Known Objects.* Aircraft, birds, balloons, kites, searchlights, and astronomical bodies (meteors, planets, stars)

b. *Unidentified Aircraft*

(1) Flying objects determined to be aircraft. These generally appear as a result of ADIZ violations and often prompt the UFO reports submitted by the general public. They are readily identifiable as, or known to be, aircraft, but their type, purpose, origin, and destination are unknown. Air Defense Command is responsible for reports of "unknown" aircraft and they should not be reported as UFO's under this regulation.

(2) Aircraft flares, jet exhausts, condensation trails, blinking or steady lights observed at night, lights circling or near airports and airways, and other similar phenomena known to be emanating from, or to be indications of aircraft. These should not

*This regulation supersedes AFRs 200–2, 5 February 1958, and 200–2A, 16 April 1959.

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be reported under this regulation as they do not fall within the definition of a UFO

(3) Pilotless aircraft and missiles.

c. *Unidentified Flying Objects.* Any airborne object which, by performance, aerodynamic characteristics, or unusual features, does not conform to known aircraft or missiles, or which does not correspond to definitions in a and b above.

2. Objectives. Air Force interest in UFO's is three-fold: First, as a possible threat to the security of the United States and its forces, second, to determine the technical or scientific characteristics of any such UFO's, third, to explain or identify all UFO sightings as defined in paragraph 2c.

a. *Air Defense.* The great majority of flying objects reported have been found to be conventional, familiar things of no great threat to the security of the United States and its possessions. However, since the possibility cannot be ignored that UFO's reported may be hostile or new foreign air vehicles of unconventional design, it is imperative that sightings be reported rapidly, factually, and as completely as possible.

b. *Technical and Scientific.* The Air Force will continue to collect and analyse reports of UFO's until all can be scientifically or technically explained or until such time as it is determined that the full potential of a sighting has been exploited. In performance of this task the following factors should be kept in mind

(1) To measure scientific advances, the Air Force must have the latest experimental and developmental information on new or unique air vehicles or weapons.

(2) The possibility exists that foreign air vehicles of revolutionary configuration or propulsion may be developed.

(3) There is a need for further scientific knowledge in such fields as geophysics, astronomy, and the upper atmosphere which the study and analysis of UFO's and similar aerial phenomena may provide.

(4) The reporting of all pertinent factors will have a direct bearing on scientific analyses and conclusions of UFO sightings.

c. *Reduction of Percentage of UFO "Unidentifieds."* Air Force activities must reduce the percentage of unidentifieds to the minimum. Analysis thus far has provided explanation for all but a few of the sightings reported. These unexplained sightings are carried statistically as unidentifieds. If more immediate, detailed objective data on the unknowns had been available, probably these too could have been explained. However, due to the human factors involved, and the fact that analyses of UFO sightings are based primarily on the personal impressions and interpretations of the observers, rather than on accurate scientific data or facts obtained under controlled conditions, it is improbable that all of the unidentifieds can be eliminated

4. Responsibilities.

a. *Reporting.* Base commanders will report all information and evidence of UFO sightings, including information and evidence received from other services, Government agencies, and civilian sources. Investigators will be authorized to make telephone calls from the investigation area direct to the Air Technical Intelligence Center (ATIC), Wright-Patterson Air Force Base, Ohio (CLearwater 3-7111, ext. 69216) The purpose of the calls is to report high priority findings. (See section C.)

b. *Investigation.* The commander of the Air Force base nearest the location of the reported UFO sighting will conduct all investigative action necessary to submit a complete initial report of a UFO sighting. Every effort will be made to resolve the sighting in the initial investigation. A UFO sighting reported to an Air Force base other than that closest to the scene of such sighting will be referred immediately to the commander of the nearest Air Force base for appropriate action. (See paragraph 6.)

c. *Analysis.* The ATIC will analyse and evaluate

(1) Information and evidence reported within the United States after the investigators of the responsible Air Force base nearest the sighting have exhausted their efforts to identify the UFO.

(2) Information and evidence collected in oversea areas.

Note. Exceptions: The ATIC, independently or in participation with pertinent Air Force activities, may conduct any additional investigations necessary to further or conclude its analyses or findings.

d. *Public Relations and Information Services.* The Office of Information Services, Office of the Secretary of the Air Force, will be responsible for releasing information on sightings, and in coordination with ATIC for answering correspondence from the public regarding UFO's. (See paragraphs 7 and 8.)

e. *Congressional Inquiries.* The Office of Legislative Liaison will

(1) In coordination with the ATIC and/or the Office of Information Services, when necessary, answer all congressional mail regarding UFO's addressed to the Secretary of the Air Force and Headquarters USAF

(2) Forward those inquiries which are scientific and technical to the ATIC for information on which to base a reply. The ATIC will return this information to the Office of Legislative Liaison for reply to the inquiry.

(3) Process requests from congressional sources in accordance with AFR 11-7

f. *Cooperation.* All Air Force activities will cooperate with Air Force UFO investigators to assure the economical and prompt success of investigations and analyses. When feasible, this cooperation will include furnishing air or ground transportation and other assistance.

5. Guidance. The thoroughness and quality of a report or investigation of UFO's are limited only by the skill and resourcefulness of the person who receives the initial information and/or prepares the report. The usefulness and value of any report or investigation depend on the accuracy and timeliness of its contents. Following are aids for screening, evaluating, and reporting sightings:

a. Careful study of the logic, consistency, and coherence of the observer's report. An interview with the observer by personnel preparing the report is especially valuable in determining the source's reliability and the validity of the information given. Particular attention should be given to the observer's age, occupation, and education and whether his occupation involves observation reporting or technical knowledge. When reporting that a witness is completely familiar with certain aspects of a sighting, his or her specific qualifications should be indicated.

b. Theodolite measurements of changes of azimuth, and elevation and angular size.

c. Interception, identification, or air search if appropriate and within the scope of air defense regulations.

d. When feasible, contact with local aircraft control and warning (ACW) units, pilots and crews of aircraft aloft at the time and place of sighting. Also, contact with any other persons or organizations that may have factual data on the UFO or can offer corroborating evidence—visual, electronic, or other

e. Consultation with military or civilian weather forecasters for data on tracks of weather balloons released in the area and any unusual meteorological activity which may have a bearing on the UFO

f. Consultation with navigators and astronomers in the area to determine whether any astronomical body or phenomenon would account for the sighting.

g. Contact with military and civilian tower operators, air operations units, and airlines to determine whether the sighting could have been an aircraft. Local units of the Federal Aviation Agency (FAA) are often of assistance in this regard

h. Contact with persons who may know of experimental aircraft of unusual configuration, rocket and guided missile firings, or aerial tests in the area

i. Contact with photographic units or laboratories. Usually these installations have several cameras available for specialized intelligence or investigative work. Photography is an invaluable tool and where possible should be used in investigating and analyzing UFO sightings. (See paragraph 19)

j. Whenever possible, selecting as a UFO sighting investigator an individual with a scientific or technical background as well as experience as an investigator

6. Reporting UFO Information. Both the Assistant Chief of Staff Intelligence, Headquarters USAF, and the Air Defense Command have a direct and immediate interest in the facts pertaining to UFO's reported within the United States.

a. All Air Force activities will conduct UFO investigations to the extent necessary for their required reporting action (see paragraphs 15, 16, and 17). However, investigations should not be carried beyond this point, unless such action is directed by Assistant Chief of Staff, Intelligence Headquarters USAF, or the preparing officer believes the magnitude (intelligence significance or public relations) of the case warrants full scale investigation. Telephone contact should be made with the ATIC (CLearwater 3-7111, ext. 69216) at Wright-Patterson Air Force Base, Ohio, to obtain verbal authority for continued investigation. This should be so noted in the preliminary report. (Foreign activities will proceed on their own judgment and so advise the ATIC in the preliminary message.)

b. After initial reports are submitted, the ATIC may require additional data, such as narrative statements, sketches, marked maps

and charts, and other required data, which can be supplied more quickly and economically by the Air Force activity that made the initial report. Therefore, ATIC is authorized to contact the appropriate Air Force activity

c. Direct communication is authorized between ATIC and other Air Force activities in matters pertaining to UFO investigations. Specifically, the ATIC may call upon the Commander, 1127th Field Activities Group, Fort Belvoir, Virginia, to conduct further field investigation if review of the initial report indicates such a requirement. In this event, the AIIS investigating will prepare the final report. (See paragraph 4b.)

SECTION B—PUBLIC RELATIONS, INFORMATION, CONTACTS AND RELEASES

7. Maintaining Public Relations. The Office of Information Services is responsible for

a. In coordination with the ATIC when necessary, maintaining contact with the public and the press on all aspects of the UFO program and its related activities.

b. Releasing information on UFO sightings and results of investigations.

c. Periodically releasing information on this subject to the general public.

d. Processing, answering, and taking action on correspondence received from the general public, pertaining to the public relations, interest, and informational aspects of the subject. (See paragraph 9.) This office will forward correspondence and queries which are purely technical and scientific to ATIC for information on which to base a reply

8. Releasing Information. All information or releases concerning UFO s, regardless of origin or nature, will be released to the public or unofficial persons or organizations by the Office of Information Services, Office of the Secretary of the Air Force This includes replies to correspondence (except congressional inquiries) submitted direct to ATIC, and other Air Force activities by private individuals requesting comments or results or analysis and investigations of sightings.

9. Exceptions. In response to local inquiries resulting from any UFO reported in the vicinity of an Air Force base, information regarding a sighting may be released to the press or the general public by the commander of the Air Force base concerned only if it has been *positively identified as a familiar or known object*. Care should be exercised not to reveal any classified aspects of the sighting or names of persons making reports. (See paragraph 18.) If the sighting is unexplainable or difficult to identify, because of insufficient information or inconsistencies, the only statement to be released is the fact that the sighting is being investigated and information regarding it will be released at a later date. If investigative action has been completed, the fact that the results of the investigation will be submitted to the ATIC for review and analysis may be released. Further inquiries should be referred to the local Office of Information Services.

10. Release by Non-Air Force Sources. If newsmen, writers, publishers, or private individuals desire to release unofficial information concerning a UFO sighting, every effort will be made to assure that the statements, theories, opinions, and allegations of these individuals or groups will not be associated with or represented as being official information.

11. Contacts. Private individuals or organizations requesting Air Force interviews, briefings, lectures, or private discussions on UFO's will be referred to the Office of Information Services, Office of the Secretary of the Air Force. Air Force personnel other than those of the Office of Information Services, will not contact private individuals on UFO cases nor will they discuss their operations and functions with unauthorized persons unless so directed, and then only on a "need-to-know" basis.

SECTION C—PREPARING AND SUBMITTING REPORTS

12. General Information:

a. **Paragraphs 2 and 5 will be used as an aid and guidance to screenings, investigations, and reportings.** The format will be as outlined in paragraph 15. Activities initially receiving reports of aerial objects and phenomena will screen the information to determine if the report concerns a valid UFO within the definition of paragraph 2a. Reports not within that definition will not be considered for further action under the provisions of this regulation.

b. To assist activities and personnel responsible for handling, screening, and processing initial, incoming UFO information, the general sources and types of reports are given here

(1) Generally, initial UFO reports are received from two sources:

(a) Civilian (airline, private and professional pilots, tower operators, technical personnel, casual observ-

ers, and the public in general), by correspondence, telephone, or personal interview:

(b) Military units and personnel (pilots, observers, radar operators, aircraft control and warning units, etc.), by telephone, electrical message, or personal interview,

(2) Generally, UFO reports received from civilian sources are of two types

(a) Those referring strictly to an observed UFO, containing either detailed or meager information,

(b) Those referring only in part to an observed UFO, but primarily requesting information on some aspect of the UFO program.

c. Reports considered to fall primarily in a public relations or information service category (see paragraphs 4d, 7, 8, 9, and b(2) above) should be referred to the Office of Information Services. UFO data sufficient for investigation and/or analysis may be extracted before referral to that office.

13. Methods for Transmitting Reports:

a. Together with any necessary screenings and investigations that must be performed preparatory to reporting, all information on UFO's will be reported promptly. Reports under 3 days from date of sighting will be electrically transmitted with a "Priority" precedence. Electrically transmitted reports over 3 days old should carry a "Routine" precedence.

b. Written reports of sightings over 3 days old may be submitted on AF Form 112, Air Intelligence Information Report (AIIR) and AF Form 112A, supplement to AF Form 112 (see paragraphs 14 and 15)[5]; however, their use should be kept to a minimum in reporting initial sightings. The delays often involved in processing and transmitting AF Forms 112 through channels may make followup investigations difficult, producing only limited usable information. This factor must be considered in cases where an immediate investigation or study of a reported sighting is considered necessary. Reporting by electrical means will eliminate delays. If requested by ATIC, a followup and/or complete report of all sightings initially reported electrically will be submitted on AF Form 112.

14. Where To Submit Reports:

a. *Electrical Reports.* Submit multiple addressed electrical reports to:

(1) Air Defense Command, Ent AFB, Colorado.

(2) Nearest Air Division (Defense). (For United States only.)

(3) Air Technical Intelligence Center, Wright-Patterson AFB, Ohio

(4) HQ USAF (AFCIN), Wash. 25, D.C.

(5) Secretary of the Air Force (SAFIS), Wash. 25, D.C.

b. *Written Reports.* (Basic letters and AF Forms 112.)

(1) Within the United States, submit all reports direct to ATIC. ATIC will reproduce each report and distribute it to interested intelligence activities in the United States and to Office of Information Services, if such action is considered necessary.

(2) Outside the United States, submit reports as prescribed in "Intelligence Collection Instruction" (ICI) June 1954, direct to:

Hq USAF (AFCIN) Wash 25, D.C.

c. *Reports from Civilians.* Where possible, civilian sources contemplating reporting UFO's should be advised to submit the report, for processing and transmission, to the nearest Air Force base, other than ATIC.

15. Basic Reporting Data and Format. Show the abbreviation "UFO" at the beginning of the text of all electrical reports and in the subject of written reports. Include in all reports the data required, in the order shown below:

a. *Description of the Object(s).*

(1) Shape.

(2) Size compared to a known object (use one of the following terms: Head of a pin, pea, dime, nickel, quarter, half dollar, silver dollar, baseball, grapefruit, or basketball) held in the hand at about arm's length

(3) Color

(4) Number

(5) Formation, if more than one

(6) Any discernible features or details

(7) Tail, trail, or exhaust, including size of same compared to size of object(s)

(8) Sound. If heard, describe sound

(9) Other pertinent or unusual features

b. *Description of Course of Object(s).*

(1) What first called the attention of observer(s) to the object(s)?

(2) Angle or elevation and azimuth of objects(s) when first observed.

(3) Angle or elevation and azimuth of object(s) upon disappearance.

(4) Description of flight path and maneuvers of object(s)

(5) How did the object(s) disappear? Instantaneously to the North, etc.)

(6) How long was the object(s) visible? Be specific, 5 minutes, 1 hour, etc.)

c. *Manner of Observation*

(1) Use one or any combination of the following items: Ground-visual, ground-electronic, air electronic. (If electronic, specify type of radar.)

(2) Statement as to optical aids (telescopes, binoculars, etc.) used and description thereof.

(3) If the sighting is made while airborne, give type of aircraft, identification number, altitude, heading, speed, and home station.

d. *Time and Date of Sighting*

(1) Zulu time-date group of sighting.

(2) Light conditions. (Use one of the following terms: Night, day, dawn, dusk.)

e. *Location of Observer(s).* Exact latitude and longitude of each observer, and/or geographical position. A position with reference to a known landmark also should be given in electrical reports, such as "2mi N of Deerville," "3mi SW of Blue Lake." Typographical errors or "garbing" often result in electrically transmitted messages, making location plots difficult or impossible.

Example: 39 45N, 122 71W for 39 45N, 102 21W.

f. *Identifying Information on Observer(s)*

(1) Civilian—Name, age, mailing address, occupation, and estimate of reliability

(2) Military—Name, grade, organization, duty, and estimate of reliability

g. *Weather and Winds—Aloft Conditions at Time and Place of Sighting*

(1) Observer(s) account of weather conditions.

(2) Report from nearest AWS or U.S. Weather Bureau Office of wind direction and velocity in degrees and knots at surface, 6,000′, 10,000′, 16,000′, 20,000′, 30,000′, 50,000′, and 80,000′ if available.

(3) Ceiling.

(4) Visibility.

(5) Amount of cloud cover

(6) Thunderstorms in area and quadrant in which located.

(7) Temperature gradient.

h. Any other unusual activity or condition, meteorological, astronomical, or otherwise, which might account for the sighting.

i. Interception or identification action taken (such action may be taken whenever feasible, complying with existing air defense directives).

j. Location, approximate altitude, and general direction of flight of any air traffic or balloon releases in the area which could possibly account for the sighting.

k. Position title and comments of the preparing officer, including his preliminary analysis of the possible cause of the sighting(s) (See paragraph 17.)

l. Existence of physical evidence, such as materials and photographs.

16. Negative or Inapplicable Data. Even though the source does not provide or has not been asked for specific information by an interviewer, do not use the words "negative" or "unidentified" until all logical leads to obtain the information outlined under paragraph 15 have been exhausted. For example, information on weather conditions in the area, as requested in paragraph 15g may be obtained from the local military or civilian weather facility. Use the phrase "not applicable" (N/A) only when the question does not apply to the particular sighting being investigated.

17. Comments of Preparing Officer. The preparing officer will make a preliminary analysis and a comment on the possible cause or identity of the object being reported, together with a statement supporting his comment and analysis. Every effort will be made to obtain pertinent items of information and to test all possible leads, clues, and hypotheses concerning the identity or explanation of the sighting. (See paragraph 5.) The preparing officer receiving the report initially is in a much better position to conduct an "on-the-spot" survey or followup than subsequent investigative personnel and analysts who may be far removed from the area, and who may arrive too late to obtain vital data or the missing information necessary for firm conclusions.

18. Classification. Do not classify reports unless data requested in paragraph 15 require classification. Classify reports primarily to protect.

a. Names of sources reporting UFO's and other principals involved if so requested by these persons or considered necessary;

b. Intelligence, investigative, intercept, or analytical methods or procedures;

c. Location of radar and other classified sites, units, and equipment,

d. Information on certain types, characteristics, and capabilities of classified aircraft, missiles, or devices that may be involved in the sighting.

19. Reporting Physical Evidence. Report promptly the existence of physical evidence (photographic or material). All physical evidence forwarded to the ATIC should be marked for the attention of AFCIN-4E4g.

a. *Photographic.*

(1) *Still Photographs.* Forward the negative and two prints. Title the prints and the negatives, or indicate the place, time, and date of the incident.

(2) *Motion Pictures.* Obtain the original film. Examine the film strip for apparent cuts, alterations, obliterations, or defects. In the report comment on any irregularities, particularly if received from other than official sources.

(3) *Supplemental Photographic Information.* Negatives and prints often are insufficient to provide certain valid data or to permit firm conclusions. (See AFM 200-9—a classified document receiving limited distribution.) Information that will aid in plotting or in estimating distances, apparent size and nature of object, probable velocity, and movements includes:

(a) Type and make of camera,
(b) Type, focal length, and make of lens,
(c) Brand and type of film,
(d) Shutter speed used,
(e) Lens opening used, that is, "f" stop,
(f) Filters used,
(g) Was tripod or solid stand used,
(h) Was "panning" used,
(i) Exact direction camera was pointing with relation to true north, and its angle with respect to the ground.

(4) *Other Camera Data.* If supplemental information cannot be obtained, the minimum camera data required are the type of camera, and the smallest and largest "f" stop and shutter-speed readings of the camera.

(5) *Radar.* Forward two copies of each still-camera photographic print. Title radarscope photographic prints in accordance with AFR 95-7. Classify radarscope photographs in accordance with section XII, AFR 205-1, 1 April 1959.

Note: If possible, develop photographic film before forwarding. If undeveloped film is forwarded, mark it conspicuously to indicate this fact. Undeveloped film often has been destroyed by exposure during examinations made while en route through mail channels to final addressees.

b. *Material.* Each Air Force echelon receiving suspected or actual UFO material will safeguard it in a manner to prevent any defacing or alterations which might reduce its value for intelligence examination and analysis.

c. *Photographs, Motion Pictures, and Negatives Submitted by Individuals.* Individuals often submit photographic and motion picture material as part of their UFO reports. All original material submitted, will be returned to the individual upon completion of necessary studies, analyses, and duplication by the Air Force.

BY ORDER OF THE SECRETARY OF THE AIR FORCE.

THOMAS D. WHITE
Chief of Staff

OFFICIAL:

J. L. TARR
Colonel, USAF
Director of Administrative Services

☆ U. S. GOVERNMENT PRINTING OFFICE: 1959

CASES OF UNIDENTIFIED FLYING OBJECTS REPORTED TO ATIC -- [illegible] June 1947 [illegible] December [illegible]

	1947-1952	1953 [illegible]	1955	1956	1957	1958	1959	[illegible]	[illegible]
UNIDENTIFIED	74.63% 434 19.74%	13.45% 78 9.13%	2.07% 12 2.97%	2.76% 16 2.06%	3.28% 19 1.61%	0.86% 5 0.85%	1.20% 7 1.92%	1.55% 9 2.13%	580 3.54%
ASTRONOMICAL	26.85% 479 21.79%	21.94% 213 24.93%	5.21% 93 23.02%	12.44% 204 26.14%	18.27% 326 7.67%	12.04% 207 [illegible]%	6.45% [illegible] [illegible]%	8.80% 151 [illegible]%	1784 [illegible]
[illegible]						[illegible] 2.04%			
[illegible]	33.03% [illegible] 21.10%	[illegible] [illegible]	6.07% [illegible]	12.78% [illegible]	20.41% [illegible] 24.28%	[illegible]% [illegible] 0.4	[illegible] [illegible]	[illegible] [illegible]	[illegible]
	[illegible]		[illegible]		[illegible]				
[illegible]									
[illegible]									
[illegible]									

LEGEND

Read across for the percentage in each category for each period or year.

Read across for the number of sightings in each category for each period or year. Read down for the number of sightings each period or year in each category.

Read down for the percentage for each period or year in each category

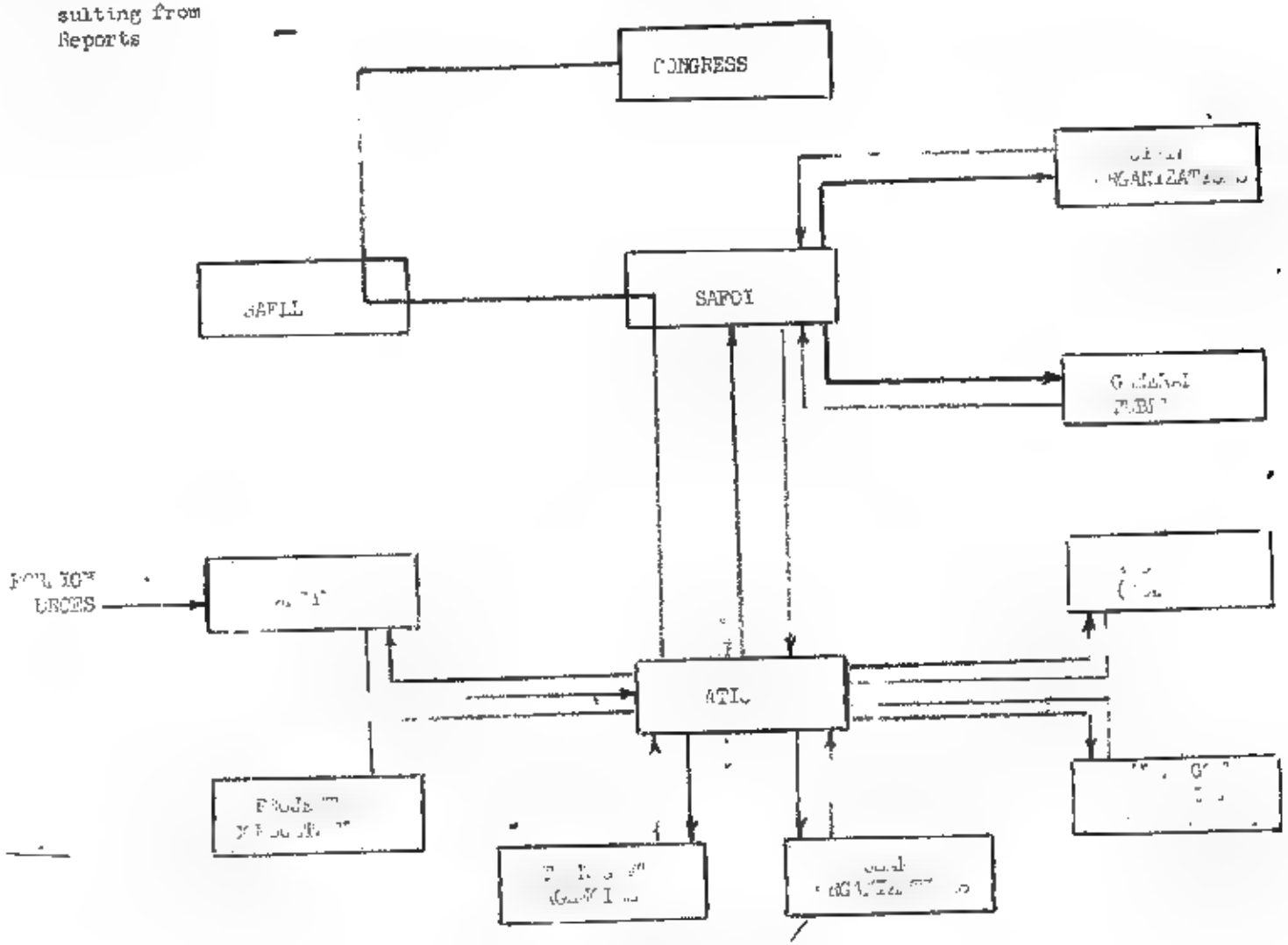
Totals at the right of the chart are the number of sightings for the entire period from 24 June 1947 to 31 December 1952. The corresponding percentages are shown just below these totals.

Totals along the bottom of the chart are those of the sightings for each period or year. The corresponding percentages are shown below these totals.

LEGEND

Cong Requests —
Reports —
Analysis —
Information Resulting from Reports —

FLOW CHART
(CURRENT)



ORGANIZATION	NAME	TELEPHONE
SAFOI-3c (DOD)	Major William Coleman	73002
SAFLL (DOD)	Lt Col Boland	73376
Northwestern University (Evanston, Illinois)	Dr. J. Allen Hynek (Project Consultant)	UN 4-1900 Ext. 285
FTD (WPAFB, Ohio) TD-6	Major Robert J. Friend	69216

1. To assist in the investigation and analysis of UFO sightings, FTD has at it's disposal facilities and personnel at all military installations. The facilities of the ASD has extensively been used for material and photographic analysis.

2. Liason with private individuals, such as Dr Whipple, is continualy maintained.

3. In cases where it is determined that FTD should conduct an investigation of a UFO sighting, a T-33 aircraft can be used for a period of 3 days. Major Friend is a rated pilot of this aircraft.

4. TD-E maintains an advisory panel consisting of a phsycologist from ASD, Chaplain, the Project consultant Dr Hynek, four officers assigned the additional duty of UFO investigator, and the Project Moniter.

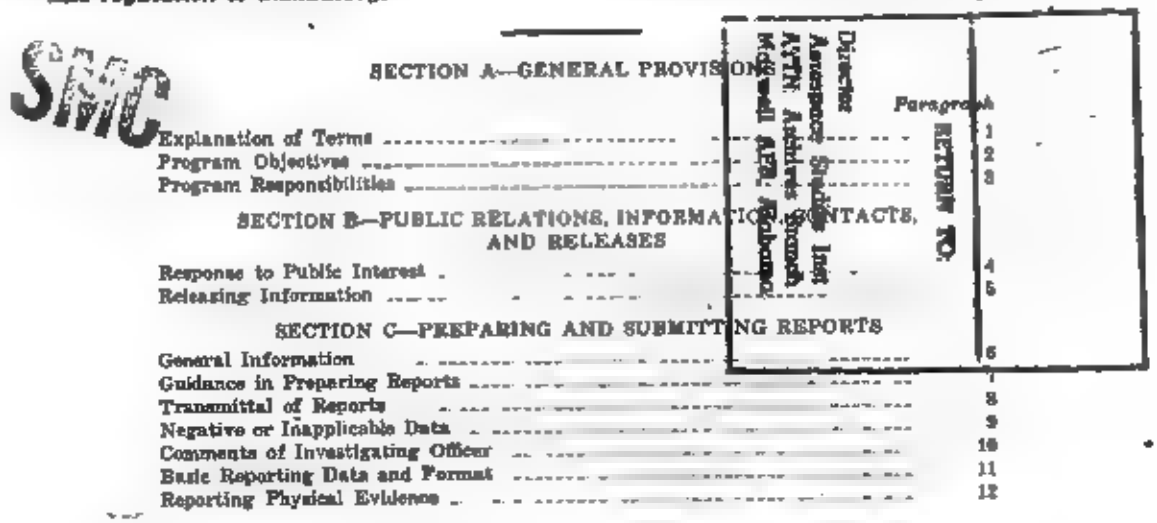
AIR FORCE REGULATION
NO. 80-17

DEPARTMENT OF THE AIR FORCE
Washington, D. C. 19 September 1966

Research And Development

UNIDENTIFIED FLYING OBJECTS (UFO)

This regulation establishes the Air Force program for investigating and analyzing UFOs over the United States. It provides for uniform investigative procedures and release of information. The investigations and analyses prescribed are related directly to the Air Force's responsibility for the air defense of the United States. The UFO Program requires prompt reporting and rapid evaluation of data for successful identification. Strict compliance with this regulation is mandatory.



SECTION A—GENERAL PROVISIONS

1. Explanation of Terms. To insure proper and uniform usage of terms in UFO investigations, reports, and analyses, an explanation of common terms follows:

a. *Unidentified Flying Objects.* Any aerial phenomenon or object which is unknown or appears out of the ordinary to the observer

b. *Familiar or Known Objects/Phenomena.* Aircraft, aircraft lights, astronomical bodies (meteors, planets, stars, comets, sun, moon), balloons, birds fireworks, missiles, rockets, satellites, searchlights, weather phenomena (clouds, contrails, dust devils), and other natural phenomena.

2. Program Objectives. Air Force interest in UFOs is two-fold: to determine if the UFO is a possible threat to the United States and to use the scientific or technical data gained from study of UFO reports. To attain these objectives, it is necessary to explain or identify the stimulus which caused the observer to report his observation as an unidentified flying object.

a. *Air Defense.* The majority of UFOs reported to the Air Force have been conventional or familiar objects which present no threat to our security

(1) It is possible that foreign countries may develop flying vehicles of revolutionary configuration or propulsion

(2) Frequently, some alleged UFOs are determined to be aircraft. Air Defense Command (ADC) is responsible for identification

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This regulation supersedes AFR 200-2, 20 July 1962
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of aircraft. Except as aircraft are determined to be the stimulus for a UFO report, aircraft are not to be reported under the provisions of this regulation.

b. *Technical and Scientific.* The Air Force will analyze reports of UFOs submitted to it to attain the program objectives. In this connection these facts are of importance:

(1) The need for further scientific knowledge in geophysics, astronomy, and physics of the upper atmosphere which may be provided by study and analysis of UFOs and similar aerial phenomena.

(2) The need to report all pertinent factors that have a direct bearing on scientific analysis and conclusions of UFO sightings.

(3) The need and the importance of complete case information. Analysis has explained all but a small percentage of the sightings which have been reported to the Air Force. The ones that have not been explained are carried statistically as "unidentified." Because of the human factors involved and because analysis of a UFO sighting depends primarily on a personal impression and interpretation by the observer rather than on scientific data or facts obtained under controlled conditions, the elimination of of all unidentifieds is improbable. However, if more immediate, detailed, and objective data on the unidentifieds had been available and promptly reported, perhaps these, too, could have been identified.

3. Program Responsibilities:

a. *Program Monitor.* The Deputy Chief of Staff, Research and Development, is responsible for the overall program, evaluation of investigative procedures, and the conduct of separate scientific investigations.

b. *Resources.* The Air Force Systems Command will support the program with current resources within the Foreign Technology Division (FTD) at Wright-Patterson Air Force Base, Ohio, to continue the Project Blue Book effort. Other AFSC resources normally used by FTD for this effort will continue to be made available.

c. *Investigation.* Each commander of an Air Force base will provide a UFO investigative capability. When notice of a UFO sighting is received, an investigation will be implemented to determine the stimulus for the sighting. An Air Force base receiving the notice of a UFO sighting may not be the base nearest the locale of the sighting. In that event, the reported UFO sighting will be referred to the Air Force base nearest the sighting for action.

EXCEPTIONS: FTD at Wright-Patterson Air Force Base, Ohio, independently or with the help of pertinent Air Force activities, may conduct any other investigation to conclude its analysis or findings. HQ USAF may arrange for separate investigations.

d. *Analysis.* FTD will:

(1) Analyze and evaluate all information and evidence reported to bases on those UFOs which are not identified at the base level.

(2) Use other Government agencies, private industrial companies, and contractor personnel to assist in analyzing and evaluating UFO reports, as necessary.

e. *Findings.* FTD, Wright-Patterson AFB, Ohio, will prepare a final case report on each sighting reported to it after the data have been properly evaluated. If the final report is deemed significant, FTD will send the report of its findings to AFSC (SCFA), Andrews AFB, Wash DC 20331, which will send a report to HQ USAF (AFRDC), Wash DC 20330.

f. *Cooperation.* All Air Force activities will cooperate with UFO investigators to insure that pertinent information relative to investigations of UFO sightings are promptly obtained. When feasible, this will include furnishing air or ground transportation and other assistance.

SECTION B—PUBLIC RELATIONS, INFORMATION, CONTACTS, AND RELEASES

4. Response to Public Interest. The Secretary of the Air Force, Office of Information (SAF–OI), maintains contact with the public and the news media on all aspects of the UFO program and related activities. Private individuals or organizations desiring Air Force interviews, briefings, lectures, or private discussions on UFOs will be instructed to direct their requests to SAF–OI. Air Force members not officially connected with UFO investigations covered by this regulation will refrain from any action or comment on UFO reports which may mislead or cause the public to construe these opinions as official Air Force findings.

5. Releasing Information. SAF–OI is the agency responsible for releasing information to the public and to the news media.

a. *Congressional and Presidential Inquiries.* The Office of Legislative Liaison will:

(1) With the assistance of SAF–OI, an-

swer all Congressional and Presidential queries regarding UFOs forwarded to the Air Force.

(2) Process requests from Congressional sources in accordance with AFR 11-7.

b. *SAF-OI will.*

(1) Respond to correspondence from individuals requesting information on the UFO Program and evaluations of sightings.

(2) Release information on UFO sightings and results of investigations to the general public.

(3) Send correspondence queries which are purely technical and scientific to FTD for information on which to base a reply.

c. *Exceptions.* In response to local inquiries regarding UFOs reported in the vicinity of an Air Force base, the base commander may release information to the news media or the public after the sighting has been positively identified. If the stimulus for the sighting is difficult to identify at the base level, the commander may state that the sighting is under investigation and conclusions will be released by SAF-OI after the investigation is completed. The commander may also state that the Air Force will review and analyze the results of the investigation. Any further inquiries will be directed to SAF-OI.

SECTION C—PREPARING AND SUBMITTING REPORTS

6. General Information:

a. The Deputy Chief of Staff, Research and Development, USAF and the ADC have a direct and immediate interest in UFOs reported within the US. All Air Force activities will conduct UFO investigations to the extent necessary for reporting action (see paragraphs 9, 10, 11, and 12). Investigation may be carried beyond this point when the preparing officer believes the scientific or public relations aspect of the case warrants further investigation. In this case, the investigator will coordinate his continued investigation with FTD.

b. Paragraph 7 will be used as a guide for screenings, investigations, and reportings. Paragraph 11 is an outline of the reporting format.

c. Inquiries should be referred to SAF-OI (see paragraph 5).

d. If possible, an individual selected as a UFO investigator should have a scientific or technical background and experience as an investigator.

e. Reports required by this regulation are excluded from assignment of a reports control symbol in accordance with paragraph 3k, AFR 300-6.

7. Guidance in Preparing Reports. The usefulness of a UFO report depends largely on accuracy, timeliness, skill and resourcefulness of the person who receives the initial information and makes the report. Following are aids for screening, evaluating and reporting sightings.

a. Activities receiving initial reports of aerial objects and phenomena will screen the information to determine if the report concerns a valid UFO as defined in paragraph 1a. Reports not falling within that definition do not require further action. Aircraft flares, jet exhausts, condensation trails, blinking or steady lights observed at night, lights circling near airports and airways, and other aircraft phenomena should not be reported as they do not fall within the definition of a UFO.

EXCEPTION: Reports of known objects will be made to FTD when this information originally had been reported by local news media as a UFO and the witness has contacted the Air Force. (Do NOT solicit reports.) News releases should be included as an attachment with the report (see paragraph 8e).

b. Detailed study will be made of the logic, consistency, and authenticity of the observer's report. An interview with the observer, by persons preparing the report, is especially valuable in determining the reliability of the source and the validity of the information. Factors for particular attention are the observer's age, occupation, and education, and whether he has a technical or scientific background. A report that a witness is completely familiar with certain aspects of a sighting should indicate specific qualifications to substantiate such familiarity.

c. The following procedures will assist the investigating officer in completing the report and arriving at a conclusion as required in paragraph 11.

(1) When feasible, contact local aircraft control and warning (ACW) units, and pilots and crews of aircraft aloft at the time and place of sighting. Contact any persons or organizations that may have additional data on the UFO or can verify evidence—visual, electronic, or other.

(2) Consult military or civilian weather forecasters for data on tracks of weather

balloons or any unusual meteorological activity that may have a bearing on the stimulus for the UFO.

(3) Consult navigators and astronomers in the area to determine if any astronomical body or phenomenon might account for the sighting.

(4) Consult military and civilian tower operators, air operations units, and airlines to determine if the sighting could have been an aircraft. Local units of the Federal Aviation Agency (FAA) can be of assistance in this regard.

(5) Consult persons who may know of experimental aircraft of unusual configuration, rocket and guided missile firings, or aerial tests in the area.

(6) Consult local and State police, county sheriffs, forest rangers, and other civil officials who may have been in the area at the time of the sighting or have knowledge of other witnesses.

8. Transmittal of Reports:

a. *Timeliness.* Report all information on UFOs promptly. Electrical transmission with a "Priority" precedence is authorized.

b. *Submission of Reports.* Submit multiple-addressed electrical reports to:

(1) ADC.

(2) Nearest Air Division (Defense).

(3) FTD WPAFB. (First line of text. FOR TDETR.)

(4) CSAF. (First line of text: FOR AFRDC.)

(5) OSAF. (First line of text: FOR SAF OI.)

c. *Written Reports.* In the event follow-up action requires a letter report, send it to FTD (TDETR), Wright-Patterson AFB, Ohio 45433. FTD will send the reports to interested organizations in the US and to SAF-OI if required.

d *Reports from Civilians.* Advise civilians to report UFOs to the nearest Air Force base.

e. *Negative or Inapplicable Data.* If specific information is lacking, refrain from using the words "negative" or "unidentified" unless all logical leads to obtain the information outlined in paragraph 11 have been exhausted. For example, the information on weather conditions in the area, as requested in paragraph 11g, is obtainable from the local military or civilian weather facility. Use the phrase "not applicable (NA)" only when the question really does not apply to the sighting under investigation.

10. Comments of Investigating Officer. This officer will make an initial analysis and comment on the possible cause or identity of the stimulus in a supporting statement. He will make every effort to obtain pertinent items of information and to test all possible leads, clues, and hypotheses. The investigating officer who receives the initial report is in a better position to conduct an on-the-spot survey and follow-up than subsequent investigative personnel and analysts who may be far removed from the area and who may arrive too late to obtain vital data or information necessary for firm conclusions. The investigating officer's comments and conclusions will be in the last paragraph of the report submitted through channels. The reporting official will contact FTD (Area Code 513, 257-0916 or 257-6678) for verbal authority to continue investigations.

11. Basic Reporting Data and Format. Show the abbreviation "UFO" at the beginning of the text of all electrical reports and in the subject of any follow-up written reports. Include required data in all electrical reports, in the order shown below:

a. Description of the Object(s):

(1) Shape.

(2) Size compared to a known object.

(3) Color

(4) Number.

(5) Formation, if more than one.

(6) Any discernible features or details.

(7) Tail, trail, or exhaust, including its size.

(8) Sound.

(9) Other pertinent or unusual features.

b. Description of Course of Object(s):

(1) What first called the attention of observer(s) to the object(s)?

(2) Angle of elevation and azimuth of object(s) when first observed. (Use theodolite or compass measurement if possible.)

(3) Angle of elevation of object(s) upon disappearance. (Use theodolite or compass measurement if possible.)

(4) Description of flight path and maneuvers of object(s). (Use elevations and azimuth, not altitude.)

(5) How did the object(s) disappear? (Instantaneously to the North, for example.)

(6) How long were the object(s) visible? (Be specific—5 minutes, 1 hour, etc.)

c. Manner of Observation:

(1) Use one or any combination of the following items. Ground-visual, air-visual, ground-electronic, air-electronic. (If electronic, specify type of radar.)

(2) Statement as to optical aids (tele-

balloons or any unusual meteorological activity that may have a bearing on the stimulus for the UFO.

(3) Consult navigators and astronomers in the area to determine if any astronomical body or phenomenon might account for the sighting.

(4) Consult military and civilian tower operators, air operations units, and airlines to determine if the sighting could have been an aircraft. Local units of the Federal Aviation Agency (FAA) can be of assistance in this regard.

(5) Consult persons who may know of experimental aircraft of unusual configuration, rocket and guided missile firings, or aerial tests in the area.

(6) Consult local and State police, county sheriffs, forest rangers, and other civil officials who may have been in the area at the time of the sighting or have knowledge of other witnesses.

8. Transmittal of Reports:

a. *Timeliness.* Report all information on UFOs promptly. Electrical transmission with a "Priority" precedence is authorized.

b. *Submission of Reports.* Submit multiple-addressed electrical reports to:

(1) ADC.
(2) Nearest Air Division (Defense).
(3) FTD WPAFB. (First line of text: FOR TDETR.)
(4) CSAF. (First line of text: FOR AFRDC.)
(5) OSAF. (First line of text: FOR SAF–OI.)

c. *Written Reports.* In the event follow-up action requires a letter report, send it to FTD (TDETR), Wright-Patterson AFB, Ohio 45433. FTD will send the reports to interested organizations in the US and to SAF–OI if required.

d. *Reports from Civilians.* Advise civilians to report UFOs to the nearest Air Force base.

e. *Negative or Inapplicable Data.* If specific information is lacking, refrain from using the words "negative" or "unidentified" unless all logical leads to obtain the information outlined in paragraph 11 have been exhausted. For example, the information on weather conditions in the area, as requested in paragraph 11g, is obtainable from the local military or civilian weather facility. Use the phrase "not applicable (NA)" only when the question really does not apply to the sighting under investigation.

10. Comments of Investigating Officer. This officer will make an initial analysis and comment on the possible cause or identity of the stimulus in a supporting statement. He will make every effort to obtain pertinent items of information and to test all possible leads, clues, and hypotheses. The investigating officer who receives the initial report is in a better position to conduct an on-the-spot survey and follow-up than subsequent investigative personnel and analysts who may be far removed from the area and who may arrive too late to obtain vital data or information necessary for firm conclusions. The investigating officer's comments and conclusions will be in the last paragraph of the report submitted through channels. The reporting officia. will contact FTD (Area Code 513, 257–0916 or 257-6678) for verbal authority to continue investigations.

11. Basic Reporting Data and Format. Show the abbreviation "UFO" at the beginning of the text of all electrical reports and in the subject of any follow-up written reports. Include required data in all electrical reports, in the order shown below:

a. Description of the Object(s):
(1) Shape.
(2) Size compared to a known object.
(3) Color.
(4) Number.
(5) Formation, if more than one.
(6) Any discernible features or details.
(7) Tail, trail, or exhaust, including its size.
(8) Sound.
(9) Other pertinent or unusual features.

b. Description of Course of Object(s):
(1) What first called the attention of observer(s) to the object(s)?
(2) Angle of elevation and azimuth of object(s) when first observed. (Use theodolite or compass measurement if possible.)
(3) Angle of elevation of object(s) upon disappearance. (Use theodolite or compass measurement if possible.)
(4) Description of flight path and maneuvers of object(s). (Use elevations and azimuth, not altitude.)
(5) How did the object(s) disappear? (Instantaneously to the North, for example.)
(6) How long were the object(s) visible? (Be specific—5 minutes, 1 hour, etc.)

c. Manner of Observation
(1) Use one or any combination of the following items: Ground-visual, air-visual, ground-electronic, air-electronic. (If electronic, specify type of radar.)
(2) Statement as to optical aids (tele-

scopes, binoculars, etc.) used and description thereof.

(3) If the sighting occurred while airborne, give type of aircraft, identification number, altitude, heading, speed, and home station.

d. Time and Date of Sighting:

(1) Greenwich date-time group of sighting and local time.

(2) Light conditions (use one of the following terms: Night, day, dawn, dusk).

e. Location of Observer(s). Give exact latitude and longitude coordinates of each observer, and/or geographical position. In electrical reports, give a position with reference to a known landmark in addition to the coordinates. For example, use "2 mi N of Deeville"; "3 mi SW of Blue Lake," to preclude errors due to teletype garbling of figures.

f. Identifying Information on Observer(s):

(1) Civilian—Name, age, mailing address, occupation, education and estimate of reliability.

(2) Military—Name, grade, organization, duty, and estimate of reliability.

g. Weather and Winds-Aloft Conditions at Time and Place of Sightings:

(1) Observer(s) account of weather conditions.

(2) Report from nearest AWS or US Weather Bureau Office of wind direction and velocity in degrees and knots at surface, 5,000', 10,000', 15,000', 20,000', 30,000', 50,000', and 80,000', if available.

(3) Ceiling.

(4) Visibility.

(5) Amount of cloud cover.

(6) Thunderstorms in area and quadrant in which located.

(7) Vertical temperature gradient.

h. Any other unusual activity or condition, meteorological, astronomical, or otherwise, that might account for the sighting.

i. Interception or identification action taken (such action is authorized whenever feasible and in compliance with existing air defense directives).

j. Location, approximate altitude, and general direction of flight of any air traffic or balloon releases in the area that might possibly account for the sighting.

k. Position title and comments of the preparing officer, including his preliminary analysis of the possible cause of the sighting(s). (See paragraph 10.)

12. Reporting Physical Evidence.

a. *Photographic:*

(1) Still Photographs. Forward the original negative to FTD (TDETR), Wright-Patterson AFB, Ohio 45433, and indicate the place, time, and date the photograph was taken.

(2) Motion Pictures. Obtain the *original* film. Examine the film strip for apparent cuts, alterations, obliterations, or defects. In the report comment on any irregularities, particularly in films received from other than official sources.

(3) Supplemental Photographic Information. Negatives and prints often are insufficient to provide certain valid data or permit firm conclusions. Information that aids in plotting or in estimating distances, apparent size and nature of object, probable velocity, and movements includes:

(a) Type and make of camera.

(b) Type, focal length, and make of lens.

(c) Brand and type of film.

(d) Shutter speed used.

(e) Lens opening used, that is, "f" stop.

(f) Filters used.

(g) Was tripod or solid stand used.

(h) Was "panning" used.

(i) Exact direction camera was pointing with relation to true North, and its angle with respect to the ground.

(4) Other Camera Data. If supplemental information is unobtainable, the minimum camera data required are the type of camera, and the smallest and largest "f" stop and shutter speed readings of the camera.

(5) Radar. Forward two copies of each still camera photographic print. Title radarscope photographic prints per AFR 95-7. Classify radarscope photographs per AFR 205-1.

NOTE: If possible, develop film before forwarding. Mark undeveloped film clearly to indicate this fact, to avoid destruction by exposure through mail channels to final addressees.

b. *Material.* Air Force echelons receiving suspected or actual UFO material will safeguard it to prevent any defacing or alterations which might reduce its value for intelligence examination and analysis.

c. *Photographs, Motion Pictures, and Negatives Submitted by Individuals.* Individuals often submit photographic and motion picture material as part of their UFO reports. All original material submitted will be returned to the individual after completion of necessary studies, analysis, and duplication by the Air Force.

AFR 80-17

BY ORDER OF THE SECRETARY OF THE AIR FORCE

OFFICIAL

J P McCONNELL
General, U.S. Air Force
Chief of Staff

R. J. PUGH
Colonel, USAF
Director of Administrative Services

CHANGE

AFR 80–17A

AIR FORCE REGULATION
NO. 80–17A

DEPARTMENT OF THE AIR FORCE
Washington, 8 November 1966

Research and Development

UNIDENTIFIED FLYING OBJECTS (UFO)

AFR 80–17, 19 September 1966, is changed as follows:

3c. *EXCEPTIONS:* FTD at Wright-Patterson . for separate investigations. The University of Colorado will, under a research agreement with the Air Force, conduct a study of UFOs. This program (to run approximately 15 months) will be conducted independently and without restrictions. The university will enlist the assistance of other conveniently located institutions that can field investigative teams. *All* UFO reports will be submitted to the University of Colorado, which will be given the fullest cooperation of all UFO Investigating Officers. Every effort will be made to keep al. UFO reports unclassified. However, if it is necessary to classify a report because of method of detection or other factors not related to the UFO, a separate report includ.ng all possible information will be sent to the University of Colorado.

8b(6). University of Colorado, Boulder, Colorado 80302, ATTN: Dr. Condon. (Mail copy of message form.)

8e. **Negative or Inapplicable Data.** Renumber as paragraph 9.

11k. Position title, name, rank, official address, telephone area code, office and home phone, and comments of the preparing officer, including his preliminary analysis of the possible cause of the sighting(s). (See paragraph 10.)

BY ORDER OF THE SECRETARY OF THE AIR FORCE:

OFFICIAL

J. P. McCONNELL
General, U. S. Air Force
Chief of Staff

R. J. PUGH
Colonel, USAF
Director of Administrative Services

DISTRIBUTION: S

CHANGE 1, AFR 80–17

AIR FORCE REGULATION
NO. 80–17(C1)

DEPARTMENT OF THE AIR FORCE
Washington, *28 October 1967*

Research and Development

UNIDENTIFIED FLYING OBJECTS (UFO)

AFR 80–17, 10 September 1966, is changed as follows.

★3c. *Investigation.* Each commander of an Air Force base within the United States will provide a UFO . . . sighting for action.

3c. *EXCEPTIONS:* FTD at Wright-Patterson . . for separate investigations. The University of Colorado, under a research agreement with the Air Force, will conduct a study of UFOs. This program (to run approximately 15 months) will be conducted independently and without restrictions. The university will enlist the assistance of other conveniently located institutions that can field investigative teams. *All* UFO reports will be submitted to the University of Colorado, which will be given the fullest cooperation of all UFO Investigating Officers. Every effort will be made to keep all UFO reports unclassified. However, if it is necessary to classify a report because of method of detection or other factors not related to the UFO, a separate report including all possible information will be sent to the University of Colorado.

★6a. The Deputy Chief of Staff, . . reported within the United States. All Air Force activities within the United States will conduct UFO . investigation with FTD.

8b(6). University of Colorado, Boulder CO 80302, Dr. Condon. (Mail copy of message form.)

★8c. *Reports.* If follow-up action is required on electrically transmitted reports, prepare an investigative report on AF Form 117, "Sighting of Unidentified Phenomena Questionnaire," which will be reproduced locally on 8" x 10½" paper in accordance with attachment 1 (9 pages). Send the completed investigative report to FTD (TDETR), Wright-Patterson AFB OH 45433. FTD will send the reports to interested organizations in the United States and to Secretary of the Air Force (SAFOI) Wash DC 20330, if required.

8e. **Negative or Inapplicable Data.** Renumber as paragraph 9.

11k. Position title, name, rank, official address, telephone area code, office and home telephone, and comments of the preparing officer, including his preliminary analysis of the possible cause of the sighting. (See paragraph 10.)

BY ORDER OF THE SECRETARY OF THE AIR FORCE

J. P. McCONNELL, *General, USAF*
Chief of Staff

OFFICIAL

R. J. PUGH, *Colonel, USAF*
Director of Administrative Services

1 Attachment
AF Form 117, "Sighting of Unidentified Phenomena Questionnaire"

This regulation supersedes AFR 80-17A, 8 November 1966.
OPR: AFRDDG
DISTRIBUTION, S

CHANGE 2, AFR 80–17

AIR FORCE REGULATION
NO. 80–17(C2)

DEPARTMENT OF THE AIR FORCE
Washington, *30 September 1968*

Research and Development

UNIDENTIFIED FLYING OBJECTS (UFO)

AFR 80–17, 19 September 1966, and change 1, 26 October 1967, are changed as follows:

8b(3). FTD WPAFB. (First line of text: FOR TDPT (UFO).)

8b(6). Delete.

BY ORDER OF THE SECRETARY OF THE AIR FORCE

OFFICIAL

J. P. McCONNELL, *General, USAF*
Chief of Staff

JOHN F. RASH, *Colonel, USAF*
Director of Administrative Services

DISTRIBUTION: S

SPECIAL REPORTS 1 - 12

PROJECT OFFICERS ON UFO PROGRAM

NAME	DATES
Capt. Robert R. Sneider	Oct 1948 - Mar 1951
Capt. Edward J. Ruppelt	Mar 1951 - Sept 1953
Lt. Robert M. Olsson	Sept 1953 - Mar 1954
Capt. Charles A. Hardin	Mar 1954 - Apr 1956
Capt. George T. Gregory	Apr 1956 - Oct 1958
Maj. Robert J. Friend	Oct 1958 - Aug 1963
Maj. Hector Quintanilla, Jr.	Aug 1963 - Present

[redacted]

7-3748-401

1003289

[redacted]

TAB B

January 1956

I BRIEF HISTORY OF PROJECT BLUEBOOK

A. GENERAL

1. In the fall of 1947 the United States Air Force took official notice of reports of so-called "flying saucers" because the reports from the public indicated that the problem might be related to the Air Force responsibility for the air defense of the United States.

2. On December 30, 1947 the Air Force directed its Air Materiel Command at Wright-Patterson Air Force Base, Ohio, to establish a project to collect and evaluate all available facts concerning "flying saucer" sightings.

3. On December 27, 1949, after 375 reported sightings had been investigated, the Air Force, with the concurrence of the Army and the Navy, announced the findings of the "flying saucer" project.

4. The evidence at that time indicated that the majority of the reports of unidentified flying objects could be accounted for as misinterpretations of various conventional objects, a mild form of hysteria, meteorological phenomena, light aberrations, or hoaxes.

5. There remained, however, a number of unexplained sightings, and the Air Force has continued its investigations inasmuch as it is an Air Force responsibility to identify and analyze aerial phenomena that could possibly be a menace to the United States.

6. To date, the Air Force has undertaken to investigate and analyze about 5,000 reports dealing with these phenomena. As before, most of the reports were identified and disposed of as friendly aircraft erroneously reported, known electronic and meteorological phenomena, light aberrations, hoaxes, and other known natural occurences or man-made objects.

7. The unexplained reports, however, which are in the order of approximately 10 percent of the total, cannot be definitely associated with these familiar things.

Difficulty in Evaluating Reports

8. The difficulty in disposing of these unexplained reports is based largely upon the lack of accurate basic data such as size, shape, composition and flight characteristics (speed, acceleration, altitude, exact maneuver pattern, etc.) of the objects.

9. Although some instruments which are useful in obtaining more accurate data of this type have been available, the reports based on sightings with these instruments have been very infrequent and comprise an extremely small percentage of the total. Moreover, even these reports have not included much of the information required.

10. Because of the inadequacy of this basic data, the Air Force has in the past devoted its efforts primarily to determining whether these unexplained sightings indicated the existence of a menace to the United States. Initially it was believed that some pattern might evolve from the study of a large volume of reports. To date, no pattern has materialized to reveal anything whatsoever which can be interpreted as indicative of purpose or consistency or which can be construed as a menace to the United States. Nonetheless, since these unexplained sightings persist, the Air Force will continue its investigations, giving the problem adequate but not frantic attention.

11. Reports of similar phenomena go back to Biblical times. There have been flurries of them in various centuries. The current series of sightings began generally in 1946.

12. There are many reasons why the volume of these reports has increased materially during the past few years. Aerial activity originated by man has increased, and people today have a greater curiosity about the activity then before. Also, our present efficient communication facilities and news media provide an incentive for reporting unusual observations, for publicising them and for recording them. However, the ability to measure these phenomena does not seem to have advanced in step with opportunities for observing them. The Air Force believes that most of these phenomena will gradually be understood as more is known about occurrences in the upper atmosphere.

B. RADAR SIGHTINGS

1. The Air Force has received many reports of unusual images on radar scopes. It is fairly well established that some of these images are ground objects reflected from a layer of warm air above the earth (a temperature inversion).

2. Temperature inversion relfections can give a return on a radar scope that is as sharp as that received from an aircraft. Speed ranges of these returns are reportedly from zero to fantastic speeds. The "objects" also appear to move in all directions.

3. Such radar sightings have resulted in hundreds of fruitless intercept efforts.

4. One scientific theory holds that light can be similarly reflected from a layer of warm air above the earth and, if proved to be correct, this could account for some visual sightings.

5. Bearing out thetheory of temperature inversion reflection is an incident which occurred in January 1951 near Oakridge, Tennessee. Two Air Force aircraft attempted to intercept an unidentified "object" and actually established a radar "lock" on the object. Their altitude at the time was 7,000 feet. The unidentified object, according to their radar, appeared to be at an elevation of ten to twenty-five degrees. Three passes were made in an attempt to close on the object. In each instance the pilots reported that their radar led them first upward and then down toward a specific point on the ground.

6. Ionized clouds are believed to be the cause of some unidntified radar returns. Thunderstorm activity is identifiable by radar, and radar is used for the purpose of avoiding thunderstorms. In addition, radar has picked up many objects first reported as "Unidentified Phenomena" which were later identified as aircraft, birds, balloons, ice formations in the air, or other known aerial objects or manifestations.

C. CONCLUSIONS

1. The Air Force has stated in the past, and reaffirms at the present time, that these unidertified aerial phenomena are not a secret weapon, missile or aircraft, develped by the United States. None of the three military departments nor any other agency in the government is conducting experiments, classified or otherwise, with flying objects which could be a basis for the reported phenomena. As far as is known there is nothing in them that is associated with material or vehicles that are directed against the United States, from another country or from other planets.

[redacted]

AUTH: CO, ATIC
BY: E. J. Ruppelt
1st Lt, USAF
DATE: 8 Jan 52

UNCLASSIFIED

SECTION OPERATIONS
ATIAA

BATTELLE

Visit to [redacted]

Lt E. J. Ruppelt and Col Kirkland conferred with members of [redacted] on 26 December 1951 in regard to Project Grudge. The question of whether or not there was enough material available on unidentified aerial objects to warrant a detailed scientific study was discussed. It was decided that there was enough material available and [redacted] would submit a proposal to furnish consultants in the fields of astronomy, applied psychology, physics, etc. They will also attempt to make a statistical analysis of the reports in an attempt to obtain some pattern or trend. It is very reasonable to believe that some type of unusual object or phenomena is being observed as many of the sightings have been made by highly qualified sources. ~~(Censored)~~

BACKGROUND - K

HOW SPECIAL REPT NO 14 came into being

DOWNGRADED AT 12 YEAR INTERVALS;
DECLASSIFIED AFTER 12 YEARS.
DOD DIR 5200.10

UNCLASSIFIED

ATIAE-5

1

[redacted] SECURITY INFORMATION

UNCLASSIFIED

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FIRST STATUS REPORT

[redacted]

PROJECT STORK
PPS-100

to

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT-PATTERSON AIR FORCE BASE

by

[redacted]

April 25, 1952

UNCLASSIFIED

[redacted] SECURITY INFORMATION

FIRST STATUS REPORT

on

PROJECT STORK
PPS-100

at

[redacted]
WRIGHT-PATTERSON AIR FORCE BASE

by

[redacted]

April 25, 1952

INTRODUCTION

This monthly report describes progress on Project Stork PPS-100, from its inception on March 31, 1952 through April 25, 1952. On and after the effective date, PPS-100 authorized us on request to provide assistance in analyzing and evaluating reported sightings of unidentified aerial objects. The requirements are as follows:

1. Provide a panel of consultants,
2. Assist in improving interrogation forms.
3. Analyze existing sighting reports.
4. Subscribe to a clipping service, as directed, and
5. Apprise the Sponsor monthly of all work done on PPS-100.

SUMMARY

A panel of consultants has been selected and a series of brief meetings are being held in which typical sighting reports and the present interrogation forms are studied. The objectives are to indoctrinate the panel and at the same

time to determine all essential and necessary facts which should be disclosed by an ideal completed form. A coding scheme is being devised to record these facts and to facilitate analysis. The project files for 1948 and 1951 were made available recently and this material is used in indoctrination and coding studies. Upon completion of coding, analysis of the files will begin, probably within one month.

The clipping service has been initiated and approximately 350 clippings have been received. The Life article is responsible for 90 per cent of the clippings, with the remainder being a few new sightings reported concurrently from several sources. These clippings are reproduced here xerographically and the originals are transmitted to the Sponsor.

WTH:mmj

9/25

SECRET

SECURITY INFORMATION

UNCLASSIFIED

This document consists of 26 pages
No. 3 of 31 copies, series A.

SECRET J. H. McGovern, Capt, USAF
AUTH: CO, ATIC
INITIALS: P. H. McGovern, Captain
Date: June 6, 1952

SECOND STATUS REPORT

on

PROJECT STORK
PPS-100

to

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT-PATTERSON AIR FORCE BASE

by

June 6, 1952

T52-5673

UNCLASSIFIED

SECRET

SECURITY INFORMATION

TABLE OF CONTENTS

SECOND STATUS REPORT

on

PROJECT STORK
PRS-100

to

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT-PATTERSON AIR FORCE BASE

by

[redacted]

June 6, 1952

This monthly report describes progress on Project Stork, PRS-100, for the period from April 26, 1952, through June 6, 1952. The original requirements were as follows:

1. To provide a panel of consultants,
2. To assist in improving the interrogation forms,
3. To analyze existing sighting reports,
4. To subscribe to a newspaper clipping service, and
5. To apprise the Sponsor monthly of all work done on PRS-100.

It is now anticipated that these original requirements will be supplemented and extended. The formal arrangements have not yet been completed.

SUMMARY

The panel of consultants has been selected and indoctrinated in a series of meetings. Members of the panel are now engaged in completing the remaining requirements of PRS-100.

T52-5673

A preliminary analysis of the existing report file has been completed. Information derived from this analysis has been applied in improving the present interrogation form. A Tentative Observer's Data Sheet has been prepared and studied by the consultants' panel. Pertinent suggestions were incorporated in the tentative form, which is enclosed for review in Section I. The revised data sheet now includes all technical details thought to be essential. It is to be evaluated next by an astronomer, a psychologist, and a CAB investigator. Arrangements for their evaluations are now being made.

The facts reported in present files or on new sightings are to be entered on the observer's data sheet. This information will not be coded for direct entry on punched cards. Instead, the facts will be classified and analyzed before entries are made on the punched cards. To facilitate this process, a coding scheme has been prepared to serve as an intermediate step between the data sheet and the punched card. A copy is enclosed in Section I.

The final element in the data record is the punched card on which the results of coded calculations and analyses are entered. A copy of a typical card is also enclosed in Section I.

Newspaper accounts of sightings furnished by the clipping service are being received at approximately a constant rate; however, the Life article is now responsible for only about half of the clippings. Originally, the clippings were copied at Battelle, and then transmitted to the Sponsor. In the future, the clippings will be sent directly to the Sponsor by Battelle.

T52-5673

FUTURE WORK

The available files will be coded and punched cards will be prepared. When cards for the sighting reports for one year are completed, preliminary statistical studies will begin. The results of these studies will be used to appraise the adequacy of all the forms and codes which have been devised. Necessary corrections and additions will be made after this limited study. Then, the remaining sighting reports will be analyzed statistically.

SECTION I

SECTION I

Tentative Observer's Data Sheet

A completed copy of the Tentative Observer's Data Sheet is shown in Exhibit I. Two uses for this form are anticipated. First, filed sighting reports will be analyzed to extract facts to be entered on this form for coding. Second, when tests establish the adequacy of the form, it may be used directly by observers in recording sighting reports. This latter use will conserve time now expended in extracting information from the present reports for coding on the punched cards.

[redacted]

The coding scheme is illustrated in Exhibit II. This completed enclosure is to serve as an intermediate between the observer's report and the punched-card abstract of the facts on the sighting. In most cases, the facts on the sighting are not entered on the punched cards directly. In some cases, intervening steps require only coding, while in others calculations or analyses also may be involved. Prior to discussing the uses to which the punched cards will be put, it should be emphasized that the facts represented include:

1. Those presently on the standard form,
2. Those suggested by the Sponsor, and
3. Those suggested by the panel.

As might be expected, many more entries are proposed than have been used previously.

T52-5673

Punched Card

A typical completed punched card is included for reference in Exhibit III. This card should be compared with the observer's data sheet for this sighting, prepared from the original report. The data sheet is the completed one described previously.

Statistical Studies

From the information entered on the punched cards, it will be possible to analyze many characteristics of sightings. (See Exhibit IV.) Some of these may be obvious, others are subtle, but all seem interesting. The planning of statistical studies is necessarily incomplete. However, some examples may suggest the possible scope of study.

Studies have been planned to reveal the variation in sighting activity with time and position. The time of sightings in conjunction with the geographical location will be used in several ways. First, time will permit correlation of sightings with astronomical and tidal phenomenon. Second, sighting times and locations may be correlated with weather conditions. These studies will assist in determining periods and areas of unusual activity. In addition, useful data on track and speed may evolve from such analyses.

Data will be compiled on the lag between sightings and the receipts of reports and supplementary information. This knowledge will aid in evaluating reports and in determining the effectiveness of collection procedures.

T52-5673

The geographical location of sightings will be coded to permit extensive manipulation. For example, it will be possible to extract cards for areas bounded by parallels of latitude and meridians of longitude. It will also be possible to enter position data for facilities such as ADC, SAC, and others. Range and bearing from sighting locations to facility locations then can be calculated. The appearance and performance characteristics of sightings will be coded also. These codes will assist in classifying sightings, which is the preliminary step of identification. Where the performance and appearance characteristics check in multiple sightings, the time and location data may be used to determine the track and velocity of objects.

The interrogation forms are designed to extract information as discrete facts, later to be corroborated by an integrated written description. There are two aims here. First, the completion of the form will assist in evaluating the observer. Second, the discrete facts may be checked against the written story for evaluation. Some subtle questions cannot be answered readily, if at all. The related answers will aid in evaluating the observer.

From these brief comments, it may be clear that the basic coding scheme is broad. With punched cards, analysis of many facts on each sighting will be rapid and convenient. However, once the code is fixed, it will be difficult to extract information not incorporated in the code. For this reason, approximately 10 per cent of the space available for entries in the code has been left to provide for expansion. The desired expansion must be planned before the code is fixed. This is one item of work planned for the immediate future. After the code is fixed, necessary extension of the system can be effected with supplementary cards.

EXHIBIT I. TENTATIVE OBSERVER'S DATA SHEET

T52-5673

EXHIBIT I. TENTATIVE OBSERVER'S DATA SHEET

Incident 202

Where Choice is Given, Circle Proper Answers, or Insert Answer

1. Date of your observation: 08 (Day) 11 (Month) 48 (Year)

2. Date you reported the observation: 09 (Day) 11 (Month) 48 (Year)

3. What time was it when you sighted the object: 6 (Hrs.) 30 (Min.)

A. M. (P. M.) Daylight (Standard)

Zone: (Eastern) Central, Mountain, Pacific, _____ (Other)

4. Length of time object was observed. Estimate: _____ (Hours) _____ (Minutes) 1 (Seconds)

5. Where observed:

Newark Air Force Base (Postal Address) Newark (City or Town) N.J. (State) U.S.A. (Country)

6. Where were you at time of observation:

Inside building, In car, (Outdoors), _____ (Other)

7. Were you moving at any time during this sighting: No (Yes or No)

8. Did you stop at any time during this sighting: _____ (Yes or No)

9. If you were moving - give _____ (Direction) and _____ (Speed) miles per hour.

10. How was object observed: [Naked eye]
Eye glasses
Other glass (Window or Windshield)
Binoculars, Telescope, Theodolite
Other _____

11. How did you happen to notice the object: Looked toward moon

EXHIBIT I. TENTATIVE OBSERVER'S DATA SHEET (Continued)

12. Describe what you saw as briefly as possible in the following spaces:

a. Sound None b. Shape Disc (almost no depth)

c. Color Luminous d. Size Moon

e. Number 1 f. Light brightness 1/3 of moon

g. Light color Grey h. Motion

i. Speed 800 M.P.H. j. Other

13. How did object disappear from view: (Suddenly) or Gradually
Circle One

14. At any time did the object:

a. Change direction b. Change speed [c. Move behind something;] Cloud, House, Tree, Other d. Blend with background e. Decrease in size f. Decrease in brightness g. Move in front of something

h. Other

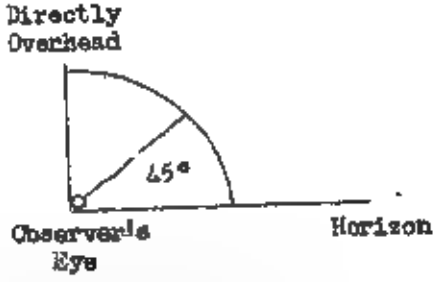
15. When you first looked at the object, what direction were you facing? N.N.W.

16. When you last saw the object, what direction were you facing? S.S.W.

17. In the following Sketch A, draw a line from the observer's eye to the circular arc to show the apparent elevation of the object in the sky.

A. When first seen, label a.

B. When last seen, label b.

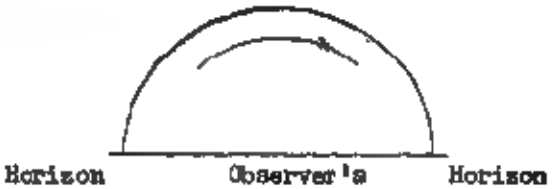


SKETCH A

EXHIBIT I. TENTATIVE OBSERVER'S DATA SHEET (Continued)

18. On the following Sketch B, label a at the apparent position of the object when first seen and b at point last seen. Trace the apparent path of the object between points a and b.

If possible label 1, 2, 3, etc., along the traced path to show the successive positions of the object after equal intervals of time during the sighting.



SKETCH B

19. In Sketch C please show the observed features of the object such as:

A. Apparent shape, (were edges pointed or rounded),

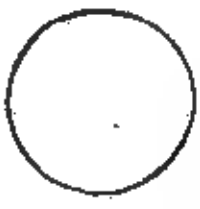
B. Apparent direction of motion, (show by arrow), and

C. Other details, exhaust, trails, tails, surfaces, etc.

SKETCH C

20. The sun and the moon are shown below as they appear in their correct relative size. In this Sketch D, show the apparent size of what you saw.

SUN



OBJECT

SKETCH D

MOON

EXHIBIT I. TENTATIVE OBSERVER'S DATA SHEET (Continued)

21. In your own words please describe the sighting you observed. Use sketches if desired. All observations from the time of first sighting to the time of disappearance are important. Include a description of the weather, wind, and cloud conditions at the time of this sighting.

At 1850 hours, 8 November, 1948, I was standing just outside hangar No. 7 at the Newark Air Force Base, on the south side of the hangar. It was a perfectly clear night. I looked up toward the moon and noticed a pale luminous object race across the sky. It was about 1/3 the brightness of the moon, round like a disc, with little or no depth (thickness) to it. It appeared to be about the same relative diameter as the moon. It traveled from north northwest in an arc toward the south southwest in about one second or less, passing out of sight over another hangar. I heard no sound from the object. I estimate the speed of the object at 800 miles per hour, and its altitude at five to six thousand feet. I have seen jet aircraft make tactical approaches at this Field at approximately 600 miles per hour, and judging from them, the speed of the object I sighted was at least 200 miles an hour faster. From where I stood, I could see approximately 75 per cent of the path of the object. The peak of its arc was approximately 45 degrees above the horizon to the west southwest of my position.

EXHIBIT I. TENTATIVE OBSERVER'S DATA SHEET (Continued)

22. Your full name: Edmund J. Cisek

23. Your address: Newark, New Jersey

24. Your occupation: Civilian Dispatcher

25. Last school you attended:

26. Year of last attendance at this school:

27. Please list the names and addresses of persons who discussed this sighting with you. It is not necessary to list the names of officials or investigators.

[redacted]. Further comments which you believe are important should be entered here. Use additional sheets of the same size if necessary.

Estimated distance of object from observer, 5000 to 6000 feet.

EXHIBIT II - CODE

EXHIBIT II. CODES

CODE 1. GENERAL

a. Every column must have at least one entry. If no data are available for any column, the X should be used.

b. If a number in any column is used to enter data, then X qualifies the data as indicated in the Code for the specific column.

CODE 25 DURATION UNITS

X	
Y	
0	Days
1	Hours
2	Minutes
3	Seconds
4	
5	
6	
7	
8	
9	

CODE 28 LATITUDE

X	South latitude
Y	
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

CODE 32 LONGITUDE

X	East longitude
Y	
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

CODE 41 POSITION

X	Variable
Y	
0	
1	In car
2	Outdoors
3	In plane
4	In building
5	
6	
7	
8	
9	Other

CODE 42 MOVEMENT OF OBSERVER

X	
Y	
0	Wasn't moving
1	Was moving - stopped
2	Was moving - didn't stop
3	
4	
5	
6	
7	
8	
9	

EXHIBIT II. CODES (Continued)

CODE 43 OBSERVATION METHOD

X	Variable
Y	
0	Naked eye
1	Eye glasses
2	Window
3	Windshield
4	Binocular
5	Telescope
6	Theodolite
7	Radar
8	Photographic
9	Other

CODE 44 SOUND

X	Variable
Y	
0	Motors
1	Jet or rockets
2	Explosion
3	Unlike aircraft
4	Hiss, swishing, whining
5	Rumbling
6	Humming or buzzing
7	None
8	Not stated
9	Other

CODE 45 COLOR

X	Variable
Y	
0	Metallic
1	Light-glow-luminous
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Violet
8	Black
9	White

CODE 46 NUMBER

X	
Y	
0	0 - 1
1	1 - 2
2	2 - 3
3	3 - 4
4	4 - 5
5	5 - 6
6	6 - 7 - 10
7	11 - 20
8	20 - 30
9	31 or more

CODE 47 LIGHT-COLOR

X	Variable
Y	
0	White
1	Black
2	Grey
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Violet
9	Other

CODE 48 SPEED

X	Variable
Y	
0	Hovering, stationary
1	Less than 100 m.p.h.
2	100-400 m.p.h.
3	More than 400 m.p.h.
4	Meteor like
5	Not stated
6	
7	
8	
9	Other

CODE 49 SHAPE

X	Variable
Y	
0	Ellipse
1	Rocket
2	Conventional aircraft
3	Unconventional aircraft
4	Meteor, comet
5	Lenticular
6	Conical
7	Tear drop
8	Flame, tails, fire
9	Other

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EXHIBIT II. CODES (Continued)

CODE 50 SHAPE PARAMETER a/b

X - Variable
Y
0 - 0.0
1 - 0.05
2 - 0.1
3 - 0.2
4 - 0.3
5 - 0.5
6 - 0.75
7 - 0.9
8 - 1.0
9 - Other

CODE 51 SUBTENDED VISUAL ANGLE (Referred to sun diameter)

X - Decreased in size
Y
0 - 0.1
1 - 0.2
2 - 0.5
3 - 0.75
4 - 1.0
5 - 1.5
6 - 2.0
7 - 4.0
8 - 4.0 to 10.0
9 - [redacted]

CODE 52 LIGHT BRIGHTNESS (Intensity)

X Decreased
Y
0 Sunlight on mirror
1 Sunlight on aluminum
2 Sunlight on plaster
3 Sunlight on stone
4 Sunlight on soil
5 Brighter than moon
6 Like moon
7 Duller than moon
8 Barely visible
9 Other

CODE 53 ANGULAR VELOCITY

X Variable
Y
0 Zero
1 Very slow, 1° per second
2 Slow, 3° per second
3 Moderate, 6° per second
4 Rapid, 12° per second
5 Very fast, 30° per second
6 Extremely fast, 90° per second
7 More than 90° per second
8
9 Other

CODE 54 ANGULAR ACCELERATION (Change in Angular Velocity)

X Variable
Y
0 Zero, V=constant
1 Increasing slowly
2 Decreasing slowly
3 Increasing fast
4 Decreasing fast
5 Increasing very fast
6 Decreasing very fast
7
8
9

CODE 55 APPEARANCE BEARING

X
Y
0 - N
1 - NE
2 - E
3 - SE
4 - S
5 - SW
6 - W
7 - NW
8
9

EXHIBIT II. CODES (Continued)

CODE 56 DISAPPEARANCE BEARING

X	- Disappeared suddenly
Y	
0	- N
1	- NE
2	- E
3	- SE
4	- S
5	- SW
6	- W
7	- NW
8	
9	

CODE 57-58 ELEVATION WITH RESPECT TO GROUND, DEGREES

	Initial		Final
X	Variable	X	Variable
Y		Y	
0	0-9	0	0-9
1	10-19	1	10-19
2	20-29	2	20-29
3	30-39	3	30-39
4	40-49	4	40-49
5	50-59	5	50-59
6	60-69	6	60-69
7	70-79	7	70-79
8	80-90	8	80-89
9		9	

CODE 61 OBJECT ORIENTATION
Apparent inclination of principal axis of object from horizontal

X	Variable
Y	
0	+90 to 60
1	+60 to 30
2	+30 to 10
3	+10 to 0
4	0
5	0 to -10
6	-10 to -30
7	-30 to -60
8	-60 to -90
9	

CODE 62-63-64 CIVILIAN OCCUPATION

Dictionary of Occupational Titles, Vol. II, 2nd Edition, pp. XIX-XXVI. U.S. Department of Labor, Bureau of Employment Security. U.S. Government Printing Office, Washington, D.C., 1949. See pp. XIX-XXVI.

CODE 65 SERVICE

X	
Y	
0	Army
1	Navy
2	Marine
3	Air Force
4	Coast Guard
5	Merchant
6	[redacted]roial Air
7	CAA
8	Gov't. Contractor
9	Other

CODE 66 DUTY

X	
Y	
0	Pilot
1	Weather tech.
2	Radar tech.
3	Tower op.
4	Balloon obs.
5	Tech. spec.
6	Guards, lookouts
7	Ground or deck crews
8	Navig. or bombardier
9	Other

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EXHIBIT II. CODES (Continued)

CODE 60 RANK EQUIVALENT

X	Officer	X	
Y		Y	
0	Lt. 2nd	0	Private
1	Lt. 1st	1	Private, 1st Cls.
2	Capt.	2	Corp.
3	Maj.	3	Serg.
4	Lt. Col.	4	S. T. Serg.
5	Col.	5	M. Serg.
6	Brig. Gen.	6	Warrant Off.
7	Maj. Gen.	7	Chief Warrant
8	Lt. Gen.	8	
9	General	9	

CODE 76 EVALUATION OF OBSERVER RELIABILITY

X	
Y	
0	Complete
1	Quite
2	Fair
3	Doubtful
4	Poor
5	Not
6	
7	
8	
9	Can't be judged

CODE 77 EVALUATION OF REPORT RELIABILITY

[redacted]	
Y	
0	Complete
1	Quite
2	Fair
3	Doubtful
4	Poor
[redacted]	Not
6	
7	
8	
9	Can't be judged

[redacted]

X	Possibly
Y	
0	Balloon
1	Astronomical
2	Aircraft
3	Light phenomenon
4	Birds
5	Clouds, dust, etc.
6	Rocket or missile
7	Psychological manifestations
8	Electromagnetic phenomenon
9	Other

[redacted]

X	Probably
Y	
0	Balloon
1	Astronomical
2	Aircraft
3	Light phenomenon
4	Birds
5	Clouds, dust, etc.
6	Rocket or missile
7	Psychological manifestations
8	Electromagnetic phenomenon
9	Other

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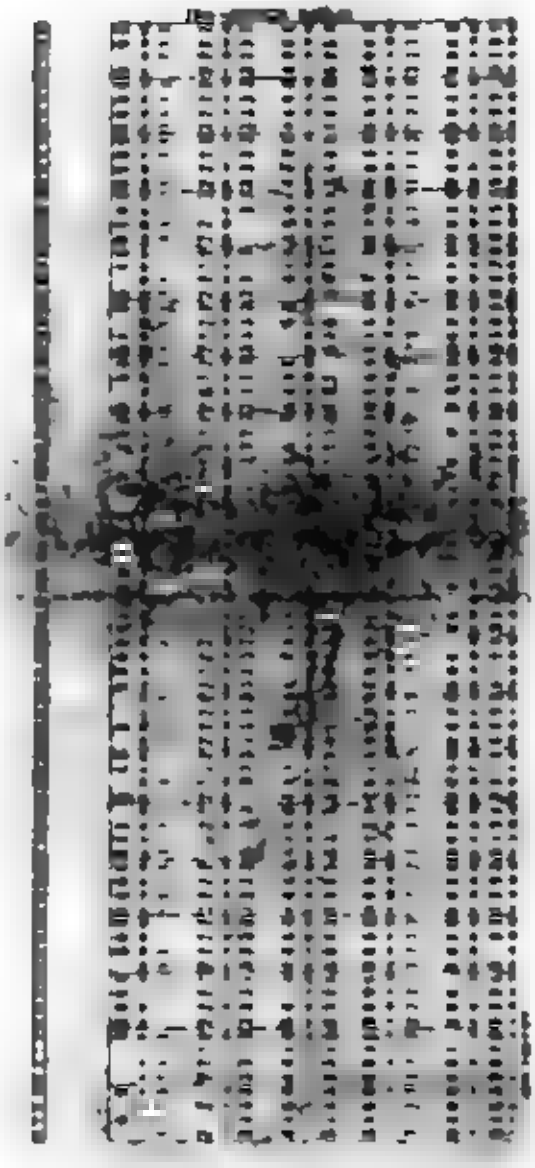
UNCLASSIFIED

EXHIBIT III. PUNCHED CARD

T52-5673

UNCLASSIFIED

SAMPLE U.S. PUNCH CARD



Typical Punched Card Containing Information Coded For Database 2B

T52-3673

UNCLASSIFIED

EXHIBIT IV. WORK SHEET

UNCLASSIFIED

UNCLASSIFIED

EXHIBIT IV. WORK SHEET

Observer's Data Sheet Question	Punched-Card Column	Code	Description	
	1*			
	2			
	3	0202	Serial No.	Incident serial number
	4			
	5			
	6	00	Serial No.	Insertion
	7			
	8	08	Day	
	9			
1.	10	11	Month	
	11			
	12	48	Year	Observed
	13			
	14	09	Day	
	15			
2.	16	11	Month	Reported
	17			
	18	XX	Day	
	19			
	20	XX	Month	Rec'd ATIC
	21			
	22	23	Hrs.	Time of observation Greenwich C.T.
	23			
3.	24	50	Min.	
	25*	3	Time units	Duration of observation
	26			
4.	27	01	Duration	
	28*			
	29	40.70		
	30			
	31		Latitude	
	32*			
	33			
	34	074.18		Location
5.	35			
	36		Longitude	
	37			
	38	7581		
	39			
	40		Cosine latitude	

* Denotes separate code key is needed.

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UNCLASSIFIED

EXHIBIT IV. WORK SHEET (Continued)

Observer's Data Sheet Question	Punched-Card Column	Code	Description	
6.	41*	2	Where observer was	
7. 8.	42*	0	Moving - Stopped	
10.	43*	0	How observed	
	12a. 44*	7	Sound	
	12c. 45*	1	Color	
	12e. 46*	0	Number	
12.	12g. 47*	2	Light-color	Appearance Description
	12i. 14b. 48*	3	Speed	
	12b. 19 49*	0	Shape	
	12b. 19 50*	8	a/b	
	12d. 14a. 20 51*	4	Size	
	12f. 14f. 52*	8	Light brightness	
	53*	7	Angular velocity	
4. 12h. 14. 18. 19	54*	0	Angular acceleration	Motion
15.	55*	7	Describe appearance	
13. 14. 16.	56*	X-5	Describe disappearance	
	57*	X-4	Initial elevation	
17.	58*	X-4	Final elevation	Elevation
	59			
12i. 21.	60	05	Altitude, 1000 ft.	Altitude
18. 19.	61*	4	Object orientation	
	62*			
	63	061		
24.	64		Civilian occupation	Observer
	65*			
	66*	392		
24.	67*		Service occupation	
	68			
	69			
	70	XXXX		
	71			
	72			
	73			
	74	XXXX		
	75			
	76*	9	Observer	
	77*	1	Report	Evaluation
	78*	X-0	Preliminary	
	79*			Identification
	80*	XX	Final	

* Denotes separate code key is needed

T52-5673

[redacted] SECURITY INFORMATION

UNCLASSIFIED

This document consists of 5 pages
No. 5 of 32 copies, Series A

SECRET
AUTH: CO, ATIC
INITIALS: F. H. McGovern
Capt., USAF
DATE: July 7, 1952

THIRD STATE REPORT

on

PROJECT STORK
PHS-100

to

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT-PATTERSON AIR FORCE BASE

by

BATTELLE MEMORIAL INSTITUTE

July 7, 1952

T52-5677

[redacted] SECURITY INFORMATION

UNCLASSIFIED

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T52-5677

THIRD STATUS REPORT

on

PROJECT STORK
PRS-100

to

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT-PATTERSON AIR FORCE BASE

by

[redacted]

July 7, 1952

This report describes progress on Project Stork, PRS-100, for the period from June 6, 1952, to July 7, 1952.

Panel of Consultants

Dr. J. Allen Hynek, Professor of Astronomy, Director of the McMillin Observatory, and Assistant Dean of the Graduate School at Ohio State University, was employed to consult on astronomical aspects of the work involved in this project. The Tentative Observer's Data Sheet, Exhibit I, enclosed in the June 6 report, was studied by Dr. Hynek and some changes and additions were made in accordance with his suggestions.

On June 22, Dr. Hynek started a tour to interview several professional and amateur astronomer groups. The purposes of these interviews are:

1. To learn if any competent people in this profession have made sightings which have not been reported.

2. To summarize the opinions of the competent people in this field relative to the broad subjects of unidentified aerial objects.
3. To obtain information and suggestions which may be useful in carrying out future phases of the work on the investigation.

This tour will be completed July 11. After Dr. Hynek had spent a short time on this tour, word was received from him that he is obtaining some interesting information from professional astronomers about sightings they have made which they have never otherwise reported. On a preliminary basis, it appears that the results of this survey will be valuable to the investigation.

Interrogation Forms

Dr. Paul M. Fitts, Professor of Psychology and Director of Aviation Psychology at Ohio State University, and a group of his associates are now engaged in revising the Tentative Observer's Interrogation Forms, Exhibit I, of the June 6 report. The object of this revision is to design the questionnaire so that a maximum of information regarding a sighting can be expected from the average individuals who will be filling out the questionnaires on future sightings. Trial tests with the revised questionnaire are planned to determine if the desired information on a sighting is obtained with it. It is expected that this revised questionnaire will be completed about July 16.

Analysis of Existing Sighting Reports

The file of sighting reports for 1948 has been studied in detail. Information on these reports has been coded by using Exhibit I, Tentative Observer's Data Sheet; Exhibit II, Codes; and Exhibit III, Work Sheet, of the June 6 report. The coded data on the work sheets are now being transferred to IBM punched cards, as shown in Exhibit III of the June 6 report. When a file of about 150 of these coded sightings is completed, preliminary analysis trials with the IBM system will be started.

Newspaper Clipping Service

The newspaper clippings are now being sent directly to the Sponsor as requested in June.

Future Work

The coding of existing sighting reports will be continued at an accelerated rate during July. Preliminary analyses will be made with the IBM system.

A separate report on the findings of Dr. J. Allen Hynek will be prepared.

The interrogation forms are expected to be completed in July.

PJR:ddg
July 17, 1952

SPECIAL REPORT

on

[redacted] WITH ASTRONOMERS
ON UNIDENTIFIED AERIAL OBJECTS

to

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT-PATTERSON AIR FORCE BASE

by

J. Allen Hynek

August 6, 1952

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SPECIAL REPORT

on

CONFERENCES WITH ASTRONOMERS
ON UNIDENTIFIED AERIAL OBJECTS

to

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT-PATTERSON AIR FORCE BASE

by

J. Allen Hynek

August 6, 1952

This special report was prepared to describe the results of a series of conferences with astronomers during and following a meeting of the American Astronomical Society in Victoria, B. C., in June, 1952. It recounts personal opinions of a large number of professionally trained astronomical observers regarding unidentified aerial objects. In addition, it reports sightings by five professional astronomers that were not explainable by them. Representing the opinions of highly trained scientists, these comments should prove particularly helpful in assessing the present status of our knowledge of unknown objects in the skies.

PURPOSE OF INTERVIEWS

The desirability has been established of inquiring of professionally trained astronomers of considerable scientific background as to whether they

had ever made sightings of unidentified aerial objects. At the same time, it is felt that it would be profitable to obtain the informal opinions and advice of high-ranking astronomers on the entire subject of unidentified aerial objects, of the manner in which the investigation of these objects was being conducted by the Air Force, and of their own inner feelings about the possibility that such objects were real and might constitute either a threat to national security or a new natural phenomena worthy of scientific investigation.

Accordingly it was planned that a tour would be made of several of the nation's observatories, not in the guise of an official investigator, but rather as an astronomer traveling about to discuss scientific problems. It was felt that this mild deception was necessary, that an artificial barrier to communication might not be set up which would invalidate the assumption that truly representative opinions were being obtained. Therefore, to maintain good faith, the names of the astronomers interviewed are withheld from this report.

In all, 45 astronomers were interviewed, nearly always individually except in a few cases where this was impossible. Eight observatories were visited and the National Meeting of the American Astronomical Society in Victoria, British Columbia, was attended on June 25 to June 28.

Because of the confidential and highly personal manner in which the interviews quoted below were made, and to keep faith with the many astronomers interviewed, who, generally, were not aware that anything more than a personal private talk between astronomers was going on, the names of the astronomers will be withheld. They will be assigned letters, but the code will not be included in this report.

Table 1 gives an informal evaluation of each astronomer as an observer, and, for some, their rating as a professional astronomer. These ratings are based on my own personal opinion; they do not represent any fixed levels of achievement in the general field of astronomy.

TABLE 1. INFORMAL EVALUATION OF ASTRONOMERS PROVIDING DATA FOR THIS REPORT

Astronomer	Rating as an observer	Rating as a professional astronomer	Astronomer	Rating as an observer	Rating as a professional astronomer
A	3	-	V	3	2
B	1	-	W	3	-
C	3	-	X	3	1
D	2	-	Y	1	-
E	3	-	Z	-	-
F	3	-	AA	-	-
G	1	-	BB	-	-
H	2	-	CC	-	-
I	1	-	DD	1	1
J	1		EE	1	-
K	-	-	FF	-	-
L	1	-	GG	1	1
M	1	-	HH	2	1
N	3	1	II	2	2
O	2	3	JJ	-	-
P	3	3	KK	1	-
Q	1	1	LL	-	-
R	1	-	MM	2	-
S	2	-	NN	-	-
T	-	-	OO	-	-
U	1	-	PP	-	-

Key to ratings: 1 Excellent
2 Above average
3 Average

INTERVIEWS WITH ASTRONOMERS

There follows a simple narrative of the interviews, after which the opinions and advice of the astronomers will be summarized.

Astronomer A has never made any sightings and knows of none in his immediate acquaintance who have.

Astronomer B has made sightings of things which people would call "flying saucers" but hasn't seen anything that he couldn't explain. He has seen birds at night flying in formation illuminated by city lights, but probably not bright enough to have been photographed because they were traveling "pretty fast". Astronomer B wonders if some of the sightings are not due to Navy secret weapons, since only the Navy has officially said nothing about flying saucers. Astronomer B was quite outspoken and feels that past methods of handling the subject have been "stupid". He feels pilots should not be hushed up, and that secrecy only whets the public appetite.

Astronomer C has made no sightings, and is quite reluctant to discuss the subject. It is evident that he regards it as a fairly silly proceeding and subject. Difficult to bring the conversation around to the subject.

Astronomer D has made no such sightings and does not know any associate who has. He is fairly sympathetic in the matter and appears open minded on the subject.

Astronomer E has made no sightings, but heard the great Seattle meteorite of May 11 at 1:30 a.m. Apparently, he is not much interested in the subject.

Astronomer F, from England, has made no sightings, but tells of the reports of unidentified objects in England.

Astronomer G has made no sightings, nor have his associates. Reasonably interested in talking about the subject, he clearly does not consider it a topic of any real importance as compared with the problems he is interested in at the moment.

Astronomer H has been associated with systematic meteor observation, but not for any great length of time. He has made no sightings nor have his associates. His meteor cameras have not picked up any objects.

Astronomer I has made no sightings and it was rather difficult to get him to talk about the subject at all. Clearly he does not regard it as a problem of importance.

Astronomer J, who has had long experience at a meteor observatory, has made no sightings but clearly is very interested in the problem. He has promised cooperation should any items come to his attention. He is very much interested in seeing this problem cleared up. His professional rating is excellent.

Astronomer L has made no sightings nor, as far as he knows, have any of his associates.

Astronomer M has made no sightings. Politely interested, but he clearly does not regard it as a major problem.

Astronomer N, with an excellent professional rating, has made no sightings nor does he know of any associates who have. He said that astronomer Whipple thinks the green fireballs observed in New Mexico are small asteroids,

whereas the ordinary meteors are cosmtary fragments. There is a further discussion of this point later with reference to La Paz.

Astronomer O, whose professional rating is only moderate, has seen none.

Astronomer P, whose professional rating also is only moderate, has seen some and does not consider the problem very important. (See footnote.)

Astronomer Q, with an excellent professional rating, has seen no unidentified objects but says that reports come in occasionally from the Fraser River valley northeast of Vancouver. Apparently these sightings have been concerned with lights similar to the Lubbock lights.

Astronomer R has personally sighted an unidentified object, a light which loomed across his range of vision, which was obstructed by an observatory dome, much faster than a plane and much slower than a meteor. If it had been a plane, then its rapid motion could be accounted for only by closeness, but since no motors were heard, this explanation was essentially ruled out. Light was steadier than that of a meteor and was observed for about three seconds. Astronomer R does not ascribe any particular significance to this sighting, except as it constitutes one of the many incomplete and unexplained sightings. Astronomer R was not reluctant to talk about the subject of flying saucers and pointed out that we must not fall into the error of believing that we understand all physical phenomena. As late as the year 1800, it was thought im-

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Footnote: The professional ratings given here show that "sightings" and interest in the problem do not run inversely proportional to the professional rating of the astronomer.

possible that meteorites, "stones from heaven", could fall from the sky. There is no reason to believe that a century and a half later all the physical phenomena that exist have been discovered. Astronomer R is, however, violently opposed to the sensational approach to this problem. He points out that many scientists, or at least some scientists, have approached these sightings for the sake of personal glory and publicity but not for the benefit of the country. He is also opposed to magazines such as Life setting themselves up as scientific arbiters and passing scientific judgment on sightings when not qualified to do so. In short, Astronomer R believes this subject is serious enough to be considered as a scientific problem, and that it should be taken entirely out of the sensational realm. He believes, for instance, that a group of serious scientists should aim to help investigators by starting with a thoroughgoing investigation of the "Lubbock lights". This investigation would comprise not only a rehash of previous sightings, but an intelligent cooperative effort to examine the world of physical phenomena and to see which of those, and which scientific or physical principles, might conceivably have led to these observations. He feels that the Lubbock incident is a particularly propitious one to start with, since the observations were made by reliable observers in a scientific atmosphere, and that, therefore, these qualified observers could discuss with other scientists their sightings in a dispassionate manner. Astronomer R turned over the record of his sighting made at the instant of the sighting, for whatever use it may be. He is interested in the problem and eminently cooperative.

Astronomer S has seen none and is not particularly interested in the problem.

Astronomer T has personally seen nothing, but recounted the incident at Selfridge Field which occurred early in June, 1952, in which a group of fliers from Selfridge Field was sent out to attack a target over Lake Erie. As they were approaching the target, the shore observers radioed "Why don't you shoot? You are already in the target." This apparently is another example of the fairly frequent radar "sightings".

Astronomer U, Hugh Pruett, who does not mind having his name used, is Northwest Regional Director of the American Meteor Society. Although getting on in years, he has had a great deal of experience with meteor observation. He evinced considerable interest and cooperation in the problem, and I took the liberty of asking him to cooperate with this endeavor in tracking down meteor sightings which might be associated with reports on flying saucers. He is well acquainted with all the officers and members of the American Meteor Society, and he could provide considerable help in assembling a panel of consulting astronomers. Pruett plotted the flight of the great Seattle meteor from hundreds of reports. He is an avid "tracker-downer" of such things, and he can be of considerable assistance in these matters. He himself has not made any unexplained sightings. I checked my knowledge of meteors with him and corroborated the points that there are many meteors that are green, that some drop vertically, that some wobble, some have noise associated with them, and some have been seen as long as 25 seconds. There is one record in the literature of a meteor that lasted 50 seconds, but this seems hardly possible.

Pruett, although he observed no objects, did hear a very loud noise above the clouds early one morning which he does not believe was aircraft. He asked the local radio station to help; his phone was kept busy for four hours. There is no question that the noise existed, but no one saw anything.

Astronomer Y has made no sightings. He was so interested in speaking of his own troubles that it was impossible to bring the conversation around to scientific problems. His professional rating is only intermediate.

Astronomer W was difficult to interest in the subject and did not admit to having seen anything.

Astronomer X, with a high professional rating, has made no sightings and exhibits an extremely negative attitude toward the whole problem. He feels that all sightings except the green fireballs are merely misrepresentations of familiar objects, and he has no patience with the subject. He believes that La Paz should have enough data to get the heights of the green fireballs, and therefore settle the question. La Paz, when questioned later, said he did have sufficient observations and the objects were eight to ten miles high. Astronomer R, who happened to be present when Astronomer X was "sounding off", again reiterated that it would be a good idea for some astronomer to take a responsible attitude toward this problem, and that we will get no place by merely pooh-poohing it.

Astronomer I has made no sightings but has stated, "If I saw one, I wouldn't say anything about it". This statement led the conversation into the question of what conditions would have to be met before he would report it. The answer from him was the same as from several other astronomers, that if

they were promised complete anonymity and if they could report their sightings to a group of serious, respected scientists who would regard the problem as a scientific one, then they would be willing to cooperate to the very fullest extent. Astronomer Y suggested that an article be written in some astronomical journal informing the astronomical world that a reliable clearing house for such information exists. (See footnote.) Astronomer Y, and others, were of the strong opinion that the astronomical world should be informed through reliable channels as to what the Air Force is doing in tracking down these stories, and what is being done to put the investigation of such incidents on a scientific basis.

Astronomer Z, from Germany, has sighted none himself but tells that flying saucer reports also exist in Germany, but he believes that many may have been introduced by the Occupation Forces. He reports that rumors are frequent that the flying saucers might be from Mars, but that these reports are taken by the intelligent simply as American propaganda to cover up the existence of secret weapons. Or, they say, if not the Americans, then the Soviets.

Astronomer AA, from England, has made no sightings himself. He tells that such sightings are talked about in England, however. The only specific case he knows anything about is that of the falling ice which killed the sheep. These very handy "flying saucers" served a very good purpose in getting around meat rationing because when a sheep was killed, obviously for table use, the blame was put to falling ice. The stories ended when a chemical examination of the only authentic case of such a fall showed the ice to have uric acid in it. This led to a change in the sanitation routines aboard the BOAC planes!

Footnote: The writer does not agree with this as it would almost immediately fall into the hands of the press and the ensuing publicity would be a strong deterrent to the receipt of reports.

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Astronomer BB has made no sighting personally, but informed the writer that he would talk to a reputable committee of scientists if he did see anything.

Astronomer CC has made no sightings himself although he has been in a very good position to do so. He was reluctant to discuss the matter to any extent.

Astronomer DD, with a top professional rating, has seen nothing personally, nor does he know of any of his associates who have. Interested in the problem, he feels that a scientific panel could provide the answer.

Astronomer EE has never seen any unexplainable objects. He has seen a phenomenon which most people would have said was a "flying saucer". This turned out to be a beacon light describing a cone of light, part of which intercepted a high cirrus cloud. This led to a series of elliptical lights moving in one direction and never coming back.

Astronomer FF has seen none himself, but recently received a report from a ranger who said he was an amateur astronomer; he reported a bright light but said that it was not a meteor. Astronomer FF said his recitation of the incident was very dramatic. Astronomer FF suggested sending up a control "flying saucer" to see how many reports come back. Apparently he had in mind an extremely bright rocket or perhaps a spectacular balloon. (See footnote.)

Footnote: Again, I do not think much of this astronomer's suggestion. It would serve to tell us how many people will report an unusual incident, which number can be compared with the number of people who report a typical sighting; if the numbers agree then this would be some proof that an actual object had been sighted in the latter cases. The confusion that would be created by this manouver is hardly worth the while. Recently, the balloon sighting over Columbus gives us, in effect, the same results that Astronomer FF suggested. Certainly in this case hundreds, if not thousands or more people saw the balloons which, incidentally, were not spectacularly
(Footnote continued on page 12.)

Astronomer GG, with an excellent professional standing, and cooperative and highly respected, has made no sightings personally. He concurs with others that a committee of scientists to approach the problem of flying saucers would be a good idea. Astronomer GG had the suggestion that St. Elmo's fire should be induced artificially to see if this is one of the causes of the numerous sightings of lights by pilots.

Astronomer HH, whose professional rating is excellent, has made no sightings personally. He agreed that the conditions under which he would talk would be complete anonymity in reporting to a committee or even to one reputable astronomer in whom he had full confidence.

Astronomer II, with an adequate professional rating, has made two sightings personally. The sightings were two years apart. The first sighting, which was witnessed also by an astronomer not interviewed on this trip, occurred in this manner: A transport plane travelling west made quite a bit of noise and Astronomer II looked up to watch it. He then noticed, above the transport and going north, a cluster of five ball-bearing-like objects. They moved rapidly and were not in sight very long. Two years after this sighting, he sighted a single such object which disappeared from sight by accelerating, probably by turning but not by going up quickly. Astronomer II is willing to cooperate but does not wish to have notoriety. Nevertheless, he would furnish further details, and Observers Questionnaires should be sent to him.

Footnote Continued: bright and could easily have escaped detection. It is interesting to note that the public at large is becoming more aware of things which might pass for flying saucers and are becoming less gullible and trigger happy. The quality of reports should be going up, and it seems that greater degree of credence can be given to sightings reported by a group of people in each case. It is becoming less likely that any large group of people will be fooled by ordinary or even unusual aircraft, balloons, or meteors. This was not the case before the turn of the half century.

Astronomer JJ has made no sightings himself, but agrees on the policy of reporting to a duly constituted panel if he should see any.

Astronomer KK has made no sightings and was not particularly interested in the problem.

Astronomer LL, Dr. La Paz, has already had so much publicity in Life magazine that there appears to be no reason for keeping his name secret. He is the Director of the Institute of Meteoritics at the University of New Mexico , and is cooperative in the extreme. One sighting of his has been described in Life magazine and also fully in OSI reports. He has made extensive reports about the green fireball sightings in New Mexico in OSI reports also.

The discussion of green fireballs with many astronomers disclosed that most of them were of the opinion that these were natural objects. However, close questioning revealed that they knew nothing of the actual sightings, of their frequency or anything much about them, and therefore cannot be taken seriously. This is characteristic of scientists in general when speaking about subjects which are not in their own immediate field of concern. Dr. La Paz has seen only one green fireball himself, but has been avid in collecting reports on the others. Because his full reports are in the OSI files, only the salient points will be discussed here. It appears that the green fireballs can be characterized by being extremely bright, most of them lighting up the sky in the daytime, estimated magnitude -12, which is extremely bright. They appear to come in bunches and at one time 10 were observed in 13 days. No noise is associated with them despite their brightness. The

light appears to be homogeneous, and their light curve resembles a square wave, that is, it comes on abruptly, remains constant while burning, and goes out exceedingly abruptly, as though it is snapped out by a push-button. They leave no trails or trains. As to their color, La Paz is aware of the fact that other meteors have a green color, but he insists that this is adifferent green, corresponding to the green line in the copper spectrum (5218 Angstrom units). These objects generally move in a preferential north-south, south-north direction.

If these data are correct, that is, if this many objects actually were seen, all extremely bright, all having this particular green color, all exhibiting no noise, all showing a preferential direction, all being homogeneous in light intensity, all snapping out very quickly, and all leaving no trails, then we can say with assurance that these were not astronomical objects. In the first place, any object as bright as this should have been reported from all over the world. This does not mean that any one object could have been seen all over the world, but if the earth in its orbit encountered, for some strange reason, a group of very large meteors, there is no reason that they should all show up in New Mexico. Besides, copper is not a plentiful element in meteors, and the typical fireball goes from dim to bright to very bright to bright and then fades out fairly fast, often breaking into many parts. They frequently leave a trail of smoke in the daytime and of luminescence at night. It is recommended that the OSI reports be obtained, and that the sightings of these fireballs be examined in detail.

If the data as reported by La Paz are correct, then we do have a strange phenomena here indeed.

Astronomer MM has not seen any. He happened to be with me, however, while I interviewed some laymen who had seen some aluminum-colored discs. He was most impressed by the consistency of their stories.

Astronomer NN is Clyde Tombaugh, who has already been identified in the Life article. He has made two sightings, the first of which is the one reported in Life magazine and the second was reported to me. The details can be obtained by sending him a questionnaire, as he is willing to cooperate. Briefly, while at Telescope No. 3 at White Sands, he observed an object of -6 magnitude (four times brighter than the planet Venus at its brightest) travelling from the zenith to the southern horizon in about three seconds. The object executed the same manuevers as the nighttime luminous object which was reported in Life magazine. No sound was associated with either of the sightings.

Mr. Tombaugh is in charge of optics design and rocket tracking at White Sands Proving Ground. He said that if he is requested officially, which can be done by a letter to the Commanding General, Flight Determination Laboratory, White Sands Proving Ground, Las Cruces, New Mexico, he will be able to put his telescopes at White Sands at the disposal of the Air Force. He can have observers alerted and ready to take photographs should some object appear. I strongly recommend that this letter be sent.

Astronomer OO is a meteor observer at the Harvard Meteor Station in New Mexico. Although relatively new on the job, he observed two lights while on watch at 1:30 a.m. that moved much too fast for a plane and much too slow

for a meteor. The two lights were white and moved in a parallel direction. It is recommended that an Observer's Questionnaire be sent to this observer, as his sighting bears a resemblance to the sighting made by Astronomer R. It was impossible to obtain full details of these sightings because this would have classed me as an official investigator. The details of these sightings should be obtained by official questionnaires.

A meteorologist at the Lowell Observatory is identified here as observer PP. He was not interviewed, but a clipping was obtained from a Flagstaff newspaper covering his observations made on May 27, 1950. The object was observed between 12:15 and 12:20 p.m. on Saturday, May 20, from the grounds of the Lowell Observatory. The object presented a bright visible disc to the naked eye and passed moderately rapidly in front of a fractocumulus cloud in the northwest. Upon passing in front of the cloud its appearance changed from that of a bright object to a dark object, due to the change in contrast. No engine noise was heard, nor was there any exhaust. It seems that this might have been a weather balloon but in this case it would be strange if this meteorologist would become confused by it. He reports that it was not moving with the wind, but across the wind.

Finally, in this survey of astronomers, my associates and I at the Perkins Observatory should be included. There are six of us there, and to the best of my knowledge, none of us has ever seen any unexplainable object in the skies.

While in Albuquerque, I met, through Dr. La Paz, a Dr. Everton Conger, Instructor in Journalism at the University of New Mexico. On July 27, 1948,

between 8:35 and 8:45 a.m. he noticed a disc-shaped object in the sky. It was flat and round like a flat plate. It appeared to be made of duraluminum and gave off reflected light very similar to the light reflected from a highly polished airplane wing. The full details of his sighting are in my notes. I obtained his cooperation and he would be very glad to fill out an official questionnaire.

I also interviewed, while in Albuquerque, Mr. Redman and Mr. Morris, the two gentlemen whose picture appeared in Life magazine in the now-famous article on flying saucers. I questioned them separately and found that their stories were remarkably consistent. Indeed, since they viewed the object from widely different parts of the city, there is some possibility that the parallax of the object can be obtained by making theodolite sightings now on where the object appeared to them. The position of the object can be identified now because it was viewed close to a canyon in the mountains. Dr. La Paz has kindly offered to obtain the parallax of this object for us.

SUMMARY AND DISCUSSION

Over 40 astronomers were interviewed of which five had made sightings of one sort or another. This is a higher percentage than among the populace at large. Perhaps this is to be expected, since astronomers do, after all, watch the skies. On the other hand, they will not likely be fooled by balloons, aircraft, and similar objects, as may the general populace.

It is interesting to remark upon the attitude of the astronomers interviewed. The great majority were neither hostile nor overly interested; they gave one the general feeling that all flying saucer reports could be explained as misrepresentations of well-known objects and that there was nothing intrinsic in the situation to cause concern. I took the time to talk rather seriously with a few of them, and to acquaint them with the fact that some of the sightings were truly puzzling and not at all easily explainable. Their interest was almost immediately aroused, indicating that their general lethargy is due to lack of information on the subject. And certainly another contributing factor to their desire not to talk about these things is their overwhelming fear of publicity. One headline in the nation's papers to the effect that "Astronomer Sees Flying Saucer" would be enough to brand the astronomer as questionable among his colleagues. Since I was able to talk with the men in confidence, I was able to gather very much more of their inner thoughts on the subject than a reporter or an interrogator would have been able to do. Actual hostility is rare; concern with their own immediate scientific problems is too great. There seems to be no convenient method by which to attack this problem, and most astronomers do not wish to become involved, not only because of the danger of publicity but because the data seem tenuous and unreliable.

Therefore, it is my considered recommendation that the following procedure be adopted by the Air Force:

First, the problem of unidentified aerial objects should be given the status of a scientific problem. In any scientific problem, the data are gathered with meticulous care and are weighed and considered, without rush, by

entirely competent men. Therefore, it is proposed that some reputable group of scientists be asked to examine recent sightings which have already gone through one or two screenings. If this group becomes convinced that the data are worthy of being treated as a scientific problem, that is, that the sightings are valid and that unexplained phenomena really do exist, then they should be asked to vouch that these data are "worthy of being admitted into court". Armed with this scientific opinion, various scientific societies should be approached. The American Physical Society, the American Astronomical Society, and the Optical Society of America are suggested, in particular. These Societies should be asked, in view of the validity of the data, to appoint one or more members to constitute a panel to advise ATIC and perhaps to direct the necessary researches into the phenomena. This would serve not only to work toward an ultimate solution of the problem, but in the meantime would lend dignity to the project.

In short, either the phenomena which have been observed are worthy of scientific attention or they are not. If they are, then the entire problem should be treated scientifically and without fanfare. It is presumed that the scientific panel would work with the full knowledge and cooperation of the general contractor, but would not be bound by secrecy, which would tend to hamper their work. It is possible that this panel might be a panel in the RDB, similar to those in geodesy, infrared, or upper atmospheric research.

In the meantime, it is recommended that the Air Force approach the Joint Chiefs of Staff for endorsement of a considered statement of philosophy and policy for presentation to the public press. There is much confusion in

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In the meantime, it is recommended that the Air Force approach the Joint Chiefs of Staff for endorsement of a considered statement of philosophy and policy for presentation to the public press. There is much confusion in

the public mind as to what is being done about the situation, and a great deal of needless criticism is being directed toward the Air Forces for "trying to cover up" or "dismissing the whole thing". The considered statement to the public press that the problem is being considered as a scientific one and is being referred to competent scientists in various fields should do a very great deal in satisfying the public clamour.

It may be, of course, that this proposal will not get beyond the first step. The scientist, or scientists, who examine the carefully screened evidence may decide there still is not enough evidence to admit the problem into the court of scientific appeal. Personally, I hardly think that this will be the case, since the number of truly puzzling incidents is now impressive.

The second stage may be a long one. The first effort should be to determine with great accuracy what the phenomena to be explained really are and to establish their reality beyond all question.

Third stage would be the eventual publication of the findings of the scientific panel. This might take the form of a progress report. If, for instance, the scientific chase is led into a detailed examination of atmospheric optics, one can envision, perhaps, many years of work. This, however, is the price one pays for a truly scientific investigation.

One final item is that the flying-saucer sightings have not died down, as was confidently predicted some years ago when the first deluge of sightings was regarded as mass hysteria. Unless the problem is attacked scientifically, we can look forward to periodic recurrences of flying-saucer reports. It appears, indeed, that the flying saucer along with the automobile is here to stay, and if we can't shoo it away, we must try to understand it.

APPENDIX

While in Los Angeles, I was asked to appear in a TV program with Gerald Herd, the BBC science analyst; with Walter Riddel, the rocket expert; and with Aldous Huxley. They were to have a round-table discussion on flying saucers. I declined immediately but was prevailed upon to be in the studio when the program was in progress. I am afraid that my presence as an astronomer "cramped their style" to a great degree, but nonetheless the program had the general effect of convincing the hearers that flying saucers did exist. There was very little constructive about the program. It consisted of a rehash of all the things we have heard so much about already. It might be profitable, for instance, to have a TV program, sponsored by the Air Force, acquainting the public with the problem of flying saucers as a scientific problem. Though suggested jokingly, there might be some point to this, if this investigation ever gets to the scientific panel stage.

JAH:eg

FIFTH STATUS REPORT

on

CONTRACT AF-19741, PPS-100

to

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT-PATTERSON AIR FORCE BASE

September 10, 1952

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FIFTH STATUS REPORT

CONTRACT AF-19701, PPS-100

to

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT-PATTERSON AIR FORCE BASE

September 10, 1952

This report describes progress on this project for the period from August 11, 1952, to September 10, 1952.

Interrogation Forms

About 800 copies of the revised Tentative Observers Questionnaire, Exhibit A of the Fourth Status Report, dated August 11, 1952, were prepared and sent to ATIC. A great many of these were sent out by ATIC to observers to be filled out and returned. This was considered a "trial test" of the questionnaire.

More than 100 of the completed questionnaires have been returned to us. These are now being studied by Dr. Paul M. Fitts and his associates in the Aviation Psychology Department at Ohio State University. The final revisions of the questionnaire will be made as results of this study show that revisions are needed. The Final Observers Questionnaire is expected to be completed and sent to ATIC during September.

Analysis of Existing Sighting Reports

Work has continued on the coding of sighting reports to make possible an analysis by IBM machines. The reports for 1947, 1948, 1949, and 1951 are nearly completed. Considerable time was spent during August in conferences at which final evaluations were made on sightings for these years. These final evaluations were needed to put into the IBM system for use in future analysis. The final evaluation conference was conducted by ATIC and our personnel. It is believed that this method of evaluation of sightings is adding greatly to the over-all analysis. It is, however, taking additional time.

It had previously been estimated that all of the backlog of files could be coded and placed in the IBM system by September 15, 1952. However, during the past few months, sighting reports have been accumulating at an unprecedented rate. In fact, the up-to-date 1952 file now contains nearly as many sightings as all previous years together. Therefore, the task of coding and analyzing the file has approximately doubled during recent months. For this reason, considerably more time will be needed to put the sighting reports on a current basis and to complete the analysis. Some of the IBM cards are now being prepared and preliminary analyses are being started.

Newspaper Clipping Service

As requested by ATIC, an order has been issued to discontinue this service on October 1, 1952.

Future Work

The coding of sighting reports will be continued and analyses will be started using the IBM system.

A Final Observers Questionnaire will be completed in September.

Special attention will be given to certain sightings by the panel of consultants, as is found necessary in the final evaluation conferences.

PJR:eg
September 24, 1952

This document consists of 38 pages
No. 12 of 32 copies, Series A

RESTRICTED J. H. McGovern
AUTH: CO, ATIC
INITIALS: F. H. McGovern
Capt., USAF
DATE: October 10, 1952

Capt USAF

SIXTH STATUS REPORT

on

CONTRACT AF-19781, PPS-100

to

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT-PATTERSON AIR FORCE BASE

October 10, 1952

T52-12111

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on

CONTRACT AF-19741, PPS-100

to

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT-PATTERSON AIR FORCE BASE

October 10, 1952

This report describes progress for the period from September 11, 1952, to October 10, 1952.

ANALYSIS OF EXISTING SIGHTING REPORTS

Work has continued on the coding of sighting reports to permit analysis by IBM machines. Reports up to and including 1951 are completed except for final evaluation of about 40 per cent of them. It is anticipated that final evaluation of all reports of sightings previous to 1952 will be completed during the month of October, in conference with ATIC personnel. Therefore, by the end of October all sighting reports for the years 1947, 1948, 1949, 1950, and 1951 will be ready as a group for preliminary analysis on IBM equipment.

Sighting reports for the first four months of 1952 were received late in September. Coding of these early 1952 reports was begun and should be completed, except for final evaluation, by October 20. Because the quality and quantity of information in many of the 1952 sighting reports has improved,

and in many cases more than one sighting is included in the folder, more time was required for coding these reports than for earlier ones.

Because sighting reports accumulated at a rapid rate in May, June, and July, 1952, and in general were more detailed than earlier reports, it is estimated that it will require until the latter part of November, 1952, to complete processing and evaluation of these reports for IBM analysis.

MISCELLANEOUS SPECIAL ASSIGNMENTS

The panel of consultants was utilized during the month to advantage on the following topics:

Analysis of Film

Two rolls of 35-mm spectrographic film and a section of gun-camera spectrographic film, furnished by the Air Force for analysis, were examined by experts on spectroscopy. After examination of the film, it was found impractical to proceed further with the analysis without more data. Although it would be possible by indirect methods to arrive at limited conclusions regarding the sources of light that were photographed, the expense would be prohibitive. Further data needed for analysis of film should be derived from controlled experiments using known sources of light, and from information on the following factors:

1. Type of camera
2. Shutter speed

3. Aperture opening

4. Range

5. Type of grid used and details of grid construction

6. Type of film used

Simple standards could be established by which it should be possible to determine the source of light photographed with the camera and spectrographic equipment, at relatively little expense. It is believed that the camera and equipment will be most useful when the light is emitted by a single chemical element. If two or more elements are involved, analysis will be difficult with this simple recording device.

Soil and Vegetation Samples

During the month, two sets of soil and vegetation samples were studied by an agricultural specialist and by physicists.

Regarding the "Florida" samples, no difference was observed between the two samples of soil, but it was found that the root structure of the plants from the area in question was degenerated, apparently by heat, while the root structure of a control sample was undisturbed. In addition, the lower leaves, those nearest the ground under normal conditions, were slightly deteriorated, apparently by heat. No logical explanation is possible for this alteration of the first sample, beyond the suggestion that a high soil temperature around the plants could have been the cause. No radioactivity was found in any of these samples.

Regarding the "Kansas" samples, no difference was found between either the soil or the vegetation from the two areas from which the specimens were obtained. These samples are now being examined for radioactivity.

Consultant on Astronomy

Advice and assistance from Dr. J. Allen Hynek was received during the month concerning astronomical objects mistaken as "flying saucers". A few fundamental rules which had been given before were further elaborated. Dr. Hynek also gave ten consulting hours to the task of improving the questions in the latest revised questionnaire.

INTERROGATION FORMS

During July, August, and September, Dr. Paul M. Fitts and associates of the Aviation Psychology Department of Ohio State University have served as consultants on the preparation of a questionnaire that would permit the United States Air Force to obtain a maximum of useful information from those persons who report sightings of unidentified aerial objects. Insofar as possible, the following criteria were used in designing the questionnaire:

1. To develop questions which could transfer from the observer to the U. S. Air Force as much detailed information as possible concerning the event, without the necessity of a personal interview.

2. To develop questions that would permit some evaluation of the accuracy and reliability of the observer and his report.

3. To develop questions that could be:

   (a) easily understood by a majority of the public,

   (b) answered with minimum effort on the part of the observer, and

   (c) objectively and easily recorded, and transferred to an automatic machine filing system.

To meet the first criterion adequately, some questions were taken from the first "Tentative Observer's Data Sheet". Suggestions and advice from Dr. J. Allen Hynek, Professor of Astronomy, Ohio State University, were requested and used, and other questions, believed to be important and useful, were devised. A copy of the second draft of the "Tentative Observer's Data Sheet" is included as Exhibit I of this report. In general, most of the questions in the second draft seem to fall in one of the following informational categories:

1. When the event occurred, and where the observer was located at the time of the sighting.
2. A description of the viewing conditions.
3. A description of the phenomenon itself.

The second draft of the "Tentative Observer's Data Sheet" was designed for a trial test for selecting and improving questions for the final questionnaire. Over 300 of these questionnaires were sent to observers by ATIC. Replies to 168 of them were analyzed. On the basis of this analysis, a

summary of these replies is included in Exhibit I of this report. A new questionnaire, the "U. S. Air Force Technical Information Sheet", has been designed, in which several questions were omitted, some were revised, and others added. As an example, it was found that many observers were unable to reply to the question which asked for an estimation of the "real" size of the object. This question was restated in the form of an "apparent" size.

A sample of the "U. S. Air Force Technical Information Sheet" is given as Exhibit II of this report. Form A is for specific data, and Form B is for a short verbal summary expressed in the observer's own words.

Multiple-choice questions, completion questions, and drawings are used throughout the final questionnaire so as to get as accurate a description as possible. The multiple-choice question is well adapted for use in large-scale statistical studies.

The second criterion used in preparing the questionnaire is most difficult to achieve. As far as possible, questions were worded to provide a check on the consistency and competence of the observer.

The best check of consistency would be to have the observer answer the questionnaire twice with an interval of time separating the two replies. Since this is not practical, it was decided that the next best way would be to have the observer fill in an objective multiple-choice section and, in addition, write out a summary description in a summary data sheet. Any obvious discrepancies between information given in this description and that given in the questionnaire would make the observer's replies questionable.

An evaluation of the observer's personality traits and mental competence is likewise difficult to achieve in such a questionnaire. In addition

to the low validity of standardized questionnaires specifically designed to test these aspects of the individual, the restriction exists that the observer should not detect that his competence is being considered. In spite of the limitations, it was decided to include several questions which might operate indirectly to reveal any severely abnormal factors. Two questions (No. 24 and No. 38) were inserted for the specific purpose of detecting replies of the fanatic and over-imaginative individual. A reasonable assumption is that the person who uses fantastic explanations and descriptions, and who appears to be convinced that the sighting was produced by unknown creatures or interplanetary visitors, is not likely to be a discerning observer. It is further proposed that such individuals will be prone to fabricate details, and suffer severe memory distortions when recounting the event.

Questions Nos. 5.1 and 22.1 are intended to indicate the over-anxious respondent. With the exception of a few instances in which accurate measurements may be made, normally one would not expect an observer to be "certain" that he had seen an object for a specific time or of a specific apparent size. Again, these types of data can be subjected to controlled experimentation in which observers make estimates of duration and of size, together with certainty ratings.

Question No. 26 is an important question if No. 36.1 receives a negative reply, and if the duration of the sighting were of sufficient length that one could reasonably expect other observers also to see the object. If this is the case, then one would suspect that the sighting was a result of individual factors.

An effort was made to satisfy the third criterion for the questionnaire by using simple language and nontechnical terminology. It is recognized that

this requirement would not permit many trained observers (scientists, pilots, etc.) to present important technical data, therefore it is recommended that a different questionnaire be used or that different channels be employed for communicating with this select group of individuals.

Whenever possible, the questions were written in multiple-choice form, so that they could be easily answered and accurately recorded. If it appeared that too many categories would be needed to cover all possible responses, or if the categories would lead to doubtful or erroneous interpretation, then the question was worded so that the observer could fill in his own answer. A large number of the questions permit the observer to give a "Don't Know" or a "Don't Remember" response, and thus do not force a guess or an incorrect answer.

It was decided that the observer should be asked to circle the correct answer to the multiple-choice items, thereby allowing minimum ambiguity in the instructions and maximum objective scoring. Systems such as checking or underlining the correct answer are often misinterpreted by the respondent because of previous experience with various ambiguous checking and "X-ing" systems, such as voting procedures.

It is anticipated that when a sufficient sample of replies has been received from the second questionnaire that further minor revisions will appear necessary.

FUTURE WORK

One-thousand copies of the "U. S. Air Force Technical Information Sheet" (Form A and Form B) will be printed and made available to ATIC in the near future.

Results of tests for radiation on the "Kansas" soil and vegetation sample will be completed.

The coding and evaluation of 1952 sighting reports will continue, and analysis of these reports will be started using the IBM system. Final evaluation, in conference with ATIC personnal, will be completed on all remaining unevaluated sighting reports dated before 1952.

PJR/VWEreg
October 23, 1952

EXHIBIT I. TENTATIVE OBSERVER'S QUESTIONNAIRE.
SUMMARY OF DATA FROM 168 COMPLETED
TENTATIVE OBSERVER'S QUESTIONNAIRES.

TENTATIVE

OBSERVERS QUESTIONNAIRE

SECTION A

1. When did you see the object:

1.1 Date: _____ (Day) _____ (Month) _____ (Year)

1.2 Time of Day: _____ (Hrs.) _____ (Min.) A.M. or P.M. (Circle One)

1.3 Time Zone: (Circle One):

a. Eastern
b. Central
c. Mountain
d. Pacific
e. Other _____

(Circle One): a. Daylight Saving
b. Standard

1.4 Circle one of the following to indicate how certain you are of your answer to the above question 1.2:

a. Certain
b. Fairly certain
c. Not very sure
d. Just a guess

2. Where were you when you saw the object:

_____ (Postal Address) _____ (City or Town) _____ (State) _____ (Country)

Additional Remarks: _____

_____

3. Where were you located when you saw the object:

(Circle One): a. Inside a building
b. In a car
c. Outdoors
d. In an airplane
e. At sea
f. Other _____

3.1 Were you:

(Circle One): a. In the business section of a city?
b. In the residential section of a city?
c. In open countryside?
d. Flying near an airfield?
e. Flying over a city?
f. Flying over open country?
g. Other _____

4. How did you happen to notice the object? _____

_____

_____

5. When did you report to some official that you had seen the object?

_____ Day _____ Month _____ Year

SECTION B

6. What were you doing at the time you saw the object? _____

_____

6.1 What had you been doing for the 30 minutes before you saw the object? Try to list the activity or activities and the approximate amount of time spent on each.

_____

_____

_____

7. Were you moving at any time while you saw the object? (Circle One):

Yes or No

IF you answered YES, then complete the following questions:

7.1 What direction were you moving?
(Circle One): a. North e. South
b. Northeast f. Southwest
c. East g. West
d. Southeast h. Northwest

7.2 How fast were you moving? _____ miles per hour.

7.3 Did you stop at any time while you were looking at the object?

(Circle One): Yes or No

8. What direction were you looking when you first saw the object?

(Circle One): a. North e. South
b. Northeast f. Southwest
c. East g. West
d. Southeast h. Northwest

8.1 What direction were you looking when the object disappeared?

(Circle One):

a. North
b. Northeast
c. East
d. Southeast
e. South
f. Southwest
g. West
h. Northwest

8.2 Circle one of the following to indicate how certain you are of your answer to the above question and preceding question (8 and 8.1).

a. Certain
b. Fairly certain
c. Not very sure
d. Just a guess

9. Were you wearing eye glasses when you saw the object? (Circle One):

Yes or No

10. How was the object seen?

(Circle One):

a. Through window glass
b. Through windshield
c. Through binoculars
d. Through telescope
e. Through theodolite
f. Through sunglasses
g. Through open space
h. [redacted]

11. What do you remember about the weather conditions at the time you saw the object?

11.1 CLOUDS (Circle One)

a. Clear sky
b. Hazy
c. Scattered clouds
d. Thick or heavy clouds
e. Don't remember

11.2 WIND (Circle One)

a. No wind
b. Slight breeze
c. Strong wind
d. Don't remember

11.3 WEATHER (Circle One)

a. Dry
b. Fog, Mist, or light rain
c. Moderate or heavy rain
d. Snow
e. Don't remember

11.4 TEMPERATURE (Circle One)

a. Cold
b. Cool
c. Warm
d. Hot
e. Don't remember

SECTION C

12. Estimate how long you saw the object?

_____ Hours _____ Minutes _____ Seconds

12.1 Circle one of the following to indicate how certain you are of your answer to Question 12:

a. Certain
b. Fairly sure
c. Not very sure
d. Just a guess

13. Did the object look: (Circle One) Solid or Transparent

14. Did the object at any time:

(Circle One for each question)

14.1	Change direction?	Yes	No	Don't know
14.2	Change speed?	Yes	No	Don't know
14.3	Change size?	Yes	No	Don't know
14.4	Change color?	Yes	No	Don't know
14.5	Break up into parts or explode?	Yes	No	Don't know
14.6	Give off smoke?	Yes	No	Don't know
14.7	Change brightness?	Yes	No	Don't know
14.8	Flicker, throb, or pulsate?	Yes	No	Don't know
14.9	Remain motionless?	Yes	No	Don't know

15. Did the object give off a light? (Circle One): Yes No Don't know

15.1 IF you answered YES, what was the color of the light? _____

16. Tell in a few words the following things about the object?

16.1 Sound _____

16.2 Color _____

17. IF there was MORE THAN ONE object, then how many were there? _____
Draw a picture of how they were arranged and put an arrow to show the direction they were traveling.

18. Did the object at any time:

18.1 Move behind something? (Circle One) Yes No Don't know

IF you answered YES, then tell what it moved behind.

_____

18.2 Move in front of something? (Circle One) Yes No Don't know

IF you answered YES, then tell what it moved in front of.

_____

18.3 Blend with the background? (Circle One) Yes No Don't know

19. Which of the following objects is about the same actual size as the object you saw? (Circle One):

a. Pea
b. Baseball
c. Basketball
d. Bicycle wheel
e. Office desk
f. Automobile
g. Small airplane
h. Large airplane
i. Dirigible
j. Other _____

19.1 Circle one of the following to indicate how certain you are of your answer to Question 19.

a. Certain
b. Fairly certain
c. Not very sure
d. Uncertain

20. Try to tell the following things about the object:

20.1 How high above the earth was it? _____ feet.
20.2 How far was it from you? _____ feet or _____ miles.
20.3 How fast was it going? _____ miles per hour.
20.4 Circle one of the following to indicate how certain you are of your answer to the above questions:

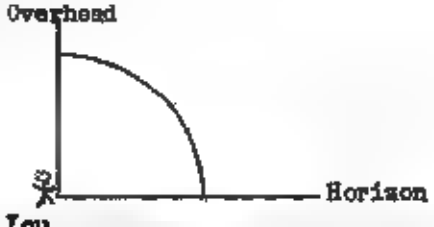
a. Certain
b. Fairly certain
c. Not very sure
d. Just a guess

21. How did the object disappear from view?

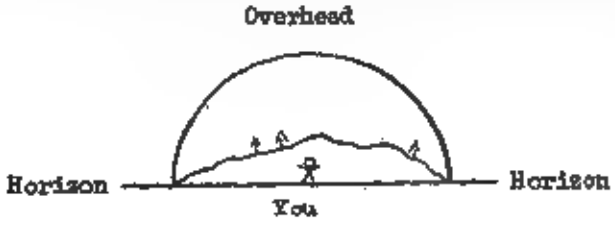
(Circle One): a. Suddenly
b. Gradually
c. Other _____
d. Don't remember

SECTION D

22. In the following sketch, imagine your eye at the point shown. Place an "A" on the curved line to show how high the object was above the horizon (skyline) when you first saw it. Place a "B" to show where it was when you last saw it.



23. In the following sketch place an "A" at the position the object was when you first saw it, and a "B" at its position when you last saw it.



24. Draw a picture that will show the motion that the object made. Place an "A" at the beginning of its path and a "B" at the end of its path.

25. Draw a picture that will show the shape of the object. Label and include in your sketch any details of the object that you saw and place an arrow beside the drawing to show the direction the object was moving.

SECTION E

26. Was this the first time that you have seen an object like this?

(Circle One): Yes or No

26.1 IF you answered NO, then when, where, and under what conditions did you see other ones?_____

_____

_____

27. In your opinion what do you think the object was and what might have caused it?

28. Give the following information about yourself:

NAME _____ (Last Name) _____ (First Name) _____ (Middle Name)

ADDRESS _____ (Street) _____ (City) _____ (Zone) _____ (State)

[redacted] _____

What is your present job? _____

Age _____

Sex _____

29. Was anyone else with you at the time you saw the object?

(Circle One): Yes or No

29.1 IF you answered YES, did they see the object too?

(Circle One): Yes or No

29.2 Please list their names and addresses:

30. Please add here any further comments which you believe are important. Use additional sheets of the same size paper, if necessary.

SUMMARY OF DATA FROM 168 COMPLETED TENTATIVE OBSERVER'S QUESTIONNAIRES*

Q. 1.2 Time of day.

	Per Cent		Per Cent
0001-0100	3.0	1201-1300	0.6
0101-0200	0.6	1301-1400	1.2
0201-0300	2.4	1401-1500	3.0
0301-0400	3.0	1501-1600	2.4
0401-0500	0.0	1601-1700	1.8
0501-0600	0.6	1701-1800	3.5
0601-0700	0.6	1801-1900	4.1
0701-0800	1.8	1901-2000	9.5
0801-0900	1.8	2001-2100	17.9
0901-1000	2.4	2101-2200	17.3
1001-1100	4.0	2201-2300	5.3
1101-1200	1.8	2301-2400	9.5
		Inaccurate	1.8

Q. 1.4 Certainty rating.

a. Certain 75.5%
b. Fairly certain 17.45%
c. Not very sure 1.8%
d. Just a guess 1.2%
e. No response 4.2%

Q. 3 Where were you located when you saw the object?

a. Inside a building	5.9%
b. In a car	14.9%
c. Outdoors	78.6%
d. In an airplane	0.6%
e. At sea	0.0%
f. Other	0.0%

Q. 3.1 Were you:

a. In the business section of a city?	5.3%
b. In the residential section of a city?	48.8%
c. In open countryside?	38.3%
d. Flying near an airfield?	0.0%
e. Flying over a city?	0.0%
f. Flying over open country?	1.2%
h. Other	
(a) Near an airport or airbase	5.9%
(b) Mountains	0.6%

* The percentage figures are based on the 168 completed questionnaires. They show how the 168 people answered the questions.

Q. 7 Were you moving (in a vehicle) at any time while you saw the object?

a. Yes 17.9%
b. No 82.1%

Q. 8 and 8.1 What direction were you facing when you first saw the object, and what direction were you facing when you last saw the object?

	First saw (percentage)							
	N	NE	E	SE	S	SW	W	NW
N	5.9	0.6	1.2	0.6	0.6	0	0.6	1.2
NE	2.4	5.3	1.8	0	0	0.6	0	1.2
E	1.2	0	7.2	0	0	0.6	0.6	0
SE	1.8	0.6	2.4	7.2	1.2	0.6	1.2	0.6
S	0	1.2	1.2	1.2	4.8	0	2.4	0.6
SW	0.6	1.2	1.2	1.2	0.6	4.1	0	0
W	1.2	0	1.2	0	1.8	1.8	7.7	1.2
NW.	0.6	0	1.8	0	0.6	1.2	1.2	1.8

Incomplete: 10.7%

Q. 8.2 Certainty rating:

a. Certain 80.5%
b. Fairly certain 16.1%
c. Not very sure 1.2%
d. Just a guess 0.0%
e. No response 2.4%

Q. 9 Were you wearing eye glasses?

a. Yes 31.6%
b. No 63.7%
c. No response 4.7%

Q. 10 How was the object seen?

a. Through window glass	3.6%
b. Through windshield	7.8%
c. Through binoculars	12.6%
d. Through telescope	0.6%
e. Through theodolite	0.6%
f. Through sun glasses	0.6%
g. Through open space	69.5%
h. Other	
(1) Porch screen	1.2%
i. No response	3.6%

Q. 11 Weather conditions.

CLOUDS (11.1)

a. Clear sky	74.8%
b. Hazy	2.4%
c. Scattered clouds	16.2%
d. Thick or heavy clouds	4.2%
e. Don't remember	0.6%
f. No response	1.8%

WIND (11.2)

a. No wind	51.8%
b. Slight breeze	34.6%
c. Strong wind	1.2%
d. Don't remember	6.5%
e. No response	5.9%

WEATHER (11.3)

a. Dry	81.0%
b. Fog, mist, light rain	0.6%
c. Moderate or heavy rain	0.0%
d. Snow	0.0%
e. Don't remember	0.6%
f. No response	17.8%

TEMPERATURE (11.4)

a. Cold	1.8%
b. Cool	17.7%
c. Warm	52.6%
d. Hot	20.1%
e. Don't remember	0.6%
f. No response	7.1%

Q. 12 Estimate how long you saw the object.

a.	1 sec. to 10 sec.	25.6%
b.	11 sec. to 30 sec.	15.5%
c.	30 sec. to 1 min.	11.9%
d.	1 min. to 2 min.	6.5%
e.	2 min. to 5 min.	12.5%
f.	5 min. to 10 min.	7.7%
g.	Over 10 min.	19.1%
h.	No response	1.2%

Q. 12.1 Certainty rating.

a.	Certain	49.4%
b.	Fairly certain	40.8%
c.	Not very sure	1.9%
d.	Just a guess	4.3%
e.	No response	3.7%

Q. 13 Did the object look:

a.	Solid?	78.5%
b.	Transparent?	4.8%
c.	Don't know	3.6%
d.	Both	0.6%
e.	No response	12.6%

Q. 14 Did the object at any time:

	Yes	No	Don't Know	No R.
14.1 Change direction?	39.6	54.5	1.2	4.8
14.2 Change speed?	27.4	64.2	3.6	4.8
14.3 Change size?	14.9	75.1	1.2	8.9
14.4 Change color?	11.9	79.3	0.0	8.9
14.5 Break up or explode?	4.8	86.9	0.0	8.4
14.6 Give off smoke?	7.7	76.9	5.3	10.1
14.7 Change brightness?	20.2	72.1	1.2	6.6
14.8 Flicker, throb, etc.?	17.7	72.2	2.4	7.7
14.9 Remain motionless?	18.5	69.8	2.9	8.9

Q. 15 Did the object give off a light?

a.	Yes	72.3%
b.	No	22.3%
c.	Don't know	3.6%
d.	No response	1.8%

Q. 16 Sound and Color:

SOUND (16.1)

a.	Yes	5.9%
b.	No	89.9%
c.	Unclassified	1.8%
d.	Don't know	0.6%
e.	No response	1.8%

COLOR (16.2)

a.	Silver	16.2%	g.	White (blue-white)	24.2%
b.	Pink	1.9%	h.	Green-blue	2.5%
c.	Orange	13.0%	i.	Blue	4.9%
d.	Green	1.9%	j.	Dark	3.1%
e.	Gray	2.5%	k.	Red	2.5%
f.	Yellow	14.9%	l.	Unclassified	4.9%
			m.	No response	7.5%

Q. 17 Was there more than one object? 30.9% responded yes. *

a.	Two	38.5%	g.	Eight	5.7%
b.	Three	19.2%	h.	Nine	1.9%
c.	Four	5.7%	i.	Ten	1.9%
d.	Five	17.6%	j.	Seventeen	1.9%
e.	Six	1.9%	k.	Twenty	1.9%
f.	Seven	1.9%	l.	Twenty-five	1.9%

Q. 18.1 Did the object move behind something?

a.	Yes	26.8%
b.	No	64.9%
c.	Don't know	5.9%
d.	No response	2.5%

Q. 18.2 Did the object move in front of something?

a.	Yes	5.9%
b.	No	76.8%
c.	Don't know	3.0%
d.	No response	11.2%

* Percentages below are per cent of the 30.9% that answered yes.

Q. 19 Size estimates:

a.	Pea	19.1%	j.	Other:	
b.	Baseball	12.5%		(1) 50-100 ft.	1.8%
c.	Basketball	13.7%		(2) 150 ft.	0.6%
d.	Bicycle wheel	7.7%		(3) Softball	4.8%
e.	Office desk	1.2%		(4) Football	1.2%
f.	Automobile	2.5%		(5) Star	5.4%
g.	Small airplane	4.2%		(6) Ping-pong ball	2.5%
h.	Large airplane	5.4%		(7) 1/20" x ¼" (theodolite)	0.6%
i.	Dirigible	6.6%		(8) Don't know	4.8%
				(9) No response	5.4%

Q. 20 Certainty rating:

a.	Certain	47.6%
b.	Fairly certain	35.1%
c.	Not very sure	5.4%
d.	Just a guess	5.4%
e.	No response	6.6%

Q. 20.1 How high above the earth was it?

a.	0-1000 ft.	8.4%	e.	Low	1.8%
b.	1001-5000 ft.	17.9%	f.	Don't know	28.2%
c.	5001-10,000 ft.	6.6%	g.	No response	11.4%
d.	10,000 & over	25.8%			

Q. 20.2 How far was it from you?

a.	0-1000 ft.	3.0%	e.	Short distance	1.2%
b.	1001-5000 ft.	7.2%	f.	Don't know	1.2%
c.	5001-10,000 ft.	5.9%	h.	No response	16.6%
d.	10,000 ft. & over	38.4%			

Q. 20.3 How fast was it going?

a.	0 mph	1.8%	g.	Slow	3.6%
b.	1-100 mph	9.0%	h.	Fast	8.4%
c.	101-200 mph	5.4%	j.	Don't know	23.5%
d.	201-500 mph	14.5%	k.	No response	15.7%
e.	501-1000 mph	9.0%			
f.	1001-over mph	9.0%			

EXHIBIT II. U. S. AIR FORCE TECHNICAL INFORMATION SHEET, FORM A AND FORM B

Q. 20,4 Certainty rating:

a.	Certain	16.1%
b.	Fairly certain	26.5%
c.	Not very sure	12.0%
d.	Just a guess	21.1%
e.	No response	22.3%

Q. 21 How did the object disappear from view?

a.	Suddenly	52.8%
b.	Gradually	40.1%
c.	Don't remember	0.6%
d.	Didn't	0.6%
e.	No response	5.9%

Q. 26 Was this the first time that you have seen an object like this?

a.	Yes	91.6%
b.	No	7.8%
c.	No response	0.6%

Q. 29 Was anyone else with you at the time you saw the object?

a.	Yes	75.6%
b.	No	23.8%
c.	No response	0.6%

U. S. AIR FORCE TECHNICAL INFORMATION SHEET

This questionnaire has been prepared so that you can give the U. S. Air Force as much information as possible concerning the unidentified aerial phenomenon that you have observed. Please try to answer as many questions as you possibly can. The information that you give will be used for research purposes, and will be regarded as confidential material. Your name will not be used in connection with any statements, conclusions, or publications without your permission. We request this personal information so that, if it is deemed necessary, we may contact you for further details.

1. When did you see the object?

____ Day ____ Month ____ Year

2. Time of day ____ Hour ____ Minutes

(Circle One): A.M. or P.M.

3. Time zone:

(Circle One): a. Eastern
b. Central
c. Mountain
d. Pacific
e. Other ____

(Circle One): a. Daylight Saving
b. Standard

4. Where were you when you saw the object?

____ Nearest Postal Address ____ City or Town ____ State or Country

Additional remarks: ____

5. Estimate how long you saw the object. ____ Hours ____ Minutes ____ Seconds

5.1 *Circle* one of the following to indicate how certain you are of your answer to Question 5.

a. Certain
b. Fairly certain
c. Not very sure
d. Just a guess

6. What was the condition of the sky?

(Circle One): a. Bright daylight
b. Dull daylight
c. Bright twilight
d. Just a trace of daylight
e. No trace of daylight
f. Don't remember

7. IF you saw the object during DAYLIGHT, TWILIGHT, or DAWN, where was the SUN located as you looked at the object?

(Circle One): a. In front of you
b. In back of you
c. To your right
d. To your left
e. Overhead
f. Don't remember

8. If you saw the object at NIGHT, TWILIGHT, or DAWN, what did you notice concerning the STARS and MOON?

8.1 STARS *(Circle One)*:

a. None
b. A few
c. Many
d. Don't remember

8.2 MOON *(Circle One)*:

a. Bright moonlight
b. Dull moonlight
c. No moonlight — pitch dark
d. Don't remember

9. Was the object brighter than the background of the sky?

(Circle One): a. Yes b. No c. Don't remember

10. IF it was BRIGHTER THAN the sky background, was the brightness like that of an automobile headlight?:

(Circle One) a. A mile or more away (a distant car)?
b. Several blocks away?
c. A block away?
d. Several yards away?
e. Other _____

11. Did the object: *(Circle One for each question)*

a. Appear to stand still at any time?	Yes	No	Don't Know
b. Suddenly speed up and rush away at any time?	Yes	No	Don't Know
c. Break up into parts or explode?	Yes	No	Don't Know
d. Give off smoke?	Yes	No	Don't Know
e. Change brightness?	Yes	No	Don't Know
f. Change shape?	Yes	No	Don't Know
g. Flicker, throb, or pulsate?	Yes	No	Don't Know

12. Did the object move behind something at anytime, particularly a cloud?

(Circle One): Yes No Don't Know. IF you answered YES, then tell what it moved behind: _____

13. Did the object move in front of something at anytime, particularly a cloud?

(Circle One): Yes No Don't Know. IF you answered YES, then tell what it moved in front of: _____

14. Did the object appear: *(Circle One)*: a. Solid? b. Transparent? c. Don't Know.

15. Did you observe the object through any of the following?

a. Eyeglasses	Yes	No	e. Binoculars	Yes	No
b. Sunglasses	Yes	No	f. Telescope	Yes	No
c. Windshield	Yes	No	g. Theodolite	Yes	No
d. Window glass	Yes	No	h. Other _____		

20. Draw a picture that will show the motion that the object or objects made. Place an "A" at the beginning of the path, a "B" at the end of the path, and show any changes in direction during the course.

21. IF POSSIBLE, try to guess or estimate what the real size of the object was in its longest dimension.
_____feet.

22. How large did the object or objects appear as compared with one of the following objects held in the hand and at about arm's length?

(Circle One):

a. Head of a pin
b. Pea
c. Dime
d. Nickel
e. Quarter
f. Half dollar
g. Silver dollar
h. Baseball
i. Grapefruit
j. Basketball
k. Other _____

22.1 (Circle One of the following to indicate how certain you are of your answer to Question 22.

a. Certain
b. Fairly certain
c. Not very sure
d. Uncertain

23. How did the object or objects disappear from view? _____

24. In order that you can give as clear a picture as possible of what you saw, we would like for you to imagine that you could construct the object that you saw. Of what type material would you make it? How large would it be, and what shape would it have? Describe in your own words a common object or objects which when placed up in the sky would give the same appearance as the object which you saw.

25. Where were you located when you saw the object? *(Circle One):*

a. Inside a building
b. In a car
c. Outdoors
d. In an airplane
e. At sea
f. Other _____

26. Were you *(Circle One)*

a. In the business section of a city?
b. In the residential section of a city?
c. In open countryside?
d. Flying near an airfield?
e. Flying over a city?
f. Flying over open country?
g. Other _____

27. What were you doing at the time you saw the object, and how did you happen to notice it?

_____

_____

_____

28. IF you were MOVING IN AN AUTOMOBILE or other vehicle at the time, then complete the following questions.

28.1 What direction were you moving? *(Circle One)*

a. North
b. Northeast
c. East
d. Southeast
e. South
f. Southwest
g. West
h. Northwest

28.2 How fast were you moving? _____ miles per hour.

28.3 Did you stop at any time while you were looking at the object?
(Circle One) Yes No

29. What direction were you looking when you first saw the object? *(Circle One)*

a. North
b. Northeast
c. East
d. Southeast
e. South
f. Southwest
g. West
h. Northwest

30. What direction were you looking when you last saw the object? *(Circle One)*

a. North
b. Northwest
c. East
d. Southeast
e. South
f. Southwest
g. West
h. Northwest

31. If you are familiar with bearing terms (angular direction), try to estimate the number of degrees the object was from true North and also the number of degrees it was upward from the horizon (elevation).

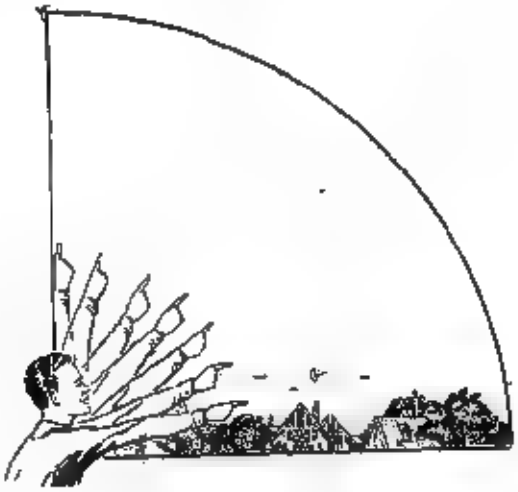
31.1 When it first appeared:

a. From true North _____ degrees.
b. From horizon _____ degrees.

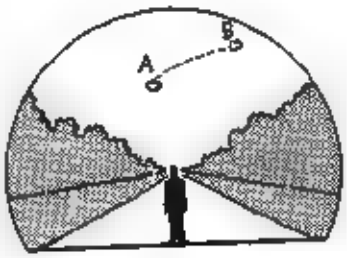
31.2 When it disappeared.

a. From true North _____ degrees.
b. From horizon _____ degrees.

32. In the following sketch, imagine that you are at the point shown. Place an "A" on the curved line to show how high the object was above the horizon (skyline) when you *first* saw it. Place a "B" on the same curved line to show how high the object was above the horizon (skyline) when you *last* saw it.



33. In the following larger sketch place an "A" at the position the object was when you *first* saw it, and a "B" at its position when you *last* saw it. Refer to smaller sketch as an example of how to complete the larger sketch.



34. What were the weather conditions at the time you saw the object?

34.1 CLOUDS *(Circle One)*

a. Clear sky
b. Hazy
c. Scattered clouds
d. Thick or heavy clouds
e. Don't remember

34.2 WIND *(Circle One)*

a. No wind
b. Slight breeze
c. Strong wind
d. Don't remember

34.3 WEATHER *(Circle One)*

a. Dry
b. Fog, mist, or light rain
c. Moderate or heavy rain
d. Snow
e. Don't remember

34.4 TEMPERATURE *(Circle One)*

a. Cold
b. Cool
c. Warm
d. Hot
e. Don't remember

35. When did you report to some official that you had seen the object?

_____ Day _____ Month _____ Year

36. Was anyone else with you at the time you saw the object?

(Circle One) Yes No

36.1 IF you answered YES, did they see the object too?

(Circle One) Yes No

36.2 Please list their names and addresses.

37. Was this the first time that you had seen an object or objects like this?

(Circle One) Yes No

37.1 IF you answered NO, then when, where, and under what circumstances did you see other ones?

38. In your opinion what do you think the object was and what might have caused it?

39. Do you think you can estimate the *speed* of the object?

(Circle One) Yes No

IF you answered YES, then what speed would you estimate? _____ m.p.h.

40. Do you think you can estimate how far away from you the object was?

(Circle One) Yes No

IF you answered YES, then how far away would you say it was? _____ feet.

41. Please give the following information about yourself:

NAME _____ (Last Name) _____ (First Name) _____ (Middle Name)

ADDRESS _____ (Street) _____ (City) _____ (Zone) _____ (State)

TELEPHONE NUMBER _____

What is your present job? _____

Age _____ Sex _____

Please indicate any special educational training that you have had.

a. Grade school _____
b. High school _____
c. College _____
d. Post graduate _____
e. a. Technical school _____
(Type) _____
f. Other special training _____
_____

42. Date you completed this questionnaire: _____ (Day) _____ (Month) _____ (Year)

Form B

U. S. AIR FORCE TECHNICAL INFORMATION SHEET

(SUMMARY DATA)

In order that your information may be filed and coded as accurately as possible, please use the following space to write out a short description of the event that you observed. You may repeat information that you have already given in the questionnaire, and add any further comments, statements, or sketches that you believe are important. Try to present the details of the observation in the order in which they occurred. Additional pages of the same size paper may be attached if they are needed.

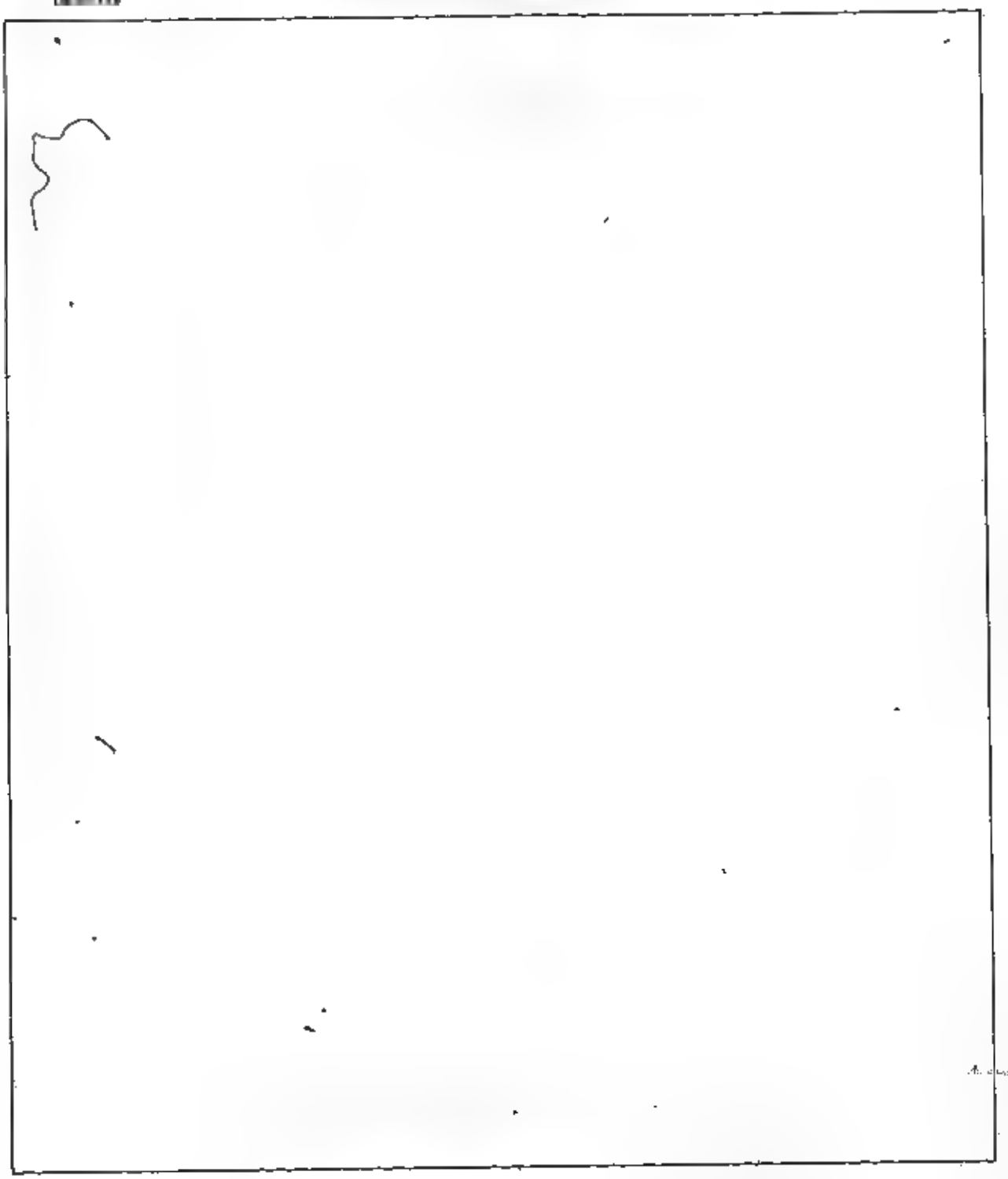
NAME _____ (Please Print)

SIGNATURE _____

DATE _____

(Do Not Write in This Space)

CODE:



SEVENTH STATUS REPORT

on

CONTRACT AF-19(1)1, PPS-100

to

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT-PATTERSON AIR FORCE BASE

November 10, 1952

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SEVENTH STATUS REPORT

on

CONTRACT AF-19741, PPS-100

to

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT-PATTERSON AIR FORCE BASE

November 10, 1952

This report describes progress for the period from October 11, 1952, to November 10, 1952.

ANALYSIS OF EXISTING SIGHTING REPORTS

Sighting reports dated up to and including June, 1952, have been processed. Except for the reports dated 1947 and 1948, all sighting reports up to and including March, 1952, have been evaluated. The sighting reports for 1947 and 1948 are not available for evaluation. As soon as the 1947 and 1948 reports are available and can be evaluated, all sighting reports for the years 1947 to 1951 will be ready as a group for preliminary analysis utilizing IBM equipment.

Sighting reports for the month of July, 1952, have been received. Because there are 450 sighting reports for July, processing them will not be completed until the first week in December. Evaluation of reports for the months of April, May, June, and July, 1952, will require about six days of conference time. Conferences for the evaluation of sighting reports will be arranged as reports become processed in groups of 200. Each group of reports will require about two days of work for a cooperating researcher-WPAFB evaluation team.

The evaluation of 1952 reports will be more time consuming than was the case for earlier reports, because reports now are in more detail and often consist of sightings of one object by more than one individual.

Since October 16, 1952, it has been necessary to establish a rotation system for handling sighting reports, no more than 100 sighting reports being permitted away from WPAFB at any one time. Questionnaires and work sheets completed here must therefore be put in duplicate folders before sighting reports matching these questionnaires and work sheets are returned to WPAFB in return for unprocessed sighting reports. When evaluation conferences are held, these folders must be matched before an evaluation is made. The necessity for establishing a rotation system has caused some delay in progress.

ANALYSIS OF SOIL AND VEGETATION SAMPLES

Two samples of vegetation and soil from Pittsburgh, Kansas, which were submitted by WPAFB for analysis, have been thoroughly studied. Examination by experts on soil and vegetation disclosed no difference between the two samples from the two areas where the specimens were obtained. Tests for radioactivity likewise showed no significant difference between the two samples of soil and vegetation. Tests were made for beta, gamma, and alpha radiation. Samples of the "Kansas" soil and the vegetation will be returned to WPAFB in the near future.

CONSULTANT ON ASTRONOMY

Dr. J. Allen Hynek, of Ohio State University, attended the Boston meeting of the Optical Society of America on October 11, 1952. The Society

took cognizance this year of the many reports of unusual aerial phenomena by including three invited papers on the subject in their otherwise straightforward scientific meeting. One of the invited papers was by Dr. Hynek, entitled "Unusual Aerial Phenomena". The other two papers were by Drs. Menzel and Liddell, of Harvard Observatory and the Atomic Energy Commission, respectively.

The papers of Menzel and Liddell, though differing somewhat in content, were identical in spirit. Both papers were characterized by the fact that numerous explanations for unexplained sightings were given without a single reference to a specific sighting in the files of the Air Technical Intelligence Command. Both papers presented a series of well-worn statements as to how jet fighters, meteors, reflections from balloons and aircraft, and optical effects, such as sundogs and mirages, could give rise to "flying saucer" reports. Since there was nothing new in either of the two papers, the trip from that standpoint was unproductive.

The paper by Dr. Hynek, in essence, was to the effect that flying saucers represented a science-public relations problem that when a sighting is made by several people, at least one of whom is an experienced observer, the mutually corroborated reports are entitled to a scientific hearing, rather than ridicule. It stressed the point that here was a subject in which the public has shown great interest. It was recommended that the relatively few well-screened reports be dealt with specifically to see whether any of the causes suggested by Drs. Liddell and Menzel are applicable, and, if so, to make this known in these specific instances. On the other hand, if the suggested explanations of Drs. Liddell and Menzel do not explain well-screened cases, this should also be made known and given further scientific study.

In conclusion, it was the opinion of Dr. Hynek that little was gained by attendance at the meeting. The results were negative in the sense that it was confirmed, as Dr. Hynek already believed, that Drs. Liddell and Menzel had not studied the literature and the evidence and, hence, were not qualified to speak with authority on the subject of recent sightings of unidentified aerial phenomena.

An attempt to arrange a meeting by Dr. Hynek with Dr. Menzel, Dr. Liddell, and Dr. Billings, after the meeting was over, was unsuccessful because Liddell and Billings both had to leave immediately after the meeting.

[redacted]

Five hundred copies of the "U. S. Air Force Technical Information Sheet" (Form A and Form B) were delivered to WPAFB on October 20, 1952. This questionnaire was used in place of the "Tentative Observers Data Sheet" to record data on all sighting reports dated after March 31, 1952. It has proved to be more satisfactory than the previous form, especially from the standpoint of recording data from sighting reports in greater detail.

Additional copies of the "U. S. Air Force Technical Information Sheet" can be supplied to WPAFB as needed.

FUTURE WORK

Coding and evaluation of 1952 sighting reports will continue. A preliminary analysis of data on all sighting reports dated previous to 1952 will be given to WPAFB as soon as possible after evaluation is completed of the 1947 and 1948 sighting reports.

By December 10, 1952, all sighting reports dated before June 15, 1952, should be processed and evaluated, ready for IBM analysis. Complete IBM analysis of all sighting reports will not be started until all reports dated previous to 1953 are processed and evaluated. Because of the nature of the work required, and the fact that the number of reports for the last three months of 1952 is not yet known, no estimate can be given as to the time final IBM analysis will begin. It is hoped, if the frequency of sighting reports follows the present decreasing trend, that complete IBM analysis for sightings dated through 1952 may be started by February 1, 1953.

VWE:eg
November 20, 1952

December 15, 1952

Mr. Miles E. Goll
Box 9575
Wright-Patterson Air Force Base
Ohio

Dear Mr. Goll:

This letter report describes progress for the period from November 11, 1952, to December 10, 1952.

Sighting reports up to and including July 25, 1952, have been processed. Except for reports dated 1947 and 1948, all sighting reports up to and including June, 1952, have been evaluated. The sighting reports for 1947 and 1948 were returned from Harvard University on November 20. Because the reports and the forms which had been filled in and placed with the folders were mixed up, these reports will not be ready for evaluation until about December 15.

Two evaluation conferences of two days each were held during this report period, on November 12 and 13, and on December 3 and 4. During the report period, evaluation has been more difficult than formerly, because the amount and quality of data in the average report have increased. Evaluation conferences will be scheduled in the future as reports are available.

The rotation system for handling sighting reports, whereby no more than 100 sighting reports are permitted away from WPAFB at any one time, has functioned with a minimum of delay.

Coding and evaluation of 1952 sighting reports will continue. The preliminary analysis of data on all sighting reports dated before 1952 will begin as soon as the 1947 and 1948 reports can be straightened out and evaluated. Results of this analysis will be given to WPAFB at the earliest possible time. It is hoped that the results will be available by January 1, 1953. By about January 15, 1953, all sighting reports dated before August 10, 1952, will probably be processed and evaluated, ready for IBM analysis.

Dr. J. Allen Hynek, The Ohio State University, gave advice concerning several sighting reports during the report period.

Very truly yours,

William T. Reid

William T. Reid
Supervisor

WTR:eg

cc: Capt. F. H. McGovern

January 23, 1953

Mr. Miles E. Goll
Box 9575
Wright-Patterson Air Force Base
Ohio

Dear Mr. Goll:

This letter report describes progress for the period from December 11, 1952, to January 10, 1953.

Sighting reports have now been processed up to and including August 10, 1952. Evaluation of sighting reports has been completed for sightings up to and including July 15, 1952. Reports for 1947 and 1948 were evaluated; these reports had been at Harvard University, and thus had not been evaluated in chronological order. In our previous letter to you, dated December 15, 1952, it was stated that a preliminary analysis of data from all sighting reports made before 1952 would begin as soon as possible after the 1947 and 1948 reports were reprocessed and evaluated. It had been hoped that results of the preliminary analysis would be available by January 1, 1953. This has not been possible, because of the extensive work required in reprocessing the 1947 and 1948 sighting reports after their return from Harvard University. Reprocessing of these reports required more time than anticipated, because many of our forms had been lost. This has delayed our consideration of the 1952 sighting reports.

One two-day evaluation conference was held during this report period, on December 17 and 18, 1952. As mentioned in the last progress report, evaluation of later sighting reports has been more difficult than for earlier cases.

Preliminary analysis by IBM machines of data from sighting reports dated before 1952 will begin January 20, 1953. Results of this analysis will be sent to WPAFB as soon as they are available. The results will be reported informally first to Captain Ruppelt, as he has requested. Later, they will be included in a routine progress report.

Coding and evaluation of 1952 sighting reports is continuing, with evaluation conferences scheduled as they are necessary. All sighting reports dated prior to August 25, 1952, should be processed by February 15, 1953. (The period of August 10 to 25, 1952, was one during which a large number of sighting reports was received.) By this same date, all reports dated before August 1, 1952, are expected to be evaluated.

Very truly yours,

William T. Reid

William T. Reid
Engineer

WTR:eg

cc: Maj. L. G. Whitcomb

February 23, 1953

Mr. Miles L. Goll
Box 9575
Wright-Patterson Air Force Base
Ohio

Dear Mr. Goll:

This letter report describes progress for the period from January 11, 1953, to February 10, 1953.

Sighting reports have now been processed up to and including October 15, 1952. Evaluation of sighting reports has been completed for sightings up to and including July 31, 1952.

Preliminary analysis by IBM machines of data from sighting reports dated before 1952 began on January 26, 1953. This work is continuing, and results of the analysis will be forwarded informally to Captain Ruppelt as soon as they are available.

One two-day evaluation conference was held during this report period, on January 22 and 23, 1953. Because only one ATAFB representative was available to participate in the conference, less than the normal amount of work was accomplished. (Usually, 180 to 200 cases can be evaluated during a two-day evaluation conference. On January 22 and 23, 1953, 145 cases were evaluated.)

Coding and evaluation of 1952 sighting reports is continuing, with evaluation conferences scheduled as they are necessary. All sighting reports remaining for the year 1952 should be processed by March 15, 1953. By that same date, all sighting reports dated prior to September 1 are expected to be evaluated.

Very truly yours,

William T. Reid

William T. Reid
Supervisor

WTR:eg

cc: Maj. L. G. Whitcher

[redacted]

UNCL

Special Report No. 14

STUDY NO. 102-EL-55/2-79

[redacted]

ANALYSIS OF REPORTS OF UNIDENTIFIED AERIAL OBJECTS

PROJECT NO. 10073

5 MAY 1955

[redacted]

7-3745 — Hec

1003287

Copy No. [redacted]

UNCL

[redacted]

SPECIAL REPORT NO. 14

[redacted]

ANALYSIS OF REPORTS OF UNIDENTIFIED AERIAL OBJECTS

PROJECT NO. 10073

5 MAY 1955

Title

[redacted]

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LIST OF ILLUSTRATIONS
(Continued)

SUMMARY

Reports of unidentified aerial objects (popularly termed "flying saucers" or "flying discs", have been received by the U. S. Air Force since mid-1947 from many and diverse sources. Although there was no evidence that the unexplained reports of unidentified objects constituted a threat to the security of the U. S., the Air Force determined that all reports of unidentified aerial objects should be investigated and evaluated to determine if "flying saucers" represented technological developments not known to this country.

In order to discover any pertinent trends or patterns inherent in the data, and to evaluate or explain any trends or patterns found, appropriate methods of reducing these data from reports of unidentified aerial objects to a form amenable to scientific appraisal were employed. In general, the original data upon which this study was based consisted of impressions and interpretations of apparently unexplainable events, and seldom contained reliable measurements of physical attributes. This subjectivity of the data presented a major limitation to the drawing of significant conclusions, but did not invalidate the application of scientific methods of study.

The reports received by the U. S. Air Force on unidentified aerial objects were reduced to IBM punched-card abstracts of the data by means of logically developed forms and standardized evaluation procedures. Evaluation of sighting reports, a crucial step in the preparation of the data for statistical treatment, consisted of an appraisal of the reports and the subsequent categorizing of the object or objects described in each report. A detailed description of this phase of the study stresses the careful attempt to maintain complete objectivity and consistency.

Analysis of the refined and evaluated data derived from the original reports of sightings comprised (1) a systematic attempt to ferret out any distinguishing characteristics inherent in the data or any of their segments, (2) a concentrated study of any trends or patterns found, and (3) an attempt to determine the probability that any of the UNKNOWNS represent observations of a class, or classes, of "flying saucers".

The first step in the analysis of the data revealed the existence of certain apparent similarities between cases of objects definitely identified and those not identified. Statistical methods of testing were applied which indicated a low probability that these apparent similarities were significant. An attempt to determine the probability that any of the UNKNOWNS represent observations of a class, or classes, of "flying saucers" necessitated a thorough re-examination and re-evaluation of cases of objects not originally identified; this led to the conclusion that the probability was very small.

Therefore, on the basis of this evaluation of the information, it is considered to be highly improbable that reports of unidentified aerial objects examined in this study represent observations of technological developments outside of the range of present-day scientific knowledge It is emphasized that there was a complete lack of any valid evidence consisting of physical matter in any case of a reported unidentified aerial object.

INTRODUCTION

In June, 1947, Kenneth Arnold, a Boise, Idaho, businessman and private pilot, publicly reported the now-famous sighting of a chainlike formation of disc-shaped objects near Mount Rainier, Washington. Resulting newspaper publicity of this incident caught the public interest, and, shortly thereafter, a rash of reports of unidentified aerial objects spawned the term "flying saucers". During the years since 1947, many reports of unidentified aerial objects have been received by the Air Force from many and diverse sources.

The unfortunate term "flying saucer", or "flying disc", because of its widespread and indiscriminate use, requires definition. Many definitions have been offered, one of the best being that originated by Dr J Allen Hynek, Director of the Emerson McMillin Observatory of The Ohio State University, who has taken a scientific interest in the problem of unidentified aerial objects since 1949. Dr. Hynek's definition of the term is "any aerial phenomenon or sighting that remains unexplained to the viewer at least long enough for him to write a report about it"(1). Dr. Hynek, elaborating on his definition, says, "Each flying saucer, so defined, has associated with it a probable lifetime. It wanders in the field of public inspection like an electron in a field of ions, until 'captured' by an explanation which puts an end to its existence as a 'flying saucer'"(1).

This definition would be applicable to any and all of the sightings which remained unidentified throughout this study. However, the term "flying saucers" shall be used hereafter in this report to mean a novel, airborne phenomenon, a manifestation that is not a part of or readily explainable by the fund of scientific knowledge known to be possessed by the Free World. This would include such items as natural phenomena that are not yet completely understood, psychological phenomena, or intruder aircraft of a type that may be possessed by some source in large enough numbers so that more than one independent mission may have been flown and reported. Thus, these phenomena are of the type which should have been observed and reported more than once.

Since 1947, public interest in the subject of unidentified aerial objects fluctuated more or less within reasonable limits until the summer of 1952, when the frequency of reports of sightings reached a peak, possibly stimulated by several articles on the subject in leading popular magazines.

Early in 1952, the Air Force's cumulative study and analysis of reported sightings indicated that the majority of reports could be accounted for as misinterpretations of known objects (such as meteors, balloons, or aircraft), a few as the result of mild hysteria, and a very few as the result of unfamiliar meteorological phenomena and light aberrations. However,

(1) Hynek, J. A., "Unusual Aerial Phenomena", Journal of the Optical Society of America, 43 (4), pp 311-314, April, 1953.

a significant number of fairly complete reports by reliable observers remained unexplained. Although no evidence existed that unexplained reports of sightings constituted a physical threat to the security of the U. S., in March, 1952, the Air Force decided that all reports of unidentified aerial objects should be investigated and evaluated to determine if "flying saucers" represented technological developments not known to this country.

Originally, the problem involved the preparation and analysis of about 1,300 reports accumulated by the Air Force between 1947 and the end of March, 1952. During the course of the work, the number of reports submitted for analysis and evaluation more than tripled, the result of the unprecedented increase in observations during 1952. Accordingly, this study is based on a number of reports considered to be large enough for a preliminary statistical analysis, approximately 4,000 reports.

This study was undertaken primarily to categorize the available reports of sightings and to determine the probability that any of the reports of unidentified aerial objects represented observations of "flying saucers" With full cognizance of the quality of the data available for study, yet with an awareness of the proportions this subject has assumed at times in the public mind, this work was undertaken with all the seriousness accorded to a straightforward scientific investigation. In order to establish the probability that any of the reports of unidentified aerial objects represented observations of "flying saucers", it was necessary to make an attempt to answer the question "What is a 'flying saucer'?". However, it must be emphasized that this was only incidental to the primary purpose of the study, the determination of the probability that any of the reports of unidentified aerial objects represented observations of "flying saucers", as defined on Page 1.

The basic technique for this study consisted of reducing the available data to a form suitable for mechanical manipulation, a prerequisite for the application of preliminary statistical methods One of International Business Machine Corporation's systems was chosen as the best available mechanical equipment.

The reduction of data contained in sighting reports into a form suitable for transfer to IBM punched cards was extremely difficult and time consuming.

For this study a panel of consultants was formed, consisting of both experts within and outside ATIC. During the course of the work, guidance and advice were received from the panel. The professional experience available from the panel covered major scientific fields and numerous specialized fields.

All records and working papers of this study have been carefully preserved in an orderly fashion suitable for ready reference. These

records include condensations of all individual sighting reports, and the IBM cards used in various phases of the study.

ORIGIN AND NATURE OF DATA

Reports of sightings were received by the U. S. Air Force from a representative cross section of the population of the U. S., and varied widely in completeness and quality. Included were reports from reputable scientists, housewives, farmers, students, and technically trained members of the Armed Forces. Reports varied in length from a few sentences stating that a 'flying saucer" had been sighted, to those containing thousands of words, including description, speculation, and advice on how to handle the "problem of the 'flying saucers'". Some reports were of high quality, conservative, and as complete as the observer could make them; a few originated from people confined to mental institutions. A critical examination of the reports revealed, however, that a high percentage of them was submitted by serious people, mystified by what they had seen and motivated by patriotic responsibility.

Three principal sources of reports were noted in the preliminary review of the data. The bulk of the data arrived at ATIC through regular military channels, from June, 1947, until the middle of 1952.

A second type of data consisted of letters reporting sightings sent by civilian observers directly to ATIC. Most of these direct communications were dated subsequent to April 30, 1952, and are believed to be the result of a suggestion by a popular magazine that future reports be directed to the Air Technical Intelligence Center. As could be expected, a large number of letters was received following this publicity.

A third type of data was that contained in questionnaire forms completed by the observer himself. A questionnaire form, developed during the course of this study, was mailed by ATIC to a selected group of writers of direct letters with the request that the form be completed and returned. Approximately 1,000 responses were received by ATIC.

In general, the data were subjective, consisting of qualified estimates of physical characteristics rather than of precise measurements. Furthermore, most of the reports were not reduced to written form immediately. The time between sighting and report varied from one day to several years. Both of these factors introduced an element of doubt concerning the validity of the original data, and increased its subjectivity. This was intensified by the recognized inability of the average individual to estimate speeds, distances, and sizes of objects in the air with any degree of accuracy In spite of these limitations, methods of statistical analysis of such reports in sufficiently large groups are valid. The danger lies in the possibility of

forgetting the subjectivity of the data at the time that conclusions are drawn from the analysis. It must be emphasized, again and again, that any conclusions contained in this report are based NOT on facts, but on what many observers thought and estimated the true facts to be.

Altogether, the data for this study consisted of approximately 4,000 reports of sightings of unidentified aerial objects. The majority were received through military channels or in the form of observer-completed questionnaires, a few were accepted in the form of direct letters from unquestionably reliable sources. Sightings made between June, 1947, and December, 1952, were considered for this study. Sightings alleged to have occurred prior to 1947 were not considered, since they were not reported to official sources until after public interest in "flying saucers" had been stimulated by the popular press.

REDUCTION OF DATA TO MECHANIZED COMPUTATION FORM

As received by the Air Technical Intelligence Center, the sighting reports were not in a form suitable for even a quasi-scientific study. A preliminary review of the data indicated the need for standardized interrogation procedures and supplemental forms for the reduction of currently held and subsequently acquired data to a form amenable to scientific appraisal.

The plan for reduction of the data to usable form consisted of a program of development comprising four major steps. (1) a systematic listing of the factors necessary to evaluate the observer and his report, and to identify the unknown object observed; (2) a standard scheme for the transfer of data to a mechanized computation system; (3 an orderly means of relating the original data to all subsequent forms, and (4) a consistent procedure for the identification of the phenomenon described by the original data.

Questionnaire

The first reports received by ATIC varied widely in completeness and quality. Air Force Letter 200-5[2] and Air Force Form 112[1] were attempts to fix responsibility for and improve the quality of the reports of sightings. To coordinate past efforts and to provide standardization for the

(1) A modified Air Force Form 112 lists pertinent questions to be answered in regard to an unidentified-object sighting.

(2) Air Force Letter 200-5 places responsibility with the Air Force for the investigation, reporting, and analysis of unidentified aerial objects. This letter is dated 29 April 1952.

future, it was imperative to develop a questionnaire form listing the factors necessary for evaluation of the observer and his report, and identification of the unknown objects. In addition, it was decided that such a questionnaire should be designed to serve as an interrogator's guide, and as a form for the observer himself to complete when personal interrogation was not possible or practicable.

Ideally, a questionnaire for the purposes required should contain questions pertaining to all technical details considered to be essential for the statistical approach, and should serve to obtain a maximum of information from the average individual who had made a sighting in the past or would be likely to be reporting sightings in the future. Besides these discrete facts, an integrated written description of a sighting would be required, thus enabling the reported facts of the sighting to be corroborated. Also, a narrative description might allow subtle questions to be answered concerning the observer's ability, such as indirect questions that would reveal his reasoning ability, suggestibility, and general mental attitude. As a whole, then, the information contained in a questionnaire should make possible the classification and evaluation of the sighting, the rating of the observer, the probability of accuracy of reported facts, and the identification of what was reported by the observer as unidentified.

During the course of this project, three questionnaire forms were developed, each intended to be an improved revision of the one preceding. The improvements were suggested and confirmed by members of the panel of consultants connected with this project.

The original form was evolved by the panel of consultants as their first work on this project. It was intended to allow the start of the reduction of reports to discrete data, and was immediately subjected to extensive review and revision by the panel. The revised (second) form was subjected to a trial test before adoption. ATIC sent a copy to observers reporting sightings, with the request that the form be completed and returned. Of the first 300 questionnaires returned during July and August, 1952, 168 were analyzed by a consulting psychologist. On the basis of this analysis, plus the experience gained in working with past reports, the final form of the questionnaire – the U. S. Air Force Technical Information Sheet – was evolved. Copies of the three forms of the questionnaire, in the order of their development, are shown as Exhibits B1, B2, and B3 in Appendix B.

In order to implement the transcription of data from past sighting reports, each succeeding form was put to use as soon as it was developed and approved. Accordingly, experience was obtained with each form in relation to past data, an important factor in the improvement of the quality and completeness of the later reports included in this study

Coding System and Work Sheet

The reduction of non-numerical data to numerical form is mandatory in the machine handling of data. Thus, the selection of the IBM punched-card system for analysis of data forced the adoption of a master coding plan. Since it was impracticable to transfer detailed data of an exact nature from the questionnaire to the IBM card, an intermediate transfer form, coordinated with the master code, was necessary.

The master coding plan was evolved during the early stages of the preliminary analysis of data, and was reviewed by the panel of consultants before use. It was recognized that this system of coding would be the heart of the analysis, that is, the completeness of the facility for translation of data could make or break the study. Accordingly, every conceivable factor that might influence the identification of unidentified aerial objects was included, together with a wide range of variations within each factor. The original coding system (with minor corrections) was used throughout the translation of the original data with marked success. A copy of this system, called CODES, is enclosed as Exhibit B4, Appendix B.

To facilitate the preparation of the punched-card abstract, an intermediate form called the WORK SHEET (later, the CARD BIBLE) was developed. Referenced to both the data from the questionnaire and the system of report identification, the WORK SHEET permitted an orderly transcription of data simultaneously by several people. In conjunction with the CODES, the WORK SHEET was used during the reduction of the original data to code form necessary for transfer to punched cards. A sample is included as Exhibit B5, Appendix B.

After the analysis was under way, it became apparent that the mechanics of machine processing could be improved by incorporating in the IBM card system group classifications of certain factors requiring more than one column for discrete expression. In addition, the inclusion of certain data relating to the evaluation and bearing of the sun with respect to the observer was considered necessary. Finally, a critical examination of certain segments of the data indicated the need for the definition of a new factor relating to the maneuvers of the object or objects sighted. Prior to the start of the analytical study, it had been assumed that a combination of stated factors would, by inference, define the maneuver pattern

All these additions have been incorporated in a revised set of CODES and CARD BIBLE that are illustrated as Exhibits B6 and B7, Appendix B. However, at the time that the maneuver factor was determined to be critical, it was physically impracticable to make the required definitions and re-evaluate the original data. Therefore, no code for maneuverability has been included in the CODES, CARD BIBLE, or IBM cards.

Identification of Working Papers

The actual reduction of data to IBM punched-card form presented a problem of mass transfer of figures by several workers. Recognizing that an orderly system of relating the original data to the questionnaire, the WORK SHEET, and the IBM card was imperative, a scheme of SERIAL NUMBERS was developed to answer this need.

The first data consisted of a series of letter-file folders identified by the year and location of the sighting or sightings they contained. The number of reports of sightings in a single folder varied from 1 to over 20. Under these conditions, there was a great possibility for incorrect transcription of data, duplication of transcription, or misplacement of intermediate forms. Further, it was considered desirable to relate all sightings of the same object or objects to one another. The concept of a four-digit serial number (major), followed by a two-digit subserial number (minor), was adequate to fulfill these requirements.

To expedite handling of the data, temporary serial numbers were assigned until each report had been evaluated and the phenomenon had been placed in a category of identification. The use of temporary serial numbers permitted the consolidation of duplicate reports from apparently diverse sources, such as a teletype message and an Air Force Form 112. However, this consolidation was made ONLY when it could be proved conclusively that the sources of the two documents were one and the same. Factors of the observer's location, date and time of observation, description of the phenomenon, and finally, the name of the observer were considered. In this manner, the assignment of major serial and minor subserial numbers in continuous series was made only to the reports accepted for the statistical study. It is believed that the reports accepted represent unique and unduplicated instances of sightings.

In the establishment of the serial-number system, it was necessary to define certain terms, so that a standard interpretation could be achieved. The terms and corresponding definitions were:

OBSERVER – Any witness reporting to a proper authority that he had seen unidentified aerial objects.

SIGHTING – The report or group of reports of the same observed phenomenon that remained unidentified to the observer or observers, at least until reported.

SINGLE OBSERVATION – A SIGHTING consisting of a single report from (1) one OBSERVER with no knowledge of additional OBSERVERS of the same phenomenon, or (2) a group of witnesses of the same phenomenon, each cognizant of the others. The witness who made the report is called a SINGLE OBSERVER.

MULTIPLE OBSERVATION – A SIGHTING consisting of several reports from OBSERVERS of the same phenomenon who were cognizant of each other. The witnesses who made reports are called MULTIPLE OBSERVERS.

ALL SIGHTINGS – (1) The group of reports consisting of one report for each OBSERVER, including both SINGLE and MULTIPLE OBSERVERS. (2) The questionnaire, work sheet, and IBM card representing the report from each OBSERVER – in other words, the representation of each report accepted for the statistical study.

UNIT SIGHTINGS – (1) The group of reports consisting of one report for each SIGHTING, including all the reports of SINGLE OBSERVATIONS and the one most representative report from each MULTIPLE OBSERVATION. (2) The questionnaire, work sheet, and IBM card representing the report for each SIGHTING accepted for the statistical study.

A major serial number (four digits) was assigned to each sighting, segregating the year of occurrence by selection of limits for each year, as follows:

0001 to 0500 reserved for 1947
0501 to 1000 reserved for 1948
1001 to 1500 reserved for 1949
1501 to 2000 reserved for 1950
2001 to 2500 reserved for 1951
2501 to 4900 reserved for 1952

While this scheme would serve to identify any individual sighting, identification of each report and its subsequent forms was necessary. The minor subserial numbers (two digits) fulfilled this requirement. For all SINGLE OBSERVATIONS, a major serial number followed by two (2) zeros, for example, 2759.00, was sufficient identification. For MULTIPLE OBSERVATIONS, the major serial number followed by a series of two-digit numbers ranging from 00 to 99 was used to identify the individual reports. In general, the most complete report from the most reliable observer of that

MULTIPLE OBSERVATION was identified with the .00 subserial number. As an example, a MULTIPLE OBSERVATION consisting of six sighting reports would have the following serial numbers.

1132.00 representing the best report and observer
1132.01 representing an additional observer
1132.02 representing an additional observer
1132.03 representing an additional observer
1132.04 representing an additional observer
1132.05 representing an additional observer

During the course of the transcription of the data to machine card form, it became obvious that certain reports could have been independent observations of the same phenomenon. So, if the presentation of an analysis based on one report for each sighting was valid (the concept of UNIT SIGHTINGS), a presentation of an analysis based on one report for each phenomenon should be valid also. Further, the examination of data relating to the actual number of phenomena was considered to be the proper basis for assessing the probability of technological developments outside the range of present-day scientific knowledge. Therefore, a designation of OBJECT SIGHTINGS was established, with the following definition:

OBJECT SIGHTING – (1) The group of reports consisting of one report for each phenomenon. (2) The questionnaire, work sheet, and IBM card representing a report for each phenomenon accepted for the statistical study.

In brief review, ALL SIGHTINGS refer to all reports, UNIT SIGHTINGS refer to actual sightings, and OBJECT SIGHTINGS refer to the assumed number of phenomena.

It must be recognized that the process of identifying OBJECT SIGHTINGS was deductive, while that for UNIT SIGHTINGS was definitive A conservative approach was adopted in the determination of OBJECT SIGHTINGS, using the factors of date and time of observations, location of observers, duration of observations, and range, bearing, track direction, and identification of the phenomena. Any error of selection of OBJECT SIGHTINGS will tend to be in the direction of reducing the actual number of phenomena observed (several instances of UNIT SIGHTINGS that might be one OBJECT SIGHTING were noted, but the evidence was not conclusive enough to justify consolidation of the reports).

Following the determination of OBJECT SIGHTINGS, a series of serial numbers, called the INCIDENT SERIAL NUMBERS, was established to facilitate any future study of a specific object sighting. Each reported sighting that relates to an OBJECT SIGHTING received the same incident serial number, a four-digit code paralleling the major serial number series.

For machine manipulation, it was desirable to be able to select the sample of cards (all reports, all sightings, or all phenomena) to be included in a particular study. The concept of a SIGHTING IDENTIFICATION NUMBER was evolved to fill this desire. Using one column of the IBM card, and the correlated working papers, the code for this function was developed. Multiple punching eliminated the need to use several columns for discrete expression of the variations. Selection of the proper number in this column thus permitted selection of the desired sample of cards.

Evaluation of Individual Reports

Evaluation of sighting reports was recognized as a crucial step in the preparation of data for statistical treatment; inconsistent evaluations would have invalidated any conclusions to be derived from this study. A method of evaluation was, therefore, determined simultaneously with the development of the questionnaire, the coding system, and the work sheet. It is emphasized that all phases of evaluation, even including the tedious preparation of the original data for statistical treatment, were entrusted only to selected, specially qualified scientists and engineers

Evaluation consisted of a standardized procedure to be followed for (1) the deduction of discrete facts from data which depended on human impressions rather than scientific measurements, (2) the rating of the observer and his report as determined from available information, and (3) the determination of the probable identification of the phenomenon observed. Categories of identification, established upon the basis of previous experience, were as follows.

Balloon
Astronomical
Aircraft
Light phenomenon
Birds
Clouds, dust, etc.
Insufficient information
Psychological manifestations
Unknown
Other

The first step in evaluation, the deduction of discrete facts from subjective data, required certain calculations based on the information available in the sighting report. An example was the finding of the approximate angular velocity and acceleration of the object or objects sighted. Care was taken during this phase of the work to insure against the deduction of discrete facts not warranted by the original data. Thus, even though there was a complete lack of any valid evidence consisting of

physical matter in any case of a reported unidentified aerial object, this was not assumed to be prima facie evidence that "flying saucers" did not exist.

In those cases in which an attempt to reduce the information to a factual level failed completely, the report was eliminated from further consideration, and thus not included in the statistical analysis. About 800 reports of sightings were eliminated or rejected in this manner. Most of these reports were rejected because they were extremely nebulous, the rest were rejected because they contained highly conflicting statements.

The second step in evaluation, the rating of the observer and his report, logically followed the first step, the reduction of the data to usable form. Ratings were assigned on the basis of the following factors of information, considered in relation to one another.

(1) The experience of the observer, deduced from his occupation, age, and training.

(2) The consistency among the separate portions of the description of the sighting;

(3) The general quality and completeness of the report,

(4) Consideration of the observer's fact-reporting ability and attitude, as disclosed by his manner of describing the sighting.

In cases in which insufficient information was available to make a judgment of the observer or report, none was made, but the report was accepted for the statistical study.

The third step in the process of evaluation, the attempted identification of the object or objects sighted, was done twice, first by the individual who made the transcription of the data (the preliminary identification), and later (the final identification) by a conference of four persons, two representatives from ATIC and two from the panel of consultants. Although representatives of ATIC participated in making the final identifications, it must be emphasized that any previous identification of a sighting made by ATIC was not introduced or referred to in any way.

In the coding system, the choices provided for final identifications were based on ATIC's previous experience in analysis of the data. They had found that the majority of sightings could be classified as misinterpretations of common objects or natural phenomena. Accordingly, categories for objects most frequently present in the air were provided. Balloons, aircraft, astronomical bodies (such as meteors), birds, and clouds or dust were recognized as major categories. The less frequent, but common objects, such as kites, fireworks, flares, rockets, contrails, and

meteorological phenomena like small tornadoes, were collected into a category called OTHER. A separate category for the uncommon natural phenomena associated with light reflections or refractions, such as mirages, sun dogs, inversion-layer images, and distortions caused by airborne ice, was established with the title of LIGHT PHENOMENON. Categories for INSUFFICIENT INFORMATION, PSYCHOLOGICAL MANIFESTATIONS, and UNKNOWN were provided for the sightings that could not be fitted into the preceding identifications. An explanation of their use follows.

INSUFFICIENT INFORMATION – This identification category was assigned to a report when, upon final consideration, there was some essential item of information missing, or there was enough doubt about what data were available to disallow identification as a common object or some natural phenomenon. It is emphasized that this category of identification was not used as a convenient way to dispose of what might be called "poor unknowns', but as a category for reports that, perhaps, could have been one of several known objects or natural phenomena. No reports identified as INSUFFICIENT INFORMATION contain authenticated facts or impressions concerning the sighting that would prevent its being identified as a known object or phenomenon;

PSYCHOLOGICAL MANIFESTATIONS – This identification category was assigned to a report when, although it was well established that the observer had seen something, it was also obvious that the description of the sighting had been overdrawn. Religious fanaticism, a desire for publicity, or an over-active imagination were the most common mental aberrations causing this type of report;

UNKNOWN – This designation in the identification code was assigned to those reports of sightings wherein the description of the object and its maneuvers could not be fitted to the pattern of any known object or phenomenon.

For the purposes of this study, two groups of identifications were recognized, the KNOWNS (including all identification categories except the UNKNOWNS) and the UNKNOWNS.

All possible identifications provided in the code system, except INSUFFICIENT INFORMATION and UNKNOWN, could be assigned according to two degrees of certainty, designated "Certain" and "Doubtful".

A "Certain" identification indicated a minimum amount of doubt regarding the validity of the evaluation. By "rule-of-thumb" reasoning, the probability of the identification being correct was better than 95 per cent. A "Doubtful" identification indicated that the choice was less positive, but that there was a better than even chance of being correct.

It is emphasized again that, as was true for other phases of evaluation, preliminary and final identification was entrusted only to scientists and engineers who, in addition to their broad scientific background, had received instruction, where necessary, in specialized subjects. The panel of consultants provided background information for this instruction. Many of the cases representing unusual features or maneuvers were submitted to and discussed with various members of the panel of consultants prior to the final identification.

Consistency in the application of the knowledge necessary for making identifications was maintained by frequent collaboration among the personnel involved, and systematic spot checks of the work. In addition to the general fund of knowledge required to identify satisfactorily a reported unidentified aerial object, an attempt was made to correlate specific data such as flight plans of aircraft, records of balloon releases, weather conditions, and an astronomical almanac with the reported sighting.

The procedure followed in making final identifications deserves explanation because of the importance assumed by the identification as a basis for statistical treatment. As was mentioned, a conference of four qualified persons, two from ATIC and two from the panel of consultants, decided upon the final identification for each sighting report. This work was done at ATIC, periodically, as reports became ready.

During an identification conference, each sighting report was first studied, from the original data, by one person. If that person arrived at a decision, it was checked against the preliminary identification, if the two identifications were the same, the report was appropriately marked and considered finished. If the two identifications did not agree, the report was considered later by everyone participating in the conference until a group decision could be made.

If an evaluator was unable to categorize the report as one of the common objects or as a natural phenomenon, and his opinion was that the sighting should be recorded as UNKNOWN, a group decision was also required on that report before it was considered finished. A group decision was necessary on all reports finally recorded as UNKNOWN, regardless of what the preliminary identification had been. In cases where a group decision was not made within a reasonable time, the report was put aside and later submitted to certain members of the panel of consultants for their opinions. If, after this, disagreement continued to exist, the report of the sighting was identified as UNKNOWN.

Upon completion of final identifications, all data were transferred to IBM cards, preparatory to analysis.

ANALYSIS OF THE DATA

Broadly stated, the problem at this point consisted of the judicious application of scientific methods of categorizing and analyzing the subjective data in reports of sightings of unidentified aerial objects. It was recognized that an approach to this problem could best be made by a systematic sorting and tabulation program to give frequency and percentage distributions of the important characteristics of sightings. A suggestion that an attempt be made to anticipate all questions that might be asked in the future about a sighting or a group of sightings, and to provide answers, was rejected. The systematic approach also made it possible to develop a detailed reference manual of the attributes of the sightings included in this study.

Thus, at the beginning of the analysis, a detailed plan was developed for sorting, counting, and tabulating the information from the punched-card abstracts of reports of sightings. It was believed at the time, and later substantiated, that the results of the program for sorting and tabulating would serve as a guide for the more sophisticated treatment involving statistical methods.

Also, it was anticipated that any patterns or trends that might be found could be subjected to concentrated study in the hope of discovering significant information relating to the characteristics of "flying saucers". Further, it was believed that these trends could serve as certain of the criteria of validity for any concepts (models) developed in the attempt to discover a class of "flying saucers".

The three parts of this study (1) the sorting and tabulation program, (2) the advanced study of the results of that program, and (3) the investigation of the possibility of conceiving a model of a "flying saucer" from descriptions reported, are discussed in sections entitled "Frequency and Percentage Distributions by Characteristics", "Advanced Study of the Data", and "The 'Flying Saucer' Model".

Frequency and Percentage Distributions by Characteristics

The original conception of this study assumed the availability of sufficient data to describe adequately the physical appearance, maneuver characteristics, range, direction, and probable path of the object or objects observed. However, familiarity with the data, acquired during the

translation and transcription from reports to punched cards, indicated that there would be relatively few specific variables or factors that would yield meaningful correlation studies. Either the original data were too subjective, or the incompleteness of the original reports would seriously reduce the sample of a specific variable.

Preliminary tabulations of various sortings substantiated the impossibility of deriving statistical results from certain variables, such as movement of the observer during the sighting, sound, shape parameter, size, angular velocity and acceleration, appearance and disappearance bearing, initial and final elevation, altitude, and orientation of the object. The statistically usable variables presented in this study include the date, time, location, duration, reliability, and method of observation of the sighting, and the physical attributes of number, color, speed, shape, light brightness, and identification of the objects sighted.

The presentation of frequency and percentage distributions of any of the variables must be interpreted in the light of the sample of incidents represented. For example, the analysis of the reported colors of the objects sighted, based on ALL SIGHTINGS, could lead to misrepresentation of the distribution of the reported color of the objects, because of the multiplicity of reports on some of the phenomena. On the other hand, the percentage distribution of the light brightness reported by each observer is more likely to be correct than a distribution based on one report for each phenomenon. To assure that the most nearly correct presentation was made, and to avoid the possibility of failure to uncover any pattern or trend inherent in the data, the variables were studied on five different bases or samples. These samples, and their numerical relation to each other, were as follows.

ALL SIGHTINGS (all reports)	— 3,201 cards
UNIT SIGHTINGS, all observers	— 2,554 cards
UNIT SIGHTINGS, single observer	— 2,232 cards
UNIT SIGHTINGS, multiple observers	— 322 cards
OBJECT SIGHTINGS	— 2,199 cards

The preliminary tabulations indicated that the samples based on UNIT SIGHTINGS, single observer, and UNIT SIGHTINGS, multiple observers, would not add materially to this study. Accordingly, although the frequency distributions were recorded and are available for study, they are not presented in this report.

The bases of ALL SIGHTINGS, UNIT SIGHTINGS (referring to all observers), and OBJECT SIGHTINGS are presented in Appendix A as Tables A1 through A240. A critical study of these tabulations reveals that there is no apparent change in the distribution of any variable from one basis to another, and that no marked patterns or trends exist in any sample.

Graphical Presentation

Graphical representation of the important information contained in the tables is presented in Figures 1 through 38 These figures present the distributions of the important variables only by the total number of cases in each identification category, since no significant differences were found between the distributions of "Certain" and 'Doubtful" identifications of objects with respect to the variables. A chronological study of these figures will afford a broad picture of the tabulated information, without the necessity of a detailed study of the tables.

A critical examination of the figures will show that no trends, patterns, or correlations are to be found, with the exception of Figures 18 through 30. The apparent similarity of the distributions shown by these mirror graphs, Figures 18 through 23, was tested by statistical methods which showed that there was a low probability that the distributions of the KNOWNS and UNKNOWNS by these characteristics were the same. These tests and their interpretation are discussed in the following section. For purposes of this study, the strategic areas, shown in Figures 32 through 38, and Tables A223 through A240, Appendix A, were designated on the basis of concentration of reports of OBJECT SIGHTINGS in an area. No other interpretation of the tables or remaining charts was deemed necessary.

Advanced Study of the Data

It was recognized that the lack of any patterns or trends, as shown by the tabulations and graphs, provided an insecure basis for drawing definite conclusions. Accordingly, shortly before the sorting and tabulation program was concluded, a program of study of the data was developed to utilize statistical and other mathematical methods, which could lead to a more concrete interpretation of the problem

Position of the Sun Relative to the Observer

The first thing that was done was to calculate the angle of elevation of the sun above the horizon and its bearing from true north as seen by the observer at the time of each sighting. With this information, it could then be determined whether there was a possibility that the reported object could have been illuminated by light from the sun In addition, it could be determined whether an object could be a mock sun (sun dog) or whether there was a possibility of specular reflection from an aircraft at the position of the object, which would give the appearance of a "flying disc".

A program of computation was set up and carried out to obtain the angle of elevation and the bearing of the sun for each sighting. All information needed for this calculation was available on the deck of IBM cards.

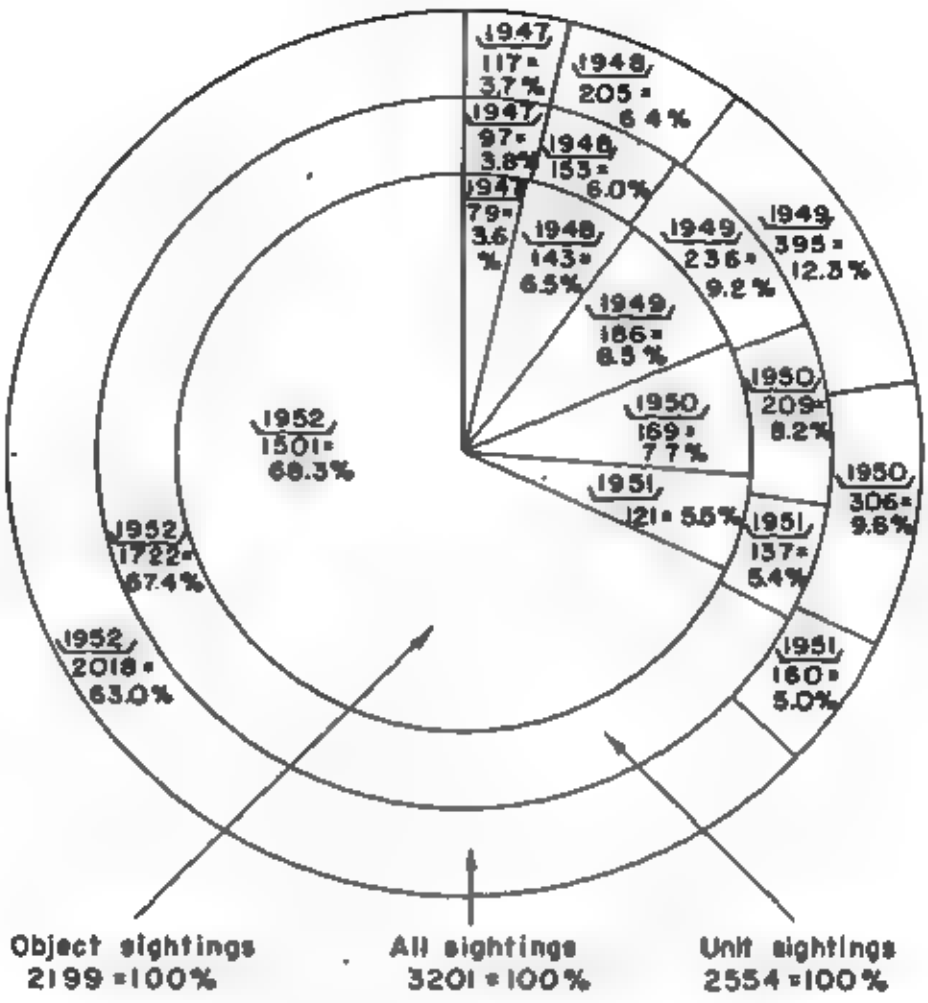


FIGURE 1 FREQUENCY OF SIGHTINGS BY YEAR FOR OBJECT, UNIT, AND ALL SIGHTINGS

A-7478

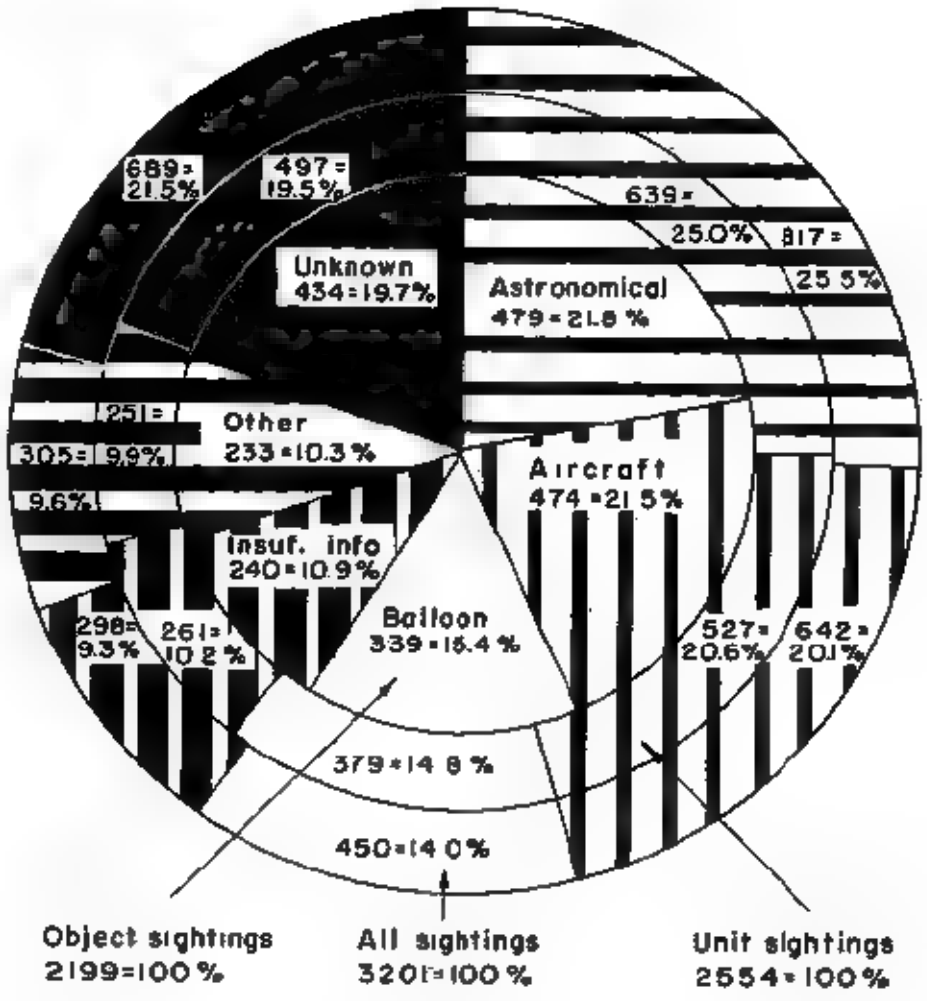


FIGURE 2 DISTRIBUTION OF EVALUATIONS OF OBJECT, UNIT, AND ALL SIGHTINGS FOR ALL YEARS

A-7480

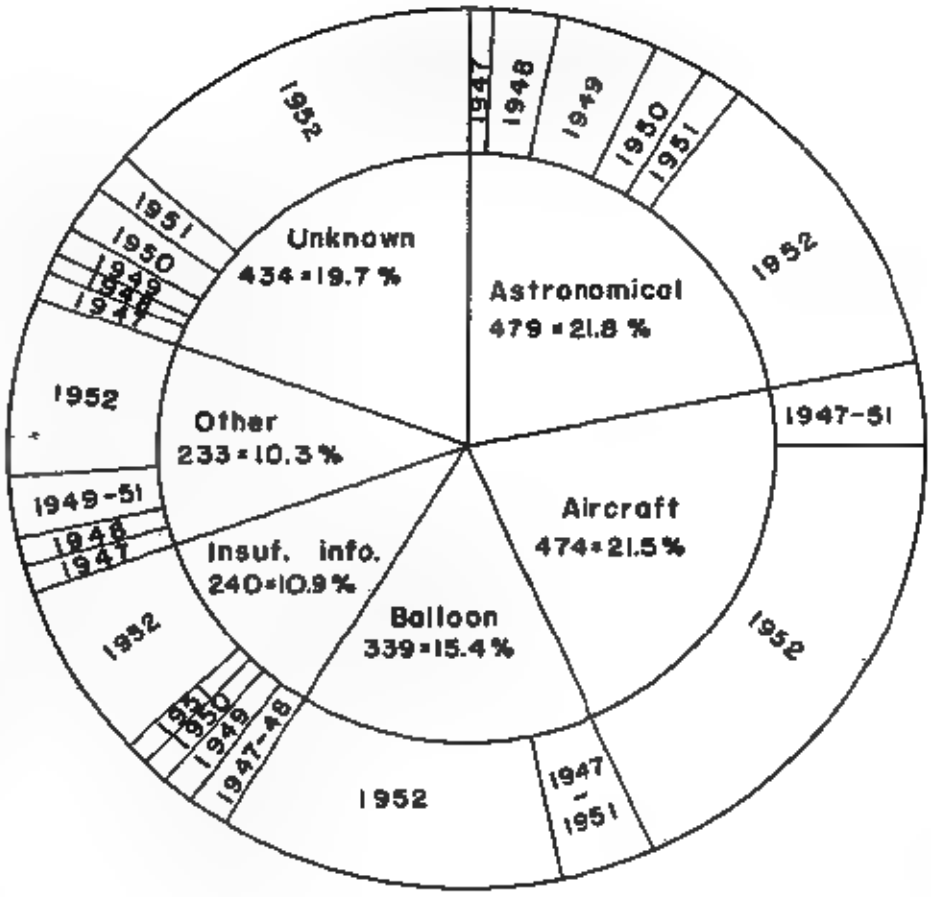


FIGURE 3 DISTRIBUTION OF OBJECT SIGHTINGS BY EVALUATION FOR ALL YEARS WITH COMPARISONS OF EACH YEAR FOR EACH EVALUATION GROUP

A-7481

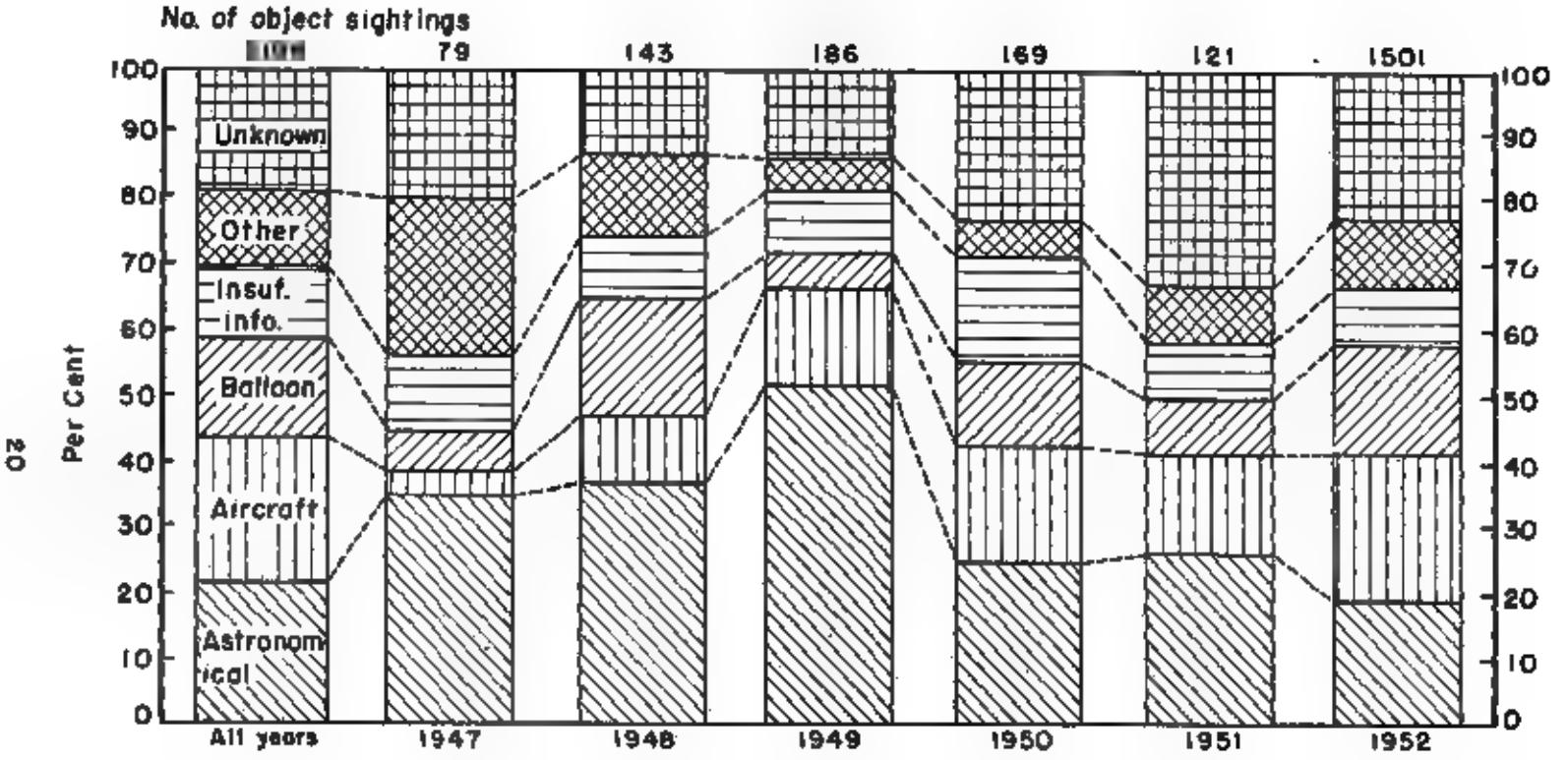


FIGURE 4 DISTRIBUTION OF OBJECT SIGHTINGS BY EVALUATION FOR ALL YEARS AND EACH YEAR

A-7482

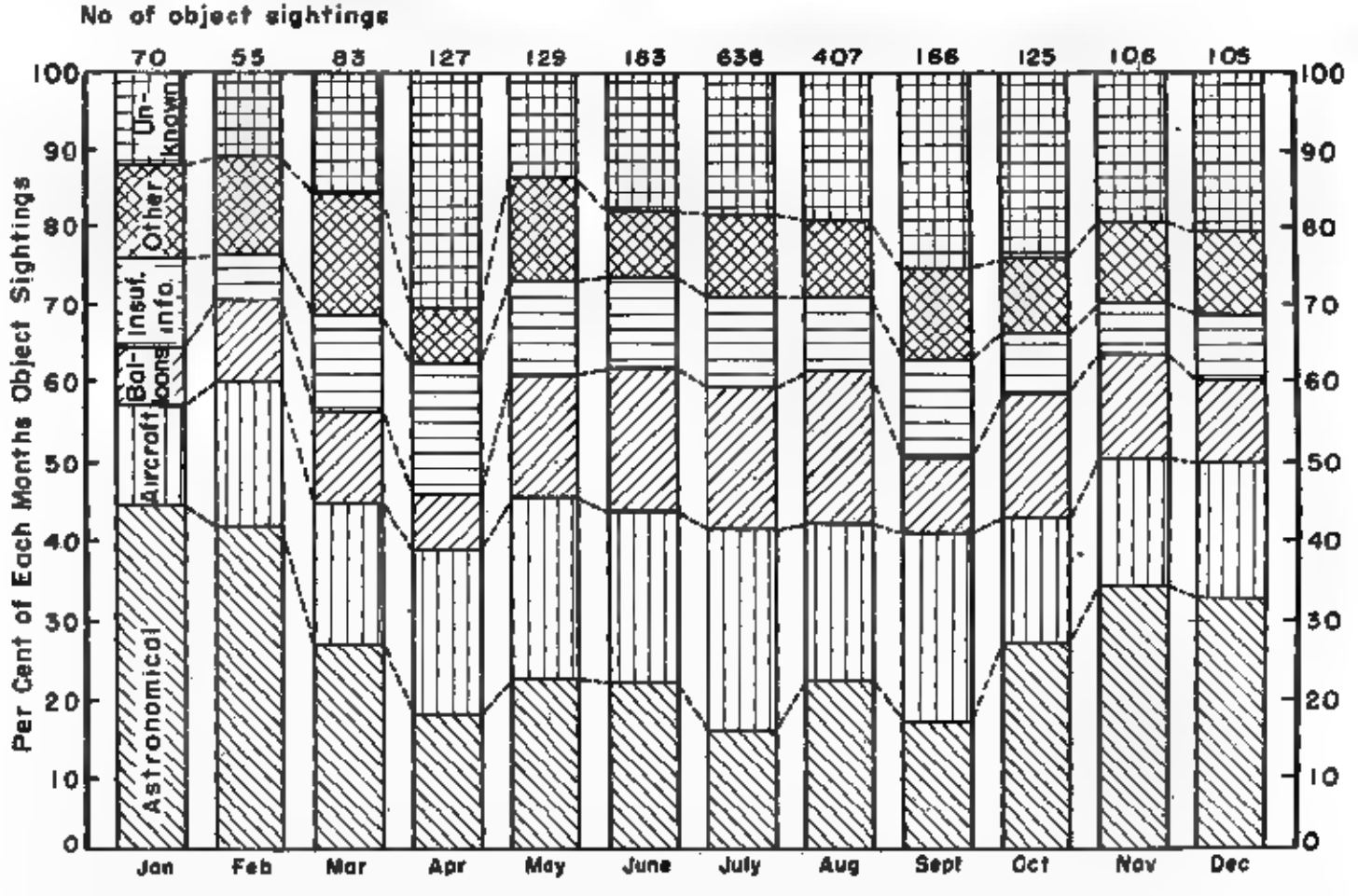


FIGURE 5 DISTRIBUTION OF OBJECT SIGHTINGS BY EVALUATION WITHIN MONTHS FOR ALL YEARS

A-7483

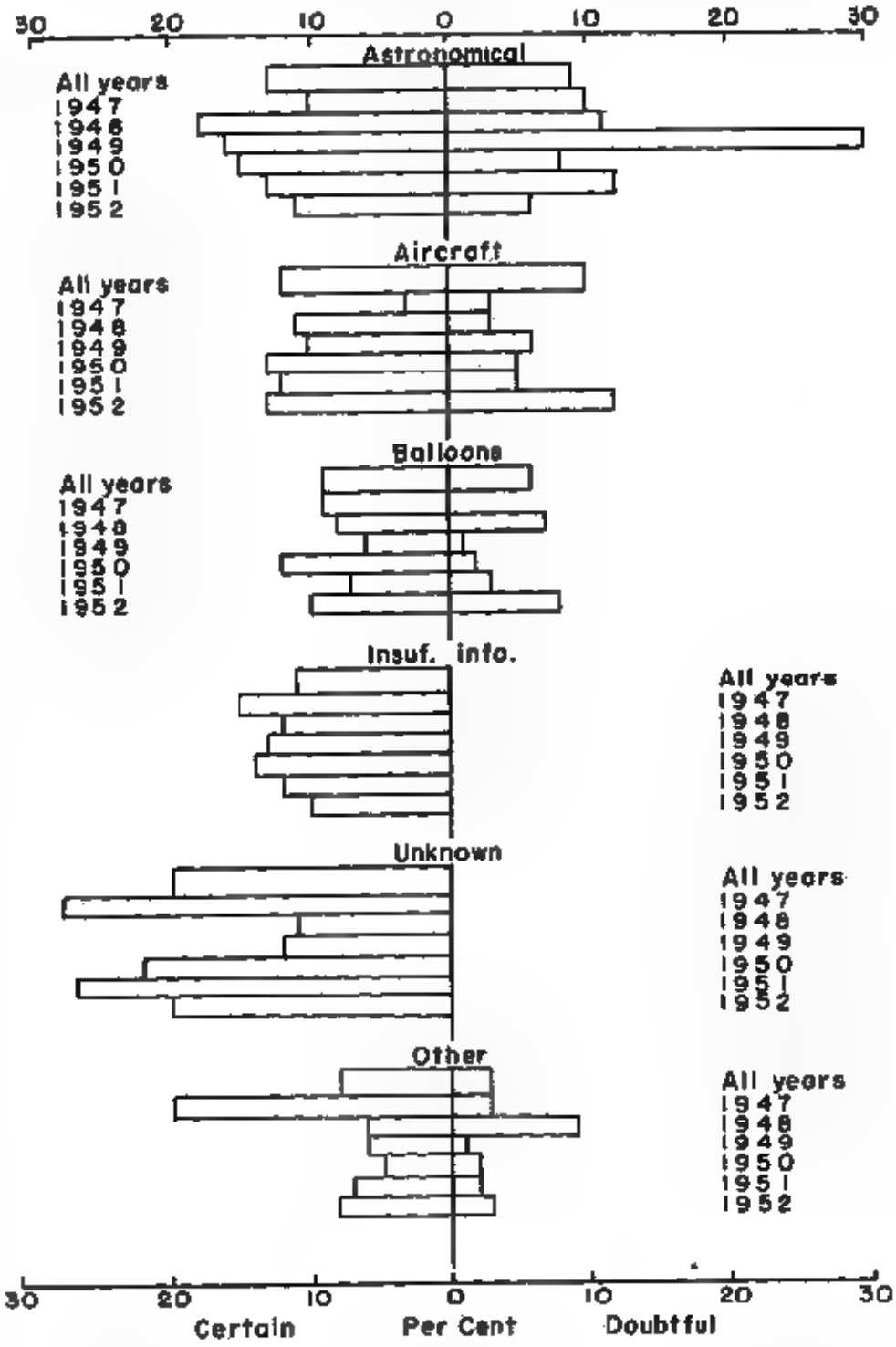


FIGURE 6 DISTRIBUTION OF OBJECT SIGHTINGS BY CERTAIN AND DOUBTFUL EVALUATIONS FOR ALL YEARS AND EACH YEAR

A-7484

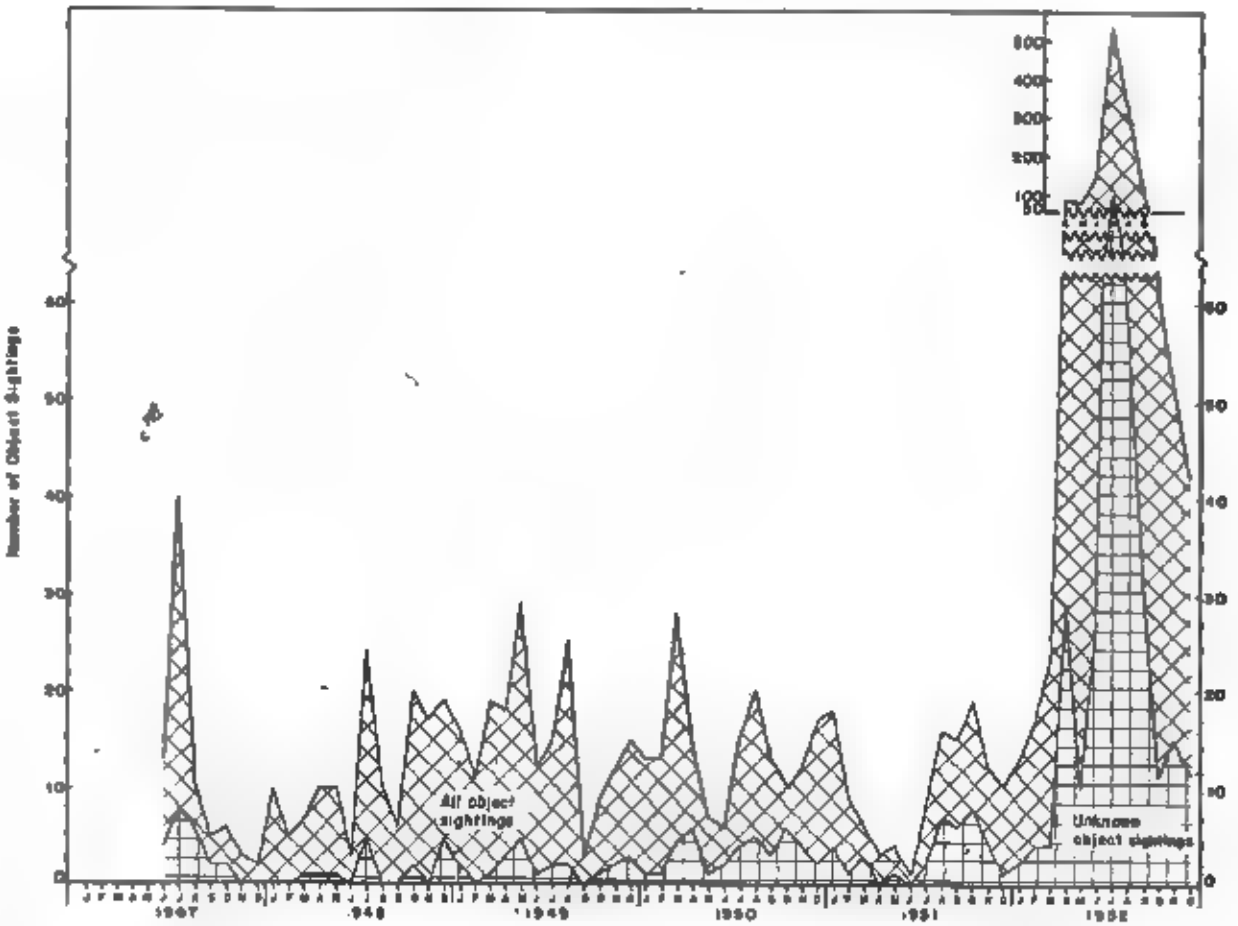


FIGURE 7 FREQUENCY OF OBJECT SIGHTINGS AND UNKNOWN OBJECT EVALUATIONS BY MONTHS, 1947-1952

C-7468

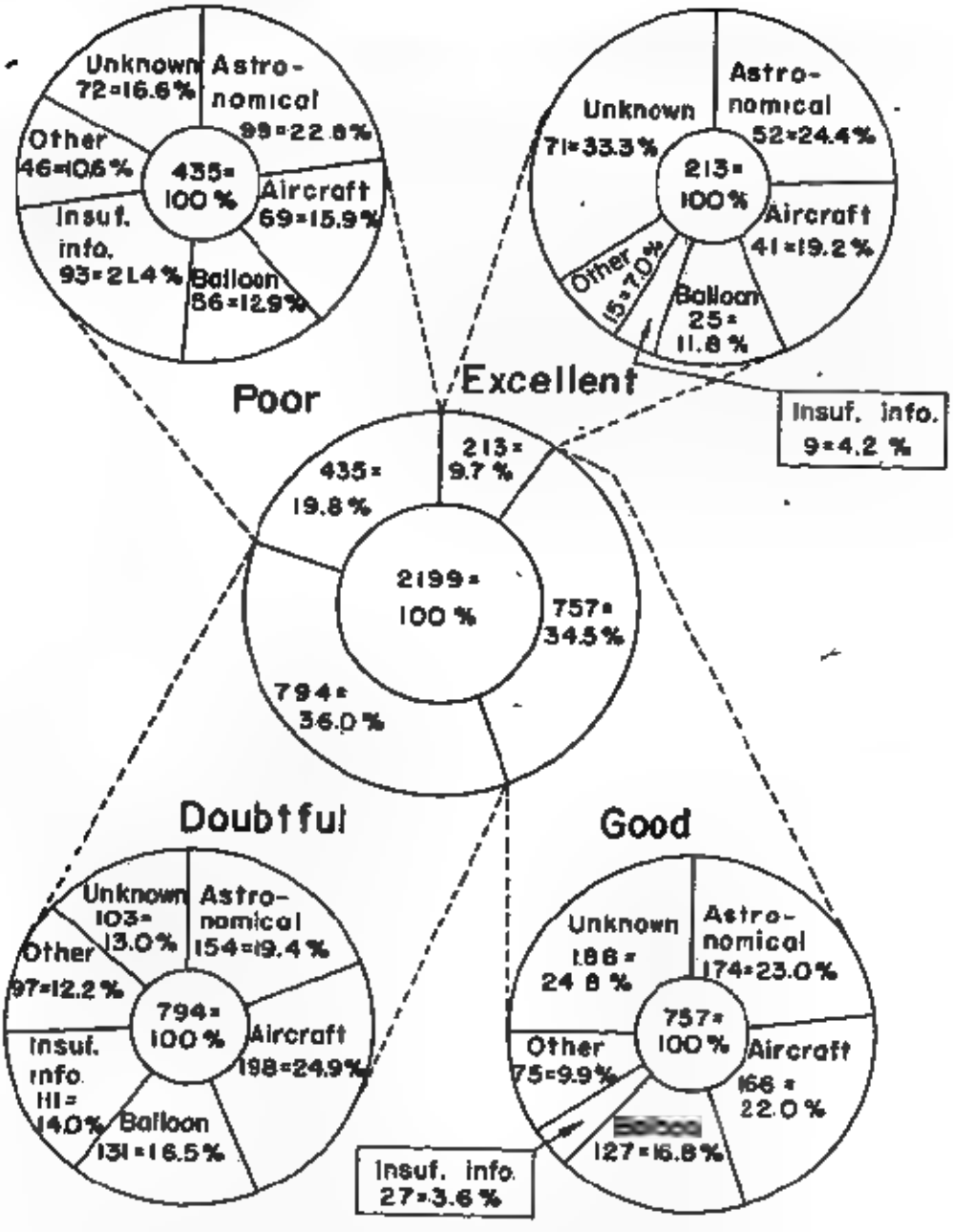


FIGURE 8 DISTRIBUTION OF OBJECT SIGHTINGS BY SIGHTING RELIABILITY GROUPS WITH EVALUATION DISTRIBUTIONS FOR EACH GROUP

A-7486

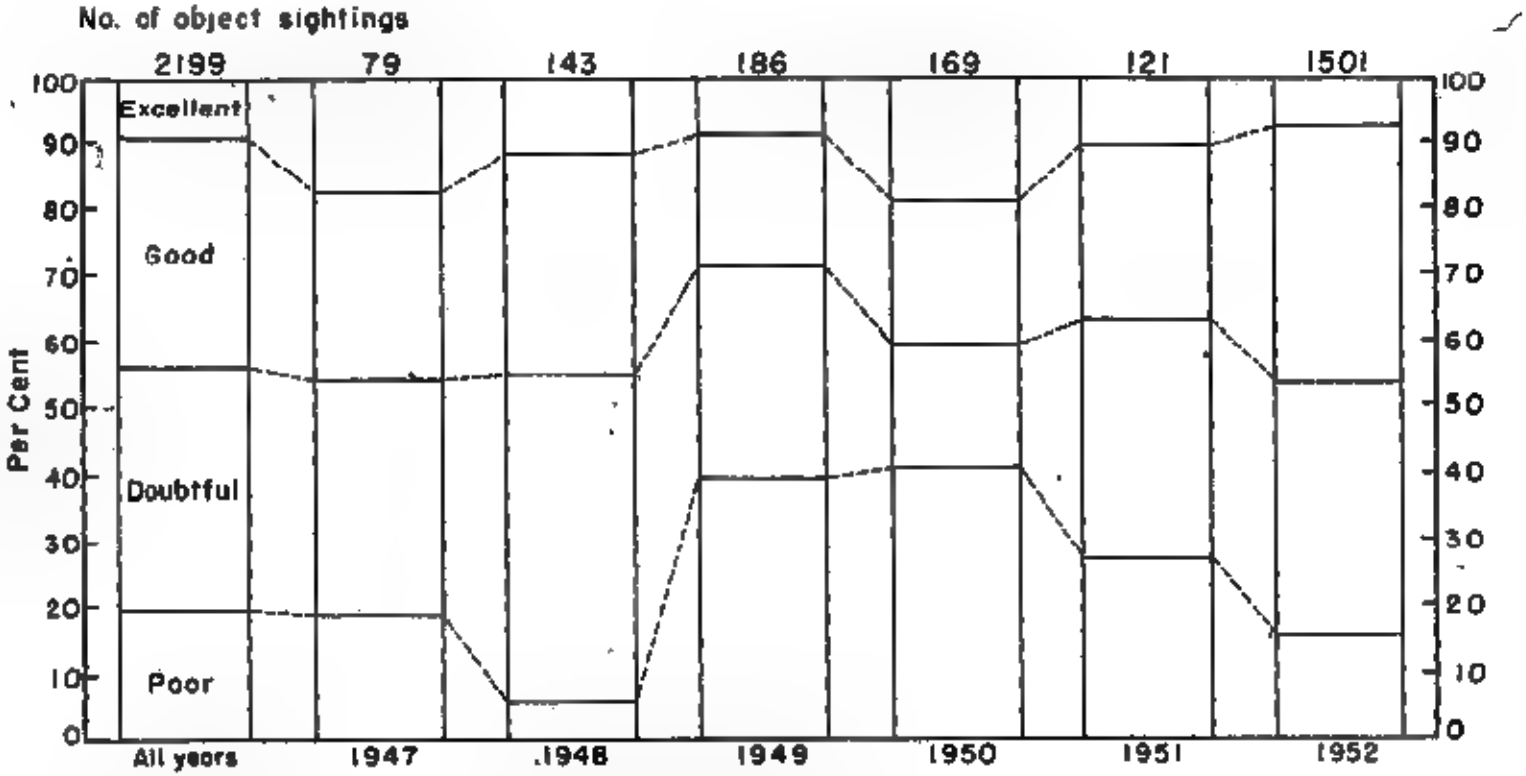


FIGURE 9 DISTRIBUTION OF OBJECT SIGHTINGS AMONG THE FOUR SIGHTING RELIABILITY GROUPS FOR ALL YEARS AND EACH YEAR

A-7487

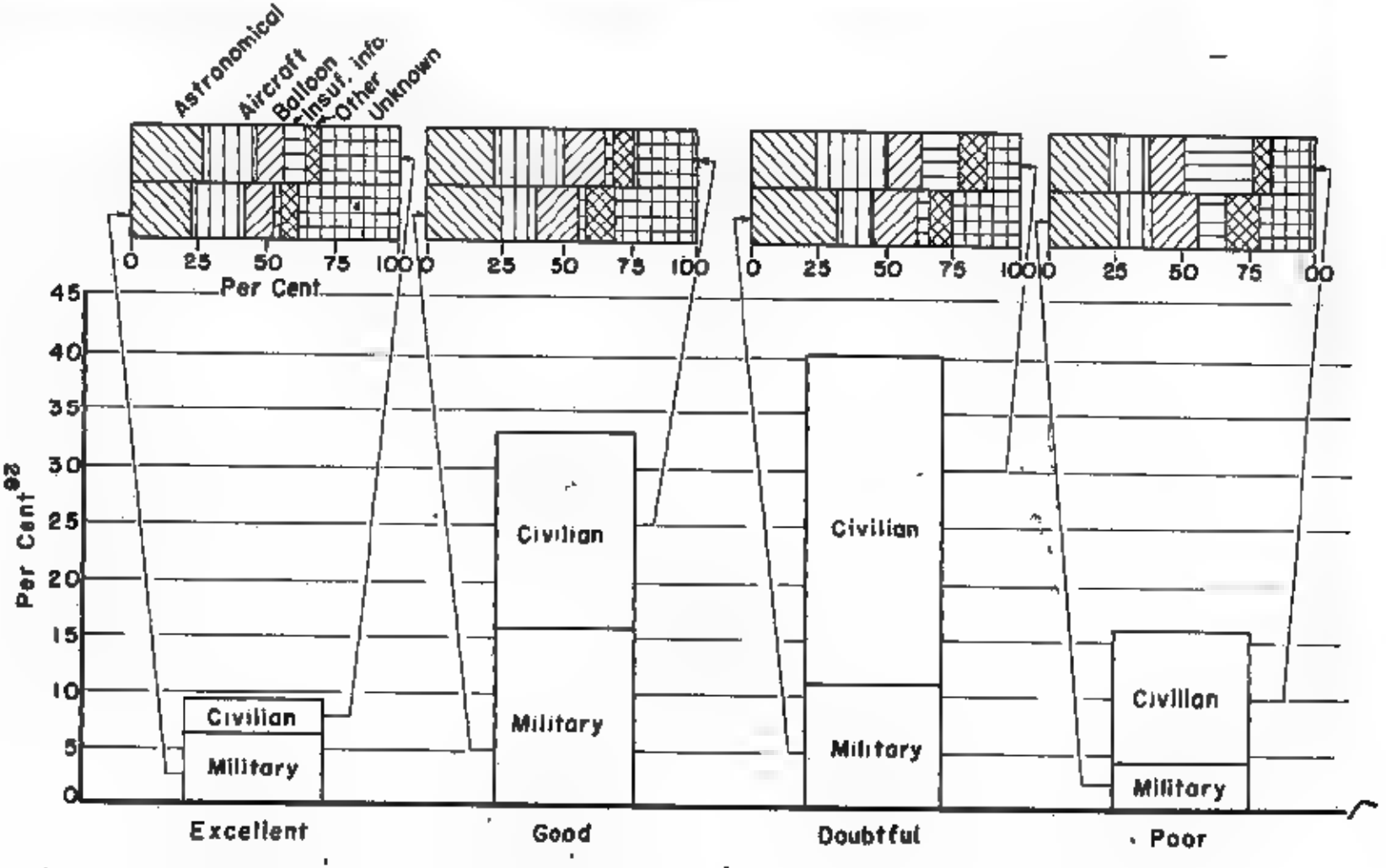


FIGURE 10 DISTRIBUTION OF ALL SIGHTINGS BY SIGHTING RELIABILITY GROUPS, SEGREGATED BY MILITARY AND CIVILIAN OBSERVERS WITH EVALUATION DISTRIBUTION FOR EACH SEGREGATION

A-7488

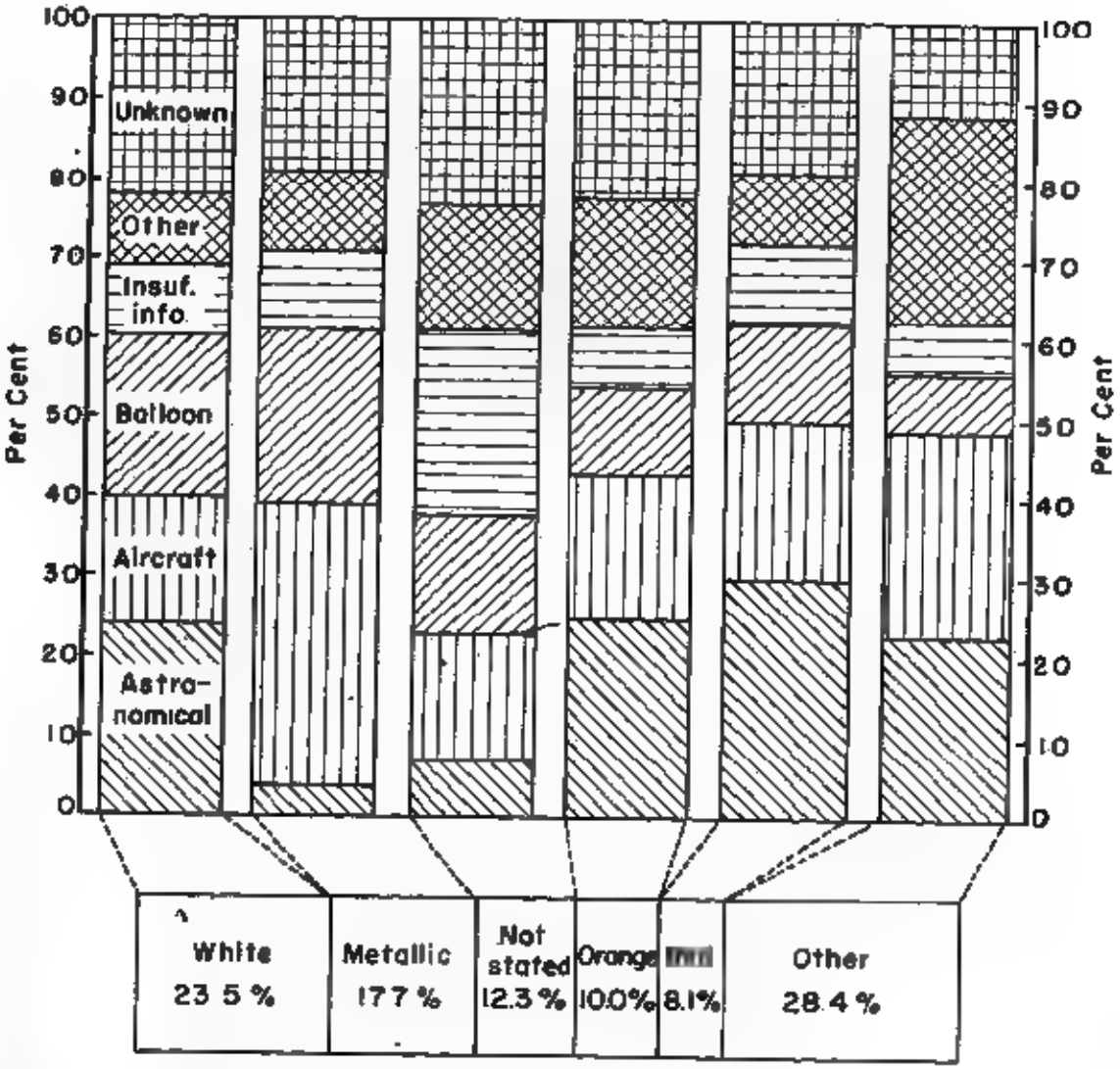


FIGURE II DISTRIBUTION OF OBJECT SIGHTINGS BY REPORTED COLORS OF OBJECT(S) WITH EVALUATION DISTRIBUTION FOR EACH COLOR GROUP

A-7488

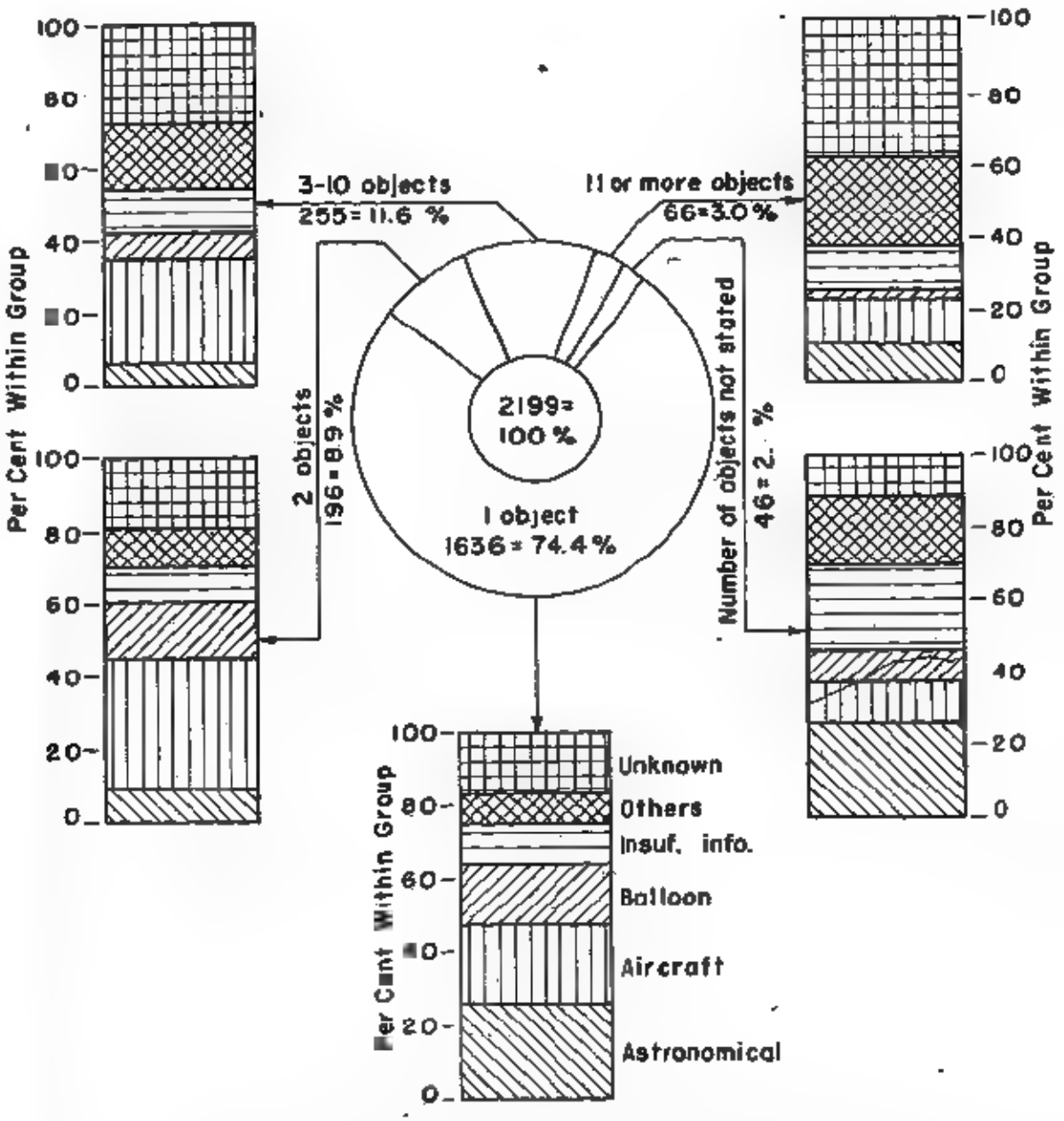


FIGURE 12 DISTRIBUTION OF OBJECT SIGHTINGS BY NUMBER OF OBJECTS SEEN PER SIGHTING WITH EVALUATION DISTRIBUTION FOR EACH GROUP

A-7490

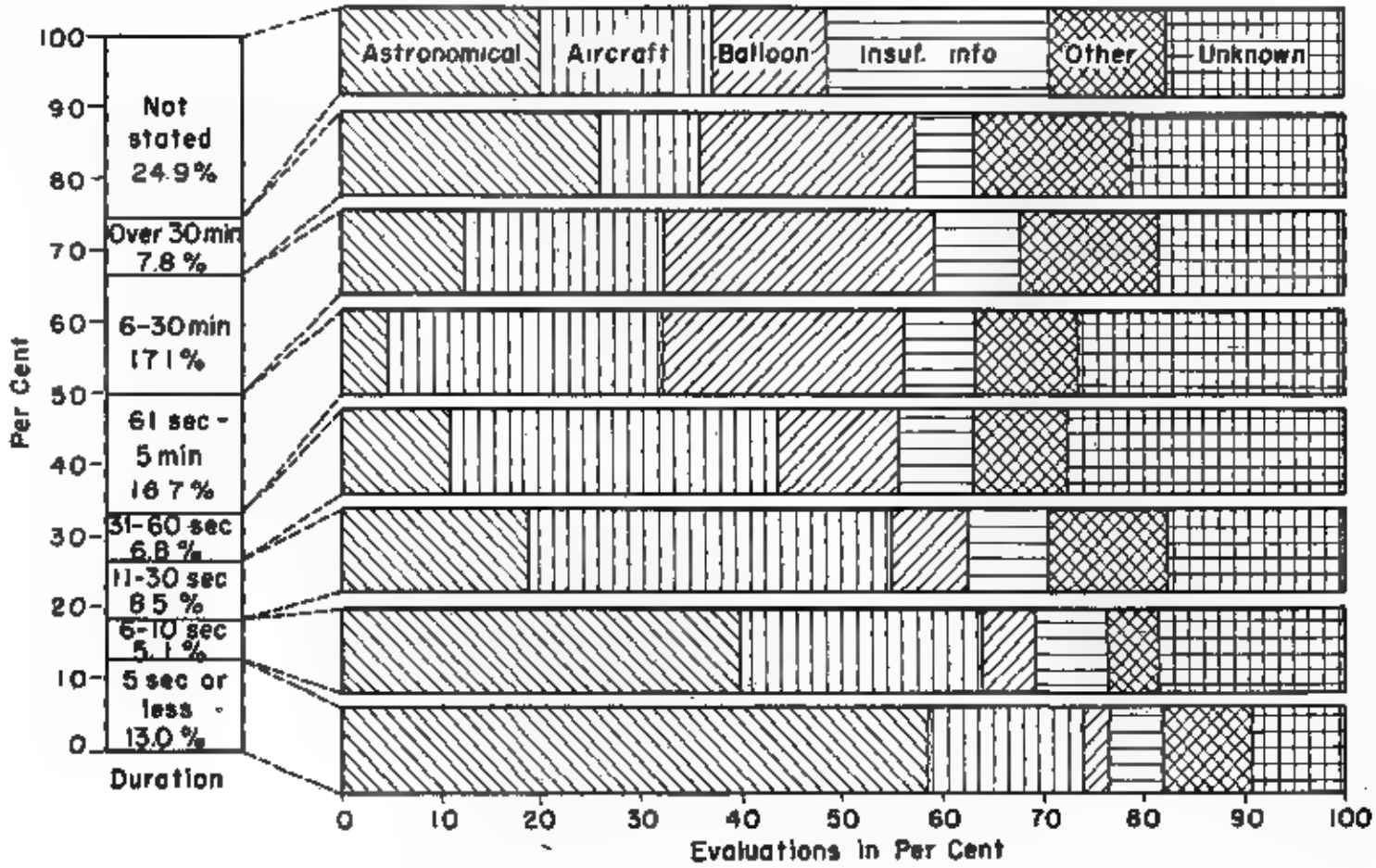


FIGURE 13 DISTRIBUTION OF OBJECT SIGHTINGS BY DURATION OF SIGHTING WITH EVALUATION DISTRIBUTION FOR EACH DURATION GROUP

A-7491

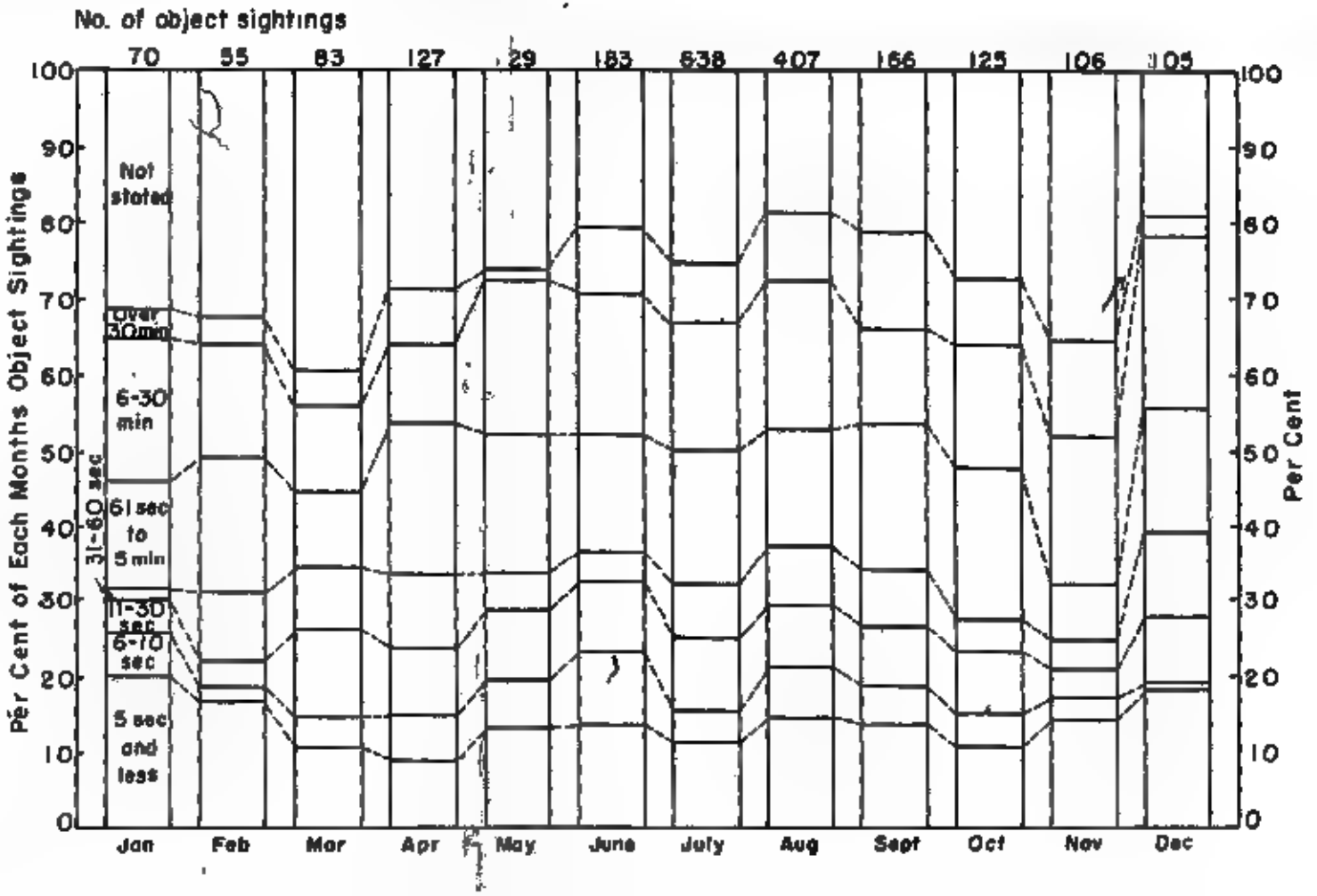


FIGURE 14 DISTRIBUTION OF OBJECT SIGHTINGS BY MONTHS AMONG THE EIGHT DURATION GROUPS FOR ALL YEARS

A-7492

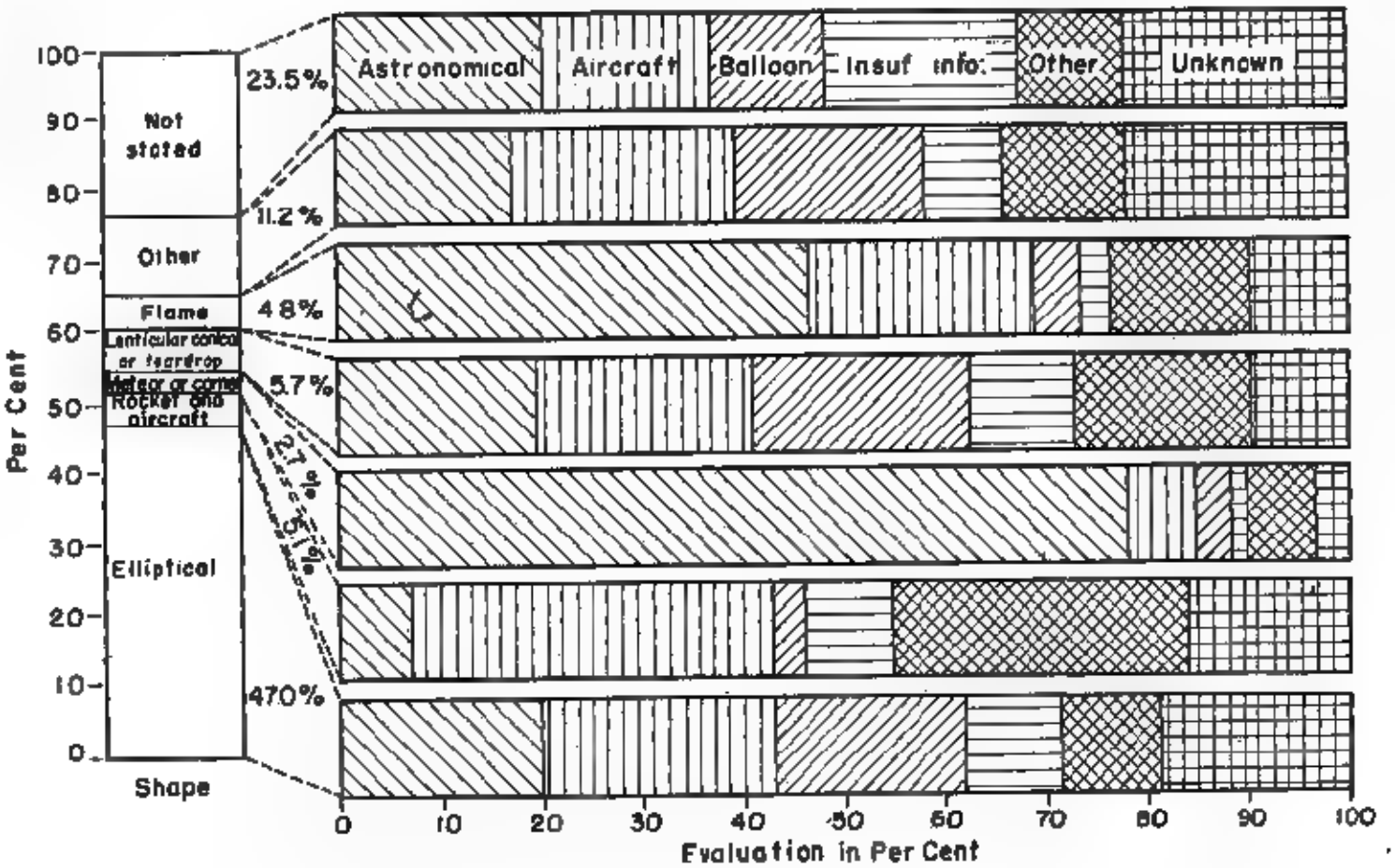


FIGURE 15 DISTRIBUTION OF OBJECT SIGHTINGS BY SHAPE OF OBJECTS REPORTED WITH EVALUATION DISTRIBUTION FOR EACH SHAPE GROUP

A-1493

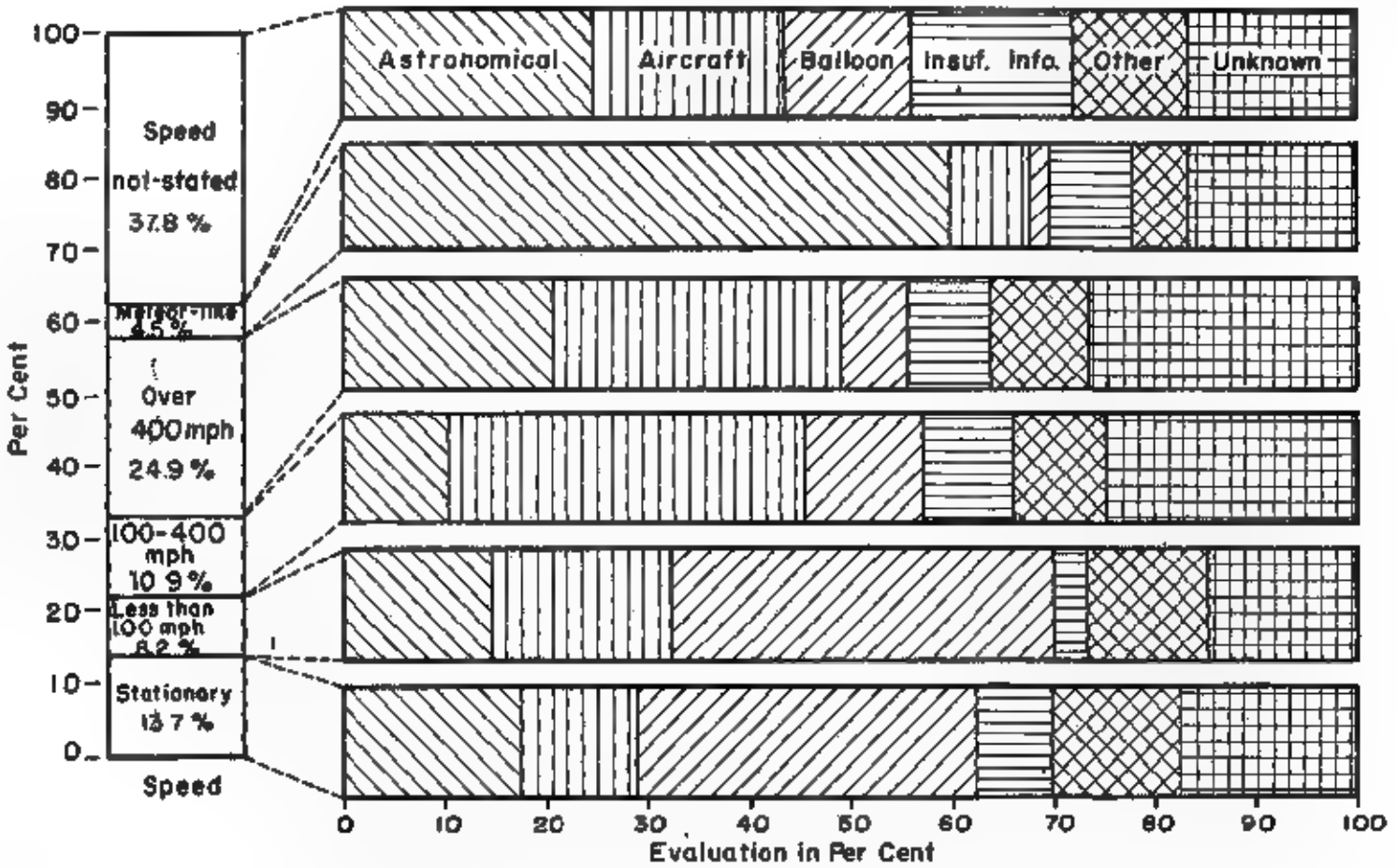


FIGURE 16 DISTRIBUTION OF OBJECT SIGHTINGS BY REPORTED SPEED OF OBJECT(S) WITH EVALUATION DISTRIBUTION FOR EACH SPEED GROUP

A-7494

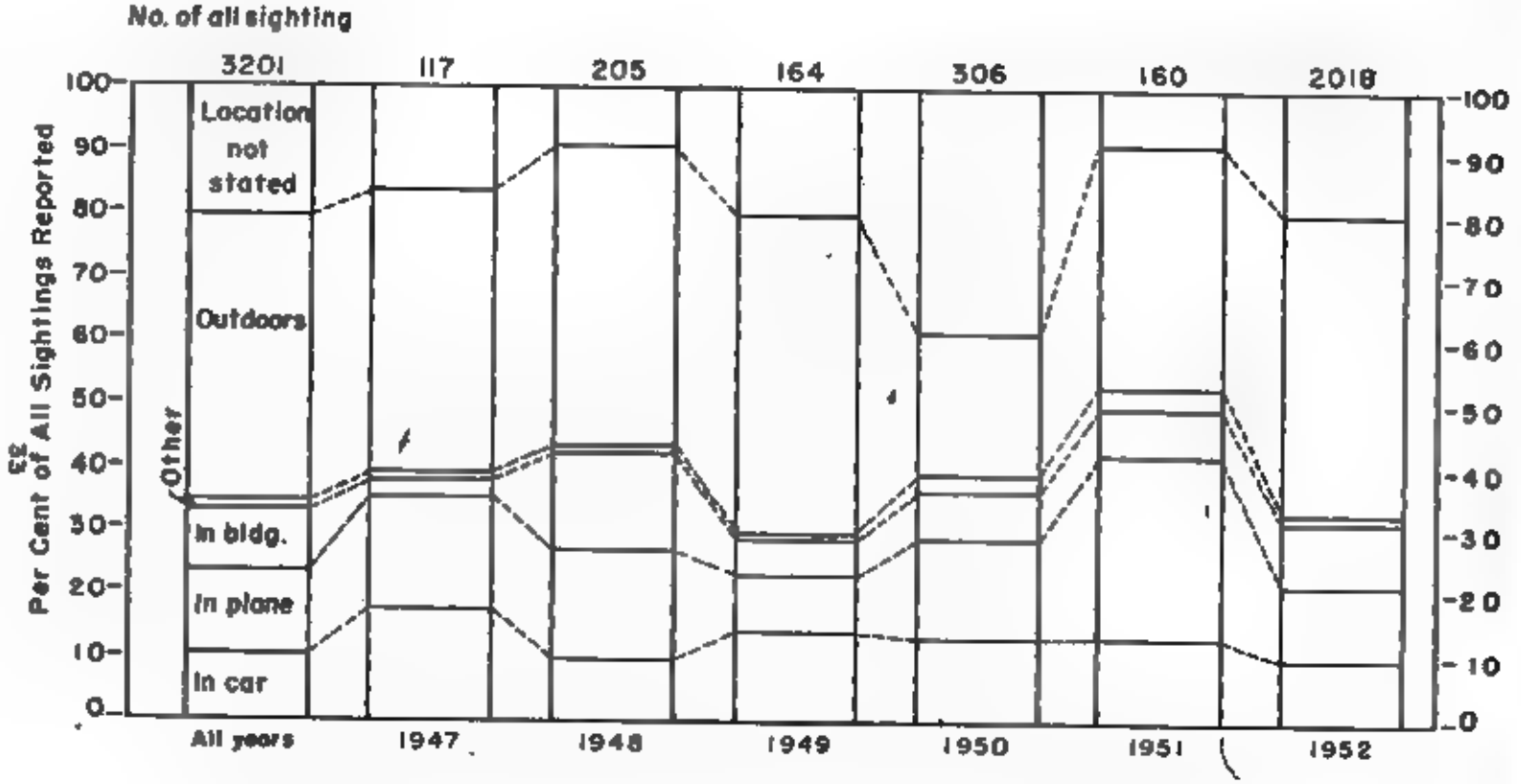


FIGURE 17 DISTRIBUTION OF ALL SIGHTINGS BY OBSERVER LOCATION FOR ALL YEARS AND EACH YEAR

A-7485

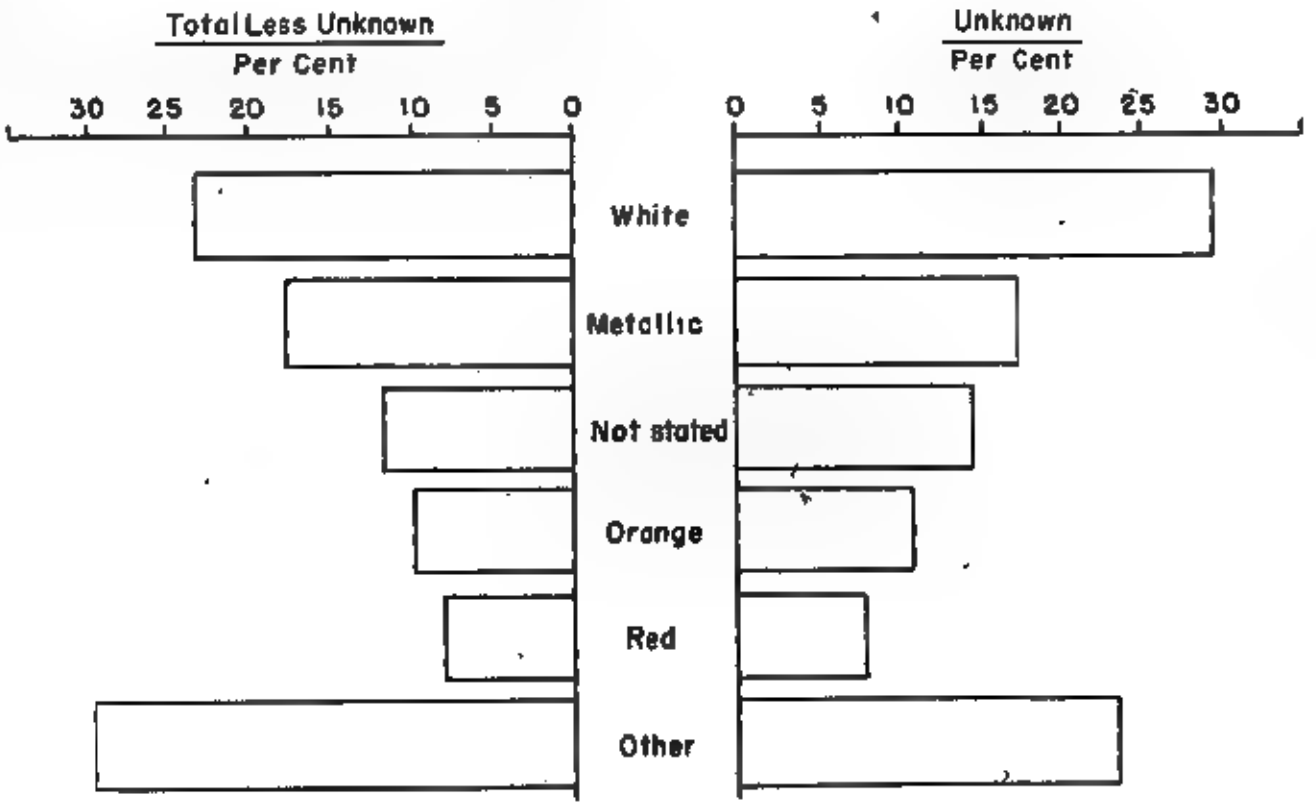


FIGURE 18 COMPARISON OF KNOWN AND UNKNOWN OBJECT SIGHTINGS BY COLOR, 1947-1952

A-7496

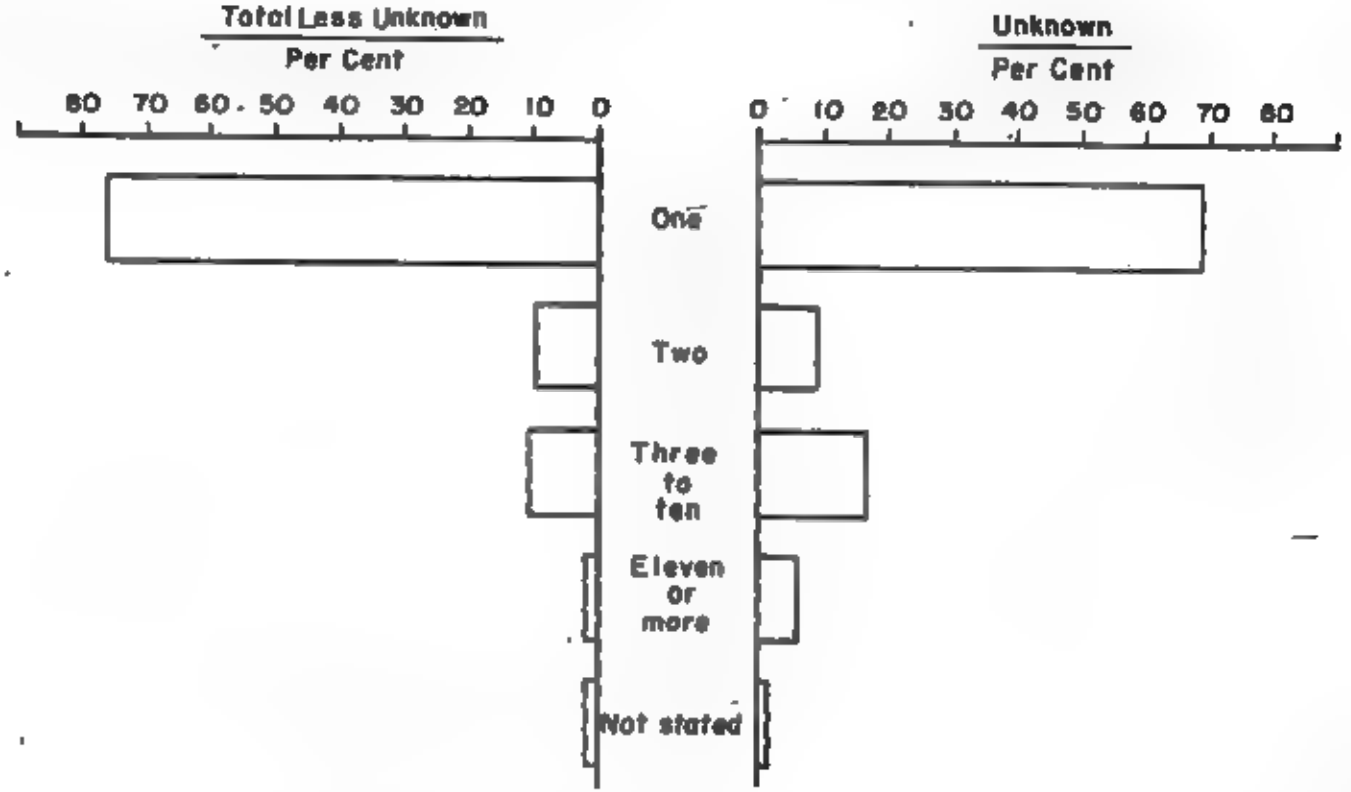


FIGURE 19 COMPARISON OF KNOWN AND UNKNOWN OBJECT SIGHTINGS BY NUMBER OF OBJECTS PER SIGHTING, 1947-1952

A-7497

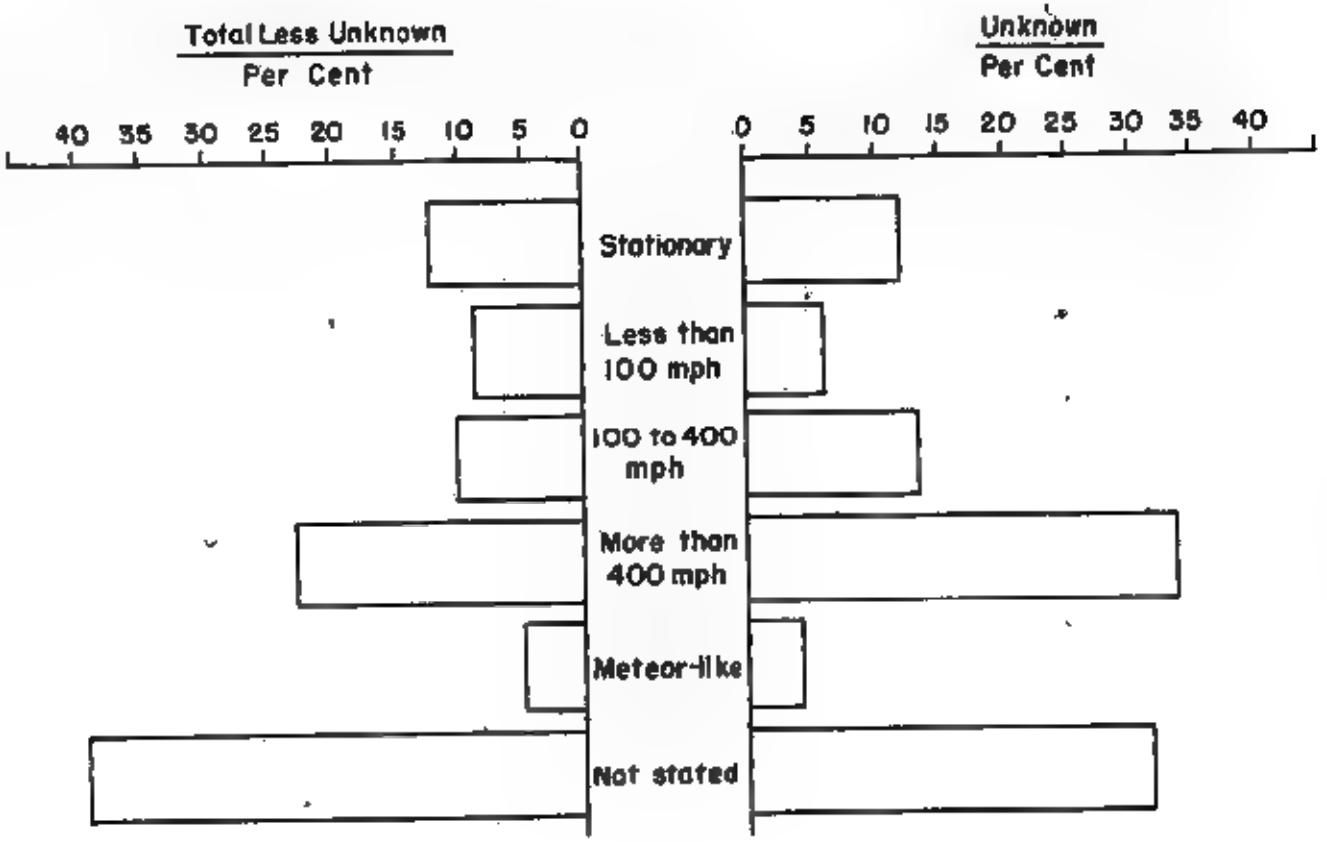


FIGURE 20 COMPARISON OF KNOWN AND UNKNOWN OBJECT SIGHTINGS BY SPEED, 1947-1952

A-7498

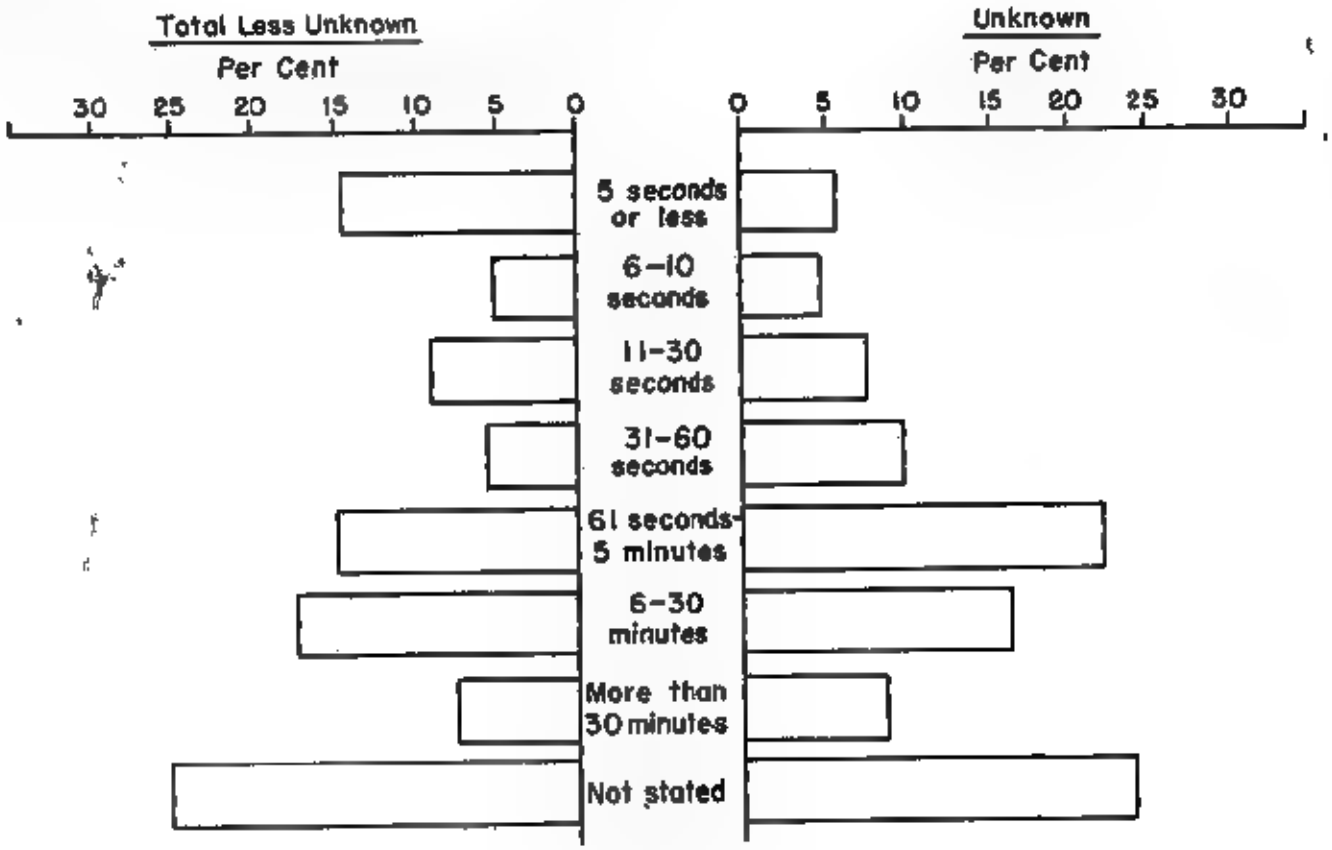


FIGURE 21 COMPARISON OF KNOWN AND UNKNOWN OBJECT SIGHTINGS BY DURATION, 1947-1952

A-7499

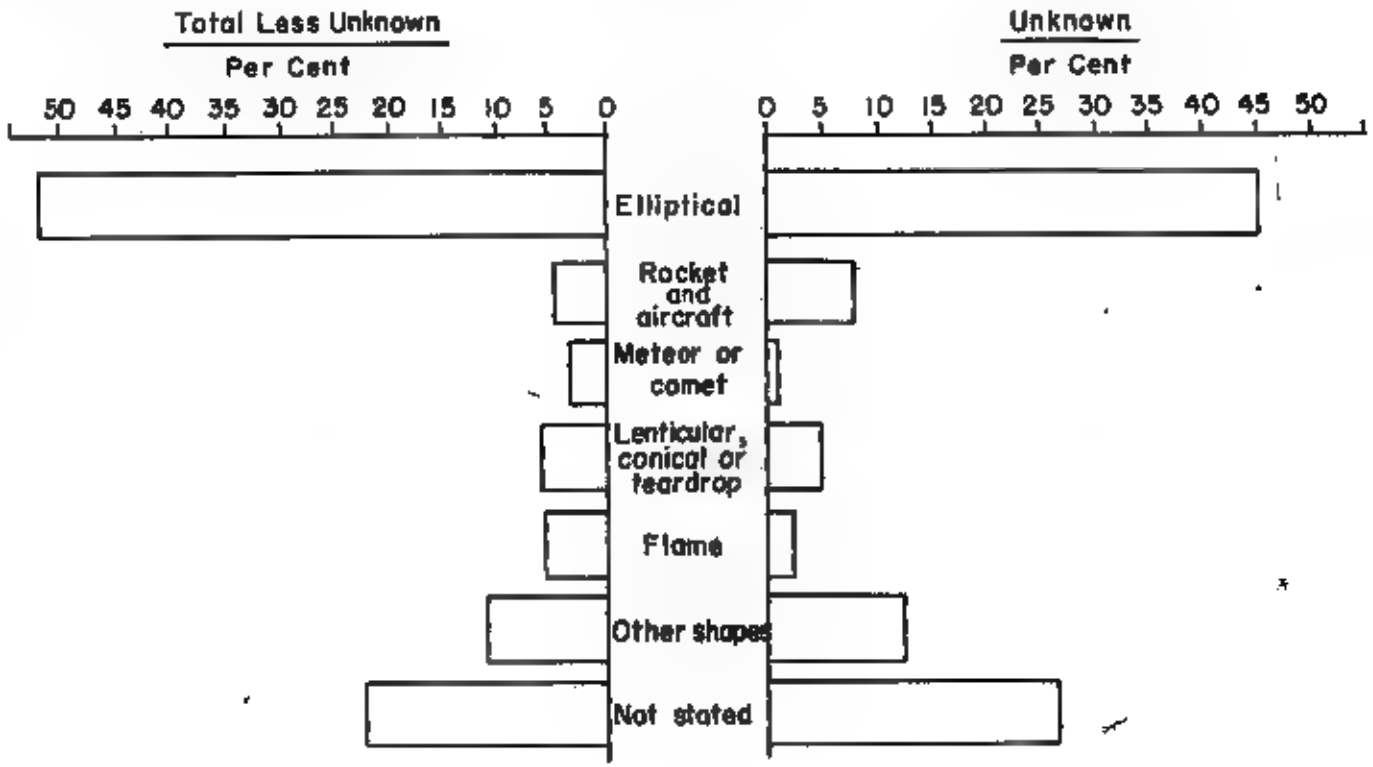


FIGURE 22 COMPARISON OF KNOWN AND UNKNOWN OBJECT SIGHTINGS BY SHAPE, 1947–1952

A-7500

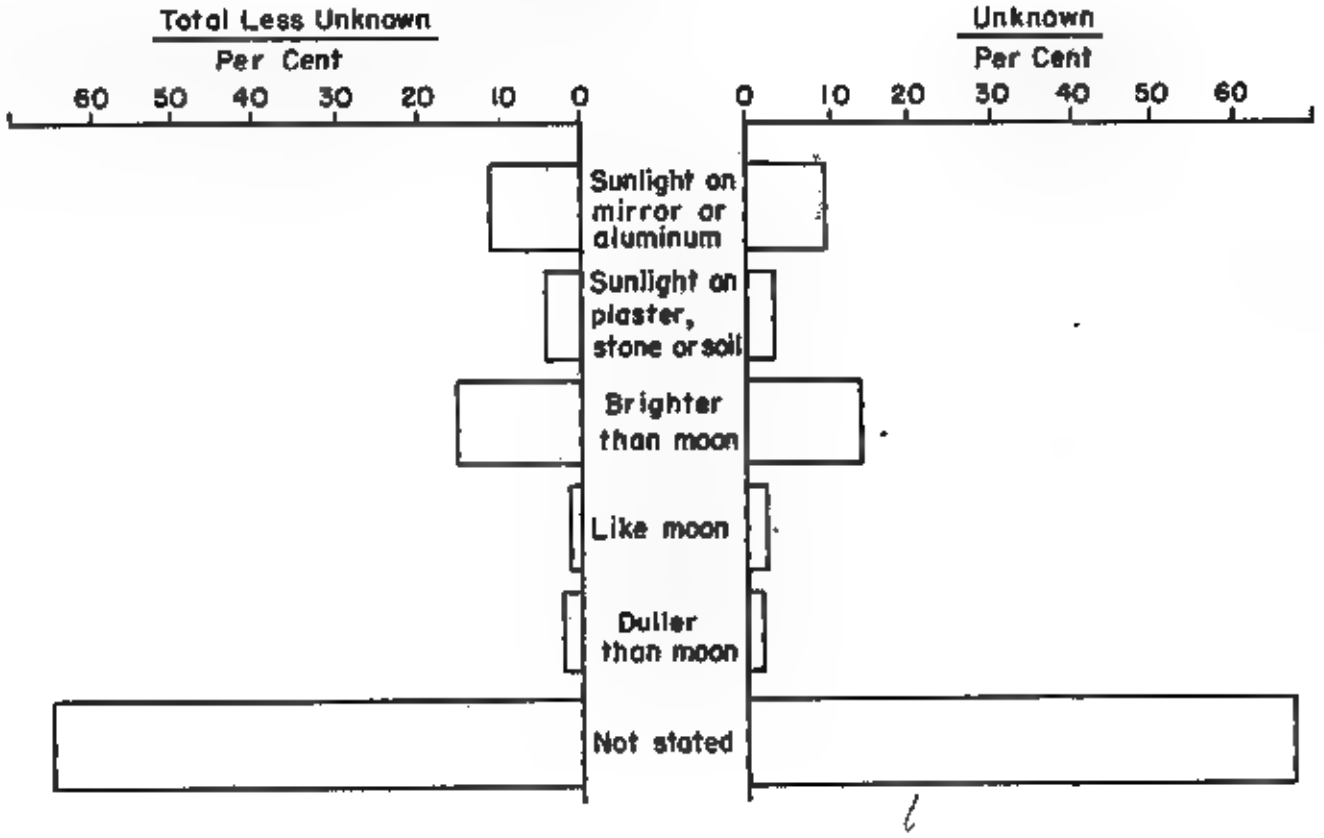


FIGURE 23 COMPARISON OF KNOWN AND UNKNOWN OBJECT SIGHTINGS BY LIGHT BRIGHTNESS, 1947-1952

A-7501

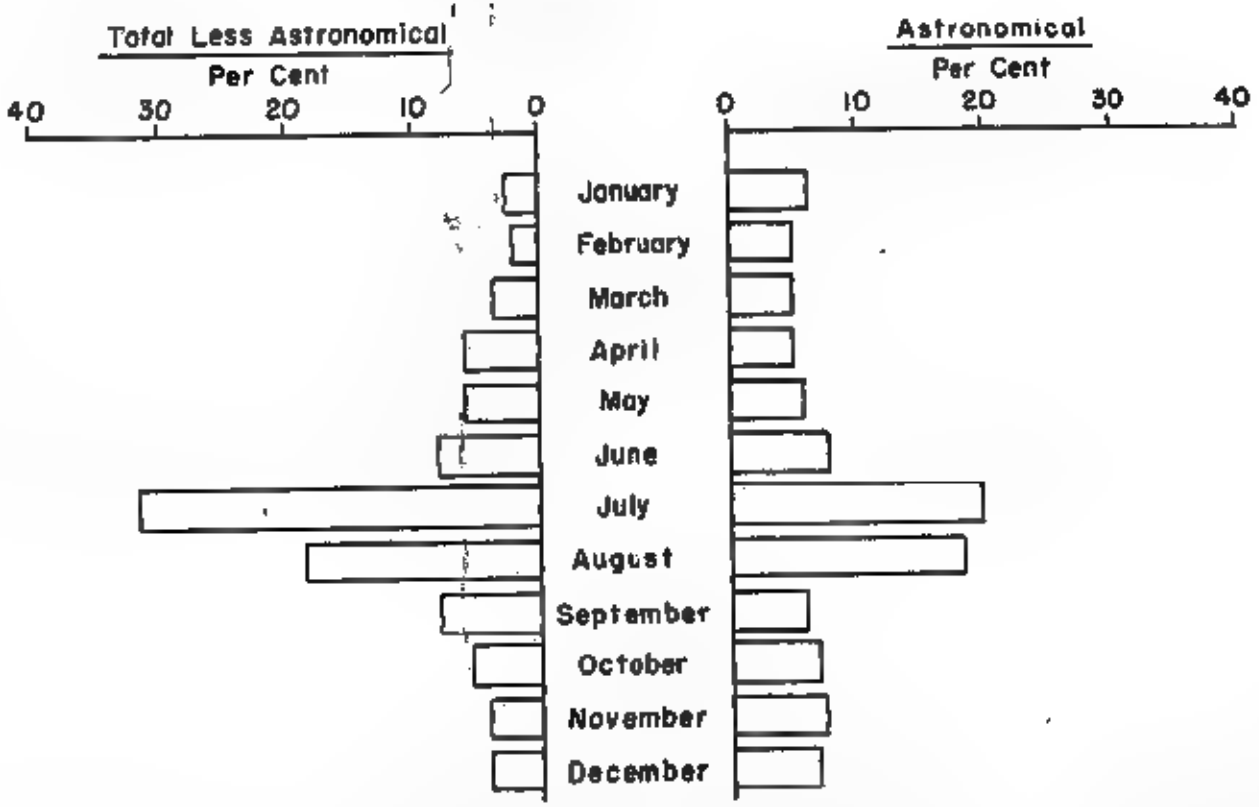


FIGURE 24 COMPARISON OF MONTHLY DISTRIBUTION OF OBJECT SIGHTINGS EVALUATED AS ASTRONOMICAL VERSUS TOTAL OBJECT SIGHTINGS LESS ASTRONOMICAL

A-7801

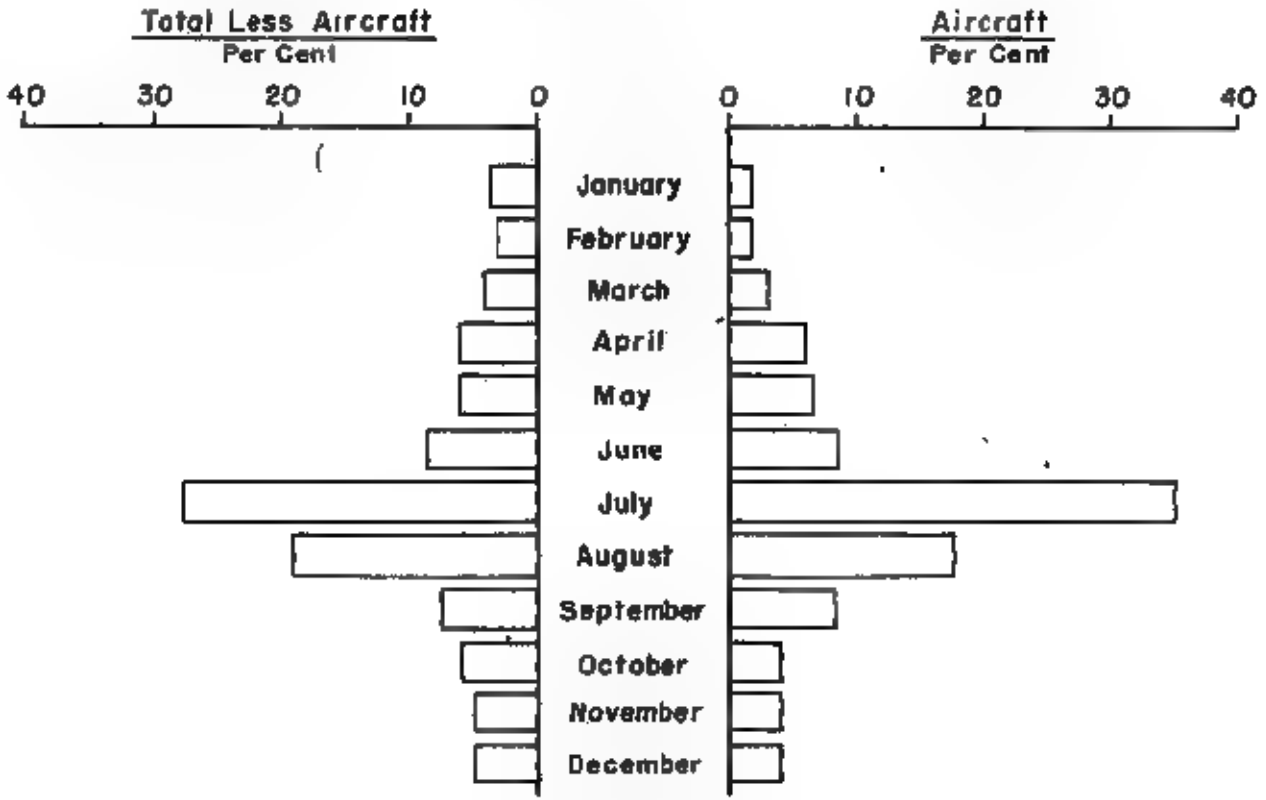


FIGURE 25 COMPARISON OF MONTHLY DISTRIBUTION OF OBJECT SIGHTINGS EVALUATED AS AIRCRAFT VERSUS TOTAL OBJECT SIGHTINGS LESS AIRCRAFT

A-7903

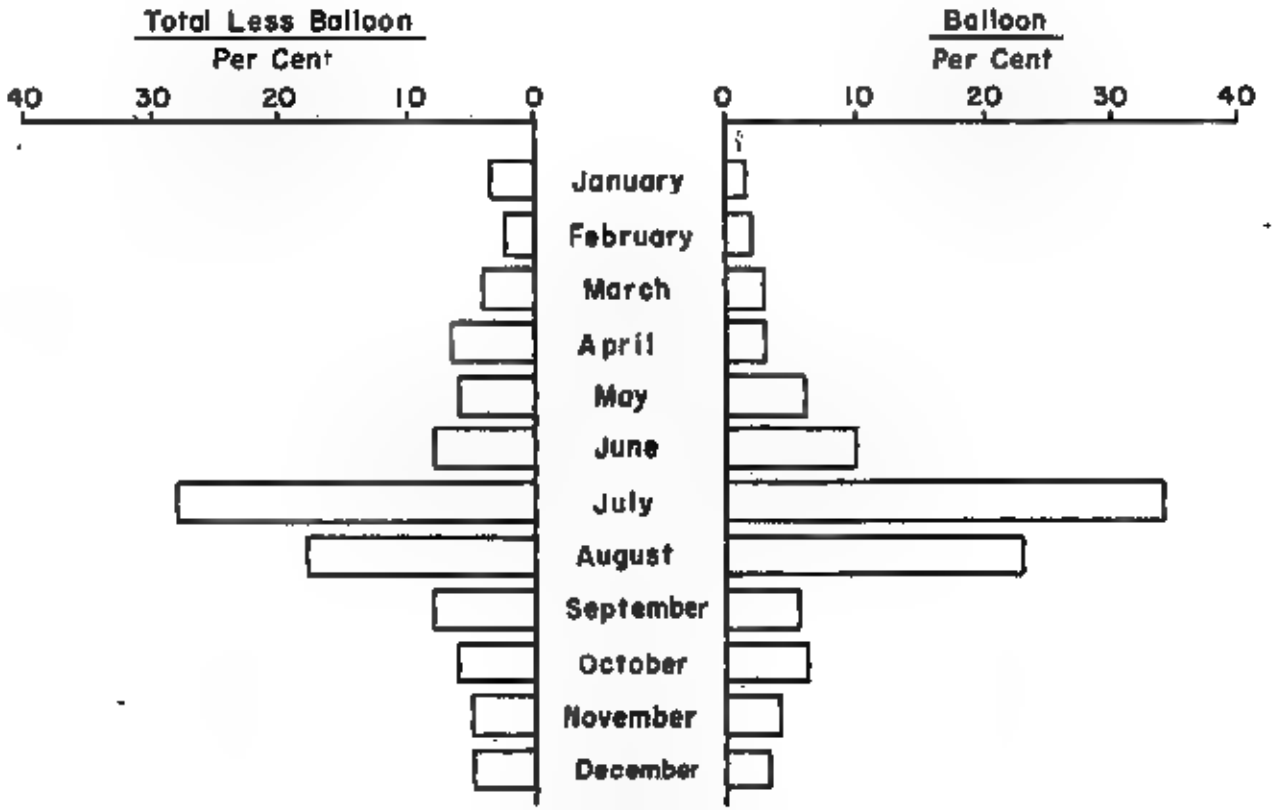


FIGURE 26 COMPARISON OF MONTHLY DISTRIBUTION OF OBJECT SIGHTINGS EVALUATED AS BALLOON VERSUS TOTAL OBJECT SIGHTINGS LESS BALLOON

A-7504

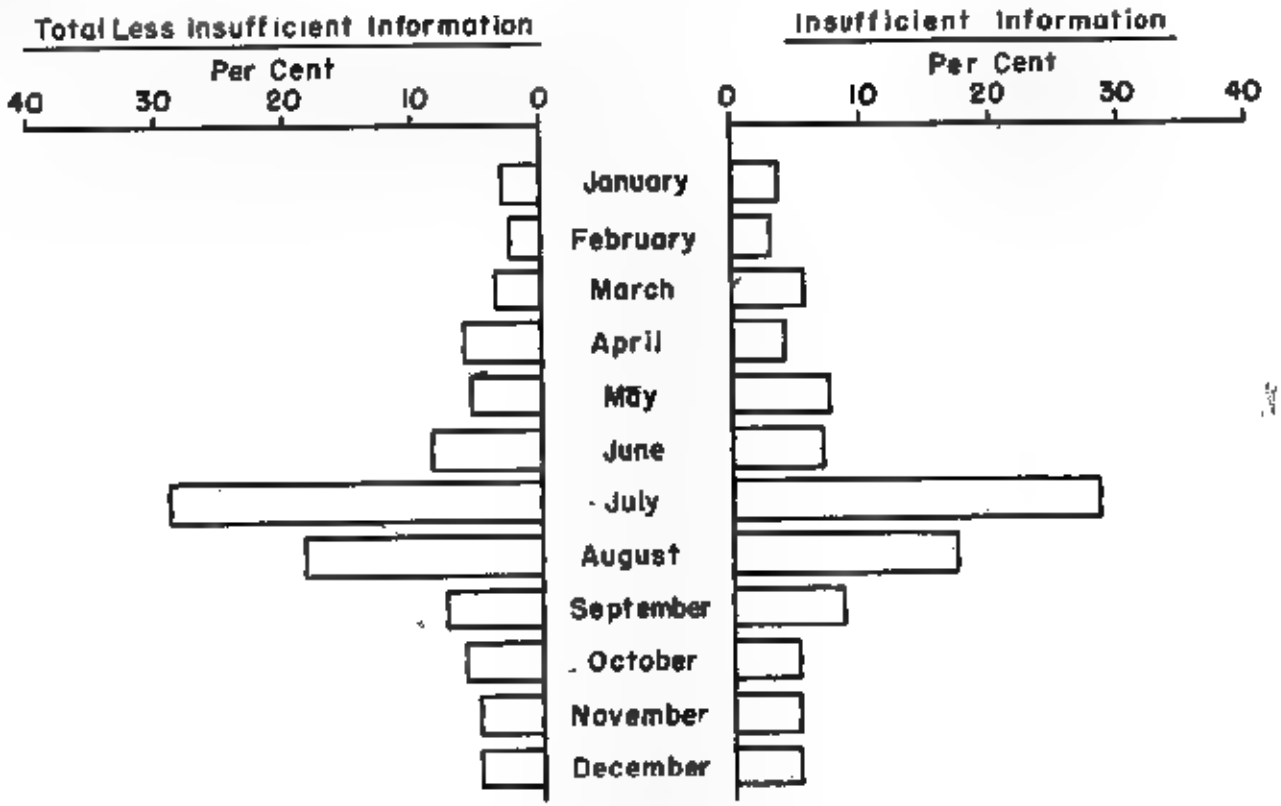


FIGURE 27 COMPARISON OF MONTHLY DISTRIBUT ON OF OBJECT SIGHTINGS EVALUATED AS INSUFFICIENT INFORMATION VERSUS TOTAL OBJECT SIGHTINGS LESS INSUFFICIENT INFORMATION

A-7505

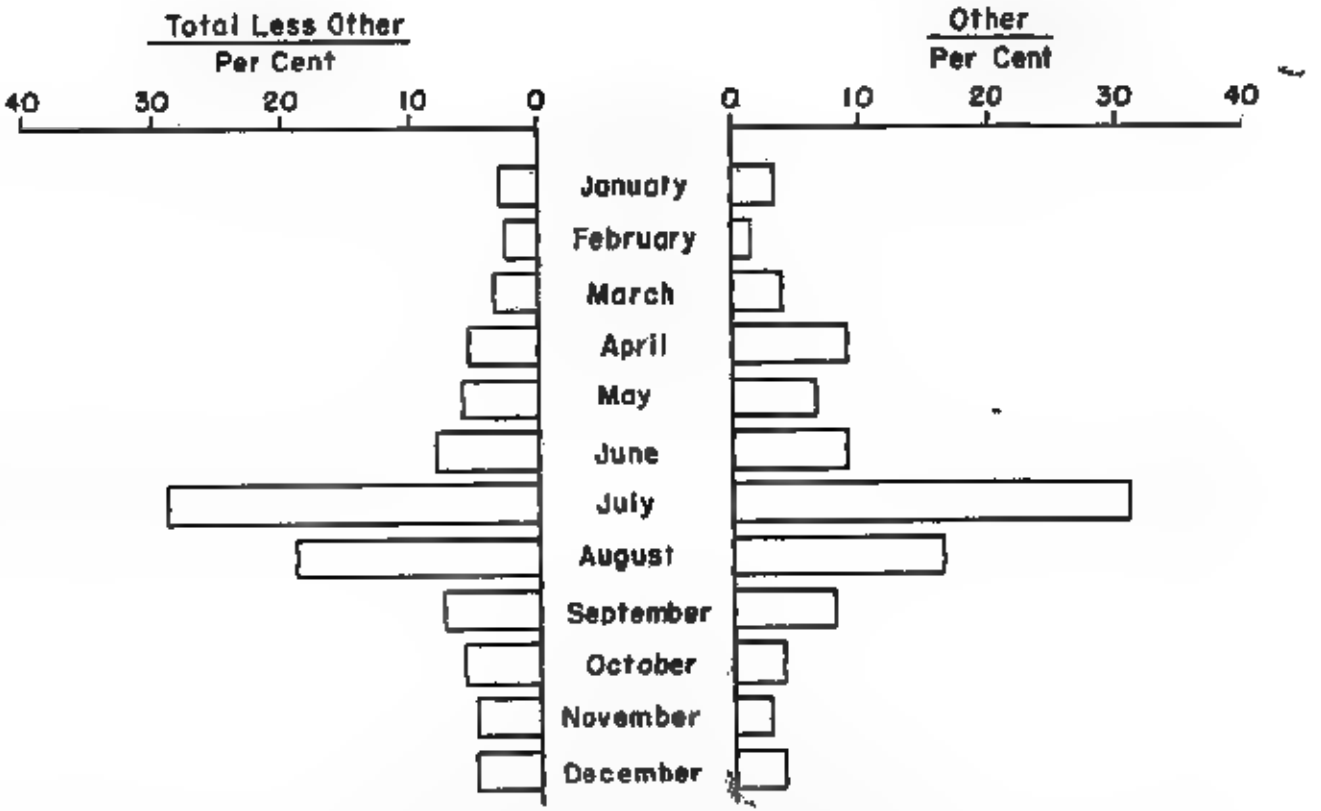


FIGURE 28 COMPARISON OF MONTHLY DISTRIBUTION OF OBJECT SIGHTINGS EVALUATED AS OTHER VERSUS TOTAL OBJECT SIGHTINGS LESS OTHER

A-7506

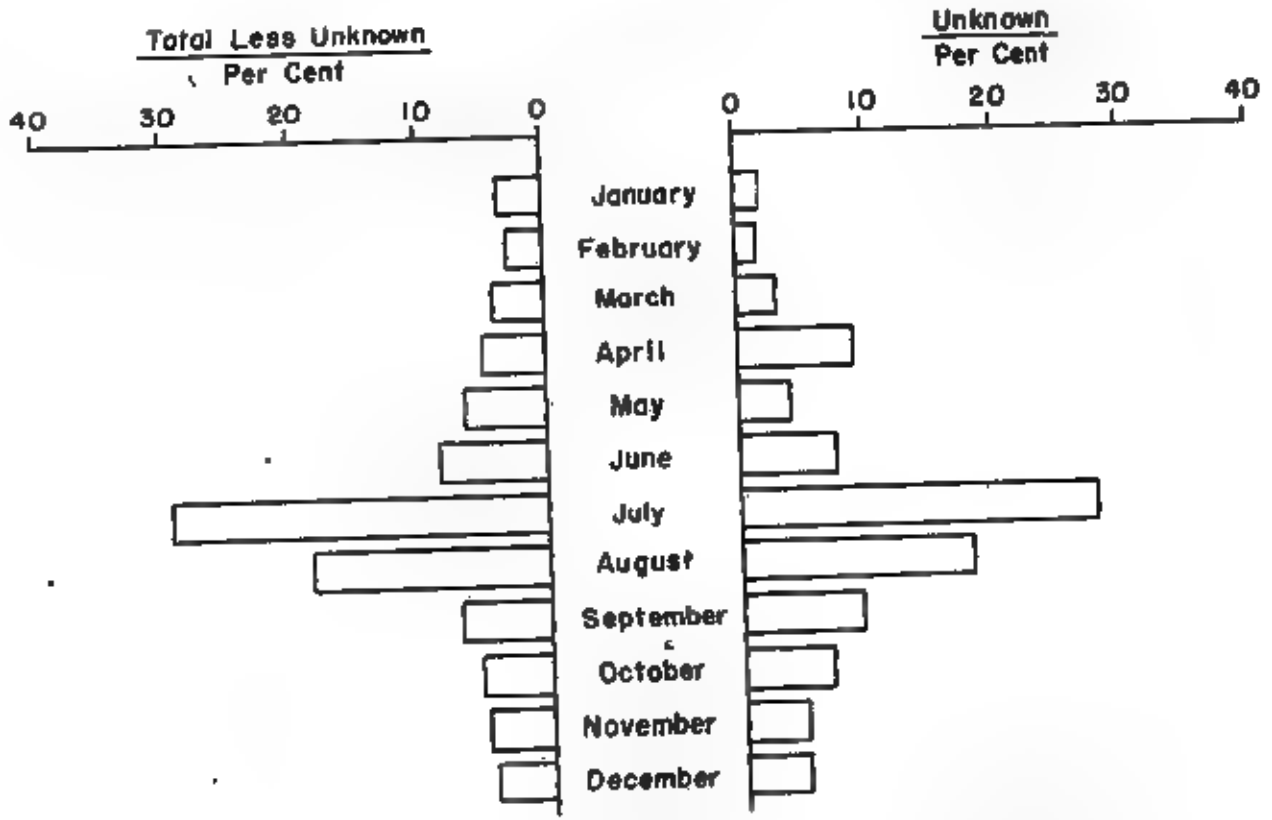


FIGURE 29 COMPARISON OF MONTHLY DISTRIBUTION OF OBJECT SIGHTINGS EVALUATED AS UNKNOWN VERSUS TOTAL OBJECT SIGHTINGS LESS UNKNOWN

A-7507

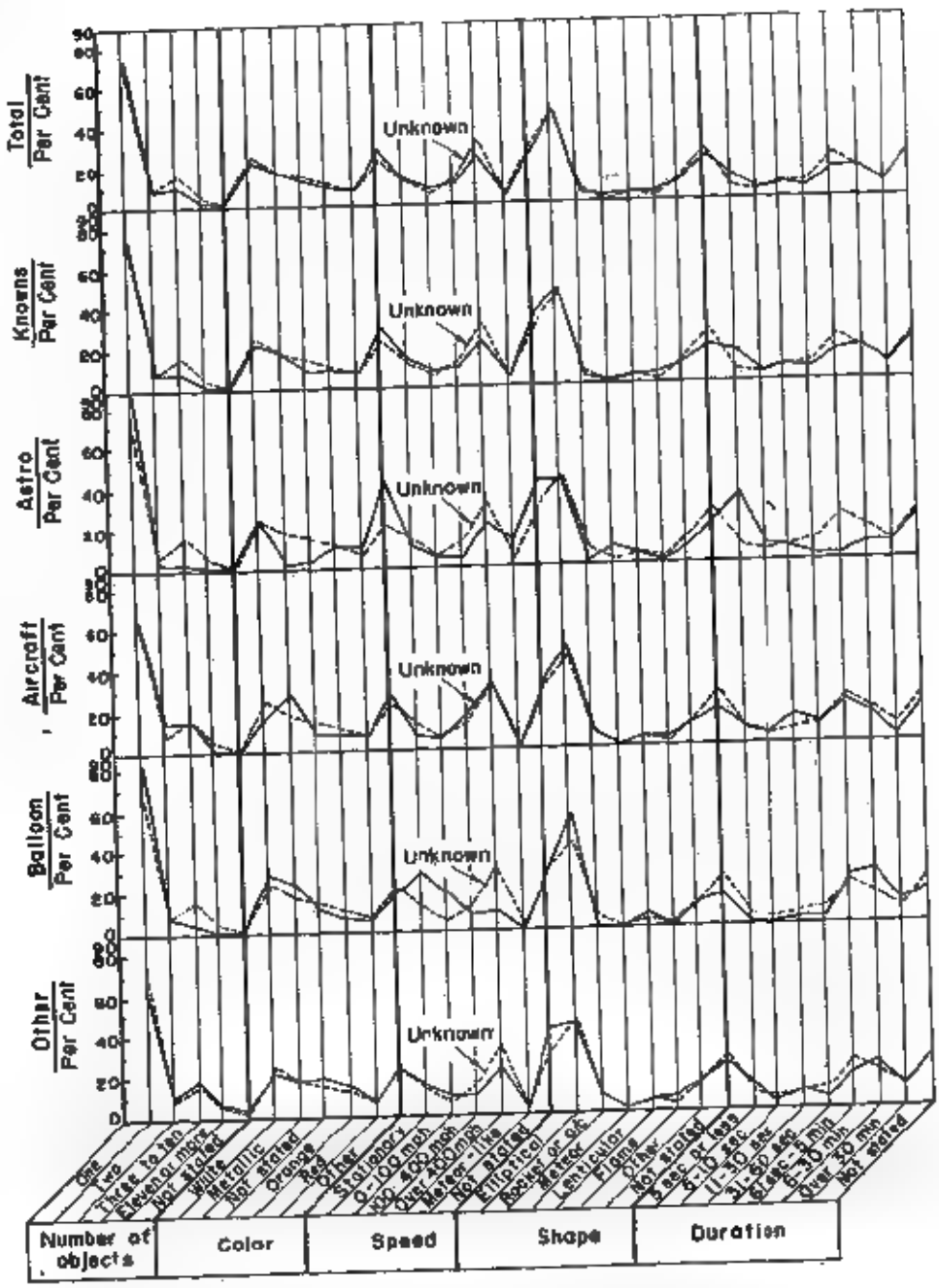


FIGURE 30 CHARACTERISTICS PROFILES OF OBJECT SIGHTINGS BY TOTAL SAMPLE, KNOWN EVALUATIONS, AND INDIVIDUAL KNOWN EVALUATIONS, WITH UNKNOWN EVALUATIONS SUPERIMPOSED

B-7508

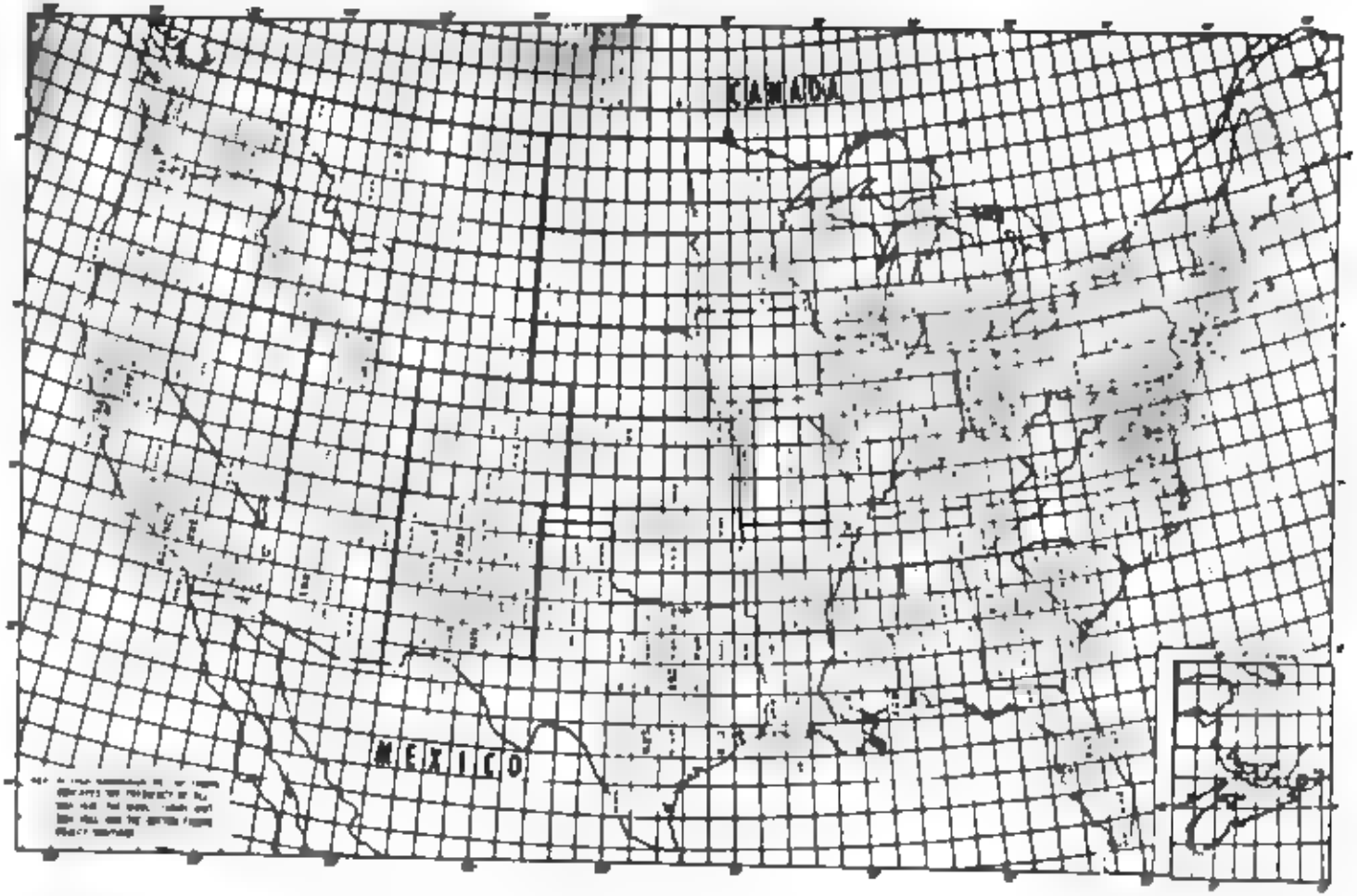


FIGURE 31 FREQUENCY OF OBJECT, UNIT, AND ALL SIGHTINGS WITHIN THE UNITED STATES 1947–1951, BY SUBDIVISIONS OF ONE DEGREE OF LATITUDE AND LONGITUDE

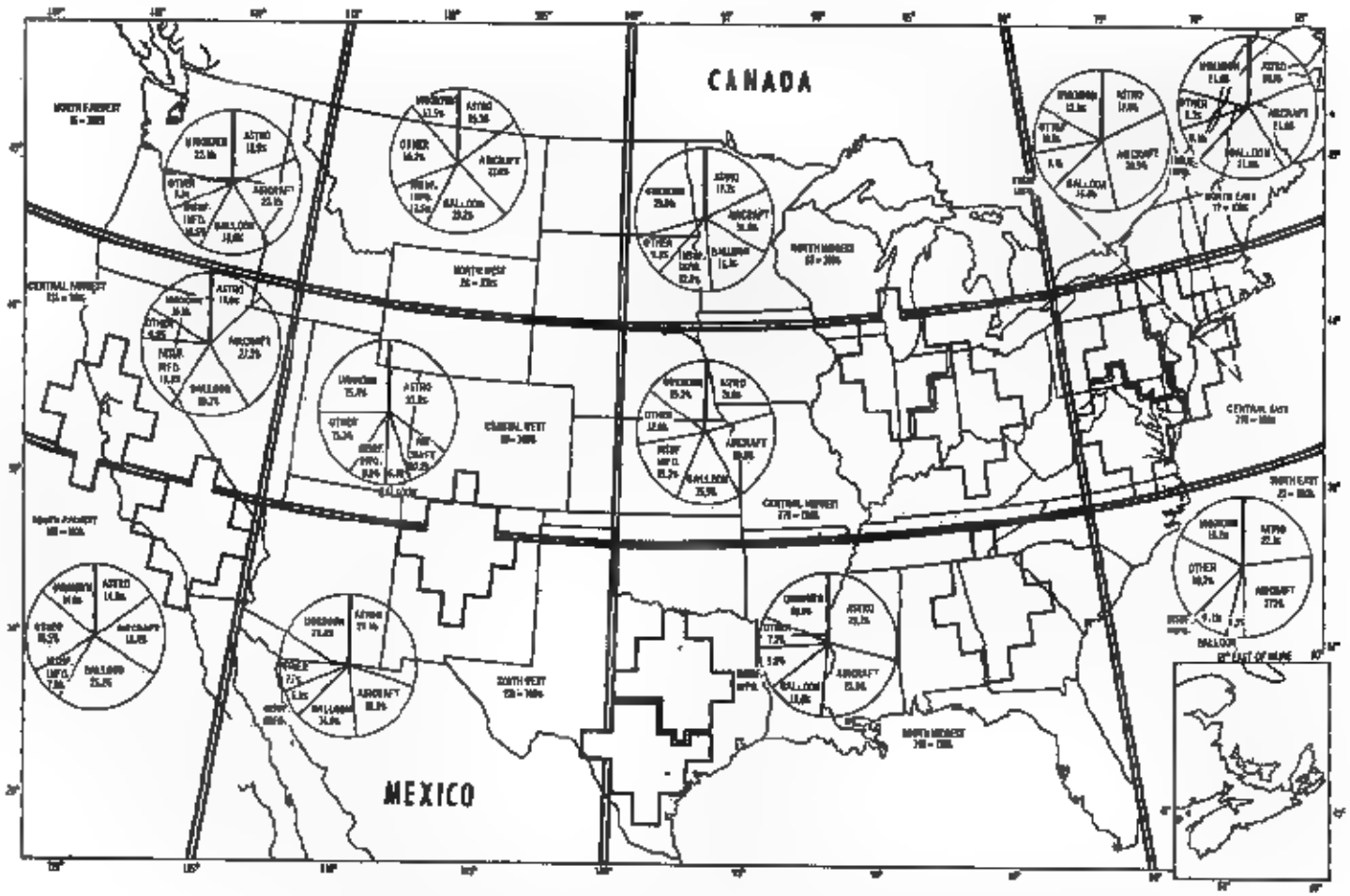


FIGURE 32 DISTRIBUTION OF OBJECT SIGHTINGS BY EVALUATION FOR THE TWELVE REGIONAL AREAS OF THE UNITED STATES, WITH THE STRATEGIC AREAS LOCATED (STRATEGIC AREAS WERE DETERMINED ON THE BASIS OF CONCENTRATION OF OBJECT SIGHTINGS)

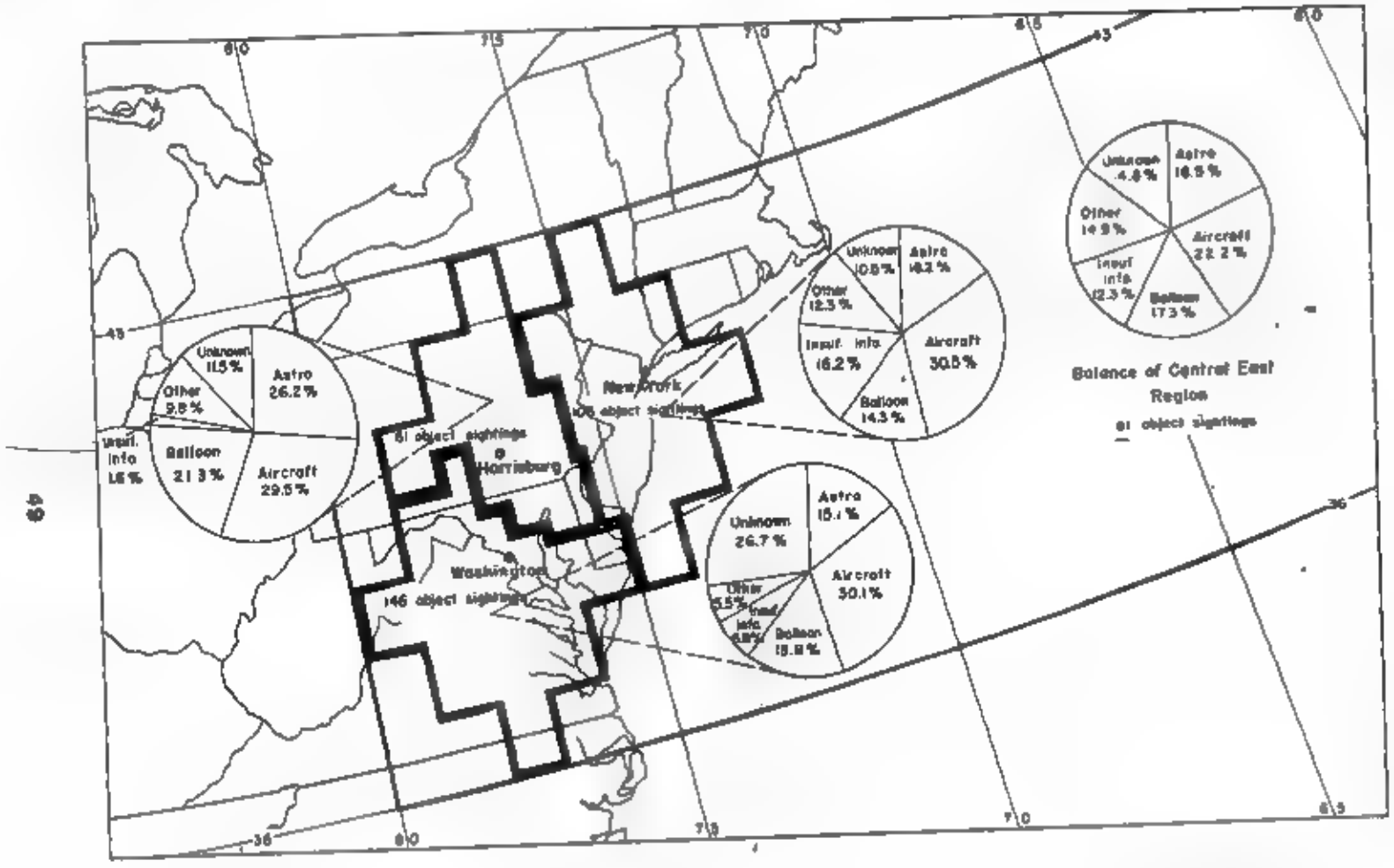


FIGURE 33 COMPARISON OF EVALUATION OF OBJECT SIGHTINGS IN THE STRATEGIC AREAS OF THE CENTRAL EAST REGION

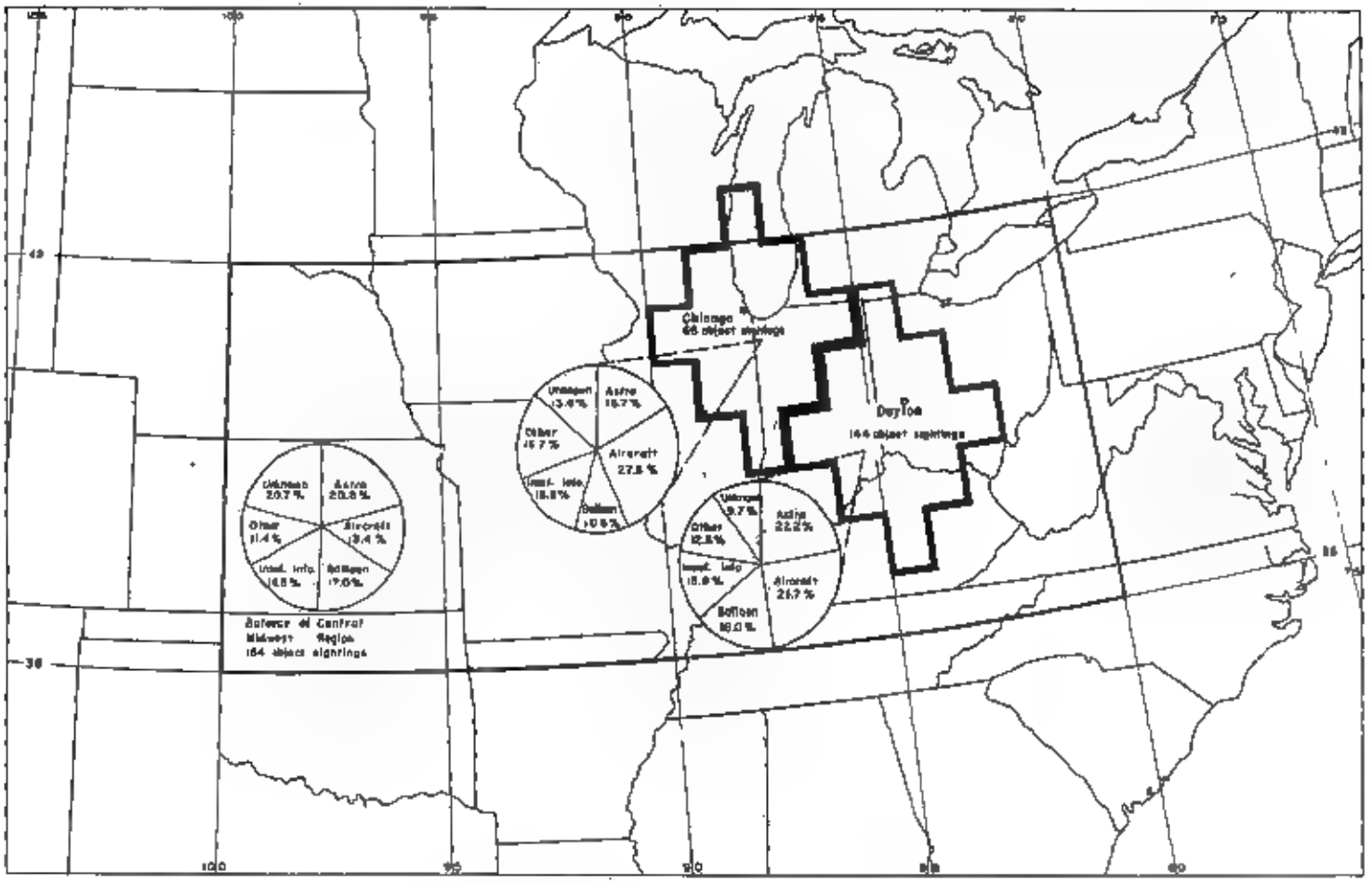


FIGURE 34 COMPARISON OF EVALUATION OF OBJECT SIGHTINGS IN THE STRATEGIC AREAS OF THE CENTRAL MIDWEST REGION

B-7512

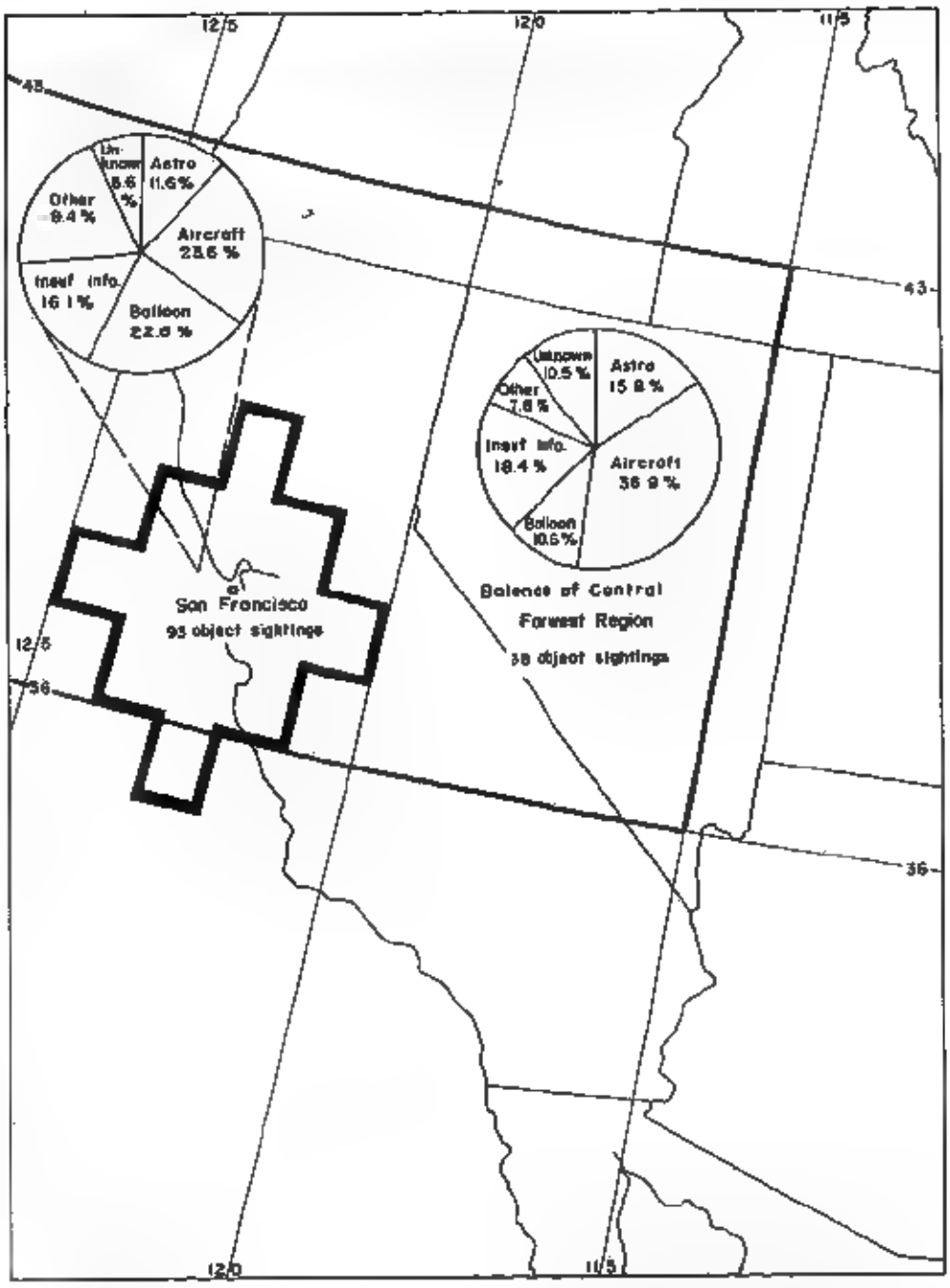


FIGURE 35 COMPARISON OF EVALUATION OF OBJECT SIGHTINGS IN THE STRATEGIC AREAS OF THE CENTRAL FARWEST REGION

B-7513

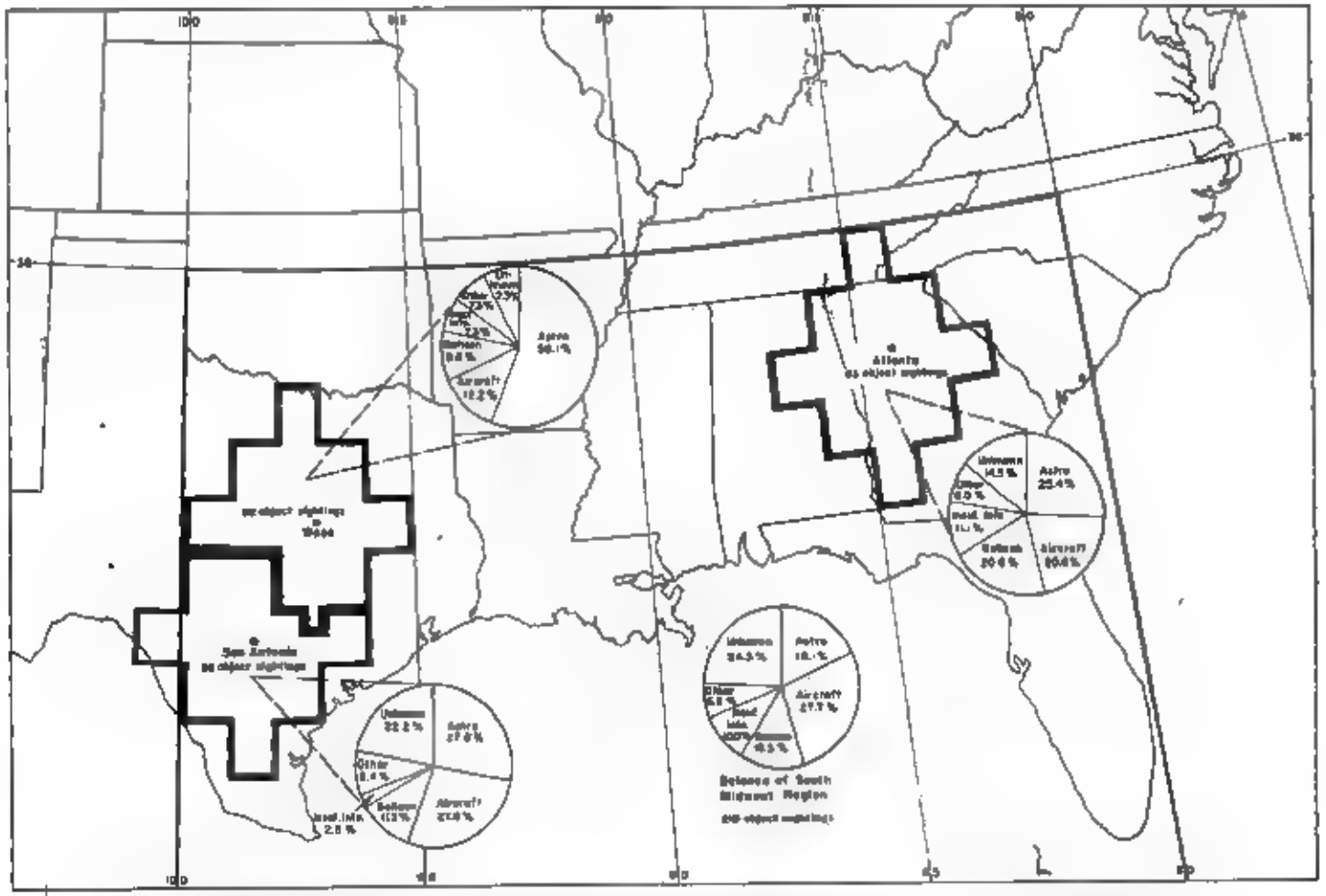


FIGURE 36 COMPARISON OF EVALUATION OF OBJECT SIGHTINGS IN THE STRATEGIC AREAS OF THE SOUTH MIDWEST REGION

B-7514

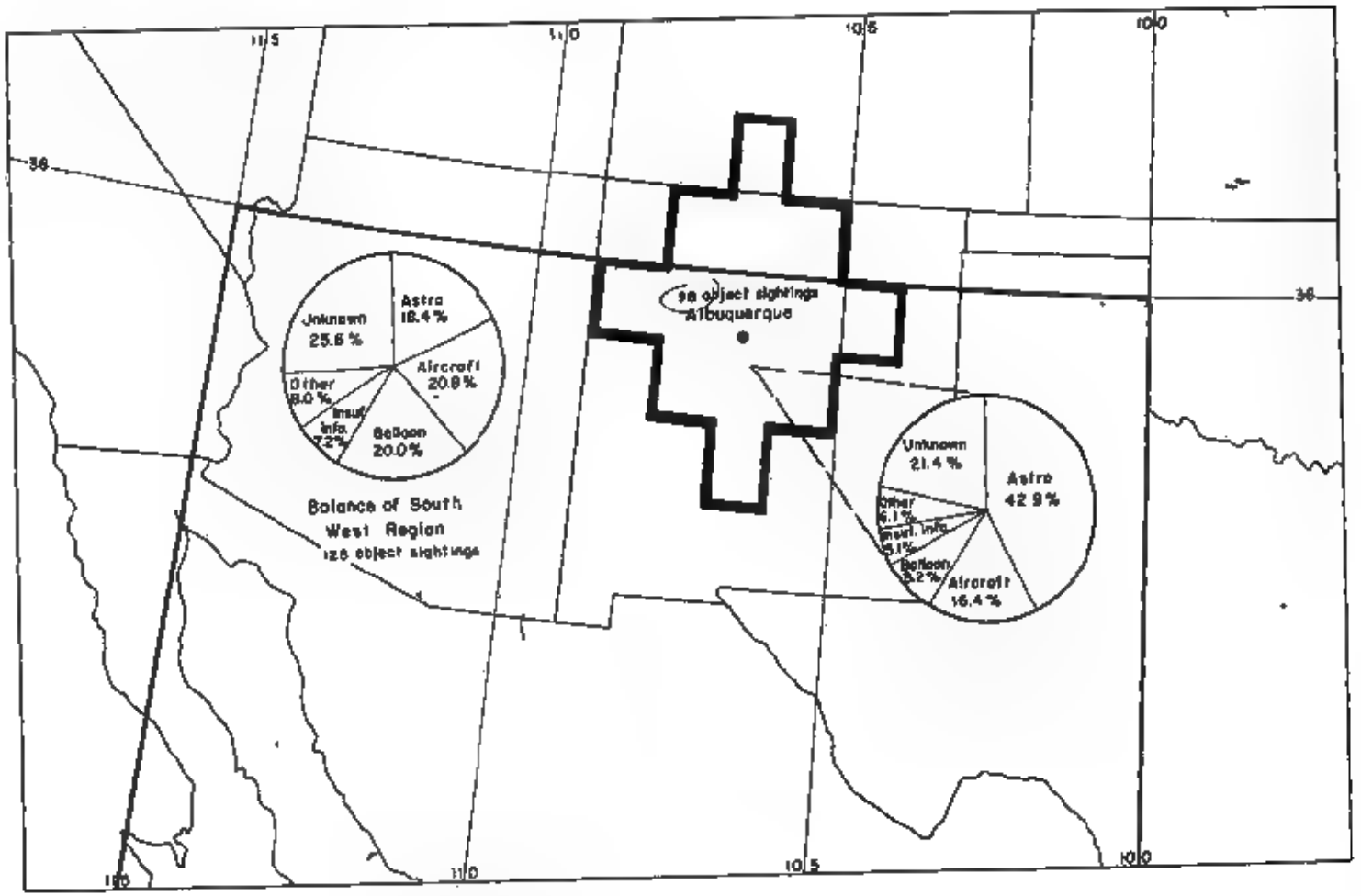


FIGURE 37 COMPARISON OF EVALUATION OF OBJECT SIGHTINGS IN THE STRATEGIC AREAS OF THE SOUTH WEST REGION

A-7885

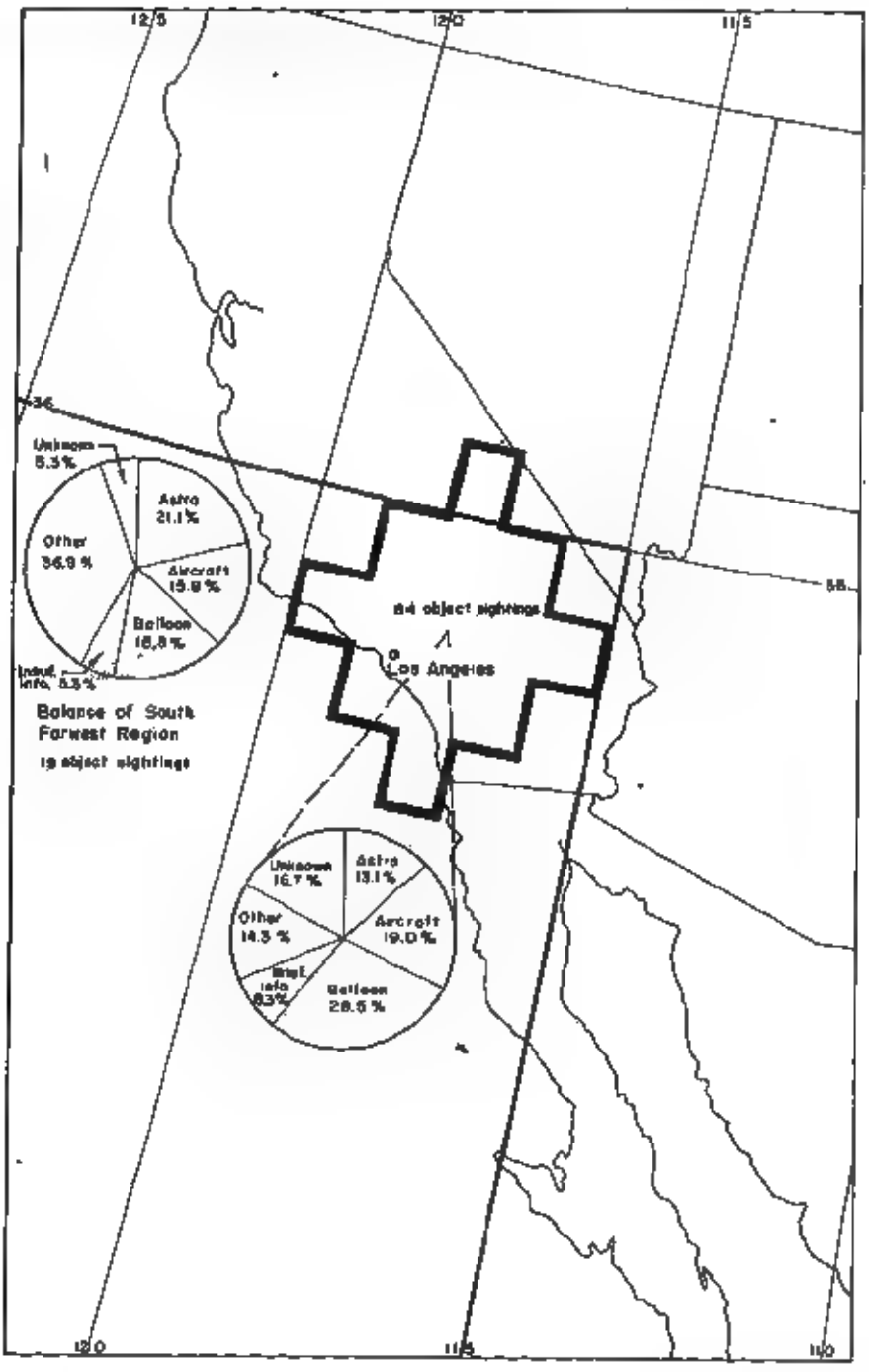


FIGURE 38 COMPARISON OF EVALUATION OF OBJECT SIGHTINGS IN THE STRATEGIC AREAS OF THE SOUTH FARWEST REGION

B-7516

This information consisted of:

(1) Time and date of observation in Greenwich Civil Time

(2) Latitude and longitude of the observer at the time of observation.

Figure 39 shows a celestial sphere on which Z represents the observer's zenith, S represents the sun, and N represents the north celestial pole.

Using the date and time of the observation, the longitude and declination (S) of the sun were obtained from an ephemeris of the sun and corrected for the equation of time. The difference between the longitudes of the sun and the observer was taken, and called the hour angle (HA on Figure 39)

Then, using the declination of the sun (S), the latitude of the observer (lat), and the hour angle (HA), the angle (ZS) between the observer's zenith and the sun can be calculated from the law of cosines of spherical trigonometry. Thus, $\cos \overline{ZS} = \cos (90 - \text{lat}) \cos (90 - S) + \sin (90 - \text{lat}) \sin (90 - S) \cos (HA)$.

Since the angle ZS is measured from the observer's zenith, the angle of elevation of the sun above the horizon for daytime sightings was found by taking $90 - \overline{ZS}$. When the sun was below the horizon, the angle of depression of the sun below the horizon was found by taking $\overline{ZS} - 90$.

Having found the angle ZS, the bearing of the sun (angle B) was obtained from the formula:

$$\frac{\sin (B)}{\sin (90 - S)} = \frac{\sin (HA)}{\sin (ZS)}$$

All of the above calculations were made with IBM equipment. Sines, cosines, and their inverses were obtained from a deck of 9,000 IBM cards on which seven-place Peter's tables of the sines, cosines, and tangents of angles had been punched for each 0.01 of a degree from 0 to 90 degrees.

Upon completion of these calculations, the cards representing OBJECT SIGHTINGS were sorted on the sign of the sine of the bearing angle. This separated the cards into two groups: (1) sightings which occurred between noon and midnight, for which the sine of the bearing angle was positive, and (2) sightings between midnight and noon, for which the sine of the bearing angle was negative. Then each of these groups was sorted into groups for intervals of 10° in angle of elevation of the sun from -90° to +90°. A count was made of the number of cards in each group and from this a histogram was constructed (Figure 40). The UNKNOWN OBJECT SIGHTINGS were then sorted out, counted in the same manner, and a histogram was made (again see Figure 40).

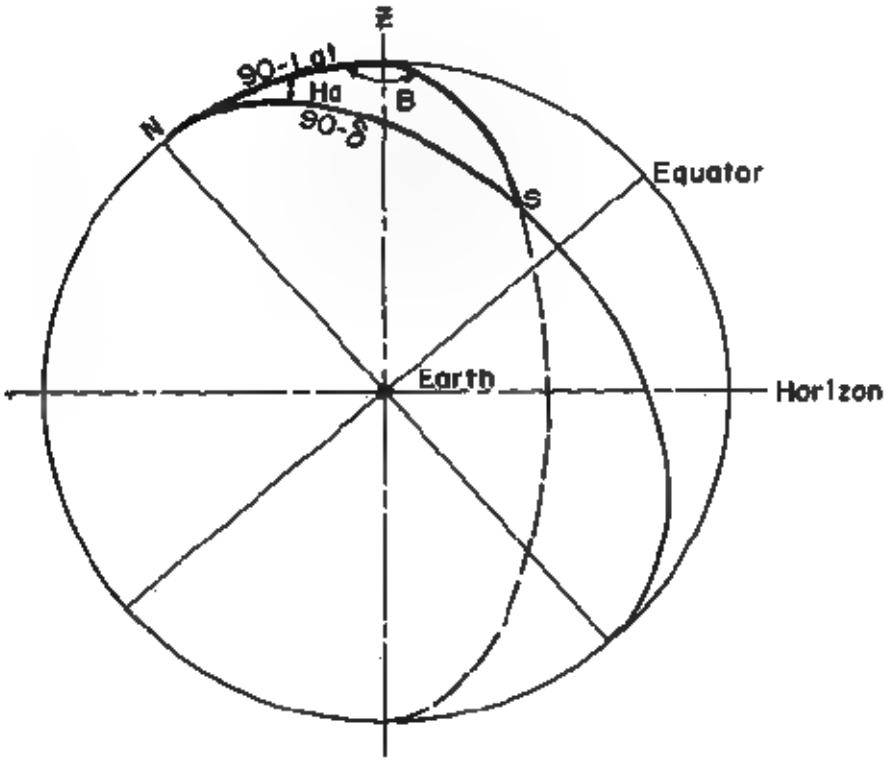


FIGURE 39 DIAGRAM OF A CELESTIAL SPHERE

A-7838

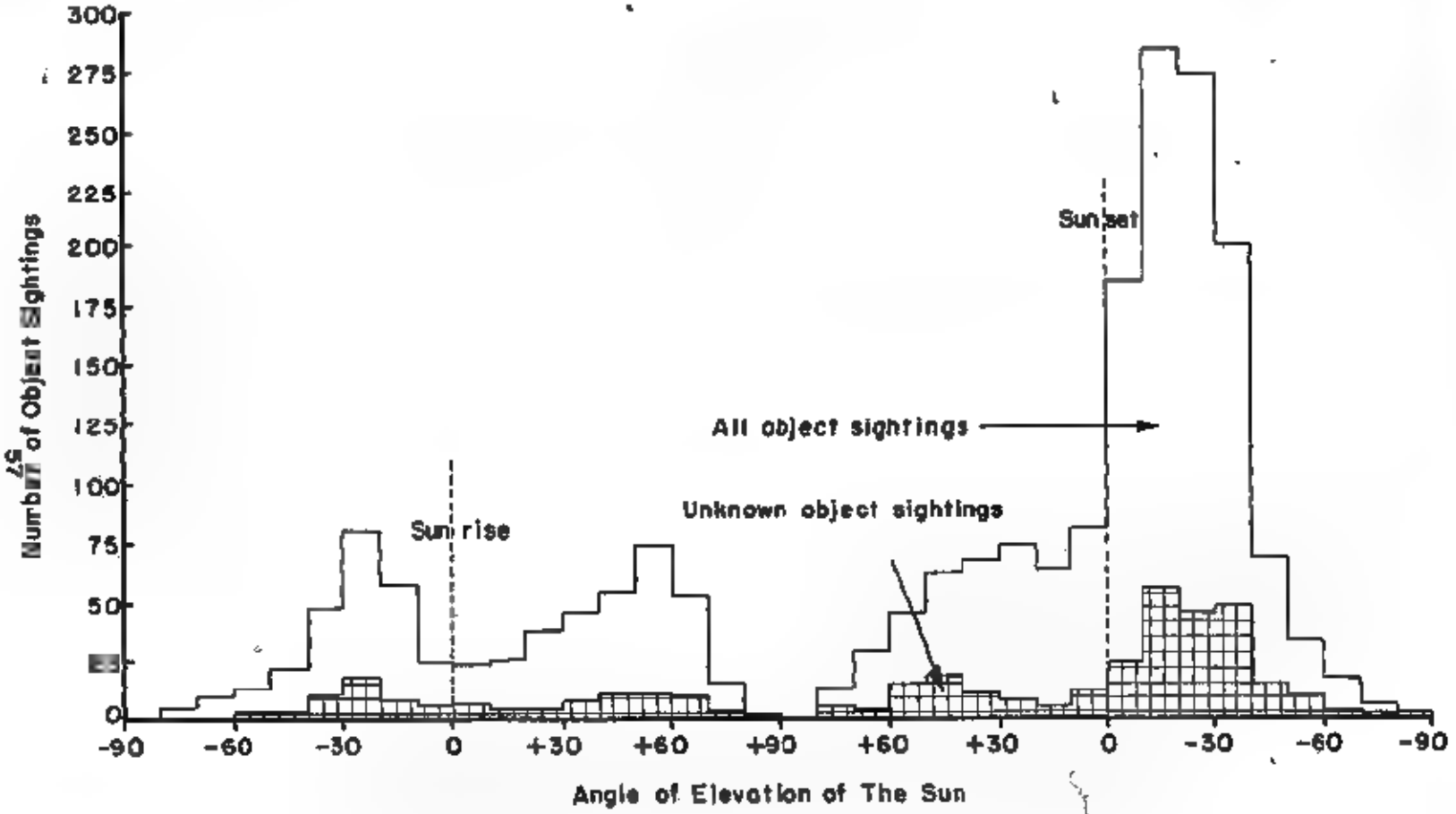


FIGURE 40 FREQUENCY OF OBJECT SIGHTINGS BY ANGLE OF ELEVATION OF THE SUN, INTERVALS OF 10 DEGREES OF ANGLE

A-7536

The following points should be carefully noted about these histograms:

(1) The negligible number of sightings when the sun is within 10° of the zenith and nadir (angle of elevation of the sun = ±90°) of the observer is due to the fact that the southernmost latitude of the U. S. is greater than the declination of the sun at the summer solstice, so that it would be impossible for the sun to reach the zenith or nadir of any observer in the U. S. (where most of the sightings were made).

(2) The time of day at which a particular angle of elevation of the sun occurs does not remain fixed but varies from day to day. Consider, for example, the variation in sunrise and sunset times over the course of a year.

Thus, there are only two inferences to be made from this histogram: (1) the high peak of sightings soon after sunset, and (2) the lack of increase in the UNKNOWNS relative to the KNOWNS near either sunset or sunrise. This would seem to discount the possibility that atmospheric phenomena such as mock suns were the primary cause of the unknown reports, since such phenomena usually occur when the sun is near the horizon.

The Local Sun Time was computed as a step in the calculation of the angle of elevation of the sun. It is related to the hour angle by the equation Local Sun Time (L.S.T.) = HA/15 + 12.00, where L.S.T. is in hours and HA in degrees.

The cards were grouped on the basis of L.S.T. in intervals of one hour, and the number of cards in each interval was counted. Again the UNKNOWNS were sorted out and similarly treated. Histograms were constructed with the results of these tabulations of OBJECT SIGHTINGS (Figure 41). Here, again, there is a peak in the early evening hours.

The cards were then broken up into seven groups on the basis of the angle of elevation of the sun, as follows:

Group 1 — Daylight sightings for which the sun was more than 10° above the horizon.

Group 2 — Sunset sightings for which the sun was between 0° and 10° above the horizon.

Group 3 — Sunset sightings for which the sun was between 0° and 10° below the horizon.

Group 4 — Evening sightings for which the sun was between 10° and 40° below the horizon.

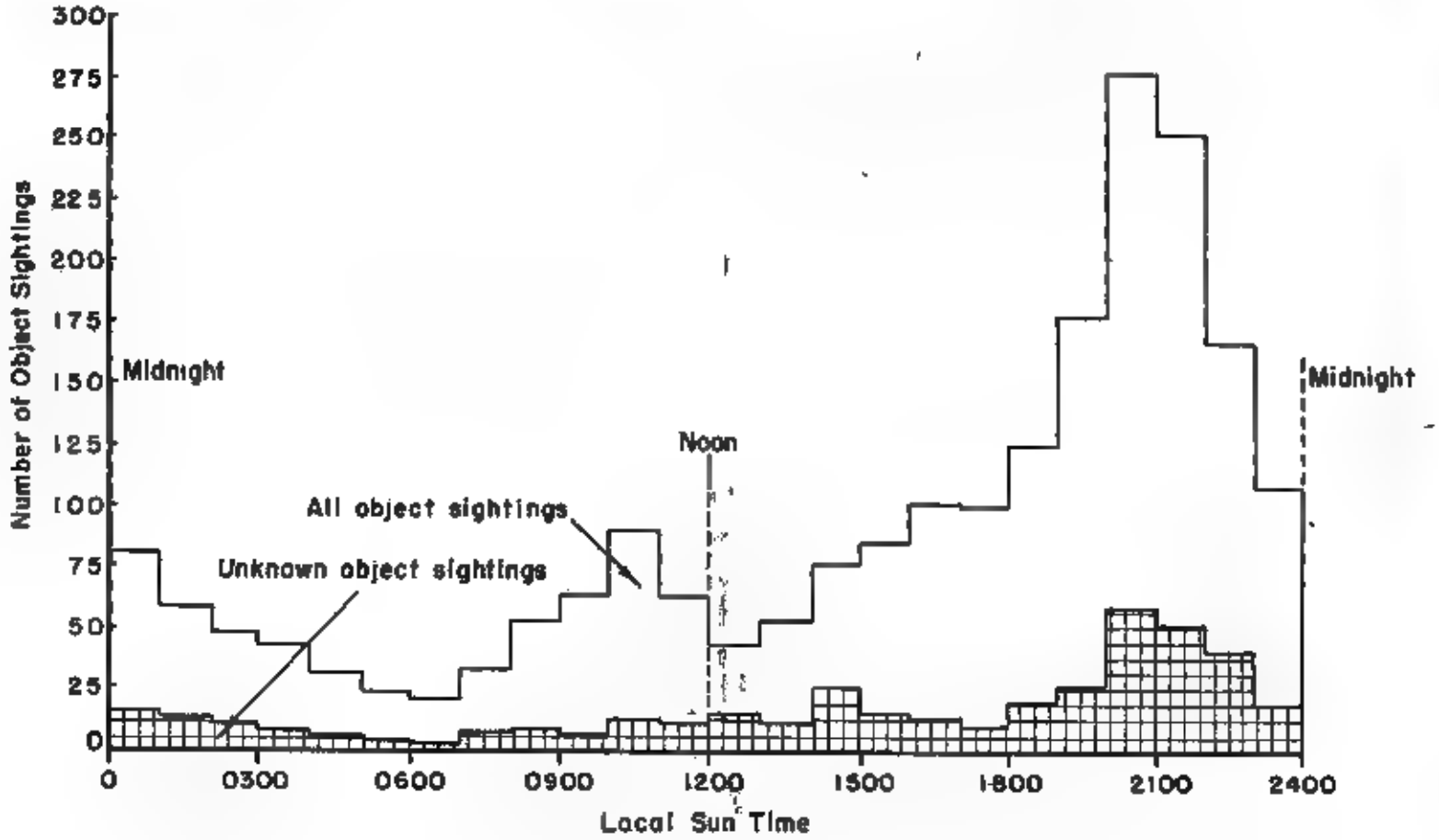


FIGURE 41 FREQUENCY OF OBJECT SIGHTINGS BY LOCAL SUN TIME, INTERVALS OF ONE HOUR

A-7537

Group 5 – Night sightings for which the sun was more than 10° below the horizon and which were not included in Group 4.

Group 6 – Sunrise sightings for which the sun was between 0° and 10° below the horizon.

Group 7 – Sunrise sightings for which the sun was between 0° and 10° above the horizon.

These group numbers were punched on the cards and incorporated into the coding system. The number of OBJECT SIGHTINGS in each group for each identification was then tabulated and is given in Table I.

TABLE I OBJECT SIGHTINGS

Identification	Angle of Elevation Group						
	1	2	3	4	5	6	7
Balloon	156	17	28	83	40	0	2
Astronomical	52	6	43	236	118	9	6
Aircraft	187	23	49	144	60	5	2
Light phenomena	8	2	4	25	7	0	0
Insufficient information	72	12	26	76	28	2	0
UNKNOWN	134	14	25	150	86	6	7
Other	64	8	12	50	36	3	7
Total	673	82	187	764	375	25	24

According to this table, a large majority of the KNOWN OBJECT SIGHTINGS in Group 1 (343 out of 467) were either aircraft or balloons. In Groups 4 and 5 combined, a large majority (681 out of 899) were either balloons, aircraft, or astronomical. Accordingly, a re-evaluation of the UNKNOWNS in these three groups was planned with the objective of determining which of the UNKNOWNS in Group 1 might possibly be aircraft or balloons and which of the UNKNOWNS in Groups 4 and 5 might possibly be balloons, aircraft, or astronomical objects. More will be said of this project later.

Statistical Chi Square Test

In the meantime, mirror graphs had been constructed from the frequency tabulations which seemed to show that, when the KNOWNS (total less UNKNOWNS) and the UNKNOWNS were grouped according to one of six characteristics, the percentage of KNOWNS and the percentage of

UNKNOWNS in each characteristic group showed the same general trend. In other words, on the basis of these graphs, it looked as though there was a good possibility that the UNKNOWNS were no different from the KNOWNS, at least in the aggregate. It was decided to investigate this by the use of a statistical procedure called the "Chi Square Test".

The Chi Square Test is a statistical test of the likelihood that two distributions come from the same population, that is, it gives the probability that there is no difference in the make-up of the two distributions being measured.

The method is outlined as follows

(1) Adjust the distributions by multiplying the KNOWNS in each characteristic group by the ratio of the total number of UNKNOWNS to the total number of KNOWNS. (The Chi Square Test is applicable only to distributions which have the same total number of elements.)

(2) Take the difference between the number of UNKNOWNS and the adjusted number of KNOWNS in each characteristic group.

(3) Square the remainder from Step 2.

(4) Divide the result of Step 3 by the corresponding number of adjusted KNOWNS.

This is the chi square for the particular group. Summing the individual chi squares over the groups of a characteristic gives the chi square for that characteristic. This number is then compared with a table of the distribution of chi square which can be found in many texts on elementary statistics.

It will be noted that chi square is tabulated in terms of degrees of freedom which in this case is one less than the number of groups of sightings for each characteristic.

The tabulations of KNOWNS and UNKNOWNS against the six characteristics and the Chi Square Test as it was applied are shown in Tables II through VII. In each case, the number of degrees of freedom is given, as is the value of chi squares corresponding to probabilities of 5 per cent and 1 per cent that two distributions with this number of degrees of freedom come from the same population. Since the greater the value of chi square the smaller the probability of homogeneity of two distributions, a calculated value of chi square greater than either the 5 per cent or 1 per cent values will indicate a probability less than 5 per cent or 1 per cent, respectively, that the two distributions are homogeneous. The term homogeneity is used here to indicate that two distributions could have come from the same population.

TABLE II CHI SQUARE TEST OF KNOWNS VERSUS UNKNOWNS ON THE BASIS OF COLOR

Color	Number of KNOWNS	Adjusted Number of KNOWNS (K)	Number of UNKNOWNS (n)	$\frac{X^2,(K-n)^2}{K}$
White	405	100	112	1.44
Metallic	313	77	76	0 01
Not stated	209	51	62	2 37
Orange	172	42	49	1.17
Red	146	36	33	0.25
Yellow	128	31	31	0
Green	130	32	14	10 13
Blue	67	17	26	4 76
Other	195	48	31	6.02
Total	1765	434	434	26.15
Degrees of freedom				8
5%				15.5
1%				20.1

TABLE III CHI SQUARE TEST OF KNOWNS VERSUS UNKNOWNS ON THE BASIS OF NUMBER

Number of Objects Per Sighting	Number of KNOWNS	Adjusted Number of KNOWNS (K)	Number of UNKNOWNS (n)	X^2, $\frac{(K-n)^2}{K}$
1	1339	329	297	3.11
2	159	39	37	0.10
3-10	185	46	70	12.52
11 or more	41	10	25	22.50
Not stated	41	10	5	2.50
Total	1765	434	434	40.73
Degrees of freedom				4
5%				9.5
1%				13.3

TABLE IV CHI SQUARE TEST OF KNOWNS VERSUS UNKNOWNS ON THE BASIS OF SHAPE

Shape	Number of KNOWNS	Adjusted Number of KNOWNS (K)	Number of UNKNOWNS (n)	X^2, $\frac{(K-n)^2}{K}$
Elliptical	838	206	195	0.59
Rocket and aircraft	80	20	33	8.45
Meteor or comet	55	14	4	7.14
Teardrop, lenticular, or conical	103	25	[redacted]	0.36
Flame	96	24	10	8.17
Other	193	47	54	1.04
Not stated	400	98	116	3.30
Total	1765	434	434	29.05
Degrees of freedom				6
5%				12.6
1%				16.8

TABLE V CHI SQUARE TEST OF KNOWNS VERSUS UNKNOWNS ON THE BASIS OF DURATION OF OBSERVATION

Duration of Observation	Number of KNOWNS	Adjusted Number of KNOWNS (K)	Number of UNKNOWNS (n)	X^2, $\frac{(K-n)^2}{K}$
5 sec or less	259	64	27	21.39
6-10 sec	92	23	21	0.17
11-30 sec	153	38	33	0.66
31-60 sec	108	26	42	9.85
61 sec-5 min	269	66	99	16.50
6-30 min	305	75	71	0.21
Over 30 min	135	33	37	0.48
Not stated	444	109	104	0.23
Total	1765	434	434	49.49
Degrees of freedom				7
[redacted]				14.1
1%				18.5

TABLE VI CHI SQUARE TEST OF KNOWNS VERSUS UNKNOWNS ON THE BASIS OF SPEED

Speed	Number of KNOWNS	Adjusted Number of KNOWNS (K)	Number of UNKNOWNS (n)	X^2, $\frac{(K-n)^2}{K}$
Stationary	249	61	53	1.05
Less than 100 mph	154	38	26	3.79
100 to 400 mph	181	45	58	3.76
Over 400 mph	403	99	145	21.37
Meteor-like	83	20	16	0.80
Not stated	695	171	136	7.16
Total	1765	434	434	37.93
Degrees of freedom				5
5%				11.1
1%				15.1

TABLE VII CHI SQUARE TEST OF KNOWNS VERSUS UNKNOWNS ON THE BASIS OF LIGHT BRIGHTNESS

Light Brightness	Number of KNOWNS	Adjusted Number of KNOWNS (K)	Number of UNKNOWNS (n)	X^2, $\frac{(K-n)^2}{K}$
Sunlight on mirror	47	11	14	0.82
Sunlight on aluminum	151	37	28	2.19
Sunlight on plaster, stone, or soil	76	19	16	0.47
Brighter than moon	273	67	61	0.55
Like moon or duller than moon	68	17	22	1.47
Not stated	1150	283	293	0.35
Total	1765	434	434	5 85
Degrees of freedom				5
5%				11.1
1%				15.1

In five of the six cases, the probability is less than 1 per cent that the distributions are the same. In the sixth case, Light Brightness, the classifications are too nebulous to be of real value. However, these tests do not necessarily mean that the UNKNOWNS are primarily "flying saucers" and not aircraft, balloons, or other known objects or natural phenomena. The UNKNOWNS might still be unidentified KNOWNS if either of the following cases occurred

(1) The characteristics which were observed for the UNKNOWNS were different from those observed for the KNOWNS because of the psychological make-up of the observer or because of atmospheric distortion. This assumes the distribution of objects in KNOWNS and UNKNOWNS is the same.

(2) The UNKNOWNS may be known objects in different proportions than the group identified as KNOWNS. (That is, a greater percentage of the UNKNOWNS could be aircraft than the percentage of aircraft in the identified KNOWNS.)

The second case is the more probable one. In this connection, it is interesting to note the factors which contributed to a large chi square result in the tests made above:

(1) Color

The major contribution to chi square in color is from the color green. There is a large excess of green sightings among the KNOWNS over the UNKNOWNS. Of the 130 known objects in this classification, 98 are astronomical, and are due mostly to the green fireballs reported from the Southwest U. S.

(2) Number

The large chi square is due to a greater proportion of UNKNOWNS in the multiple object classification. Apparently these are harder to identify.

(3) Shape

In this case, there is a higher percentage of UNKNOWNS in the rocket-aircraft-shape classification. These might be familiar objects for which unusual maneuvers were reported.

There is a higher percentage of KNOWNS in the flame and in the meteor- or comet-shape category, which in both cases appears to result mainly from excesses of astronomical sightings.

(4) Duration of observation

Here there is an excess of KNOWNS in the less-than-5-second group. Again, the majority of KNOWNS in this group are astronomical. The greater proportion of UNKNOWNS in the 31- to 60-second and 61-second to 5-minute groups cannot be explained.

(5) Speed

The major contribution to chi square for this characteristic is due to a large excess of UNKNOWNS in the over 400-mph class. It can be assumed that some of the excessive speeds are inaccuracies in estimates by observers. However, some radar sightings, which are practically impossible to identify, show objects with speeds of 1,000 to 2,000 mph and over, and these reports account for a number of these UNKNOWNS.

(6) Light brightness

Since this chi square was not significant, it is not necessary to discuss it here.

An examination of these discrepancies thus brings up a very interesting point. In every case for which there is a significant excess of KNOWNS over UNKNOWNS, the excess can be attributed to an excess of identifiable astronomical phenomena. This would seem to lead to the conclusion that astronomical phenomena are easy to identify and there are very few left in the UNKNOWNS. Accordingly, the astronomical object sightings were deleted from the KNOWN object sightings and the Chi Square Test was again applied. The results are shown in Tables VIII through XIII, where in this case the KNOWNS do not contain astronomical sightings

It will be noted that some groups were combined when the adjusted number of KNOWNS was ten or less, except for the case for which the number of objects per sighting was the characteristic studied. These were borderline cases, and no good combination of groups existed.

It is apparent that the deletion of astronomical sightings gives a better fit, although the decision is not clear cut, since for two cases (light brightness and speed), the chi square increased. However, it can again be pointed out that the reporting of these two characteristics is highly subjective and is open to question. The estimation of speed is especially open to question because of the impossibility of accurately determining it visually.

TABLE VIII CHI SQUARE TEST OF REVISED KNOWNS VERSUS UNKNOWNS ON THE BASIS OF COLOR

Color	Number of KNOWNS	Adjusted Number of KNOWNS (K)	Number of UNKNOWNS (n)	X^2, $\frac{(K-n)^2}{K}$
White	281	95	112	3.04
Metallic	298	101	76	6.19
Not stated	189	64	62	0.06
Orange	117	39	49	2.56
Red	92	31	33	0.13
Yellow	90	30	31	0.03
Green	32	11	14	0.82
Blue	29	10	26	0.57
Other	158	53	31	
Total	1286	434	434	13.40
Degrees of freedom				7
5%				14.1
1%				18.5

TABLE IX CHI SQUARE TEST OF REVISED KNOWNS VERSUS UNKNOWNS ON THE BASIS OF NUMBER

Number of Objects Per Sighting	Number of KNOWNS	Adjusted Number of KNOWNS (K)	Number of UNKNOWNS (n)	X^2, $\frac{(K-n)^2}{K}$
1	913	308	297	0.39
2	142	48	37	2.52
3-10	168	57	70	2.96
11 or more	34	11	25	15.36
Not stated	29	10	5	2.50
Total	1286	434	434	23.73
Degrees of freedom				4
5%				9.5
1%				13.3

TABLE X CHI SQUARE TEST OF REVISED KNOWNS VERSUS UNKNOWNS ON THE BASIS OF SHAPE

Shape	Number of KNOWNS	Adjusted Number of KNOWNS (K)	Number of UNKNOWNS (n)	X^2, $\frac{(K-n)^2}{K}$
Elliptical	632	213	195	1.52
Rocket or aircraft	72	24	33	3.37
Meteor or comet	9	3	4	1.32
Flame	47	16	10	
Teardrop, lenticular, or conical	79	27	22	0.93
Other	151	51	54	1.76
Not stated	296	100	116	2.56
Total	1286	434	434	11.46
Degrees of freedom				5
5%				11.1
1%				15.1

TABLE XI CHI SQUARE TEST OF REVISED KNOWNS VERSUS UNKNOWNS ON THE BASIS OF DURATION OF OBSERVATION

Duration of Observation	Number of KNOWNS	Adjusted Number of KNOWNS (K)	Number of UNKNOWNS (n)	X^2, $\frac{(K-n)^2}{K}$
5 sec or less	92	31	27	0.52
6-10 sec	47	16	21	1.56
11-30 sec	118	40	33	1.23
31-60 sec	92	31	42	3.90
61 sec-5 min	252	85	99	2.31
6 min-30 min	259	87	71	2.94
Over 30 min	91	31	37	1.16
Not stated	335	113	104	0.72
Total	1286	434	434	14.34
Degrees of freedom				7
5%				14.1
1%				18.5

TABLE XII CHI SQUARE TEST OF REVISED KNOWNS VERSUS UNKNOWNS ON THE BASIS OF SPEED

Speed	Number of KNOWNS	Adjusted Number of KNOWNS (K)	Number of UNKNOWNS (n)	χ^2, $\frac{(K-n)^2}{K}$
Stationary	196	66	53	2.56
Less than 100 mph	128	43	26	6.72
100 to 400 mph	156	53	58	0.47
Over 400 mph	291	98	145	28.54
Meteor-like	24	8	16	
Not stated	491	166	136	5.42
Total	1286	434	434	43.71
Degrees of freedom				4
5%				9.5
1%				13.3

TABLE XIII CHI SQUARE TEST OF REVISED KNOWNS VERSUS UNKNOWNS ON THE BASIS OF LIGHT BRIGHTNESS

Light Brightness	Number of KNOWNS	Adjusted Number of KNOWNS (K)	Number of UNKNOWNS (n)	X^2, $\frac{(K-n)^2}{K}$
Sunlight on mirror	24	8	14	2.67
Sunlight on aluminum	136	46	28	
Sunlight on plaster, stone, or soil	63	21	16	1.19
Brighter than moon	143	48	61	3.52
Like moon or duller than moon	42	15	22	3.27
Not stated	878	296	293	0.03
Total	1286	434	434	10.68
Degrees of freedom				4
[redacted]				9.5
1%				13.3

Another interesting aspect of these new tests is that there are only two large discrepancies in all of the groups. These are for the 11 or more groups in the classification by number of objects per sighting and for the over-400-mph and meteor-like group for the classification by speed. The first was relatively unchanged by deletion of the astronomical sightings principally because of the concentration of sightings in the single-object category. The second was slightly increased by the removal of the astronomical sightings from the meteor-like classification. However, the main discrepancy, that of the excess of UNKNOWNS in the over-400-mph class, was little changed.

The results of these tests are inconclusive since they neither confirm nor deny that the UNKNOWNS are primarily unidentified KNOWNS, although they do indicate that relatively few of the UNKNOWNS are actually astronomical phenomena.

It was decided that this process would not be carried to its logical conclusion (that is, the determination of a linear combination of KNOWNS that would give a negligible chi square when compared with the UNKNOWNS), since it was felt that the inaccuracies in the reports would give a distorted and meaningless result.

The "Flying Saucer" Model

The importance of the problem dictated a second approach, should the statistical results prove inconclusive. It was decided that an attempt would be made to describe the physical appearance, flight characteristics, and other attributes (that is, construct a model) of a class or classes of "flying saucers".

Preparatory to this attempt, a re-evaluation of the UNKNOWNS was necessary. This re-evaluation was accomplished by a panel composed only of persons previously associated with the work. Using all the UNKNOWNS reports available at ATIC, the panel made a careful study of the reports for the UNKNOWN SIGHTINGS in angle-of-sun-elevation Groups 1, 2, 3, 6, and 7 – those groups for which the sun was either above the horizon or less than 10° in elevation below the horizon.

This study had two purposes. The first was to determine, with additional information such as the angle of elevation of the sun, how many of the UNKNOWNS might be ascribed to known phenomena. The second was to obtain those UNKNOWNS which were described in sufficient detail that they might be used to construct a model or models of "flying saucers".

It was decided to put any of the UNKNOWNS which might be known phenomena into a "possible KNOWN" category to denote the slightly lower confidence level which could be ascribed to these new evaluations. The

UNKNOWNS with sufficiently detailed description would be called "good UNKNOWNS", while the remainder would simply be called UNKNOWNS. One hundred sixty-four folders of a total of 186 OBJECT SIGHTINGS in Groups 1, 2, 3, 6, and 7 were examined. There were 18 possible aircraft, 20 possible balloons, 7 good UNKNOWNS, 100 UNKNOWNS, and 19 others which were identified as being possible KNOWNS of various types. It is interesting to note that two of these were established as mock suns on the basis of the angle of sun elevation and the sun bearing angle, together with the direction of the object from the observer. In addition, the UNKNOWNS in angle-of-sun-elevation Groups 4 and 5 (nighttime sightings) were scanned with no attempt at identification, but to find any possible "good UNKNOWNS". There were five sightings that could be put into this category.

Of the UNKNOWNS, there were approximately 20 sightings that were observed in such a way that they should have been recognized easily if they had been familiar objects, that is, there was little possibility that their shapes, as seen, could have been distorted sufficiently by one cause or another to render them unrecognizable. There were a very few that would have been identified as guided missiles or rockets, but that were not so identified because of the geographical location in which they were seen.

All of the remaining UNKNOWNS were classified as such solely because they were reported to have performed maneuvers that could not be ascribed to any known objects. In these cases, the shape might have been unrecognizable also, but it was felt that this was because of distortion and distance, or because of darkness.

This is a very important point. To put it differently, if these UNKNOWNS, which represent all but about 40 of the UNKNOWN SIGHTINGS, were reported to have performed maneuvers which could be ascribed to known phenomena, they would probably have been identified as KNOWNS. With the exception of some radar sightings, all of these maneuvers were observed visually. The possibilities for inaccuracies are great because of the inability of an observer to estimate visually size, distance, and speed.

Reports of sightings by radar usually were of high speed objects, some at extremely high altitudes. Some were identified as UNKNOWNS because there was no object to be seen visually at the point indicated by the radar set. It cannot be said with any assurance what these radar sightings mean, but the most logical explanation is that they are ground targets reflected by an atmospheric temperature inversion layer. The validity of this statement cannot be established. It is felt that radar sightings in this study are of no significance whatsoever unless a visual sighting of the object also is made.

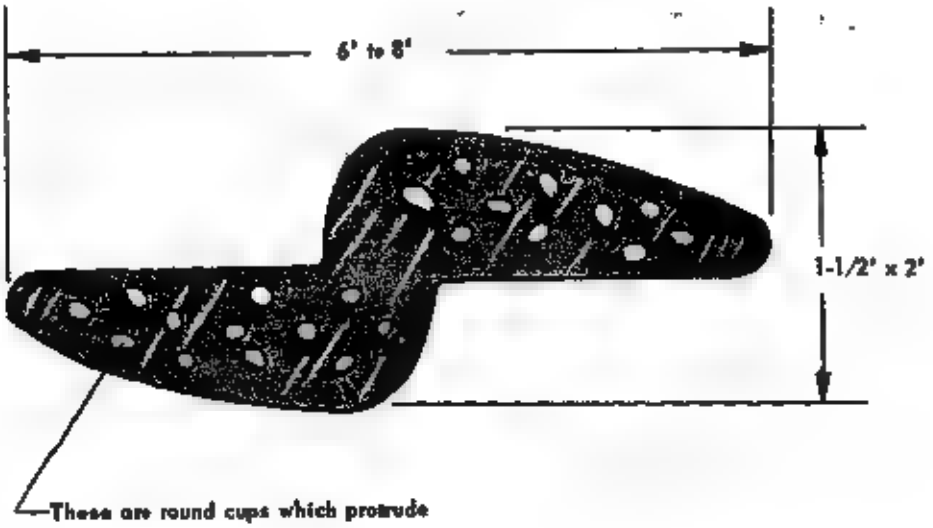
Taken in conjunction with the Chi Square Tests discussed earlier, the results of the re-evaluation of reports identified as UNKNOWN SIGHTINGS would seem to indicate that the majority of them could easily

have been familiar objects. However, the resolution of this question with any degree of certainty appears to be impossible.

Thus, out of the 434 OBJECT SIGHTINGS that were identified as UNKNOWNS by the data reduction process, there were only 12 that were described with sufficient detail that they could be used in an attempt to derive a model of a "flying saucer". The following is a summary of the 12 good UNKNOWN SIGHTINGS:

Case I (Serial 0573.00)

Two men employed by a rug-cleaning firm were driving across a bridge at 0955 hours on July 29, 1948, when they saw an object glide across the road a few hundred feet in front of them. It was shiny and metallic in construction, about 6 to 8 feet long and 2 feet wide. It was in a flat glide path at an altitude of about 30 feet and in a moderate turn to the left. It was seen for only a few seconds and apparently went down in a wooded area, although no trace of it was found.

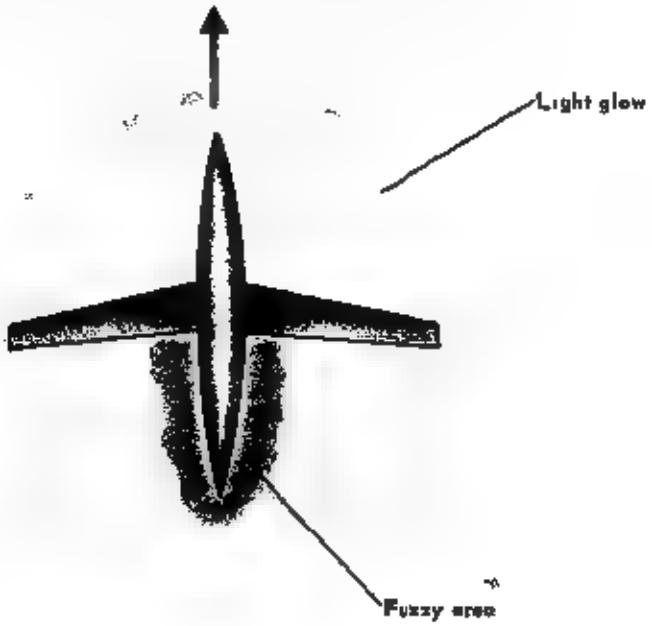


Case II (Serial 4508.00)

A naval aviation student, his wife, and several others were at a drive-in movie from 2115 to 2240 hours on April 20, 1952, during which time they saw several groups of objects fly over. There were from two to nine objects in a group and there were about 20 groups. The groups of

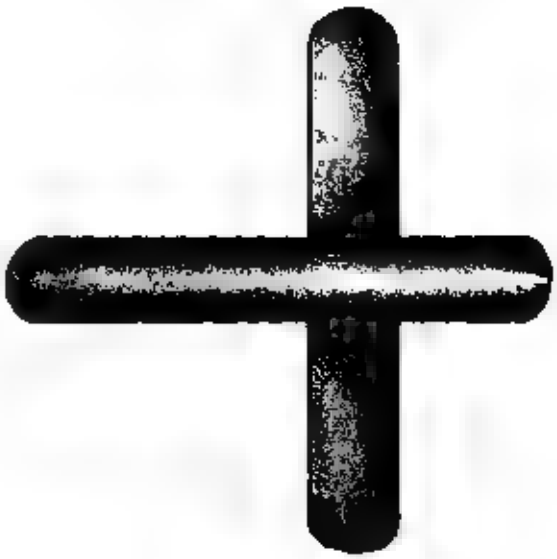
objects flew in a straight line except for some changes in direction accomplished in a manner like any standard aircraft turn.

The objects were shaped like conventional aircraft. The unaccountable feature of the objects was that each had a red glow surrounding it and was glowing itself, although it was a cloudless night.



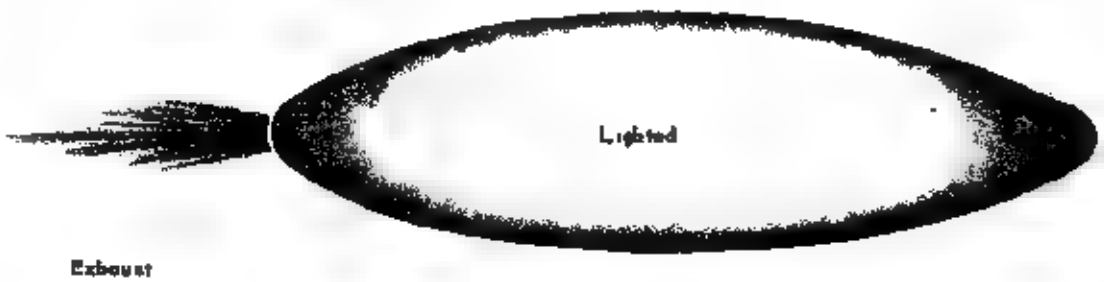
Case III (Serial 2013.00, 2014.00, and 2014.01)

Two tower operators sighted a light over a city airport at 2020 hours on January 20, 1951 Since a commercial plane was taking off at this time, the pilots were asked to investigate this light. They observed it at 2026 hours. According to them, it flew abreast of them at a greater radius as they made their climbing turn, during which time it blinked some lights which looked like running lights. While the observing plane was still in its climbing turn, the object made a turn toward the plane and flew across its nose. As the two men turned their heads to watch it, it instantly appeared on their other side flying in the same direction as they were flying, and then in 2 or 3 seconds it slipped under them, and they did not see it again. Total time of the observation was not stated. In appearance, it was like an airplane with a cigar-shaped body and straight wings, somewhat larger than a B-29. No engine nacelles were observed on the wings.



Case IV (Serial 4599.00)

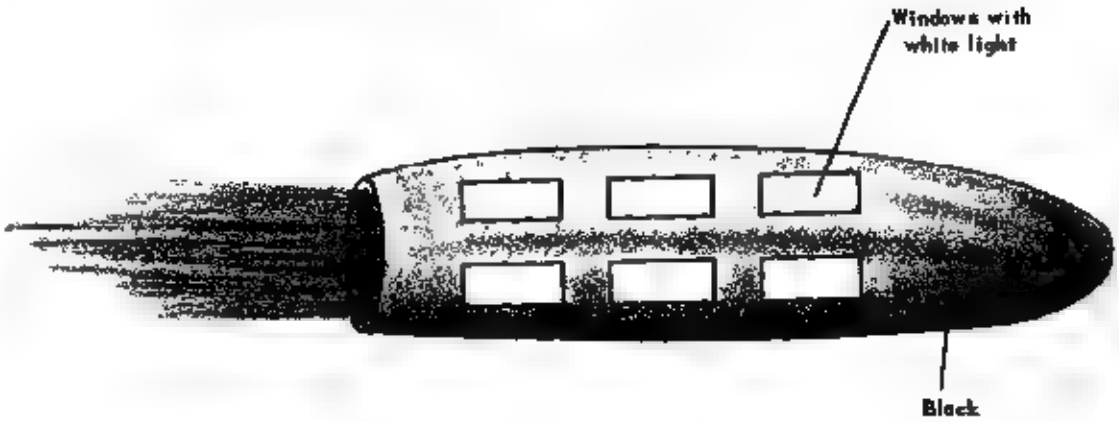
A part-time farmer and a hired hand were curing tobacco at midnight on July 19, 1952, when they looked up and saw two cigar-shaped objects. One hovered while the other moved to the east and came back, at which time both ascended until out of sight. Duration of observation was 3 to 4 minutes. Both had an exhaust at one end, and neither had projections of any kind. It was stated that they appeared to be transparent and illuminated from the inside.



Case V (Serial 0565.00 to 0565.03)

A pilot and copilot were flying a DC-3 at 0340 hours on July 24, 1948, when they saw an object coming toward them. It passed to the right and slightly above them, at which time it went into a steep climb and was lost from sight in some clouds. Duration of the observation was about 10 seconds. One passenger was able to catch a flash of light as the object passed. The object seemed powered by rocket or jet motors shooting a trail of fire some 50 feet to the rear of the object. The object had no wings or other protrusion and had two rows of lighted windows.

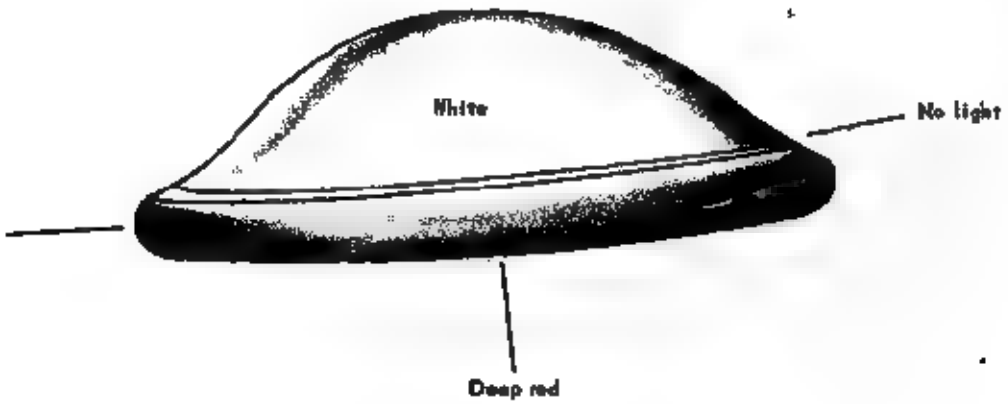
Pilot



Copilot

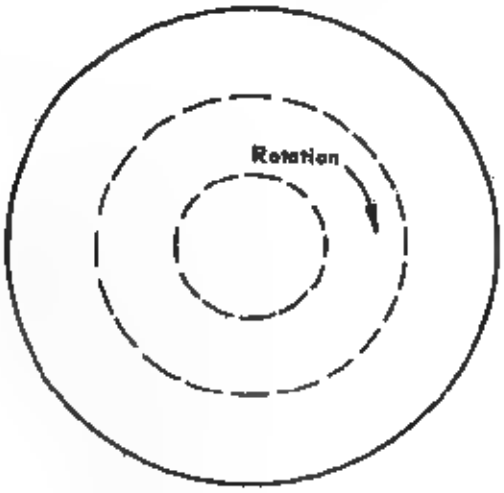
Case VI (Serial 4822.00)

An instrument technician, while driving from a large city toward an Air Force base on December 22, 1952, saw an object from his car at 1930 hours. He stopped his car to watch it. It suddenly moved up toward the zenith in spurts from right to left at an angle of about 45°. It then moved off in level flight at a high rate of speed, during which maneuver it appeared white most of the time, but apparently rolled three times showing a red side. About halfway through its roll it showed no light at all. It finally assumed a position to the south of the planet Jupiter at a high altitude, at which position it darted back and forth, left and right alternately. Total time of the observation was 15 minutes. Apparently, the observer just stopped watching the object.



Case VII (Serial 2728.00)

A Flight Sergeant saw an object over an Air Force base in Korea at 0842 hours on June 6, 1952. The object flew in a series of spinning and tumbling actions. It was on an erratic course, first flying level, then stopping momentarily, shooting straight up, flying level and again tumbling, then changing course and disappearing into the sun. It reappeared and was seen flying back and forth across the sun. At one time an F 86 passed between the observer and the object. He pointed it out to another man who saw it as it maneuvered near the sun.



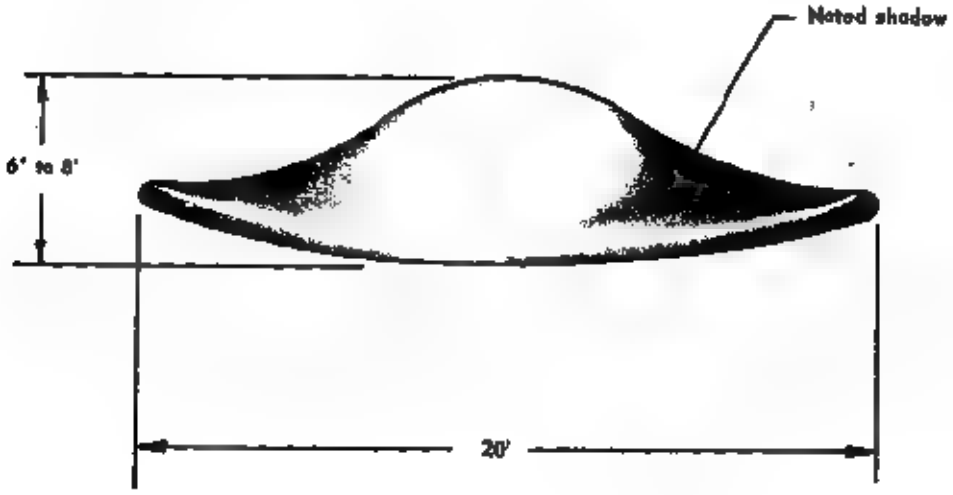
Black lines evenly spaced

Proportion 7 to 1

(Dimensions are as shown in observer's original drawing)

Case VIII (Serial 0576.00)

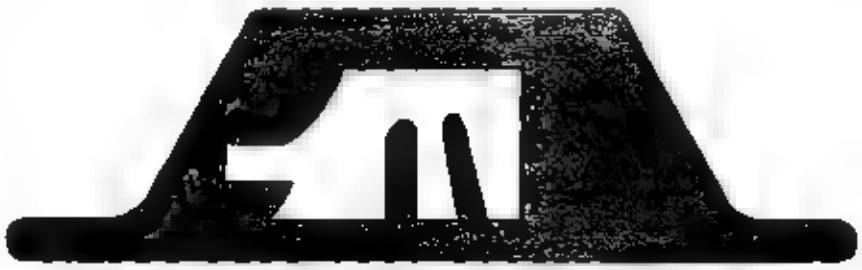
An electrician was standing by the bathroom window of his home, facing west, at 0825 hours on July 31, 1948, when he first sighted an object. He ran to his kitchen where he pointed out the object to his wife. Total time in sight was approximately 10 seconds, during which the object flew on a straight and level course from horizon to horizon, west to east.



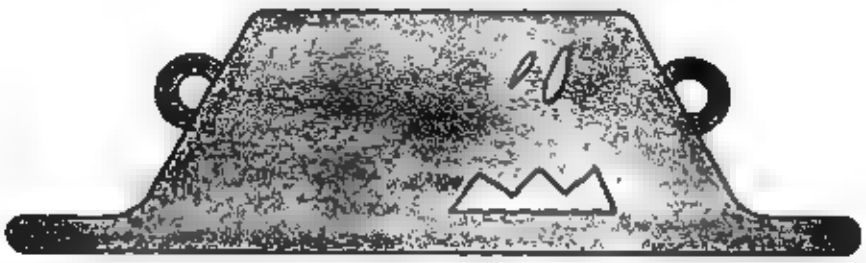
(Ratio approx. 3:1)

Case IX (Serial 0066.00)

A farmer and his two sons, aged 8 and 10, were at his fishing camp on August 13, 1947. At about 1300 hours, he went to look for the boys, having sent them to the river for some tape from his boat. He noticed an object some 300 feet away, 75 feet above the ground He saw it against the background of the canyon wall which was 400 feet high at this point. It was hedge hopping, following the contour of the ground, was sky blue, about 20 feet in diameter and 10 feet thick, and had pods on the side from which flames were shooting out. It made a swishing sound. The observer stated that the trees were highly agitated by the craft as it passed over. His two sons also observed the object. No one saw the object for more than a few seconds.



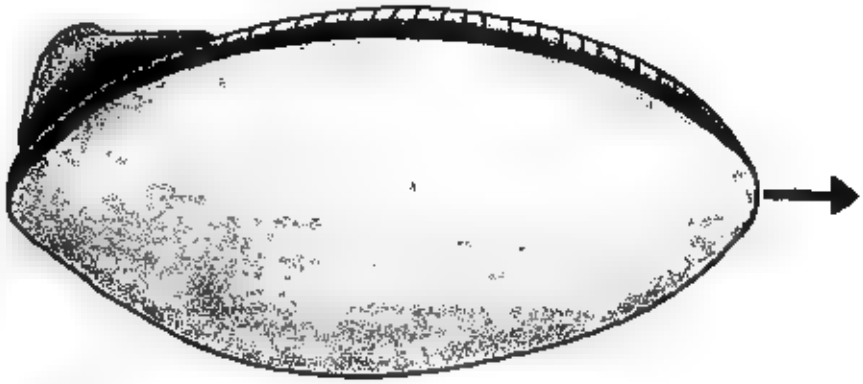
Side view

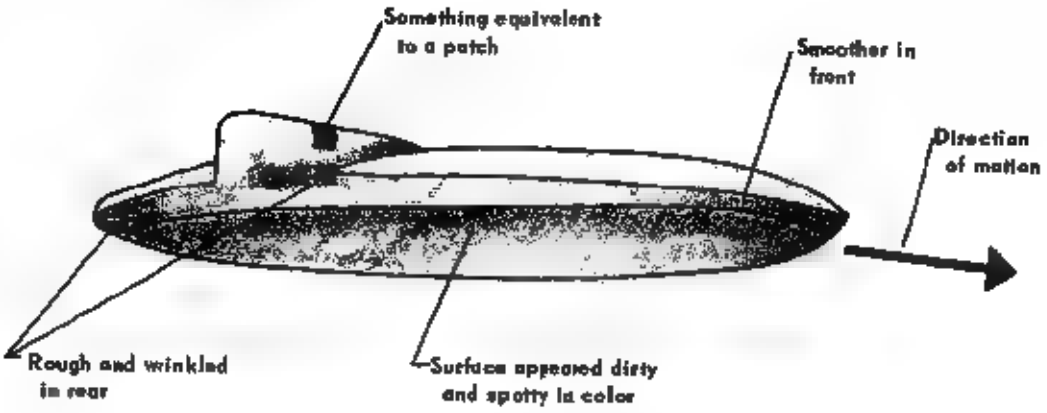


End view

Case X (Serial 1119.00)

An employee in the supersonic laboratory of an aeronautical laboratory and some other employees of this lab, were by a river, 2-1/2 miles from its mouth, when they saw an object. The time was about 1700 hours on May 24, 1949. The object was reflecting sunlight when observed by naked eye. However, he then looked at it with 8-power binoculars, at which time there was no glare. (Did glasses have filter?) It was of metallic construction and was seen with good enough resolution to show that the skin was dirty. It moved off in horizontal flight at a gradually increasing rate of speed, until it seemed to approach the speed of a jet before it disappeared. No propulsion was apparent. Time of observation was 2-1/2 to 3 minutes.

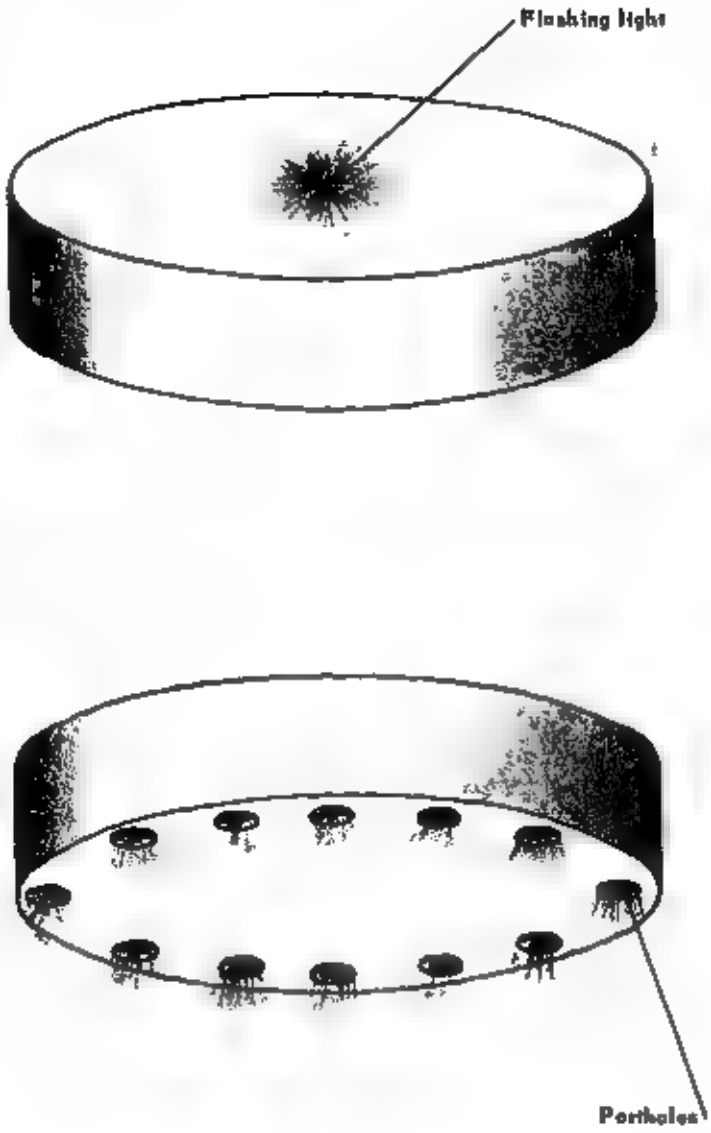




Case XI (Serial 1550.00)

On March 20, 1950, a Reserve Air Force Captain and an airlines Captain were flying a commercial airlines flight. At 21:26, the airline Captain directed the attention of the Reserve Air Force Captain to an object which apparently was flying at high speed, approaching the airliner from the south on a north heading. The Reserve Air Force Captain focused his attention on the object. Both crew members watched it as it passed in front of them and went out of sight to the right. The observation, which lasted about 25 to 35 seconds, occurred about 15 miles north of a medium-sized city. When the object passed in front of the airliner, it was not more than 1/2 mile distant and at an altitude of about 1000 feet higher than the airliner

The object appeared to be circular, with a diameter of approximately 100 feet and with a vertical height considerably less than the diameter, giving the object a disc-like shape. In the top center was a light which was blinking at an estimated 3 flashes per second. This light was so brilliant that it would have been impossible to look at it continuously had it not been blinking. This light could be seen only when the object was approaching and after it had passed the airliner When the object passed in front of the observers, the bottom side was visible. The bottom side appeared to have 9 to 12 symmetrical oval or circular portholes located in a circle approximately 3/4 of the distance from the center to the outer edge. Through these portholes came a soft purple light about the shade of aircraft fluorescent lights. The object was traveling in a straight line without spinning. Considering the visibility, the length of time the object was in sight, and the distance from the object, the Reserve Air Force Captain estimates the speed to be in excess of 1000 mph.


Flashing light
Portholes

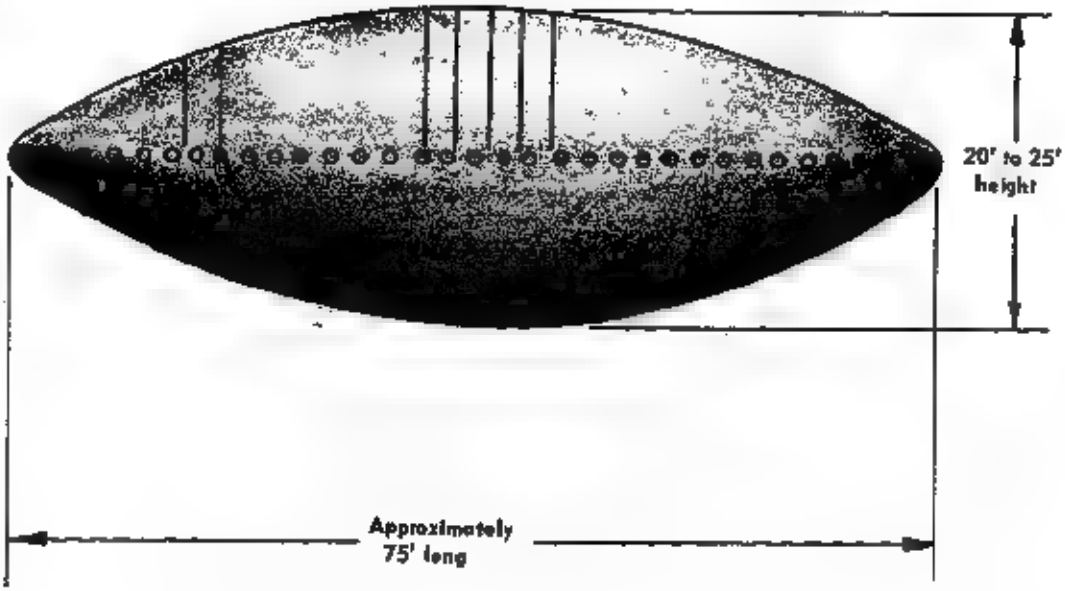
Case XII (Serial 3601.00)

At 0535 on the morning of August 25, 1952, a musician for a radio station was driving to work from his home when he noticed an object hovering about 10 feet above a field near the road along which he was driving. As he came abreast of the object, he stopped his car and got out to watch. Having an artificial leg, he could not leave the road, since the surrounding terrain was rough. However, he was within about 100 yards of it at the point he was standing on the road. The object was not absolutely still, but seemed to rock slightly as it hovered When he turned off the motor of his car, he could hear a deep throbbing sound coming from the object. As he got out of the car, the object began a vertical ascent with a sound similar to "a large covey of quail starting to fly at one time". The object ascended vertically through broken clouds until out of sight. His view was not obscured by clouds The observer states that the vegetation was blown about by the object when it was near the ground.

Description of the object is as follows

It was about 75 feet long, 45 feet wide, and 15 feet thick, shaped like two oval meat platters placed together. It was a dull aluminum color, and had a smooth surface. A medium-blue continuous light shone through the one window in the front section. The head and shoulders of one man, sitting motionless, facing the forward edge of the object, were visible In the midsection of the object were several windows extending from the top to the rear edge of the object; the midsection of the ship had a blue light which gradually changed to different shades. There was a large amount of activity and movement in the midsection that could not be identified as either human or mechanical, although it did not have a regular pattern of movement. There were no windows, doors or portholes, vents, seams, etc , visible to the observer in the rear section of the object or under the object (viewed at time of ascent). Another identifiable feature was a series of propellers 6 to 12 inches in diameter spaced closely together along the outer edge of the object. These propellers were mounted on a bracket so that they revolved in a horizontal plane along the edge of the object. The propellers were revolving at a high rate of speed.

Investigation of the area soon afterward showed some evidence of vegetation being blown around. An examination of grass and soil samples taken indicated nothing unusual. Reliability of the observer was considered good.


20' to 25'
height
Approximately
75' long

These 12 sightings can be classed into four categories on the basis of their shapes, as follows:

(1) Propeller shape – Case I

(2) Aircraft shape – Cases II and III

(3) Cigar shape – Cases IV and V

(4) Elliptical or disc shape – Cases VI to XII

The criterion for choosing the above sightings was that their descriptions were given in enough detail to permit diagrams of the objects to be drawn. It might be noted here that in all but one of these cases (Case XI) the observer had already drawn a diagram of what he had seen.

The objective of this section of the study was the conceiving of a model, or models. The requirement that the description be detailed is an important one, and was the easiest to determine in the re-evaluation program. However, a good model ought to satisfy the following conditions as well:

(1) The general shape of the object and the maneuvers it performed should fit the reports of many of the UNKNOWNS and thus explain them.

(2) The observer and the report should be reliable.

(3) The report should contain elements which should have been observed with accuracy, and which eliminate the possibility that the sighting could be ascribed to a familiar object or to a known natural phenomenon.

(4) The model should be derived from two or more good UNKNOWNS between which there is no essential conflict.

It can be shown that it is not possible to deduce a model from the 12 cases that will satisfy all of these conditions. The following case-by-case discussion of the 12 good UNKNOWNS will illustrate this point:

(1) Case I does not satisfy Conditions 1 and 4. The reported shape of this object is not duplicated in any of the other UNKNOWNS

(2) Case II does not satisfy Conditions 1 and 3. There are very few UNKNOWNS in the aircraft shape classification. In addition, the unusual characteristic of this sighting (i.e., the red glow) could have been reflection of the lights of Flint from the objects if they were either birds or aircraft.

(3) Case III does not satisfy Condition 1. It also does not satisfy Condition 4 when Case II is eliminated as a good UNKNOWN.

(4) Case IV does not satisfy Conditions 1 or 2. There are few cigar-shaped or rocket-shaped objects reported in the literature. In addition, this observer is not considered to be well-qualified technically.

(5) Case V does not satisfy Condition 1. It also does not satisfy Condition 4 when Case IV is eliminated as a good UNKNOWN.

It might be argued here that many of the UNKNOWNS might actually have shapes similar to these good UNKNOWNS. It will be noted, however, that each of these five cases does not satisfy one of the other three conditions.

(6) Case VI does not satisfy Condition 2. In the description of the object, it was stated that at certain times there was no light seen from the object. Apparently, the "band of no light", as diagrammed by the observer, was an attempt to explain this. However, if the object were constructed as shown in the diagram, light should have been seen at all times. Because of this conflict the drawing is not considered reliable, and without the drawing, there is not enough detail in the description to make it useful for this study.

(7) Case VII violates Conditions 1 and 4. Although the shape is disc-like, the maneuvers performed by the object are unique both among the UNKNOWNS and among the good UNKNOWNS.

Cases VIII to XII satisfy Conditions 1 through 3, but they do not satisfy Condition 4. The features which make them different from each other are as follows:

(8) Case VIII. The object is smooth, with no protrusions or other details.

(9) Case IX. The object had rocket or jet pods on each side that were shooting out flames.

(10) Case X. The object had a fin or rudder.

(11) Case XI. The object had a series of portholes, or windows, on its under side.

(12) Case XII. The object had windows in its top and front and its top midsection. It also had a set of propellers around its waist.

It is not possible, therefore, to derive a verified model of a "flying saucer" from the data that have been gathered to date. This point is important enough to emphasize. Out of about 4,000 people who said they saw a "flying saucer", sufficiently detailed descriptions were given in only 12 cases. Having culled the cream of the crop, it is still impossible to develop a picture of what a "flying saucer' is.

In addition to this study of the good UNKNOWNS, an attempt was made to find groups of UNKNOWNS for which the observed characteristics were the same. No such groups were found.

On the basis of this evidence, therefore, there is a low probability that any of the UNKNOWNS represent observations of a class of "flying saucers". It may be that some reports represent observations of not one but several classes of objects that might have been "flying saucers", however, the lack of evidence to confirm even one class would seem to make this possibility remote. It is pointed out that some of the cases of KNOWNS, before identification, appeared fully as bizarre as any of the 12 cases of good UNKNOWNS, and, in fact, would have been placed in the class of good UNKNOWNS had it not been possible to establish their identity.

This is, of course, contrary to the bulk of the publicity that has been given to this problem. The reason for the nature of this publicity was clearly brought out during the re-evaluation study. It is a definite fact that upon reading a few reports, the reader becomes convinced that "flying saucers" are real and are some form of sinister contrivance. This reaction is independent of the training of the reader or of his attitude toward the problem prior to the initial contact. It is unfortunate that practically all of the articles, books, and news stories dealing with the phenomenon of the "flying saucer' were written by men who were in this category, that is, men who had read only a few selected reports. This is accentuated by the fact that, as a rule, only the more lurid-sounding reports are cited in these publications. Were it not for this common psychological tendency to be captivated by the mysterious, it is possible that no problem of this nature would exist.

The reaction, mentioned above, that after reading a few reports, the reader is convinced that "flying saucers" are real and are some form of sinister contrivance, is very misleading. As more and more of the reports are read, the feeling that "saucers" are real fades, and is replaced by a feeling of skepticism regarding their existence. The reader eventually reaches a point of saturation, after which the reports contain no new information at all and are no longer of any interest. This feeling of surfeit was universal among the personnel who worked on this project, and continually necessitated a conscious effort on their part to remain objective.

CONCLUSIONS

It can never be absolutely proven that "flying saucers" do not exist. This would be true if the data obtained were to include complete scientific measurements of the attributes of each sighting, as well as complete and detailed descriptions of the objects sighted. It might be possible to demonstrate the existence of "flying saucers" with data of this type, IF they were to exist.

Although the reports considered in this study usually did not contain scientific measurements of the attributes of each sighting, it was possible to establish certain valid conclusions by the application of statistical methods in the treatment of the data. Scientifically evaluated and arranged, the data as a whole did not show any marked patterns or trends. The inaccuracies inherent in this type of data, in addition to the incompleteness of a large proportion of the reports, may have obscured any patterns or trends that otherwise would have been evident. This absence of indicative relationships necessitated an exhaustive study of selected facets of the data in order to draw any valid conclusions.

A critical examination of the distributions of the important characteristics of sightings, plus an intensive study of the sightings evaluated as UNKNOWN, led to the conclusion that a combination of factors, principally the reported maneuvers of the objects and the unavailability of supplemental data such as aircraft flight plans or balloon-launching records, resulted in the failure to identify as KNOWNS most of the reports of objects classified as UNKNOWNS.

An intensive study, aimed at finding a verified example of a "flying saucer" or at deriving a verified model or models of "flying saucers" (as defined on Page 1), led to the conclusion that neither goal could be attained using the present data.

It is emphasized that there was a complete lack of any valid evidence consisting of physical matter in any case of a reported unidentified aerial object.

Thus, the probability that any of the UNKNOWNS considered in this study are "flying saucers" is concluded to be extremely small, since the most complete and reliable reports from the present data, when isolated and studied, conclusively failed to reveal even a rough model, and since the data as a whole failed to reveal any marked patterns or trends.

Therefore, on the basis of this evaluation of the information, it is considered to be highly improbable that any of the reports of unidentified aerial objects examined in this study represent observations of technological developments outside the range of present-day scientific knowledge.

APPENDIX A

TABULATIONS OF FREQUENCY AND PERCENTAGE DISTRIBUTIONS BY CHARACTERISTICS

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TABLE XI — [illegible] OF [illegible] BY YEARS

Evaluation	All Years						19[illegible]						19[illegible]						19[illegible]					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
0-Satisfactory	[illegible]																							
1-Unsatisfactory																								
2-Overall																								
3-Light Duty																								
4-Desk																								
5-Classified, Secret, etc.																								
6-Health, etc.																								
7-Psychological																								
8-Unknown																								
9-Other																								
Total																								

Evaluation	1950						19[illegible]						19[illegible]						19[illegible]					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
0-Satisfactory																								
1-Unsatisfactory																								
2-Overall																								
3-Light Duty																								
4-Desk																								
5-Classified, Secret, etc.																								
6-Health, etc.																								
7-Psychological																								
8-Unknown																								
9-Other																								
Total																								

TABLE XI — EVALUATION OF UNIT SIGHTINGS BY YEARS

Evaluation	All Years						19[illegible]						19[illegible]						19[illegible]					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
0-Satisfactory																								
1-Unsatisfactory																								
2-Overall																								
3-Light Duty																								
4-Desk																								
5-Classified, Secret, etc.																								
6-Health, etc.																								
7-Psychological																								
8-Unknown																								
9-Other																								
Total																								

Evaluation	1950						19[illegible]						19[illegible]						19[illegible]					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
0-Satisfactory																								
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3-Light Duty																								
4-Desk																								
5-Classified, Secret, etc.																								
6-Health, etc.																								
7-Psychological																								
8-Unknown																								
9-Other																								
Total																								

TABLE 29 EVALUATION OF OBJECT DISCHARGES BY YEARS

Evaluation	All Years						1947						1948						1949					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Hospital	Total	Civilian	Hospital	Total	Civilian	Hospital	Total	Civilian	Hospital	Total	Civilian	Hospital	Total	Civilian	Hospital	Total	Civilian	Hospital	Total	Civilian	Hospital	Total
1-Balloon	809	192	991	9.0	4.0	15.0	9	0	9	2.9	0.0	2.9	16	10	26	2.4	2.0	15.4	0	2	2	0.0	1.1	1.0
2-Astronomical	274	205	479	15.5	9.3	21.8	8	3	11	10.	10.1	20.2	25	23	48	12.5	11.1	23.6	29	56	85	16.4	32.6	45.1
3-Aircraft	265	209	474	13.0	9.5	22.5	2	2	4	2.5	2.5	5.0	15	7	22	11.6	2.5	12.1	18	12	30	9.7	6.4	16.1
4-Light Phenom.	50	15	65	2.4	0.5	3.2	2	0	2	2.5	0.0	2.5	3	5	8	1.4	2.	3.6	0	0	0	0.0	0.0	0.0
5-Birds	12	10	22	0.5	0.6	1.0	0	0	0	0.0	0.0	0.0	2	3	5	1.4	2.1	3.5	2	1	3	1.1	0.6	1.6
6-Clouds, Dust, etc.	5	7	12	0.1	0.3	0.4	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Satellite, Sun	240	0	240	10.9	0.0	10.9	16	0	16	15.2	0.0	15.2	17	0	17	11.9	0.0	11.9	25	0	25	15.8	0.0	15.8
8-Psychological	35	9	44	1.6	0.4	2.0	3	2	5	2.9	2.6	4.3	1	0	1	0.7	0.0	0.7	3	0	3	1.6	0.0	1.6
9-Unknown	434	0	434	13.7	0.0	19.4	28	0	28	17.8	0.0	17.8	15	0	15	10.5	0.0	10.5	18	0	18	11.8	0.0	11.8
0-Other	66	24	89	3.0	1.1	4.0	2	0	2	1.3	0.0	1.3	9	7	16	6.3	4.9	11.2	6	0	6	3.2	0.0	3.2
Total	1676	469	2145	76.1	21.3	100	67	12	79	84.8	15.2	100	99	58	143	69.2	30.8	100	114	70	184	62.4	37.6	100

Evaluation	1950						1951						1952											
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Hospital	Total	Civilian	Hospital	Total	Civilian	Hospital	Total	Civilian	Hospital	Total	Civilian	Hospital	Total	Civilian	Hospital	Total	Civilian	Hospital	Total	Civilian	Hospital	Total
1-Balloon	31	0	31	10.8	2.1	14.9	8	3	11	4.4	2.3	7.1	68	113	261	9.2	7.6	17.9						
2-Astronomical	95	16	79	14.8	8.9	23.1	16	14	30	13.2	11.6	24.8	191	81	272	11.8	6.1	17.5						
3-Aircraft	32	9	31	13.0	6.3	19.3	15	6	21	12.5	5.0	17.5	193	176	369	12.9	11.7	24.6						
4-Light Phenom.	0	0	0	0.0	0.0	0.0	1	1	2	0.8	0.8	1.6	25	14	39	1.7	0.9	2.6						
5-Birds	0	0	0	0.0	0.0	0.0	0	1	1	0.0	0.8	0.8	8	5	13	0.5	0.3	0.8						
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	9	7	16	0.2	0.5	0.7						
7-Satellite, Sun	34	0	34	14.2	0.0	14.2	14	0	14	11.6	0.0	11.6	158	0	158	9.9	0.0	9.9						
8-Psychological	2	0	2	1.2	0.0	1.2	1	1	2	0.8	0.8	1.6	35	6	31	1.7	0.4	2.1						
9-Unknown	79	0	79	33.0	0.0	33.0	33	0	33	27.5	0.0	27.5	103	0	103	10.6	0.0	10.6						
0-Other	6	1	7	2.5	1.8	5.3	7	0	7	5.8	0.0	5.8	57	14	45	3.4	0.9	4.3						
Total	189	50	239	81.3	17.7	100	95	26	121	78.5	21.5	100	695	466	1161	71.6	28.4	100						

TABLE XI. SITUATION OF ALL SIGHTINGS BY MONTH OF YEAR, ALL YEARS

	January						February						March						April					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Situation	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Station	3	3	6	2.2	2.2	4.4	9	0	9	9.1	0.0	9.1	16	4	20	9.6	2.4	12.0	7	3	10	3.5	1.5	5.0
1-Meteorological	29	46	75	21.3	33.8	55.1	17	16	33	17.3	17.3	33.5	21	20	41	12.7	12.0	24.7	52	9	61	26.0	4.5	30.5
2-Aircraft	6	3	9	4.4	2.2	6.6	9	5	14	9.1	5.1	14.2	23	7	30	13.9	4.2	18.1	30	6	36	15.0	3.0	18.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	0.5	0.0	0.5
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	5	0	5	3.0	0.0	3.0	4	1	5	2.0	0.5	2.5
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	0.6	0.6	0	0	0	0.0	0.0	0.0
6-Aurora, Ice, etc.	8	0	8	5.9	0.0	5.9	13	0	13	14.0	0.0	14.0	22	0	22	13.9	0.0	13.9	26	0	26	10.0	0.0	10.0
7-Psychological	2	0	2	1.5	0.0	1.5	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	1.0	0.0	1.0
8-Unknown	26	0	26	19.5	0.0	19.5	16	0	16	17.2	0.0	17.2	29	0	29	17.5	0.0	17.5	57	0	57	28.5	0.0	28.5
9-Other	9	1	10	6.6	0.7	7.3	8	0	8	8.6	0.0	8.6	1	17	18	0.6	10.2	10.8	2	0	2	1.0	0.0	1.0
Total	83	53	136	61.0	39.0	100.	72	27	99	77.9	22.9	100.	117	49	166	70.5	29.5	100.	177	31	208	85.1	14.9	100.

	May						June						July						August					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Situation	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Station	24	5	29	12.4	2.6	15.0	36	6	42	15.9	2.6	18.5	108	55	155	10.0	5.9	15.7	39	44	83	7.5	8.4	15.9
1-Meteorological	28	10	38	14.4	5.2	19.6	29	23	52	12.7	10.1	22.8	116	55	171	12.5	5.9	18.4	53	78	131	10.2	13.4	23.6
2-Aircraft	25	15	40	12.9	7.7	20.6	30	13	43	13.2	5.7	18.9	133	98	231	14.3	11.5	24.8	57	55	107	10.9	10.6	20.6
3-Light Phenom.	1	5	6	.5	1.5	3.0	1	3	4	0.4	1.3	1.7	14	4	18	1.5	0.4	1.9	7	7	14	1.3	1.3	2.6
4-Birds	0	3	3	0.0	1.5	1.5	0	0	0	0.0	0.0	0.0	4	3	7	0.0	0.3	0.7	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	8	0	8	4.1	0.0	4.1	0	0	0	0.0	0.0	0.0	4	1	5	0.4	0.1	0.5	0	1	1	0.0	0.2	0.2
6-Aurora, Ice, etc.	22	0	22	11.3	0.0	11.3	25	0	25	11.1	0.0	11.1	88	0	88	7.5	0.0	9.5	45	0	45	8.6	0.0	8.6
7-Psychological	0	0	0	0.0	0.0	0.0	6	0	6	2.6	0.0	2.6	9	9	18	1.0	1.0	2.0	10	1	11	1.9	0.2	2.1
9-Unknown	36	0	36	18.6	0.0	18.6	47	0	47	20.6	0.0	20.6	185	0	185	21.0	0.0	21.0	119	0	119	22.8	0.0	22.8
9-Other	9	4	13	4.6	2.1	6.7	8	1	9	3.5	0.4	3.9	44	1	45	4.3	0.1	4.4	11	7	18	2.1	1.3	3.4
Total	165	39	194	77.9	20.1	100.	127	96	223	77.9	29.2	100.	703	236	939	71.7	29.4	100.	326	185	511	64.5	2...5	100.

	September						October						November						December					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Situation	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Station	6	14	20	2.9	6.7	9.6	16	21	37	8.3	10.5	18.5	5	18	23	3.0	11.0	14.0	9	7	16	5.4	4.2	9.6
1-Meteorological	31	11	42	14.8	5.2	20.0	46	21	67	23.8	10.4	34.7	28	29	57	17.1	17.7	34.8	33	31	64	19.9	18.5	37.5
2-Aircraft	14	32	51	6.7	17.6	24.3	11	17	28	5.7	8.9	14.6	11	16	27	6.7	9.8	16.5	12	14	26	7.1	8.3	15.4
3-Light Phenom.	1	2	3	0.5	1.0	.5	1	4	5	0.5	2.1	2.6	3	1	4	1.8	0.6	2.4	1	0	1	0.6	0.0	0.6
4-Birds	1	2	3	0.5	1.0	.5	5	2	7	2.6	1.0	3.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	1	1	1	0.0	0.5	0.5	0	1	1	0.0	0.5	0.5	0	8	8	0.0	4.9	4.9	0	0	0	0.0	0.0	0.0
6-Aurora, Ice, etc.	20	0	20	9.5	0.0	9.5	12	0	12	6.2	0.0	6.2	8	0	8	4.9	0.0	4.9	9	0	9	5.4	0.0	5.4
7-Psychological	2	0	3	1.4	0.0	1.4	1	0	1	0.5	0.0	0.5	1	0	1	0.6	0.0	0.6	4	0	4	2.4	0.0	2.4
8-Unknown	56	0	56	26.7	0.0	26.7	36	0	36	18.7	0.0	18.7	32	0	32	19.5	0.0	19.5	40	0	40	23.8	0.0	23.8
9-Other	8	3	11	3.8	1.4	5.2	5	4	9	2.6	2.1	4.7	4	0	4	2.4	0.0	2.4	9	0	9	5.4	0.0	5.4
Total	149	70	210	71.7	33.3	100.	25	67	192	65.1	34.9	100.	93	72	129	56.1	43.9	100.	116	52	168	69.0	31.0	100.

TABLE IX EVALUATION OF ALL SIGHTINGS BY MONTH OF YEAR, 1967

Evaluation	January	February	March	April
0-Balloon	NO DATA	NO DATA	NO DATA	NO DATA
1-Astronomical				
2-Aircraft				
3-Light Phenom.				
4-Birds				
5-Chemt., Dust, etc.				
6-Satellite, Misc.				
7-Psychological				
8-Unknown				
9-Other				
Total				

Evaluation	May	June	July	August
0-Balloon	NO DATA	1 / 0 / 1 / 7.7 / 0.0 / 7.7	6 / 0 / 6 / 16.7 / 0.0 / 10.9	0 / 0 / 0 / 0.0 / 0.0 / 0.0
1-Astronomical		0 / 1 / 1 / 0.0 / 7.7 / 7.7	5 / 3 / 8 / 27.1 / 25.0 / 46.6	6 / 1 / 7 / 75.0 / 6.2 / 43.8
2-Aircraft		2 / 0 / 2 / 15.4 / 0.0 / 15.0	0 / 2 / 2 / 0.0 / 16.6 / 3.6	0 / 0 / 0 / 0.0 / 0.0 / 0.0
3-Light Phenom.		0 / 0 / 0 / 0.0 / 0.0 / 0.0	1 / 0 / 1 / 1.8 / 0.0 / 1.8	0 / 0 / 0 / 0.0 / 0.0 / 0.0
4-Birds		0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0
5-Chemt., Dust, etc.		0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0
6-Satellite, Misc.		3 / 0 / 3 / 23.1 / 0.0 / 23.1	3 / 0 / 3 / 16.5 / 0.0 / 10.5	2 / 0 / 2 / 12.5 / 0.0 / 12.5
7-Psychological		1 / 0 / 1 / 7.7 / 0.0 / 7.7	0 / 2 / 2 / 0.0 / 7.5 / 7.5	0 / 0 / 0 / 0.0 / 0.0 / 0.0
8-Unknown		4 / 0 / 4 / 30.8 / 0.0 / 30.8	12 / 0 / 12 / 21.5 / 0.0 / 21.5	7 / 0 / 7 / 43.8 / 0.0 / 43.8
9-Other		1 / 0 / 1 / 7.7 / 0.0 / 7.7	16 / 0 / 16 / 29.1 / 0.0 / 29.1	0 / 0 / 0 / 0.0 / 0.0 / 0.0
Total		12 / 1 / 13 / 92.3 / 7.7 / 100.	44 / 7 / 55 / 82.3 / 12.7 / 100.	15 / 1 / 16 / 93.7 / 6.3 / 100.

Evaluation	September	October	November	December
0-Balloon	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0
1-Astronomical	1 / 0 / 1 / 16.7 / 0.0 / 16.7	14 / 2 / 16 / 73.7 / 10.5 / 84.2	1 / 1 / 2 / 33.3 / 33.3 / 66.6	5 / 0 / 5 / 100.0 / 0.0 / 100.0
2-Aircraft	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0
3-Light Phenom.	0 / 0 / 0 / 0.0 / 0.0 / 0.0	8 / 0 / 8 / 40 / 0.0 / 0.0	1 / 0 / 1 / 33.3 / 0.0 / 33.3	0 / 0 / 0 / 0.0 / 0.0 / 0.0
4-Birds	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0
5-Chemt., Dust, etc.	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0
6-Satellite, Misc.	1 / 0 / 1 / 16.7 / 0.0 / 16.7	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0
7-Psychological	1 / 0 / 1 / 16.7 / 0.0 / 16.7	1 / 0 / 1 / 5.3 / 0.0 / 5.3	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0
8-Unknown	3 / 0 / 3 / 50.0 / 0.0 / 50.0	2 / 0 / 2 / 10.5 / 0.0 / 10.5	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0
9-Other	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0	0 / 0 / 0 / 0.0 / 0.0 / 0.0
Total	6 / 0 / 6 / 100.0 / 0.0 / 100.	17 / 2 / 19 / 89.5 / 10.5 / 100.	2 / 1 / 3 / 66.7 / 33.3 / 100.	5 / 0 / 5 / 100.0 / 0.0 / 100.

TABLE 46 EVALUATION OF ALL SIGHTINGS, BY MONTH OF YEAR, 1968

Evaluation	JANUARY						FEBRUARY						MARCH						APRIL					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	11.1	0.0	11.1
1-Astronomical	10	3	13	62.5	18.7	81.2	7	2	9	77.8	22.2	100.0	2	0	2	22.2	0.0	22.2	0	9	9	0.0	100.0	100.0
2-Aircraft	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	0	3	16.7	0.0	16.7
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Bird	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	22.2	0.0	22.2	1	0	1	5.6	0.0	5.6
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insects, Ins.	2	0	2	12.5	0.0	12.5	0	0	0	0.0	0.0	0.0	2	0	2	22.2	0.0	22.2	1	0	1	5.6	0.0	5.6
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	11.1	0.0	11.1	3	0	3	16.7	0.0	16.7
9-Other	0	1	1	0.0	6.2	6.2	0	0	0	0.0	0.0	0.0	0	9	9	0.0	100.0	100.0	0	0	0	0.0	0.0	0.0
Total	12	4	16	75.0	25.0	100.	7	2	9	77.8	22.2	100.	5	9	9	55.6	100.0	100.	10	9	19	55.6	100.0	100.

Evaluation	MAY						JUNE						JULY						AUGUST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0	3	0	3	50.0	0.0	50.0	4	1	5	14.3	2.6	17.9	0	2	2	0.0	18.2	18.2
1-Astronomical	1	1	2	9.1	9.1	18.2	0	0	0	0.0	0.0	0.0	4	9	13	14.3	23.1	38.4	2	2	4	18.2	18.2	36.4
2-Aircraft	1	0	1	9.1	0.0	9.1	0	0	0	0.0	0.0	0.0	5	2	7	12.8	5.1	17.9	1	1	2	9.1	9.1	18.2
3-Light Phenom.	0	3	3	0.0	33.3	33.3	0	3	3	0.0	50.0	50.0	1	0	1	2.6	0.0	2.6	0	0	0	0.0	0.0	0.0
4-Bird	0	1	1	0.0	9.1	9.1	0	0	0	0.0	0.0	0.0	0	1	1	0.0	2.6	2.6	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insects, Ins.	3	0	3	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	9.1	0.0	9.1
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	1	0	1	9.1	0.0	9.1	0	0	0	0.0	0.0	0.0	11	0	11	28.2	0.0	28.2	0	0	0	0.0	0.0	0.0
9-Other	0	0	0	0.0	0.0	0.0	0	1	0	0.0	0.0	0.0	1	0	1	2.6	0.0	2.6	0	2	2	0.0	18.2	18.2
Total	6	5	11	54.6	45.4	100.	3	3	6	50.0	50.0	100.	26	13	39	66.7	33.3	100.	4	7	11	36.4	63.6	100.

Evaluation	SEPTEMBER						OCTOBER						NOVEMBER						DECEMBER					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	3	3	0.0	37.5	37.5	5	9	14	16.7	30.0	46.7	1	5	6	5.0	25.0	30.0	2	0	2	7.1	0.0	7.1
1-Astronomical	0	1	1	0.0	12.5	12.5	1	3	4	3.3	10.0	13.3	7	1	8	35.0	5.0	40.0	2	9	11	7.1	32.1	39.2
2-Aircraft	1	1	2	12.5	12.5	25.0	1	0	1	3.3	0.0	3.3	4	0	4	20.0	0.0	20.0	0	1	1	0.0	3.6	3.6
3-Light Phenom.	0	0	0	0.0	0.0	0.0	1	0	1	3.3	0.0	3.3	2	0	2	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Bird	0	0	0	0.0	0.0	0.0	1	1	2	3.3	3.3	6.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insects, Ins.	8	0	8	50.0	0.0	50.0	6	0	6	20.0	0.0	20.0	1	0	1	5.0	0.0	5.0	3	0	3	10.7	0.0	10.7
7-Psychological	1	0	1	12.5	0.0	12.5	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	0	0	0	0.0	0.0	0.0	2	0	2	6.7	0.0	6.7	0	0	0	0.0	0.0	0.0	9	0	9	32.1	0.0	32.1
9-Other	0	1	1	0.0	12.5	12.5	0	0	0	0.0	0.0	0.0	1	0	1	5.0	0.0	5.0	2	0	2	7.1	0.0	7.1
Total	2	6	8	25.0	75.0	100.	17	13	30	56.7	43.3	100.	14	6	20	70.0	30.0	100.	18	0	25	64.3	35.7	100.

TABLE 21 EVALUATION OF ALL SIGHTINGS BY MONTH OF YEAR, 1948

Evaluation	January						February						March						April					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	1	1	0.0	1.7	1.7	4	0	4	12.2	0.0	12.2	0	0	0	0.0	0.0	0.0	1	0	1	2.1	0.0	2.1
1-Astronomical	6	30	36	10.3	51.8	62.0	3	7	10	16.7	38.9	55.6	9	19	28	19.1	36.6	53.9	30	1	31	63.8	2.1	65.9
2-Aircraft	4	1	5	6.8	1.7	8.5	1	0	1	5.6	0.0	5.6	8	0	8	15.4	0.0	15.4	3	0	3	6.4	0.0	6.4
3-Light Phen.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	4	0	4	7.7	0.0	7.7	0	0	0	0.0	0.0	0.0
5-Clouds, Sun, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Meteor, etc.	0	0	0	0.0	0.0	0.0	1	0	1	5.6	0.0	5.6	6	0	6	11.6	0.0	11.6	5	0	5	10.6	0.0	10.6
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	12	0	12	24.9	0.0	24.9	1	0	1	5.6	0.0	5.6	6	0	6	11.6	0.0	11.6	7	0	7	14.9	0.0	14.9
9-Other	5	0	5	5.5	0.0	5.5	1	0	1	5.6	0.0	5.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	27	32	59	45.8	54.2	100.	11	7	18	61.1	38.9	100.	37	19	56	66.1	33.9	100.	46	1	47	97.9	2.1	100.

Evaluation	May						June						July						August					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	4	1	5	8.7	2.2	11.	1	0	1	4.0	0.0	4.0	1	0	1	5.0	0.0	5.0	0	0	0	0.0	0.0	0.0
1-Astronomical	7	5	14	15.6	11.1	31.1	6	4	10	24.0	16.0	40.0	0	7	7	0.0	35.0	35.0	1	25	26	1.1	67.7	68.2
2-Aircraft	6	3	9	13.0	6.7	19.6	1	1	2	4.0	4.0	8.0	0	5	5	0.0	25.0	25.0	1	10	11	1.9	17.2	19.1
3-Light Phen.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	5.0	5.0	0	0	0	0.0	0.0	0.0
5-Clouds, Sun, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Meteor, etc.	11	0	11	24.4	0.0	24.4	2	0	2	8.0	0.0	8.0	3	0	3	15.0	0.0	15.0	2	0	2	3.9	0.0	3.9
7-Psychological	0	0	0	0.0	0.0	0.0	1	0	1	4.0	0.0	4.0	0	0	0	0.0	0.0	0.0	2	0	2	3.8	0.0	3.8
8-Unknown	6	0	6	13.3	0.0	13.3	8	0	8	32.0	0.0	32.0	2	0	2	10.0	0.0	10.0	1	0	1	1.9	0.0	1.9
9-Other	0	0	0	0.0	0.0	0.0	1	0	1	4.0	0.0	4.0	1	0	1	5.0	0.0	5.0	0	0	0	0.0	0.0	0.0
Total	36	9	45	80.0	20.0	100.	19	6	25	76.0	24.0	100.	7	13	20	35.0	65.0	100.	7	46	53	13.5	86.5	100.

Evaluation	September						October						November						December					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	1	0	1	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0	0	3	3	0.0	8.9	8.9	4	0	4	14.8	0.0	14.8
1-Astronomical	0	0	0	0.0	0.0	0.0	2	4	6	15.8	30.8	46.2	7	10	21	20.6	41.2	61.8	2	5	7	7.4	18.5	25.9
2-Aircraft	0	0	0	0.0	0.0	0.0	1	1	2	7.7	7.7	15.4	0	5	5	0.0	14.7	14.7	6	0	6	22.2	0.0	22.2
3-Light Phen.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Sun, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Meteor, etc.	2	0	2	66.7	0.0	66.7	2	0	2	15.4	0.0	15.4	1	0	1	2.9	0.0	2.9	1	0	1	3.7	0.0	3.7
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	0	0	0	0.0	0.0	0.0	3	0	3	23.1	0.0	23.1	4	0	4	11.8	0.0	11.8	6	0	6	22.2	0.0	22.2
9-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	0	3	11.1	0.0	11.1
Total	3	0	3	100.	0.0	100.	8	5	13	61.5	38.5	100.	12	22	34	35.3	64.7	100.	22	5	27	81.5	18.5	100.

TABLE A8 EVALUATION OF ALL SIGHTINGS BY MONTH OF YEAR, 1960

Evaluation	JANUARY						FEBRUARY						MARCH						APRIL					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0	3	0	3	9.1	0.0	9.1	19	2	21	90.5	9.5	100.	1	0	1	3.4	0.0	3.4
1-Astronomical	9	5	14	64.3	35.7	100.	3	4	7	9.1	12.1	21.2	9	0	9	100.	0.0	100.	4	0	4	13.9	0.0	13.9
2-Aircraft	2	0	2	14.3	0.0	14.3	6	0	6	18.2	0.0	18.2	12	4	16	66.7	16.6	100.	6	0	6	20.7	0.0	20.7
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Bird	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, Etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Satellite, Inh.	1	0	1	5.3	0.0	5.3	11	0	11	33.3	0.0	33.3	17	0	17	100.	0.0	100.	8	0	8	27.6	0.0	27.6
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	3.4	0.0	3.4
8-Unknown	2	0	2	10.5	0.0	10.5	3	0	3	9.1	0.0	9.1	15	0	15	100.	0.0	100.	9	0	9	31.0	0.0	31.0
9-Other	1	0	1	5.3	0.0	5.3	3	0	3	9.1	0.0	9.1	0	4	4	0.0	5.6	5.6	0	0	0	0.0	0.0	0.0
Total	14	5	19	73.7	26.3	100.	29	4	33	87.9	12.1	100.	61	11	72	84.7	15.3	100.	29	0	29	100.0	0.0	100.

Evaluation	MAY						JUNE						JULY						AUGUST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	3	0	3	15.0	0.0	15.0	5	0	5	71.4	0.0	71.4	1	0	1	4.2	0.0	4.2	2	0	2	9.1	0.0	9.1
1-Astronomical	2	2	4	10.0	10.0	20.0	0	0	0	0.0	0.0	0.0	7	0	7	29.2	0.0	29.2	1	6	7	4.5	27.3	31.8
2-Aircraft	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	4	1	5	16.7	4.2	20.8	4	1	5	18.2	4.5	22.7
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Bird	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	4.5	4.5
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Satellite, Inh.	2	0	2	10.0	0.0	10.0	0	0	0	0.0	0.0	0.0	7	0	7	29.2	0.0	29.2	2	0	2	9.1	0.0	9.1
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	8	0	8	40.0	0.0	40.0	2	0	2	28.6	0.0	28.6	4	0	4	16.7	0.0	16.7	9	1	9	32.0	4.5	36.4
9-Other	0	3	3	0.0	15.0	15.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	4.0	0.0	4.0
Total	15	5	20	75.0	25.0	100.	7	0	7	100.0	0.0	100.	24	1	32	75.0	4.2	100.	18	7	25	72.0	28.0	100.

Evaluation	SEPTEMBER						OCTOBER						NOVEMBER						DECEMBER					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0	1	0	1	10.0	0.0	10.0	0	2	2	1.4	9.1	9.1	2	4	6	6.5	12.9	19.4
1-Astronomical	5	0	5	38.5	0.0	38.5	1	1	2	10.0	10.0	20.0	0	0	0	0.0	0.0	0.0	10	7	17	32.3	22.6	54.9
2-Aircraft	2	0	2	15.4	0.0	15.4	0	1	1	0.0	10.0	10.0	2	8	10	8.7	34.8	43.5	1	0	1	3.2	0.0	3.2
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Bird	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Satellite, Inh.	3	0	3	23.1	0.0	23.1	0	0	0	0.0	0.0	0.0	1	0	1	4.3	0.0	4.3	1	0	1	3.2	0.0	3.2
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	0	3	9.7	0.0	9.7
8-Unknown	5	0	5	38.1	0.0	38.1	6	0	6	60.0	0.0	60.0	9	0	9	39.1	0.0	39.1	2	0	2	6.5	0.0	6.5
9-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	4.3	0.0	4.3	1	0	1	3.2	0.0	3.2
Total	13	0	13	100.0	0.0	100.	8	2	10	80.0	20.0	100.	13	10	23	56.5	43.5	100.	20	11	31	64.5	35.5	100.

Table 6 EVALUATION OF ALL SIGHTINGS BY MONTH OF YEAR, 1951

Evaluation	Cert.	Prob.	Poss.	Total	Cert. %	Prob. %	Poss. %	Total %	FEBRUARY Number Cert.	Number Prob.	Number Total	Per Cent Cert.	Per Cent Prob.	Per Cent Total	MARCH Number Cert.	Number Prob.	Number Total	Per Cent Cert.	Per Cent Prob.	Per Cent Total	APRIL Number Cert.	Number Prob.	Number Total	Per Cent Cert.	Per Cent Prob.	Per Cent Total
1-Balloon	2	1	4	7	28.6	14.3	57.1	100.	1	0	1	6.7	0.0	6.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
2-Astronomical	1	2	5	8	12.5	25.0	62.5	100.	0	2	2	0.0	13.3	13.3	1	1	2	16.7	16.7	33.4	0	0	0	0.0	0.0	0.0
3-Aircraft	2	1	2	5	40.0	20.0	40.0	100.	0	3	3	0.0	20.0	20.0	0	1	1	0.0	16.7	16.7	1	0	1	33.3	0.0	33.3
4-Light Phenom.	0	0	0	0	0.0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0	0.0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Bris, etc.	0	0	0	0	0.0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Meteoric Ph.	1	0	5	6	16.7	0.0	83.3	100.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Psychological	0	0	0	0	0.0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Unknown	10	4	2	16	62.5	25.0	12.5	100.	7	0	7	46.7	0.0	46.7	3	0	3	50.0	0.0	50.0	0	0	0	0.0	0.0	0.0
10-Other	2	0	1	3	66.7	0.0	33.3	100.	2	0	2	13.3	0.0	13.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	17	8	21	46	36.9	17.4	45.7	100.	10	5	15	66.7	33.3	100.	4	2	6	66.7	33.3	100.	3	0	3	100.0	0.0	100.

Evaluation	MAY Cert.	Prob.	Poss.	Total	Per Cent Cert.	Per Cent Prob.	Per Cent Poss.	Per Cent Total	JUNE Number Cert.	Number Prob.	Number Total	Per Cent Cert.	Per Cent Prob.	Per Cent Total	JULY Number Cert.	Number Prob.	Number Total	Per Cent Cert.	Per Cent Prob.	Per Cent Total	AUGUST Number Cert.	Number Prob.	Number Total	Per Cent Cert.	Per Cent Prob.	Per Cent Total
1-Balloon			2	2	0.0	0.0	100.0	100.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	9.0	5.0	10.0
2-Astronomical	0	0	0	0	0.0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	2	3	11.1	22.2	33.3	0	0	0	0.0	0.0	0.0
3-Aircraft	1	0	1	2	50.0	0.0	50.0	100.	1	0	1	100.0	0.0	100.0	1	0	1	11.1	0.0	11.1	1	0	1	5.0	0.0	5.0
4-Light Phenom.	0	0	0	0	0.0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	1	3	10.0	5.0	15.0
5-Birds	0	1	0	1	0.0	50.0	0.0	50.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Bris, etc.	0	0	0	0	0.0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Meteoric Ph.	0	0	0	0	0.0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Psychological	0	0	0	0	0.0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	11.1	11.1	0	0	0	0.0	0.0	0.0
9-Unknown	1	0	1	2	50.0	0.0	50.0	100.	0	0	0	0.0	0.0	0.0	3	0	3	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0
10-Other	0	0	0	0	0.0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	11.1	0.0	11.1	1	0	1	5.0	0.0	5.0
Total	4	1	5	10	40.0	10.0	100.	100.	1	0	1	100.0	0.0	100.	6	3	9	66.7	33.3	100.	15	2	20	95.0	10.0	100.

Evaluation	SEPTEMBER Cert.	Prob.	Poss.	Total	Per Cent Cert.	Per Cent Prob.	Per Cent Poss.	Per Cent Total	OCTOBER Number Cert.	Number Prob.	Number Total	Per Cent Cert.	Per Cent Prob.	Per Cent Total	NOVEMBER Number Cert.	Number Prob.	Number Total	Per Cent Cert.	Per Cent Prob.	Per Cent Total	DECEMBER Number Cert.	Number Prob.	Number Total	Per Cent Cert.	Per Cent Prob.	Per Cent Total
1-Balloon	0	0	1	1	0.0	0.0	5.6	5.6	2	0	2	7.1	0.0	7.1	0	1	1	0.0	7.7	5.9	1	0	1	9.1	0.0	9.1
2-Astronomical	3	0	1	4	16.7	0.0	5.6	22.3	9	1	10	32.1	3.6	35.7	8	5	13	47.0	29.4	76.4	2	1	3	18.2	9.1	27.3
3-Aircraft	1	0	0	1	5.6	0.0	0.0	5.6	4	2	6	14.3	7.1	21.4	2	0	2	11.8	0.0	11.8	4	0	4	36.4	0.0	36.4
4-Light Phenom.	0	0	0	0	0.0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Birds	1	0	0	1	5.6	0.0	0.0	5.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Bris, etc.	0	0	0	0	0.0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Meteoric Ph.	2	0	0	2	11.1	0.0	0.0	11.1	0	0	0	0.0	0.0	0.0	1	0	1	5.9	0.0	5.9	1	0	1	9.1	0.0	9.1
8-Psychological	0	0	0	0	0.0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	9.1	0.0	9.1
9-Unknown	3	0	0	3	16.6	0.0	0.0	16.6	9	0	9	32.1	0.0	32.1	0	0	0	0.0	0.0	0.0	1	0	1	9.1	0.0	9.1
10-Other	2	0	0	2	11.1	0.0	0.0	11.1	1	0	1	3.6	0.0	3.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	12	0	2	18	66.6	0.0	11.1	100.	26	3	28	92.3	10.7	100.	11	6	17	64.7	35.3	100.	10	1	11	91.9	9.1	100.

TABLE A10 EVALUATION OF ALL SIGHTINGS BY MONTH OF YEAR, 1962.

Evaluation	January						February						March						April					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total
1-Balloon	1	0	1	6.7	0.0	6.7	1	0	1	5.6	0.0	5.6	3	1	4	11.1	3.7	14.8	3	3	6	2.9	2.9	5.8
2-Astronomical	4	4	8	26.7	26.7	53.4	4	1	5	22.2	5.6	27.8	1	0	1	3.7	0.0	3.7	18	0	18	17.5	0.0	17.5
3-Aircraft	0	0	0	0.0	0.0	0.0	2	2	4	11.1	11.1	22.2	3	2	5	11.1	7.4	18.5	15	8	23	14.6	7.8	22.4
4-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	1.0	0.0	1.0
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	3.7	0.0	3.7	3	1	4	2.9	1.0	3.9
6-Clouds, Ball, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	3.7	3.7	7.4	0	0	0	0.0	0.0	0.0
7-Weather, Inv.	0	0	0	0.0	0.0	0.0	1	0	1	5.6	0.0	5.6	1	0	1	3.7	0.0	3.7	10	0	10	9.7	0.0	9.7
8-Psychological	2	0	2	13.3	0.0	13.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	1.0	0.0	1.0
9-Unknown	2	0	2	13.3	0.0	13.3	5	0	5	27.8	0.0	27.8	4	0	4	14.8	0.0	14.8	38	0	38	36.9	0.0	36.9
10-Other	2	0	2	13.3	0.0	13.3	2	0	2	11.1	0.0	11.1	1	9	10	3.7	33.3	37.0	2	0	2	1.9	0.0	1.9
Total	11	4	15	73.3	26.7	100.	15	3	18	83.3	16.7	100.	14	13	27	51.9	48.2	100.	91	12	103	88.4	11.6	100.

Evaluation	May						June						July						August					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total
1-Balloon	15	4	19	13.3	3.5	16.8	26	6	32	15.9	3.7	19.6	99	54	153	11.3	6.2	17.5	36	6	42	9.1	1.5	10.6
2-Astronomical	16	3	19	14.2	1.8	16.0	24	17	41	14.6	10.4	25.0	99	34	133	11.3	3.9	15.2	93	26	119	23.6	6.6	30.2
3-Aircraft	17	12	29	15.0	10.6	25.6	26	12	38	15.9	7.3	23.2	123	98	221	14.1	11.2	25.3	95	43	138	24.1	10.9	35.0
4-Light Phenom.	3	0	3	2.7	0.0	2.7	1	0	1	0.6	0.0	0.6	12	9	21	1.4	1.0	2.4	5	6	11	1.3	1.5	2.8
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	4	1	5	.5	.1	.6	0	0	0	0.0	0.0	0.0
6-Clouds, Ball, etc.	8	0	8	7.1	0.0	7.1	0	0	0	0.0	0.0	0.0	4	1	5	.5	.1	.6	0	1	1	0.0	.3	.3
7-Weather, Inv.	6	0	6	5.3	0.0	5.3	20	0	20	11.4	0.0	11.4	78	0	78	9.0	0.0	9.0	36	0	36	9.1	0.0	9.1
8-Psychological	0	0	0	0.0	0.0	0.0	4	0	4	2.3	0.0	2.3	9	6	15	1.2	.8	2.0	8	1	9	2.0	.3	2.3
9-Unknown	20	0	20	17.9	0.0	17.9	33	0	33	18.8	0.0	18.8	163	0	163	20.8	0.0	20.8	93	0	93	23.4	0.0	23.4
10-Other	9	1	10	8.0	0.9	8.9	6	1	7	3.4	0.6	4.0	21	1	22	2.7	.1	2.8	9	5	14	2.3	1.3	3.6
Total	94	19	113	83.2	16.8	100.	140	36	176	79.6	20.4	100.	595	189	784	75.9	24.1	100.	279	123	397	69.7	31.3	100.

Evaluation	September						October						November						December					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total
1-Balloon	4	11	15	2.5	6.8	9.3	8	12	20	4.9	7.3	12.2	2	9	11	3.0	13.6	16.6	0	3	3	0.0	4.6	4.6
2-Astronomical	22	9	31	13.6	5.6	19.2	13	10	23	19.1	14.9	33.8	5	8	13	7.6	11.9	19.6	11	9	20	16.7	13.6	30.3
3-Aircraft	10	36	46	6.2	22.2	28.4	5	13	18	7.4	19.1	26.5	9	3	6	9.5	4.5	9.0	1	13	14	1.5	19.7	21.2
4-Light Phenom.	1	2	3	.6	1.2	1.9	0	4	4	0.0	5.9	5.9	2	1	3	3.0	1.5	4.5	1	0	1	1.5	0.0	1.5
5-Birds	1	2	3	.6	1.2	1.9	4	1	5	5.9	1.1	7.4	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Ball, etc.	0	1	1	0.0	0.6	0.6	0	1	1	0.0	1.1	1.1	0	8	8	0.0	11.9	11.9	0	0	0	0.0	0.0	0.0
7-Weather, Inv.	12	0	12	7.4	0.0	7.4	4	0	4	4.3	0.0	4.3	4	0	4	6.0	0.0	6.0	3	0	3	4.6	0.0	4.6
8-Psychological	1	0	1	0.6	0.0	0.6	0	0	0	0.0	0.0	0.0	1	0	1	1.5	0.0	1.5	0	0	0	0.0	0.0	0.0
9-Unknown	42	0	42	25.9	0.0	25.9	14	0	14	15.2	0.0	15.2	19	0	19	28.4	0.0	28.4	22	0	22	33.4	0.0	33.4
10-Other	6	2	8	3.7	1.2	4.9	2	1	3	2.2	1.1	3.3	2	0	2	3.0	0.0	3.0	3	0	3	4.6	0.0	4.6
Total	99	63	162	61.1	38.9	100.	50	42	92	54.4	45.6	100.	38	29	67	56.7	43.3	100.	41	25	66	62.1	37.9	100.

TABLE XV EVALUATION OF UFO SIGHTINGS BY MONTH OF YEAR, ALL YEARS

Evaluation	January						February						March						April					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
A-Balloon	3	2	5	3.8	7.5	6.3	7	0	7	10.9	0.0	10.9	8	2	10	7.5	1.9	9.4	7	3	10	4.9	2.1	7.0
B-Astronomical	21	18	39	26.2	22.5	48.7	11	15	26	17.2	23.5	40.7	15	12	27	14.0	11.2	25.2	26	3	29	18.3	2.1	20.4
C-Aircraft	6	3	9	7.5	3.8	11.3	7	5	12	10.9	7.8	18.7	12	7	19	11.2	6.5	17.7	23	2	25	16.2	1.4	17.6
D-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	0.9	0.0	0.9	1	0	1	0.7	0.0	0.7
E-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	0	3	2.8	0.0	2.8	4	1	5	2.8	0.7	3.5
F-Clouds, Fog, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	0.9	0.9	0	0	0	0.0	0.0	0.0
G-Insufficient Info.	8	0	8	10.0	0.0	10.0	3	0	3	4.7	0.0	4.7	15	0	15	14.0	0.0	14.0	21	0	21	14.8	0.0	14.8
H-Psychological	2	0	2	2.5	0.0	2.5	0	0	0	0.0	0.0	0.0	2	0	2	0.0	0.0	0.0	2	0	2	1.4	0.0	1.4
I-Unknown	11	0	11	13.8	0.0	13.8	9	0	9	14.1	0.0	14.1	17	0	17	15.9	0.0	15.9	42	0	42	29.6	0.0	29.6
J-Other	5	1	6	6.2	1.3	7.5	7	0	7	10.9	0.0	10.9	1	14	15	0.9	13.1	14.0	2	0	2	1.4	0.0	1.4
Total	56	24	80	70.0	30.0	100	44	20	64	68.8	31.3	100.	71	36	107	66.4	33.6	100.	128	14	142	90.1	9.9	100

Evaluation	May						June						July						August					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
A-Balloon	18	5	23	12.0	3.3	15.3	29	6	35	14.8	3.0	17.8	92	98	190	11.9	12.7	24.6	39	92	131	5.7	13.4	19.1
B-Astronomical	23	8	31	15.3	5.3	20.6	25	21	46	12.8	10.8	23.6	104	99	203	13.4	12.8	26.2	47	64	111	18.5	16.3	34.8
C-Aircraft	18	15	33	12.0	10.0	22.0	34	13	47	17.4	6.5	23.9	186	81	267	23.7	10.5	34.2	48	38	86	18.7	6.5	25.2
D-Light Phenom.	5	2	7	3.0	1.3	4.3	1	1	2	0.5	0.5	1.0	14	4	18	1.8	0.5	2.3	7	7	14	1.6	1.6	3.2
E-Birds	0	2	2	0.0	1.3	1.3	0	0	0	0.0	0.0	0.0	3	3	6	0.4	0.4	0.8	0	0	0	0.0	0.0	0.0
F-Clouds, Fog, etc.	2	0	2	1.3	0.0	1.3	4	0	4	2.0	0.0	2.0	1	1	2	0.1	0.1	0.2	0	1	1	0.0	0.2	0.2
G-Insufficient Info.	22	0	22	14.7	0.0	14.7	23	0	23	11.5	0.0	11.5	91	0	91	10.5	0.0	10.5	42	0	42	7.4	0.0	9.4
H-Psychological	0	0	0	0.0	0.0	0.0	6	0	6	3.0	0.0	3.0	9	9	17	1.2	1.0	2.2	8	1	11	2.2	0.2	2.4
I-Unknown	23	0	23	15.3	0.0	15.3	38	0	38	19.1	0.0	18.9	146	0	146	18.8	0.0	18.8	87	0	87	12.4	0.0	12.4
J-Other	7	2	9	4.7	1.3	6.0	7	1	8	3.5	0.5	4.0	28	1	31	3.7	0.1	3.8	11	5	16	2.6	1.1	3.5
Total	116	34	150	77.3	22.7	100.	159	42	201	79.1	20.9	100.	685	190	795	75.5	24.5	100.	291	158	449	64.8	35.2	100.

Evaluation	September						October						November						December					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
A-Balloon	6	13	19	5.1	6.8	11.9	8	12	20	5.6	8.2	13.8	5	12	17	4.3	10.8	14.2	6	6	12	4.7	4.7	9.4
B-Astronomical	30	11	41	15.6	5.7	21.3	23	19	46	15.9	13.1	31.8	25	19	43	20.8	15.8	35.8	29	23	52	22.8	18.1	40.9
C-Aircraft	13	31	44	6.8	16.1	22.9	14	15	29	6.8	10.2	17.0	11	8	19	9.2	6.7	15.9	8	12	20	6.5	9.4	15.4
D-Light Phenom.	1	2	3	0.5	1.0	1.5	1	4	5	0.7	2.7	3.4	3	1	4	2.5	0.8	3.3	1	0	1	0.8	0.0	0.8
E-Birds	1	2	3	0.5	1.0	1.5	2	2	4	1.4	1.4	2.8	9	0	9	0.8	0.0	0.8	8	4	9	0.9	0.0	0.9
F-Clouds, Fog, etc.	0	1	1	0.0	0.5	0.5	0	1	1	0.0	0.7	0.7	0	2	2	0.0	1.7	1.7	0	0	0	0.0	0.0	0.0
G-Insufficient Info.	20	0	20	10.4	0.0	10.4	10	0	10	6.8	0.0	6.8	7	0	7	5.8	0.0	5.8	9	0	9	7.1	0.0	7.1
H-Psychological	3	0	3	1.6	0.0	1.6	1	0	1	0.7	0.0	0.7	1	0	1	0.8	0.0	0.8	2	0	2	1.6	0.0	1.6
I-Unknown	47	0	47	24.9	0.0	24.9	31	0	31	21.1	0.0	21.1	23	0	23	19.2	0.0	19.2	23	0	23	18.1	0.0	18.1
J-Other	8	3	11	4.2	1.6	5.8	3	1	4	2.0	0.7	2.7	4	0	4	3.3	0.0	3.3	8	0	8	6.3	0.0	6.3
Total	129	63	192	67.8	32.8	100.	93	54	147	63.3	36.7	100.	79	41	120	65.9	34.2	100.	86	41	127	67.7	32.3	100.

TABLE XII EVALUATION OF UFO SIGHTINGS BY MONTHS OF YEAR, 1947

Evaluation	January	February	March	April
0-Balloon	NO DATA	NO DATA	NO DATA	NO DATA
1-Astronomical				
2-Aircraft				
3-Light Phenom.				
4-Birds				
5-Clouds, Dust, etc.				
6-Meteor, Ids.				
7-Psychological				
8-Hoaxes				
9-Other				
Total				

Evaluation	May	June	July	August
0-Balloon	NO DATA	1 0 1 7.7 0.0 7.7	6 0 6 13.0 0.0 13.0	0 0 0 0.0 0.0 0.0
1-Astronomical		0 1 1 0.0 7.7 7.7	2 3 5 4.3 6.5 10.8	2 1 3 18.2 9.1 27.3
2-Aircraft		2 0 2 15.4 0.0 15.4	0 2 2 0.0 4.3 4.3	0 0 0 0.0 0.0 0.0
3-Light Phenom.		0 0 0 0.0 0.0 0.0	1 0 1 2.2 0.0 2.2	0 0 0 0.0 0.0 0.0
4-Birds		0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0
5-Clouds, Dust, etc.		0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0
6-Meteor, Ids.		3 0 3 23.1 0.0 23.1	6 0 6 13.0 0.0 13.0	2 0 2 18.2 0.0 18.2
7-Psychological		1 0 1 7.7 0.0 7.7	0 2 2 0.0 4.3 4.3	0 0 0 0.0 0.0 0.0
8-Hoaxes		4 0 4 30.8 0.0 30.8	9 0 9 19.6 0.0 19.6	6 0 6 54.5 0.0 54.5
9-Other		1 0 1 7.7 0.0 7.7	15 0 15 32.6 0.0 32.6	0 0 0 0.0 0.0 0.0
Total		13 1 13 92.3 7.7 100.	34 7 46 73.8 15.2 100.	10 1 11 90.9 9.1 100.

Evaluation	September	October	November	December
0-Balloon	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0
1-Astronomical	1 0 1 16.7 0.0 16.7	8 2 10 44.5 15.4 76.9	1 1 2 33.3 33.3 66.6	5 0 5 100.0 0.0 100.0
2-Aircraft	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0
3-Light Phenom.	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0	1 0 1 33.3 0.0 33.3	0 0 0 0.0 0.0 0.0
4-Birds	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0
5-Clouds, Dust, etc.	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0
6-Meteor, Ids.	1 0 1 16.7 0.0 16.7	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0
7-Psychological	1 0 1 16.7 0.0 16.7	1 0 1 7.7 0.0 7.7	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0
8-Hoaxes	3 0 3 50.0 0.0 50.0	2 0 2 15.4 0.0 15.4	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0
9-Other	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0	0 0 0 0.0 0.0 0.0
Total	6 0 6 100.0 0.0 100.	11 2 13 84.6 15.4 100.	2 1 3 66.7 33.3 100.	5 0 5 100.0 0.0 100.

TABLE XII — EVALUATION OF NEWLY SELECTED BY MONTH OF YEAR — 1951

	JANUARY						FEBRUARY						MARCH						APRIL					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Evaluation	Cotton	Quality	Total	Cotton	Quality	Total	Cotton	Quality	Total	Cotton	Quality	Total	Cotton	Quality	Total	Cotton	Quality	Total	Cotton	Quality	Total	Cotton	Quality	Total
1-Excellent	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	28.6	0.0	28.6
2-Commercial	6	3	9	54.0	33.3	81.8	3	2	5	60.0	40.0	100.0	2	0	2	22.2	0.0	22.2	0	2	2	0.0	28.6	28.6
3-Fourth	3	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	0	3	42.9	0.0	42.9
4-Light Fawn	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Spotted	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	14.3	0.0	14.3
6-Gray, Badly Stained	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Gray, Stained	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Gray, Light Stained	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	9	4	13	69.2	33.3	100.0	5	2	7	71.4	28.6	100.0	5	4	9	55.6	44.4	100.0	7	2	9	77.8	22.2	100.0

	MAY						JUNE						JULY						AUGUST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Evaluation	Cotton	Quality	Total	Cotton	Quality	Total	Cotton	Quality	Total	Cotton	Quality	Total	Cotton	Quality	Total	Cotton	Quality	Total	Cotton	Quality	Total	Cotton	Quality	Total
1-Excellent	0	0	0	0.0	0.0	0.0	5	1	7	41.7	8.3	50.0	4	1	5	14.8	3.7	18.5	4	2	6	9.1	18.2	27.3
2-Commercial	1	1	2	10.0	10.0	20.0	0	0	0	0.0	0.0	0.0	4	4	8	14.8	14.8	29.6	2	2	4	18.2	18.2	36.4
3-Fourth	1	0	1	10.0	0.0	10.0	0	0	0	0.0	0.0	0.0	4	2	6	14.8	7.4	22.2	1	1	2	9.1	9.1	18.2
4-Light Fawn	0	2	2	0.0	20.0	20.0	0	0	0	0.0	0.0	0.0	1	0	1	3.7	0.0	3.7	0	0	0	0.0	0.0	0.0
5-Spotted	0	1	1	0.0	10.0	10.0	0	0	0	0.0	0.0	0.0	1	1	2	3.7	3.7	7.4	0	0	0	0.0	0.0	0.0
6-Gray, Badly Stained	0	0	0	0.0	0.0	0.0	1	0	1	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Gray, Stained	3	0	3	30.0	0.0	30.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	10.0	0.0	10.0
8-Gray, Light Stained	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Other	1	0	1	10.0	0.0	10.0	0	0	0	0.0	0.0	0.0	5	0	5	18.5	0.0	18.5	0	0	0	0.0	0.0	0.0
Total	6	4	10	60.0	40.0	100.0	7	2	9	77.8	22.2	100.0	19	8	27	70.4	29.6	100.0	8	5	13	61.5	38.5	100.0

	SEPTEMBER						OCTOBER						NOVEMBER						DECEMBER					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Evaluation	Cotton	Quality	Total	Cotton	Quality	Total	Cotton	Quality	Total	Cotton	Quality	Total	Cotton	Quality	Total	Cotton	Quality	Total	Cotton	Quality	Total	Cotton	Quality	Total
1-Excellent	0	2	2	0.0	33.3	33.3	3	3	6	15.0	15.0	30.0	1	2	3	5.9	11.8	17.7	2	0	2	8.3	0.0	8.3
2-Commercial	0	1	1	0.0	16.7	16.7	1	3	4	5.0	15.0	20.0	7	1	8	41.2	5.9	47.1	2	8	10	8.3	33.3	41.6
3-Fourth	1	0	1	16.7	0.0	16.7	1	0	1	5.0	0.0	5.0	4	0	4	23.5	0.0	23.5	0	1	1	0.0	8.3	8.3
4-Light Fawn	0	0	0	0.0	0.0	0.0	1	0	1	5.0	0.0	5.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Spotted	0	0	0	0.0	0.0	0.0	1	1	2	5.0	5.0	10.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	8.3	8.3
6-Gray, Badly Stained	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Gray, Stained	0	0	0	0.0	0.0	0.0	4	0	4	20.0	0.0	20.0	1	0	1	5.9	0.0	5.9	3	0	3	12.5	0.0	12.5
8-Gray, Light Stained	1	0	1	16.7	0.0	16.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Other	0	0	0	0.0	0.0	0.0	2	0	2	10.0	0.0	10.0	1	0	1	5.9	0.0	5.9	2	0	2	8.3	0.0	8.3
Total	2	4	6	33.3	66.7	100.0	13	7	20	65.0	35.0	100.0	14	3	17	82.4	17.6	100.0	16	8	24	66.7	33.3	100.0

TABLE XII. ELEVATION OF UNIT SELECTIONS BY MONTH OF YEAR, 1964

Excavation	JANUARY						FEBRUARY						MARCH						APRIL					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Bifaces	0	1	1	0.0	5.6	5.6	2	0	2	14.3	0.0	14.3	0	0	0	0.0	0.0	0.0	1	0	1	5.3	0.0	5.3
2-Atlatl weights	2	6	8	11.1	33.3	44.4	2	6	8	14.3	42.9	57.2	7	11	18	22.6	35.5	58.1	7	1	8	36.9	5.3	42.1
3-Atlatl	4	1	5	22.2	5.6	27.8	1	0	1	7.1	0.0	7.1	2	0	2	6.5	0.0	6.5	2	0	2	10.5	0.0	10.5
4-Light Projectile	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Drill	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	6.5	0.0	6.5	0	0	0	0.0	0.0	0.0
6-Choppers, Scrapers, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Small tools, Misc.	0	0	0	0.0	0.0	0.0	1	0	1	7.1	0.0	7.1	4	0	4	12.9	0.0	12.9	5	0	5	26.3	0.0	26.3
8-Physiological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Unknown	3	0	3	16.7	0.0	16.7	1	0	1	7.1	0.0	7.1	5	0	5	16.1	0.0	16.1	3	0	3	15.8	0.0	15.8
0-Other	1	0	1	5.6	0.0	5.6	1	0	1	7.1	0.0	7.1	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	10	8	18	55.6	44.4	100.	8	6	14	57.1	42.9	100.	20	11	31	64.5	35.5	100.	19	1	19	94.7	5.3	100.

Excavation	MAY						JUNE						JULY						AUGUST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Bifaces	4	1	5	10.0	2.5	12.5		0	1	5.9	0.0	5.9	1	0	1	6.2	0.0	6.2	0	0	0	0.0	0.0	0.0
2-Atlatl weights	7	4	11	17.5	10.0	27.5	1	3	4	5.9	17.6	23.5	0	5	5	0.0	31.2	31.2	1	30	31	2.6	76.9	79.5
3-Atlatl	4	3	7	10.0	7.5	17.5	1	1	2	5.9	5.9	11.8	0	3	3	0.0	18.8	18.8	1	2	3	2.6	5.1	7.7
4-Light Projectile	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Drills	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	6.2	6.2	0	0	0	0.0	0.0	0.0
6-Choppers, Scrapers, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Small tools, Misc.	11	0	11	27.5	0.0	27.5	2	0	2	11.8	0.0	11.8	3	0	3	18.8	0.0	18.8	2	0	2	5.1	0.0	5.1
8-Physiological	0	0	0	0.0	0.0	0.0	1	0	1	5.9	0.0	5.9	0	0	0	0.0	0.0	0.0	2	0	2	5.1	0.0	5.1
9-Unknown	6	6	12	15.0	0.0	15.0	6	0	6	35.3	0.0	35.3	2	0	2	12.5	0.0	12.5	1	0	1	2.6	0.0	2.6
0-Other	0	0	0	0.0	0.0	0.0	1	0	1	5.9	0.0	5.9	1	0	1	6.2	0.0	6.2	0	0	0	0.0	0.0	0.0
Total	32	8	40	80.0	20.0	100.	13	4	17	76.5	23.5	100.	7	9	16	43.8	56.2	100.	7	32	39	17.9	82.1	100.

Excavation	SEPTEMBER						OCTOBER						NOVEMBER						DECEMBER					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Bifaces	1	0	1	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0	0	1	1	0.0	6.7	6.7	1	0	1	6.7	0.0	6.7
2-Atlatl weights	0	0	0	0.0	0.0	0.0	1	3	4	11.1	33.3	44.4	4	7	11	26.7	46.7	73.4	2	4	6	13.3	26.7	40.0
3-Atlatl	0	0	0	0.0	0.0	0.0	1	1	2	11.1	11.1	22.2	0	1	1	0.0	6.7	6.7	2	0	2	13.3	0.0	13.3
4-Light Projectile	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Drills	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Choppers, Scrapers, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Small tools, Misc.	2	0	2	66.7	0.0	66.7	2	0	2	22.2	0.0	22.2	0	0	0	0.0	0.0	0.0	1	0	1	6.7	0.0	6.7
8-Physiological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Unknown	0	0	0	0.0	0.0	0.0	1	0	1	11.1	0.0	11.1	2	0	2	13.3	0.0	13.3	3	0	3	20.0	0.0	20.0
0-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	13.3	0.0	13.3
Total	3	0	3	100.0	0.0	100.	5	4	9	55.4	44.4	100.	6	9	15	40.0	60.0	100.	11	4	15	73.3	26.7	100.

TABLE XIII. EVALUATION OF UNIT SUBSTANCES BY MONTH OF YEAR, 1960

Evaluation	January						February						March						April					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Suicide	0	0	0	0.0	0.0	0.0	3	0	3	16.7	0.0	16.7	5	1	6	13.5	2.7	16.2	1	0	1	5.3	0.0	5.3
1-Homicide	5	3	11	50.0	18.8	68.8	2	4	6	11.1	22.2	33.3	9	0	9	24.3	0.0	24.3	4	0	4	21.1	0.0	21.1
2-Accident	2	0	2	12.5	0.0	12.5	4	0	4	22.2	0.0	22.2	7	4	11	18.9	10.8	29.7	4	0	4	21.1	0.0	21.1
3-Light Phenom.	0	1	1	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Body	4	0	4	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Death, Dept. etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Weather, Mis.	1	0	1	6.2	0.0	6.2	1	0	1	5.6	0.0	5.6	0	0	0	21.6	0.0	21.6	3	0	3	15.8	0.0	15.8
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	0	0.0	0.0	0.0	1	0	1	5.3	0.0	5.3
8-Unknown	1	0	1	6.2	0.0	6.2	2	0	2	11.1	0.0	11.1	4	0	4	10.8	0.0	10.8	6	0	6	31.6	0.0	31.6
9-Other	1	0	1	6.2	0.0	6.2	2	0	2	11.1	0.0	11.1	0	4	4	0.0	10.8	10.8	0	0	0	0.0	0.0	0.0
Total	13	3	16	81.3	18.8	100	18	4	18	72.8	27.2	100	33	4	37	75.2	24.8	100	19	0	19	100.0	0.0	100.

Evaluation	May						June						July						August					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Suicide	0	1	1	0.0	4.8	4.8	4	0	4	66.7	0.0	66.7	1	0	1	4.8	0.0	4.8	2	0	2	8.7	0.0	8.7
1-Homicide	1	2	3	4.5	14.3	28.6	0	0	0	0.0	0.0	0.0	7	0	7	33.3	0.0	33.3	1	6	7	4.3	26.1	30.4
2-Accident	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	4	1	5	19.0	4.8	23.8	4	1	5	17.4	4.3	21.7
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	4	0	0	0.0	0.0	0.0	0	0	1	0.0	0.0	0.0
4-Body	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	1	0.0	0.0	0.0
5-Death, Dept. etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Weather, Mis.	2	0	2	28.6	0.0	28.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	4	0	4	19.0	0.0	19.0	2	0	2	8.7	0.0	8.7
8-Unknown	1	0	1	14.3	0.0	14.3	2	0	2	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Other	1	1	1	0.0	14.3	14.3	0	0	0	0.0	0.0	0.0	4	0	4	19.0	0.0	19.0	6	0	6	26.1	0.0	26.1
													0	0	0	0.0	0.0	0.0	1	0	1	4.3	0.0	4.3
Total	5	2	7	71.4	28.6	100.	6	0	6	100.	0.0	100.	20	1	21	95.2	4.8	100.	6	7	23	26.6	38.9	100.

Evaluation	September						October						November						December					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Suicide	2	0	0	0.0	0.0	0.0		0		10.0	0.0	10.0	2	0	2	12.5	0.0	12.5	2	4	6	8.3	16.7	25.0
1-Homicide	5	0	5	38.5	0.0	38.5	1	1	2	10.0	0.0	20.0	0	0	0	0.0	0.0	0.0	9	3	12	37.5	12.5	50.0
2-Accident	2	0	2	15.4	0.0	15.4	0	1	1	0.0	10.0	10.0	2	4	6	12.5	25.0	37.5	1	0	1	4.2	0.0	4.2
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Body	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Death, Dept. etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Weather, Mis.	3	0	3	23.1	0.0	23.1	0	0	0	0.0	0.0	0.0	1	0	1	4.2	0.0	4.2	1	0	1	4.2	0.0	4.2
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	1	4.2	0.0	4.2
8-Unknown	1	0	1	7.7	0.0	7.7	0	0	0	0.0	0.0	0.0	5	0	5	20.8	0.0	20.8	2	0	2	8.3	0.0	8.3
9-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	4.2	0.0	4.2	1	0	0	4.2	0.0	4.2
Total	13	0	13	100.0	0.0	100.	1	2	10	10.0	20.0	100.	12	4	16	75.0	25.0	100.	17	7	24	70.2	29.2	99.

TABLE XIV EVALUATION OF UNIT SIGHTINGS BY MONTH OF YEAR, 1961

Evaluation	January						February						March						April					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total
1-Balloon	3	1	3	18.5	5.9	15.8	1	0	1	11.1	0.0	11.1	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
2-Astronomical	3	2	5	5.3	11.5	11.8	0	2	2	0.0	22.2	22.2	1	1	2	16.7	16.7	33.4	0	0	0	0.0	0.0	0.0
3-Aircraft	0	2	2	0.0	10.5	10.5	0	3	3	0.0	33.3	33.3	0	1	1	0.0	16.7	16.7	1	0	1	33.3	0.0	33.3
4-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Insects, Bits, etc.	5	0	5	26.3	0.0	26.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	66.7	0.0	66.7
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Unknown	5	0	5	26.3	0.0	26.3	1	0	1	11.1	0.0	11.1	3	0	3	50.0	0.0	50.0	0	0	0	0.0	0.0	0.0
10-Other	1	0	1	5.3	0.0	5.3	2	0	2	22.2	0.0	22.2	0	0	0	0.0	0.0	0.0						
Total	19	5	19	100.0	26.3	100	4	5	9	44.4	55.6	100	4	2	6	66.7	33.3	100	3	0	3	100.0	0.0	100

Evaluation	May						June						July						August					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total
1-Balloon	2	0	2	40.0	0.0	40.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	5.9	5.9	11.8
2-Astronomical	2	0	2	6.0	0.0	6.0	0	1	1	0.0	0.0	0.0	1	2	3	11.1	22.2	33.3	0	0	0	0.0	0.0	0.0
3-Aircraft	1	0	1	20.0	0.0	20.0	1	0	1	100.0	0.0	100.0	1	0	1	11.1	0.0	11.1	1	0	1	5.9	0.0	5.9
4-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	1	3	11.8	5.9	17.7
5-Birds	0	1	1	0.0	20.0	20.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Insects, Bits, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	0	3	17.6	0.0	17.6
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	11.1	11.1	0	0	0	0.0	0.0	0.0
9-Unknown	1	0	1	20.0	0.0	20.0	0	1	1	0.0	0.0	0.0	3	0	3	33.3	0.0	33.3	7	0	7	41.2	0.0	41.2
10-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	11.1	0.0	11.1	1	0	1	5.9	0.0	5.9
Total	5	1	5	100.0	20.0	100	1	0	1	100.0	0.0	100	6	3	9	66.7	33.3	100	15	2	17	88.2	11.8	100

Evaluation	September						October						November						December					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total
1-Balloon	1	0	1	5.9	0.0	5.9	1	0	1	4.2	0.0	4.2	0	1	1	0.0	6.2	6.2	1	0	1	9.1	0.0	9.1
2-Astronomical	2	1	3	11.8	5.9	17.7	6	1	7	25.0	4.2	29.2	8	4	12	50.0	25.0	75.0	2	1	3	18.2	9.1	27.3
3-Aircraft	1	0	1	5.9	0.0	5.9	4	2	6	16.7	8.3	25.0	2	0	2	12.5	0.0	12.5	4	0	4	36.4	0.0	36.4
4-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Insects, Bits, etc.	2	0	2	11.8	0.0	11.8	0	0	0	0.0	0.0	0.0	1	0	1	6.2	0.0	6.2	1	0	1	9.1	0.0	9.1
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	9.1	0.0	9.1
9-Unknown	8	0	8	47.1	0.0	47.1	9	0	9	37.5	0.0	37.5	0	0	0	0.0	0.0	0.0	1	0	1	9.1	0.0	9.1
10-Other	2	0	2	11.8	0.0	11.8	1	0	1	4.2	0.0	4.2	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	16	1	17	94.1	5.9	100	21	3	24	87.5	12.5	100	11	5	16	68.8	31.2	100	10	1	11	90.9	9.1	100

TABLE XIV - EVALUATION OF UNIT SHOOTINGS BY MONTH OF YEAR, 1962

Evaluation	JANUARY						FEBRUARY						MARCH					
	Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Safety	1	0	1	6.7	0.0	6.7	1	0	1	5.6	0.0	5.6	3	1	4	12.5	4.2	16.7
1-Accidental	4	4	5	26.7	26.7	53.3	4	1	5	22.2	5.6	27.8	1	0	1	4.2	0.0	4.2
2-Aircraft	0	0	0	0.0	0.0	0.0	2	2	4	11.1	11.1	22.2	3	2	5	12.5	8.3	20.8
3-Light Planes	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	4.2	0.0	4.2
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	4.2	4.2
6-Satellite, Mis.	1	0	1	6.7	0.0	6.7	1	0	1	5.6	0.0	5.6	1	0	1	4.2	0.0	4.2
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	2	0	2	13.3	0.0	13.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Other	2	0	2	13.3	0.0	13.3	5	0	5	27.8	0.0	27.8	2	0	2	16.7	0.0	16.7
Total	11	4	15	73.3	26.7	100.	15	3	18	83.3	16.7	100	14	10	24	58.3	41.7	100.

Evaluation	APRIL						MAY						JUNE					
	Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Safety	3	3	6	4.3	4.3	8.6	11	4	15	12.5	4.5	17.0	21	6	27	3.0	3.7	16.7
1-Accidental	15	0	15	16.5	0.0	16.5	14	2	16	15.9	2.3	18.2	28	17	45	16.9	10.6	28.5
2-Aircraft	41	28	69	14.7	7.2	19.9	12	12	24	3.6	17.6	22.2	26	12	38	16.1	7.5	23.6
3-Light Planes	5	6	11	7.4	7.7	15.1	3	0	3	3.4	1.0	3.4	1	0	1	0.6	0.0	.6
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	1	1	0.0	0.3	0.3	2	0	2	2.3	0.0	2.3	0	0	0	0.0	0.0	0.0
6-Satellite, Mis.	6	0	6	6.8	0.0	6.8	6	0	6	6.9	0.0	6.9	18	0	18	11.2	0.0	11.2
7-Psychological	1	0	1	0.0	0.0	0.0	8	0	8	9.0	0.0	9.0	4	0	4	2.5	0.0	2.5
8-Unknown	14	0	14	15.9	0.0	15.9	16	0	16	18.4	0.0	18.4	24	0	24	14.9	0.0	14.9
9-Other	7	1	8	8.0	1.1	9.1	7	1	8	8.0	1.1	9.1	5	1	6	3.1	0.6	3.7
Total	69	19	88	78.4	21.6	100.	82	36	118	93.6	23.4	100.	144	36	180	89.4	22.4	100.

Evaluation	JULY						AUGUST						SEPTEMBER					
	Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Safety	50	67	117	12.2	7.7	19.9	36	39	75	16.3	11.2	27.5	11	5	16	2.7	3.5	18.2
1-Accidental	96	30	126	3.7	4.6	15.3	41	25	66	14.7	7.2	19.9	22	9	31	15.0	6.1	21.1
2-Aircraft	89	23	112	10.8	11..	29.7	41	30	73	8.7	9.7	31.4	9	31	40	6..	21.1	27.2
3-Light Planes	3	0	3	3.4	1.0	3.4	5	6	11	1.4	1.7	3.1	1	2	3	0.7	1.4	2.1
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	2	0	2	2.3	0.0	2.3	0	1	1	0.0	0.3	0.3	1	1	2	0.7	0.7	1.4
6-Satellite, Mis.	6	0	6	6.8	0.0	6.8	11	0	11	3.2	0.0	3.2	3	0	3	2.1	0.0	2.1
7-Psychological	1	0	1	0.0	0.0	0.0	8	0	8	2.5	0.0	2.5	3	0	3	2.1	0.0	2.1
8-Unknown	14	0	14	15.9	0.0	15.9	24	0	24	6.7	0.0	6.7	20	0	20	14.0	0.0	14.0
9-Other	7	1	8	8.0	1.1	9.1	5	1	6	3.1	0.6	3.7	2	1	3	1.4	0.7	2.1
Total	68	19	87	77.3	21.6	100.	82.5	36	118	73.6	23.4	100.	99	16.2	69.5	75.3	24.7	100.	239	110	349	68.5	31.5	100.

Evaluation	OCTOBER						NOVEMBER						DECEMBER					
	Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Safety	5	9	13	4.2	12.7	16.9	2	8	10	3.7	14.8	18.5	0	2	2	0.0	4.2	4.2
1-Accidental	22	9	31	15.0	6.1	21.1	10	9	19	19.6	17.3	36.9	5	5	10	9.3	9.3	18.6
2-Aircraft	9	31	40	6..	21.1	27.2	4	11	15	5.6	15.5	21.1	3	3	6	5.6	5.6	11.2
3-Light Planes	1	2	3	0.7	1.4	2.1	0	4	4	0.0	5.6	5.6	2	1	3	3.7	1.9	5.6
4-Birds	1	2	3	0.7	1.4	2..	1	1	2	1.4	1.4	2.8	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	1	1	0.0	0.7	0.7	0	1	1	0.0	1.4	1.4	0	2	2	0.0	3.7	3.7
6-Satellite, Mis.	12	0	12	8.2	0.0	8.2	4	0	4	5.6	0.0	5.6	4	0	4	7.4	0.0	7.4
7-Psychological	1	0	1	0.7	0.0	0.7	0	0	0	0.0	0.0	0.0	1	0	1	1.9	0.0	1.9
8-Unknown	33	0	33	22.4	0.0	22.4	11	0	11	15.5	0.0	15.5	16	0	16	29.6	0.0	29.6
9-Other	6	2	8	4.1	1.4	5.5	3	1	3	2.8	1.4	4.2	2	0	2	3.7	0.0	3.7
Total	89	58	147	60.5	39.5	100.	35	36	71	49.3	50.7	100.	35	19	54	64.8	35.2	100.	28	20	48	58.3	41.7	100.

TABLE XII — DISTRIBUTION OF OBJECT SIGHTINGS BY MONTH OF YEAR, ALL YEARS

Evaluation	January						February						March						April					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	1	3	5	4.3	2.9	7.2	6	0	6	10.9	0.0	10.9	1	2	10	9.6	2.9	2.9	2	1	3	5.5	1.6	7.1
2-Astronomical	15	16	31	21.4	22.9	44.3	11	22	33	20.0	21.0	41.8	12	10	22	19.5	12.0	31.5	19	3	22	15.0	2.4	17.4
3-Aircraft	6	3	9	8.6	4.3	12.9	5	5	10	9.1	9.1	18.2	6	7	13	9.6	9.9	18.9	20	7	27	3.7	5.5	21.2
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	0.8	0.0	0.8
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	2	2	0.0	2.9	2.9	3	1	4	2.4	0.8	3.2
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	1.3	1.3	0	0	0	0.0	0.0	0.0
6-Unidentified	8	0	8	11.9	0.0	11.9	5	0	5	5.5	0.0	5.5	10	0	10	12.8	0.0	12.8	21	0	21	16.5	0.0	16.5
7-Psychological	2	0	2	2.9	0.0	2.9	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	1.6	0.0	1.6
8-Unknown	9	0	9	12.9	0.0	12.9	6	0	6	10.9	0.0	10.9	13	0	13	15.7	0.0	15.7	39	0	39	30.7	0.0	30.7
9-Other	5	1	6	7.1	1.5	8.5	7	0	7	12.7	0.0	12.7	4	5	9	1.2	9.6	10.8	2	0	2	1.6	0.0	1.6
Total	69	26	70	98.8	36.4	100.	55	32	55	99.9	30.9	100	55	28	83	66.3	33.7	100	126	25	151	99.8	19.2	119.

Evaluation	May						June						July						August					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	17	3	20	13.2	2.3	15.5	28	5	33	15.3	2.7	18.0	78	37	115	11.6	6.9	18.5	39	33	72	7.6	6.4	14.2
2-Astronomical	32	6	38	17.1	4.7	21.8	22	12	34	12.0	6.5	18.5	56	38	94	9.1	6.1	15.2	53	45	98	10.6	11.1	21.7
3-Aircraft	27	13	40	17.3	8.1	25.3	25	12	37	13.3	6.6	21.9	96	22	118	14.7	11.3	26.0	40	35	75	11.5	9.6	21.0
3-Light Phenom.	3	2	5	2.3	1.6	3.9	1	1	2	0.5	0.5	1.0	12	11	23	2.0	1.6	3.6	6	6	12	1.5	1.5	3.0
4-Birds	0	2	2	0.0	1.6	1.6	0	0	0	0.0	0.0	0.0	3	3	6	0.5	0.5	1.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	2	0	2	1.6	0.0	1.6	0	0	0	0.0	0.0	0.0	1	1	2	0.2	0.2	0.3	0	1	1	0.0	0.2	0.2
6-Unidentified	16	0	16	12.4	0.0	12.4	22	0	22	12.6	0.0	12.6	78	0	78	11.6	0.0	11.6	40	0	40	9.8	0.0	9.8
7-Psychological	0	0	0	0.0	0.0	0.0	6	0	6	3.3	0.0	3.3	5	5	10	.3	.3	2.6	10	1	11	2.5	0.2	2.7
8-Unknown	15	0	15	10.0	0.0	10.0	23	0	23	12.8	0.0	12.8	121	0	121	17.8	0.0	17.8	77	0	77	19.9	0.0	19.9
9-Other	8	2	8	4.7	1.6	6.3	2	1	3	1.0	0.5	1.5	20	1	25	2.8	0.2	3.0	11	5	16	2.7	1.2	3.9
Total	101	29	129	78.5	21.7	100.	147	36	183	80.3	19.7	100.	470	165	635	73.7	26.3	100.	225	132	407	62.6	32.9	110.

Evaluation	September						October						November						December					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	0	2	18	3.6	7.2	10.8	8	12	20	4.9	9.6	12.0	5	9	14	4.2	8.5	3.5	6	5	11	5.7	4.8	10.5
2-Astronomical	18	9	27	10.8	5.4	16.2	15	18	33	12.8	19.4	24.4	24	15	36	11.3	19.1	34.4	18	16	34	.7	15.2	32.3
3-Aircraft	13	27	40	7.8	16.3	24.1	9	11	20	7.2	8.8	16.4	11	6	17	10.4	5.7	16.1	7	11	18	6.7	10.5	17.2
3-Light Phenom.	1	2	3	0.6	1.2	1.8	1	2	3	0.8	1.6	2.4	3	1	4	2.8	0.9	3.7	1	0	1	1.0	0.0	1.0
4-Birds	1	2	3	0.6	1.2	1.8	2	2	4	1.6	1.6	3.2	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	1	1	0.0	0.6	0.6	0	1	1	0.0	0.8	0.8	0	2	2	0.0	1.9	1.9	0	0	0	0.0	0.0	0.0
6-Unidentified	19	0	19	11.4	0.0	11.4	10	0	10	8.0	0.0	8.0	7	0	7	6.6	0.0	6.6	9	0	9	8.6	0.0	8.6
7-Psychological	3	0	3	1.8	0.0	1.8	1	0	1	0.8	0.0	0.8	1	0	1	0.9	0.0	0.9	2	0	2	1.9	0.0	1.9
8-Unknown	42	0	42	25.3	0.0	25.3	38	0	38	30.8	0.0	30.8	22	0	22	19.9	0.0	19.9	22	0	22	2.0	0.0	21.0
9-Other	3	2	10	4.2	1.2	6.0	2	1	3	1.6	0.8	2.4	4	0	4	3.6	0.0	3.6	1	0	1	7.6	0.0	7.6
Total	111	55	166	66.9	33.1	100.	78	47	125	62.9	37.6	100.	75	33	106	69.8	31.1	100.	73	32	105	67.5	30.8	98.

TABLE XIX EVALUATION OF OBJECT SIGHTINGS BY MONTH OF YEAR, 1952

Evaluation	JANUARY						FEBRUARY						MARCH						APRIL					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon																								
2-Astronomical																								
3-Aircraft																								
4-Light Phenom.																								
5-Birds																								
6-Clouds, Dust, etc.																								
7-Searchlight, Mis.																								
8-Psychological																								
9-Unknown																								
10-Other																								
Total	NO DATA						NO DATA						NO DATA						NO DATA					

Evaluation	MAY						JUNE						JULY						AUGUST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon							1	0	1	7.7	0.0	7.7	6	0	6	15.0	0.0	15.0	0	0	0	0.0	0.0	0.0
2-Astronomical							0	1	1	0.0	7.7	7.7	2	3	5	5.0	7.5	12.5	1	1	2	10.0	10.0	20.0
3-Aircraft							2	0	2	15.4	0.0	15.4	0	2	2	0.0	5.0	5.0	0	0	0	0.0	0.0	0.0
4-Light Phenom.							0	0	0	0.0	0.0	0.0	1	0	1	2.5	0.0	2.5	0	0	0	0.0	0.0	0.0
5-Birds							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Dust, etc.							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Searchlight, Mis.							3	0	3	23.1	0.0	23.1	6	0	6	15.0	0.0	15.0	2	0	2	20.0	0.0	20.0
8-Psychological							1	0	1	7.7	0.0	7.7	2	2	4	5.0	5.0	10.0	0	0	0	0.0	0.0	0.0
9-Unknown							4	0	4	30.8	0.0	30.8	0	0	0	20.0	0.0	20.0	6	0	6	60.0	0.0	60.0
10-Other							1	0	1	7.7	0.0	7.7	10	0	10	25.0	0.0	25.0	0	0	0	0.0	0.0	0.0
Total							12	1	13	92.3	7.7	100	33	7	40	82.5	17.5	100	9	1	10	90.0	10.0	NO

Evaluation	SEPTEMBER						OCTOBER						NOVEMBER						DECEMBER					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
2-Astronomical	1	0	1	20.0	0.0	20.0	1	2	3	16.7	33.3	50.0	1	1	2	33.3	33.3	66.6	2	0	2	66.6	0.0	100.0
3-Aircraft	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Searchlight, Mis.	1	0	1	10.0	0.0	10.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Psychological	1	0	1	20.0	0.0	20.0	1	0	1	16.7	0.0	16.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Unknown	2	0	2	40.0	0.0	40.0	2	2	2	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
10-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	5	0	5	100	0.0	100	4	2	6	66.7	33.3	100	2	1	3	66.7	33.3	100	2	0	2	100.0	0.0	100

CHILD ABUSE EVALUATION OF ABUSIVE SCRATCHES BY MONTH OF YEAR, 1979

	January			February			March			April		
	Number			Number			Number			Number		
	Pre Child			Pre Child			Pre Child			Pre Child		
Evaluation	Victim	Doubtful	Total	Victim	Doubtful	Total	Victim	Doubtful	Total	Victim	Doubtful	Total
1-Father	0	0	0	0.0	0.0	0.0	1	0	1	14.3	0.0	14.3
2-Stepfather	4	3	7	57.1	42.9	100.0	3	0	3	42.9	0.0	42.9
3-Mother	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Mother's Friend	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Sibling	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Other	0	1	1	0.0	100.0	100.0	0	0	0	0.0	0.0	0.0
Total	6	4	10	60.0	40.0	100.0	5	2	7	71.4	28.6	100.0

	May			June			July			August		
	Number			Number			Number			Number		
	Pre Child			Pre Child			Pre Child			Pre Child		
Evaluation	Victim	Doubtful	Total	Victim	Doubtful	Total	Victim	Doubtful	Total	Victim	Doubtful	Total
1-Father	0	0	0	2	0	2	2	1	3	0	2	2
2-Stepfather	1	1	2	0	0	0	3	4	7	2	2	4
3-Mother	1	0	1	0	0	0	4	2	6	1	1	2
4-Mother's Friend	0	0	0	0	0	0	1	0	1	0	0	0
5-Sibling	2	0	2	0	1	1	0	1	1	0	0	0
6-Other	0	1	1	0	0	0	0	0	0	0	0	0
7-Stepfather's Friend	2	0	2	0	0	0	0	0	0	1	0	1
8-Unknown	3	0	3	0	0	0	0	0	0	0	0	0
9-Other	0	0	0	0	0	0	1	0	1	0	0	0
Total	6	4	10	2	1	3	16	9	25	4	5	9

	September			October			November			December		
	Number			Number			Number			Number		
	Pre Child			Pre Child			Pre Child			Pre Child		
Evaluation	Victim	Doubtful	Total	Victim	Doubtful	Total	Victim	Doubtful	Total	Victim	Doubtful	Total
1-Father	0	2	2	3	7	6	1	2	3	2	0	2
2-Stepfather	0	1		1	3	4	7	1	8	2	4	6
3-Mother	1	0	1	1	0	1	4	0	4	0	1	1
4-Mother's Friend	0	0	0	1	0	1	0	0	0	0	0	0
5-Sibling	0	0	0	1	1	2	0	0	0	0	0	0
6-Other	0	0	0	0	0	0	0	0	0	0	0	0
7-Stepfather's Friend	0	0	0	4	0	4	1	0	1	0	0	0
8-Unknown	1	0	1	0	0	0	0	0	0	0	0	0
9-Other	0	1	1	2	0	2	0	0	0	1	0	1
Total	2	4	6	13	7	20	14	3	17	5	5	19

TABLE XII. EVALUATION OF OBJECT SIGHTINGS, BY MONTH OF YEAR, 1952.

Evaluation	January						February						March						April					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	1	1	0.0	6.7	6.7	2	0	2	18.2	0.0	18.2	0	0	0	0.0	0.0	0.0	1	0	1	5.6	0.0	5.6
1-Astronomical	2	5	7	13.3	33.3	46.7	2	4	6	18.2	36.4	54.6	9	4	13	31.1	42.9	68.5	6	1	7	33.3	5.6	38.9
2-Aircraft	4	1	5	26.7	6.7	33.3	1	0	1	9.1	0.0	9.1	2	0	2	18.5	9.5	18.5	2	0	2	11.1	0.0	11.1
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Star	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	18.5	0.0	18.5	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	2	0	2	0.0	0.0	0.0	1	0	1	9.1	0.0	9.1	1	0	1	5.3	0.0	5.3	3	0	3	16.7	0.0	16.7
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	2	0	2	12.5	0.0	12.5	0	0	0	0.0	0.0	0.0	1	0	1	5.3	0.0	5.3	3	0	3	16.7	0.0	16.7
9-Other	1	0	1	6.2	0.0	6.2	1	0	1	9.1	0.0	9.1	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	9	7	16	56.2	43.8	100	7	4	11	63.6	36.4	100	10	9	19	52.6	47.4	100	17	1	18	94.4	5.6	100

Evaluation	May						June						July						August					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	4	0	4	13.8	0.0	13.8	1	0	1	8.3	0.0	8.3	1	0	1	3.7	0.0	3.7	0	0	0	0.0	0.0	0.0
1-Astronomical	6	2	8	20.7	6.9	27.6	1	3	4	8.3	25.0	33.3	0	4	4	0.0	26.7	26.7	1	16	17	4.0	64.0	68.0
2-Aircraft	4	3	7	13.8	10.3	24.1	1	1	2	8.3	8.3	16.6	0	3	3	0.0	20.0	20.0	1	2	3	4.0	8.0	12.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Star	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	6.7	6.7	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	3	2	5	17.2	0.0	17.2	2	0	2	16.7	0.0	16.7	3	0	3	20.0	0.0	20.0	2	0	2	8.0	0.0	8.0
7-Psychological	0	0	0	0.0	0.0	0.0	1	0	1	8.3	0.0	8.3	0	0	0	0.0	0.0	0.0	2	0	2	8.0	0.0	8.0
8-Unknown	5	0	5	17.2	0.0	17.2	1	0	1	8.3	0.0	8.3	2	0	2	13.3	0.0	13.3	1	0	1	4.0	0.0	4.0
9-Other	0	0	0	0.0	0.0	0.0	1	0	1	8.3	0.0	8.3	1	0	1	6.7	0.0	6.7	0	0	0	0.0	0.0	0.0
Total	29	5	34	82.8	17.2	100	8	4	12	66.7	33.3	100	7	8	15	46.7	53.3	100	7	18	25	28.0	72.0	100

Evaluation	September						October						November						December					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	1	0	1	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0	0	1	1	0.0	8.3	8.3	1	0	1	6.7	0.0	6.7
1-Astronomical	0	3	0	0.0	0.0	0.0	1	3	4	11.1	33.3	44.4	4	4	8	33.3	33.3	66.6	2	4	6	13.3	26.6	39.9
2-Aircraft	0	0	0	0.0	0.0	0.0	1	1	2	11.1	11.1	22.2	0	1	1	0.0	8.3	8.3	2	0	2	13.3	0.0	13.3
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Star	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	2	0	2	66.7	0.0	66.7	2	0	2	22.2	0.0	22.2	0	0	0	0.0	0.0	0.0	1	0	1	6.7	0.0	6.7
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	0	0	0	0.0	0.0	0.0	1	0	1	11.1	0.0	11.1	2	0	2	11.7	0.0	16.7	2	0	2	13.3	0.0	13.3
9-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	13.3	0.0	13.3
Total	3	0	3	100.0	0.0	100.	5	4	9	55.6	44.4	100.	6	6	12	50.0	50.0	100.	11	4	15	73.3	26.7	100.

TABLE 22. ELEVATION OF OBJECT SIGHTINGS BY MONTH OF YEAR, 1950

Evaluation	January						February						March						April					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	0	0	0	0.0	0.0	0.0	1	0	1	5.6	0.0	5.9	5	1	6	17.9	3.6	21.5	1	0	1	7.1	0.0	7.1
2-Astronomical	5	3	8	38.5	23.1	61.6	2	1	3	11.1	5.6	17.6	4	0	4	14.3	0.0	14.3	1	0	1	7.1	0.0	7.1
3-Aircraft	2	0	2	15.4	0.0	15.4	3	0	3	16.7	0.0	16.7	3	4	7	10.7	14.3	25.0	3	0	3	42.9	0.0	42.9
4-Aircraft	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Insufficient Info.	1	0	1	7.7	0.0	7.7	1	0	1	5.6	0.0	5.9	6	0	6	21.5	0.0	21.4	3	0	3	21.4	0.0	21.4
9-Psychological	0	0	0	0.0	0.0	0.0	1	0	1	5.6	0.0	5.9	0	0	0	0.0	0.0	0.0	1	0	1	7.1	0.0	7.1
10-Unknown	1	0	1	7.7	0.0	7.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
11-Other	1	0	1	7.7	0.0	7.7	2	0	2	11.1	0.0	11.1	0	1	1	0.0	3.6	3.6	0	0	0	0.0	0.0	0.0
Total	0	3	13	76.9	23.1	100.	12	3	15	76.9	23.1	100.	22	6	28	78.6	21.4	100.	10	0	14	100.0	0.0	100.

Evaluation	May						June						July						August					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	1	0	1	14.3	0.0	14.3	4	0	4	44.4	0.0	44.4	1	0	1	6.7	0.0	6.7	2	0	2	10.0	0.0	10.0
2-Astronomical	1	1	2	14.3	14.3	28.6	0	0	0	0.0	0.0	0.0	1	0	1	6.7	0.0	6.7	1	4	5	5.0	20.0	25.0
3-Aircraft	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	4	1	5	26.7	6.7	33.4	4	1	5	20.0	5.0	25.0
4-Aircraft	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	10.0	0.0	10.0
5-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Insufficient Info.	2	0	2	28.6	0.0	28.6	0	0	0	0.0	0.0	0.0	4	0	4	26.7	0.0	26.7	2	0	2	10.0	0.0	10.0
9-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
10-Unknown	1	0	1	14.3	0.0	14.3	2	0	2	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0	5	0	5	25.0	0.0	25.0
11-Other	0	1	1	0.0	14.3	14.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	5.0	0.0	5.0
Total	5	2	7	71.4	28.6	100.	6	0	6	100.0	0.0	100.	12	1	15	93.3	6.7	100.	15	5	20	75.0	25.0	100.

Evaluation	September						October						November						December					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	0	0	0	0.0	0.0	0.0	0	1	1	0.0	11.1	11.1	2	0	2	16.7	0.0	16.7	2	3	5	11.8	17.6	29.4
2-Astronomical	5	0	5	38.5	0.0	38.5	2	1	3	18.2	10.0	28.2	0	0	0	0.0	0.0	0.0	4	2	6	23.5	11.8	35.3
3-Aircraft	2	0	2	15.4	0.0	15.4	0	1	1	0.0	10.0	10.0	2	2	4	16.7	16.7	33.4	1	0	1	5.9	0.0	5.9
4-Aircraft	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Light Phenom.	2	0	2	15.4	0.0	15.4	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Insufficient Info.	3	0	3	23.1	0.0	23.1	0	0	0	0.0	0.0	0.0	1	0	1	8.3	0.0	8.3	1	0	1	5.9	0.0	5.9
9-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	5.9	0.0	5.9
10-Unknown	3	0	3	23.1	0.0	23.1	0	0	0	0.0	0.0	0.0	4	0	4	33.3	0.0	33.3	2	0	2	11.8	0.0	11.8
11-Other	0	0	0	0.0	0.0	0.0	6	0	6	60.0	0.0	60.0	1	0	1	8.3	0.0	8.3	1	0	1	5.9	0.0	5.9
Total	13	0	13	100.0	0.0	100.	8	2	10	80.0	20.0	100.	10	2	12	83.3	16.7	100.	12	5	17	70.6	29.4	100.

TABLE 123 EVALUATION OF OBJECT SIGHTINGS BY MONTH OF YEAR, 1951

Evaluation	January						February						March						April					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	2		2	11.1	5.6	16.7		0	0	11.1	0.0	11.1	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
1-Astronomical		2	2	5.6	11.1	16.7	0	2	2	0.0	22.2	22.2	1	1	2	16.7	16.7	33.4	0	0	0	0.0	0.0	0.0
2-Aircraft	0	2	2	0.0	11.1	11.1	0	3	3	0.0	33.3	33.3	0	1	1	0.0	16.7	16.7	1	0	1	33.3	0.0	33.3
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Bird	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	5	0	5	27.8	0.0	27.8	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	66.7	0.0	66.7
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	4	0	4	22.2	0.0	22.2	0	0	0	11.1	0.0	11.1	3	0	3	50.0	0.0	50.0	0	0	0	0.0	0.0	0.0
9-Other	1	0	1	5.6	0.0	5.6	0	0	0	22.2	0.0	22.2	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	13	5	18	72.2	27.8	100	4	5	9	44.4	55.6	100.	4	2	6	66.7	33.3	100.	3	0	3	100.0	0.0	100.

Evaluation	May						June						July						August					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	1	0	1	25.0	0.0	25.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	6.2	6.2	12.4
1-Astronomical	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	2	3	12.5	25.0	37.5	0	0	0	0.0	0.0	0.0
2-Aircraft	1	0	1	25.0	0.0	25.0	1	0	1	100.0	0.0	100.0	1	0	1	12.5	0.0	12.5	1	0	1	6.2	0.0	6.2
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	6.2	6.2	12.4
4-Bird	0	1	1	0.0	25.0	25.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insuffic. Info.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	0.0	0.0	0.0	3	0	3	18.8	0.0	18.8
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	12.5	12.5	0	0	0	0.0	0.0	0.0
8-Unknown	1	0	1	25.0	0.0	25.0	0	0	0	0.0	0.0	0.0	2	0	2	25.0	0.0	25.0	7	0	7	43.8	0.0	43.8
9-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	12.5	0.0	12.5	1	0	1	6.2	0.0	6.2
Total	3	1	4	75.0	25.0	100.	1	0	1	100.0	0.0	100.	8	3	8	62.5	37.5	100.	14	2	16	87.5	12.5	100.

Evaluation	September						October						November						December					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	1	0	1	6.7	0.0	6.7	1	0	1	5.3	0.0	5.3	0	1	1	0.0	8.3	8.3	1	0	1	10.0	0.0	10.0
1-Astronomical	2	1	3	13.3	6.7	20.0	5	1	6	26.3	5.3	31.6	4	4	8	33.3	33.3	66.6	2	1	3	20.0	10.0	30.0
2-Aircraft	1	0	1	6.7	0.0	6.7	4	0	4	21.1	0.0	21.1	2	0	2	16.7	0.0	16.7	3	0	3	30.0	0.0	30.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Bird	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insuffic. Info.	2	0	2	13.3	0.0	13.3	0	0	0	0.0	0.0	0.0	1	0	1	8.3	0.0	8.3	1	0	1	10.0	0.0	10.0
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	10.0	0.0	10.0
8-Unknown	6	0	6	40.0	0.0	40.0	8	0	8	42.1	0.0	42.1	0	0	0	0.0	0.0	0.0	1	0	1	10.0	0.0	10.0
9-Other	2	0	2	13.3	0.0	13.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	14	1	15	93.3	6.7	100.	19	1	19	99.7	5.3	100.	7	5	12	58.3	41.7	100.	9	1	10	90.0	10.0	100.

TABLE XXV — ENUMERATION OF OBJECT SIGHTINGS BY MONTH OF YEAR, 1952

Location	January			February			March			April		
	Number			Number			Number			Number		
	Civilian	Disability	Total	Civilian	Disability	Total	Civilian	Disability	Total	Civilian	Disability	Total
1-Quebec	1	0	1	1	0	1	3	1	4	3	2	5
2-Massachusetts	3	3	6	4	1	5	1	0	1	12	0	12
3-Alaska	0	0	0	2	2	4	1	2	3	12	2	14
4-Puerto Rico	0	0	0	0	0	0	0	0	0	1	0	1
5-Virgin Islands	0	0	0	1	0	1	1	0	1	2	1	3
6-Hawaii	0	0	0	0	0	0	0	1	1	0	0	0
7-Canada, Great Britain	0	0	0	0	0	0	2	1	3	2	0	2
8-Australia, New Zealand	1	0	1	1	0	1	1	0	1	10	0	10
9-Philippines	0	0	0	0	0	0	0	0	0	1	0	1
10-Germany	2	0	2	4	0	4	4	0	4	28	0	28
11-Other	2	0	2	2	0	2	1	0	1	2	0	2
Total	10	3	13	14	3	17	14	5	19	73	10	83

Location	May			June			July			August		
	Number			Number			Number			Number		
	Civilian	Disability	Total	Civilian	Disability	Total	Civilian	Disability	Total	Civilian	Disability	Total
1-Quebec	11	3	14	20	5	25	49	20	69	36	36	72
2-Massachusetts	9	2	11	21	13	34	51	25	76	38	22	60
3-Alaska	21	14	35	24	11	35	95	69	164	40	31	71
4-Puerto Rico	3	0	3	1	0	1	11	4	15	5	5	10
5-Virgin Islands	0	0	0	0	0	0	3	1	4	0	0	0
6-Hawaii	2	0	2	2	0	2	1	1	2	2	1	3
7-Canada, Great Britain	6	2	8	13	0	13	41	0	41	28	0	28
8-Australia, New Zealand	2	0	2	4	0	4	9	5	13	8	1	9
9-Philippines	18	0	18	26	0	26	130	0	130	59	0	59
10-Germany	6	1	7	5	1	6	11	1	12	9	4	13
11-Other												
Total	63	16	79	140	30	170	403	141	544	236	104	336

Location	September			October			November			December		
	Number			Number			Number			Number		
	Civilian	Disability	Total	Civilian	Disability	Total	Civilian	Disability	Total	Civilian	Disability	Total
1-Quebec	4	10	14	3	9	12	2	5	7	0	2	2
2-Massachusetts	9	2	11	6	8	14	5	5	10	6	5	11
3-Alaska	9	27	36	3	9	12	3	3	6	1	10	11
4-Puerto Rico	1	2	3	0	2	2	2	1	3	1	0	1
5-Virgin Islands	1	2	3	1	1	2	0	0	0	0	0	0
6-Hawaii	2	1	3	0	1	1	0	2	2	0	0	0
7-Canada, Great Britain	11	0	11	4	0	4	4	0	4	3	0	3
8-Australia, New Zealand	1	0	1	0	0	0	1	0	1	0	0	0
9-Philippines	31	0	31	11	0	11	15	0	15	11	0	11
10-Germany	4	1	5	2	1	3	3	0	3	3	0	3
11-Other												
Total	74	54	128	30	31	61	35	16	51	25	17	42

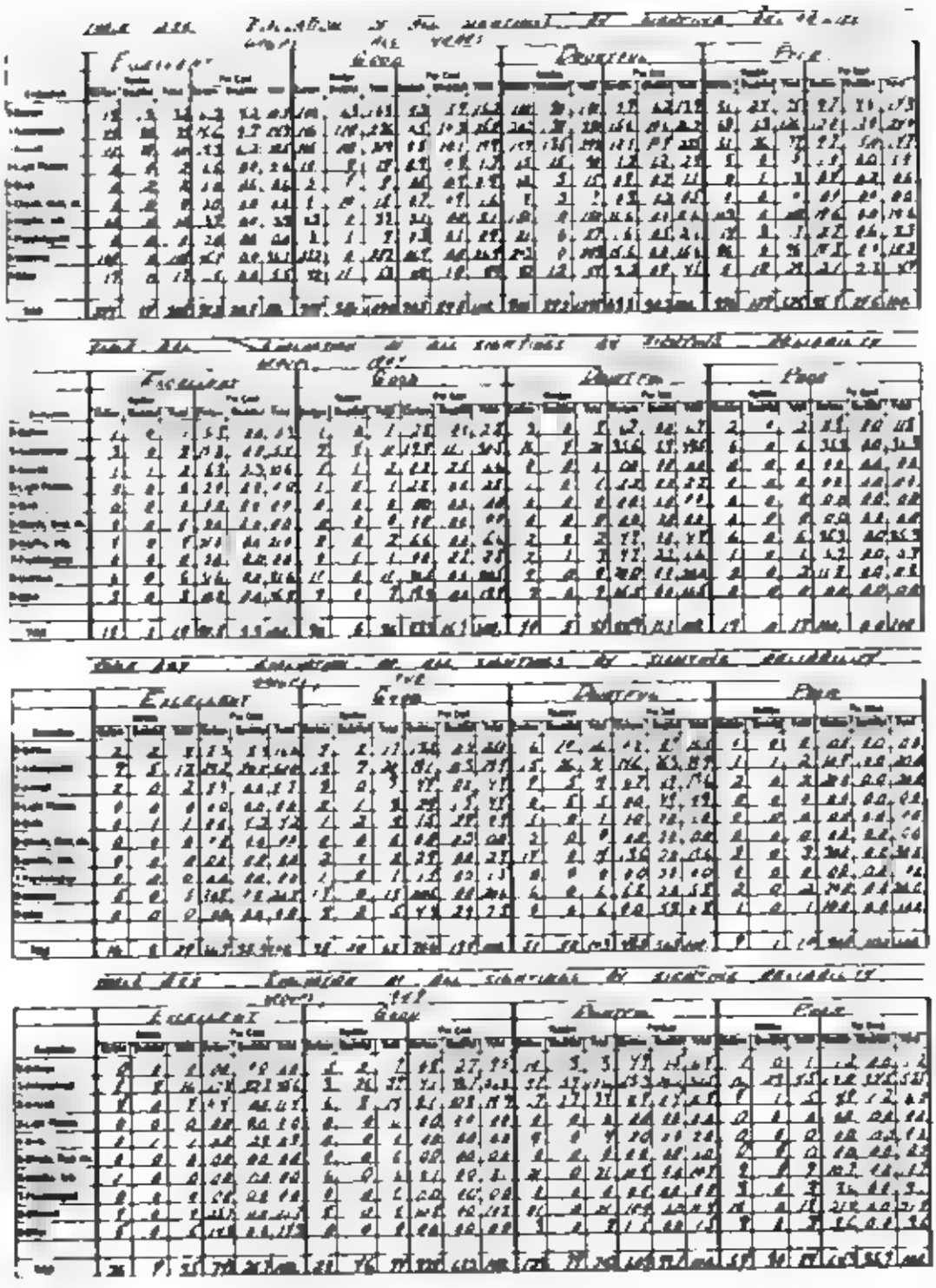


TABLE 129 EVALUATION OF ALL SIGHTINGS BY SIGHTING RELIABILITY GROUPS, 1950

Evaluation	EXCELLENT Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total	GOOD Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total	DOUBTFUL Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total	POOR Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total
1-Balloon	4	0	4	3.2	0.0	3.2	3	0	3	5.1	0.0	5.1	18	5	23	18.6	4.1	18.7	8	2	10	16.7	2.7	13.4
2-Astronomical	7	7	14	16.3	16.3	32.6	20	5	25	33.9	6.8	40.7	12	8	20	9.8	6.5	16.3	10	2	12	12.8	2.7	15.4
3-Aircraft	6	1	7	5.2	2.8	10.2	6	5	11	10.2	8.5	18.7	17	9	26	13.8	7.3	21.1	12	0	12	16.4	0.0	16.0
4-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	19	0	19	25.3	0.0	25.3
7-Satellite, Meteor	4	0	4	3.2	0.0	3.2	1	0	1	1.7	0.0	1.7	25	0	25	20.3	0.0	20.3	4	0	4	5.3	0.0	5.3
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	1.3	0.0	1.3
9-Unknown	21	0	21	16.7	0.0	16.7	12	0	12	20.3	0.0	20.3	23	0	23	12.9	0.0	12.9	14	0	14	21.3	0.0	21.3
10-Other	1	0	1	0.8	0.0	0.8	1	3	4	1.7	5.1	6.8	8	11	7	7.6	8.3	9.6	2	0	2	2.7	0.0	2.7
Total	44	9	53	34.7	16.3	100.	43	16	59	73.3	27.1	100.	97	26	123	78.9	21.	100.	71	4	75	94.7	5.3	100.

TABLE 130 EVALUATION OF ALL SIGHTINGS BY SIGHTING RELIABILITY GROUPS, 1951

Evaluation	EXCELLENT Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total	GOOD Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total	DOUBTFUL Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total	POOR Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total
1-Balloon	1	0	1	5.1	0.0	5.1	5	1	6	12.2	2.4	14.6	2	2	4	2.9	2.9	5.7	2	1	3	4.7	2.1	7.0
2-Astronomical	3	2	5	15.2	12.1	27.3	13	5	18	31.7	12.2	43.9	7	4	7	5.2	5.9	11.1	6	6	12	14.0	14.0	28.0
3-Aircraft	2	1	4	6.2	3.3	12.5	7	0	7	17.1	0.0	17.1	2	4	6	3.0	6.1	10.8	4	3	7	9.2	7.0	16.2
4-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	1	3	3.4	1.7	5.1	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0	0	1	1	0.0	2.4	2.4	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Satellite, Meteor	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	9	0	9	15.5	0.0	15.5	5	0	5	12.2	0.0	12.2
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	1.7	1.7	3.4	0	0	0	0.0	0.0	0.0
9-Unknown	3	0	3	15.5	0.0	15.5	4	0	4	24.4	0.0	24.4	25	0	25	43.1	0.0	43.1	11	0	11	26.8	0.0	26.8
10-Other	1	0	1	5.2	0.0	5.2	0	0	0	0.0	0.0	0.0	1	0	1	1.4	0.0	1.4	5	0	5	12.2	0.0	12.2
Total	15	3	18	83.3	16.7	100.	36	7	41	87.8	17.1	100.	56	12	68	79.2	24.2	100.	33	10	43	76.8	23.2	100.

TABLE 131 EVALUATION OF ALL SIGHTINGS BY SIGHTING RELIABILITY GROUPS, 1952

Evaluation	EXCELLENT Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total	GOOD Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total	DOUBTFUL Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total	POOR Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total
1-Balloon	11	11	22	6.7	6.7	13.4	77	52	129	9.7	6.6	16.3	61	60	121	9.0	7.8	15.8	35	24	59	12.5	7.1	19.7
2-Astronomical	17	9	26	10.4	5.9	15.3	110	50	160	13.9	6.3	20.2	109	97	206	16.2	9.8	26.0	76	25	101	9.1	9.8	26.5
3-Aircraft	27	16	43	16.6	9.8	26.4	92	34	126	16.3	6.9	23.2	112	108	220	16.6	13.0	32.6	29	22	51	9.9	7.3	17.2
4-Light Phenom.	2	0	2	1.2	0.0	1.2	7	8	15	0.9	1.0	1.9	12	9	21	1.6	1.2	2.8	5	0	5	1.7	0.0	1.7
5-Birds	0	0	0	0.0	0.0	0.0	4	1	5	0.5	0.1	0.6	7	2	10	0.9	0.2	1.3	2	1	3	0.7	0.3	1.0
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	9	10	19	1.0	1.3	2.3	4	3	7	0.5	0.4	0.9	0	0	0	0.0	0.0	0.0
7-Satellite, Meteor	11	0	11	2.5	0.0	2.5	22	0	22	2.8	0.0	2.8	79	0	79	10.3	0.0	10.3	61	0	61	20.6	0.0	20.6
8-Psychological	2	0	2	0.3	0.0	0.3	2	0	2	0.3	0.0	0.3	18	4	22	2.3	0.5	2.8	6	3	9	2.0	1.1	3.1
9-Unknown	60	0	60	26.9	0.0	26.9	226	0	226	29.5	0.0	29.5	120	0	120	15.6	0.0	15.6	47	0	47	15.9	0.0	15.9
10-Other	7	0	7	3.3	0.0	3.3	21	6	27	2.7	0.8	3.5	22	3	25	2.9	0.3	3.2	0	12	12	0.0	4.1	4.1
Total	135	35	169	59.5	12.5	100.	571	224	795	74.5	29.2	100.	587	219	767	76.6	28.6	100.	212	84	296	71.6	28.2	100.

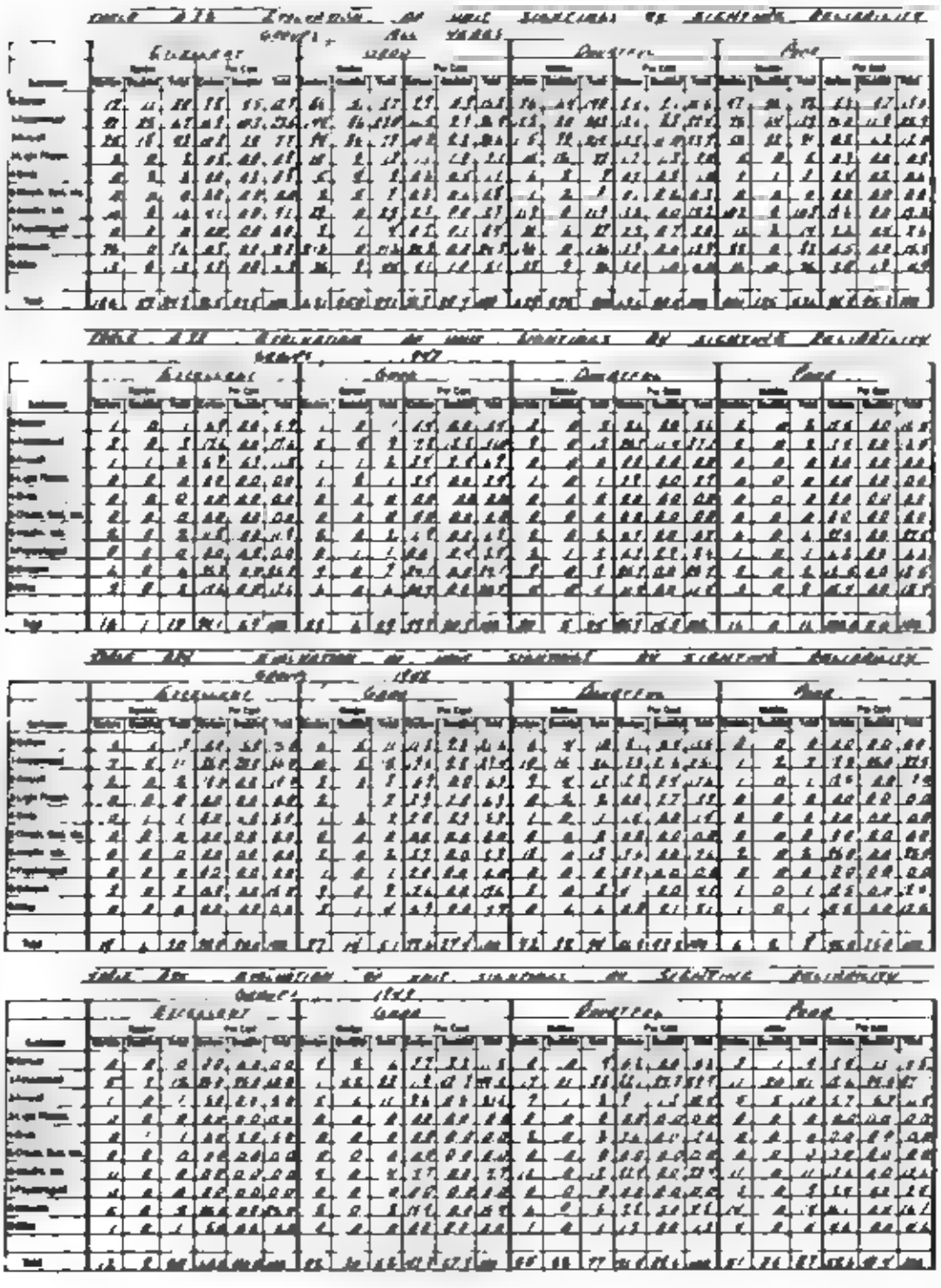


TABLE B5a EVALUATION OF UNIT SIGHTINGS BY SIGHTING RELIABILITY GROUPS, 1950

Evaluation	Excellent			Good			Doubtful			Poor		
	Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Safety	0	6	6	11.9	0.0	11.9	3	0	3	5.6	0.0	5.6
2-Administration	6	5	11	17.1	14.3	31.4	12	8	20	33.3	22.9	57.1
3-Health	2	1	3	5.7	2.9	8.6	6	4	10	11.1	7.4	18.5
4-Legal Matters	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Safety	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Welfare, Rec. etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Welfare, Info.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Unknown	12	8	20	34.3	22.9	57.1	10	0	10	28.6	0.0	28.6
0-Other	1	0	1	2.9	0.0	2.9	1	3	4	2.9	8.6	11.5
Total	21	14	35	60.0	40.0	100	32	15	47	91.4	42.9	134.3

Evaluation	Poor		
	Number		
	Certain	Doubtful	Total
1-Safety	9	9	18
2-Administration	12	1	13
3-Health	17	4	21
4-Legal Matters	0	0	0
5-Safety	0	0	0
6-Welfare, Rec. etc.	0	0	0
7-Welfare, Info.	17	0	17
8-Psychological	2	0	2
9-Unknown	14	0	14
0-Other	3	1	4
Total	74	15	111

Evaluation	Percentage		
	Certain	Doubtful	Total
1-Safety	10.3	10.3	20.6
2-Administration	34.3	2.9	37.1
3-Health	9.7	12.1	31.8
4-Legal Matters	0.0	0.0	0.0
5-Safety	0.0	0.0	0.0
6-Welfare, Rec. etc.	0.0	0.0	0.0
7-Welfare, Info.	48.6	0.0	48.6
8-Psychological	5.7	0.0	5.7
9-Unknown	40.0	0.0	40.0
0-Other	8.6	2.9	11.5
Total	212.1	42.9	255.0

TABLE B5b EVALUATION OF UNIT SIGHTINGS BY SIGHTING RELIABILITY GROUPS, 1951

Evaluation	Excellent			Good			Doubtful			Poor		
	Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Safety	1	0	1	2.9	0.0	2.9	4	1	5	11.1	2.8	13.9
2-Administration	2	2	4	5.6	5.6	11.1	6	4	10	16.7	11.1	27.8
3-Health	2	1	3	5.6	2.8	8.3	7	0	7	19.4	0.0	19.4
4-Legal Matters	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Safety	0	0	0	0.0	0.0	0.0	0	1	1	0.0	2.8	2.8
6-Welfare, Rec. etc.	1	0	1	2.8	0.0	2.8	1	0	1	2.8	0.0	2.8
7-Welfare, Info.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Unknown	6	0	6	16.7	0.0	16.7	7	0	7	19.5	0.0	19.5
0-Other	1	0	1	2.8	0.0	2.8	0	0	0	0.0	0.0	0.0
Total	13	3	16	36.1	8.3	44.4	25	6	31	69.5	16.7	86.2

Evaluation	Poor		
	Number		
	Certain	Doubtful	Total
1-Safety	2	0	2
2-Administration	2	0	2
3-Health	2	0	2
4-Legal Matters	0	0	0
5-Safety	0	0	0
6-Welfare, Rec. etc.	0	0	0
7-Welfare, Info.	0	0	0
8-Psychological	0	0	0
9-Unknown	5	0	5
0-Other	0	0	0
Total	11	0	11

Evaluation	Percentage		
	Certain	Doubtful	Total
1-Safety	5.6	0.0	5.6
2-Administration	5.6	2.8	8.4
3-Health	5.6	2.8	8.4
4-Legal Matters	0.0	0.0	0.0
5-Safety	0.0	0.0	0.0
6-Welfare, Rec. etc.	0.0	0.0	0.0
7-Welfare, Info.	13.9	0.0	13.9
8-Psychological	0.0	0.0	0.0
9-Unknown	13.9	0.0	13.9
0-Other	0.0	0.0	0.0
Total	30.6	2.8	33.4

TABLE B5c EVALUATION OF UNIT SIGHTINGS BY SIGHTING RELIABILITY GROUPS, 1952

Evaluation	Excellent			Good			Doubtful			Poor		
	Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Safety	11	10	21	6.3	5.8	12.1	48	63	111	27.8	36.4	64.2
2-Administration	13	5	18	7.5	2.9	10.4	58	57	115	33.5	32.9	66.4
3-Health	14	15	29	8.1	8.7	16.8	76	70	146	43.9	40.5	84.4
4-Legal Matters	0	0	0	0.0	0.0	0.0	2	3	5	1.2	1.7	2.9
5-Safety	0	0	0	0.0	0.0	0.0	11	5	16	6.4	2.9	9.3
6-Welfare, Rec. etc.	0	0	0	0.0	0.0	0.0	2	5	7	1.2	2.9	4.1
7-Welfare, Info.	9	0	9	5.2	0.0	5.2	30	0	30	17.3	0.0	17.3
8-Psychological	0	0	0	0.0	0.0	0.0	2	0	2	1.2	0.0	1.2
9-Unknown	45	0	45	26.0	0.0	26.0	111	0	111	64.2	0.0	64.2
0-Other	3	0	3	1.7	0.0	1.7	26	5	31	15.0	2.9	17.9
Total	101	33	134	58.4	19.1	77.5	370	179	549	214.0	103.5	317.5

Evaluation	Poor		
	Number		
	Certain	Doubtful	Total
1-Safety	31	31	62
2-Administration	46	26	72
3-Health	31	31	62
4-Legal Matters	2	1	3
5-Safety	5	0	5
6-Welfare, Rec. etc.	2	1	3
7-Welfare, Info.	11	0	11
8-Psychological	2	0	2
9-Unknown	43	0	43
0-Other	0	9	9
Total	173	99	272

Evaluation	Percentage		
	Certain	Doubtful	Total
1-Safety	17.9	17.9	35.8
2-Administration	26.6	15.0	41.6
3-Health	17.9	17.9	35.8
4-Legal Matters	1.2	0.6	1.8
5-Safety	2.9	0.0	2.9
6-Welfare, Rec. etc.	1.2	0.6	1.8
7-Welfare, Info.	6.4	0.0	6.4
8-Psychological	1.2	0.0	1.2
9-Unknown	24.9	0.0	24.9
0-Other	0.0	5.2	5.2
Total	100.0	57.2	157.2

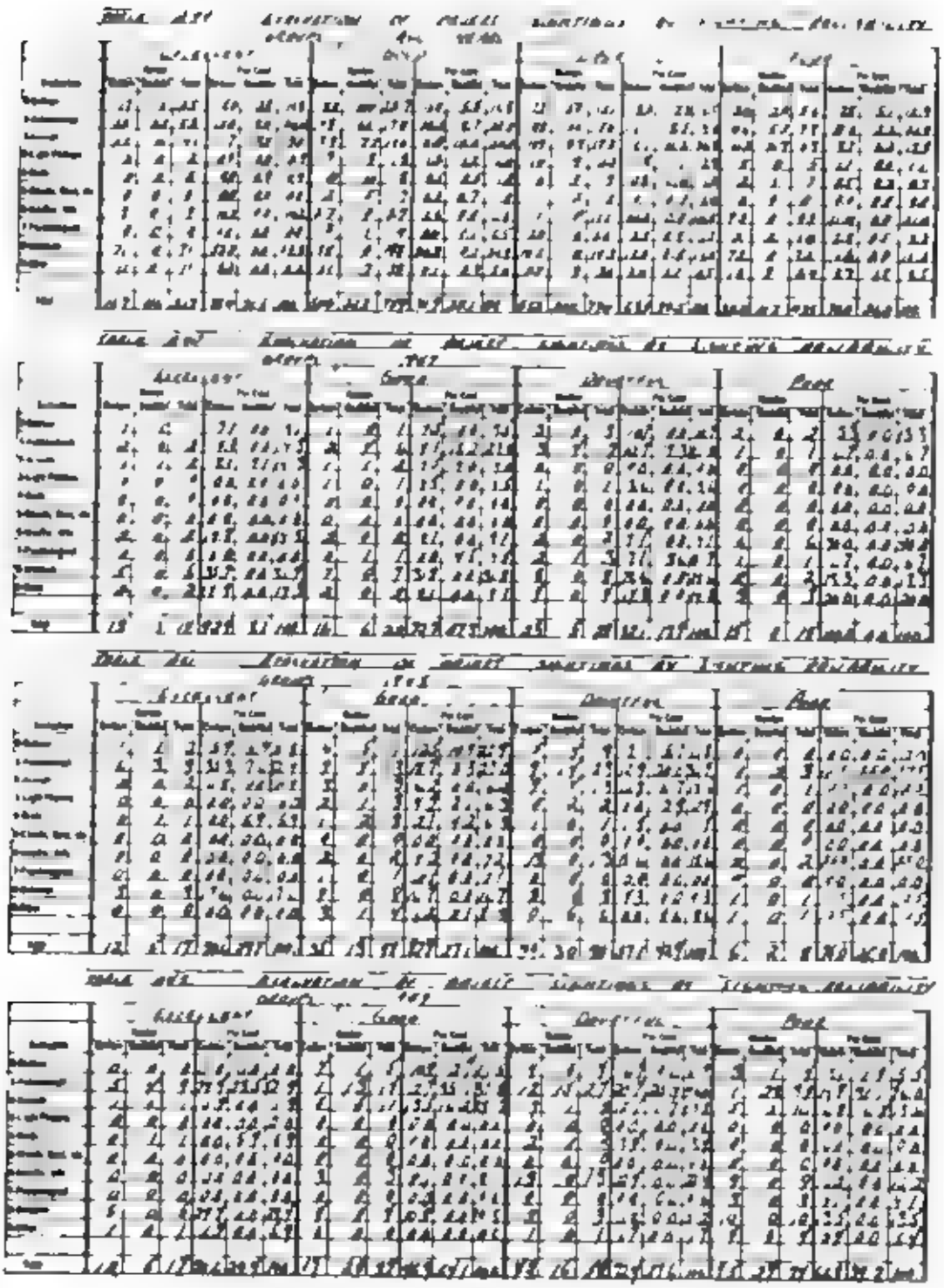


TABLE XVII — EVALUATION OF OBJECT SIGHTINGS BY SIGHTING RELIABILITY GROUPS, 1950

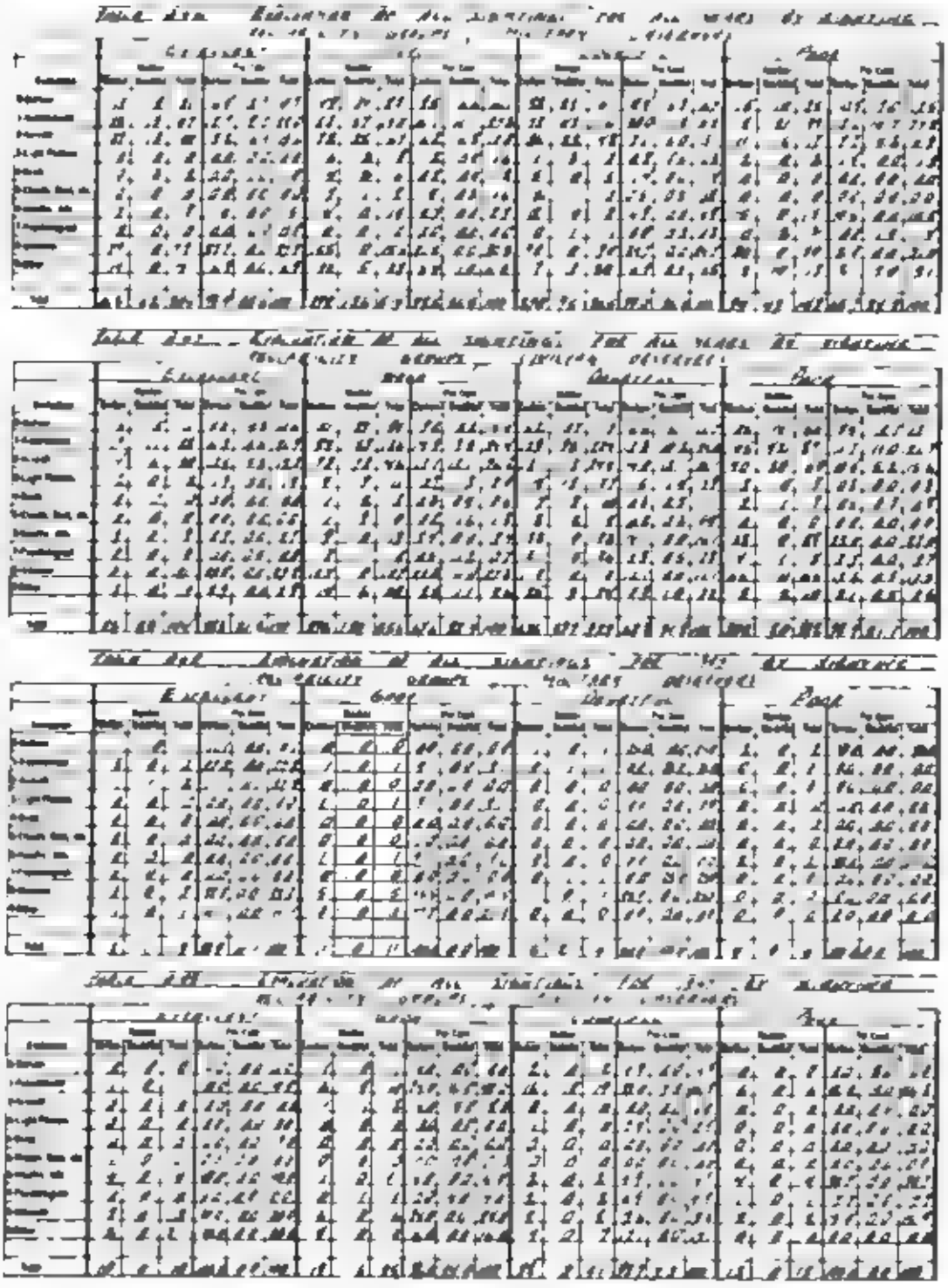
	Excellent						Good						Doubtful						Poor					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Evaluation	Civilian	Scientific	Total	Civilian	Scientific	Total	Civilian	Scientific	Total	Civilian	Scientific	Total	Civilian	Scientific	Total	Civilian	Scientific	Total	Civilian	Scientific	Total	Civilian	Scientific	Total
A-Balloon	4	0	4	12.5	0.0	7.5	3	0	3	7.9	0.0	7.7	5	1	6	16.7	3.3	20.0	9	3	12	29.0	9.1	7.4
B-Aircraft	3	5	8	9.4	15.6	25.0	9	4	13	23.7	10.5	34.2	16	4	20	53.3	13.3	66.6	4	1	10	12.9	3.1	16.0
C-Astronomical	2	1	3	6.2	3.1	9.3	6	4	10	15.8	10.5	26.3	5	0	5	16.7	0.0	16.7	9	4	13	29.0	12.9	41.9
D-Aircraft	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
E-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
F-Hoax	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
G-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	15	0	15	48.4	0.0	48.4
H-Satellite, Sat.	4	0	4	12.5	0.0	12.5	1	0	1	2.6	0.0	2.6	4	0	4	13.3	0.0	13.3	2	0	2	6.4	0.0	6.4
I-Unidentified	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	5	0	5	16.1	0.0	16.1
J-Other	12	0	12	37.5	0.0	37.5	9	0	9	23.7	0.0	23.7	5	0	5	16.7	0.0	16.7	13	0	13	41.9	0.0	41.9
Total	1	0	1	3.1	0.0	3.1	1	1	2	2.6	2.6	5.2	1	1	2	3.3	3.3	6.6	5	1	6	16.1	3.2	19.3
Total	26	6	32	81.2	18.8	100.	29	9	38	76.3	23.7	100	29	6	30	80.0	20.0	100	60	9	69	87.0	13.0	100

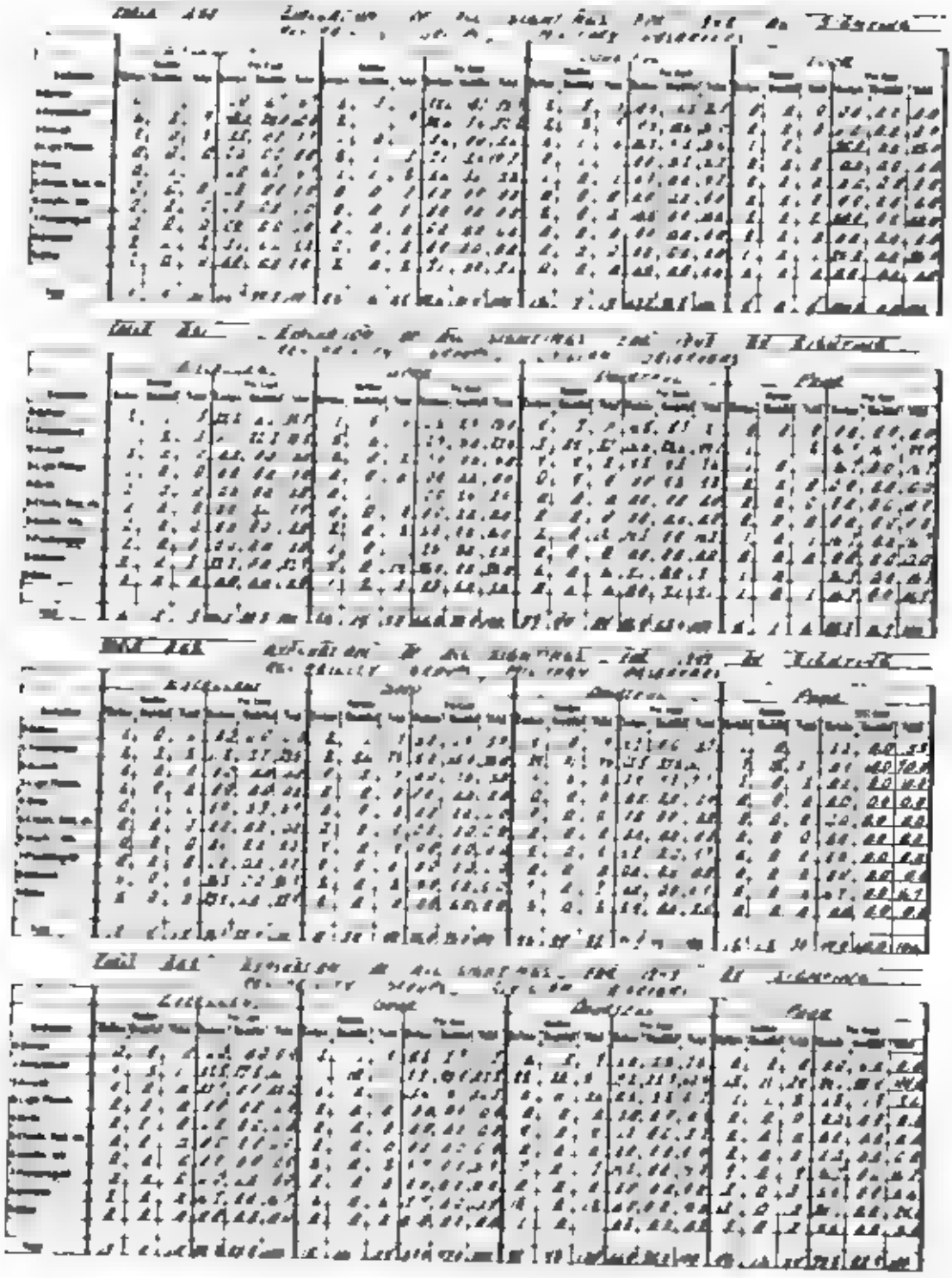
TABLE XVIII — EVALUATION OF OBJECT SIGHTINGS BY SIGHTING RELIABILITY GROUPS, 1951

	Excellent						Good						Doubtful						Poor					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Evaluation	Civilian	Scientific	Total	Civilian	Scientific	Total	Civilian	Scientific	Total	Civilian	Scientific	Total	Civilian	Scientific	Total	Civilian	Scientific	Total	Civilian	Scientific	Total	Civilian	Scientific	Total
A-Balloon	1	0	1	7.7	0.0	7.7	4	1	5	12.5	3.1	15.6	2	2	4	4.8	9.8	9.6		0	1	2.9	4.0	2.9
B-Aircraft	2	2	4	15.4	15.4	30.8	10	4	14	31.2	12.5	43.7	1	3	4	2.4	7.1	9.5	3	5	8	8.8	14.7	23.5
C-Astronomical	3	1	4	23.1	7.7	30.8	6	0	6	18.8	0.0	18.8	2	3	5	4.8	7.1	11.9	4	2	6	11.8	5.9	17.7
D-Aircraft	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	2.4	2.4	4.8	0	0	0	0.0	0.0	0.0
E-Light Phenom.	0	0	0	0.0	0.0	0.0	0	1	1	0.0	3.1	3.1	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
F-Hoax	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
G-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	6	0	6	17.6	0.0	17.6
H-Satellite, Sat. etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	2.4	2.4	4.8	0	0	0	0.0	0.0	0.0
I-Unidentified	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	9	0	9	21.9	0.0	21.9	8	0	8	23.5	0.0	23.5
J-Other	4	0	4	30.8	0.0	30.8	6	0	6	18.8	0.0	18.8	15	6	15	36.6	0.0	36.6	5	0	5	14.7	0.0	14.7
	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	4.8	0.0	4.8						
Total	10	3	13	76.9	23.1	100	26	6	32	81.2	18.8	100	32	10	42	76.2	23.8	100	29	7	34	79.4	20.6	100

TABLE XIX — EVALUATION OF OBJECT SIGHTINGS BY SIGHTING RELIABILITY GROUPS, 1952

	Excellent						Good						Doubtful						Poor					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Evaluation	Civilian	Scientific	Total	Civilian	Scientific	Total	Civilian	Scientific	Total	Civilian	Scientific	Total	Civilian	Scientific	Total	Civilian	Scientific	Total	Civilian	Scientific	Total	Civilian	Scientific	Total
A-Balloon	10	7	17	8.3	5.8	14.1	65	37	102	6.3	4.9	11.4	54	51	105	9.5	9.0	18.5	18	18	32	8.1	7.7	15.8
B-Aircraft	14	6	20	11.7	5.0	16.7	72	37	109	13.2	6.8	19.9	58	26	85	10.2	4.6	14.8	22	22	43	9.3	9.3	18.5
C-Astronomical	16	13	29	13.3	10.8	24.1	68	66	134	11.2	11.2	22.4	86	81	167	15.2	14.3	29.5	23	18	41	9.8	7.6	17.4
D-Aircraft	2	0	2	1.7	0.0	1.7	6	8	14	1.0	1.3	2.3	12	6	18	2.1	1.1	3.2	5	0	5	2.1	0.0	2.1
E-Light Phenom.	2	0	2	1.7	0.0	1.7	3	1	4	0.5	0.2	0.7	3	3	6	0.5	0.5	1.0	2	1	3	0.9	0.4	1.3
F-Hoax	0	0	0	0.0	0.0	0.0	3	1	4	0.5	0.2	0.7	2	3	5	0.3	0.5	0.8	0	0	0	0.0	0.0	0.0
G-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	2	5	7	0.3	0.8	1.2	1	2	3	0.2	0.3	0.5	55	0	55	23.5	0.0	23.5
H-Satellite, Sat. etc.	3	0	3	2.5	0.0	2.5	19	0	19	3.3	0.0	3.3	21	0	21	2.5	0.0	2.5	8	2	8	3.4	0.9	3.5
I-Unidentified	0	0	0	0.0	0.0	0.0	2	0	2	0.3	0.0	0.3	17	4	21	2.0	0.7	2.7	26	0	26	11.2	0.0	11.2
J-Other	42	0	42	35.0	0.0	35.0	274	0	274	31.6	0.0	31.6	67	0	67	11.2	0.0	11.2	0	7	7	0.0	3.0	3.0
	7	0	7	5.8	0.0	5.8	25	5	30	4.3	0.9	5.2	19	2	21	3.3	0.4	3.8						
Total	94	26	120	78.3	21.7	100	921	169	1090	72.0	27.9	100	371	175	546	64.1	30.5	100	169	66	235	71.9	28.1	100





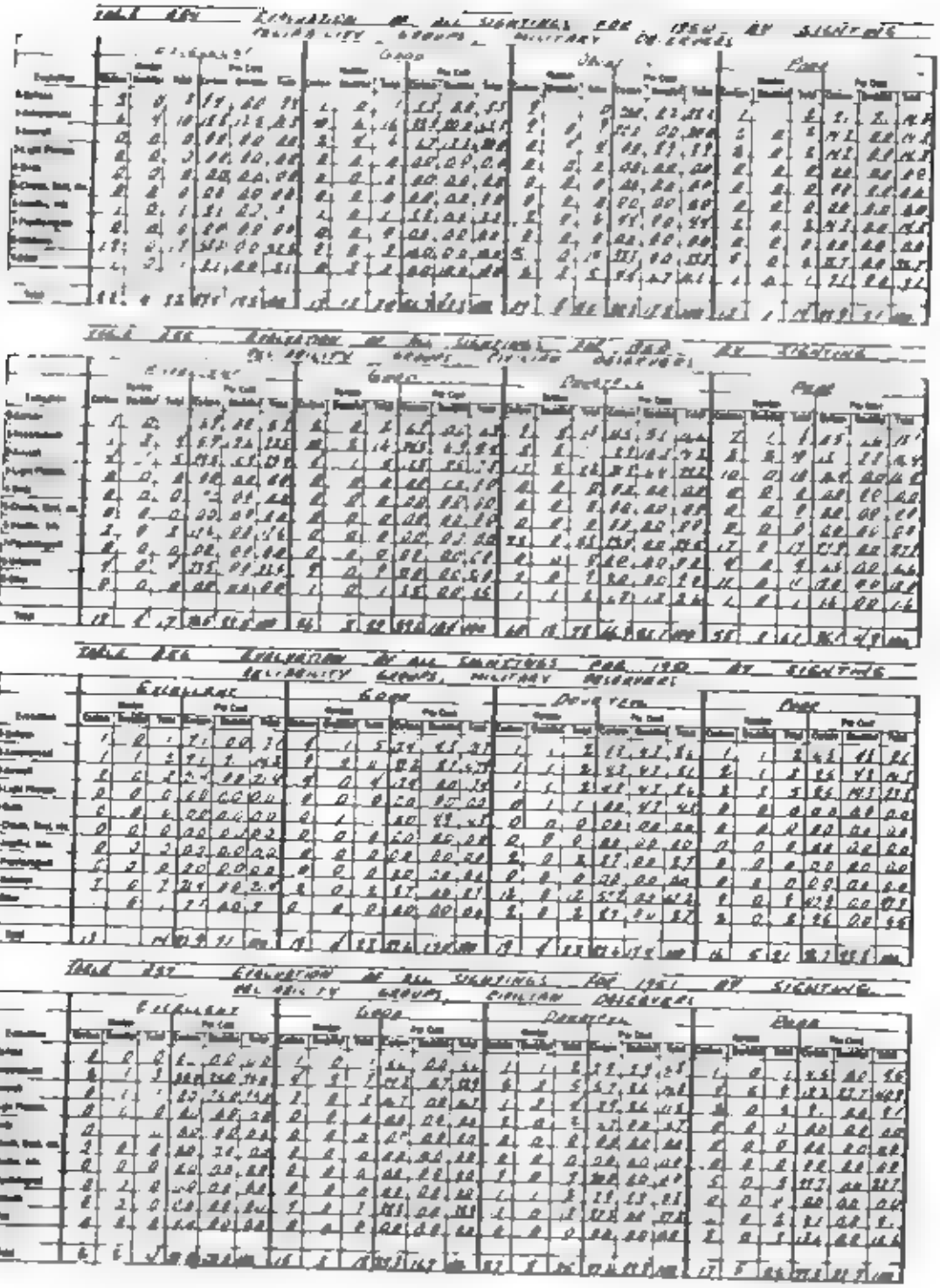


TABLE A68 EVALUATION OF ALL SIGHTINGS FOR 1952 BY SIGHTING RELIABILITY GROUPS, MILITARY OBSERVERS

Evaluation	Excellent						Good						Doubtful						Poor					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Daytime	Nighttime	Total	Daytime	Nighttime	Total	Daytime	Nighttime	Total	Daytime	Nighttime	Total	Daytime	Nighttime	Total	Daytime	Nighttime	Total	Daytime	Nighttime	Total	Daytime	Nighttime	Total
1-Balloon	5	2	15	6.8	6.0	12.8	14	89	63	57	9.6	66.5	21	18	39	10.3	8.4	20.5	10	8	18	4.3	11.0	15.2
2-Aircraft	11	5	19	9.4	6.5	16.1	59	22	76	13.3	5.8	18.7	37	8	46	18.3	4.2	22.5	11	2	13	5.2	2.2	7.4
3-Aircraft	21	12	33	18.0	10.3	28.3	16	28	53	6.5	7.3	13.8	19	10	29	7.0	5.2	14.6	8	5	6	4.3	4.3	8.6
4-Light Phenom.	0	0	0	0.0	0.0	0.0	3	1	4	0.8	0.2	1.1	1	0	1	0.5	0.0	0.5	2	0	2	1.0	0.0	2.9
5-Birds	0	0	0	0.0	0.0	0.0	3	0	3	0.8	0.0	0.8	4	0	4	2.1	0.0	2.1	0	0	0	0.0	0.0	0.0
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	4	1	5	1.0	0.3	1.3	3	1	5	1.6	0.5	1.6	0	0	0	0.0	0.0	0.0
7-Searchlights, etc.	2	0	2	1.2	0.0	1.2	8	0	8	2.1	0.0	2.1	2	0	2	0.2	0.0	0.2	2	0	2	1.0	0.0	1.0
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	2	2	0.0	2.9	2.9
9-Unknown	42	0	42	25.9	0.0	25.9	141	0	141	37.4	0.0	37.4	43	0	43	22.4	0.0	22.4	10	0	10	14.3	0.0	14.3
10-Other	6	0	6	3.1	0.0	3.1	25	6	31	6.6	0.6	8.2	11	0	11	5.7	0.0	5.7	0	10	10	0.0	14.3	14.3
Total	90	27	117	46.9	28.1	75.0	299	83	382	79.3	21.7	101	155	37	192	80.7	19.3	100	45	25	70	64.3	35.7	100

TABLE A69 EVALUATION OF ALL SIGHTINGS FOR 1952 BY SIGHTING RELIABILITY GROUPS, CIVILIAN OBSERVERS

Evaluation	Excellent						Good						Doubtful						Poor					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Daytime	Nighttime	Total	Daytime	Nighttime	Total	Daytime	Nighttime	Total	Daytime	Nighttime	Total	Daytime	Nighttime	Total	Daytime	Nighttime	Total	Daytime	Nighttime	Total	Daytime	Nighttime	Total
1-Balloon	7	4	11	4.6	2.7	7.2	48	33	81	5.6	3.8	9.4	40	42	82	7.0	7.3	14.3	23	13	41	12.0	6.8	18.8
2-Aircraft	4	0	4	1.1	0.0	1.1	57	38	95	1.9	6.5	10.7	72	99	101	12.5	5.0	17.5	18	23	32	5.8	10.2	16.0
3-Aircraft	6	4	10	1.1	0.7	2.8	57	46	103	1.9	16.1	20.0	94	90	184	16.2	15.7	31.9	26	18	44	11.5	7.8	19.9
4-Light Phenom.	2	0	2	0.3	0.0	0.3	6	2	11	1.0	0.7	2.7	11	9	20	1.9	1.6	3.5	3	0	3	1.3	0.0	1.3
5-Birds	0	0	0	0.0	0.0	0.0	1	1	2	0.2	0.2	0.4	3	3	6	0.5	1.0	1.6	2	1	3	0.9	0.4	1.3
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	1	9	10	0.2	2.2	2.4	2	2	4	0.3	0.3	0.6	0	0	0	0.0	0.0	0.0
7-Searchlights, etc.	2	0	2	0.3	0.0	0.3	14	0	14	3.4	0.0	3.4	71	0	71	12.3	0.0	12.3	52	0	52	25.0	0.0	25.0
8-Psychological	0	0	0	0.0	0.0	0.0	2	0	2	0.5	0.0	0.5	16	4	20	2.1	0.7	2.8	4	1	7	2.1	0.4	2.1
9-Unknown	18	0	18	11.5	0.0	11.4	56	0	56	10.7	0.0	10.7	67	0	67	11.7	0.0	11.7	37	0	37	16.8	0.0	16.8
10-Other	1	0	1	0.2	0.0	0.2	8	4	12	2.0	1.0	4.0	14	14	28	2.4	0.5	4.1	0	14	0	0.0	0.0	0.0
Total	58	8	66	14.4	17.4	100	272	133	410	44.5	53.7	100	394	181	575	68.5	31.5	100	167	59	226	74.9	26.1	100

TABLE 160 REPORTED COLORS OF OBJECTS SIGHTED BY YEARS,
ALL SIGHTINGS

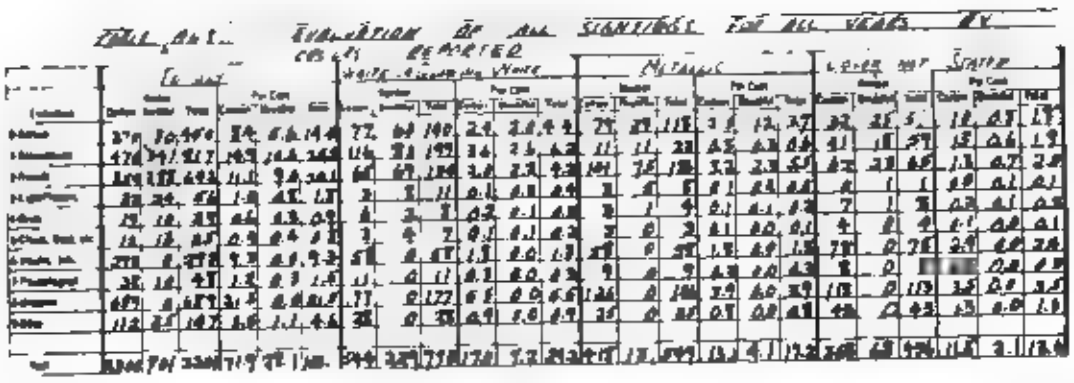
	All Years		1947		1948		1949		1950		1951		1952	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
White or Colorless White	775	24.2	23	21.9	45	22.6	94	25.5	72	25.5	38	22.8	496	24.6
Metallic	549	17.2	24	20.6	36	17.6	60	16.2	61	21.5	26	14.5	322	15.9
Color not Stated	434	13.6	20	19.0	31	15.5	37	9.9	61	21.9	25	15.1	260	12.8
Orange or Colorless Orange	295	9.3	6	5.1	21	10.3	24	6.4	7	2.5	17	10.6	221	11.0
Red or Colorless Red	263	8.2	1	1.0	14	6.8	37	9.9	27	9.8	8	4.8	156	7.8
Green or Colorless Green	224	7.0		0.0	15	7.3	16	4.2	17	6.2	7	4.2	134	6.6
Light Colors, Color not Known	219	6.8	5	4.8	14	6.8	19	5.0	15	5.4	8	5.0	151	7.5
Yellow or Colorless Yellow	206	6.5	8	7.8	12	5.9	23	6.8	2	0.7	1	6.7	146	7.2
Blue or Colorless Blue	145	4.5	4	3.9	9	4.4	21	5.5	11	4.0	5	3.0	95	4.6
Black or Colorless Black	67	2.1	6	5.8	7	3.4	8	2.0	6	2.0	6	3.6	36	1.8
Light Colors, Semi-Transparent Color	17	0.4	0	0.0	2	1.0	5	1.3	2	0.0	1	0.6	6	0.3
Violet or Colorless Violet	8	0.3	0	0.0	0	0.0	0	0.0	3	1.0	1	0.6	4	0.2
Colorless Gray	8	0.3	0	0.0	0	0.0	1	0.3	1	0.3	2	1.3	4	0.2
Total	3201	100	117	100	225	100	376	100	296	100	167	100	2018	100

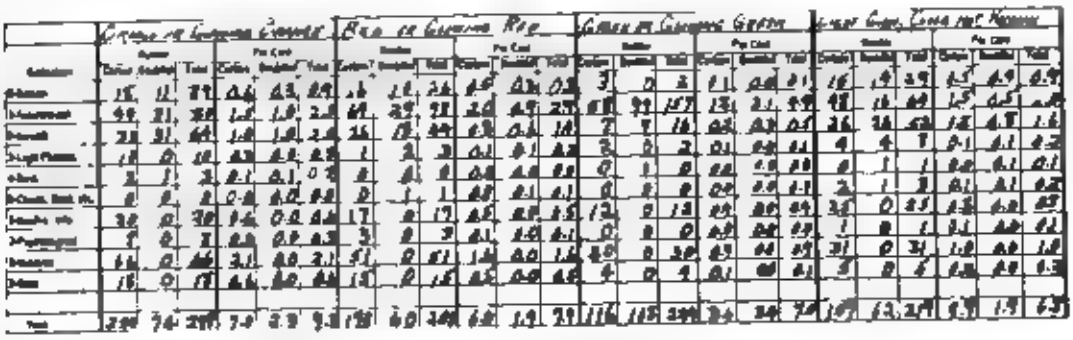
TABLE 161 REPORTED COLORS OF OBJECTS SIGHTED BY YEARS,
UNIT SIGHTINGS

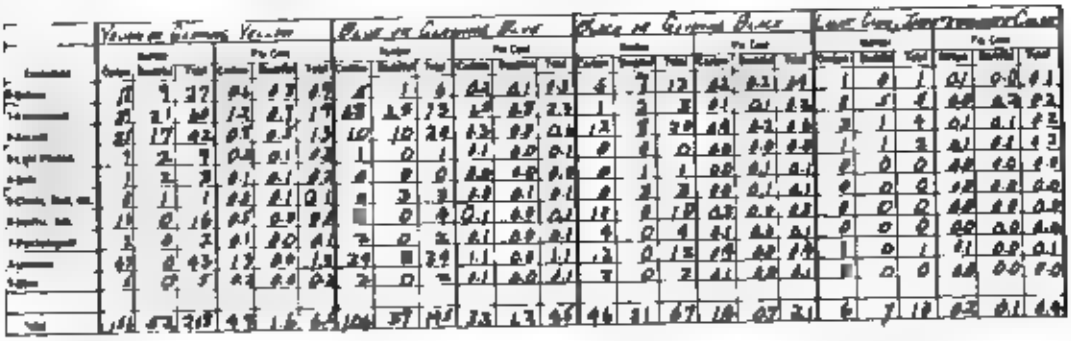
	All Years		1947		1948		1949		1950		1951		1952	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
White or Colorless White	610	23.9	27	27.8	26	17.0	57	24.9	60	22.9	22	20.1	417	28.2
Metallic	422	16.5	22	22.7	30	19.6	37	15.7	40	15.1	25	15.2	268	15.6
Color not Stated	324	12.7	22	22.7	23	15.0	26	11.0	42	20.1	23	14.3	189	11.0
Orange or Colorless Orange	253	9.9	2	2.1	16	10.5	18	7.6	6	2.3	18	10.2	196	11.6
Red or Colorless Red	203	7.9	4	4.1	9	6.9	23	9.7	21	10.0	6	6.4	190	9.1
Green or Colorless Green	145	6.8	1	1.0	15	9.8	26	11.0	10	4.8	7	5.1	116	6.7
Light Colors, Color not Known	178	7.0	9	9.1	10	6.5	13	5.5	11	5.3	7	5.1	133	7.7
Yellow or Colorless Yellow	185	7.2	7	7.2	10	6.5	16	6.8	9	4.3	8	5.8	135	7.8
Blue or Colorless Blue	121	4.7	2	2.1	6	3.9	11	4.7	11	5.3	8	5.8	82	4.8
Black or Colorless Black	59	2.3	6	6.1	6	3.9	6	2.5	6	2.9	4	2.9	33	1.9
Light Colors, Semi-Transparent Color	10	0.4	0	0.0	2	1.3	2	0.8	0	0.0	1	0.7	5	0.3
Violet or Colorless Violet	7	0.3	0	0.0	0	0.0	0	0.0	2	1.0	1	0.7	4	0.2
Colorless Gray	6	0.2	0	0.0	0	0.0	1	0.4	1	0.5	0	0.0	4	0.2
Other	2544	100	99	100	163	100	236	100	209	100	137	100	1745	100

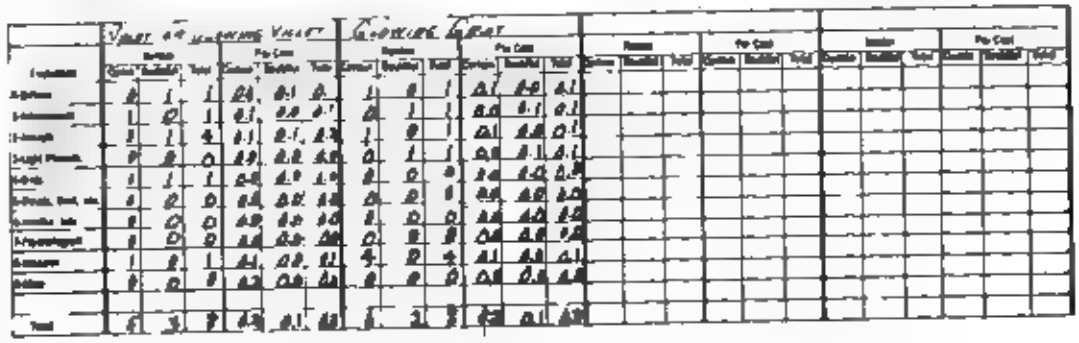
TABLE 162 REPORTED COLORS OF OBJECTS SIGHTED BY YEARS,
OBJECT SIGHTINGS

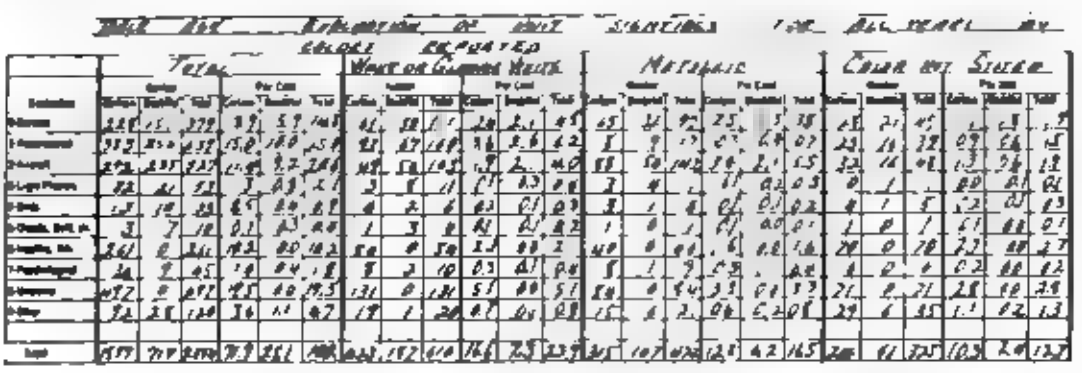
	All Years		1947		1948		1949		1950		1951		1952	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
White or Colorless White	57	2.4	02	27.8	25	17.5	43	22.1	44	26.0	27	22.3	356	23.7
Metallic	329	13.7	10	76.9	28	20.3	24	12.5	21	12.2	62	12.8	256	16.6
Color not Stated	271	11.3	2	22.2	21	14.7	19	9.2	31	18.3	22	18.2	160	10.7
Orange or Colorless Orange	22	10.0	2	22.2	16	11.2	15	7.3	5	3.0	12	9.9	70	11.3
Red or Colorless Red	79	5.1	2	2.1	2	5.6	9	10.6	16	9.5	6	5.0	127	8.5
Green or Colorless Green	100	6.6	0	0.0	12	8.4	21	11.3	8	4.7	7	5.6	96	6.4
Light Colors, Color not Known	152	6.9	2	6.1	10	7.0	12	6.5	8	4.7	8	6.1	113	7.5
Yellow or Colorless Yellow	109	7.2	2	2.2	9	6.3	12	6.6	8	4.7	7	5.8	120	8.0
Blue or Colorless Blue	93	6.2	2	2.5	5	3.5	5	2.7	6	3.6	7	5.8	68	4.5
Black or Colorless Black	57	2.6	2	5.1	6	4.2	5	2.7	5	3.0	4	3.3	33	2.2
Light Colors, Semi-Transparent Color	7	0.3	0	0.0	2	1.4	0	0.0	0	0.0	1	0.8	4	0.3
Violet or Colorless Violet	5	0.2	0	0.0	0	0.0	0	0.0	1	0.6	1	0.8	3	0.2
Colorless Gray	6	0.3	0	0.0	0	0.0	1	0.5	1	0.6	0	0.0	3	0.2
Total	3199	100	72	100	143	100	186	100	169	100	121	100	1601	100

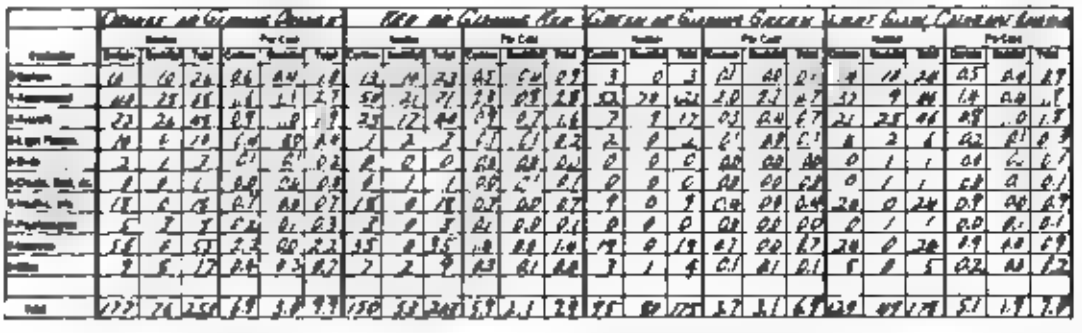


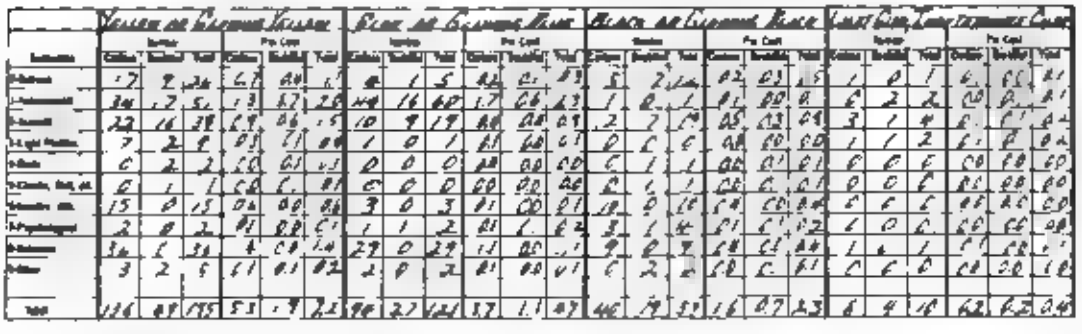


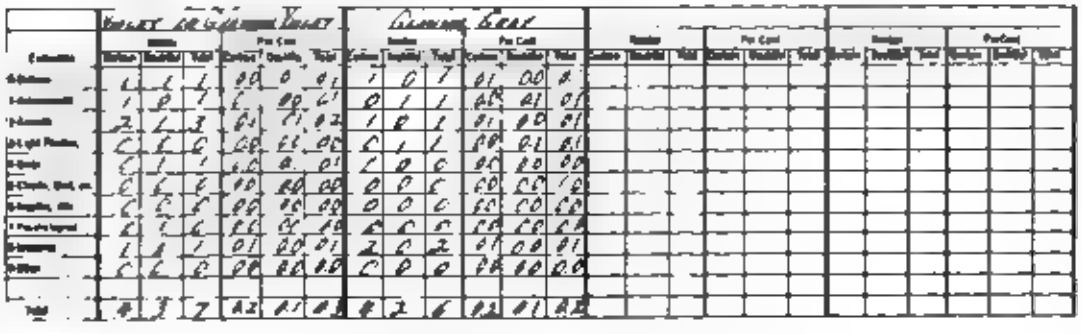


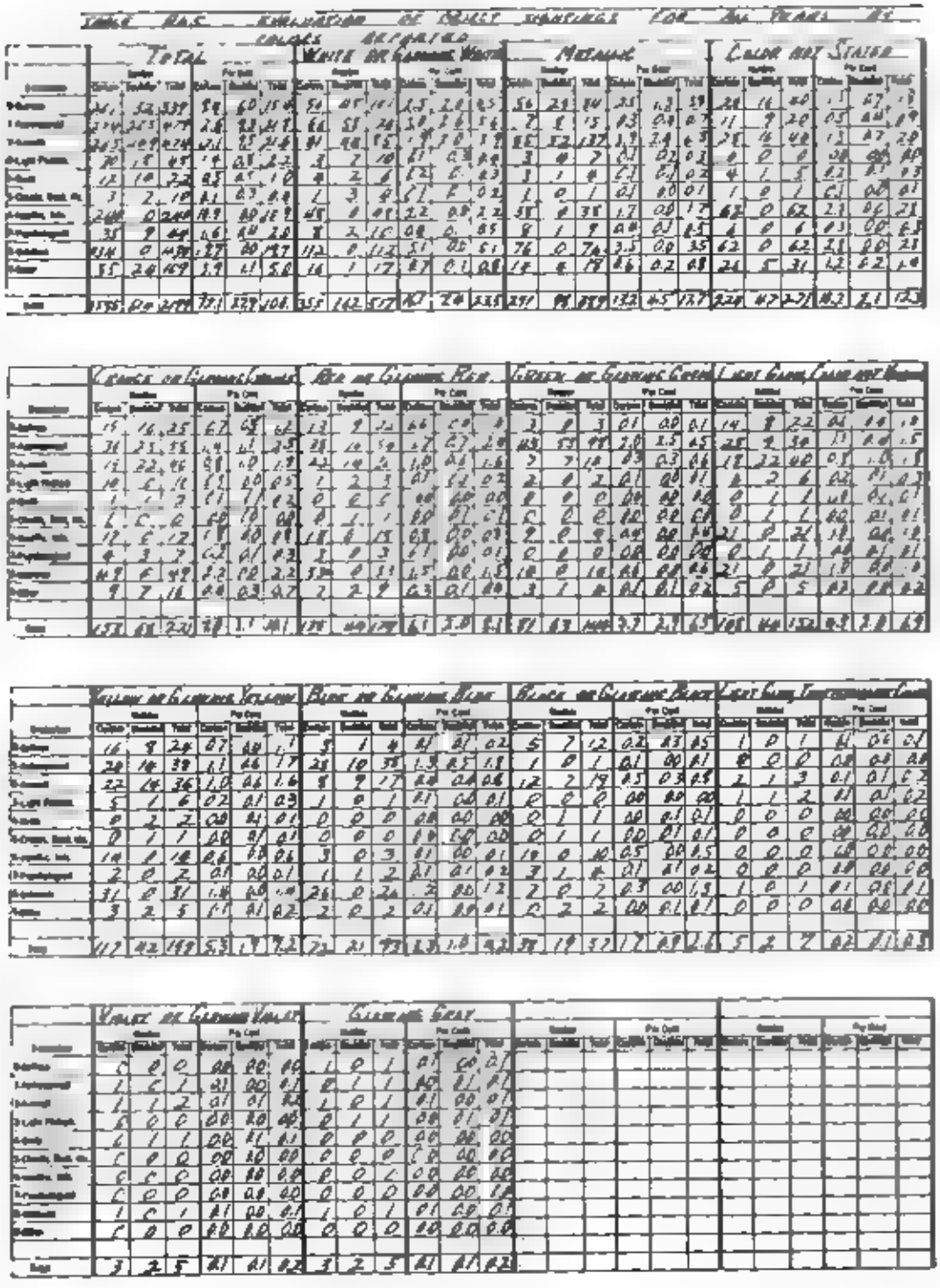


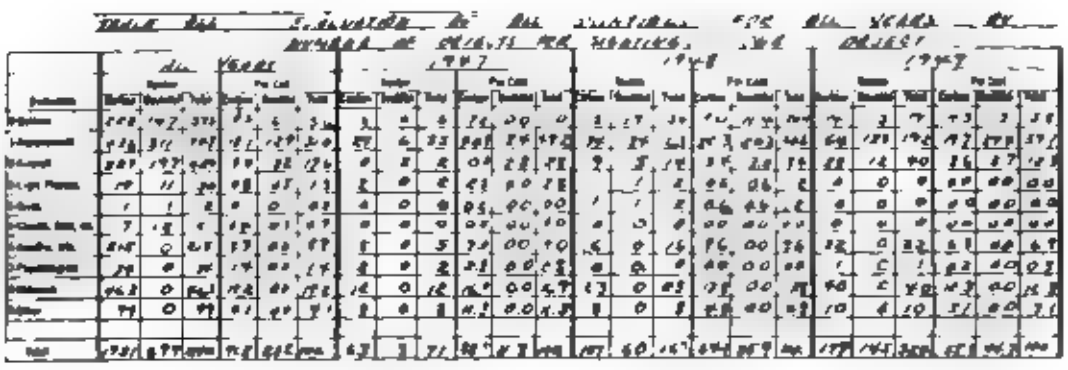


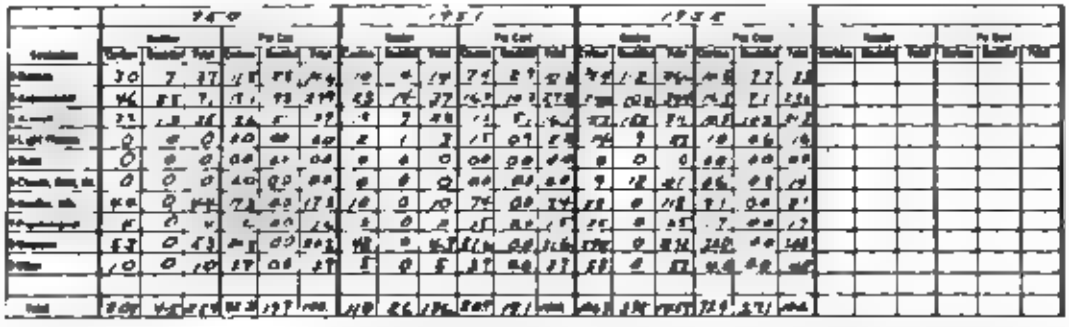


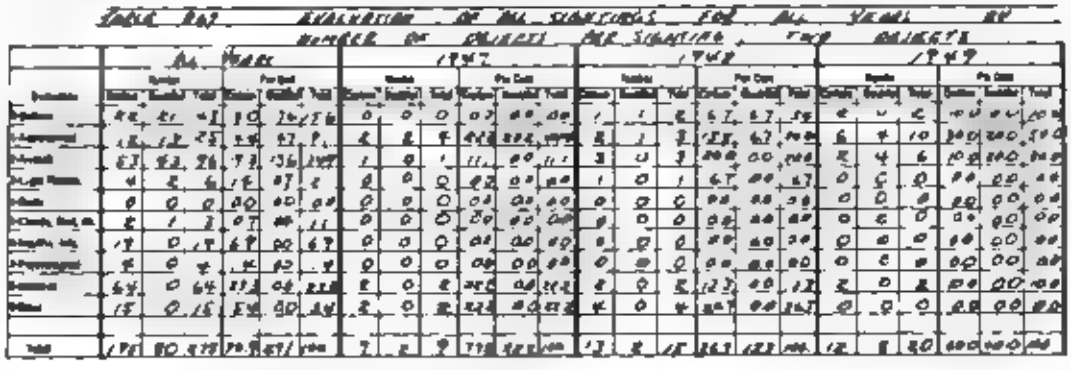


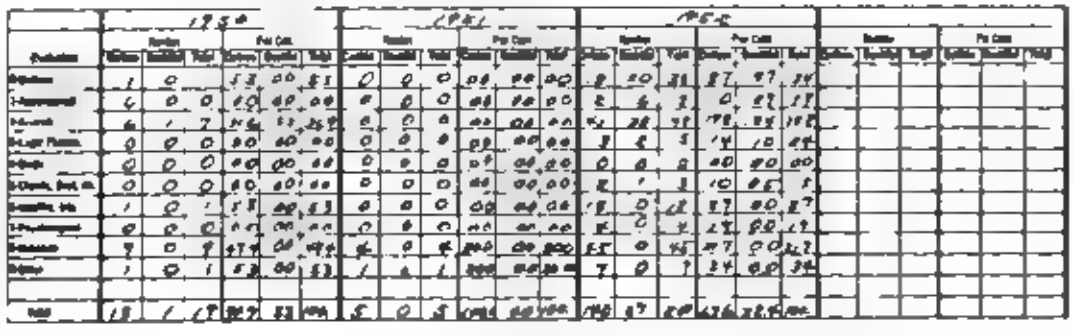


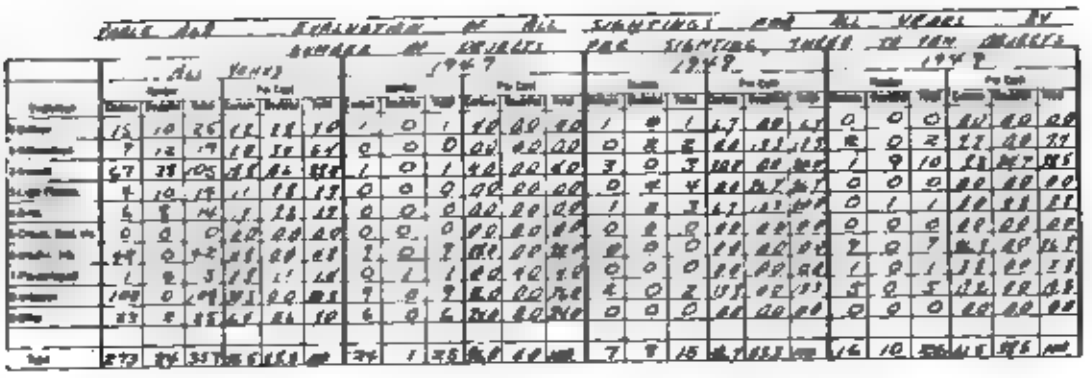


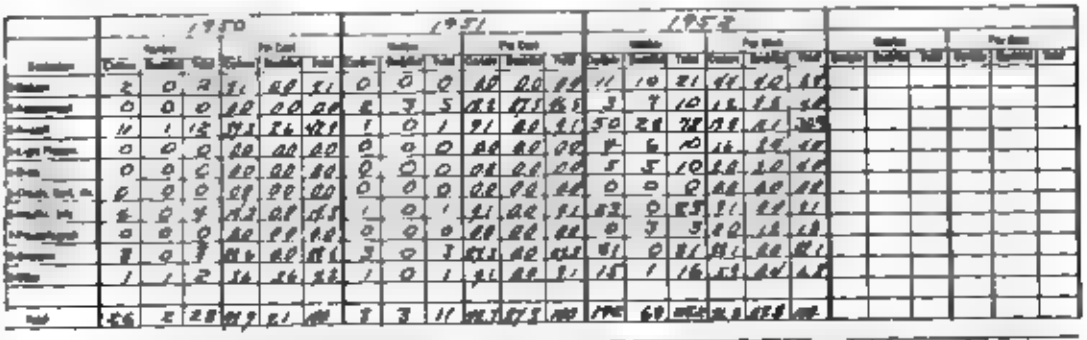


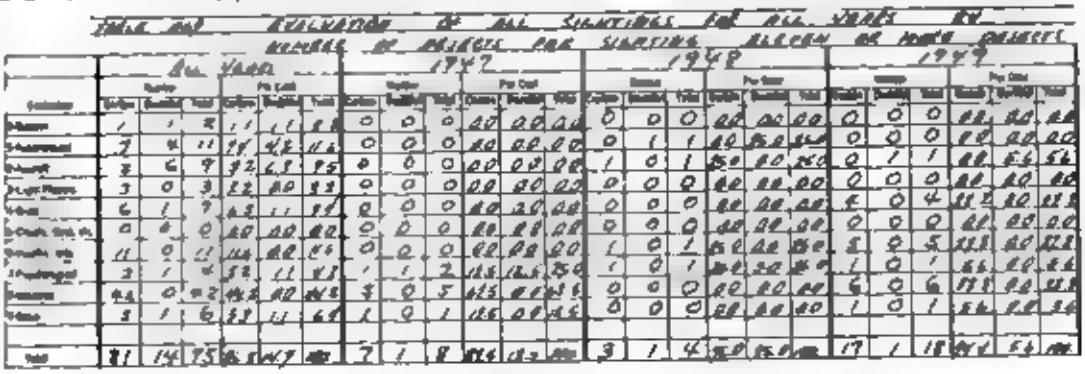












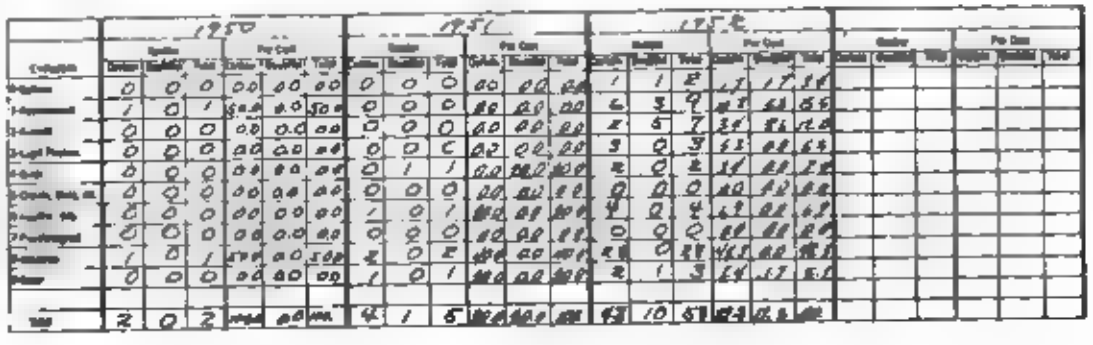
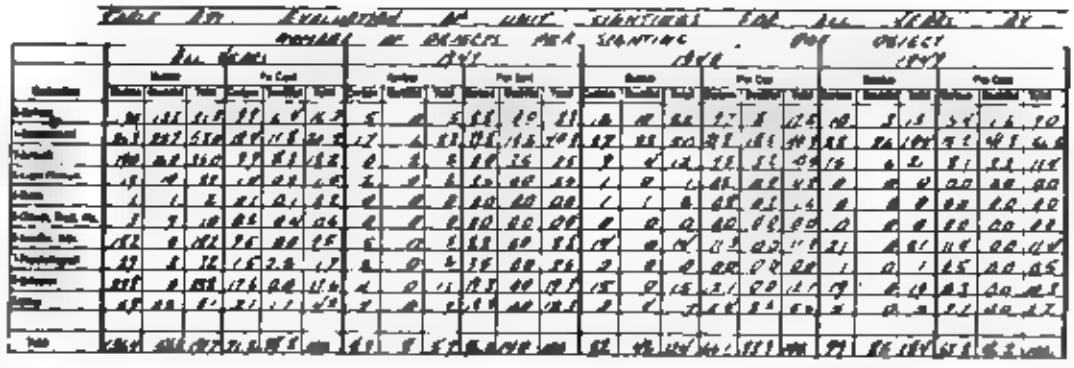
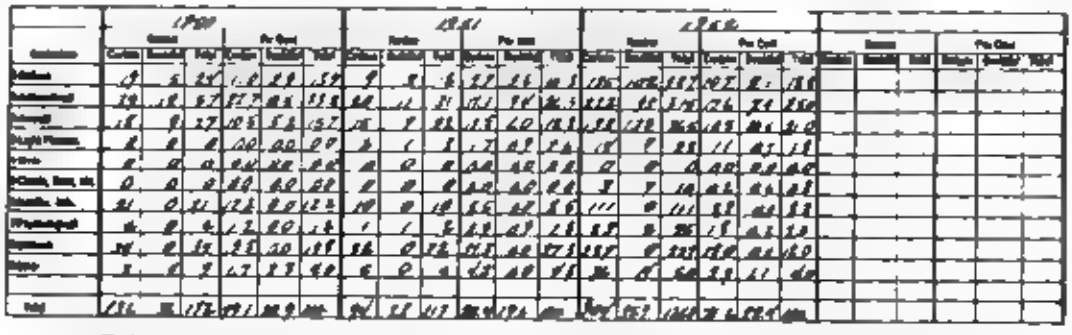


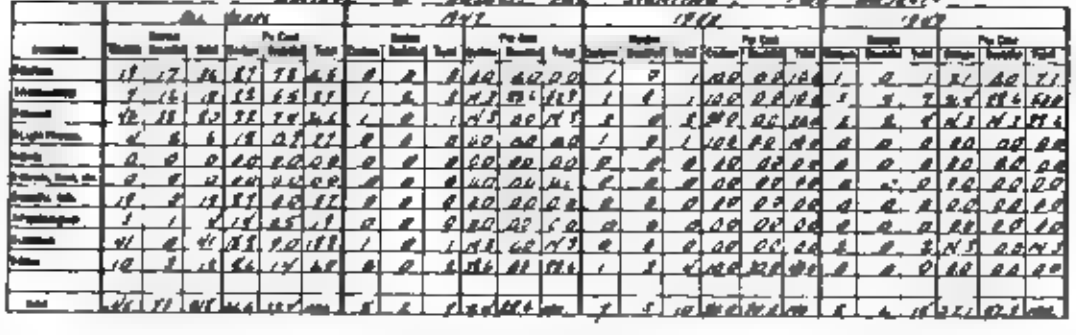
TABLE XIV CIRCULATION OF ALL SUBSCRIBERS FOR ALL YEARS AS NUMBER OF ORDERS PER STATIONS — NUMBER OF ORDERS NOT FILLED

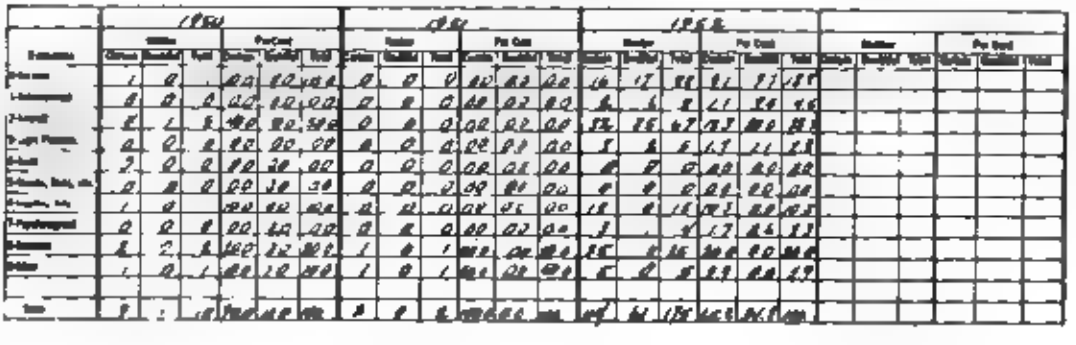
	1947						1948						1949					
	Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Orders	Unfilled	Total	Orders	Unfilled	Total	Orders	Unfilled	Total	Orders	Unfilled	Total	Orders	Unfilled	Total	Orders	Unfilled	Total
	4	1	5	6.3	1.6	7.9	1	0	1	12.5	0.0	25.0	0	0	0	0.0	0.0	0.0
	14	1	15	22.2	1.6	23.8	1	0	1	25.0	0.0	25.0	0	1	1	0.0	25.0	25.0
	4	4	8	6.3	6.3	12.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
	2	1	3	3.1	1.6	4.7	0	0	0	0.0	0.0	0.0	0	1	1	0.0	25.0	25.0
	6	0	6	9.5	0.0	9.5	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
	1	0	1	1.6	0.0	1.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
	11	0	11	17.2	0.0	17.2	2	0	2	50.0	0.0	50.0	2	0	2	50.0	0.0	50.0
	1	0	1	1.6	0.0	1.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
	12	0	12	19.1	0.0	19.1	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
	6	0	6	9.5	0.0	9.5	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	63	7	70	100.0	11.1	100.0	4	0	4	100.0	0.0	100.0	2	2	4	50.0	50.0	100.0

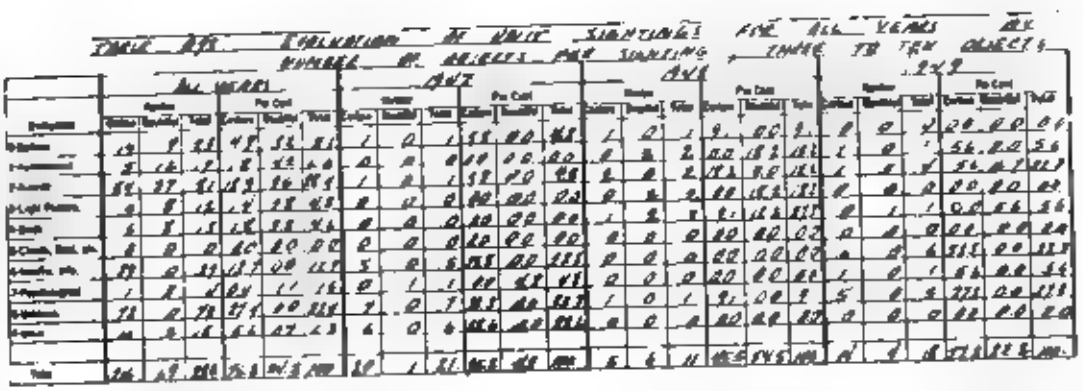
	1950						1951						1952											
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Orders	Unfilled	Total	Orders	Unfilled	Total	Orders	Unfilled	Total	Orders	Unfilled	Total	Orders	Unfilled	Total	Orders	Unfilled	Total	Orders	Unfilled	Total	Orders	Unfilled	Total
	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	1	4	7.0	2.3	9.3						
	2	0	2	66.7	0.0	66.7	0	0	0	0.0	0.0	0.0	7	0	7	20.9	0.0	20.9						
	0	0	0	0.0	0.0	0.0	0	1	1	0.0	33.3	33.3	4	3	7	9.3	7.0	16.3						
	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	4.7	0.0	4.7						
	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	6	0	6	14.0	0.0	14.0						
	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	2.3	0.0	2.3						
	0	0	0	0.0	0.0	0.0	2	0	2	66.7	0.0	66.7	3	0	3	7.0	0.0	7.0						
	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	2.3	0.0	2.3						
	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	9	0	9	20.9	0.0	20.9						
	1	0	1	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0	1	0	1	2.3	0.0	2.3						
Total	3	0	3	100.0	0.0	100.0	2	1	3	66.7	33.3	100.0	37	4	43	90.7	9.3	100.0						

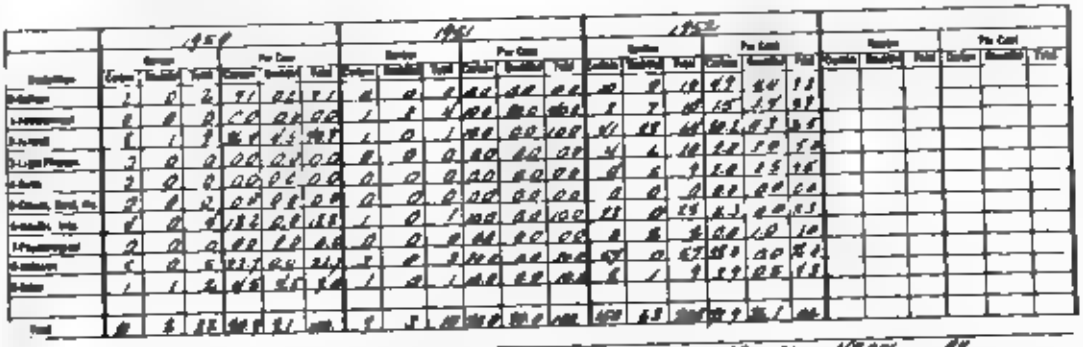


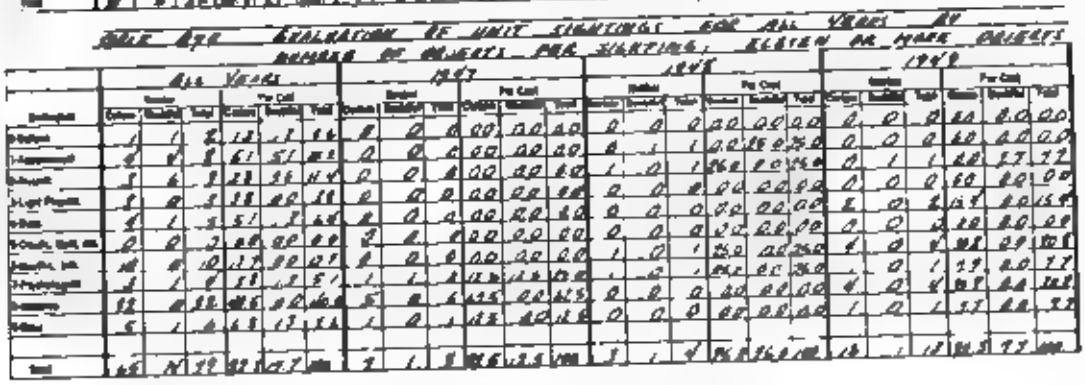












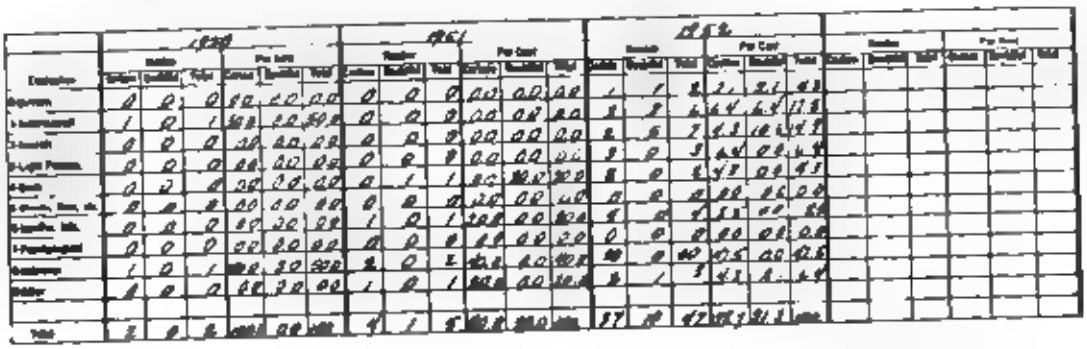
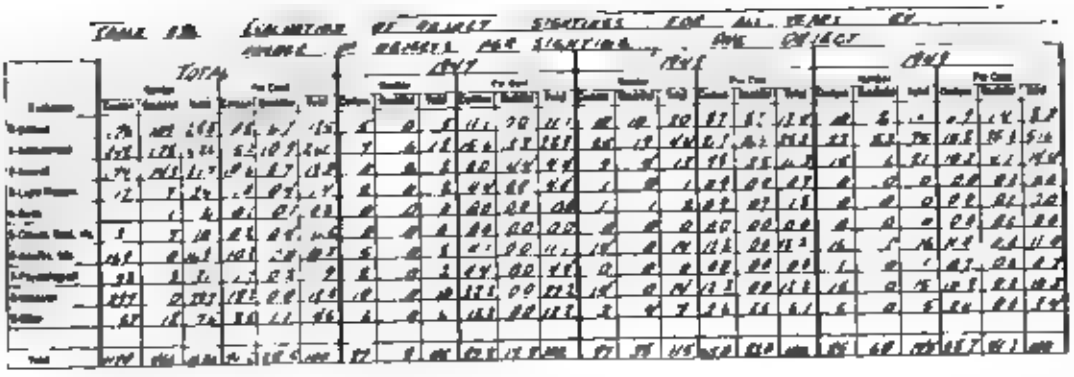
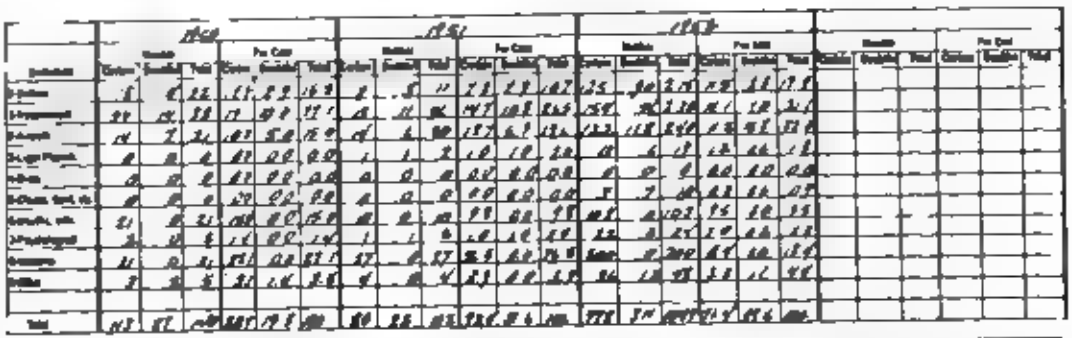


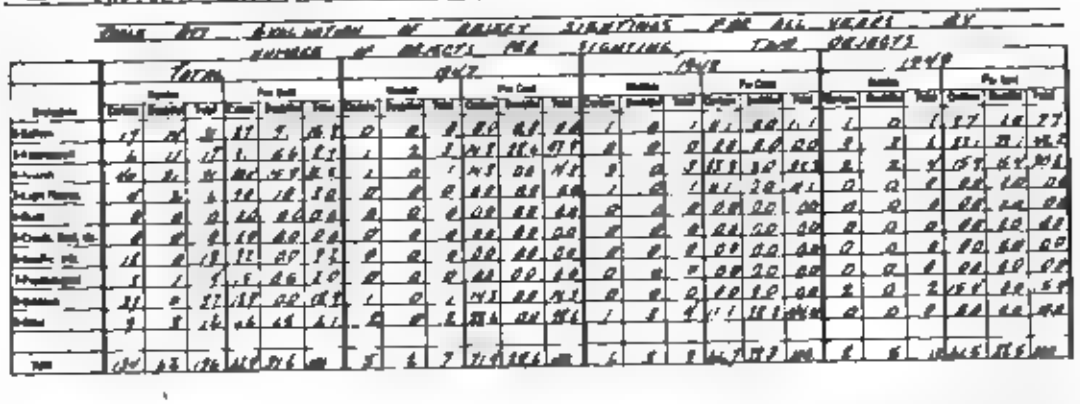
TABLE 8/5 — DISPOSITION OF UNIT FINDINGS FOR ALL YEARS BY NUMBER OF OBJECTS PER SIGHTING, NUMBER OF OBJECTS NOT STATED

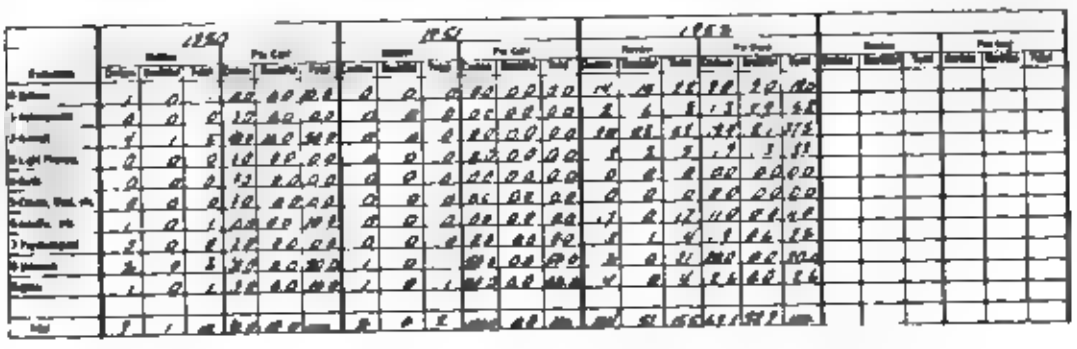
Explanation	ALL YEARS						1947						1948						1949					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	41	1	42	23	1.8	24.1	1	0	1	25.0	0.0	25.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
2-Astronomical	14	1	15	25.6	1.8	27.5	1	0	1	25.0	0.0	25.0	0	1	1	0.0	25.0	25.0	2	0	2	22.2	0.0	22.2
3-Aircraft	8	4	12	5.4	7.3	12.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Light Phenom.	2	1	3	3.6	1.8	5.4	0	0	0	0.0	0.0	0.0	0	1	1	0.0	25.0	25.0	0	0	0	0.0	0.0	0.0
5-Birds	3	0	3	5.4	0.0	5.4	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Cond., etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Meteors, Etc.	11	0	11	20.0	0.0	20.0	2	0	2	50.0	0.0	50.0	2	0	2	0.0	50.0	50.0	2	0	2	22.2	0.0	22.2
8-Psychological	0	1	1	0.0	1.8	1.8	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Unknown	5	0	5	9.5	0.0	9.5	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	0	3	42.9	0.0	42.9
10-Other	2	0	2	3.6	0.0	3.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	47	8	55	85.5	14.5	100.	4	0	4	100.0	0.0	100.	2	2	4	50.0	50.0	100.	7	0	7	100.0	0.0	100.

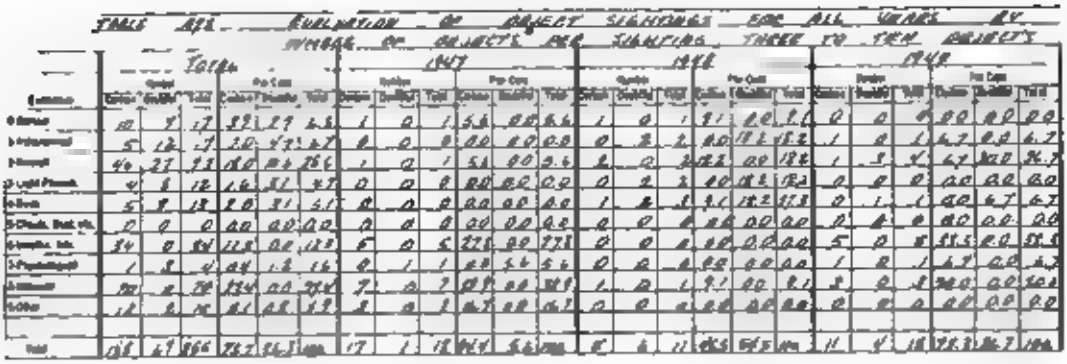
Explanation	1950						1951						1952											
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	1	4	8.8	2.9	11.7						
2-Astronomical	2	0	2	16.7	0.0	16.7	0	0	0	0.0	0.0	0.0	9	0	9	26.5	0.0	26.5						
3-Aircraft	0	2	2	0.0	0.0	0.0	0	1	1	0.0	33.3	33.3	3	3	6	8.8	8.8	17.6						
4-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	5.9	0.0	5.9						
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	0	3	8.8	0.0	8.8						
6-Clouds, Cond., etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0						
7-Meteors, Etc.	0	0	0	0.0	0.0	0.0	2	0	2	66.7	0.0	66.7	3	0	3	8.8	0.0	8.8						
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	2.9	2.9						
9-Unknown	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	5	0	5	14.7	0.0	14.7						
10-Other	1	0	1	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0	1	0	1	2.9	0.0	2.9						
Total	3	0	3	100.0	0.0	100.	2	1	3	66.7	33.3	100.	29	5	34	85.3	14.7	100.						

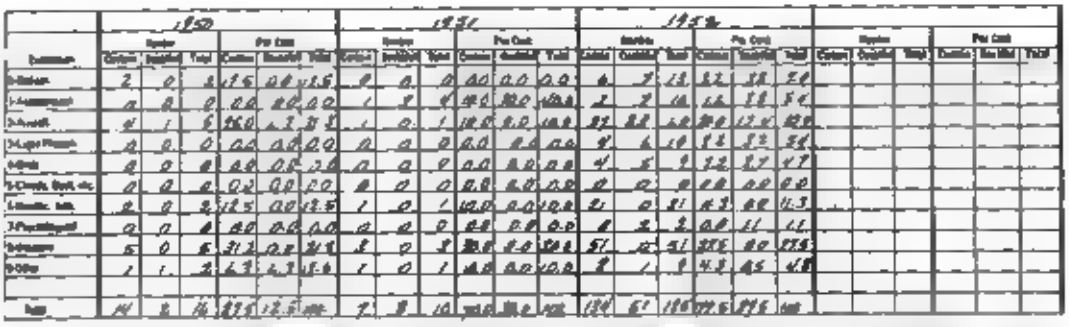


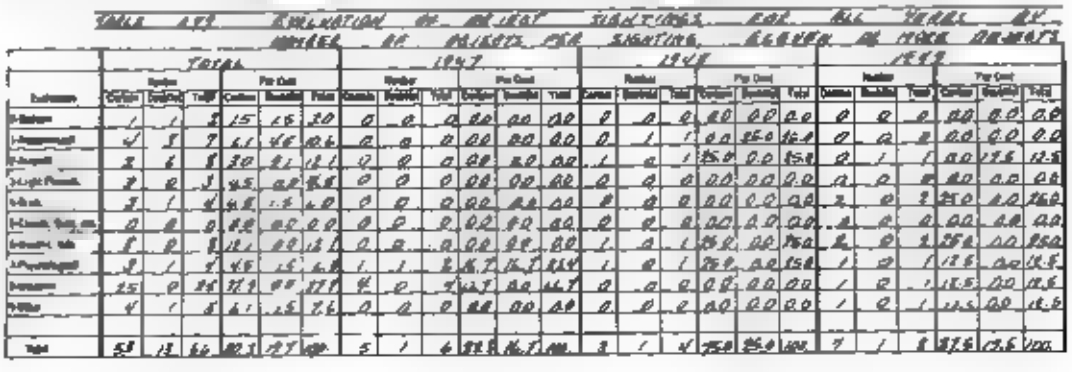












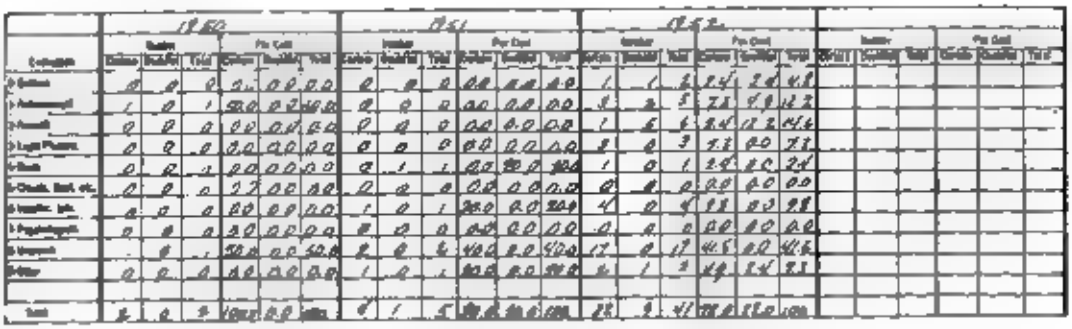
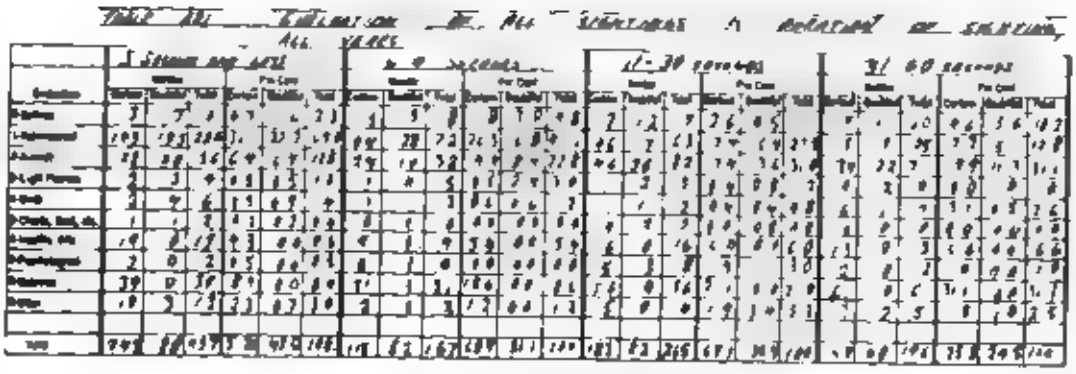
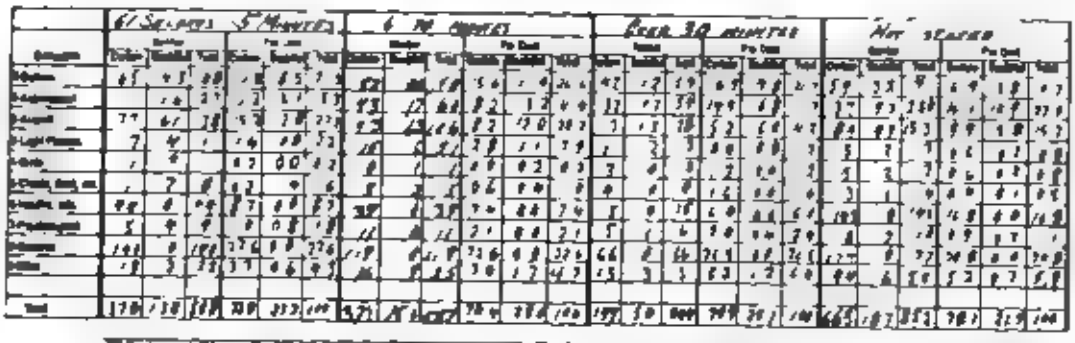


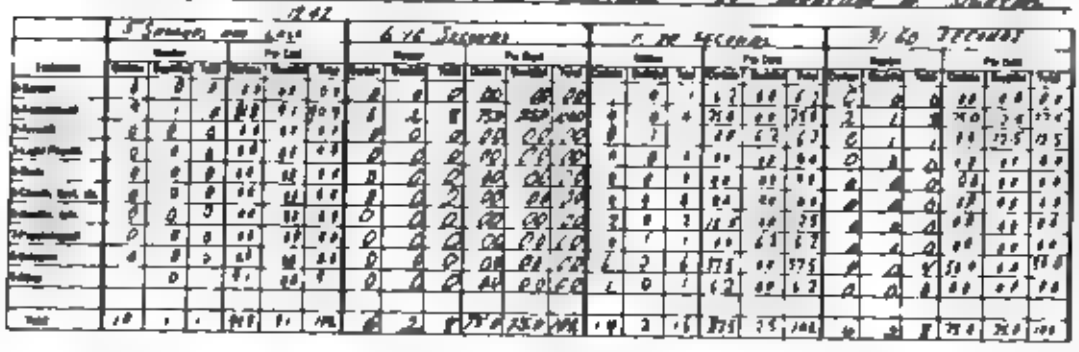
TABLE A30 EVALUATION OF OBJECT SIGHTINGS FOR ALL YEARS BY NUMBER OF OBJECTS PER SIGHTING, NUMBER OF OBJECTS NOT STATED

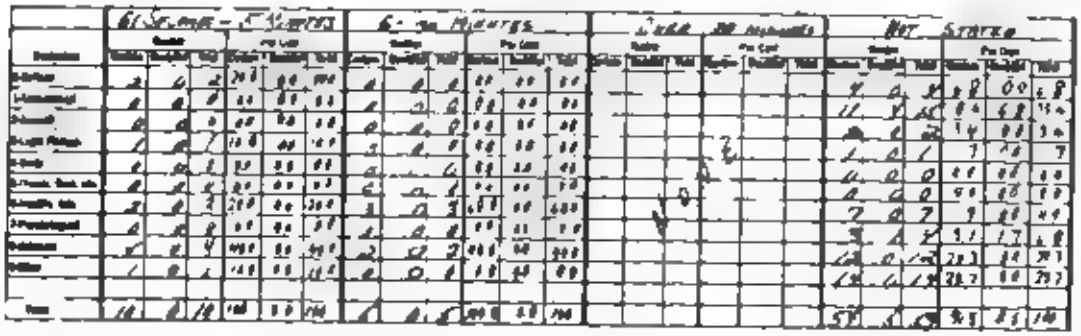
Explosion	All Years						1947						1948						1949					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	9	1	9	6.5	7.2	8.7	1	0	1	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
1-Unidentified	11	1	12	7.9	7.2	15.1	0	0	0	0.0	0.0	0.0	0	1	1	0.0	25.0	25.0	2	0	2	40.0	0.0	40.0
2-Aircraft	9	2	5	6.5	4.3	10.8	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
3-Light Phenom.	2	1	3	1.5	2.1	6.5	0	0	0	0.0	0.0	0.0	0	1	1	0.0	25.0	25.0	0	0	0	0.0	0.0	0.0
4-Birds	3	0	3	6.5	0.0	6.5	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insects, etc.	11	0	11	23.9	0.0	23.9	2	0	2	66.7	0.0	66.7	2	0	2	50.0	0.0	50.0	2	0	2	40.0	0.0	40.0
7-Psychological	0	1	1	0.0	2.2	2.2	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	5	0	5	10.9	0.0	10.9	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	20.0	0.0	20.0
9-Other	2	0	2	4.3	0.0	4.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	40	6	46	87.0	13.0	100.	3	0	3	100.0	0.0	100.	2	3	4	50.0	50.0	100.	5	0	5	100.0	0.0	100.

Explosion	1950						1951						1952											
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	1	3	6.5	2.2	9.7						
1-Unidentified	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	0	3	9.7	0.0	9.7						
2-Aircraft	2	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	2	6	9.7	6.5	16.2						
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	6.5	0.0	6.5						
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	0	3	9.7	0.0	9.7						
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0						
6-Insects, etc.	0	0	0	0.0	0.0	0.0	1	0	1	100.0	0.0	100.0	3	0	3	9.7	0.0	9.7						
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	3.2	3.2						
8-Unknown	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	4	0	4	12.9	0.0	12.9						
9-Other	1	0	1	100.0	0.0	100.0	0	0	0	0.0	0.0	0.0	1	0	1	3.2	0.0	3.2						
Total	1	0	1	100.0	0.0	100.	1	0	1	100.0	0.0	100.	27	4	31	87.1	12.9	100.						









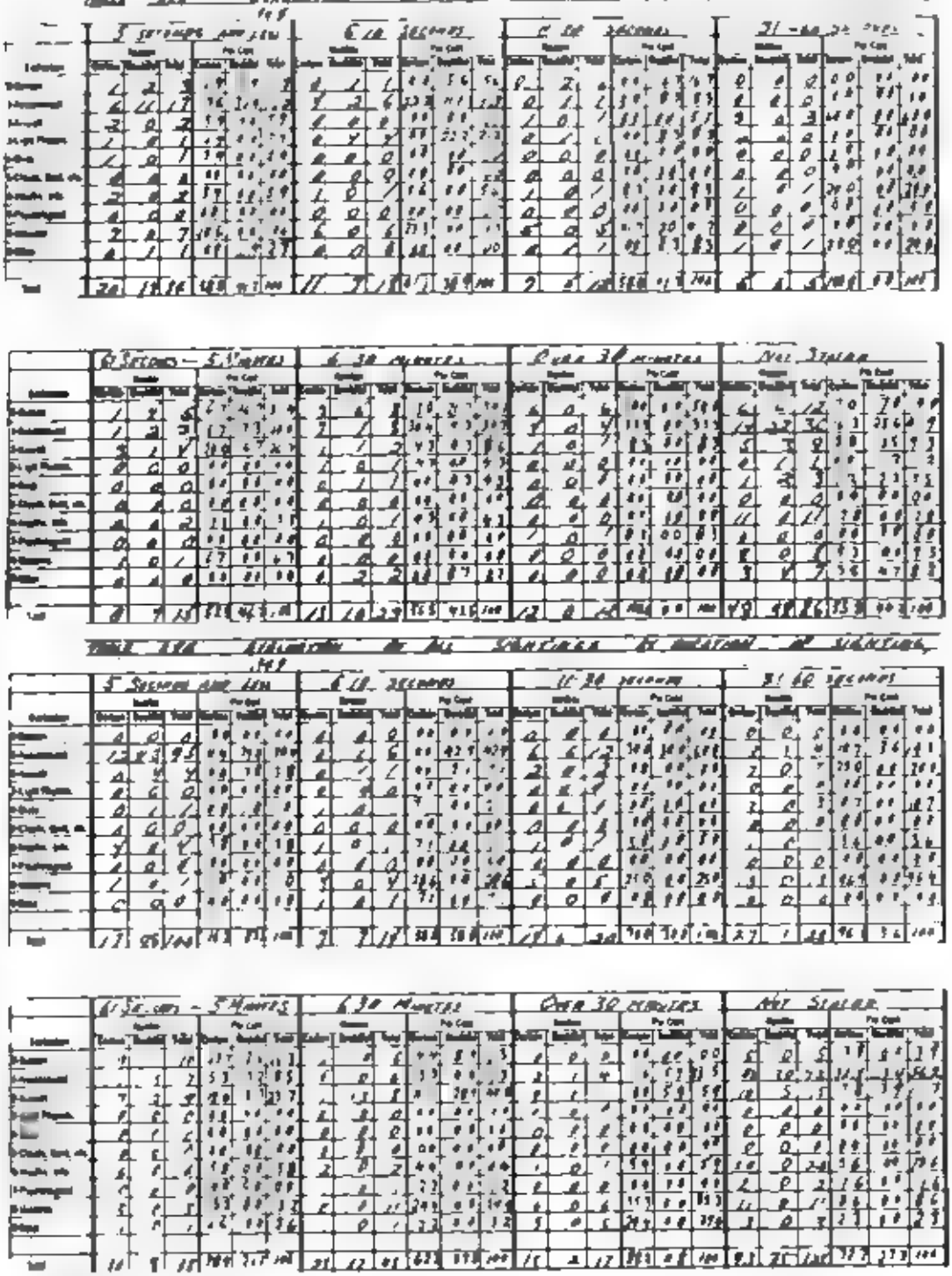


TABLE XXX EVALUATION OF ALL SIGNALMEN IN OPERATION OF SIGNALS, 1930

	5 SECONDS AND LESS			6-10 SECONDS			11-30 SECONDS			31-60 SECONDS		
	Number			Number			Number			Number		
Employee	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total
1-Gilman	1	0	1	0	0	0	0	1	1	1	0	1
2-Hammond	17	8	25	1	2	3	6	1	7	2	2	4
3-Knott	1	0	1	4	0	4	5	2	7	2	0	2
4-Light Phares	0	0	0	0	0	0	0	0	0	0	0	0
5-Mack	0	0	0	0	0	0	0	0	0	0	0	0
6-Owen, Asst. Mgr.	0	0	0	0	0	0	0	0	0	0	0	0
7-Sandler, Info.	2	0	2	0	0	0	1	0	1	0	0	0
8-Psychologist	0	0	0	0	0	0	0	0	0	0	0	0
9-Edwards	1	0	1	0	0	0	5	0	5	4	0	4
10-Other	0	0	0	0	0	0	0	0	0	0	0	0
Total	17	8	25	5	2	7	17	4	21	5	2	10

	5 SECONDS AND LESS					6-10 SECONDS					11-30 SECONDS					31-60 SECONDS				
	Number			Per Cent		Number			Per Cent		Number			Per Cent		Number			Per Cent	
Employee	Correct	Doubtful	Total	Correct	Doubtful	Correct	Doubtful	Total	Correct	Doubtful	Correct	Doubtful	Total	Correct	Doubtful	Correct	Doubtful	Total	Correct	Doubtful
1-Gilman	1	0	1	4.0	0.0	0	0	0	0.0	0.0	0	1	1	0.0	4.0	1	0	1	10.0	0.0
2-Hammond	17	8	25	68.0	32.0	1	2	3	14.3	28.6	6	1	7	28.6	4.0	2	2	4	20.0	20.0
3-Knott	1	0	1	4.0	0.0	4	0	4	57.1	0.0	5	2	7	23.8	9.5	2	0	2	20.0	0.0
4-Light Phares	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
5-Mack	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
6-Owen, Asst. Mgr.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
7-Sandler, Info.	2	0	2	8.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
8-Psychologist	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	1	1	4.8	0.0	0	0	0	0.0	0.0
9-Edwards	1	0	1	4.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
10-Other	0	0	0	0.0	0.0	0	0	0	0.0	0.0	5	0	5	23.8	0.0	4	0	4	40.0	0.0
Total	17	8	25	68.0	32.0	5	2	7	71.4	28.6	17	4	21	81.0	19.0	5	2	10	50.0	20.0

	61 SECONDS - 5 MINUTES					6-30 MINUTES					OVER 30 MINUTES					NOT STATED				
	Number			Per Cent		Number			Per Cent		Number			Per Cent		Number			Per Cent	
Employee	Correct	Doubtful	Total	Correct	Doubtful	Correct	Doubtful	Total	Correct	Doubtful	Correct	Doubtful	Total	Correct	Doubtful	Correct	Doubtful	Total	Correct	Doubtful
1-Gilman	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
2-Hammond	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
3-Knott	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
4-Light Phares	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
5-Mack	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
6-Owen, Asst. Mgr.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
7-Sandler, Info.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
8-Psychologist	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
9-Edwards	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
10-Other	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
Total	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0

TABLE XXX EVALUATION OF ALL SIGNALMEN IN OPERATION OF SIGNALS, 1931

	5 SECONDS AND LESS			6-10 SECONDS			11-30 SECONDS			31-60 SECONDS		
	Number			Number			Number			Number		
Employee	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total
1-Gilman	0	0	0	0	0	0	1	0	1	0	0	0
2-Hammond	6	2	8	5	1	6	4	0	4	1	1	2
3-Knott	1	0	1	1	0	1	3	0	3	2	0	2
4-Light Phares	0	0	0	0	0	0	0	0	0	0	0	0
5-Mack	0	0	0	0	0	0	0	1	1	0	0	0
6-Owen, Asst. Mgr.	0	0	0	0	0	0	0	0	0	0	0	0
7-Sandler, Info.	0	0	0	0	0	0	0	0	0	0	0	0
8-Psychologist	0	0	0	0	0	0	0	0	0	0	0	0
9-Edwards	0	0	0	0	0	0	0	0	0	0	0	0
10-Other	4	0	4	2	0	2	2	0	2	0	0	0
Total	11	2	13	8	1	9	10	1	11	3	1	4

	5 SECONDS AND LESS					6-10 SECONDS					11-30 SECONDS					31-60 SECONDS				
	Number			Per Cent		Number			Per Cent		Number			Per Cent		Number			Per Cent	
Employee	Correct	Doubtful	Total	Correct	Doubtful	Correct	Doubtful	Total	Correct	Doubtful	Correct	Doubtful	Total	Correct	Doubtful	Correct	Doubtful	Total	Correct	Doubtful
1-Gilman	0	0	0	0.0	0.0	0	0	0	0.0	0.0	1	0	1	9.1	0.0	0	0	0	0.0	0.0
2-Hammond	6	2	8	54.6	11.8	1	5	6	9.0	45.5	4	0	4	36.4	0.0	1	1	2	20.0	20.0
3-Knott	1	0	1	9.1	0.0	1	0	1	12.5	0.0	3	0	3	27.3	0.0	2	0	4	40.0	0.0
4-Light Phares	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
5-Mack	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	1	1	0.0	9.1	0	0	0	0.0	0.0
6-Owen, Asst. Mgr.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
7-Sandler, Info.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
8-Psychologist	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
9-Edwards	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
10-Other	4	0	4	73.3	0.0	2	0	2	25.0	0.0	2	0	2	18.2	0.0	0	0	0	0.0	0.0
Total	11	2	13	84.6	15.4	4	5	9	44.4	55.6	10	1	11	90.9	9.1	3	1	4	75.0	25.0

	61 SECONDS - 5 MINUTES					6-30 MINUTES					OVER 30 MINUTES					NOT STATED				
	Number			Per Cent		Number			Per Cent		Number			Per Cent		Number			Per Cent	
Employee	Correct	Doubtful	Total	Correct	Doubtful	Correct	Doubtful	Total	Correct	Doubtful	Correct	Doubtful	Total	Correct	Doubtful	Correct	Doubtful	Total	Correct	Doubtful
1-Gilman	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
2-Hammond	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
3-Knott	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
4-Light Phares	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
5-Mack	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
6-Owen, Asst. Mgr.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
7-Sandler, Info.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
8-Psychologist	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
9-Edwards	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
10-Other	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0
Total	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0	0	0	0.0	0.0

TABLE XXI EVALUATION OF ALL SIGHTINGS BY DURATION OF SIGHTING, 1952

Evaluation	5 SECONDS AND LESS						6-10 SECONDS						11-30 SECONDS						31-60 SECONDS					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total
0-Balloon	1	5	6	0.4	2.0	2.4	8	4	12	4.2	3.6	6.3	5	9	14	2.7	4.9	7.6	6	11	17	5.7	7.9	13.6
1-Aircraft	24	34	58	18.9	13.5	32.9	29	5	34	15.9	13.4	29.3	26	9	35	14.1	4.9	19.0	16	5	21	7.1	3.6	10.7
2-Aircraft	28	28	56	9.8	9.8	19.6	19	13	32	12.0	11.6	28.6	35	29	64	18.9	15.8	34.7	28	28	56	7.1	14.3	21.4
3-Light Phenom.	1	2	3	0.4	0.8	1.2	-	0	1	0.4	0.0	0.4	1	1	2	0.5	0.5	1.0	0	2	2	0.0	1.4	1.4
4-Birds	1	3	4	0.4	1.2	1.6	0	1	1	0.0	0.9	0.9	1	0	1	0.5	0.0	0.5	3	1	4	2.1	0.7	2.8
5-Clouds, Dust, etc.	1	1	2	0.4	0.4	0.8	0	0	0	0.0	0.0	0.0	2	2	4	0.0	1.1	1.1	0	0	0	0.0	0.0	0.0
6-Satellite, Sat.	11	0	11	4.5	0.0	4.5	7	0	7	6.2	0.0	6.2	11	0	11	5.9	0.0	5.9	11	0	11	7.7	0.0	7.7
7-Psychological	2	0	2	0.8	0.0	0.8	0	0	0	0.0	0.0	0.0	5	2	7	2.7	1.1	3.8	2	0	2	1.4	0.0	1.4
8-Unknown	46	0	46	18.6	0.0	18.6	19	0	19	17.0	0.0	17.0	23	0	23	12.6	0.0	12.6	40	0	40	28.6	0.0	28.6
9-Other	9	2	11	3.7	0.8	4.5	1	0	1	0.9	0.0	0.9	11	5	16	6.0	2.7	8.7	1	2	3	0.7	1.4	2.1
Total	170	75	245	69.4	30.6	100.	79	33	112	70.5	29.5	100.	171	64	235	65.4	24.6	100.	99	41	140	70.7	29.3	100.

Evaluation	61 SECONDS - 5 MINUTES						6-30 MINUTES						OVER 30 MINUTES						NOT STATED					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total
0-Balloon	46	36	82	12.7	9.9	22.6	62	05	167	16.5	12.2	29.0	27	12	39	4.4	6.4	20.9	55	22	57	8.4	5.3	13.7
1-Aircraft	11	7	18	1.1	2.2	3.3	23	15	38	6.2	4.1	10.3	27	14	41	14.4	7.5	21.9	62	16	63	11.3	3.8	15.1
2-Aircraft	52	56	108	15.7	15.4	31.1	73	41	73	9.6	11.1	19.7	11	9	20	5.9	4.8	10.7	84	36	84	11.5	8.7	20.2
3-Light Phenom.	6	3	9	1.7	0.8	2.5	18	6	19	3.5	1.6	5.1	1	2	3	0.5	1.1	1.6	3	1	4	0.7	0.2	0.9
4-Birds	1	0	1	0.3	0.0	0.3	0	0	0	0.0	0.0	0.0	3	0	3	1.6	0.0	1.6	4	0	4	1.0	0.0	1.0
5-Clouds, Dust, etc.	1	7	8	0.3	1.9	2.2	3	2	5	0.8	0.5	1.3	11	0	11	2.1	0.0	2.1	3	1	4	0.7	0.2	0.9
6-Satellite, Sat.	5	5	10	1.9	0.0	1.9	29	0	29	7.8	0.0	7.8	8	0	8	4.3	0.0	4.3	71	0	71	17.1	0.0	17.1
7-Psychological	11	3	7	1.1	0.8	1.9	7	0	7	1.9	0.0	1.9	4	1	5	2.1	0.5	2.6	2	1	3	0.5	0.2	0.7
8-Unknown	101	0	101	27.8	0.0	27.8	77	20.8	0.0	20.8	0.0	20.8	54	0	54	28.3	0.0	28.3	106	0	106	25.5	0.0	25.5
9-Other	12	0	12	3.3	0.0	3.3	11	4	15	3.0	1.1	4.1	8	3	11	4.3	1.6	5.7	19	1	20	4.6	0.2	4.8
Total	250	113	363	68.9	31.1	100.	257	113	370	69.5	30.5	100.	146	91	187	78.1	21.9	100.	398	78	416	81.2	18.8	100

TABLE XXX EVALUATION OF UNIT SIGNATURES BY QUANTITY OF SIGNATURES

ALL YEARS

	5 SECONDS AND LESS			6 TO 30 SECONDS			31 TO 60 SECONDS			OVER 60 SECONDS		
	Number			Number			Number			Number		
Evaluation	Weight	Quantity	Total	Weight	Quantity	Total	Weight	Quantity	Total	Weight	Quantity	Total
Excellent	3	5	8	12	20	32	5	10	15	1	10	11
Recommended	121	206	327	36	59	95	38	46	84	10	12	22
Passed	93	93	186	24	31	55	44	33	77	21	23	44
Slight Flaws	2	2	4	1	2	3	1	1	2	0	0	0
Weak	2	4	6	0	1	1	1	1	2	1	1	2
Check, Bad, etc.	0	1	1	0	0	0	0	2	2	0	0	0
Doubtful, etc.	19	0	19	2	0	2	16	3	19	11	0	11
Unphotographed	2	0	2	0	0	0	2	0	2	2	0	2
Unknown	31	0	31	24	0	24	38	0	38	44	0	44
Other	9	3	12	2	0	2	5	6	11	3	2	5
Total	312	314	626	101	113	214	150	102	252	93	61	154

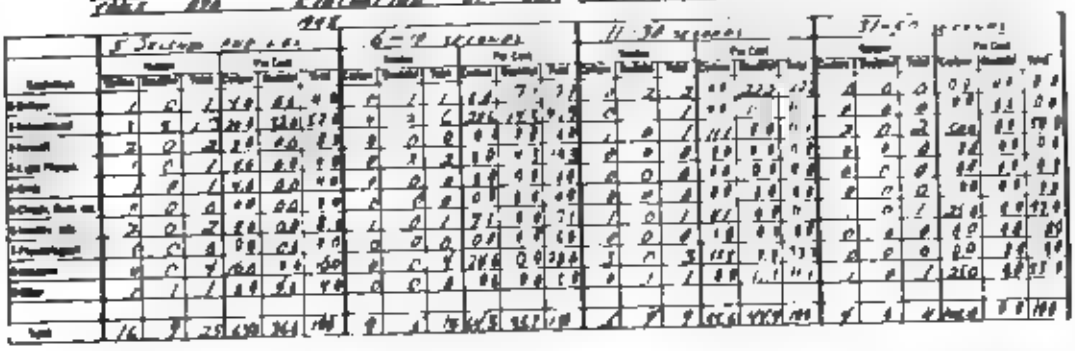
	61 SECONDS - 5 MINUTES			5 TO 10 MINUTES			OVER 10 MINUTES			ALL SPACES		
	Number			Number			Number			Number		
Evaluation	Weight	Quantity	Total	Weight	Quantity	Total	Weight	Quantity	Total	Weight	Quantity	Total
Excellent	56	46	102	17	16	33	11	10	21	27	25	52
Recommended	5	3	8	38	15	53	33	14	47	84	41	125
Passed	58	56	114	46	44	90	46	40	86	129	114	243
Slight Flaws	2	5	7	5	4	9	3	2	5	5	7	12
Weak	1	0	1	0	2	2	2	0	2	3	2	5
Check, Bad, etc.	0	3	3	1	1	2	1	0	1	2	1	3
Doubtful, etc.	18	0	18	36	0	36	11	0	11	65	0	65
Unphotographed	5	0	5	7	0	7	5	1	6	14	1	15
Unknown	187	0	187	86	0	86	37	0	37	310	0	310
Other	15	3	18	15	6	21	11	0	11	41	9	50
Total	349	121	467	205	111	316	115	74	189	729	306	1035

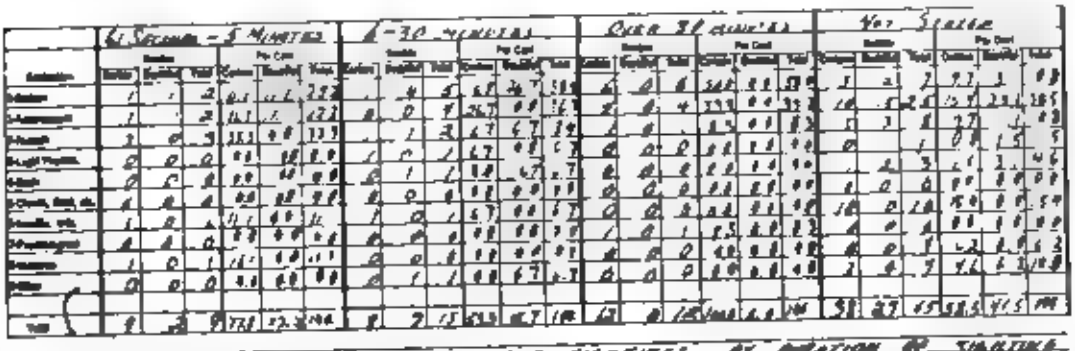
TABLE XXX EVALUATION OF UNIT SIGNATURES BY QUANTITY OF SIGNATURES,

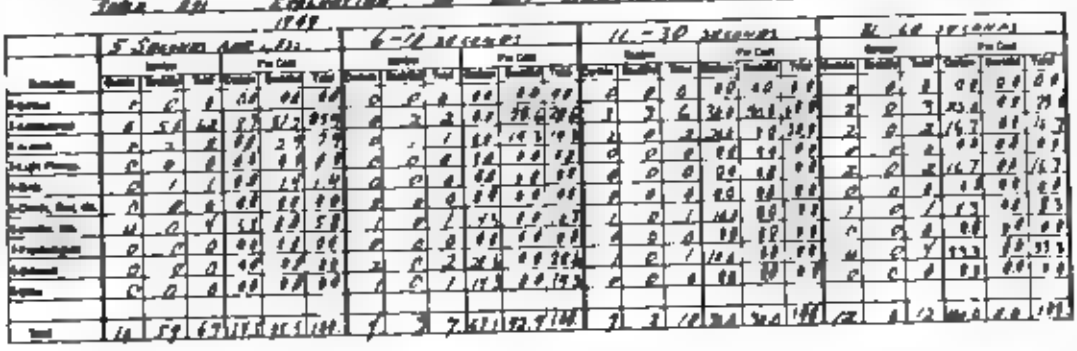
1947

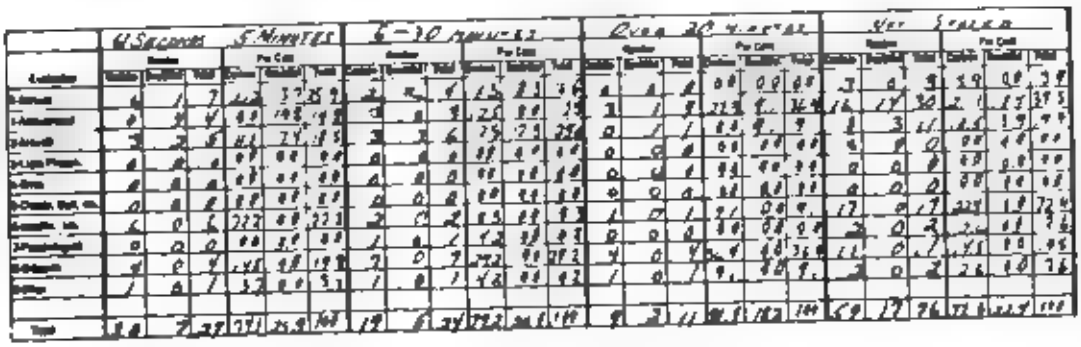
	5 SECONDS OR LESS			6 TO 30 SECONDS			31 TO 60 SECONDS			OVER 60 SECONDS		
	Number			Number			Number			Number		
Evaluation	Weight	Quantity	Total	Weight	Quantity	Total	Weight	Quantity	Total	Weight	Quantity	Total
Excellent	0	1	0	0	0	0	1	0	1	0	0	0
Recommended	1	1	2	2	2	4	2	0	2	0	1	1
Passed	0	0	0	0	0	0	0	1	1	0	0	0
Slight Flaws	0	0	0	0	0	0	0	0	0	0	0	0
Weak	0	0	0	0	0	0	0	0	0	0	0	0
Check, Bad, etc.	0	0	0	0	0	0	0	0	0	0	0	0
Doubtful, etc.	0	0	0	0	0	0	2	1	3	0	0	0
Unphotographed	0	0	0	0	1	1	0	1	1	0	0	0
Unknown	0	0	0	0	0	0	5	0	5	1	0	1
Other	1	0	1	0	0	0	1	0	1	0	0	0
Total	1	1	2	2	3	5	11	3	14	1	1	2

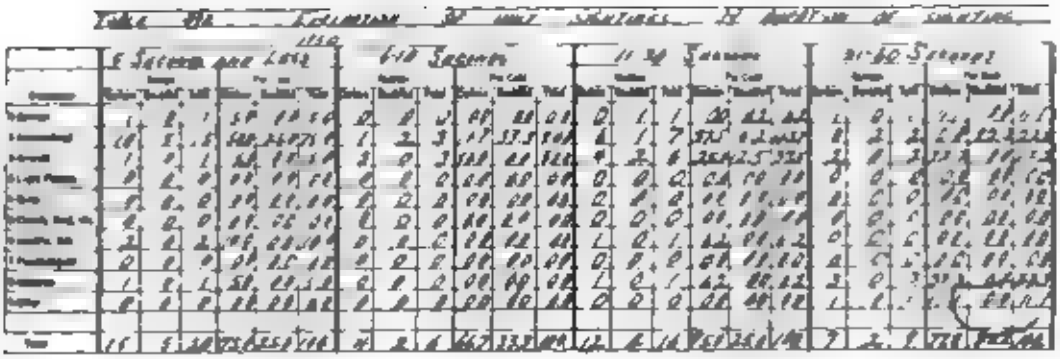
	61 SECONDS - 5 MINUTES			5 TO 10 MINUTES			OVER 10 MINUTES			ALL SPACES		
	Number			Number			Number			Number		
Evaluation	Weight	Quantity	Total	Weight	Quantity	Total	Weight	Quantity	Total	Weight	Quantity	Total
Excellent	0	0	0	0	0	0				0	0	0
Recommended	0	0	0	1	0	1				1	1	2
Passed	0	0	0	0	0	0				0	0	0
Slight Flaws	1	0	1	0	0	0				1	0	1
Weak	0	0	0	0	0	0				0	0	0
Check, Bad, etc.	0	0	0	0	0	0				0	0	0
Doubtful, etc.	1	0	1	2	0	2				3	0	3
Unphotographed	0	0	0	1	0	1				1	0	1
Unknown	2	0	2	0	0	0				2	0	2
Other	1	0	1	0	0	0				1	0	1
Total	5	0	5	4	0	4				9	1	10

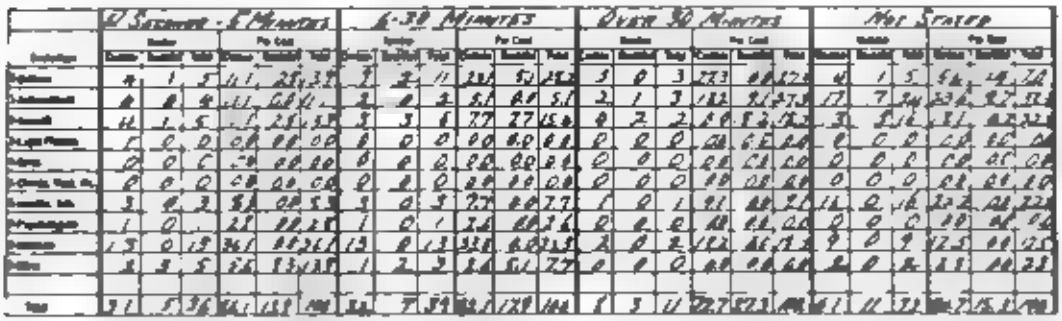


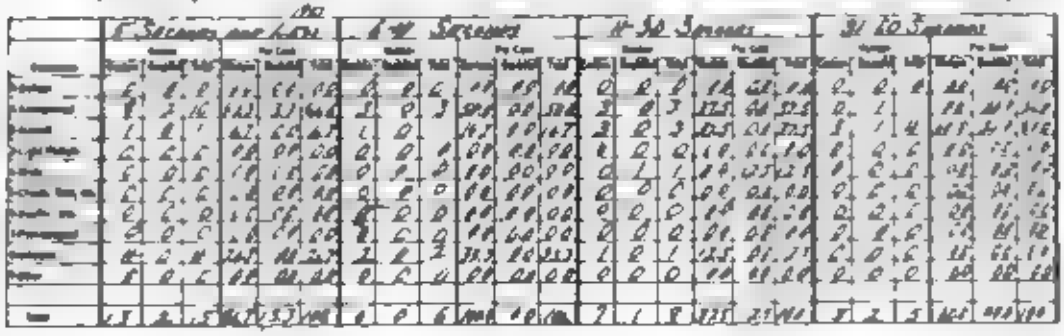












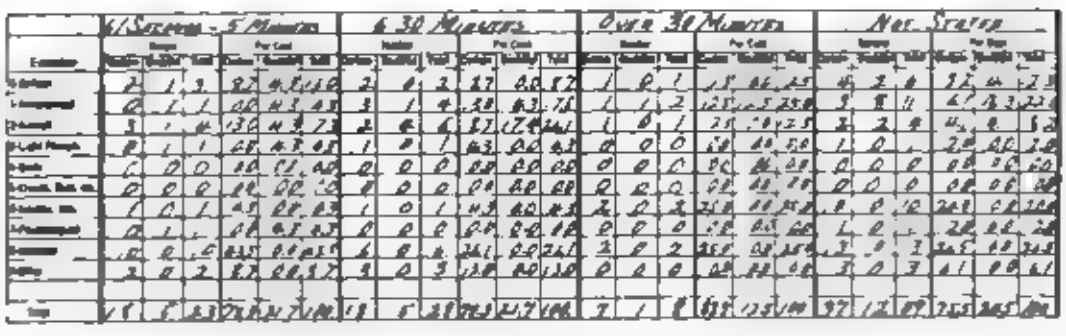


TABLE 33E. EVALUATION OF UNIT SIGHTINGS BY DURATION OF SIGHTING.

152

	5 Seconds and Less						6-10 Seconds						11-30 Seconds						31-60 Seconds					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Evaluation	Carlos	Dunkirk	Total	Carlos	Dunkirk	Total	Carlos	Dunkirk	Total	Carlos	Dunkirk	Total	Carlos	Dunkirk	Total	Carlos	Dunkirk	Total	Carlos	Dunkirk	Total	Carlos	Dunkirk	Total
1-Definite	1	5	6	0.5	2.3	2.8	3	3	6	2.1	2.1	4.2	4	7	11	1.5	4.3	6.9	8	10	18	6.3	7.9	14.2
2-Unidentified	36	94	130	99.3	15.5	58.9	26	15	41	18.3	10.3	41.9	23	9	32	14.3	5.6	19.9	10	4	14	7.9	3.2	11.1
3-Aircraft	19	21	40	8.7	9.6	18.3	16	10	26	16.3	10.2	26.5	30	30	60	18.6	18.6	37.2	22	20	42	17.5	15.9	33.4
4-Light Planet.	1	2	3	0.5	0.9	1.4	1	0	1	1.0	0.0	1.0	1	1	2	0.6	0.6	1.2	0	2	2	0.0	1.6	1.6
5-Birds	1	3	4	0.5	1.4	1.9	0	1	1	0.0	1.0	1.0	1	0	1	0.6	0.0	0.6	3	1	4	2.4	0.8	3.2
6-Clouds, Dust, etc.	0	1	1	0.0	0.5	0.5	0	0	0	0.0	0.0	0.0	0	2	2	0.0	1.2	1.2	0	0	0	0.0	0.0	0.0
7-Searchlights	11	0	11	5.0	0.0	5.0	6	0	6	6.1	0.0	6.1	11	0	11	6.8	0.0	6.8	7	0	7	5.1	0.0	5.1
8-Psychological	2	0	2	0.9	0.0	0.9	0	0	0	0.0	0.0	0.0	5	1	6	3.1	0.6	3.7	2	0	2	1.6	0.0	1.6
9-Unknown	22	0	22	10.0	0.0	10.0	16	0	16	10.3	0.0	10.3	27	0	27	16.8	0.0	16.8	32	0	32	25.4	0.0	25.4
0-Other	6	2	10	3.7	0.9	4.6	1	0	1	1.0	0.0	1.0	4	5	9	2.5	3.1	5.6	1	2	3	0.9	1.6	2.5
Total	151	68	219	68.9	31.1	100.	69	29	98	70.9	29.6	100.	106	55	161	65.5	34.2	100.	87	39	126	69.0	31.0	100.

	61 Seconds - 5 Minutes						6-30 Minutes						Over 30 Minutes						Not Stated					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Evaluation	Carlos	Dunkirk	Total	Carlos	Dunkirk	Total	Carlos	Dunkirk	Total	Carlos	Dunkirk	Total	Carlos	Dunkirk	Total	Carlos	Dunkirk	Total	Carlos	Dunkirk	Total	Carlos	Dunkirk	Total
1-Definite	40	36	76	13.4	11.9	25.4	53	37	90	16.8	11.7	28.5	25	12	37	16.1	7.7	23.8	31	20	51	9.8	5.8	15.8
2-Unidentified	3	7	10	1.0	2.3	3.3	22	14	36	7.0	4.4	11.4	23	13	36	14.8	8.4	23.2	46	13	59	13.8	3.8	17.6
3-Aircraft	43	50	93	14.2	16.5	30.7	31	33	64	9.8	10.4	20.2	8	7	15	5.2	4.5	9.7	42	27	69	12.5	8.1	20.6
4-Light Planet.	6	3	9	2.0	1.0	3.0	13	6	19	4.1	1.9	6.0	1	2	3	0.6	1.3	1.9	3	1	4	0.9	0.3	1.2
5-Birds	1	0	1	0.3	0.0	0.3	0	0	0	0.0	0.0	0.0	2	0	2	1.3	0.0	1.3	1	0	1	0.3	0.0	0.3
6-Clouds, Dust, etc.	0	3	3	0.0	1.0	1.0	1	1	2	0.3	0.3	0.6	1	0	1	0.6	0.0	0.6	1	0	1	0.3	0.0	0.3
7-Searchlights	18	0	18	5.9	0.0	5.9	27	0	27	8.5	0.0	8.5	7	0	7	4.5	0.0	4.5	70	0		22.3	0.0	22.3
8-Psychological	4	3	7	1.3	1.0	2.3	7	0	7	2.2	0.0	2.2	4	1	5	2.6	0.6	3.2	2	1	3	0.	0.	0.9
9-Unknown	77	0	77	25.4	0.0	25.4	58	0	58	18.4	0.0	18.4	39	0	39	25.2	0.0	25.2	23	0	23	7.2	0.0	7.2
0-Other	9	0	9	3.0	0.0	3.0	10	3	13	3.2	0.9	4.1	7	3	10	4.5	1.9	6.4	13	1	13	3.5	0.3	3.8
Total	301	102	303	66.3	33.7	100.	232	94	316	73.3	29.7	100.	117	38	155	75.5	24.5	100.	251	63	314	79.7	19.3	100.

TABLE XIX EVALUATION OF DEADLY SIGHTINGS BY DURATION OF SIGHTING, [illegible] YEARS

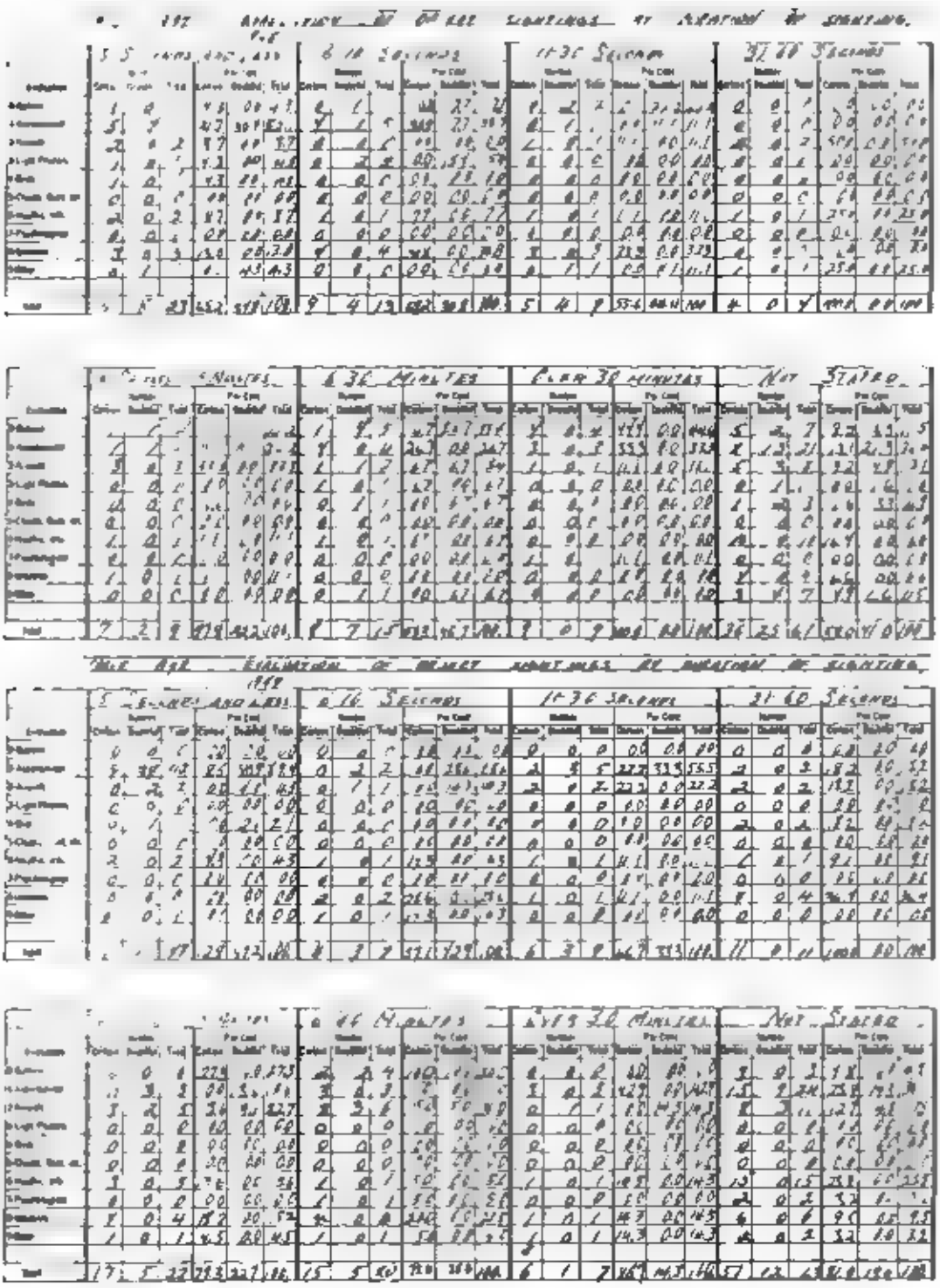
Evaluation	5 Seconds and Less						6-10 Seconds						11-30 Seconds						31-60 Second					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total
1-Deer	3	6	9	1.8	4.7	2.7	2	4	6	1.8	3.5	5.3	5	9	14	2.7	4.4	7.5	9	9	18	6.0	6.0	12.0
2-Antelope	127	40	167	30.6	22.0	52.4	26	19	45	23.0	16.7	39.8	21	11	32	12.9	5.9	18.9	9	7	16	6.0	4.7	10.7
3-Moose	24	22	46	8.5	7.8	16.4	13	9	22	15.9	11.0	26.9	36	31	67	19.5	16.7	36.0	30	19	49	20.0	12.7	32.7
4-Light Phases	2	2	4	0.7	0.7	1.4	1	2	3	0.9	1.8	2.7	1	1	2	.5	.5	1.0	0	2	2	0.0	1.3	1.3
5-Bear	2	3	5	0.7	1.4	2.1	0	1	1	0.0	0.9	0.9	1	1	2	.5	.5	1.0	3	1	4	2.0	.7	2.7
6-Coach, Bird, etc.	0	1	1	0.0	0.5	0.5	0	0	0	0.0	0.0	0.0	0	2	2	0.0	1.1	1.1	0	0	0	0.0	0.0	0.0
7-Smiths, Mfr.	15	6	15	5.2	0.0	5.2	8	0	8	7.1	0.0	7.1	16	0	15	4.1	0.0	9.1	11	0	11	7.3	0.0	7.3
8-Psychological	2	0	2	0.7	0.0	0.7	0	0	0	0.0	0.0	0.0	5	0	5	1.4	0.0	3.4	2	0	2	1.3	0.0	1.3
9-Unknown	27	0	27	9.5	0.0	9.4	21	0	21	18.6	0.0	18.6	39	0	39	19.7	0.0	19.7	42	0	42	29.0	0.0	29.0
0-Other	9	3	12	3.1	1.0	4.1	2	0	2	1.8	0.0	1.8	6	6	12	2.7	2.7	5.4	3	2	5	2.0	1.3	3.3
Total	169	117	286	59.1	40.9	100.	76	35	111	68.8	31.0	100.	129	62	186	46.7	33.3	100.	110	70	180	73.3	26.7	100.

Evaluation	61 Seconds – 5 Minutes						6-30 Minutes						Over 30 Minutes						Not Stated					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total
1-Deer	33	15	48	16.5	9.5	23.7	23	10	33	16.8	10.2	24.7	27	12	39	16.9	9.4	23.8	23	20	43	7.2	6.6	13.4
2-Antelope	6	11	17	3.0	7.0	10.1	34	15	49	3.2	7.0	12.2	29	15	44	18.9	9.5	25.4	62	37	99	11.3	7.6	18.9
3-Moose	53	49	102	26.1	23.3	27.4	30	27	57	10.1	9.3	19.9	9	5	17	5.2	3.1	9.9	66	34	100	12.9	6.2	17.1
4-Light Phases	6	3	9	3.0	0.8	2.4	15	6	19	5.9	1.5	5.0	1	2	3	0.6	1.2	1.8	5	1	6	0.9	0.2	1.1
5-Bear	1	0	1	0.5	0.0	0.7	0	1	1	0.0	0.3	0.3	2	0	2	1.2	0.0	1.2	2	2	4	0.3	0.3	0.8
6-Coach, Bird, etc.	0	3	3	0.0	0.8	2.8	1	1	2	0.3	0.3	0.6	1	0	1	0.6	0.0	0.6	1	0	1	0.2	0.0	0.2
7-Smiths, Mfr.	26	0	26	7.1	0.0	7.1	32	0	32	9.5	0.0	9.5	10	0	10	5.9	0.0	5.9	123	0	123	23.9	0.0	23.9
8-Psychological	5	4	9	1.4	1.1	2.5	8	0	8	2.4	0.0	2.4	5	1	6	2.9	0.6	3.5	8	2	10	1.5	0.4	1.9
9-Unknown	99	0	99	26.9	0.0	26.9	24	0	24	14.2	0.0	14.2	32	0	32	18.5	0.0	18.5	100	0	100	19.0	0.0	19.0
0-Other	19	1	15	3.8	0.3	4.1	16	4	20	9.0	2.3	11.3	8	3	11	4.7	1.7	6.4	28	4	32	5.5	0.8	6.2
Total	362	106	468	98.2	28.8	127	204	102	306	82.9	27.1	110	124	41	172	76.3	25.3	100.	527	111	638	77.7	20.3	100.

TABLE XX EVALUATION OF CORRECT SIGHTINGS BY DURATION OF SIGHTING, 1967

Evaluation	5 Seconds and Less						6-10 Seconds						11-30 Seconds						31-60 Seconds					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total
1-Deer	0	4	0	0.0	0.0	0.0	0	1	0	0.0	0.0	0.0	1	0	1	5.3	0.0	5.3	0	0	0	0.0	0.0	0.0
2-Antelope	3	1	4	60.0	20.0	80.0	1	2	3	33.3	66.7	100.0	1	0	1	5.3	0.0	5.3	0	1	1	0.0	16.7	16.7
3-Moose	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	5.3	5.3	0	1	1	0.0	16.7	16.7
4-Light Phases	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Bear	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Coach, Bird, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Smiths, Mfr.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	10.5	0.0	10.5	0	0	0	0.0	0.0	0.0
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	5.3	5.3	0	0	0	0.0	0.0	0.0
9-Unknown	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	5	0	5	31.7	0.0	41.7	1	0	4	66.7	0.0	66.7
0-Other	1	0	1	20.0	0.0	20.0	0	0	0	0.0	0.0	0.0	1	0	1	5.3	0.0	5.3	0	0	0	0.0	0.0	0.0
Total	4	1	5	80.0	20.0	100.	1	2	3	33.3	66.7	100.	10	2	12	53.3	16.7	100.	1	2	6	66.7	33.3	100.

Evaluation	61 Seconds – 5 Minutes						6-30 Minutes						Over 30 Minutes						Not Stated					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total
1-Deer	2	0	2	28.6	0.0	28.6	0	0	0	0.0	0.0	0.0							4	4	8	9.3	0.0	9.3
2-Antelope	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0							3	4	7	7.0	9.3	16.3
3-Moose	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0							2	0	2	4.7	0.0	4.7
4-Light Phases	1	0	1	14.3	0.0	14.3	0	0	0	0.0	0.0	0.0							1	1	1	2.3	0.0	2.3
5-Bear	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0
6-Coach, Bird, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0
7-Smiths, Mfr.	1	0	1	14.3	0.0	14.3	2	0	2	66.7	0.0	66.7							7	0	7	16.3	0.0	16.3
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0							1	1	4	7.0	2.3	9.3
9-Unknown	2	0	2	28.6	0.0	28.6	1	0	1	33.3	0.0	33.3							10	0	10	23.3	0.0	23.3
0-Other	1	0	1	14.3	0.0	14.3	0	0	0	0.0	0.0	0.0							8	0	8	18.6	0.0	18.6
Total	7	0	7	100.0	0.0	100.	3	0	3	100.	0.0	100.							35	8	43	81.4	18.6	100.



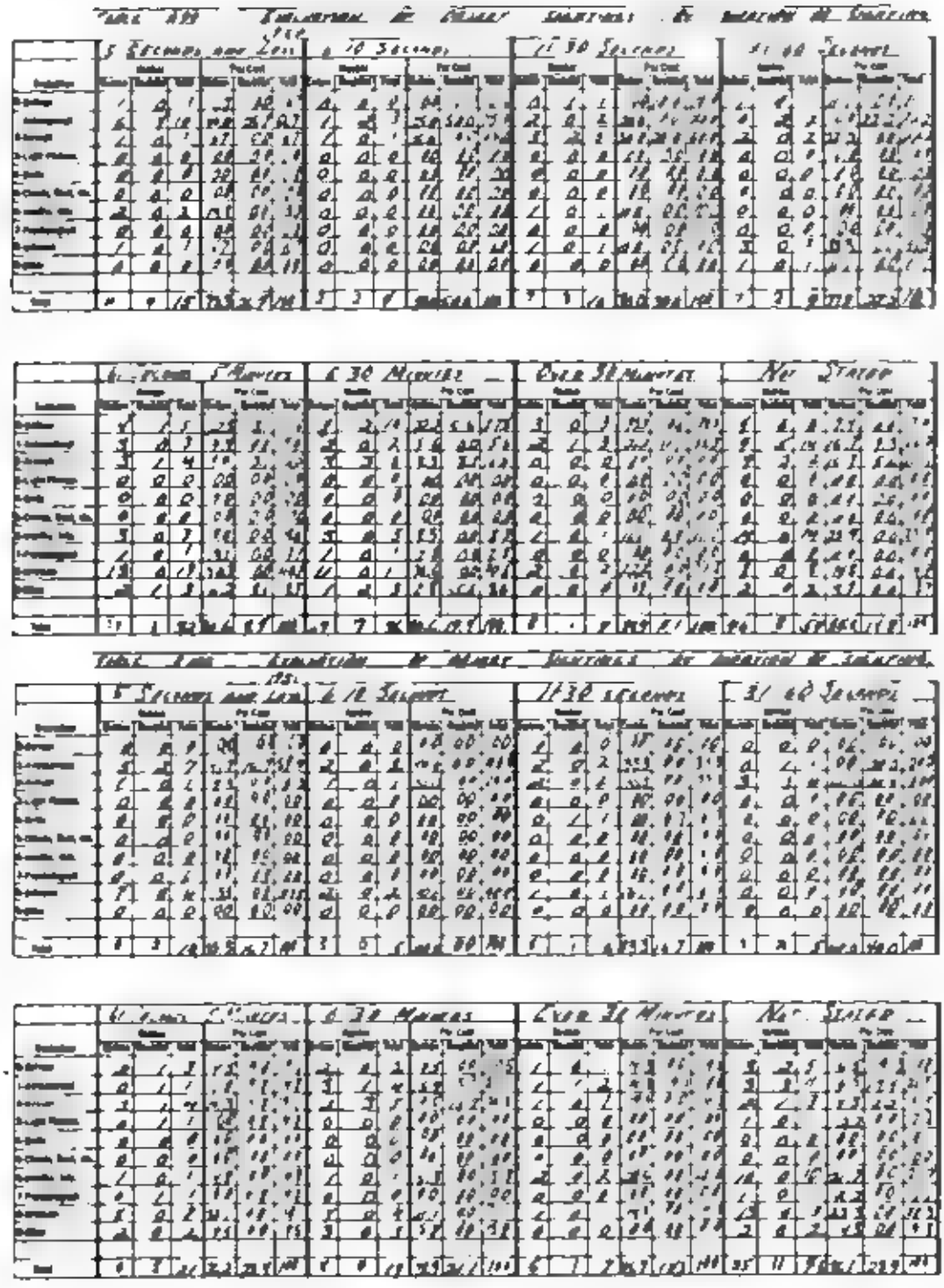


TABLE XIII — EVALUATION OF OBJECT SIGHTINGS BY DURATION OF SIGHTING

Evaluation	5 Seconds and Less						6-10 Seconds						11-30 Seconds						31-60 Seconds					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
A-Balloon	1	5	6	0.5	2.7	3.2	2	3.5		2.4	3.7	6.1	4	6	10	2.9	4.3	7.3	8	9	17	7.6	7.8	15.8
I-Astronomical	54	28	73	29.9	15.2	50.4	18	12	30	22.8	14.8	37.6	17	7	24	12.1	5.0	17.1	7	3	10	6.1	2.6	8.7
C-Aircraft	18	20	38	9.8	10.9	20.7	16	8	24	19.8	9.9	29.7	28	28	56	20.0	20.0	40.0	21	17	38	18.5	14.8	33.1
D-Light Phenom.	1	2	3	.5	1.1	1.6	1	0	1	1.2	0.0	1.2	1	1	2	.7	.7	1.4	0	2	2	0.0	1.7	1.7
E-Birds	1	3	4	.5	1.6	2.1	0	1	1	0.0	1.2	1.2	1	0	1	.7	0.0	.7	2	1	3	1.7	.9	2.6
F-Clouds, Dust, etc.	0	1	1	0.0	.5	0.5	0	0	0	0.0	0.0	0.0	0	2	2	0.0	1.4	1.4	0	0	0	0.0	0.0	0.0
G-Satellite, Iris.	9	0	9	4.9	0.1	4.9	6	0	6	7.4	0.0	7.4	10	0	10	7.1	0.0	7.1	9	0	9	7.8	0.0	7.8
H-Psychological	2	1	3	1.1	0.5	1.1	0	0	0	0.0	0.0	0.0	4	1	5	2.9	0.7	3.6	2	0	2	1.7	0.0	1.7
I-Unknown	19	6	19	10.5	0.0	10.5	13	0	13	16.0	0.0	16.0	22	0	22	15.7	0.0	15.7	36	0	36	22.0	0.0	22.0
J-Other	8	2	10	4.5	1.1	5.9	1	0	1	1.2	0.0	1.2	9	4	13	2.9	2.9	5.8	1	2	3	0.9	1.7	2.6
Total	123	67	189	66.9	33.1	100	77	24	101	70.4	29.6	100	97	49	146	66.0	34.0	100	81	34	115	70.4	29.6	100

Evaluation	61 Seconds - 5 Minutes						6-20 Minutes						Over 30 Minutes						Net Status					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
A-Balloon	35	35	70	15.7	11.6	23.3	60	30	90	17.7	10.6	28.3	21	12	33	15.0	8.6	23.6	29	16	40	9.5	5.7	14.2
I-Astronomical	2	6	8	0.7	2.2	2.9	19	14	33	6.7	4.9	11.6	20	13	33	14.5	9.3	23.6	24	9	33	8.5	2.8	11.3
C-Aircraft	40	45	85	18.9	16.2	30.6	49	27	56	18.2	9.5	27.7	7	9	4	5.0	6.4	11.4	39	29	69	12.1	9.5	22.6
D-Light Phenom.	5	2	7	1.8	0.7	2.5	15	5	18	4.6	1.8	6.4	1	2	3	0.7	1.4	2.1	3	0	3	1.1	0.0	1.1
E-Birds	1	0	1	0.4	0.0	0.4	0	0	0	0.0	0.0	0.0	2	0	2	1.5	0.0	1.4	1	0	1	0.4	0.0	0.4
F-Clouds, Dust, etc.	0	1	1	0.0	.4	.4	1	1	2	0.4	0.4	0.8	1	0	1	0.7	0.0	0.7	1	0	1	0.4	0.0	0.4
G-Satellite, Iris.	17	0	17	6.1	0.0	6.1	29	0	29	9.5	0.0	9.5	6	0	6	4.3	0.0	4.3	67	0	67	25.8	0.0	25.8
H-Psychological	4	3	7	1.4	1.1	2.5	7	0	7	2.5	0.0	2.5	2	1	3	2.9	0.7	3.6	5	2	7	0.7	1.0	1.7
I-Unknown	71	0	71	25.6	0.0	25.6	51	0	51	18.0	0.0	18.0	34	0	34	25.6	0.0	25.6	63	0	63	22.4	2.1	24.4
J-Other	8	0	8	2.9	0.0	2.9	10	2	12	3.5	0.7	4.2	7	3	10	5.0	2.1	7.1	12	1	13	4.3	0.4	4.7
Total	186	91	277	67.1	32.9	100	201	77	278	72.1	27.9	100	102	38	140	72.9	27.1	100	231	70	301	82.2	17.8	100

TABLE XVII. EVALUATION OF ALL SIGHTINGS, FOR ALL YEARS, BY DURATION OF SIGHTING FOR MONTHS OF YEAR. FIVE SECONDS OR LESS

JANUARY

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0
1-Astronomical	5	21	26	16.7	70.0	86.7
2-Aircraft	0	0	0	0.0	0.0	0.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	0	0	0	0.0	0.0	0.0
7-Psychological	1	0	1	3.3	0.0	3.3
8-Other	2	0	2	6.7	0.0	6.7
9-Hoax	0	1	1	0.0	3.3	3.3
Total	8	22	30	26.7	73.3	100.

FEBRUARY

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0
1-Astronomical	4	6	10	36.4	54.5	90.9
2-Aircraft	0	0	0	0.0	0.0	0.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	0	0	0	0.0	0.0	0.0
7-Psychological	0	0	0	0.0	0.0	0.0
8-Other	0	0	0	0.0	0.0	0.0
9-Hoax	1	0	1	9.1	0.0	9.1
Total	5	6	11	45.5	54.5	100.

MARCH

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0
1-Astronomical	6	8	14	37.5	50.0	87.5
2-Aircraft	0	0	0	0.0	0.0	0.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	1	0	1	6.3	0.0	6.3
7-Psychological	0	0	0	0.0	0.0	0.0
8-Other	1	0	1	6.3	0.0	6.3
9-Hoax	0	1	1	0.0	6.3	6.3
Total	8	9	16	50.0	56.3	100.

APRIL

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	1	0	1	5.6	0.0	5.6
1-Astronomical	11	0	11	61.1	0.0	61.1
2-Aircraft	2	0	2	11.1	0.0	11.1
3-Light Phenom.	0	0	0	0.0	0.0	0.0
4-Birds	0	1	1	0.0	5.6	5.6
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	1	0	1	5.6	0.0	5.6
7-Psychological	0	0	0	0.0	0.0	0.0
8-Other	2	0	2	11.1	0.0	11.1
9-Hoax	0	0	0	0.0	0.0	0.0
Total	17	1	18	94.4	5.6	100.

MAY

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0
1-Astronomical	13	5	18	72.2	27.8	100.
2-Aircraft	5	1	6	20.8	4.1	24.9
3-Light Phenom.	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	1	0	1	4.1	0.0	4.1
6-Insufficient Info.	1	0	1	4.2	0.0	4.2
7-Psychological	0	0	0	0.0	0.0	0.0
8-Other	1	0	1	4.2	0.0	4.2
9-Hoax	0	0	0	0.0	0.0	0.0
Total	20	4	24	83.3	16.7	100.

JUNE

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	1	0	1	3.7	0.0	3.7
1-Astronomical	10	8	18	37.0	29.6	66.6
2-Aircraft	3	1	4	11.1	3.7	14.8
3-Light Phenom.	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	3	0	3	11.1	0.0	11.1
7-Psychological	0	0	0	0.0	0.0	0.0
8-Other	1	0	1	3.7	0.0	3.7
9-Hoax	0	0	0	0.0	0.0	0.0
Total	18	9	27	66.7	33.3	100.

JULY

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	1	2	3	0.9	1.8	2.7
1-Astronomical	59	24	83	53.2	22.0	76.2
2-Aircraft	11	12	23	10.1	11.0	21.1
3-Light Phenom.	1	0	1	0.9	0.0	0.9
4-Birds	1	2	3	0.9	1.8	2.7
5-Clouds, Dust, etc.	0	1	1	0.0	0.9	0.9
6-Insufficient Info.	1	2	3	0.9	1.8	2.7
7-Psychological	0	0	0	0.0	0.0	0.0
8-Other	12	0	12	11.0	0.0	11.0
9-Hoax	2	0	2	1.8	0.0	1.8
Total	68	41	109	62.4	37.6	100.

AUGUST

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	3	3	0.0	3.5	3.5
1-Astronomical	45	40	85	52.4	46.5	98.9
2-Aircraft	3	8	11	3.5	9.3	12.8
3-Light Phenom.	0	1	1	0.0	1.2	1.2
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	6	0	6	7.0	0.0	7.0
7-Psychological	1	0	1	1.2	0.0	1.2
8-Other	6	0	6	7.0	0.0	7.0
9-Hoax	2	1	3	2.3	1.2	3.5
Total	33	53	86	38.4	61.6	100.

SEPTEMBER

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0
1-Astronomical	14	1	15	64.1	4.8	68.9
2-Aircraft	1	2	3	4.8	9.5	14.3
3-Light Phenom.	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	2	0	2	9.5	0.0	9.5
7-Psychological	0	0	0	0.0	0.0	0.0
8-Other	2	0	2	9.5	0.0	9.5
9-Hoax	0	1	1	0.0	4.8	4.8
Total	17	4	21	81.0	19.0	100.

OCTOBER

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	2	2	0.0	5.6	5.6
1-Astronomical	17	6	23	47.2	16.7	63.9
2-Aircraft	1	3	4	2.8	8.3	11.1
3-Light Phenom.	0	1	1	0.0	2.8	2.8
4-Birds	1	1	2	2.8	2.8	5.6
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	1	0	1	2.8	0.0	2.8
7-Psychological	0	0	0	0.0	0.0	0.0
8-Other	1	0	1	2.8	0.0	2.8
9-Hoax	0	1	1	0.0	2.8	2.8
Total	23	13	36	63.9	36.1	100.

NOVEMBER

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0
1-Astronomical	7	14	21	24.1	48.3	72.4
2-Aircraft	2	1	3	6.9	3.4	10.3
3-Light Phenom.	1	0	1	3.4	0.0	3.4
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	0	0	0	0.0	0.0	0.0
7-Psychological	0	0	0	0.0	0.0	0.0
8-Other	3	0	3	10.3	0.0	10.3
9-Hoax	1	0	1	3.4	0.0	3.4
Total	14	15	29	48.3	51.7	100.

DECEMBER

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0
1-Astronomical	12	12	24	40.0	40.0	80.0
2-Aircraft	0	0	0	0.0	0.0	0.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	0	0	0	0.0	0.0	0.0
7-Psychological	0	0	0	0.0	0.0	0.0
8-Other	6	0	6	20.0	0.0	20.0
9-Hoax	0	0	0	0.0	0.0	0.0
Total	18	12	30	60.0	40.0	100.

TABLE XIII EVALUATION OF ALL SIGHTINGS FOR ALL YEARS BY DURATION OF SIGHTING FOR MONTHS OF YEAR. SIX TO TEN SECONDS

Evaluation	JANUARY						FEBRUARY						MARCH						APRIL					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
1-Astronomical	1	5	6	11.1	55.6	66.7	1	0	1	100.0	0.0	100.0	1	0	1	16.7	0.0	16.7	2	0	2	18.2	0.0	18.2
2-Aircraft	2	1	3	22.2	11.1	33.3	0	0	0	0.0	0.0	0.0	1	0	1	16.7	0.0	16.7	4	1	5	36.4	9.1	45.5
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Bird	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	16.7	0.0	16.7	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Specific, Ids.	1	0	1	11.1	0.0	11.1	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	9.1	0.0	9.1
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	1	0	1	11.1	0.0	11.1	0	0	0	0.0	0.0	0.0	3	0	3	50.0	0.0	50.0	3	0	3	27.3	0.0	27.3
9-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	3	6	9	33.3	66.7	100.	1	0	1	100.0	0.0	100	6	0	6	100.0	0.0	100	10	1	11	90.9	9.1	100.

Evaluation	MAY						JUNE						JULY						AUGUST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	1	0	1	8.3	0.0	8.3	1	0	1	5.0	0.0	5.0	1	0	1	4.6	0.0	4.6	0	1	1	0.0	12.5	12.5
1-Astronomical	3	0	3	25.0	0.0	25.0	5	7	10	25.0	35.0	50.0	14	6	20	63.7	27.4	90.7	1	2	3	9.4	25.0	37.5
2-Aircraft	2	1	3	16.7	8.3	25.0	3	0	3	15.0	0.0	15.0	6	5	11	27.6	22.7	50.3	3	1	4	25.0	12.5	37.5
3-Light Phenom.	0	1	1	0.0	8.3	8.3	0	3	3	0.0	15.0	15.0	0	0	0	0.0	0.0	0.0	1	0	1	8.1	0.0	8.1
4-Bird	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Specific, Ids.	2	0	2	16.7	0.0	16.7	2	0	2	10.0	0.0	10.0	1	0	1	7.7	0.0	7.7	2	0	2	16.2	0.0	16.2
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	1	0	1	8.3	0.0	8.3	1	0	1	5.0	0.0	5.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	3.4	0.0	3.4	1	0	1	8.1	0.0	8.1
Total	12	2	14	99.3	16.7	100.	10	10	20	50.0	50.0	100	29	11	41	73.3	26.8	100	24	11	35	66.6	34.4	100.

Evaluation	SEPTEMBER						OCTOBER						NOVEMBER						DECEMBER					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	1	1	0.0	10.0	10.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
1-Astronomical	6	1	3	20.0	10.0	30.0	3	3	15	14.7	20.0	34.7	5	1	6	41.7	14.3	57.2	1	2	3	33.3	66.7	100.0
2-Aircraft	0	2	2	0.0	20.0	20.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Bird	0	1	1	0.0	10.0	10.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Specific, Ids.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	3	0	3	30.0	0.0	30.0	2	0	2	13.3	0.0	13.3	3	0	3	42.9	0.0	42.9	0	0	0	0.0	0.0	0.0
9-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	5	5	10	50.0	50.0	100	5	3	15	50.0	30.0	100.	6	1	7	85.7	14.3	100	1	2	3	33.3	66.7	100.

TABLE B108 EVALUATION OF ALL SIGHTINGS FOR ALL YEARS BY DURATION OF SIGHTING FOR MONTHS OF YEAR, ELEVEN TO THIRTY SECONDS

Evaluation	January						February						March						April					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	6.3	6.3	0	0	0	0.0	0.0	0.0
1-Astronomical	4	1	5	40.0	10.0	50.0	1	0	1	25.0	0.0	25.0	0	1	1	0.0	6.3	6.3	2	1	3	11.1	6.3	16.6
2-Aircraft	0	0	0	0.0	0.0	0.0	1	0	1	25.0	0.0	25.0	1	0	1	6.3	0.0	6.3	2	3	5	14.3	9.5	23.8
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	4.8	0.0	4.8
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	4.8	0.0	4.8
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insects, Mfg.	1	0	1	10.0	0.0	10.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	4	0	4	40.0	0.0	50.0	2	0	2	50.0	0.0	50.0	3	0	3	18.7	0.0	18.7	5	0	5	23.8	0.0	23.8
9-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	9	10	6.3	56.4	62.5	1	0	1	4.8	0.0	4.8
Total	9	1	10	90.0	10.0	100.	4	0	4	100.0	0.0	100.	5	11	16	31.3	68.7	100	13	3	16	61.7	14.3	100.

Evaluation	May						June						July						August					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	1	1	2	5.3	5.3	10.6	1	0	1	5.6	0.0	5.6	4	5	9	4.4	5.5	9.9	0	1	1	0.0	2.5	2.5
1-Astronomical	2	0	2	10.5	0.0	10.5	1	3	4	5.6	16.7	22.3	13	3	16	14.3	3.3	17.6	6	6	12	15.0	15.0	30.0
2-Aircraft	4	1	5	21.1	5.3	26.4	5	2	7	27.8	11.1	38.9	17	19	36	18.8	18.8	37.6	6	4	10	15.0	10.0	25.0
3-Light Phenom.	0	1	1	0.0	5.3	5.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	2.5	2.5
4-Birds	0	1	1	0.0	5.3	5.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insects, Mfg.	4	0	4	21.1	0.0	21.1	3	0	3	16.7	0.0	16.7	5	0	5	6.3	0.0	6.3	2	0	2	7.5	0.0	7.5
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	7	2	9	8.8	2.5	11.3	0	0	0	0.0	0.0	0.0
8-Unknown	3	0	3	15.8	0.0	15.8	3	0	3	16.7	0.0	16.7	19	0	19	23.9	0.0	23.9	8	0	14	35.0	0.0	35.0
9-Other	1	0	1	5.3	0.0	5.3	0	0	0	0.0	0.0	0.0	1	0	1	1.1	0.0	1.1	0	0	0	0.0	0.0	0.0
Total	15	4	19	78.9	21.1	100.	13	5	18	72.2	27.8	100.	62	29	91	68.2	31.8	100	28	12	40	70.5	29.5	100.

Evaluation	September						October						November						December					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	2	2	0.0	15.3	15.3	1	0	1	7.1	0.0	7.1	0	0	0	0.0	0.0	0.0	0	2	2	0.0	15.4	15.4
1-Astronomical	1	1	2	6.7	6.7	13.4	6	1	7	42.9	7.1	50.0	0	0	2	50.0	0.0	50.0	3	0	3	23.1	0.0	23.1
2-Aircraft	4	3	7	26.7	20.0	46.7	1	2	3	7.1	14.3	21.4	2	0	2	50.0	0.0	50.0	1	4	5	7.7	30.8	38.5
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	1	1	0.0	6.7	6.7	0	1	1	0.0	7.1	7.1	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insects, Mfg.	2	0	2	13.3	0.0	13.3	1	0	1	7.1	0.0	7.1	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Psychological	1	0	1	6.7	0.0	6.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	15.4	0.0	15.4
8-Unknown	0	0	0	0.0	0.0	0.0	1	0	1	7.1	0.0	7.1	0	0	0	0.0	0.0	0.0	1	0	1	7.7	0.0	7.7
9-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0						
Total	8	7	15	53.3	46.7	100.	10	4	14	71.4	28.6	100.	4	0	4	100.0	0.0	100.	7	6	13	53.9	46.1	100.

TABLE XIII5 EVALUATION OF ALL SIGHTINGS FOR ALL YEARS BY DURATION OF SIGHTING FOR MONTHS OF YEAR, THIRTY ONE TO SIXTY SECONDS

Evaluation	January						February						March						April					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Classified	Total	Civilian	Classified	Total	Civilian	Classified	Total	Civilian	Classified	Total	Civilian	Classified	Total	Civilian	Classified	Total	Civilian	Classified	Total	Civilian	Classified	Total
1-Planets	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	1	0	1	33.3	00.0	33.3	0	1	1	00.0	4.5	4.5
2-Astronomical	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	1	0	1	4.5	00.0	4.5
3-Aircraft	2	0	2	00.0	00.0	00.0	1	2	3	20.0	40.0	60.0	1	0	1	33.3	00.0	33.3	1	1	2	4.5	4.5	9.1
4-Light Phenom.	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0
5-Birds	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	1	0	1	33.3	00.0	33.3	1	0	1	4.5	00.0	4.5
6-Clouds, Dust, etc.	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0
7-Insects, Ins.	2	0	2	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	2	0	2	9.1	00.0	9.1
8-Psychological	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0
9-Unknown	4	0	4	100.0	00.0	100.0	1	0	1	20.0	00.0	20.0	2	0	2	66.7	00.0	66.7	15	0	15	68.2	00.0	68.2
10-Other	0	0	0	00.0	00.0	00.0	1	0	1	20.0	00.0	20.0	0	1	1	00.0	33.3	33.3	0	0	0	00.0	00.0	00.0
Total	4	0	4	100.0	00.0	100.0	3	2	5	60.0	40.0	100.	11	1	12	91.7	8.3	100.	20	2	22	90.9	9.1	100.

Evaluation	May						June						July						August					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Classified	Total	Civilian	Classified	Total	Civilian	Classified	Total	Civilian	Classified	Total	Civilian	Classified	Total	Civilian	Classified	Total	Civilian	Classified	Total	Civilian	Classified	Total
1-Planets	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	5	2	7	20.0	40.0	40.0	1	4	5	3.6	18.5	13.1
2-Astronomical	3	1	4	33.3	11.1	44.4	0	0	0	00.0	00.0	00.0	2	0	2	40.0	00.0	40.0	3	3	6	11.1	11.1	15.8
3-Aircraft	2	0	2	22.2	00.0	22.2	3	2	5	37.5	25.0	62.5	14	12	26	28.0	24.0	52.0	3	2	5	7.9	5.3	13.2
4-Light Phenom.	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	1	1	00.0	2.0	2.0	0	1	1	00.0	2.6	2.6
5-Birds	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	1	0	1	2.0	00.0	2.0	0	0	0	00.0	00.0	00.0
6-Clouds, Dust, etc.	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0
7-Insects, Ins.	0	0	0	00.0	00.0	00.0	1	0	1	14.1	00.0	14.1	3	2	5	6.0	4.0	10.0	2	0	2	5.3	00.0	5.3
8-Psychological	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	2	0	2	5.3	00.0	5.3
9-Unknown	3	0	3	33.3	00.0	33.3	2	0	2	22.2	00.0	22.2	10	0	10	20.0	00.0	20.0	14	0	14	36.8	00.0	36.8
10-Other	0	0	0	00.0	00.0	00.0	0	1	1	00.0	11.1	11.1	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0
Total	8	1	9	88.9	11.1	100.	6	3	9	66.7	33.3	100.	36	15	50	72.0	30.0	100.	25	10	35	71.4	28.6	100.

Evaluation	September						October						November						December					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Classified	Total	Civilian	Classified	Total	Civilian	Classified	Total	Civilian	Classified	Total	Civilian	Classified	Total	Civilian	Classified	Total	Civilian	Classified	Total	Civilian	Classified	Total
1-Planets	0	1	1	00.0	11.1	11.1	1	0	1	10.0	00.0	10.0	0	1	1	00.0	20.0	20.0	1	2	3	5.3	10.5	15.8
2-Astronomical	2	1	3	15.4	11.1	33.1	2	0	2	20.0	00.0	20.0	0	2	2	00.0	40.0	40.0	2	3	5	10.5	15.8	26.3
3-Aircraft	2	1	3	22.1	11.1	33.3	2	0	2	20.0	00.0	20.0	1	0	1	20.0	00.0	20.0	5	2	7	26.3	10.5	36.8
4-Light Phenom.	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0
5-Birds	0	1	1	00.0	11.1	11.1	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0
6-Clouds, Dust, etc.	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0
7-Insects, Ins.	1	0	1	11.1	00.0	11.1	0	0	0	00.0	00.0	00.0	1	0	1	20.0	00.0	20.0	0	0	0	00.0	00.0	00.0
8-Psychological	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0
9-Unknown	3	0	3	33.1	00.0	33.1	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0
10-Other	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	0	0	0	00.0	00.0	00.0	2	0	2	10.5	00.0	10.5
Total	9	4	13	69.2	30.8	100.	10	0	10	100.0	00.0	100.	2	3	5	40.0	60.0	100.	12	7	19	63.2	36.8	100.

TABLE [illegible] ELIMINATION OF ALL SCHEDULES FOR ALL YEARS BY NUMBER OF SCHEDULES FOR NUMBER OF WEEKS FIFTY ONE SECONDS TO FIVE MINUTES

	January			February			March			April		
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
Counties	Others	Doubles	Total	Others	Doubles	Total	Others	Doubles	Total	Others	Doubles	Total
[illegible]	1	1	2	7.7	7.7	15.4	1	0	1	11.1	0.0	11.1
[illegible]	3	0	3	23.1	0.0	23.1	0	2	2	0.0	22.2	22.2
[illegible]	2	1	3	15.4	7.7	23.1	2	0	2	22.2	0.0	22.2
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	1	0	1	7.7	0.0	7.7	1	0	1	11.1	0.0	11.1
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	3	0	3	23.1	0.0	23.1	1	0	1	11.1	0.0	11.1
[illegible]	1	0	1	7.7	0.0	7.7	1	0	1	11.1	0.0	11.1
Total	11	2	13	84.6	15.4	100	5	2	7	71.4	28.6	100

	May			June			July			August		
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
Counties	Others	Doubles	Total	Others	Doubles	Total	Others	Doubles	Total	Others	Doubles	Total
[illegible]	9	2	11	69.2	15.4	84.6	0	1	1	7.7	7.7	15.4
[illegible]	2	2	4	20.0	20.0	40.0	1	2	3	12.5	25.0	37.5
[illegible]	9	6	15	60.0	40.0	100.0	5	4	9	41.7	33.3	75.0
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	9	0	9	69.2	0.0	69.2	0	0	0	0.0	0.0	0.0
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	3	0	3	15.8	0.0	15.8	8	0	8	72.7	0.0	72.7
[illegible]	2	0	2	9.1	0.0	9.1	4	0	4	22.2	0.0	22.2
Total	27	10	37	73.0	27.0	100	18	7	25	72.0	28.0	100

	September			October			November			December		
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
Counties	Others	Doubles	Total	Others	Doubles	Total	Others	Doubles	Total	Others	Doubles	Total
[illegible]	3	4	7	6.5	8.7	15.2	6	6	12	13.0	13.0	26.0
[illegible]	1	1	2	8.3	8.3	16.6	0	2	2	0.0	15.4	15.4
[illegible]	4	16	20	8.3	33.3	41.6	2	5	7	8.3	20.8	29.1
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	0	0	0	0.0	0.0	0.0	0	1	1	0.0	8.3	8.3
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	1	0	1	8.3	0.0	8.3	0	1	1	8.3	0.0	8.3
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	11	0	11	91.7	0.0	91.7	1	0	1	8.3	0.0	8.3
[illegible]	0	0	0	0.0	0.0	0.0	1	0	1	8.3	0.0	8.3
Total	20	23	43	46.5	53.5	100	10	15	25	40.0	60.0	100

TABLE XXII EVALUATION OF ALL SIGHTINGS FOR ALL YEARS BY DURATION OF SIGHTING FOR MONTHS OF YEAR, SIX TO THIRTY MINUTES

JANUARY

Evaluation	Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total
1-Balloon	1	1	2	5.9	5.9	11.8
2-Astronomical	6	0	6	35.3	0.0	35.3
3-Aircraft	2	1	3	11.8	5.9	17.7
4-Light Phenom.	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0
6-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
7-Meteor, etc.	0	0	0	0.0	0.0	0.0
8-Psychological	1	0	1	5.9	0.0	5.9
9-Unknown	4	0	4	23.5	0.0	23.5
10-Other	1	0	1	5.9	0.0	5.9
Total	17	2	17	56.9	11.8	100

FEBRUARY

Evaluation	Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total
1-Balloon	3	0	3	25.0	0.0	25.0
2-Astronomical	2	0	2	16.7	0.0	16.7
3-Aircraft	0	2	2	0.0	16.7	16.7
4-Light Phenom.	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0
6-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
7-Meteor, etc.	0	0	0	0.0	0.0	0.0
8-Psychological	0	0	0	0.0	0.0	0.0
9-Unknown	2	0	2	16.7	0.0	16.7
10-Other	3	0	3	25.0	0.0	25.0
Total	10	2	12	83.3	16.7	100

MARCH

Evaluation	Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total
1-Balloon	2	3	5	13.3	20.0	33.3
2-Astronomical	1	0	1	6.7	0.0	6.7
3-Aircraft	1	2	3	6.7	13.3	20.0
4-Light Phenom.	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0
6-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
7-Meteor, etc.	0	0	0	0.0	0.0	0.0
8-Psychological	0	0	0	0.0	0.0	0.0
9-Unknown	5	0	5	33.3	0.0	33.3
10-Other	0	1	1	0.0	6.7	6.7
Total	9	6	15	60.0	40.0	100

APRIL

Evaluation	Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total
1-Balloon	0	0	0	0.0	0.0	0.0
2-Astronomical	4	1	5	25.0	6.3	31.3
3-Aircraft	4	0	4	25.0	0.0	25.0
4-Light Phenom.	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0
6-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
7-Meteor, etc.	0	0	0	0.0	0.0	0.0
8-Psychological	1	0	1	6.3	0.0	6.3
9-Unknown	6	0	6	37.5	0.0	37.5
10-Other	0	0	0	0.0	0.0	0.0
Total	15	1	16	93.7	6.3	100

MAY

Evaluation	Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total
1-Balloon	7	2	9	25.9	7.4	33.3
2-Astronomical	3	1	4	11.1	3.7	14.8
3-Aircraft	5	2	7	18.5	7.4	25.9
4-Light Phenom.	2	0	2	7.4	0.0	7.4
5-Birds	0	0	0	0.0	0.0	0.0
6-Clouds, Mist, etc.	1	0	1	3.7	0.0	3.7
7-Meteor, etc.	1	0	1	3.7	0.0	3.7
8-Psychological	0	0	0	0.0	0.0	0.0
9-Unknown	2	0	2	7.4	0.0	7.4
10-Other	1	2	3	3.7	7.4	11.1
Total	22	5	27	81.5	18.5	100

JUNE

Evaluation	Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total
1-Balloon	10	1	11	23.8	2.4	26.2
2-Astronomical	2	0	2	4.7	0.0	4.7
3-Aircraft	8	3	11	19.0	7.1	26.2
4-Light Phenom.	1	0	1	2.4	0.0	2.4
5-Birds	0	0	0	0.0	0.0	0.0
6-Clouds, Mist, etc.	2	0	2	4.7	0.0	4.7
7-Meteor, etc.	3	0	3	7.0	0.0	7.0
8-Psychological	1	0	1	2.4	0.0	2.4
9-Unknown	4	0	4	9.5	0.0	9.5
10-Other	0	0	0	0.0	0.0	0.0
Total	31	4	35	73.8	9.5	83.3

JULY

Evaluation	Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total
1-Balloon	24	10	34	17.6	7.4	25.0
2-Astronomical	9	6	15	6.7	4.4	11.1
3-Aircraft	14	8	22	10.3	5.9	16.2
4-Light Phenom.	3	2	5	2.2	1.5	3.7
5-Birds	0	0	0	0.0	0.0	0.0
6-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
7-Meteor, etc.	14	2	16	10.3	1.5	11.8
8-Psychological	1	0	1	0.7	0.0	0.7
9-Unknown	22	0	22	16.2	0.0	16.2
10-Other	4	1	5	2.9	0.7	3.7
Total	91	29	120	67.0	21.3	88.2

AUGUST

Evaluation	Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total
1-Balloon	17	13	30	12.5	9.6	22.1
2-Astronomical	8	2	10	5.9	1.5	7.4
3-Aircraft	6	17	23	4.4	12.5	16.9
4-Light Phenom.	4	0	4	2.9	0.0	2.9
5-Birds	0	0	0	0.0	0.0	0.0
6-Clouds, Mist, etc.	0	1	1	0.0	0.7	0.7
7-Meteor, etc.	6	0	6	4.4	0.0	4.4
8-Psychological	2	0	2	1.5	0.0	1.5
9-Unknown	12	0	12	8.8	0.0	8.8
10-Other	6	1	5	4.2	0.7	5.4
Total	61	34	95	44.9	25.0	69.9

SEPTEMBER

Evaluation	Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total
1-Balloon	3	2	5	10.0	6.7	16.7
2-Astronomical	0	2	2	0.0	6.7	6.7
3-Aircraft	1	8	9	3.3	26.7	30.0
4-Light Phenom.	1	1	2	3.3	3.3	6.6
5-Birds	0	0	0	0.0	0.0	0.0
6-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
7-Meteor, etc.	3	0	3	10.0	0.0	10.0
8-Psychological	0	0	0	0.0	0.0	0.0
9-Unknown	7	0	7	23.3	0.0	23.3
10-Other	1	1	2	3.3	3.3	6.6
Total	16	14	30	53.3	46.7	100

OCTOBER

Evaluation	Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total
1-Balloon	2	6	8	3.1	17.2	26.3
2-Astronomical	1	3	4	4.6	9.1	13.6
3-Aircraft	1	3	4	4.6	9.1	13.6
4-Light Phenom.	1	2	3	4.6	9.1	13.6
5-Birds	0	1	1	0.0	4.5	4.6
6-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
7-Meteor, etc.	1	0	1	4.5	0.0	4.5
8-Psychological	0	0	0	0.0	0.0	0.0
9-Unknown	7	0	7	31.8	0.0	31.8
10-Other	1	1	2	4.5	4.5	9.0
Total	14	14	31	63.9	59.1	100

NOVEMBER

Evaluation	Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total
1-Balloon	2	4	6	6.3	12.9	19.2
2-Astronomical	3	3	6	9.6	9.6	19.2
3-Aircraft	0	8	8	0.0	25.0	25.0
4-Light Phenom.	1	1	2	3.1	3.1	6.2
5-Birds	0	0	0	0.0	0.0	0.0
6-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
7-Meteor, etc.	1	0	1	3.1	0.0	3.1
8-Psychological	0	0	0	0.0	0.0	0.0
9-Unknown	1	0	1	3.1	0.0	3.1
10-Other	0	0	0	0.0	0.0	0.0
Total	7	16	23	21.8	50.0	71.8

DECEMBER

Evaluation	Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total
1-Balloon	2	1	3	8.0	4.0	12.0
2-Astronomical	4	1	4	16.0	4.0	20.0
3-Aircraft	1	2	3	4.0	8.0	12.0
4-Light Phenom.	1	0	1	4.0	0.0	4.0
5-Birds	0	0	0	0.0	0.0	0.0
6-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
7-Meteor, etc.	2	0	2	8.0	0.0	8.0
8-Psychological	1	0	1	4.0	0.0	4.0
9-Unknown	8	0	8	32.0	0.0	32.0
10-Other	1	0	1	4.0	0.0	4.0
Total	21	4	25	84.0	16.0	100

TABLE XIII EVALUATION OF ALL SIGHTINGS FOR ALL YEARS, BY DURATION OF SIGHTING FOR MONTHS OF YEAR, OVER THIRTY MINUTES

Evaluation	January						February						March						April					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	1	0	1	10.0	0.0	10.0	1	0	1	50.0	0.0	50.0	7	0	7	38.9	0.0	38.9	3	0	3	16.7	0.0	16.7
1-Astronomical	1	1	2	10.0	10.0	20.0	1	0	1	50.0	0.0	50.0	1	1	1	5.6	0.0	5.6	2	0	2	12.5	0.0	12.5
2-Aircraft	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	2	2	0.0	12.5	12.5
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insects, Ins.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	4	0	4	25.0	0.0	25.0
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	8	0	8	80.0	0.0	80.0	0	0	0	0.0	0.0	0.0	10	0	10	55.6	0.0	55.6	5	0	5	31.3	0.0	31.3
9-Other	5	0	5	50.0	0.0	50.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	0	0.0	0.0	0.0
Total	9	1	10	90.0	10.0	100.	2	0	2	100.0	0.0	100.	18	0	18	100.0	0.0	100.	16	2	16	87.5	12.5	100.

Evaluation	May						June						July						August					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	0	0	0	0.0	0.0	0.0	9	2	9	69.2	15.5	77.5	14	7	21	14.3	7.1	21.4	6	3	9	11.1	5.6	16.7
1-Astronomical	0	1	1	0.0	11.1	11.1	5	0	5	38.5	0.0	38.5	10	5	17	12.2	6.1	18.3	8	7	15	14.8	12.9	27.7
2-Aircraft	0	0	0	0.0	0.0	0.0	2	0	2	15.5	0.0	15.5	6	8	14	6.1	8.2	14.3	3	3	6	5.6	5.6	11.2
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	1.0	0.0	1.0	0	1	1	0.0	1.9	1.9
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	6	0	6	46.2	0.0	46.2	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insects, Ins.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	8	0	8	8.2	0.0	8.2	2	0	2	3.7	0.0	3.7
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	1.0	1.0	2.0	2	0	2	3.7	0.0	3.7
8-Unknown	0	0	0	0.0	0.0	0.0	7	0	7	53.2	0.0	53.2	31	0	31	31.6	0.0	31.6	15	0	15	27.8	0.0	27.8
9-Other	1	1	2	11.1	11.1	22.2	1	0	1	7.2	0.0	7.2	4	0	4	4.1	0.0	4.1	0	4	4	0.0	7.4	7.4
Total	7	2	9	77.8	22.2	100.	24	2	26	92.3	7.7	100.	77	21	98	78.6	21.4	100.	36	18	54	66.7	33.3	100.

Evaluation	September						October						November						December					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	0	2	2	0.0	6.3	6.3	7	3	10	46.8	15.8	62.4	0	1	1	0.0	4.2	4.2	0	0	0	0.0	0.0	0.0
1-Astronomical	3	1	4	9.4	3.1	12.5	1	0	1	5.3	0.0	5.3	3	2	5	12.5	8.3	20.8	1	1	2	11.1	11.1	22.2
2-Aircraft	2	4	6	6.3	12.5	18.8	0	1	1	0.0	5.3	5.3	1	5	6	4.2	20.8	25.0	0	0	0	0.0	0.0	0.0
3-Light Phenom.	0	1	1	0.0	3.1	3.1	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Birds	1	0	1	3.1	0.0	3.1	2	0	2	10.5	0.0	10.5	0	0	0	0.0	0.0	0.0	1	0	1	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	4.2	4.2	0	0	0	0.0	0.0	0.0
6-Insects, Ins.	2	0	2	6.3	0.0	6.3	0	0	0	0.0	0.0	0.0	2	0	2	8.3	0.0	8.3	0	0	0	0.0	0.0	0.0
7-Psychological	1	0	1	3.1	0.0	3.1	2	0	2	0.0	0.0	0.0	1	0	1	4.2	0.0	4.2	2	0	2	22.2	0.0	22.2
8-Unknown	14	0	14	43.7	0.0	43.7	4	0	4	21.1	0.0	21.1	7	0	7	29.2	0.0	29.2	4	0	4	44.4	0.0	44.4
9-Other	1	0	1	3.1	0.0	3.1	0	1	1	0.0	5.3	5.3	1	0	1	4.2	0.0	4.2	1	0	1	11.1	0.0	11.1
Total	24	8	32	76.0	25.0	100.	14	5	19	73.7	26.3	100.	15	9	24	62.5	37.5	100.	8	1	9	88.9	11.1	100.

TABLE A109 EVALUATION OF ALL SIGHTINGS FOR ALL YEARS BY DURATION OF SIGHTING FOR MONTHS OF YEAR. DURATION NOT STATED

Evaluation	JANUARY Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total	FEBRUARY Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total	MARCH Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total	APRIL Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total
0-Airliner	0	1	1	0.0	2.3	2.3	4	0	4	11.8	0.0	11.8	4	0	4	6.2	0.0	6.2	1	2	3	1.6	3.2	4.8
1-Astronomical	9	18	27	20.9	41.9	62.8	8	8	16	23.5	23.5	47.0	11	11	22	18.5	16.9	35.4	24	6	30	38.7	9.7	48.4
2-Aircraft	2	0	2	4.7	0.0	4.7	5	1	6	14.7	2.9	17.6	8	3	11	12.3	4.6	16.9	6	0	6	9.7	0.0	9.7
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	1.6	0.0	1.6
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Satellite, Bal.	5	0	5	11.6	0.0	11.6	1	0	1	2.9	0.0	2.9	21	0	21	32.3	0.0	32.3	12	0	12	19.3	0.0	19.3
7-Physiological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	1.6	0.0	1.6
8-Unknown	6	0	6	13.9	0.0	13.9	7	0	7	20.6	0.0	20.6	5	0	5	4.6	0.0	4.6	9	0	9	14.5	0.0	14.5
9-Other	2	0	2	4.7	0.0	4.7	0	0	0	0.0	0.0	0.0	0	3	3	0.0	4.6	4.6	0	0	0	0.0	0.0	0.0
Total	24	19	43	55.8	44.2	100.	25	9	34	73.5	26.5	100.	49	17	65	75.3	24.1	100.	54	8	62	87.1	12.9	100.

Evaluation	MAY Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total	JUNE Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total	JULY Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total	AUGUST Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total
0-Airliner	4	0	4	10	0.0	8.0	7	0	7	12.5	0.0	12.5	29	11	40	11.9	4.5	16.4	5	4	9	4.8	3.8	8.6
1-Astronomical	11	2	13	22.0	4.0	26.0	7	3	10	12.5	5.4	17.9	39	10	49	16.4	4.2	15.3	8	9	17	7.6	7.7	16.3
2-Aircraft	3	4	7	6.0	8.0	14.0	4	1	5	7.1	1.8	8.9	32	19	51	12.5	7.9	19.9	11	13	24	10.6	12.6	23.1
3-Light Phenom.	0	1	1	0.0	2.0	2.0	0	0	0	0.0	0.0	0.0	3	0	3	1.2	0.0	1.2	2	0	2	1.9	0.0	1.9
4-Birds	0	1	1	0.0	2.0	2.0	0	0	0	0.0	0.0	0.0	2	1	3	0.8	0.4	1.2	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	0	3	1.2	0.0	1.2	0	0	0	0.0	0.0	0.0
6-Satellite, Bal.	6	0	6	12.0	0.0	12.0	11	2	13	18.2	3.0	25.2	41	0	41	16.1	0.0	16.1	19	0	19	18.3	0.0	18.3
7-Physiological	0	0	0	0.0	0.0	0.0	2	0	2	3.6	0.0	3.6	1	2	3	0.4	0.8	1.2	1	0	1	1.0	0.0	1.0
8-Unknown	17	0	17	34.0	0.0	34.0	17	0	17	30.3	0.0	30.3	48	0	48	18.5	0.0	18.5	29	0	29	27.9	0.0	27.9
9-Other	0	1	1	0.0	2.0	2.0	2	0	2	3.6	0.0	3.6	24	0	24	9.4	0.0	9.4	2	1	3	1.9	1.0	2.9
Total	41	9	50	81.8	18.0	100.	49	6	56	87.5	9.1	100.	242	63	305	81.1	16.9	100.	78	26	104	75.0	25.0	100.

Evaluation	SEPTEMBER Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total	OCTOBER Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total	NOVEMBER Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total	DECEMBER Number Certain	Number Doubtful	Number Total	Per Cent Certain	Per Cent Doubtful	Per Cent Total
0-Airliner	0	0	0	0.0	0.0	0.0	3	4	7	6.6	8.7	15.2	1	9	10	2.1	18.7	20.8	1	1	2	2.2	2.2	4.4
1-Astronomical	10	3	13	21.2	7.0	28.0	5	5	10	4.6	15.2	21.7	9	6	15	18.7	12.5	31.2	6	11	17	13.0	23.9	36.9
2-Aircraft	1	1	2	2.3	2.3	4.6	3	4	7	6.5	8.7	15.2	5	2	7	10.4	4.2	14.6	4	1	5	8.7	2.2	10.9
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	1	1	0.0	2.2	2.2	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0	2	0	2	4.3	0.0	4.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	2.1	2.1	0	0	0	0.0	0.0	0.0
6-Satellite, Bal.	9	0	9	19.2	0.0	19.2	7	0	7	15.2	0.0	15.2	4	0	4	8.3	0.0	8.3	5	0	5	10.9	0.0	10.9
7-Physiological	1	0	1	2.3	0.0	2.3	1	0	1	2.2	0.0	2.2	0	0	0	0.0	0.0	0.0	1	0	1	2.2	0.0	2.2
8-Unknown	11	0	11	25.6	0.0	26.4	9	0	9	20.0	0.0	20.0	9	0	9	18.7	0.0	18.7	12	0	12	26.1	0.0	26.1
9-Other	4	1	7	9.0	2.3	16.3	2	0	2	4.5	0.0	4.5	2	0	2	4.2	0.0	4.2	4	0	4	8.7	0.0	8.7
Total	38	5	43	88.4	11.6	100.	30	16	46	66.1	34.8	100.	30	18	48	62.5	37.5	100.	33	13	46	71.8	28.3	100.

TABLE AIID — CALCULATION OF WAIT SCATTINGS FOR ALL YEARS BY DURATION OF SCATTERS FOR MONTHS OF YEAR, FOR SECONDS OR LESS

Evaluation	January						February						March						April					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total
0-Below	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	5.5	0.0	5.5
1-Assessment	3	7	10	30.0	70.0	100.0	3	6	9	33.3	66.6	99.9	4	6	10	33.3	60.0	93.3	6	0	6	33.3	0.0	33.3
2-Recall	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	5.5	0.0	5.5
3-Light Flashes	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Both	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	5.5	5.5
5-Clicks, Beat, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	5.5	0.0	5.5	1	0	1	5.5	0.0	5.5
6-Double, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Psychological	1	0	1	6.7	0.0	6.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Refusal	1	0	1	6.7	0.0	6.7	0	0	0	0.0	0.0	0.0	1	0	1	5.5	0.0	5.5	2	0	2	11.1	0.0	11.1
9-Other	0	1	1	0.0	6.7	6.7	1	0	1	16.6	0.0	16.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	5	10	15	33.3	66.7	100	4	6	10	40.0	60.0	100	6	6	12	50.0	50.0	100	11	1	12	91.7	8.3	100

Evaluation	May						June						July						August					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total
0-Below	0	0	0	0.0	0.0	0.0	1	0	1	5.5	0.0	5.5	1	2	3	3.3	6.6	9.9	2	2	4	0.0	5.5	5.5
1-Assessment	5	2	7	16.1	16.6	16.7	10	8	18	55.6	44.4	100.0	16	38	54	29.1	70.4	99.5	18	50	68	24.7	68.4	93.1
2-Recall	4	1	5	26.1	5.5	26.6	11	7	18	61.1	38.8	99.9	8	9	17	47.0	52.9	99.9	5	2	7	13.9	5.5	19.4
3-Light Flashes	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	3.3	0.0	3.3	0	0	0	0.0	0.0	0.0
4-Both	0	2	2	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	2	3	3.3	6.6	9.9	0	0	0	0.0	0.0	0.0
5-Clicks, Beat, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	3.3	3.3	0	0	0	0.0	0.0	0.0
6-Double, etc.	3	0	3	16.6	0.0	16.6	3	0	3	16.6	0.0	16.6	2	0	2	6.6	0.0	6.6	1	0	1	2.8	0.0	2.8
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	2.8	0.0	2.8
8-Refusal	2	0	2	11.1	0.0	11.1	0	0	0	0.0	0.0	0.0	2	0	2	6.6	0.0	6.6	4	0	4	11.1	0.0	11.1
9-Other	2	0	2	11.1	0.0	11.1	1	0	1	5.5	0.0	5.5	2	0	2	6.6	0.0	6.6	2	1	3	5.6	2.8	8.4
Total	16	3	19	88.8	16.6	105.4	18	9	27	100.0	50.0	150.0	60	35	95	166.6	97.2	263.8	34	16	50	94.4	44.4	138.8

Evaluation	September						October						November						December					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total	Correct	Doubtful	Total
0-Below	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
1-Assessment	11	1	12	55.0	5.0	60.0	12	5	17	60.0	17.5	85.0	7	7	14	33.3	33.3	66.6	11	9	20	47.8	39.1	86.9
2-Recall	1	2	3	5.0	10.0	15.0	1	3	4	5.0	15.0	20.0	2	1	3	9.6	4.8	14.3	0	0	0	0.0	0.0	0.0
3-Light Flashes	0	0	0	0.0	0.0	0.0	0	1	1	0.0	5.0	5.0	1	0	1	4.8	0.0	4.8	0	0	0	0.0	0.0	0.0
4-Both	0	0	0	0.0	0.0	0.0	1	1	2	5.0	5.0	10.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clicks, Beat, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Double, etc.	2	0	2	10.0	0.0	10.0	1	0	1	5.0	0.0	5.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Refusal	2	0	2	10.0	0.0	10.0	2	1	3	10.0	5.0	15.0	2	0	2	9.6	0.0	9.6	2	1	3	13.0	4.3	17.3
9-Other	0	1	1	0.0	5.0	5.0	0	0	0	0.0	0.0	0.0	1	0	1	4.8	0.0	4.8	0	0	0	0.0	0.0	0.0
Total	16	4	20	80.0	20.0	100.0	18	10	28	90.0	50.0	140.0	13	8	21	61.9	38.1	100.0	14	9	23	60.9	39.1	100.0

TABLE XIII — EVALUATION OF MUZZLE SIGHTINGS FOR ALL MARKS BY DURATION OF SIGHTING FOR MONTHS OF 1944 — SIX TO TEN SECONDS

Evaluation	January			February			March			April		
	Number			Per Cent			Number			Per Cent		
	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total
1-Outlaw	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
2-Impressionist	1	1	2	50.0	50.0	100.0	1	0	1	100.0	0.0	100.0
3-Aircraft	0	1	1	0.0	100.0	100.0	1	0	1	100.0	0.0	100.0
4-Light Pattern	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Dots	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Checks, Bars, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Number, Ids.	1	0	1	100.0	0.0	100.0	0	0	0	0.0	0.0	0.0
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Aircraft	1	0	1	100.0	0.0	100.0	0	0	0	0.0	0.0	0.0
Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	3	2	5	60.0	40.0	100.	1	0	1	100.0	0.0	100.

Evaluation	May			June			July			August		
	Number			Per Cent			Number			Per Cent		
	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total
1-Outlaw	1	0	1	100.0	0.0	10.0	1	0	1	5.6	0.0	5.6
2-Impressionist	2	0	2	20.0	0.0	20.0	3	7	10	16.7	38.9	55.6
3-Aircraft	1	1	2	10.0	10.0	20.0	3	0	3	16.7	0.0	16.7
4-Light Pattern	0	1	1	0.0	100.0	10.0	0	1	1	0.0	5.6	5.6
5-Dots	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Checks, Bars, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Number, Ids.	2	0	2	20.0	0.0	20.0	2	0	2	11.1	0.0	11.1
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Aircraft	2	0	2	20.0	0.0	20.0	1	0	1	5.6	0.0	5.6
Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	8	2	10	80.0	20.0	100.	10	8	18	55.6	44.4	100.

Evaluation	July			August		
	Number			Per Cent		
	Correct	Incorrect	Total	Correct	Incorrect	Total
1-Outlaw	1	0	1	2.9	0.0	2.9
2-Impressionist	16	4	20	48.0	17.1	57.1
3-Aircraft	5	3	8	14.3	8.6	22.9
4-Light Pattern	0	0	0	0.0	0.0	0.0
5-Dots	0	0	0	0.0	0.0	0.0
6-Checks, Bars, etc.	0	0	0	0.0	0.0	0.0
7-Number, Ids.	1	0	1	2.9	0.0	2.9
8-Psychological	0	0	0	0.0	0.0	0.0
9-Aircraft	4	0	4	11.4	0.0	11.4
Other	1	0	1	2.9	0.0	2.9
Total	26	9	35	74.3	25.7	100.

Evaluation	August			September			October			November		
	Number			Per Cent			Number			Per Cent		
	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total
1-Outlaw	0	1	1	0.0	100.0	10.0	0	0	0	0.0	0.0	0.0
2-Impressionist	2	1	3	20.0	10.0	30.0	4	3	7	57.1	33.3	77.3
3-Aircraft	0	2	2	0.0	20.0	20.0	0	0	0	0.0	0.0	0.0
4-Light Pattern	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Dots	0	1	1	0.0	10.0	10.0	0	0	0	0.0	0.0	0.0
6-Checks, Bars, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Number, Ids.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Aircraft	3	0	3	30.0	0.0	30.0	2	0	2	28.6	0.0	28.6
Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	5	5	10	50.0	50.0	100.	6	3	9	66.7	33.3	100.

Evaluation	November			December		
	Number			Per Cent		
	Correct	Incorrect	Total	Correct	Incorrect	Total
1-Outlaw	0	0	0	0.0	0.0	0.0
2-Impressionist	3	0	3	75.0	0.0	75.0
3-Aircraft	0	0	0	0.0	0.0	0.0
4-Light Pattern	0	0	0	0.0	0.0	0.0
5-Dots	0	0	0	0.0	0.0	0.0
6-Checks, Bars, etc.	0	0	0	0.0	0.0	0.0
7-Number, Ids.	0	0	0	0.0	0.0	0.0
8-Psychological	0	0	0	0.0	0.0	0.0
9-Aircraft	1	0	1	25.0	0.0	25.0
Other	0	0	0	0.0	0.0	0.0
Total	4	0	4	100.0	0.0	100.

TABLE XVII. EVALUATION OF WHITE PHOSPHORUS AND ALL VALUES BY METHOD OF SMOKING FOR MONTHS OF WAR, MARCH TO THREE SECTIONS

Evaluation	JANUARY						FEBRUARY						MARCH						APRIL					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Curious	Doubtful	Total	Curious	Doubtful	Total	Curious	Doubtful	Total	Curious	Doubtful	Total	Curious	Doubtful	Total	Curious	Doubtful	Total	Curious	Doubtful	Total	Curious	Doubtful	Total
1-Soldiers	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	9.1	9.1	0	0	0	0.0	0.0	0.0
2-Commissioned	0	1	1	0.0	4.7	4.7	1	0	1	50.0	0.0	50.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	4.7	4.7
3-Aircraft	0	0	0	0.0	0.0	0.0	1	0	1	50.0	0.0	50.0	1	0	1	9.1	0.0	9.1	2	2	4	18.5	18.5	36.9
4-Light Planes	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	4.7	0.0	4.7
5-Tanks	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	4.7	0.0	4.7
6-Trucks, Misc. etc.	1	0	1	4.7	0.0	4.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Supplies, Info.	2	0	2	9.0	0.0	9.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Unknown	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	18.2	0.0	18.2	2	0	2	9.0	0.0	9.0
10-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	6	7	9.1	54.5	63.6	1	0	1	4.7	0.0	4.7
Total	5	1	6	22.3	4.7	27.0	2	0	2	9.0	0.0	9.0	4	7	11	18.4	63.6	82.0	13	3	16	59.0	23.0	82.0

Evaluation	MAY						JUNE						JULY						AUGUST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Curious	Doubtful	Total	Curious	Doubtful	Total	Curious	Doubtful	Total	Curious	Doubtful	Total	Curious	Doubtful	Total	Curious	Doubtful	Total	Curious	Doubtful	Total	Curious	Doubtful	Total
1-Soldiers	1	1	2	4.7	4.7	18.4	1	0	1	4.5	0.0	4.9	3	1	4	9.1	4.1	13.2	0	1	1	0.0	2.9	2.9
2-Commissioned	1	0	1	4.7	0.0	4.7	1	2	3	4.9	11.8	17.7	10	4	14	11.5	2.7	14.5	4	6	12	17.1	17.1	34.5
3-Aircraft	2	1	3	18.2	4.7	27.0	5	2	7	22.5	11.8	41.3	15	16	31	20.5	21.6	42.1	6	4	10	17.1	11.4	28.5
4-Light Planes	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	2.9	2.9
5-Tanks	0	1	1	0.0	4.7	4.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Trucks, Misc. etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Supplies, Info.	4	0	4	18.7	0.0	18.7	3	0	3	13.6	0.0	13.6	3	0	3	4.1	0.0	4.1	2	0	2	5.7	0.0	5.7
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	4	2	6	5.4	2.7	8.1	0	0	0	0.0	0.0	0.0
9-Unknown	2	0	2	9.0	0.0	9.0	3	0	3	13.6	0.0	13.6	15	0	15	20.3	0.0	20.3	9	0	9	25.7	0.0	25.7
10-Other	1	0	1	4.7	0.0	4.7	0	0	0	0.0	0.0	0.0	1	0	1	1.4	0.0	1.4	0	0	0	0.0	0.0	0.0
Total	12	3	15	54.6	13.6	68.2	13	4	17	58.8	23.5	82.3	51	23	74	68.9	31.1	100	22	12	34	62.7	34.3	97.0

Evaluation	SEPTEMBER						OCTOBER						NOVEMBER						DECEMBER					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Curious	Doubtful	Total	Curious	Doubtful	Total	Curious	Doubtful	Total	Curious	Doubtful	Total	Curious	Doubtful	Total	Curious	Doubtful	Total	Curious	Doubtful	Total	Curious	Doubtful	Total
1-Soldiers	0	2	2	0.0	13.3	13.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	2	2	0.0	4.7	4.7
2-Commissioned	1	1	2	4.7	4.7	11.4	4	1	5	18.2	4.5	22.7	2	0	2	20.0	0.0	20.0	1	0	1	20.0	0.0	20.0
3-Aircraft	4	3	7	18.2	13.6	31.8	1	3	4	4.5	13.6	18.2	2	0	2	40.0	0.0	40.0	1	3	4	8.3	25.0	33.3
4-Light Planes	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Tanks	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Trucks, Misc. etc.	0	1	1	0.0	4.7	4.7	0	1	1	0.0	4.5	4.5	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Supplies, Info.	2	0	2	13.3	0.0	13.3	3	0	3	13.6	0.0	13.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Psychological	1	0	1	4.7	0.0	4.7	2	0	2	9.0	0.0	9.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Unknown	0	0	0	0.0	0.0	0.0	1	0	1	4.5	0.0	4.5	0	0	0	0.0	0.0	0.0	2	0	2	4.7	0.0	4.7
10-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	4.3	0.0	4.3
Total	5	7	15	33.3	46.7	100	11	5	16	68.7	22.7	100	4	0	4	100.0	0.0	100	7	5	12	58.3	41.7	100

TABLE XXX — EVALUATION OF UNIT SOLUTIONS FOR ALL TASKS AT DIRECTION OF SUPERIOR FOR MONTHS OF YEAR, THIRTY ONE TO SIXTY SECONDS

Evaluation	January						February						March						April					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total
1-Sailors	0	0	0	00	00	00	0	0	0	00	00	00	1	0	1	14.3	0.0	14.3	0	1	1	00	6.3	6.3
2-Automotive	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00	1	0	1	6.3	00	6.3
3-Aircraft	0	0	0	00	00	00	1	2	3	100	100	100	1	2	1	14.3	00	14.3	1	1	2	6.3	6.3	12.5
4-Light Plants	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00
5-Birds	0	0	0	00	00	00	0	0	0	00	00	00	5	0	5	71.9	00	71.9	1	0	1	6.3	00	6.3
6-Clouds, Dust, etc.	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00
7-Insects, etc.	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00	2	0	2	12.5	00	12.5
8-Psychological	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00
9-Questions	1	0	1	100.0	00	100.0	1	0	1	100	00	100	1	0	1	14.3	00	14.3	9	0	9	56.3	00	56.3
10-Other	0	0	0	00	00	00	1	0	1	100	00	100	0	1	1	00	14.3	14.3	0	0	0	00	00	00
Total	1	0	1	100.0	00	100	3	2	5	600	400	100	6	1	7	85.7	14.3	100	14	2	16	87.5	12.5	100

Evaluation	May						June						July						August					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total
1-Sailors	0	0	0	00	00	00	0	0	0	00	00	00	5	2	7	26.4	9.5	14.9	1	4	5	2.1	16.6	10.6
2-Automotive	3	0	3	42.8	00	42.8	0	0	0	00	00	00	1	0	1	5.1	00	2.1	3	3	6	9.4	9.4	18.8
3-Aircraft	2	0	2	28.6	0.0	28.6	3	2	5	75.0	25.0	62.5	12	12	24	63.5	25.6	51.0	5	2	5	9.4	6.3	15.7
4-Light Plants	0	0	0	00	00	00	0	0	0	00	00	00	0	1	1	00	2.1	2.1	0	1	1	00	2.1	2.1
5-Birds	0	0	0	00	00	00	0	0	0	00	00	00	1	0	1	2.1	00	2.1	0	0	0	00	00	00
6-Clouds, Dust, etc.	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00
7-Insects, etc.	0	0	0	00	00	00	0	0	0	00	00	00	3	0	3	6.4	00	6.4	6	0	6	12.5	00	12.5
8-Psychological	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00	3	0	3	6.3	00	6.3
9-Questions	2	0	2	28.6	00	28.6	2	0	2	50.0	00	50.0	10	0	10	21.3	00	21.3	2	0	2	9.1	00	9.1
10-Other	0	0	0	00	00	00	0	1	1	00	12.5	12.5	0	0	0	00	00	00	0	0	0	00	00	00
Total	7	0	7	100.0	00	100	5	3	8	62.5	37.5	100	32	15	47	68.1	31.9	100	22	10	32	68.7	31.3	100

Evaluation	September						October						November						December					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total
1-Sailors	0	1	1	00	33	33	1	0	1	14.3	0.0	14.3	0	1	1	00	100	100	1	1	2	6.7	6.7	13.4
2-Automotive	2	1	3	66.7	33	100	2	0	2	28.6	0.0	28.6	0	2	2	00	100	100	2	2	4	12.5	12.5	25.0
3-Aircraft	3	1	4	33.3	33	33.3	1	0	1	14.3	0.0	14.3	1	0	1	100	00	100	3	2	6	20.0	13.3	33.3
4-Light Plants	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00
5-Birds	0	1	1	00	33	33	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00
6-Clouds, Dust, etc.	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00
7-Insects, etc.	1	0	1	33	00	33	0	0	0	00	00	00	1	0	1	100	00	100	0	0	0	00	00	00
8-Psychological	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00
9-Questions	5	0	5	166.7	00	166.7	3	0	3	42.8	00	42.8	0	0	0	00	00	00	2	0	2	8.3	00	16.6
10-Other	0	0	0	00	00	00	0	0	0	00	00	00	0	0	0	00	00	00	2	0	2	12.5	00	12.5
Total	9	4	13	69.2	30.8	100	7	0	7	100.0	00	100	2	3	5	40.0	60.0	100	10	5	15	66.7	33.3	100

TABLE XIII EVALUATION OF UFO SIGHTINGS FOR ALL YEARS BY DURATION OF SIGHTING FOR MONTHS OF YEAR, SIXTY ONE SECONDS TO FIVE MINUTES

Evaluation	January						February						March						April					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	1	1	2	100	100	100	1	0	1	9.1	0.0	9.1	1	0	1	9.1	0.0	9.1	2	0	2	7.7	0.0	7.7
2-Astronomical	0	0	0	0.0	0.0	0.0	0	1	1	0.0	9.1	9.1	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
3-Aircraft	2	0	2	100	0.0	100	2	0	2	18.2	0.0	18.2	2	2	4	18.2	18.2	36.4	7	2	9	26.9	7.7	34.6
4-Aircraft	1	1	2	50.0	100	100	2	0	2	18.2	0.0	18.2	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	3.8	0.0	3.8
6-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	9.1	9.1	0	0	0	0.0	0.0	0.0
7-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	0	3	11.5	0.0	11.5
8-Insects, Ins.	1	0	1	100	0.0	100	2	0	2	18.2	0.0	18.2	0	0	0	0.0	0.0	0.0	1	0	1	3.8	0.0	3.8
9-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	7.6	0.0	7.6
10-Unknown	1	0	1	100	0.0	100	3	0	3	27.3	0.0	27.3	0	2	2	0.0	18.2	18.2	1	0	1	3.8	0.0	3.8
11-Other	1	0	1	100	0.0	100	2	0	2	18.2	0.0	18.2	0	3	3	0.0	27.3	27.3	1	0	1	3.8	0.0	3.8
Total	5	2	10	50.0	100	100	10	1	11	90.8	9.1	100	5	6	11	45.4	54.6	100	24	2	26	92.3	7.7	100

Evaluation	May						June						July						August					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	6	2	9	18.2	6.5	25.8	6	1	7	10.3	3.4	24.1	19	14	33	14.8	10.6	25.0	10	12	22	14.9	12.2	27.1
2-Astronomical	0	2	2	0.0	6.5	6.5	1	2	3	3.4	6.9	10.3	1	3	4	1.8	2.3	3.1	1	1	2	6.6	1.5	2.0
3-Aircraft	3	6	9	9.7	19.3	29.0	5	4	9	17.2	13.8	31.0	20	14	34	15.1	10.6	25.7	10	4	14	14.9	6.0	20.9
4-Aircraft	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	6	1	7	4.6	0.8	5.3	0	3	3	0.0	4.5	4.5
5-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	0	3	11.5	0.0	11.5
8-Insects, Ins.	4	0	4	12.9	0.0	12.9	0	0	0	0.0	0.0	0.0	13	0	13	9.8	0.0	9.8	3	0	3	11.5	0.0	11.5
9-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	3	5	1.5	2.3	3.8	2	1	3	7.6	1.5	11.5
10-Unknown	6	0	6	19.3	0.0	19.3	7	0	7	24.1	0.0	24.1	23	0	23	17.4	0.0	17.4	18	0	18	69.2	0.0	69.2
11-Other	2	0	2	6.6	0.0	6.6	1	0	1	3.4	0.0	3.4	3	0	3	2.3	0.0	2.3	2	0	2	7.6	0.0	7.6
Total	21	10	31	67.7	32.3	100	22	7	29	75.8	24.1	100	77	35	132	58.3	26.5	100	46	21	67	68.7	31.3	100

Evaluation	September						October						November						December					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	3	5	8	8.3	13.9	22.2	2	4	6	7.7	15.4	23.1	2	0	2	25.0	0.0	25.0	2	1	3	11.1	5.6	16.7
2-Astronomical	1	1	2	2.8	2.8	5.6	0	2	2	0.0	7.7	7.7	1	0	1	12.5	0.0	12.5	1	1	2	5.6	5.6	11.2
3-Aircraft	1	12	13	2.8	33.3	36.1	3	5	8	11.5	19.2	30.7	0	0	0	0.0	0.0	0.0	1	4	5	5.6	22.2	27.8
4-Aircraft	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	12.5	0.0	12.5	0	0	0	0.0	0.0	0.0
5-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	2	2	0.0	25.0	25.0	0	0	0	0.0	0.0	0.0
7-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	11.1	0.0	11.1
8-Insects, Ins.	1	0	1	2.8	0.0	2.8	1	0	1	3.8	0.0	3.8	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
10-Unknown	12	0	12	33.3	0.0	33.3	2	0	2	30.8	0.0	30.8	2	0	2	25.0	0.0	25.0	6	0	6	33.3	0.0	33.3
11-Other	0	0	0	0.0	0.0	0.0	1	0	1	3.8	0.0	3.8	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	18	18	36	50.0	50.0	100	15	11	26	57.7	42.3	100	6	2	8	75.0	25.0	100	12	6	18	66.7	33.3	100

TABLE XIII. EVALUATION OF UNIT SIGHTINGS FOR ALL YEARS BY DURATION OF SIGHTING FOR PERIODS OF YEAR, SIX TO FORTY MINUTES

	JANUARY						FEBRUARY						MARCH						APRIL					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Evaluation	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total						
0-Below	1	1	2	7.1	7.1	14.2	3	0	3	23.1	0.0	23.1	1	1	2	8.3	8.3	16.6	0	0	0	0.0	0.0	0.0
1-Commercial	3	0	3	21.4	0.0	21.4	1	0	1	7.7	0.0	7.7	1	0	1	8.3	0.0	8.3	2	0	2	15.4	0.0	15.4
2-Aircraft	2	1	3	14.3	7.1	21.4	0	2	2	0.0	15.4	15.4	1	2	3	8.3	16.7	25.0	4	0	4	30.8	0.0	30.8
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Bird	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Comet, Dirt, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Meteor, Ink.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	7.7	0.0	7.7
7-Psychological	1	0	1	7.1	0.0	7.1	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	4	0	4	28.6	0.0	28.6	2	0	2	15.3	0.0	15.3	5	0	5	41.5	0.0	41.5	6	0	6	46.2	0.0	46.2
9-Other	1	0	1	7.1	0.0	7.1	3	0	3	23.1	0.0	23.1	0	1	1	0.0	8.3	8.3	0	0	0	0.0	0.0	0.0
Total	12	2	14	85.7	14.3	100	9	2	11	81.8	18.2	100	8	4	12	66.7	33.3	100	13	0	13	100.0	0.0	100

	MAY						JUNE						JULY						AUGUST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Evaluation	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Below	7	2	9	24.1	6.9	31.0	9	1	10	16.7	5.1	27.0	24	12	36	20.0	10.0	30.0	17	13	30	19.5	14.9	34.4
1-Commercial	2	1	3	6.9	3.4	10.3	2	0	2	5.4	0.0	5.4	7	4	11	5.8	3.3	9.1	2	2	10	2.3	2.3	11.5
2-Aircraft	3	2	5	10.3	6.9	17.2	5	2	7	13.5	5.1	21.6	16	8	24	13.3	6.7	20.0	6	11	17	6.9	12.6	19.5
3-Light Phenom.	3	0	3	10.3	0.0	10.3	1	0	1	2.7	0.0	2.7	3	2	5	2.5	1.7	4.2	4	0	4	4.6	0.0	4.6
4-Bird	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Comet, Dirt, etc.	1	0	1	3.4	0.0	3.4	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	1.1	1.1
6-Meteor, Ink.	3	0	3	10.3	0.0	10.3	3	0	3	8.1	0.0	8.1	16	0	16	13.3	0.0	13.3	4	2	6	4.9	0.0	4.9
7-Psychological	0	0	0	0.0	0.0	0.0	4	0	4	10.8	0.0	10.8	1	0	1	0.8	0.0	0.8	2	0	2	2.3	0.0	2.3
8-Unknown	2	0	2	6.9	0.0	6.9	9	0	9	24.3	0.0	24.3	22	0	22	18.3	0.0	18.3	12	0	12	13.8	0.0	13.8
9-Other	1	2	3	3.4	6.9	10.3	0	0	0	0.0	0.0	0.0	4	1	5	3.3	0.8	4.1	4	1	5	4.6	1.1	5.7
Total	22	7	29	75.9	24.1	100	31	6	37	83.8	16.2	100	93	27	120	77.5	22.5	100	57	28	87	67.8	32.2	100

	SEPTEMBER						OCTOBER						NOVEMBER						DECEMBER					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Evaluation	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Below	3	2	5	20.0	6.7	26.7	0	6	6	0.0	30.0	30.0	9	4	13	17.7	17.4	34.1	2	1	3	8.0	4.0	12.0
1-Commercial	0	2	2	0.0	6.7	6.7	1	2	3	5.0	10.0	15.0	2	3	5	8.7	13.0	21.7	5	1	6	20.0	4.0	24.0
2-Aircraft	1	8	9	3.3	26.7	30.0	1	2	3	5.0	10.0	15.0	0	3	3	0.0	13.0	13.0	1	2	3	4.0	8.0	12.0
3-Light Phenom.	1	1	2	3.3	3.3	6.6	1	2	3	5.0	10.0	15.0	1	1	2	4.3	4.3	8.6	1	0	1	4.0	0.0	4.0
4-Bird	0	0	0	0.0	0.0	0.0	0	1	1	0.0	5.0	5.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Comet, Dirt, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Meteor, Ink.	3	0	3	10.0	0.0	10.0	1	0	1	5.0	0.0	5.0	1	0	1	4.3	0.0	4.3	2	0	2	8.0	0.0	8.0
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	4.0	0.0	4.0
8-Unknown	7	0	7	23.3	0.0	23.3	3	0	3	15.0	0.0	15.0	6	0	6	26.1	0.0	26.1	8	0	8	32.0	0.0	32.0
9-Other	1	1	2	3.3	3.3	6.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	4.0	0.0	4.0
Total	16	14	30	53.3	46.7	100	7	13	20	35.0	65.0	100	19	11	23	82.6	47.8	130	21	4	25	84.0	16.0	100

TABLE XVII EVALUATION OF UNIT SIGHTINGS FOR ALL YEARS BY DURATION OF SIGHTING FOR MONTHS OF YEAR, OVER THIRTY MINUTES

Evaluation	JANUARY						FEBRUARY						MARCH						APRIL					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	1	0	1	25.0	0.0	25.0	1	0	1	50.0	0.0	50.0	2	0	2	40.0	0.0	40.0	3	0	3	33.3	0.0	33.3
1-Astronomical	1	1	2	25.0	25.0	50.0	1	0	1	50.0	0.0	50.0	1	0	1	20.0	0.0	20.0	2	0	2	22.2	0.0	22.2
2-Aircraft	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	11.1	11.1	22.2
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Meteors, Inf.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	11.1	0.0	11.1
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	40.0	0.0	40.0	2	0	2	22.2	0.0	22.2
9-Other	1	0	1	25.0	0.0	25.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	3	1	4	75.0	25.0	100.	2	0	2	100.0	0.0	100.	5	0	5	100.0	0.0	100.	9	1	9	88.9	11.1	100.

Evaluation	MAY						JUNE						JULY						AUGUST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0	9	2	9	45.0	0.0	45.0	12	4	16	19.0	6.3	25.3	6	3	9	15.8	7.9	23.7
1-Astronomical	0	1	1	0.0	33.3	33.3	5	0	5	25.0	0.0	25.0	8	4	12	12.7	6.3	19.0	7	6	13	18.4	15.8	34.3
2-Aircraft	0	0	0	0.0	0.0	0.0	2	0	2	10.0	0.0	10.0	5	2	7	7.9	3.2	11.1	2	1	3	5.3	2.6	7.9
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	1.6	0.0	1.6	0	1	1	0.0	2.6	2.6
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	1	0	1	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Meteors, Inf.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	5	2	7	7.9	3.2	11.1	1	0	1	2.6	0.0	2.6
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	1.6	1.6	3.2	2	0	2	5.3	0.0	5.3
8-Unknown	0	0	0	0.0	0.0	0.0	3	0	3	15.0	0.0	15.0	11	0	11	17.4	0.0	17.4	7	0	7	18.4	0.0	18.4
9-Other	1	0	1	33.3	0.0	33.3	1	0	1	5.0	0.0	5.0	2	0	2	3.2	0.0	3.2	0	2	2	0.0	5.3	5.3
Total	2	1	3	66.6	33.3	100.	18	2	20	90.0	10.0	100.	50	13	63	79.4	20.6	100.	26	13	39	68.5	34.2	102.

Evaluation	SEPTEMBER						OCTOBER						NOVEMBER						DECEMBER					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	2	2	0.0	8.0	8.0	3	1	4	30.0	10.0	40.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
1-Astronomical	3	1	4	12.0	4.0	16.0	1	0	1	10.0	0.0	10.0	5	2	5	33.0	13.3	33.3	1	1	2	33.3	33.3	66.6
2-Aircraft	2	2	4	8.0	8.0	16.0	0	0	0	0.0	0.0	0.0	1	2	3	6.7	13.3	20.0	0	0	0	0.0	0.0	0.0
3-Light Phenom.	0	1	1	0.0	4.0	4.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Birds	1	0	1	4.0	0.0	4.0	1	0	1	10.0	0.0	10.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Meteors, Inf.	2	0	2	8.0	0.0	8.0	0	0	0	0.0	0.0	0.0	2	0	2	13.3	0.0	13.3	0	0	0	0.0	0.0	0.0
7-Psychological	1	0	1	4.0	0.0	4.0	0	0	0	0.0	0.0	0.0	1	0	1	6.7	0.0	6.7	0	0	0	0.0	0.0	0.0
8-Unknown	9	0	9	36.0	0.0	36.0	3	0	3	30.0	0.0	30.0	3	0	3	20.0	0.0	20.0	0	0	0	0.0	0.0	0.0
9-Other	1	0	1	4.0	0.0	4.0	0	1	1	0.0	10.0	10.0	1	0	1	6.7	0.0	6.7	1	0	1	33.3	0.0	33.3
Total	19	6	25	100.0	0.0	100.	8	2	10	80.0	20.0	100.	11	4	15	73.3	26.7	100.	2	1	3	66.7	33.3	100.

TABLE XIII EVALUATION OF UFO SIGHTINGS FOR ALL YEARS BY DURATION OF SIGHTING FOR MONTHS OF YEAR, DURATION NOT STATED

Evaluation	January			February			March			April		
	Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Planet	0	0	0	0.0	0.0	0.0	2	0	2	9.1	0.0	9.1
2-Astronomical	7	6	13	41.0	54.0	59.0	0	6	12	18.2	54.5	54.6
3-Aircraft	2	0	2	8.0	0.0	8.0	3	1	4	13.6	4.5	18.1
4-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Meteor, Misc.	5	0	5	20.0	0.0	20.0	1	0	1	4.5	0.0	4.5
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Unknown	3	0	3	12.0	0.0	12.0	3	0	3	13.6	0.0	13.6
10-Other	2	0	2	8.0	0.0	8.0	0	0	0	0.0	0.0	0.0
Total	19	6	25	76.0	24.0	100	19	9	28	59.1	40.9	100

Evaluation	March			April			May			June		
	Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Planet	1	0	1	4.5	0.0	4.5	4	0	4	18.2	0.0	18.2
2-Astronomical	3	1	4	13.6	4.5	18.1	3	2	5	6.7	4.4	11.1
3-Aircraft	1	0	1	4.5	0.0	4.5	4	1	5	9.8	2.2	11.0
4-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Meteor, Misc.	4	0	4	18.2	0.0	18.2	12	0	12	26.7	0.0	26.7
8-Psychological	0	0	0	0.0	0.0	0.0	2	0	2	4.4	0.0	4.4
9-Unknown	4	0	4	18.2	0.0	18.2	12	0	12	26.7	0.0	26.7
10-Other	0	0	0	0.0	0.0	0.0	2	0	2	4.4	0.0	4.4
Total	13	1	14	59.1	4.5	63.6	37	3	40	82.2	6.7	88.9

Evaluation	June			July			August		
	Number			Per Cent			Number		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Planet	6	0	6	13.3	0.0	13.3	27	11	38	14.7	5.2	19.9
2-Astronomical	3	2	5	6.7	4.4	11.1	27	7	34	12.7	3.5	16.0
3-Aircraft	3	2	5	6.8	2.2	11.0	27	15	42	14.7	7.1	19.8
4-Light Phenom.	0	0	0	0.0	0.0	0.0	3	0	3	1.4	0.0	1.4
5-Birds	0	0	0	0.0	0.0	0.0	1	1	2	0.5	0.5	1.0
6-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0	1	0	1	0.5	0.0	0.5
7-Meteor, Misc.	6	0	6	13.3	0.0	13.3	38	0	38	17.9	0.0	17.9
8-Psychological	1	2	3	0.5	0.9	1.4	1	0	1	0.5	0.0	0.5
9-Unknown	15	0	15	33.3	0.0	33.3	96	0	96	45.5	0.0	45.5
10-Other	1	0	1	2.2	0.0	2.2	16	0	16	7.5	0.0	7.5
Total	45	5	50	100.0	11.1	111.1	176	36	212	83.0	17.0	100.

Evaluation	August			September			October			November			December		
	Number			Per Cent			Number			Per Cent			Number		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Planet	5	3	8	5.8	3.5	9.3	2	1	3	5.7	2.9	8.6	1	7	8	2.5	17.5	20.0
2-Astronomical	6	5	11	7.0	5.8	12.8	2	4	6	5.7	11.1	16.8	7	4	11	17.5	10.0	27.5
3-Aircraft	10	7	17	11.6	8.1	19.7	1	1	2	2.8	2.8	5.6	3	4	7	7.5	5.0	12.5
4-Light Phenom.	2	0	2	2.3	0.0	2.3	0	1	1	0.0	2.9	2.9	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Meteor, Misc.	19	0	19	22.1	0.0	22.1	6	0	6	17.1	0.0	17.1	3	0	3	7.5	0.0	7.5
8-Psychological	1	0	1	1.2	0.0	1.2	1	0	1	2.9	0.0	2.9	0	0	0	0.0	0.0	0.0
9-Unknown	22	0	22	25.6	0.0	25.6	8	0	8	22.9	0.0	22.9	9	0	9	22.5	0.0	22.5
10-Other	2	1	3	2.3	1.2	3.5	2	0	2	5.7	0.0	5.7	2	0	2	5.0	0.0	5.0
Total	67	19	86	77.9	22.1	100	22	7	29	62.9	20.0	82.9	25	15	40	62.5	37.5	100

Evaluation	December		
	Number		
	Certain	Doubtful	Total
1-Planet	1	1	2
2-Astronomical	6	7	13
3-Aircraft	3	1	4
4-Light Phenom.	0	0	0
5-Birds	0	0	0
6-Clouds, Mist, etc.	0	0	0
7-Meteor, Misc.	5	0	5
8-Psychological	1	0	1
9-Unknown	2	0	2
10-Other	3	0	3
Total	20	9	29

TABLE XIII EVALUATIONS OF OBJECT SIGHTINGS FOR ALL USERS BY DURATION OF SIGHTING FOR MONTHS OF YEAR, FIVE SECONDS OR LESS

JANUARY

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0
1-Astronomical	2	9	11	18.2	81.8	100.0
2-Aircraft	0	0	0	0.0	0.0	0.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	0	0	0	0.0	0.0	0.0
7-Psychological	1	0	1	7.1	0.0	7.1
8-Hoaxes	1	0	1	7.1	0.0	7.1
9-Other	0	1	1	0.0	7.1	7.1
Total	4	10	14	28.6	71.4	100.

FEBRUARY

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0
1-Astronomical	3	8	11	33.3	66.6	88.9
2-Aircraft	0	0	0	0.0	0.0	0.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	0	0	0	0.0	0.0	0.0
7-Psychological	0	0	0	0.0	0.0	0.0
8-Hoaxes	0	0	0	0.0	0.0	0.0
9-Other	1	0	1	11.1	0.0	11.1
Total	4	8	9	44.4	55.6	100

MARCH

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0
1-Astronomical	2	5	7	28.5	58.6	77.8
2-Aircraft	0	0	0	0.0	0.0	0.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	1	0	1	11.1	0.0	11.1
7-Psychological	0	0	0	0.0	0.0	0.0
8-Hoaxes	1	0	1	11.1	0.0	11.1
9-Other	0	0	0	0.0	0.0	0.0
Total	3	5	8	33.3	55.6	88.9

APRIL

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	1	0	1	9.1	0.0	9.1
1-Astronomical	5	0	5	45.5	0.0	45.5
2-Aircraft	1	0	1	9.1	0.0	9.1
3-Light Phenom.	0	1	1	0.0	9.1	9.1
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	1	0	1	9.1	0.0	9.1
7-Psychological	0	0	0	0.0	0.0	0.0
8-Hoaxes	2	0	2	18.2	0.0	18.2
9-Other	0	0	0	0.0	0.0	0.0
Total	10	1	11	90.9	9.1	100.

MAY

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0
1-Astronomical	6	2	7	33.3	11.2	44.2
2-Aircraft	4	1	5	22.5	5.7	27.8
3-Light Phenom.	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	1	0	1	5.9	0.0	5.9
7-Psychological	0	0	0	0.0	0.0	0.0
8-Hoaxes	2	0	2	11.2	0.0	11.2
9-Other	2	0	2	11.2	0.0	11.2
Total	14	3	17	82.4	17.6	100.

JUNE

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	1	0	1	4.0	0.0	4.0
1-Astronomical	10	7	17	40.0	28.0	68.0
2-Aircraft	3	0	3	12.0	0.0	12.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	3	0	3	12.0	0.0	12.0
7-Psychological	0	0	0	0.0	0.0	0.0
8-Hoaxes	0	0	0	0.0	0.0	0.0
9-Other	1	0	1	4.0	0.0	4.0
Total	18	7	25	72.0	28.0	100.

JULY

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	1	2	3	1.4	2.8	4.2
1-Astronomical	26	15	37	31.0	21.1	68.1
2-Aircraft	7	9	16	9.9	12.7	22.6
3-Light Phenom.	1	0	1	1.4	0.0	1.4
4-Birds	1	6	8	1.4	2.8	4.2
5-Clouds, Mist, etc.	0	1	1	0.0	1.4	1.4
6-Insufficient Info.	2	0	2	2.8	0.0	2.8
7-Psychological	0	0	0	0.0	0.0	0.0
8-Hoaxes	4	0	4	5.6	0.0	5.6
9-Other	2	0	2	2.8	0.0	2.8
Total	44	29	71	59.8	40.8	100

AUGUST

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	3	3	0.0	5.9	5.9
1-Astronomical	18	20	38	31.7	35.3	66.0
2-Aircraft	3	6	9	5.0	10.0	15.0
3-Light Phenom.	0	1	1	0.0	1.7	1.7
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	4	0	4	6.7	0.0	6.7
7-Psychological	1	0	1	1.7	0.0	1.7
8-Hoaxes	6	0	6	10.0	0.0	10.0
9-Other	2	1	3	3.3	1.7	5.0
Total	34	31	60	56.8	51.7	100.

SEPTEMBER

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0
1-Astronomical	5	6	11	20.8	25.3	46.1
2-Aircraft	1	3	4	4.2	12.5	16.7
3-Light Phenom.	0	1	1	0.0	4.2	4.2
4-Birds	1	1	2	4.2	4.2	8.4
5-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	1	0	1	4.2	0.0	4.2
7-Psychological	0	0	0	0.0	0.0	0.0
8-Hoaxes	3	0	3	12.5	0.0	12.5
9-Other	0	0	0	0.0	0.0	0.0
Total	11	10	24	45.8	40.7	100.

OCTOBER

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0
1-Astronomical	7	5	12	58.3	41.7	100.
2-Aircraft	0	0	0	0.0	0.0	0.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	0	0	0	0.0	0.0	0.0
7-Psychological	0	0	0	0.0	0.0	0.0
8-Hoaxes	1	0	1	8.3	0.0	8.3
9-Other	0	0	0	0.0	0.0	0.0
Total	8	5	13	66.7	41.7	108.

NOVEMBER

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0
1-Astronomical	4	4	8	26.7	26.7	53.4
2-Aircraft	2	1	3	13.3	6.7	20.0
3-Light Phenom.	1	0	1	6.7	0.0	6.7
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	0	0	0	0.0	0.0	0.0
7-Psychological	0	0	0	0.0	0.0	0.0
8-Hoaxes	0	0	0	0.0	0.0	0.0
9-Other	1	0	1	6.7	0.0	6.7
Total	8	5	13	53.3	33.3	86.6

DECEMBER

Evaluation	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0
1-Astronomical	9	8	17	47.4	42.1	89.5
2-Aircraft	0	0	0	0.0	0.0	0.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Mist, etc.	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	0	0	0	0.0	0.0	0.0
7-Psychological	0	0	0	0.0	0.0	0.0
8-Hoaxes	2	0	2	10.5	0.0	10.5
9-Other	0	0	0	0.0	0.0	0.0
Total	11	8	19	57.9	42.1	100.

TABLE XIII EVALUATION OF OBJECT SIGHTINGS FOR ALL YEARS BY DURATION OF SIGHTING
FOR MONTHS OF YEAR, SIX TO TEN SECONDS

Evaluation	JANUARY						FEBRUARY						MARCH						APRIL					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
1-Astronomical	0	1	1	0.0	50.0	50.0	1	0	1	100.0	0.0	100.0	1	0	1	50.0	0.0	50.0	2	0	2	75.0	0.0	75.0
2-Aircraft	0	1	1	0.0	50.0	50.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	12.5	12.5	25.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	1	0	1	50.0	0.0	50.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	12.5	0.0	12.5
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	1	0	1	50.0	0.0	50.0	0	0	0	0.0	0.0	0.0	3	0	3	75.0	0.0	75.0	3	0	3	37.5	0.0	37.5
9-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	2	2	4	50.0	50.0	100.	1	0	1	100.0	0.0	100.	4	0	4	100.0	0.0	100.	7	1	8	87.5	12.5	100.

Evaluation	MAY						JUNE						JULY						AUGUST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total
0-Balloon	1	0	1	12.5	0.0	12.5	1	0	1	5.9	0.0	5.9	0	0	0	0.0	0.0	0.0	0	3	3	0.0	11.5	11.6
1-Astronomical	2	0	2	25.0	0.0	25.0	3	6	9	17.6	35.3	52.9	9	6	15	33.3	22.2	55.5	3	3	6	11.5	11.5	23.0
2-Aircraft	1	1	2	12.5	12.5	25.0	3	0	3	17.6	0.0	17.6	5	2	7	18.5	7.4	25.9	8	2	10	30.8	7.7	38.5
3-Light Phenom.	0	1	1	0.0	12.5	12.5	0	1	1	0.0	5.9	5.9	0	0	0	0.0	0.0	0.0	1	0	1	3.8	0.0	3.8
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insuffic. Info.	2	0	2	25.0	0.0	25.0	2	0	2	11.8	0.0	11.8	1	0	1	3.7	0.0	3.7	1	0	1	3.8	0.0	3.8
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	0	0	0	0.0	0.0	0.0	1	0	1	5.9	0.0	5.9	3	0	3	11.1	0.0	11.1	4	0	4	15.5	0.0	15.4
9-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	3.7	0.0	3.7	1	0	1	3.8	0.0	3.8
Total	4	1	5	80.0	20.0	100.	17	7	24	70.8	29.2	100.	19	8	27	70.4	29.6	100.	18	8	26	69.2	30.8	100.

Evaluation	SEPTEMBER						OCTOBER						NOVEMBER						DECEMBER					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total
0-Balloon	0	1	1	0.0	11.1	11.1	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
1-Astronomical	2	0	2	22.2	0.0	22.2	1	2	3	20.0	40.0	60.0	2	0	2	66.7	0.0	66.7	0	1	1	0.0	100.0	100.0
2-Aircraft	0	2	2	0.0	22.2	22.2	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Birds	0	1	1	0.0	11.1	11.1	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insuffic. Info.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	1	0	1	11.1	0.0	11.1	1	0	1	20.0	0.0	20.0	1	0	1	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0
9-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	5	4	9	55.6	44.4	100.	3	2	5	60.0	40.0	100.	3	0	3	100.0	0.0	100.	0	1	1	0.0	100.0	100.

TABLE A1&2 — EVALUATION OF OBJECT SIGHTINGS FOR ALL YEARS BY LOCATION OF SIGHTING FOR MONTHS OF YEAR, DURING THE THIRTY SECONDS

JANUARY

Location	Number			Per Cent		
	Cyclic	Chaotic	Total	Cyclic	Chaotic	Total
	0	0	0	0.0	0.0	0.0
	2	0	2	66.7	0.0	66.7
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	1	0	1	33.3	0.0	33.3
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
Total	3	0	3	100.0	0.0/100	100

FEBRUARY

Location	Number			Per Cent		
	Cyclic	Chaotic	Total	Cyclic	Chaotic	Total
	0	0	0	0.0	0.0	0.0
	1	0	1	50.0	0.0	50.0
	1	0	1	50.0	0.0	50.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
Total	2	0	2	100.0	0.0	100

MARCH

Location	Number			Per Cent		
	Cyclic	Chaotic	Total	Cyclic	Chaotic	Total
	0	1	1	0.0	16.7	16.7
	0	0	0	0.0	0.0	0.0
	1	0	1	16.7	0.0	16.7
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	2	0	2	33.3	0.0	33.3
	4	2	6	66.7	33.3	100
Total	7	3	10	116.7	50.0	166

APRIL

Location	Number			Per Cent		
	Cyclic	Chaotic	Total	Cyclic	Chaotic	Total
	0	0	0	0.0	0.0	0.0
	2	1	3	16.7	8.3	25.0
	1	2	3	8.3	16.7	25.0
	1	0	1	8.3	0.0	8.3
	1	0	1	8.3	0.0	8.3
	1	0	1	8.3	0.0	8.3
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	2	0	2	16.7	0.0	16.7
	1	0	1	8.3	0.0	8.3
Total	9	3	12	75.0	25.0	100

MAY

Location	Number			Per Cent		
	Cyclic	Chaotic	Total	Cyclic	Chaotic	Total
	1	0	1	5.9	0.0	5.9
	1	0	1	5.9	0.0	5.9
	1	1	2	5.9	5.9	11.8
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	4	0	4	23.5	0.0	23.5
	0	0	0	0.0	0.0	0.0
	2	0	2	11.8	0.0	11.8
	1	0	1	5.9	0.0	5.9
Total	11	1	12	64.7	5.9	70.6

JUNE

Location	Number			Per Cent		
	Cyclic	Chaotic	Total	Cyclic	Chaotic	Total
	1	0	1	5.9	0.0	5.9
	1	2	3	5.9	11.8	17.7
	5	2	7	29.4	11.8	41.2
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	3	0	3	17.6	0.0	17.6
	0	0	0	0.0	0.0	0.0
	3	0	3	17.6	0.0	17.6
	0	0	0	0.0	0.0	0.0
Total	13	4	17	76.6	23.5	100

JULY

Location	Number			Per Cent		
	Cyclic	Chaotic	Total	Cyclic	Chaotic	Total
	3	3	6	4.5	4.5	9.1
	6	1	7	9.1	1.5	10.6
	10	19	29	15.2	28.8	43.9
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	2	0	2	3.0	0.0	3.0
	3	2	5	4.5	3.0	7.6
	12	0	12	18.2	0.0	18.2
	1	0	1	1.5	0.0	1.5
Total	41	25	66	62.1	37.9	100

AUGUST

Location	Number			Per Cent		
	Cyclic	Chaotic	Total	Cyclic	Chaotic	Total
	0	1	1	0.0	3.0	3.0
	6	5	11	18.2	15.2	33.3
	6	3	9	18.2	9.1	27.3
	0	1	1	0.0	3.0	3.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	2	0	2	6.1	0.0	6.1
	2	0	2	6.1	0.0	6.1
	9	0	9	27.3	0.0	27.3
	0	0	0	0.0	0.0	0.0
Total	25	10	35	75.7	30.3	106

SEPTEMBER

Location	Number			Per Cent		
	Cyclic	Chaotic	Total	Cyclic	Chaotic	Total
	0	5	5	0.0	14.3	14.3
	0	1	1	0.0	7.1	7.1
	4	7	11	11.4	20.0	31.4
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	1	1	0.0	7.1	7.1
	3	0	3	14.3	0.0	14.3
	1	0	1	7.1	0.0	7.1
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
Total	7	14	21	33.3	66.7	100

OCTOBER

Location	Number			Per Cent		
	Cyclic	Chaotic	Total	Cyclic	Chaotic	Total
	0	0	0	0.0	0.0	0.0
	0	1	1	11.1	11.1	22.2
	1	3	4	11.1	33.3	44.4
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	1	1	0.0	11.1	11.1
	1	0	1	11.1	0.0	11.1
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	1	1	0.0	11.1	11.1
Total	2	7	9	22.2	77.8	100

NOVEMBER

Location	Number			Per Cent		
	Cyclic	Chaotic	Total	Cyclic	Chaotic	Total
	0	0	0	0.0	0.0	0.0
	1	0	1	100.0	0.0	100.0
	2	0	2	66.0	0.0	66.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	2	0	2	33.3	0.0	33.3
	1	0	1	16.7	0.0	16.7
Total	6	0	6	100.0	0.0	100

DECEMBER

Location	Number			Per Cent		
	Cyclic	Chaotic	Total	Cyclic	Chaotic	Total
	0	2	2	0.0	22.2	22.2
	1	0	1	11.1	0.0	11.1
	2	2	4	22.2	22.2	44.4
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	0	0	0	0.0	0.0	0.0
	2	0	2	22.2	0.0	22.2
	1	0	1	11.1	0.0	11.1
Total	4	5	9	44.4	55.6	100

TABLE XXI. DURATION OF OBJECT SIGHTINGS FOR ALL YEARS BY DURATION OF SIGHTING FOR PERIODS OF ONE YEAR

THIRTY ONE TO SIXTY SECONDS

Evaluation	January			February			March			April		
	Number			Per Cent			Number			Per Cent		
	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total
1-Aircraft	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
2-Astronomical	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
3-Aircraft	0	0	0	0.0	0.0	0.0	1	2	3	50.0	40.0	60.0
4-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Fogs, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Balloons, Kites	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Hoaxes	1	0	1	100.0	0.0	100.0	1	0	1	20.0	0.0	20.0
10-Other	0	0	0	0.0	0.0	0.0	1	0	1	20.0	0.0	20.0
Total	1	0	1	100.0	0.0	100.0	5	2	7	100.0	40.0	140.0

Evaluation	May			June			July			August		
	Number			Per Cent			Number			Per Cent		
	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total
1-Aircraft	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
2-Astronomical	2	0	2	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0
3-Aircraft	2	0	2	33.3	0.0	33.3	5	2	5	35.0	14.3	35.0
4-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Fogs, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Balloons, Kites	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Hoaxes	2	0	2	33.3	0.0	33.3	1	0	2	5.0	0.0	10.0
10-Other	0	0	0	0.0	0.0	0.0	0	1	1	0.0	12.5	12.5
Total	6	0	6	100.0	0.0	100.0	5	3	8	42.0	27.5	100.0

Evaluation	September			October			November			December		
	Number			Per Cent			Number			Per Cent		
	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total	Civilian	Doubtful	Total
1-Aircraft	0	1	1	0.0	7.7	7.7	1	0	1	20.0	0.0	20.0
2-Astronomical	2	1	3	15.4	7.7	23.1	0	0	0	0.0	0.0	0.0
3-Aircraft	3	1	4	23.1	7.7	30.8	1	0	1	20.0	0.0	20.0
4-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Birds	0	1	1	0.0	7.7	7.7	0	0	0	0.0	0.0	0.0
6-Clouds, Fogs, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Balloons, Kites	1	0	1	7.7	0.0	7.7	0	0	0	0.0	0.0	0.0
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Hoaxes	3	0	3	23.1	0.0	23.1	3	0	3	60.0	0.0	60.0
10-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	9	4	13	69.2	30.8	100.0	5	0	5	100.0	0.0	100.0

Evaluation	December		
	Number		
	Civilian	Doubtful	Total
1-Aircraft	1	1	2
2-Astronomical	1	1	2
3-Aircraft	3	1	4
4-Light Phenom.	0	0	0
5-Birds	0	0	0
6-Clouds, Fogs, etc.	0	0	0
7-Balloons, Kites	0	0	0
8-Psychological	0	0	0
9-Hoaxes	2	0	2
10-Other	2	0	2
Total	9	3	12

TABLE XIII EVALUATION OF OBJECT SIGHTINGS FOR ALL YEARS BY DURATION OF SIGHTING FOR MONTHS OF YEAR SIXTY ONE SECONDS TO FIVE MINUTES

Evaluation	January			February			March			April		
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
	Others	Possible	Total	Others	Possible	Total	Others	Possible	Total	Others	Possible	Total
1-Balloon	1	1	2	100	0.0	100	1	0	1	1	0	1
2-Astronomical	1	0	1	100	0.0	100	0	1	1	0.0	12.5	100
3-Aircraft	3	1	3	100	0.0	100	1	0	1	100	0.0	100
4-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Refl. etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Insufficient Info.	1	0	1	100	0.0	100	2	0	2	200	0.0	200
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Unknown	1	0	1	100	0.0	100	2	0	2	200	0.0	200
10-Other	1	0	1	100	0.0	100	2	0	2	100	0.0	100
Total	8	2	10	800	200	1000	9	1	10	900	100	1000

Evaluation	May			June			July			August		
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
	Others	Possible	Total	Others	Possible	Total	Others	Possible	Total	Others	Possible	Total
1-Balloon	6	1	7	85.8	14.2	71.4	6	1	7	85.8	14.2	71.4
2-Astronomical	0	1	1	0.0	14.2	14.2	1	2	3	14.3	28.6	42.9
3-Aircraft	3	5	8	37.5	62.5	100.0	4	4	8	50.0	50.0	100.0
4-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Refl. etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Insufficient Info.	1	0	1	14.2	0.0	14.2	0	0	0	0.0	0.0	0.0
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Unknown	4	0	4	57.2	0.0	57.2	7	0	7	87.5	0.0	87.5
10-Other	1	0	1	14.2	0.0	14.2	1	0	1	12.5	0.0	12.5
Total	15	7	22	214.2	100.0	314.2	21	7	28	300.0	100.0	400.0

Evaluation	September			October			November			December		
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
	Others	Possible	Total	Others	Possible	Total	Others	Possible	Total	Others	Possible	Total
1-Balloon	2	6	8	28.6	85.7	114.3	2	0	2	25.0	0.0	25.0
2-Astronomical	1	1	2	14.3	14.3	28.6	1	0	1	12.5	0.0	12.5
3-Aircraft	1	12	13	14.3	171.4	185.7	1	0	1	12.5	0.0	12.5
4-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Refl. etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Insufficient Info.	1	0	1	14.3	0.0	14.3	0	2	2	0.0	25.0	25.0
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Unknown	11	0	11	157.1	0.0	157.1	2	0	2	25.0	0.0	25.0
10-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	15	19	34	214.3	271.4	485.7	6	2	8	75.0	25.0	100.0

TABLE - AIR - EVALUATION OF OBJECT IDENTIFICATIONS FOR ALL YEARS OF DURATION OF SIGHTING FOR MONTH OF YEAR - X'S TO THIRTY MINUTES

Evaluation	JANUARY						FEBRUARY						MARCH						APRIL					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	1	1	2	9.1	9.1	15.4	2	0	2	25.0	0.0	16.0	1	1	2	16.0	16.0	100	0	0	0	0.0	0.0	0.0
2-Unidentified	2	0	2	18.1	0.0	15.1	1	0	1	12.5	0.0	12.5	0	0	0	0.0	0.0	0.0	2	0	2	15.4	0.0	15.4
3-Aircraft	3	1	4	15.4	9.1	30.1	0	2	2	0.0	25.0	25.0	1	2	3	16.0	16.0	30.0	4	0	4	30.8	0.0	30.8
4-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Insufficient Info.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	7.7	0.0	7.7
8-Psychological	1	0	1	7.7	0.0	7.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Unknown	3	0	3	23.1	0.0	23.1	0	0	0	0.0	0.0	0.0	5	0	5	30.0	0.0	30.0	6	0	6	46.2	0.0	46.2
10-Other	1	0	1	7.7	0.0	7.7	3	0	3	37.5	0.0	37.5	2	1	1	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	11	2	13	84.6	15.4	100	8	2	9	100.0	100.0	100	6	4	10	60.0	40.0	100	13	0	13	100.0	0.0	100

Evaluation	MAY						JUNE						JULY						AUGUST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	3	2	5	23.1	22.2	23.1	6	3	9	26.1	23.1	26.5	21	11	32	26.6	22.2	25.9	17	10	27	21.8	12.8	17.5
2-Unidentified	2	1	3	7.7	11.1	11.5	2	0	2	5.9	0.0	5.9	6	4	9	6.7	8.7	8.4	8	2	10	0.0	2.6	12.5
3-Aircraft	3	1	4	11.5	11.1	15.3	6	3	9	11.7	9.8	20.5	15	8	23	14.0	9.5	11.5	6	10	16	7.5	12.5	20.0
4-Light Phenom.	3	0	3	11.5	0.0	11.5	1	0	1	2.3	0.0	2.9	3	2	5	2.8	1.9	4.7	3	0	3	3.8	0.0	3.8
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Dust, etc.	1	0	1	3.8	0.0	3.8	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	1.3	1.3
7-Insufficient Info.	2	0	2	7.7	0.0	7.7	2	0	2	5.1	0.0	6.1	12	0	12	11.0	0.0	11.0	6	0	6	7.5	0.0	7.5
8-Psychological	0	0	0	0.0	0.0	0.0	4	0	4	5.1	0.0	5.1	1	0	1	0.9	0.0	0.5	2	0	2	2.5	0.0	2.5
9-Unknown	1	0	1	3.8	0.0	3.8	2	0	2	26.5	0.0	26.5	17	0	17	15.9	0.0	15.9	10	0	10	12.5	0.0	12.5
10-Other	1	2	3	3.8	7.7	11.5	0	0	0	0.0	0.0	0.0	4	1	5	3.7	0.9	4.6	4	1	5	5.0	1.3	6.3
Total	26	6	32	76.9	23.1	100.0	23	6	29	85.1	14.7	100	81	26	107	75.9	24.5	100	61	24	85	76.3	30.0	106.3

Evaluation	SEPTEMBER						OCTOBER						NOVEMBER						DECEMBER					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	3	1	4	13.6	4.6	18.1	0	6	6	0.0	33.3	33.3	4	1	5	9.5	4.3	13.8	4	1	5	8.3	4.2	12.5
2-Unidentified	2	2	4	9.1	9.1	18.1	1	2	3	5.6	11.1	16.7	2	4	6	9.5	17.3	26.8	3	1	4	12.5	4.2	16.7
3-Aircraft	4	1	5	18.2	4.6	22.7	1	1	2	5.6	5.6	11.2	0	3	3	0.0	14.3	14.3	1	2	3	4.2	8.3	12.5
4-Light Phenom.	1	1	2	4.6	4.6	9.0	1	1	2	5.6	5.6	11.2	1	1	2	4.8	4.8	9.6	1	0	1	4.2	0.0	4.2
5-Birds	0	0	0	0.0	0.0	0.0	0	1	1	0.0	5.6	5.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Insufficient Info.	2	0	2	9.1	0.0	9.1	1	0	1	5.6	0.0	5.6	1	0	1	4.8	0.0	4.8	2	0	2	8.3	0.0	8.3
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	4.2	0.0	4.2
9-Unknown	6	0	6	27.3	0.0	27.3	3	0	3	16.7	0.0	16.7	5	0	5	23.8	0.0	23.8	3	0	3	12.5	0.0	12.5
10-Other	1	0	1	4.6	0.0	4.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	4.2	0.0	4.2
Total	19	5	24	86.4	22.8	109.2	7	11	18	38.8	61.1	100	13	10	23	61.9	47.6	109.5	20	4	24	83.3	16.7	100

TABLE XIII. EVALUATION OF OBJECT SELECTIONS FOR ALL YEARS BY DURATION OF SELECTION FOR MONTHS OF YEAR, OVER THIRTY MINUTES

Evaluation	JANUARY						FEBRUARY						MARCH						APRIL					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total
0-Others	1	0	1	33.3	0.0	33.3	1	0	1	50.0	0.0	50.0	2	0	2	50.0	0.0	50.0	3	0	3	11.1	0.0	11.1
1-Interpersonal	0	1	1	0.0	33.3	33.3	1	0	1	50.0	0.0	50.0	1	0	1	25.0	0.0	25.0	2	0	2	22.2	0.0	22.2
2-Aural	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	11.1	11.1
3-Light Physch.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Body	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Check, Dual, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Health, Ish.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	11.1	0.0	11.1
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Weapon	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	25.0	0.0	25.0	2	0	2	22.2	0.0	22.2
9-Other	1	0	1	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	2	1	3	66.7	33.3	100	2	0	2	100.0	0.0	100.0	4	0	4	100.0	0.0	100.0	9	1	9	100.0	11.1	100.0

Evaluation	MAY						JUNE						JULY						AUGUST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total
0-Others	0	0	0	0.0	0.0	0.0	6	2	8	37.5	12.5	50.0	7	4	11	14.0	8.0	22.0	6	3	9	16.2	8.1	24.3
1-Interpersonal	0	0	0	0.0	0.0	0.0	4	0	4	25.0	0.0	25.0	6	4	10	12.0	8.0	20.0	7	6	13	18.9	16.2	35.1
2-Aural	0	0	0	0.0	0.0	0.0	2	2	4	12.5	12.5	25.0	2	4	6	4.0	8.0	12.0	2	1	3	5.4	2.7	8.1
3-Light Physch.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	2.0	0.0	2.0	1	1	1	2.7	2.7	5.4
4-Body	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Check, Dual, etc.	1	0	1	50.0	0.0	50.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Health, Ish.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	2.0	0.0	2.0	1	0	1	2.7	0.0	2.7
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	2.0	2.0	4.0	2	0	2	5.4	0.0	5.4
8-Weapon	0	0	0	0.0	0.0	0.0	1	0	1	6.3	0.0	6.3	14	0	14	28.0	0.0	28.0	6	0	6	16.2	0.0	16.2
9-Other	1	0	1	50.0	0.0	50.0	1	0	1	6.3	0.0	6.3	2	0	2	4.0	0.0	4.0	0	2	2	0.0	5.4	5.4
Total	2	0	2	100.0	0.0	100.0	14	2	16	87.5	12.5	100.	37	13	50	74.0	26.0	100.	26	13	37	64.9	35.1	100.

Evaluation	SEPTEMBER						OCTOBER						NOVEMBER						DECEMBER					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total
0-Others	0	2	2	0.0	8.7	8.7	5	1	6	20.0	4.0	24.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
1-Interpersonal	3	1	4	13.0	4.3	17.3	1	0	1	4.0	0.0	4.0	5	2	7	19.1	15.4	38.5	1	1	2	33.3	33.3	66.6
2-Aural	2	2	4	8.7	8.7	17.4	0	0	0	0.0	0.0	0.0	1	0	1	7.7	0.0	7.7	0	0	0	0.0	0.0	0.0
3-Light Physch.	0	1	1	0.0	4.3	4.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Body	1	0	1	4.3	0.0	4.3	1	0	1	4.0	0.0	4.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Check, Dual, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Health, Ish.	2	0	2	8.7	0.0	8.7	0	0	0	0.0	0.0	0.0	2	0	2	15.4	0.0	15.4	0	0	0	0.0	0.0	0.0
7-Psychological	1	0	1	4.3	0.0	4.3	0	0	0	0.0	0.0	0.0	1	0	1	7.7	0.0	7.7	0	0	0	0.0	0.0	0.0
8-Weapon	7	0	7	30.4	0.0	30.4	3	0	3	12.0	0.0	12.0	3	0	3	23.1	0.0	23.1	0	0	0	0.0	0.0	0.0
9-Other	1	0	1	4.3	0.0	4.3	0	1	1	0.0	4.0	4.0	1	0	1	7.7	0.0	7.7	1	0	1	33.3	0.0	33.3
Total	17	6	23	73.9	26.1	100	9	2	11	80.0	8.0	100.	11	2	13	84.6	15.4	100.	2	1	3	66.7	33.3	100.

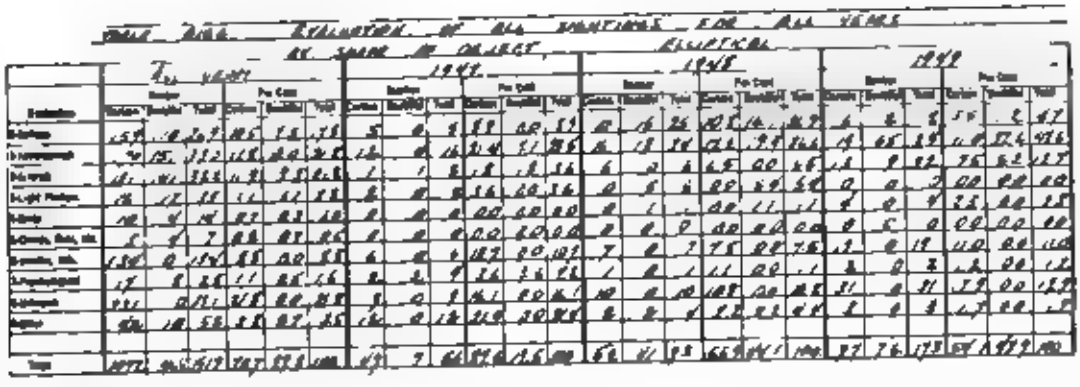
TABLE XIII EVALUATION OF OBJECT SIGHTINGS FOR ALL YEARS BY DURATION OF SIGHTING FOR MONTH OF YEAR, DURATION NOT STATED

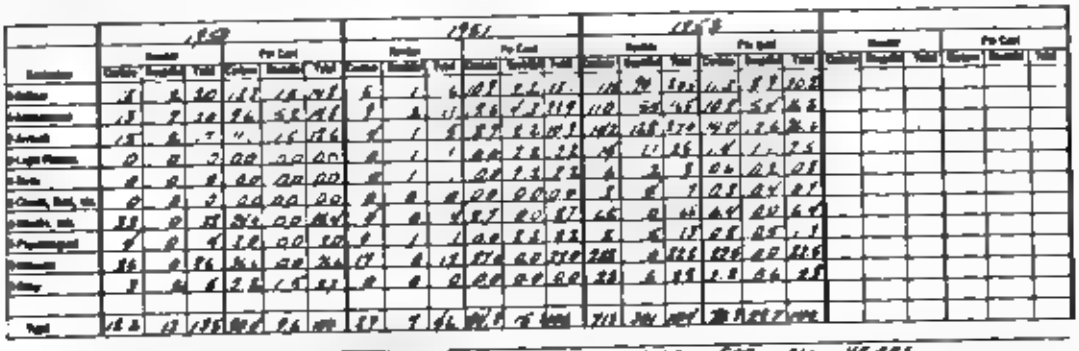
Evaluation	January			February			March			April		
	Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	3	0	0	0.0	0.0	0.0	2	0	2	11.1	0.0	11.1
1-Astronomical	1	5	11	27.3	22.7	50.0	4	6	10	18.2	27.3	45.5
2-Aircraft	2	0	2	9.1	0.0	9.1	3	1	4	11.1	5.6	16.7
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Fogs, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	5	0	5	22.7	0.0	22.7	1	0	1	5.6	0.0	5.6
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	2	0	2	9.1	0.0	9.1	2	0	2	11.1	0.0	11.1
9-Other	2	0	2	9.1	0.0	9.1	0	0	0	0.0	0.0	0.0
Total	19	5	24	79.2	20.8	100	11	7	18	61.1	38.9	100

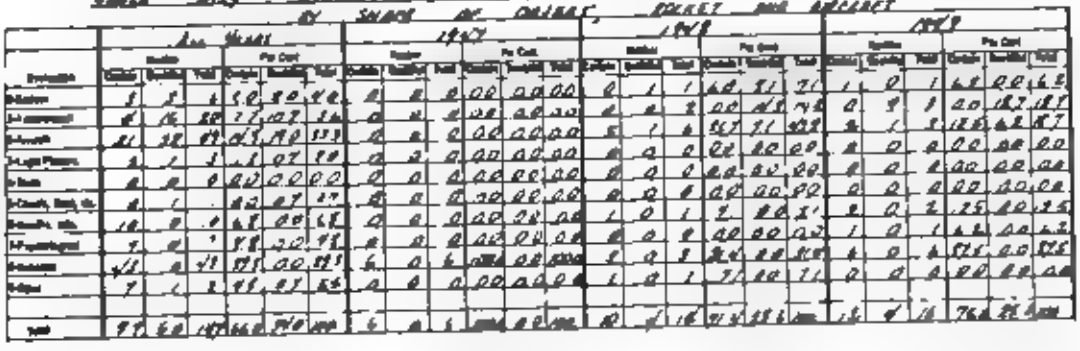
Evaluation	April			May			June			July			August		
	Number			Per Cent			Number			Per Cent			Number		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	1	1	2	2.7	2.7	5.4	6	0	6	15.8	0.0	15.8	80	9	29	16.3	5.6	12.9
1-Astronomical	0	0	0	0.0	0.0	0.0	1	0	1	2.6	0.0	2.6	9	6	15	5.6	3.7	9.3
2-Aircraft	1	0	1	2.7	0.0	2.7	4	1	5	10.5	2.6	13.1	21	13	34	13.0	7.9	20.9
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	0	3	1.9	0.0	1.9
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	0.6	0.6	1.2
5-Clouds, Fogs, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	0.6	0.0	0.6
6-Insuffic. Info.	0	0	0	0.0	0.0	0.0	12	0	12	31.6	0.0	31.6	55	0	55	34.0	0.0	34.0
7-Psychological	0	0	0	0.0	0.0	0.0	2	0	2	5.3	0.0	5.3	1	2	3	0.6	1.2	1.9
8-Unknown	0	0	0	0.0	0.0	0.0	10	0	10	26.3	0.0	26.3	30	0	30	18.5	0.0	18.5
9-Other	0	0	0	0.0	0.0	0.0	2	0	2	5.3	0.0	5.3	11	0	11	6.8	0.0	6.8
Total	2	1	3	5.4	2.7	8.1	37	1	38	97.4	2.6	100	212	30	162	85.5	16.5	100

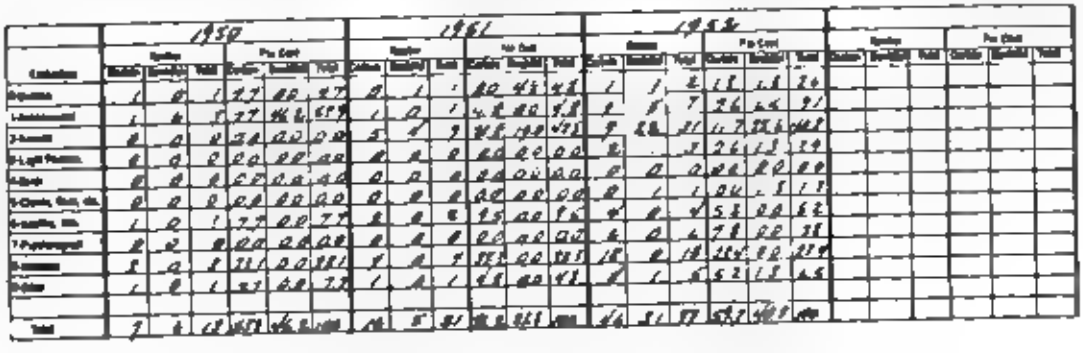
Evaluation	August			September			October			November			December		
	Number			Per Cent			Number			Per Cent			Number		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	5	3	8	4.7	4.0	10.7	2	1	3	6.6	3.2	9.7	1	6	7	9.1	18.8	18.8
1-Astronomical	2	5	7	2.7	6.7	9.3	2	6	8	6.6	19.4	26.8	7	8	11	18.8	19.6	38.4
2-Aircraft	2	1	3	2.0	1.3	4.0	2	2	4	6.5	6.5	12.0	5	2	7	15.2	6.5	18.5
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Fogs, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insuffic. Info.	1	0	1	1.3	0.0	1.3	6	0	6	19.4	0.0	19.4	2	0	2	2.9	0.0	2.9
7-Psychological	0	0	0	0.0	0.0	0.0	1	0	1	3.2	0.0	3.2	0	0	0	0.0	0.0	0.0
8-Unknown	10	0	10	6.7	0.0	6.7	8	0	8	25.8	0.0	25.8	8	0	8	21.0	0.0	21.0
9-Other	1	1	2	1.3	1.3	2.6	1	0	1	3.2	0.0	3.2	2	0	2	5.5	0.0	5.5
Total	21	10	31	28.0	13.3	41.3	22	9	31	71.0	29.0	100	25	16	41	68.4	31.6	100

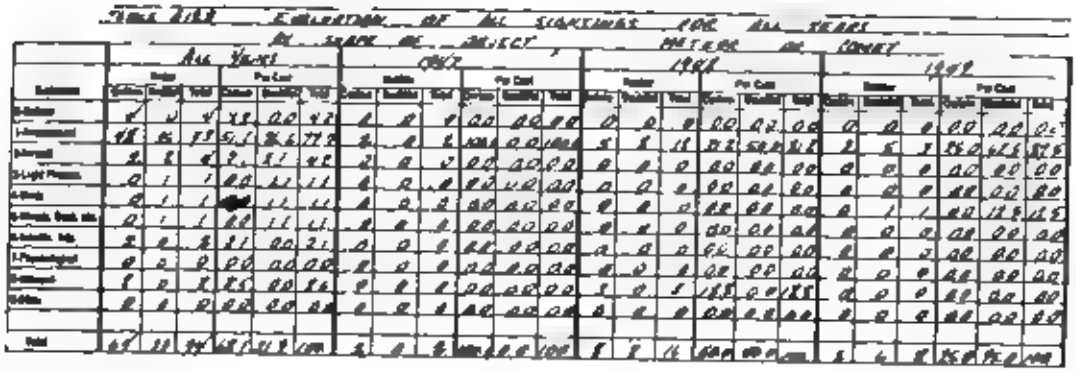
Evaluation	December			Total		
	Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	1	0	1	5.0	0.0	5.0
1-Astronomical	2	3	5	10.0	15.0	25.0
2-Aircraft	2	1	3	10.0	5.0	15.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0
5-Clouds, Fogs, etc.	0	0	0	0.0	0.0	0.0
6-Insuffic. Info.	5	0	5	25.0	0.0	25.0
7-Psychological	1	0	1	5.0	0.0	5.0
8-Unknown	2	0	2	10.0	0.0	10.0
9-Other	3	0	3	15.0	0.0	15.0
Total	16	4	20	80.0	20.0	100

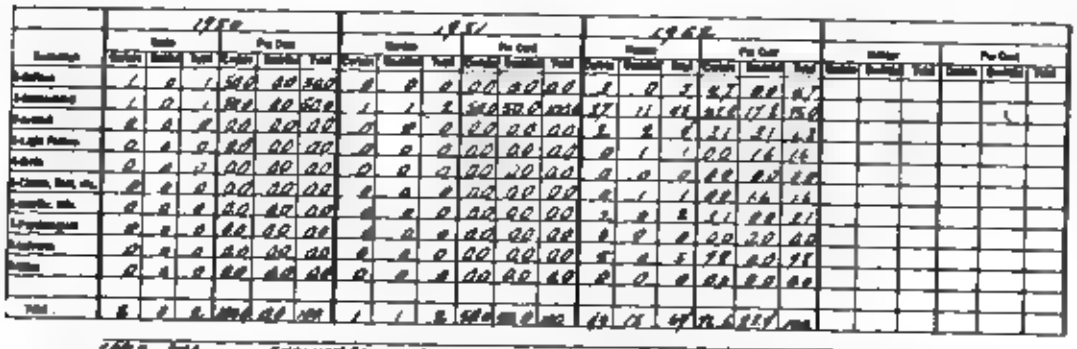


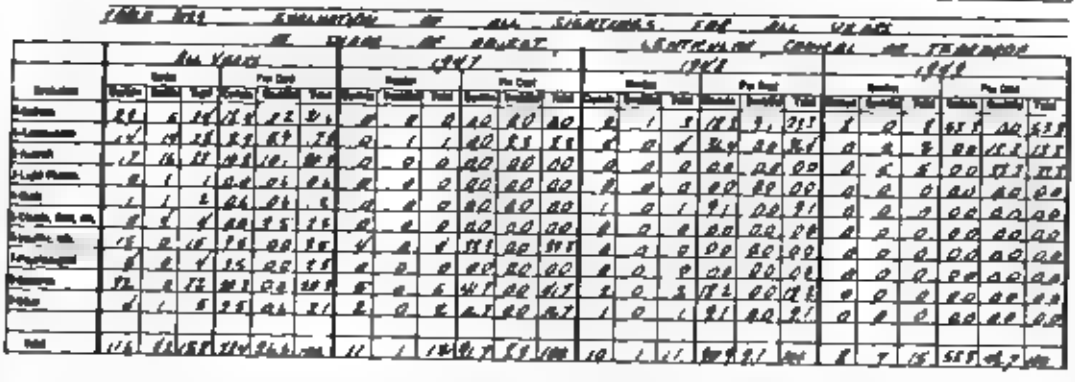


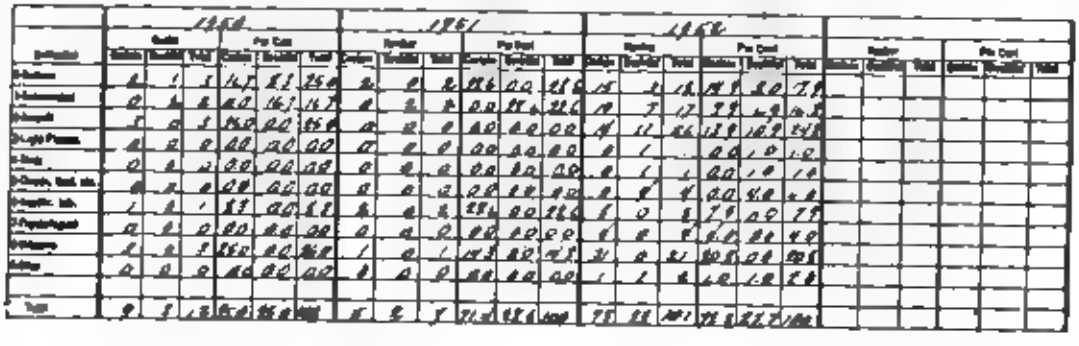


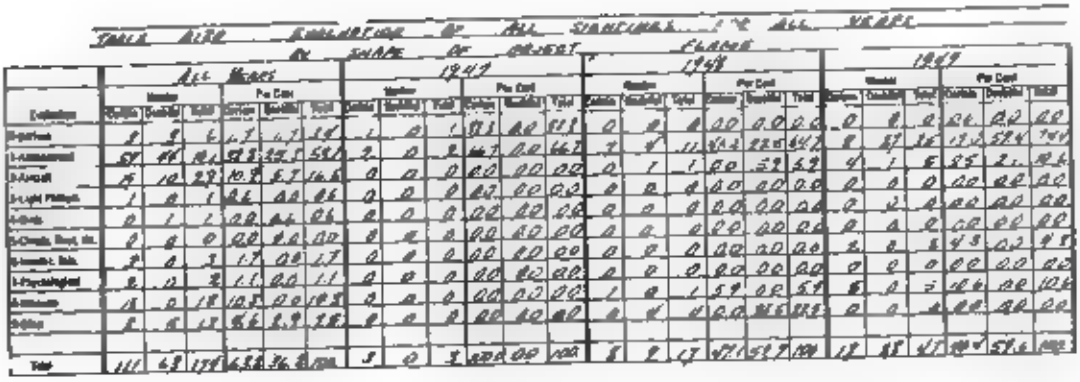


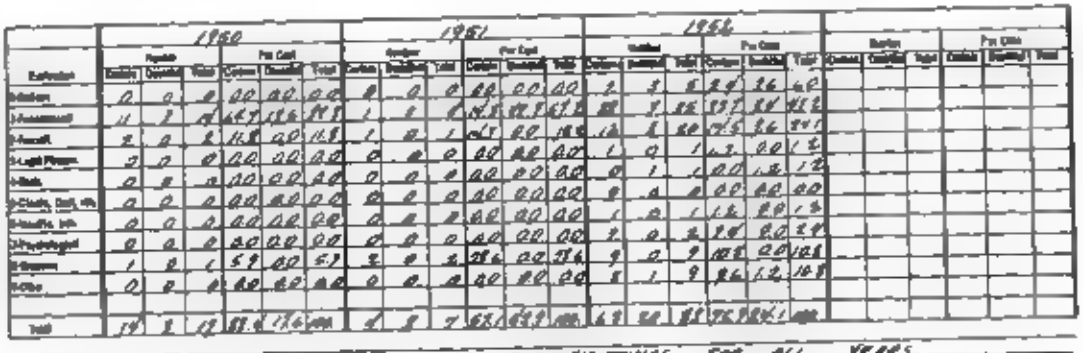


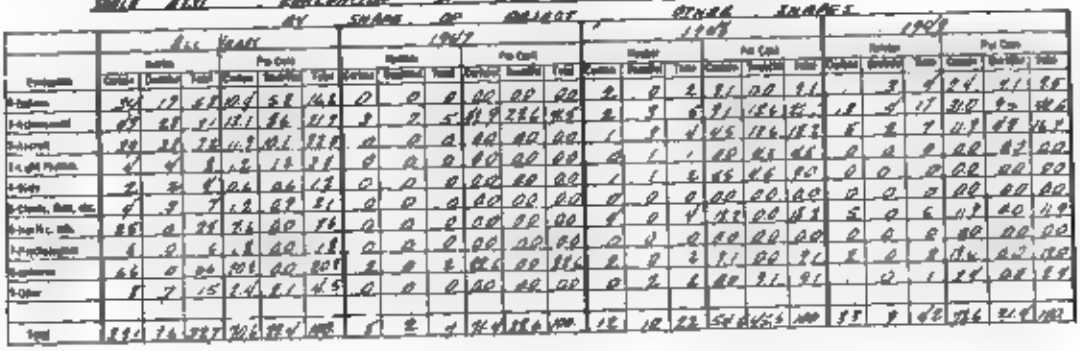












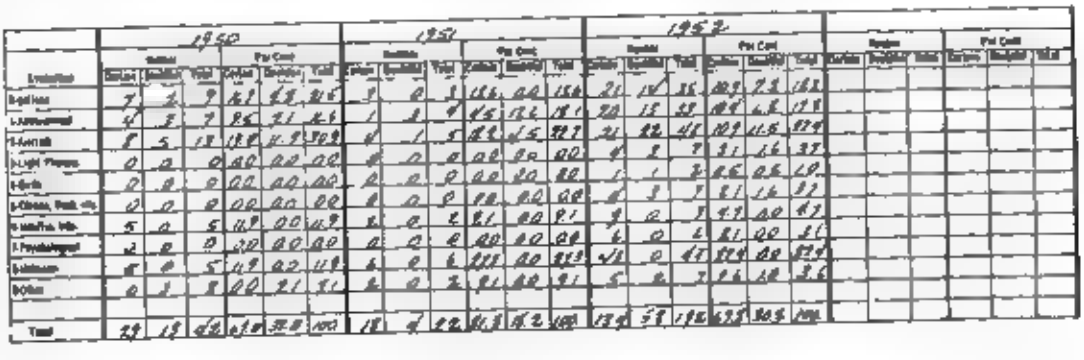
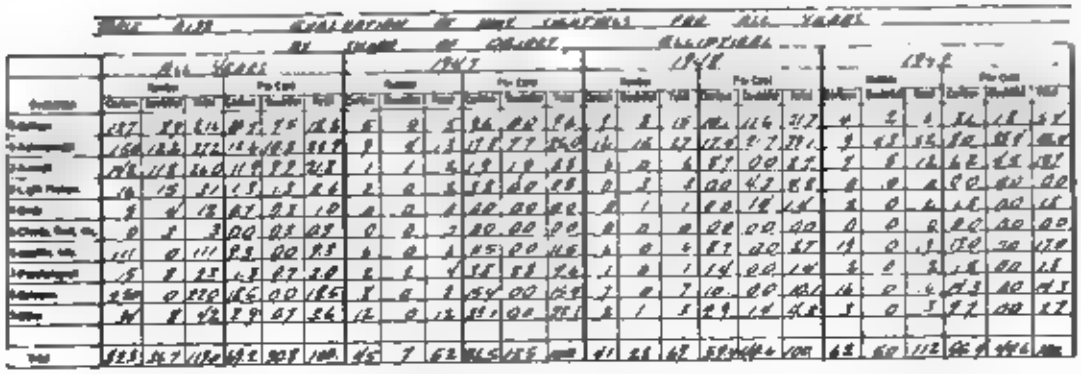
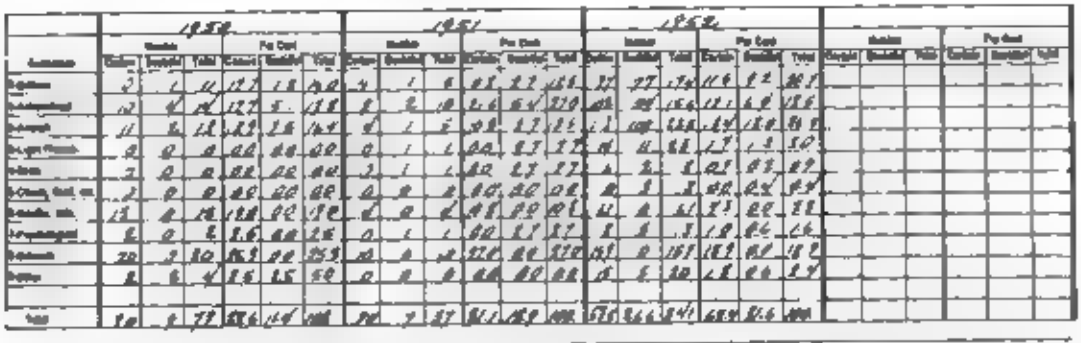


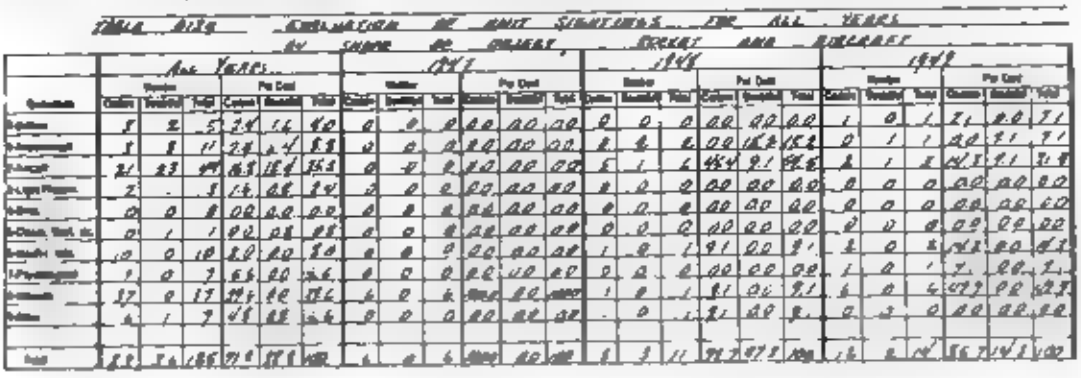
TABLE XIII. EVALUATION OF ALL SIGHTINGS FOR ALL YEARS BY SHAPE OF OBJECT, SHAPE NOT STATED

Evaluation	All Years						1947						1948					
	Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	38	40	78	4.8	5.1	9.9	1	0	1	52.0	0.0	52.0	3	3	6	9.4	9.4	18.8	0	0	0	0.0	0.0	0.0
1-Unexplained	131	45	176	16.7	5.8	22.5	13	1	14	40.9	3.2	44.1	2	4	6	6.3	12.5	18.8	32	16	48	34.0	17.0	51.1
2-Aircraft	79	23	102	10.1	2.9	13.0	1	1	2	3.2	3.2	6.4	4	0	4	12.5	0.0	12.5	7	2	14	7.4	2.1	15.9
3-Light Phenom.	9	0	9	1.1	0.0	1.1	0	0	0	0.0	0.0	0.0	2	0	2	6.3	0.0	6.3	0	0	0	0.0	0.0	0.0
4-Birds	6	1	7	0.8	0.1	0.9	0	0	0	0.0	0.0	0.0	0	1	1	0.0	3.1	3.1	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	5	0	5	0.6	0.0	0.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insects, Ins.	109	0	109	13.8	0.0	13.8	4	0	4	12.9	0.0	12.9	7	0	7	21.9	0.0	21.9	8	0	8	5.6	0.0	5.6
7-Psychological	2	2	4	0.3	0.3	0.6	1	0	1	3.2	0.0	3.2	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	151	0	151	19.1	0.0	19.1	6	0	6	19.4	0.0	19.4	6	0	6	18.8	0.0	18.8	6	0	6	4.2	0.0	4.2
9-Other	48	11	59	6.1	1.4	7.5	3	0	3	9.7	0.0	9.7	0	0	0	0.0	0.0	0.0	9	0	9	6.4	0.0	6.4
Total	609	175	784	77.1	22.3	100	29	2	31	93.6	6.5	100	24	8	32	76.0	25.0	100	60	34	94	63.8	36.2	100

Evaluation	1950						1951						1952											
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	4	2	6	4.7	2.4	7.1	0	2	2	0.0	5.6	5.6	30	28	58	6.2	6.8	13.0						
1-Unexplained	19	9	28	22.5	10.7	33.2	12	6	18	32.8	16.9	49.7	52	32	84	10.9	6.5	16.4						
2-Aircraft	11	8	19	12.9	9.4	22.3	2	2	4	5.6	5.6	11.2	50	29	79	10.3	5.0	15.3						
3-Light Phenom.	0	0	0	0.0	0.0	0.0	2	0	2	5.6	0.0	5.6	5	0	5	1.0	0.0	1.0						
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	6	0	6	1.2	0.0	1.2						
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	5	0	5	1.0	0.0	1.0						
6-Insects, Ins.	9	0	9	10.6	0.0	10.6	9	0	9	13.3	0.0	13.3	77	0	77	15.9	0.0	15.9						
7-Psychological	0	0	0	0.0	0.0	0.0	1	0	1	1.3	0.0	1.3	0	2	2	0.0	0.4	0.4						
8-Unknown	23	0	23	27.1	0.0	27.1	13	0	13	36.6	0.0	36.6	131	0	131	26.9	0.0	26.9						
9-Other	3	3	6	3.5	3.5	7.1	5	0	5	9.1	0.0	9.1	45	2	47	9.1	0.4	9.5						
Total	69	16	85	81.3	18.8	100	46	10	56	81.8	17.2	100	352	136	487	72.4	27.6	100						







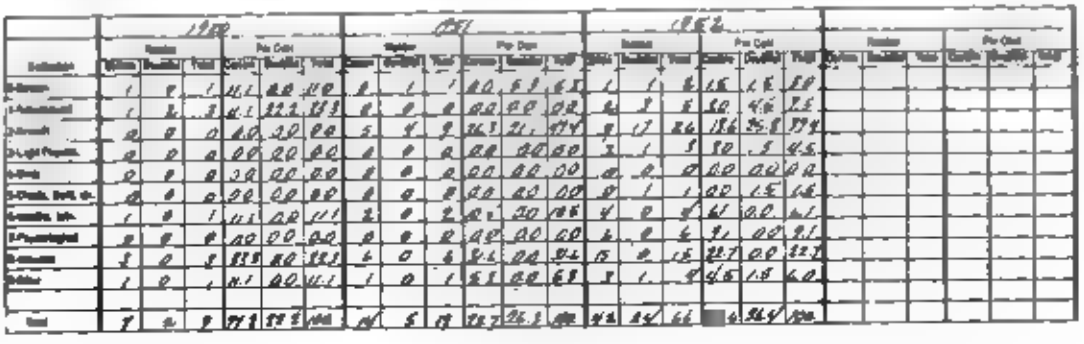


TABLE A15E EXPLANATION OF UNIT SIGHTINGS FOR ALL YEARS
BY SCHOOL OF GAMES, METHOD OF CAPTURE

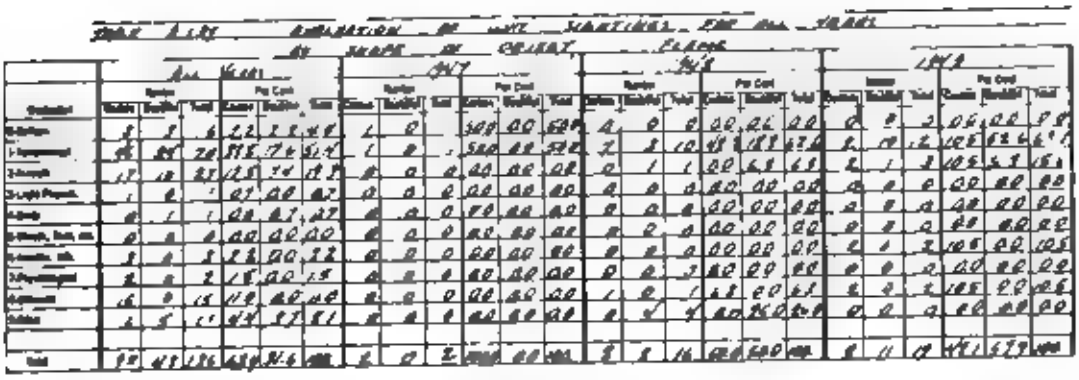
Explanation	All Years						1947						1948						1949					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total
1-Deliver	6	0	6	2.6	0.0	2.6							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
2-Unreported	41	21	62	53.9	27.6	81.5							4	1	5	100.0	50.0	100.0	1	5	6	16.6	71.4	85.7
3-Unsold	2	6	8	2.6	7.9	10.5							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Light Pheasts	0	1	1	0.0	1.3	1.3							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Birds	0	1	1	0.0	1.3	1.3							0	0	0	0.0	0.0	0.0	0	1	1	0.0	14.3	14.3
6-Chicks, Dead, etc.	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Deaths, Info.	1	0	1	1.3	0.0	1.3							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unpublished	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Absent	5	0	5	6.6	0.0	6.6							2	0	2	100.0	0.0	100.0	0	0	0	0.0	0.0	0.0
Other	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	61	25	76	63.1	32.9	100.0							6	1	10	100.0	50.0	100.0	1	6	7	14.1	85.7	100.0

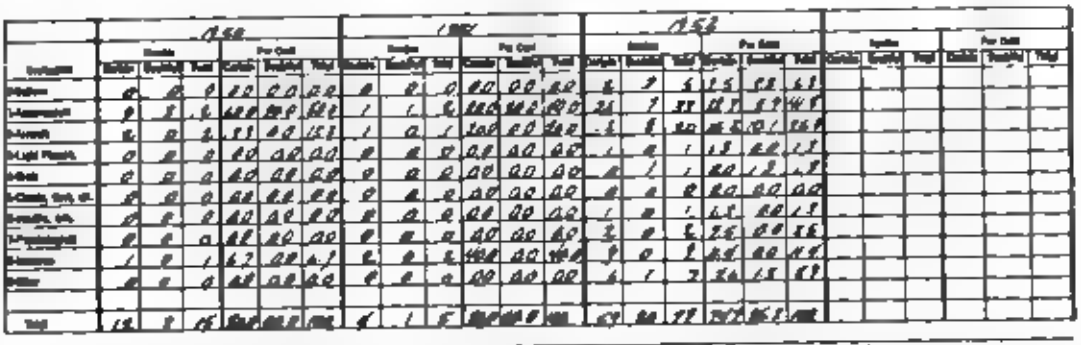
Explanation	1950						1951						1952											
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total
1-Deliver		0	1	50.0	0.0	50.0	0	0	0	0.0	0.0	0.0	1	0	1	1.3	0.0	1.3						
2-Unreported	1	0	1	50.0	0.0	50.0	1	1	2	50.0	50.0	100.0	36	11	47	46.8	30.0	76.8						
3-Unsold	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	3	4	2.6	3.6	7.2						
4-Light Pheasts	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	1.3	1.3						
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0						
6-Chicks, Dead, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0						
7-Deaths, Info.	0	0	0	0.0	0.0	0.0	2	0	2	0.0	0.0	0.0	1	0	1	1.3	0.0	1.3						
8-Unpublished	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0						
9-Absent	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	0	3	5.4	0.0	5.4						
Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0						
Total	2	0	2	100.0	0.0	100.0	3	1	4	50.0	50.0	100.0	43	14	57	76.8	25.0	100.0						

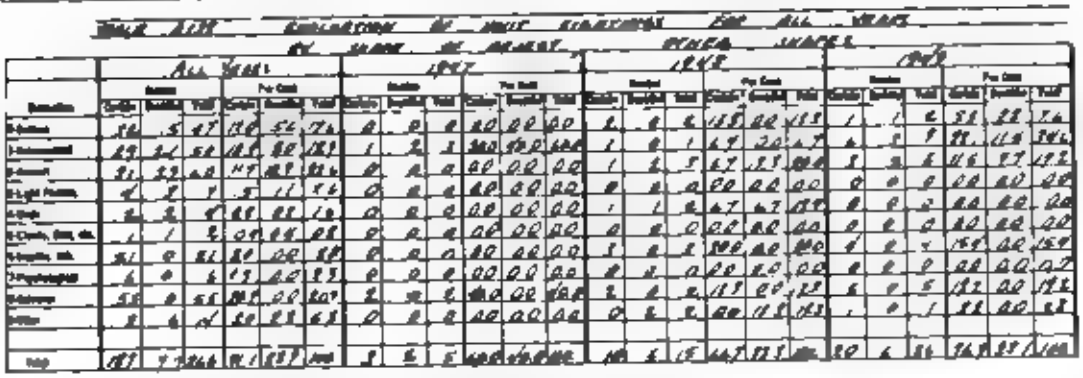
TABLE A15E EXPLANATION OF UNIT SIGHTINGS FOR ALL YEARS
BY SCHOOL OF GAMES, METHOD OF CAPTURE

Explanation	All Years						1947						1948						1949					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total
1-Deliver	26	4	30	17.0	2.9	19.9	0	0	0	0.0	0.0	0.0	2	0	2	26.0	0.0	26.0	5	0	5	35.6	0.0	56.6
2-Unreported	12	13	24	8.5	9.5	17.0	0	1	1	0.0	16.7	16.7	3	0	3	37.5	0.0	37.5	0	2	2	0.0	28.2	28.2
3-Unsold	16	18	29	11.3	12.6	23.9	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	2	2	0.0	28.2	28.2
4-Light Pheasts	0	1	1	0.0	0.7	0.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Birds	1	1	2	0.7	0.7	1.4	0	0	0	0.0	0.0	0.0	1	0	1	12.5	0.0	12.5	0	0	0	0.0	0.0	0.0
6-Chicks, Dead, etc.	0	6	6	0.0	4.2	4.2	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Deaths, Info.	14	0	14	9.8	0.0	9.8	2	0	2	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unpublished	4	0	4	2.9	0.0	2.9	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Absent	24	0	24	18.0	0.0	18.0	2	0	2	33.3	0.0	33.3	1	0	1	12.5	0.0	12.5	0	0	0	0.0	0.0	0.0
Other	3	1	4	2.2	0.7	2.9	1	0	1	16.7	0.0	16.7	1	0	1	12.5	0.0	12.5	0	0	0	0.0	0.0	0.0
Total	100	35	137	74.5	25.5	100.0	5	1	6	83.3	16.7	100.0	8	0	8	100.0	0.0	100.0	5	4	9	55.6	44.4	100.0

Explanation	1950						1951						1952											
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total	Captive	Disabled	Total
1-Deliver	6	1	8	18.8	9.1	27.9	2	0	2	33.3	0.0	33.3	15	3	18	16.5	3.3	19.8						
2-Unreported	0	2	2	0.0	18.2	18.2	0	1	1	0.0	16.7	16.7	10	7	17	10.1	7.6	17.8						
3-Unsold	3	0	3	27.2	0.0	27.2	0	0	0	0.0	0.0	0.0	13	11	24	13.4	11.3	24.7						
4-Light Pheasts	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	1.0	1.0						
5-Birds	0	0	0	0.0	0.0	0.0	2	0	2	0.0	0.0	0.0	0	1	1	0.0	1.0	1.0						
6-Chicks, Dead, etc.	2	2	2	0.0	0.0	0.0	0	0	2	0.0	0.0	0.0	0	2	2	0.0	2.1	2.1						
7-Deaths, Info.	1	0	1	9.1	0.0	9.1	2	0	2	33.3	0.0	33.3	8	0	8	8.2	0.0	8.2						
8-Unpublished	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	4	0	4	4.1	0.0	4.1						
9-Absent	2	0	2	18.2	0.0	18.2	1	0	1	16.7	0.0	16.7	10	0	10	10.4	0.0	10.4						
Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	1	1.0	1.0	2.0						
Total	3	5	11	27.2	27.2	100.0	5	1	6	83.3	16.7	100.0	31	26	57	32.5	26.8	100.0						







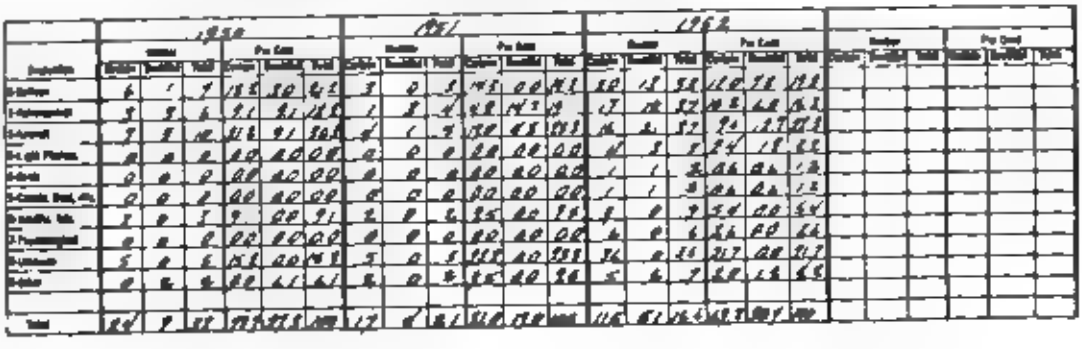
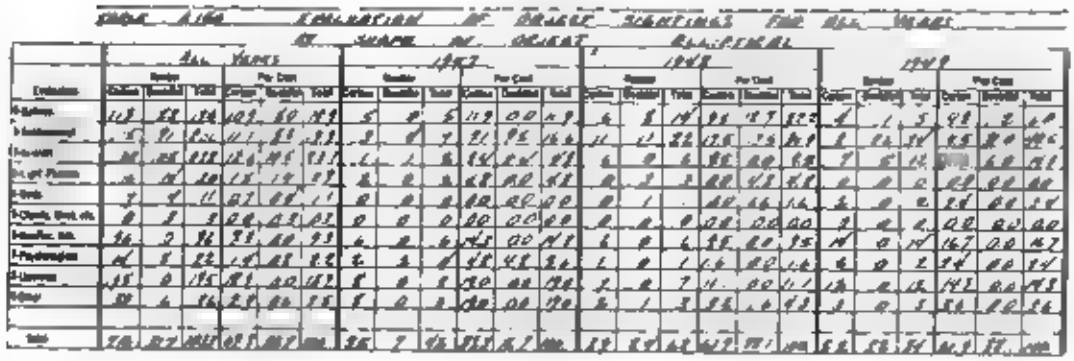
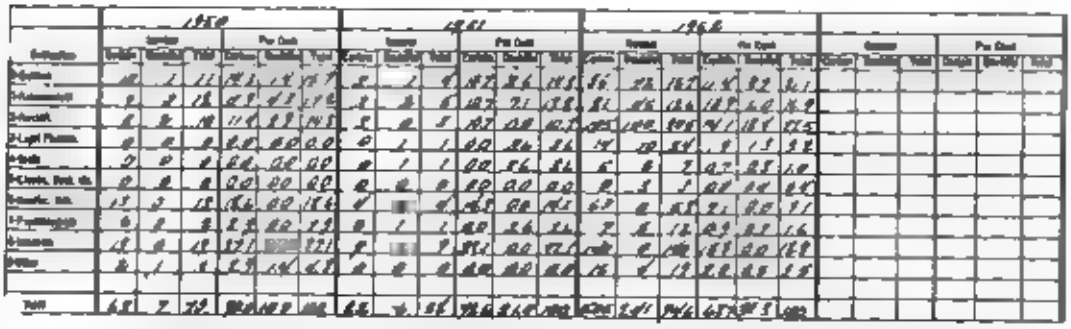


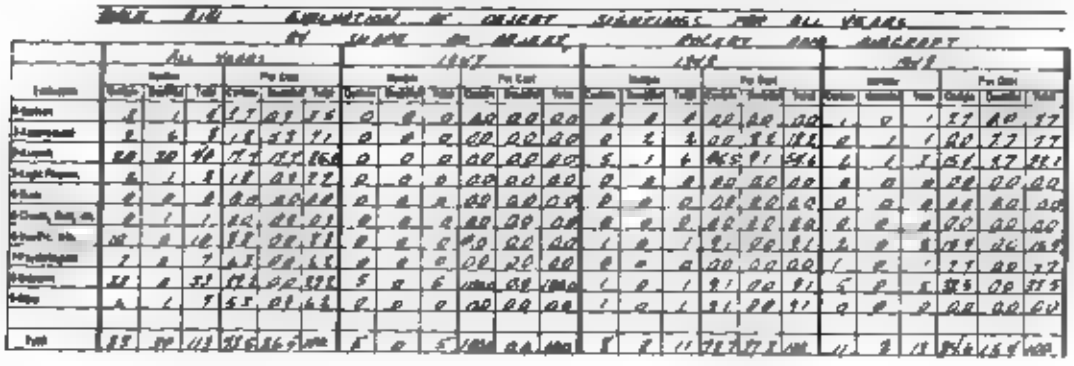
TABLE 9.15 EVALUATION OF UNIT SAVINGS FOR ALL YEARS BY SHARE OF OBJECT, SHARE NOT STATED

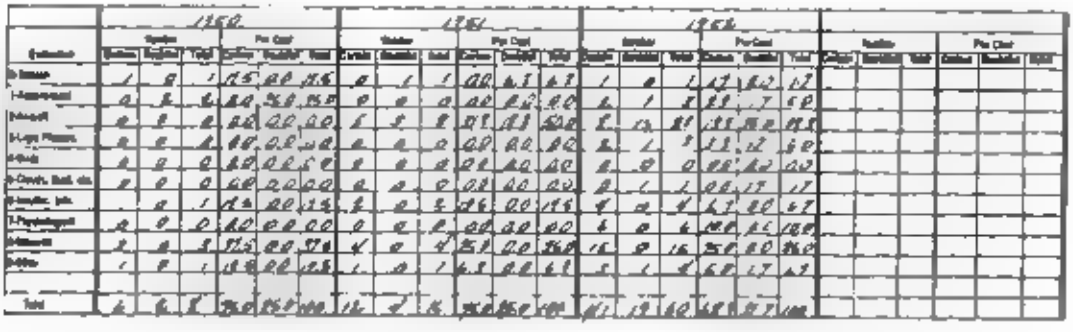
Evaluator	All Years						1947						1948						1949					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0 Student	35	38	73	5.6	6.1	11.7	1	0	1	3.8	0.0	3.8	3	2	5	11.5	7.7	19.2	0	0	0	0.0	0.0	0.0
1 Accountant	101	47	148	16.2	7.5	23.7	8	1	9	30.8	3.8	34.6	1	3	4	4.2	12.5	16.7	14	14	28	17.1	17.1	34.2
2 Aircraft	63	40	103	10.1	6.4	16.5	1	1	2	3.8	3.8	7.6	2	0	2	12.5	0.0	12.5	4	1	5	5.8	2.0	7.8
3 Agricultural Prospect.	9	0	9	1.4	0.0	1.4	0	0	0	0.0	0.0	0.0	2	0	2	8.3	0.0	8.3	8	0	8	8.0	0.0	8.0
4 Artist	2	1	3	0.3	0.2	0.5	0	0	0	0.0	0.0	0.0	0	1	1	0.0	4.2	4.2	0	0	0	0.0	0.0	0.0
5 Chemist, Biol. etc.	2	0	2	0.3	0.0	0.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6 Engineer, Ind.	102	0	102	16.3	0.0	16.3	9	0	9	34.6	0.0	34.6	7	0	7	29.2	0.0	29.2	5	0	5	12.2	0.0	12.2
7 Physiological	3	1	3	0.3	0.2	0.5	1	0	1	3.8	0.0	3.8	0	0	0	0.0	0.0	0.0	2	0	2	4.9	0.0	4.9
8 Lawyer	139	0	139	22.3	0.0	22.3	6	0	6	23.1	0.0	23.1	2	0	2	8.3	0.0	8.3	1	0	1	2.4	0.0	2.4
9 Other	35	7	42	5.6	1.1	6.7	3	0	3	11.5	0.0	11.5	0	0	0	0.0	0.0	0.0	1	0	1	2.4	0.0	2.4
Total	490	134	624	78.6	21.4	100	24	2	26	92.3	7.7	100	18	6	24	75.0	25.0		32	17	49	65.3	34.7	100

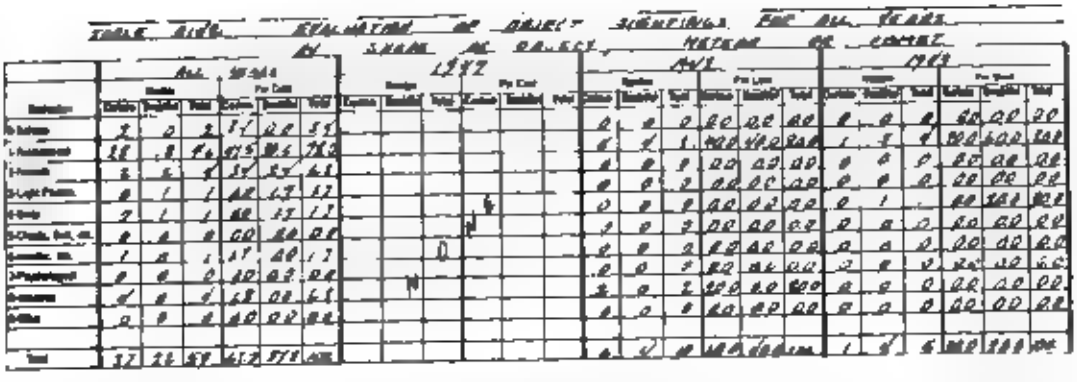
Evaluator	1950						1951						1952											
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0 Student	2	2	4	2.8	2.8	5.6	0	1	1	0.0	4.1	4.1	09	38	48	4.9	7.9	12.8						
1 Accountant	11	6	22	15.0	8.2	23.3	10	6	16	41.2	15.4	56.6	48	17	65	11.5	4.1	15.6						
2 Aircraft	7	6	13	9.7	10.0	19.7	2	2	4	8.3	8.3	16.6	46	30	76	11.8	7.2	18.2						
3 Agricultural Prospect.	0	0	0	0.0	0.0	0.0	2	0	2	8.3	0.0	8.3	5	0	5	1.2	0.0	1.2						
4 Artist	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	0.5	0.0	0.5						
5 Chemist, Biol. etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	0.5	0.0	0.5						
6 Engineer, Ind.	6	0	6	10.0	0.0	10.0	4	0	4	16.6	0.0	16.6	76	0	76	19.9	0.0	19.9						
7 Physiological	0	0	0	0.0	0.0	0.0	1	0	1	4.1	0.0	4.1	0	1	1	0.0	0.2	0.2						
8 Lawyer	11	0	11	18.3	0.0	18.3	14	0	14	58.3	0.0	58.3	102	0	102	26.7	0.0	26.7						
9 Other	3	1	4	5.0	1.7	6.7	6	0	6	24.9	0.0	24.9	22	6	28	5.3	1.6	6.9						
Total	42	15	60	70.5	21.7	100	24	9	33	100.0	28.1	100	331	87	418	77.6	20.9	100						

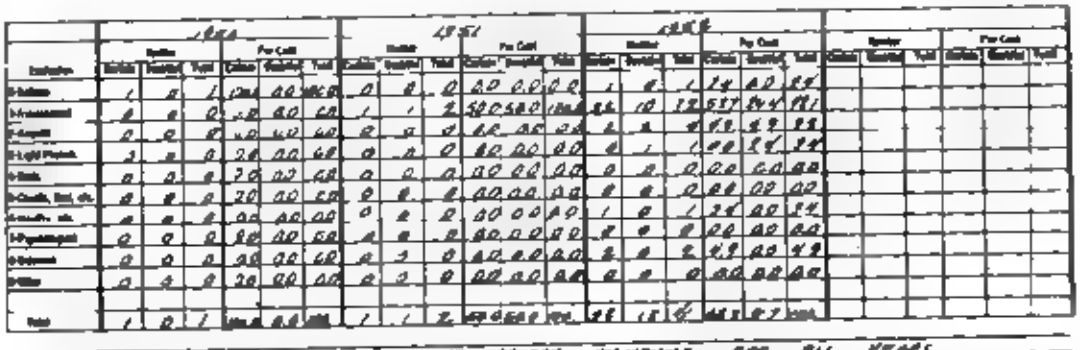


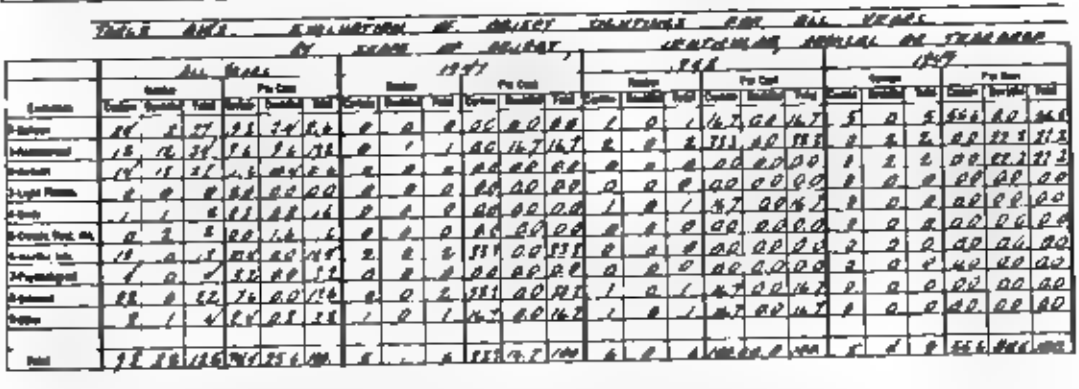


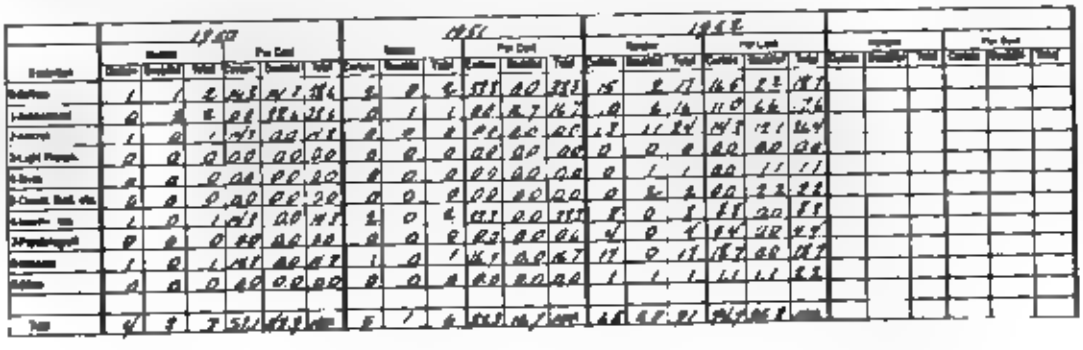


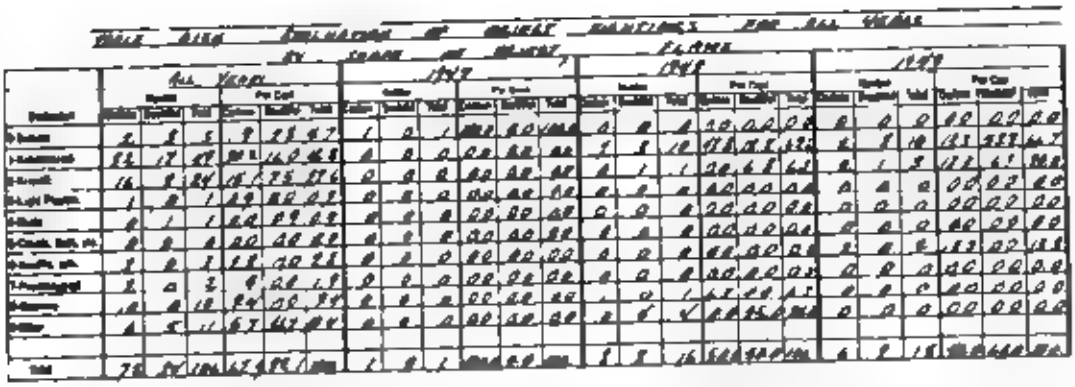


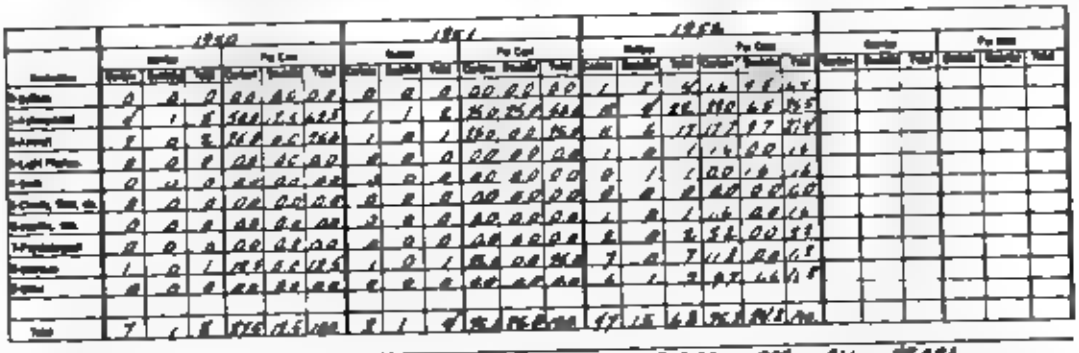


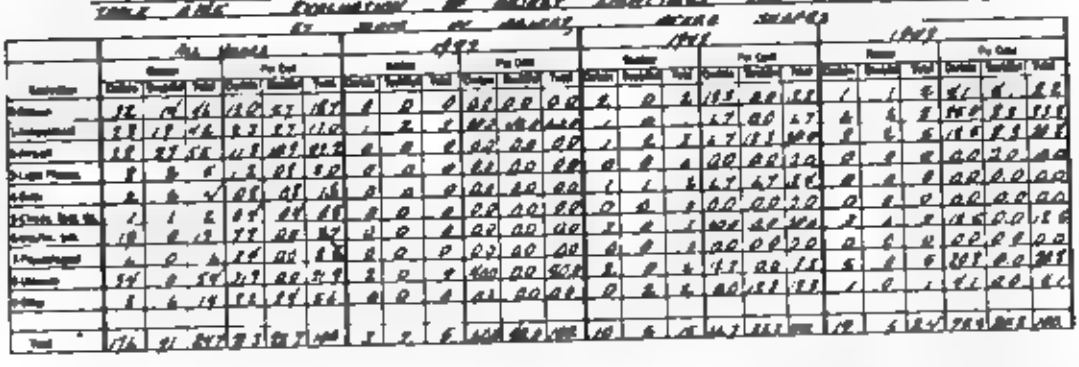












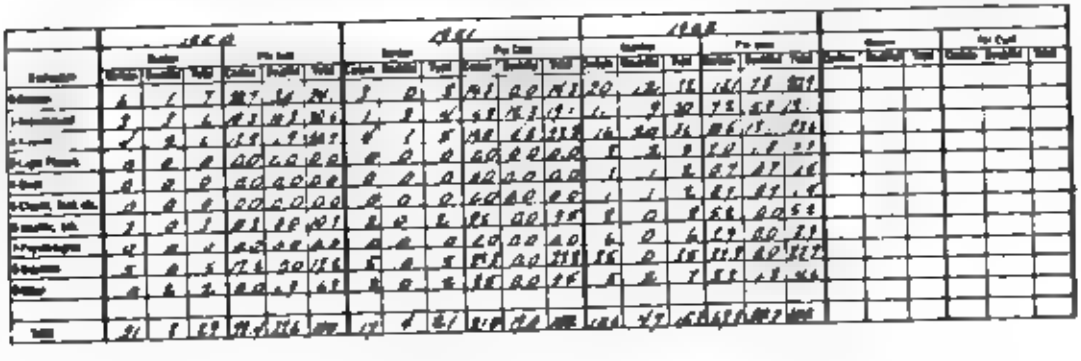


TABLE FIVE EVALUATION OF OBJECT SIGHTINGS FOR ALL YEARS
BY SHAPE OF OBJECT SHAPE NOT STATED

Evaluation	All Years						1947						1948						1949					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	[illegible]	[illegible]	Total	[illegible]	[illegible]	Total	[illegible]	[illegible]	Total	[illegible]	[illegible]	Total	[illegible]	[illegible]	Total	[illegible]	[illegible]	Total	[illegible]	[illegible]	Total	[illegible]	[illegible]	Total
Balloon	31	28	59	6.0	5.4	11.4	1	0	1	5.0	0.0	5.0	3	2	5	13.6	9.1	22.7	0	0	0	0.0	0.0	0.0
Astronomical	62	42	104	12.0	8.1	20.1	4	1	5	20.0	5.0	25.0	0	3	3	0.0	13.6	13.6	12	12	24	33.3	33.3	66.6
Aircraft	55	31	86	10.7	6.0	16.7	1	1	2	5.0	5.0	10.0	3	0	3	13.6	0.0	13.6	4	1	5	11.1	2.8	13.9
Light Phenom.	8	0	8	1.6	0.0	1.6	0	0	0	0.0	0.0	0.0	2	0	2	9.1	0.0	9.1	0	0	0	0.0	0.0	0.0
Birds	3	1	4	0.6	0.2	0.8	0	0	0	0.0	0.0	0.0	0	1	1	0.0	4.5	4.5	0	0	0	0.0	0.0	0.0
Clouds, Dust, etc.	2	0	2	0.4	0.0	0.4	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Insuffic. info.	58	0	58	11.2	0.0	11.2	4	0	4	20.0	0.0	20.0	7	0	7	31.8	0.0	31.8	4	0	4	11.1	0.0	11.1
Psychological	2	1	3	0.4	0.2	0.6	1	0	1	5.0	0.0	5.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Unknown	116	0	116	22.6	0.0	22.6	5	0	5	25.0	0.0	25.0	1	0	1	4.5	0.0	4.5	0	0	0	0.0	0.0	0.0
Other	32	5	37	6.2	1.0	7.2	2	0	2	10.0	0.0	10.0	0	0	0	0.0	0.0	0.0	2	0	2	5.6	0.0	5.6
Total	403	105	516	78.1	21.9	100	18	2	20	90.0	10.0	100	16	6	22	72.7	27.3	100	22	14	36	61.1	38.9	100

Evaluation	1950						1951						1952											
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	[illegible]	[illegible]	Total	[illegible]	[illegible]	Total	[illegible]	[illegible]	Total	[illegible]	[illegible]	Total	[illegible]	[illegible]	Total	[illegible]	[illegible]	Total	[illegible]	[illegible]	Total	[illegible]	[illegible]	Total
Balloon	2	1	3	4.3	2.2	6.5	0	1	1	0.0	2.3	2.3	26	24	49	7.2	6.9	14.1						
Astronomical	8	4	12	17.4	6.5	26.1	10	6	16	22.7	13.6	36.3	27	16	43	7.8	4.6	12.4						
Aircraft	7	5	12	15.2	10.9	26.1	2	2	4	4.5	4.5	9.0	38	22	60	10.9	6.3	17.2						
Light Phenom.	0	0	0	0.0	0.0	0.0	1	0	1	2.3	0.0	2.3	5	0	5	1.4	0.0	1.4						
Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	0.6	0.0	0.6						
Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	0.6	0.0	0.6						
Insuffic. info.	6	0	6	13.0	0.0	13.0	4	0	4	9.1	0.0	9.1	72	0	72	20.8	0.0	20.8						
Psychological	0	0	0	0.0	0.0	0.0	1	0	1	2.3	0.0	2.3	0	1	1	0.0	0.3	0.3						
Unknown	10	0	10	21.7	0.0	21.7	13	0	13	29.5	0.0	29.5	87	0	87	25.0	0.0	25.0						
Other	3	0	3	6.5	0.0	6.5	4	0	4	9.1	0.0	9.1	21	5	26	6.0	1.4	7.4						
Total	37	9	46	80.4	19.6	100	35	9	44	79.5	20.5	100	280	65	345	81.5	18.5	100						

TABLE XXIV. — RESIDENCE OF ALL PATIENTS FOR ALL YEARS AT ATHENS

SHOWING NO. ADMITTED, STATIONARY

	All Years			1943			1943			1949		
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
Athens	33	41	74	24.6	42.6	33.3	6	0	6	0.0	0.0	0.0
Commerce	41	33	74	30.6	34.4	32.4	0	2	2	0.0	20.0	20.0
Driscoll	28	18	46	20.9	18.8	19.8	0	0	0	0.0	0.0	0.0
Light Plains	6	5	11	4.5	5.2	4.8	0	0	0	0.0	0.0	0.0
Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Travis, Rural, etc.	6	6	12	4.5	6.2	5.4	0	0	0	0.0	0.0	0.0
Unknown, etc.	26	0	26	19.4	0.0	11.7	0	0	0	0.0	0.0	0.0
Unemployed	11	1	12	8.2	1.0	5.4	0	0	0	0.0	0.0	0.0
Students	29	0	29	21.6	0.0	13.0	0	0	0	0.0	0.0	0.0
Other	13	7	20	9.7	7.2	9.0	0	0	0	0.0	0.0	0.0
Total	216	130	346	100.0	100.0	100.0	0	2	2	0.0	100.0	100.0

	1944			1945			1946			1947						1948					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
Athens	1	0	1	4.4	0.0	2.6	4	0	4	14.3	0.0	11.4	29	5	34	11.9	4.3	9.1			
Commerce	2	0	2	8.7	0.0	5.3	2	3	5	7.1	17.6	13.2	22	12	34	9.0	10.3	9.6			
Driscoll	0	0	0	0.0	0.0	0.0	1	1	2	3.6	5.9	5.3	27	17	44	11.1	14.6	12.4			
Light Plains	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	5	2	7	2.0	1.7	1.9			
Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0			
Travis, Rural, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	6	4	10	2.5	3.4	2.8			
Unknown, etc.	2	0	2	8.7	0.0	5.3	1	0	1	3.6	0.0	2.6	10	0	10	4.1	0.0	2.8			
Unemployed	2	0	2	13.0	0.0	10.5	0	0	0	0.0	0.0	0.0	2	1	3	0.8	0.9	0.8			
Students	2	0	2	8.7	0.0	5.3	2	0	2	7.1	0.0	5.3	20	0	20	8.3	0.0	5.5			
Other	0	2	2	0.0	8.7	5.3	0	0	0	0.0	0.0	0.0	10	4	14	4.1	3.4	3.9			
Total	9	2	23	39.1	8.7	100.0	10	4	14	35.7	23.5	100.0	131	85	216	54.4	73.3	59.7			

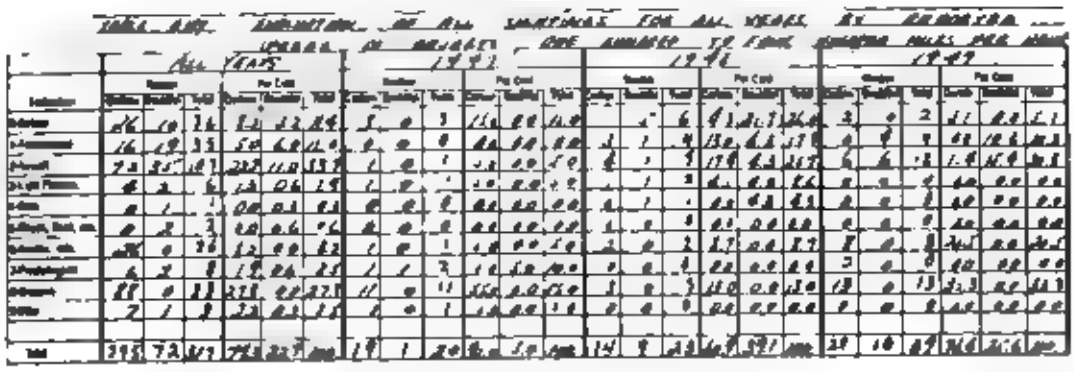
TABLE XXV. — DISTRIBUTION OF ALL CHRISTIANS FOR ALL YEARS AT ATHENS

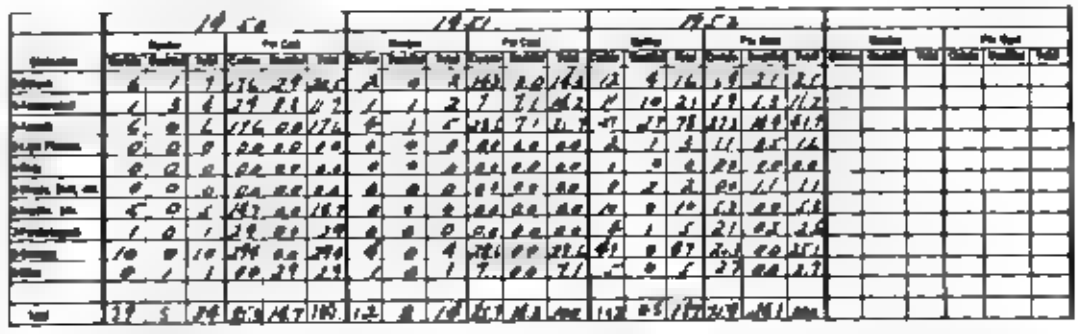
SHOWING NO. ADMITTED, LESS THAN ONE HUNDRED AND MORE

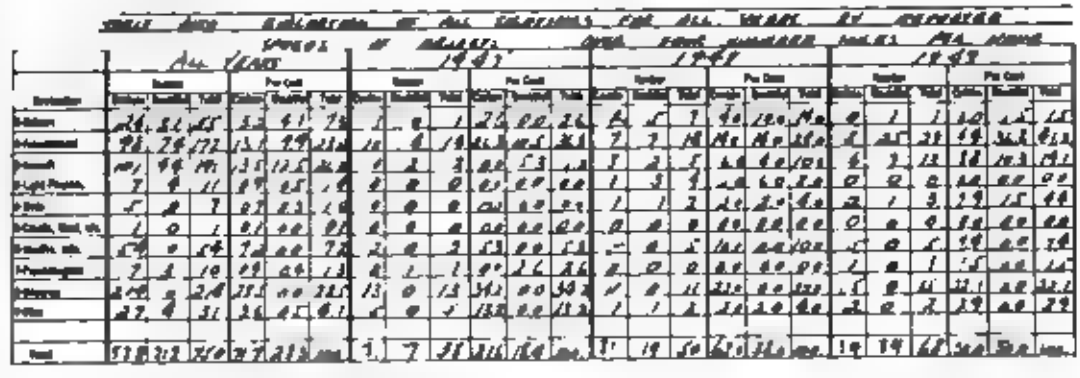
	All Years			1943			1943			1949		
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
Athens	49	30	79	19.4	11.5	15.8	1	0	1	12.5	0.0	12.5
Commerce	23	21	44	9.1	8.1	17.4	0	0	0	0.0	0.0	0.0
Driscoll	20	23	43	7.9	9.1	17.0	0	0	0	0.0	0.0	0.0
Light Plains	0	3	3	0.0	1.2	1.2	0	0	0	0.0	0.0	0.0
Other	6	1	7	2.4	0.4	2.8	0	0	0	0.0	0.0	0.0
Travis, Rural, etc.	5	2	7	2.0	0.8	2.8	0	0	0	0.0	0.0	0.0
Unknown, etc.	8	0	8	3.2	0.0	3.2	0	0	0	0.0	0.0	0.0
Unemployed	3	0	3	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Students	49	0	49	19.4	0.0	12.3	0	0	0	0.0	0.0	0.0
Other	8	8	16	3.2	3.2	6.3	0	0	0	0.0	0.0	0.0
Total	179	148	327	71.0	58.7	100.0	2	0	2	100.0	0.0	100.0

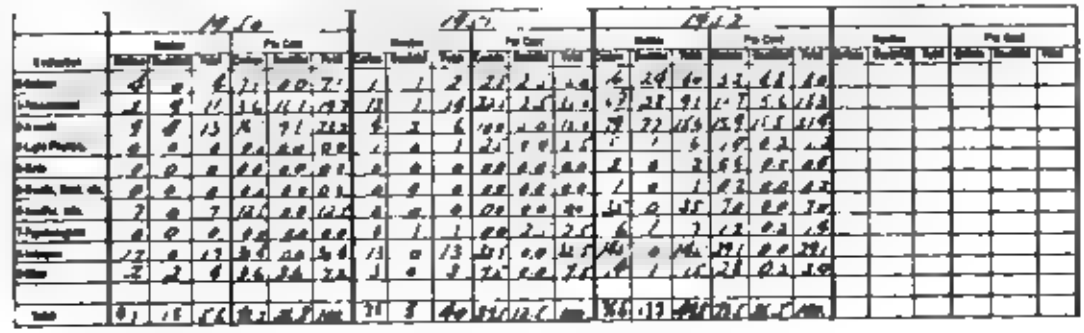
	1944			1945			1946			1947						1948					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
Athens	1	0	1	12.5	0.0	12.5	1	0	1	50.0	0.0	50.0	2	2	10	22.6	6.9	10.6	1	0	1
Commerce	1	0	1	12.5	0.0	12.5	0	0	0	0.0	0.0	0.0	6	7	13	13.3	24.1	19.1	1	1	2
Driscoll	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	2.6	3.4	2.9	0	2	2
Light Plains	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1
Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0
Travis, Rural, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0
Unknown, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	2.6	0.0	1.4	1	0	1
Unemployed	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0
Students	1	0	1	12.5	0.0	12.5	0	0	0	0.0	0.0	0.0	1	0	1	2.6	0.0	1.4	1	0	1
Other	0	1	1	0.0	12.5	12.5	0	0	0	0.0	0.0	0.0	0	1	1	0.0	3.4	1.4	0	0	0
Total	3	1	8	37.5	12.5	100.0	1	0	1	50.0	0.0	50.0	11	11	29	29.1	37.9	40.6	4	4	8

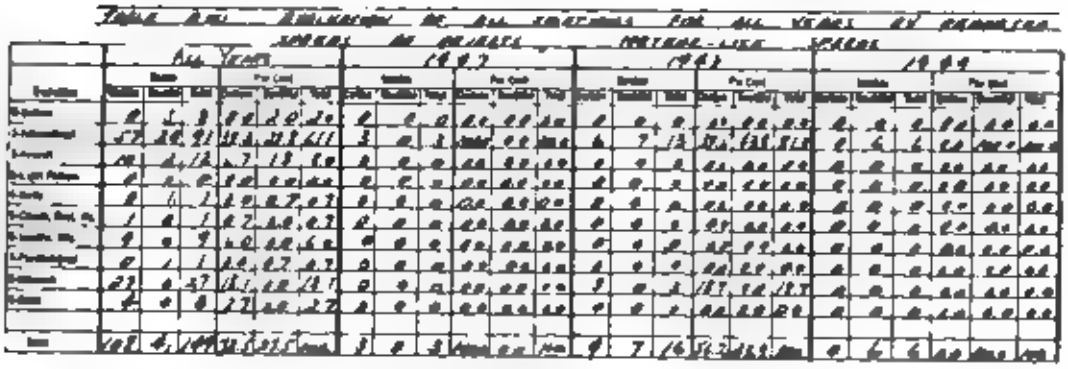
	1945			1946			1947			1948						1949					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
Athens	1	0	1	50.0	0.0	50.0	1	0	1	50.0	0.0	50.0	33	23	56	20.1	14.0	34.1			
Commerce	1	0	1	50.0	0.0	50.0	0	1	1	0.0	20.0	20.0	9	8	17	5.5	4.9	10.4			
Driscoll	1	0	1	50.0	0.0	50.0	1	0	1	50.0	0.0	50.0	12	20	32	7.3	12.2	19.5			
Light Plains	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	3	3	0.0	1.8	1.8			
Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	6	1	7	3.7	0.6	4.3			
Travis, Rural, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	5	2	7	3.0	1.2	4.3			
Unknown, etc.	1	0	1	50.0	0.0	50.0	0	0	0	0.0	0.0	0.0	5	0	5	3.0	0.0	3.0			
Unemployed	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	1.2	0.0	1.2			
Students	1	0	1	50.0	0.0	50.0	0	0	0	0.0	0.0	0.0	27	0	27	16.5	0.0	16.5			
Other	0	1	1	0.0	50.0	50.0	0	0	0	0.0	0.0	0.0	5	1	6	3.0	0.6	3.6			
Total	2	1	2	100.0	50.0	100.0	1	1	2	50.0	50.0	100.0	106	58	164	64.6	35.4	100.0			

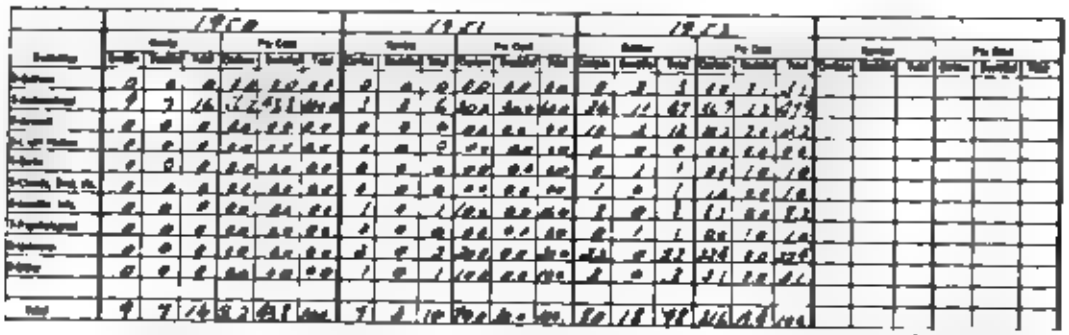


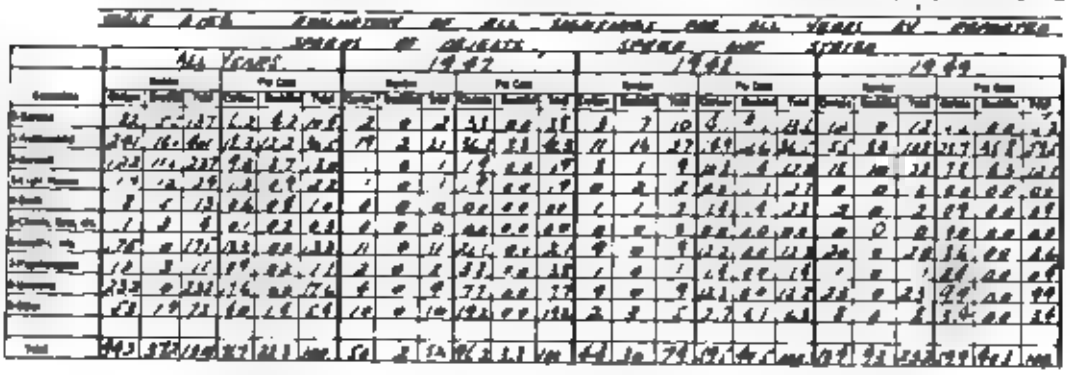


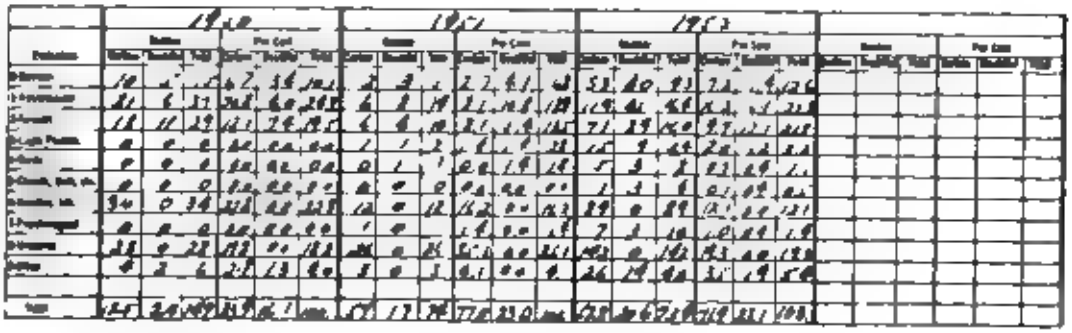


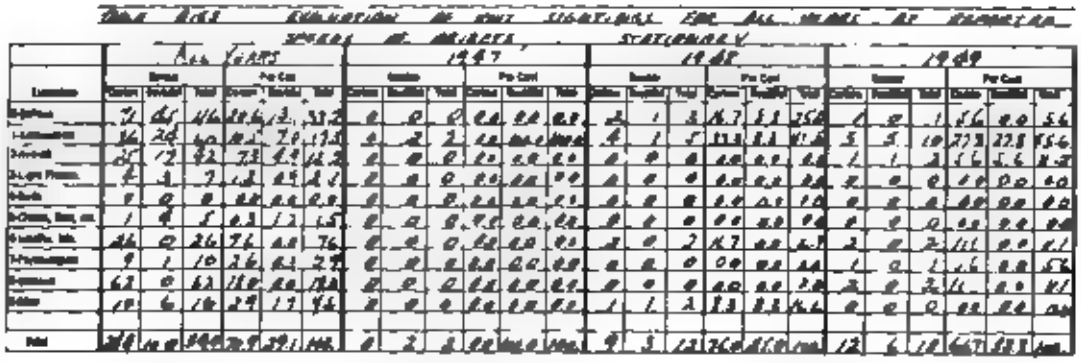


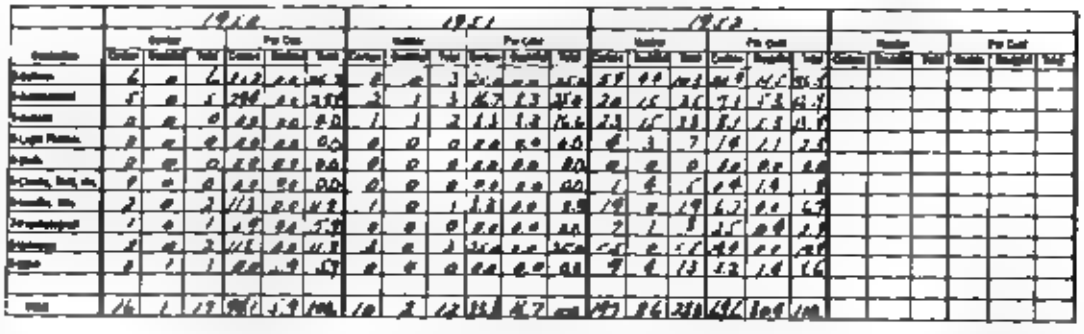


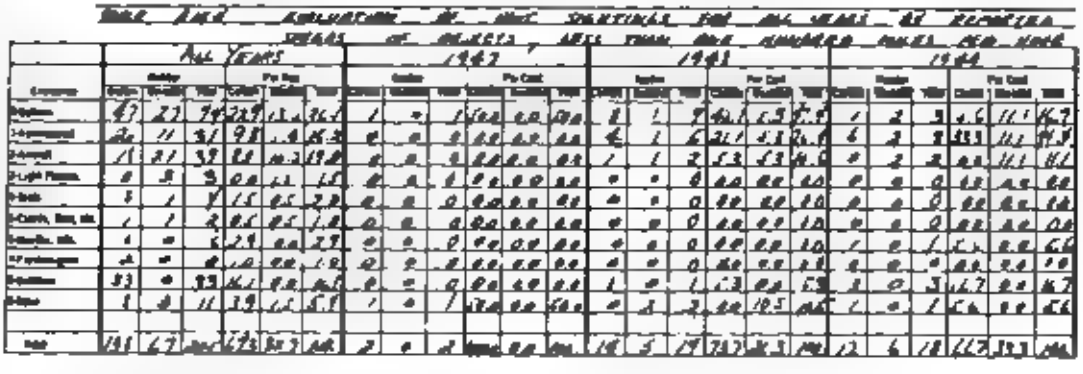


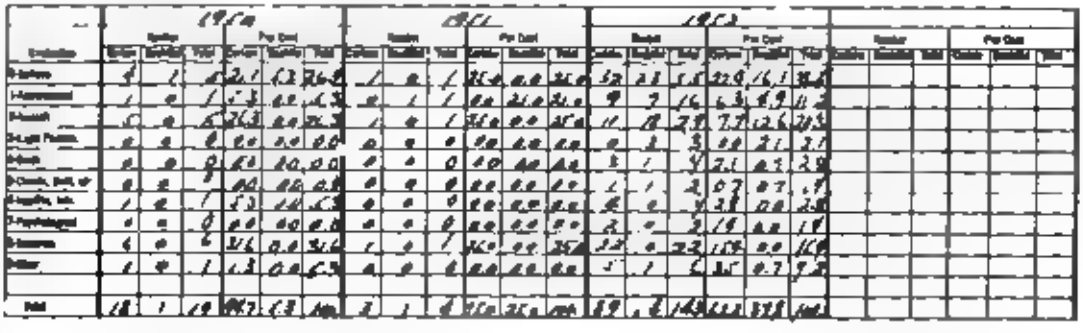












	All Years			1963			1965			1967			1969		
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
Population	Cycles	Deaths	Total	Cycles	Deaths	Total	Cycles	Deaths	Total	Cycles	Deaths	Total	Cycles	Deaths	Total
[illegible]	21	8	29	10.0	3.0	12.0	5	0	5	16.1	0.0	16.1	1	4	5	5.0	20.0	25.0	2	0	2	8.7	0.0	8.7
[illegible]	16	17	33	6.1	1.9	12.6	0	0	0	0.0	0.0	0.0	5	1	6	15.9	5.9	21.8	2	2	4	8.7	8.7	17.4
[illegible]	64	27	91	24.2	10.2	34.4	1	0	1	6.3	0.0	6.3	6	1	7	46.0	7.3	53.3	6	2	8	26.1	8.7	34.8
[illegible]	4	1	5	2.5	0.8	3.3	1	0	1	6.3	0.0	6.3	1	0	1	5.0	0.0	5.0	0	0	0	0.0	0.0	0.0
[illegible]	0	1	1	0.0	0.8	0.8	0	0	0	0.0	0.0	0.0	0	1	1	0.0	5.0	5.0	0	0	0	0.0	0.0	0.0
[illegible]	0	3	3	0.0	2.5	2.5	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	25	0	25	9.5	0.0	9.5	1	0	1	6.3	0.0	6.3	2	0	2	10.0	0.0	10.0	8	0	8	34.3	0.0	34.8
[illegible]	1	2	3	2.3	0.0	2.3	1	1	2	6.3	6.3	12.5	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	62	0	62	23.5	0.0	23.5	7	0	7	43.8	0.0	43.8	2	0	2	10.0	0.0	10.0	5	0	5	21.7	0.0	21.7
[illegible]	3	1	4	2.3	0.8	3.1	1	0	1	6.3	0.0	6.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	245	59	304	77.7	18.3	100.0	16	1	17	100.0	6.3	106.3	18	7	25	100.0	35.0	135.0	19	4	23	82.6	17.4	100.0

	1970			1971			1972					
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
Population	Cycles	Deaths	Total	Cycles	Deaths	Total	Cycles	Deaths	Total	Cycles	Deaths	Total
[illegible]	1	1	2	4.0	4.0	8.0	2	0	2	14.6	0.0	15.4	12	3	15	7.2	1.8	9.0						
[illegible]	1	3	4	4.0	12.0	16.0	1	1	2	7.7	7.7	15.4	11	10	21	6.6	6.0	12.6						
[illegible]	6	0	6	24.0	0.0	24.0	4	1	5	30.8	7.7	38.5	46	23	69	27.6	13.8	41.4						
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	1	3	1.2	0.6	1.8						
[illegible]	0	0	0	0.0	0.0	0.0	1	0	1	7.7	0.0	7.7	0	0	0	0.0	0.0	0.0						
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	2	2	0.0	1.2	1.2						
[illegible]	5	0	5	20.0	0.0	20.0	0	0	0	0.0	0.0	0.0	3	0	3	1.8	0.0	1.8						
[illegible]	1	0	1	4.0	0.0	4.0	0	0	0	0.0	0.0	0.0	4	1	5	2.4	0.6	3.0						
[illegible]	6	0	6	24.0	0.0	24.0	3	0	3	23.1	0.0	23.1	39	0	39	23.8	0.0	23.8						
[illegible]	0	1	1	0.0	4.0	4.0	1	0	1	7.7	0.0	7.7	5	0	5	3.0	0.0	3.0						
Total	20	5	25	80.0	20.0	100.0	13	2	15	100.0	15.4	115.4	123	40	163	75.0	25.0	100.0						

	All Years			1963			1965			1967			1969		
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
Population	Cycles	Deaths	Total	Cycles	Deaths	Total	Cycles	Deaths	Total	Cycles	Deaths	Total	Cycles	Deaths	Total
[illegible]	40	28	68	3.3	2.3	5.6	1	0	1	2.9	0.0	2.9	1	1	2	2.9	2.9	5.8	0	1	1	0.0	1.9	1.9
[illegible]	36	41	77	11.8	10.0	21.8	6	4	10	17.6	11.8	29.4	4	6	10	11.6	17.4	29.0	2	21	23	3.8	40.4	44.2
[illegible]	52	81	133	13.3	13.3	27.6	0	2	2	0.0	5.9	5.9	3	1	4	8.8	2.9	11.7	6	5	11	11.5	9.6	21.1
[illegible]	7	4	11	1.1	0.7	1.8	0	0	0	0.0	0.0	0.0	1	2	3	2.9	5.7	8.8	0	0	0	0.0	0.0	0.0
[illegible]	3	2	5	0.5	0.3	0.8	0	0	0	0.0	0.0	0.0	1	1	2	2.9	2.9	5.8	0	1	1	0.0	1.9	1.9
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	41	0	98	7.9	0.0	7.9	2	0	2	5.9	0.0	5.9	4	0	4	11.5	0.0	11.5	5	0	5	9.6	0.0	9.6
[illegible]	7	3	10	1.1	0.5	1.6	0	1	1	0.0	2.9	2.9	0	0	0	0.0	0.0	0.0	1	0	1	1.9	0.0	1.9
[illegible]	173	0	173	27.1	0.0	27.1	13	0	13	38.2	0.0	38.2	2	0	2	5.8	0.0	5.8	7	0	7	13.5	0.0	13.5
[illegible]	26	9	35	4.1	1.7	5.8	5	0	5	14.7	0.0	14.7	1	1	2	2.9	2.9	5.8	1	0	1	1.9	0.0	1.9
Total	435	174	609	71.0	31.0	102.0	29	7	36	79.6	20.6	100.2	22	12	34	64.7	35.3	100.0	26	28	54	46.2	53.8	100.0

	1970			1971			1972					
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
Population	Cycles	Deaths	Total	Cycles	Deaths	Total	Cycles	Deaths	Total	Cycles	Deaths	Total
[illegible]	3	0	3	7.9	0.0	7.9	1	0	1	3.4	0.0	3.4	14	12	26	3.4	4.3	7.6						
[illegible]	2	4	6	4.3	10.5	15.8	10	0	10	34.5	0.0	34.5	60	26	86	14.2	6.1	20.3						
[illegible]	2	9	11	5.4	23.7	28.9	4	2	6	13.8	6.9	20.7	67	62	129	15.9	14.7	30.6						
[illegible]	0	1	1	0.0	2.6	2.6	1	0	1	3.4	0.0	3.4	4	1	5	0.9	0.2	1.2						
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	1	3	0.5	0.2	0.7						
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0						
[illegible]	3	0	3	7.9	0.0	7.9	1	0	1	3.4	0.0	3.4	14	0	14	3.3	0.0	3.3						
[illegible]	0	0	0	0.0	0.0	0.0	0	1	1	0.0	3.4	3.4	6	1	7	1.4	0.2	1.6						
[illegible]	11	0	11	28.9	0.0	28.9	7	0	7	24.1	0.0	24.1	106	0	106	25.1	0.0	25.1						
[illegible]	2	2	4	5.3	5.3	10.5	1	0	1	3.4	0.0	3.4	19	1	15	1.3	0.2	3.6						
Total	23	15	38	60.5	39.5	100.0	26	3	29	89.7	10.3	100.0	344	114	458	75.0	25.0	100.0						

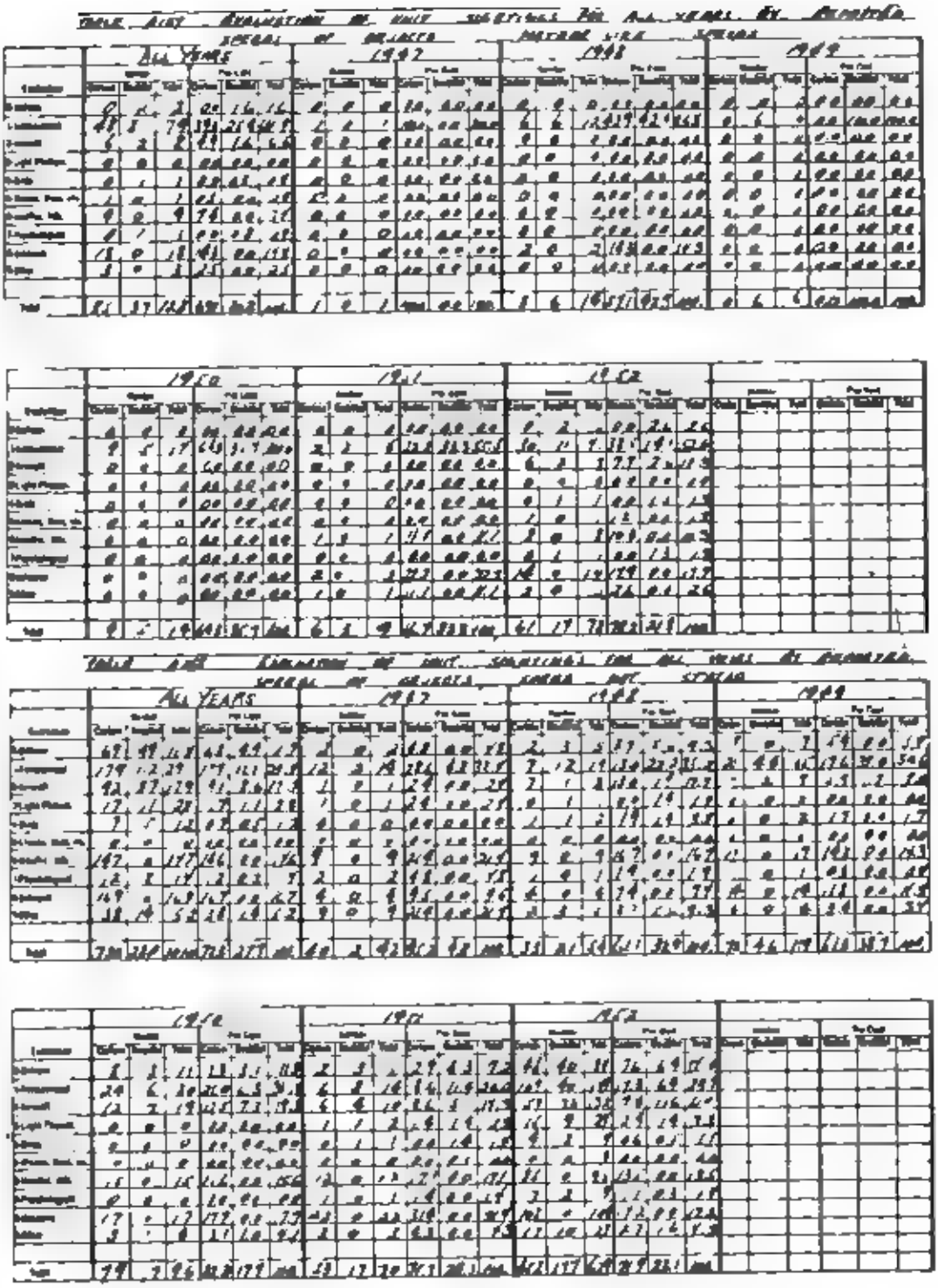


TABLE [illegible] NUMBER AND PERCENT OF PRIMARY SURGERIES FOR ALL YEARS AT REPORTING SPECIFIC NO. OF PRIMARIES STATIONARY

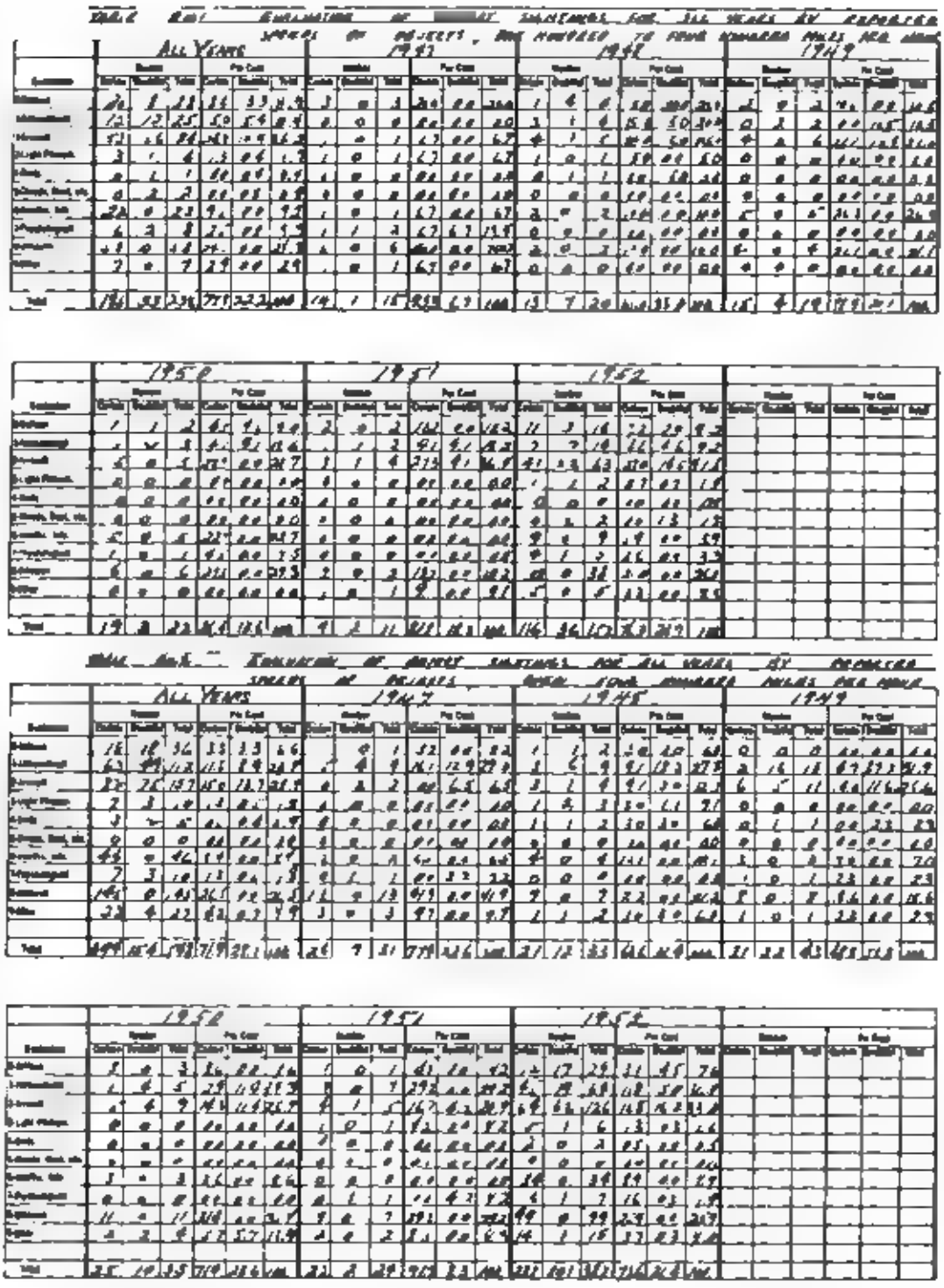
	All Years						1947						1948						1949					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Institution	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total
[illegible]	64	19	102	80.9	129.33		0	0	0	0.0	0.0	0.0	2	1	3	200	100	300	1	0	1	6.2	0.0	6.2
[illegible]	33	20	53	80	66.7	166.7	0	2	2	0.0	200.0	200.0	3	0	3	300	0.0	300	2	2	4	12.5	12.5	25.0
[illegible]	23	12	35	76	40	116	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	6.2	6.2	12.5
[illegible]	4	2	6	13	6.7	20	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	1	0	1	3.3	1.3	4.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	28	0	28	79	0.0	79	0	0	0	0.0	0.0	0.0	2	0	2	200	0.0	200	2	0	2	12.5	0.0	12.5
[illegible]	2	1	3	6.6	3.3	9.9	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	6.2	0.0	6.2
[illegible]	3	0	3	10.0	0.0	10.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	12.5	0.0	12.5
[illegible]	10	6	16	33	19	53	0	0	0	0.0	0.0	0.0	1	1	2	100	100	200	0	0	0	0.0	0.0	0.0
Total	219	88	303	72.6	29.1	101.7	0	2	2	0.0	100.0	100.0	8	2	10	80.0	20.0	100.0	13	4	16	8.2	2.5	10.7

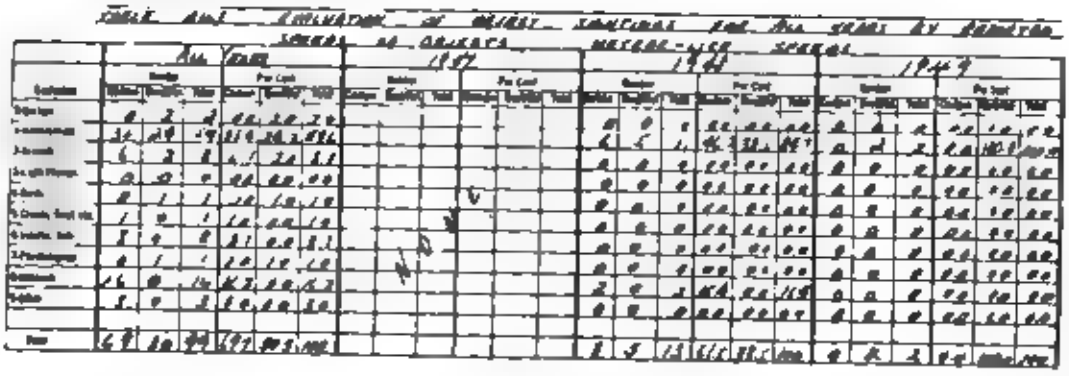
	1950						1951						1952											
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Institution	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total
[illegible]	4	1	5	33.3	6.7	39.9	1	0	1	25.0	0.0	25.0	31	21	52	21.9	16.5	38.4						
[illegible]	1	0	1	5.9	0.0	5.9	0	1	1	0.0	25.0	25.0	7	7	14	5.5	5.5	11.0						
[illegible]	2	0	2	12.5	0.0	12.5	1	0	1	25.0	0.0	25.0	8	16	24	6.3	12.6	18.9						
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	3	3	0.0	2.4	2.4						
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	1	4	2.4	0.8	3.2						
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	0.8	0.8	1.6						
[illegible]	1	0	1	1.9	0.0	1.9	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0						
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	1.6	0.0	1.6						
[illegible]	4	0	4	25.0	0.0	25.0	1	0	1	25.0	0.0	25.0	12	0	12	9.5	0.0	9.5						
[illegible]	1	0	1	5.9	0.0	5.9	0	0	0	0.0	0.0	0.0	2	1	3	1.6	0.8	2.4						
Total	16	1	17	94.1	5.9	100.0	3	1	4	75.0	25.0	100.0	77	50	127	60.6	39.4	100.0						

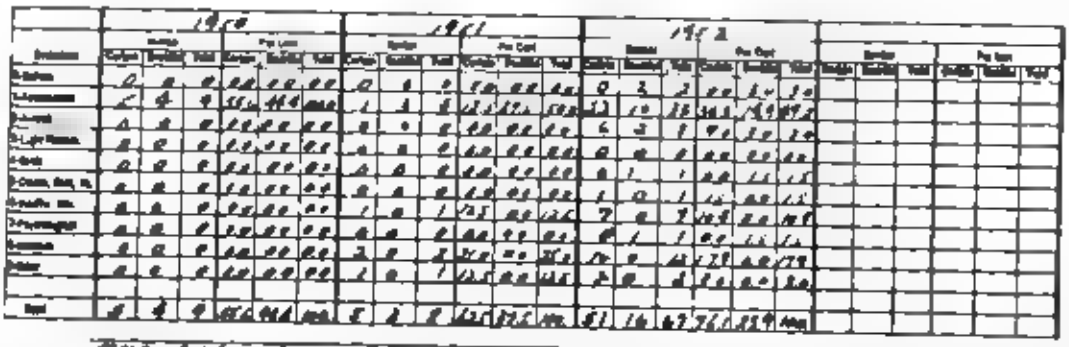
TABLE [illegible] NUMBER AND PERCENT OF PRIMARY SURGERIES FOR ALL YEARS AT REPORTING SPECIFIC NO. OF PRIMARIES LATER THAN ONE HUNDRED DAYS AFTER ONSET

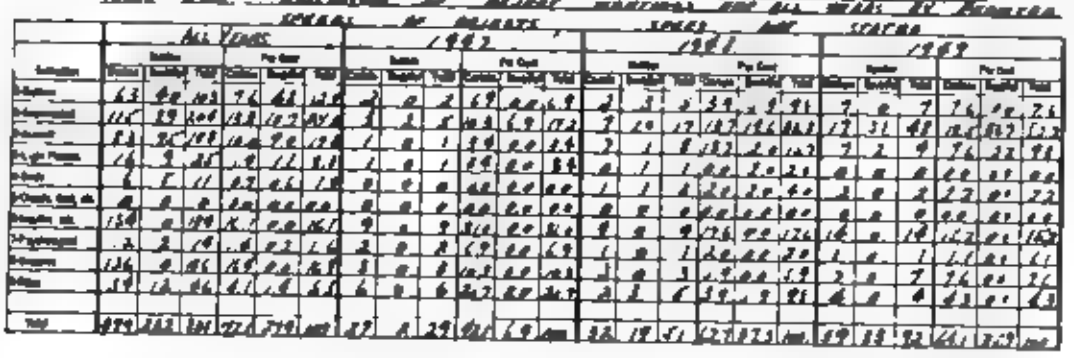
	All Years						1947						1948						1949					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Institution	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total
[illegible]	43	20	63	35.9	19.9	57.8	1	0	1	66.6	0.0	0.0	6	1	7	33.6	6.3	43.9	1	2	3	7.1	14.3	21.4
[illegible]	16	10	26	14.6	9.6	24.2	0	0	0	0.0	0.0	0.0	3	1	4	18.8	6.3	25.0	5	1	6	35.7	7.1	42.8
[illegible]	13	19	32	7.2	10.6	17.8	0	0	0	0.0	0.0	0.0	1	1	2	6.3	6.3	12.5	0	2	2	0.0	14.3	14.3
[illegible]	0	3	3	0.0	1.7	1.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	3	1	4	1.7	0.6	2.3	0	0	0	0.0	0.0	0.0	2	0	2	12.5	0.0	12.5	0	0	0	0.0	0.0	0.0
[illegible]	1	1	2	0.6	0.6	1.2	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	6	0	6	3.3	0.0	3.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	7.1	0.0	7.1
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
[illegible]	26	0	26	14.4	0.0	14.4	0	0	0	0.0	0.0	0.0	1	0	1	6.2	0.0	6.2	1	0	1	7.1	0.0	7.1
[illegible]	9	3	12	5.0	1.7	6.7	1	0	1	50.0	0.0	50.0	0	2	2	0.0	12.5	12.5	1	0	1	7.1	0.0	7.1
Total	118	62	180	65.6	34.4	100.0	2	0	2	100.0	0.0	100.0	11	5	16	68.8	31.2	100.0	9	5	14	64.3	35.7	100.0

	1950						1951						1952											
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Institution	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total	Curative	Doubtful	Total
[illegible]	4	1	5	23.5	5.9	29.4	1	0	1	25.0	0.0	25.0	31	21	52	21.9	16.5	38.4						
[illegible]	1	0	1	5.9	0.0	5.9	0	1	1	0.0	25.0	25.0	7	7	14	5.5	5.5	11.0						
[illegible]	2	0	2	12.5	0.0	12.5	1	0	1	25.0	0.0	25.0	8	16	24	6.3	12.6	18.9						
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	3	3	0.0	2.4	2.4						
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	1	4	2.4	0.8	3.2						
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	0.8	0.8	1.6						
[illegible]	1	0	1	1.9	0.0	1.9	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0						
[illegible]	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	1.6	0.0	1.6						
[illegible]	4	0	4	23.5	0.0	23.5	1	0	1	25.0	0.0	25.0	12	0	12	9.5	0.0	9.5						
[illegible]	1	0	1	5.9	0.0	5.9	0	0	0	0.0	0.0	0.0	2	1	3	1.6	0.8	2.4						
Total	16	1	17	94.1	5.9	100.0	3	1	4	75.0	25.0	100.0	77	50	127	60.6	39.4	100.0						









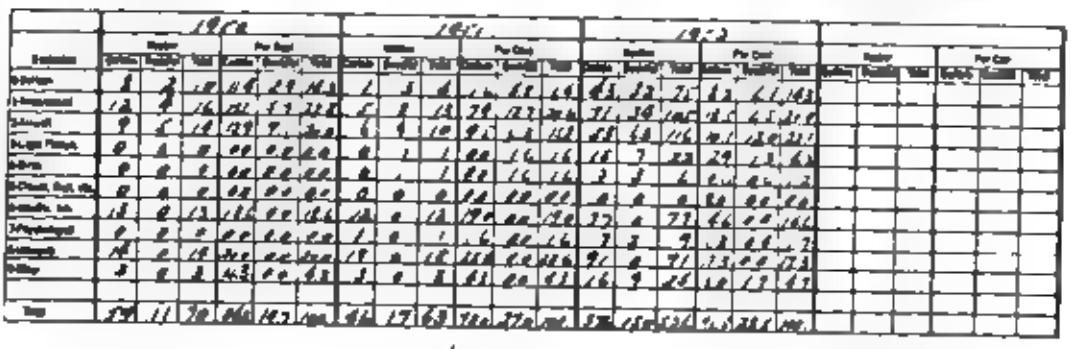


Table A16 — Evaluation of Sex Characters for All Years

By Light Reflected as

	Sunlight on Mirror						Sunlight on Aluminum						Sunlight on Plaster						Sunlight on Stone					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Evaluation	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
Definite	2	5	7	2.4	5.7	3.3	31	23	54	13.7	9.4	22.1	11	8	19	17.4	9.1	26.1	2	2	4	10.5	6.5	21.0
Intermediate	19	16	33	22.4	18.5	38.9	12	10	22	8.9	11.1	9.0	9	9	18	10.0	10.0	20.0	2	1	3	10.5	5.3	15.8
Doubtful	9	3	12	10.6	3.5	14.1	42	34	76	17.2	13.9	31.1	6	13	19	6.7	14.4	21.1	0	3	3	0.0	15.8	15.8
Slight Female	1	0	1	1.2	0.0	1.2	0	4	4	0.0	1.6	1.6	0	1	1	0.0	1.1	1.1	0	0	0	0.0	0.0	0.0
Male	0	0	0	0.0	0.0	0.0	1	1	2	0.4	0.4	0.8	1	1	2	1.1	1.1	2.2	1	1	1	0.0	5.3	5.3
Female, Med. Hi.	0	0	0	0.0	0.0	0.0	2	0	2	0.8	0.0	0.8	1	2	3	1.1	2.2	3.3	0	0	0	0.0	0.0	0.0
Female, Hi.	7	0	7	8.6	0.0	10.6	17	0	17	7.8	0.0	7.8	9	0	9	10.0	0.0	10.0	1	0	1	5.3	0.0	5.3
Psychological	2	2	4	2.8	2.8	5.7	2	2	4	0.9	0.9	1.8	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Unknown	15	0	15	17.6	0.0	17.6	52	0	52	23.9	0.0	23.9	16	0	16	17.8	0.0	17.8	5	0	5	26.3	0.0	26.3
Other	1	3	4	1.2	3.5	4.7	9	2	11	4.1	0.9	5.0	3	0	3	3.3	0.0	3.3	2	0	2	10.5	0.0	10.5
Total	56	29	85	65.9	34.1	100	218	76	294	100.0	34.1	134.1	56	34	90	62.2	37.8	100	19	7	19	63.2	36.8	100.

	Sunlight on Sole						Brighter than Mean						Like Mean						Duller than Mean					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Evaluation	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
Definite	4	0	4	57.1	0.0	57.1	18	28	47	14.6	22.8	37.4	1	2	3	6.7	13.3	20.0	5	7	12	7.1	10.0	17.1
Intermediate	0	1	1	0.0	16.7	16.7	36	83	119	22.5	14.6	62.1	4	11	15	7.5	20.8	28.3	6	17	23	8.6	24.3	32.9
Doubtful	0	0	0	0.0	0.0	0.0	27	50	77	5.7	11.0	16.7	10	6	16	18.9	11.3	30.2	3	3	6	4.3	4.3	8.6
Slight Female	0	0	0	0.0	0.0	0.0	6	3	9	1.3	0.6	1.9	1	2	3	1.9	3.8	5.7	1	3	4	1.4	4.3	5.7
Male	0	0	0	0.0	0.0	0.0	1	0	1	0.2	0.0	0.2	0	0	0	0.0	0.0	0.0	1	1	2	1.4	1.4	2.8
Female, Med. Hi.	0	1	1	0.0	16.7	16.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Female, Hi.	0	0	0	0.0	0.0	0.0	22	0	22	9.7	0.0	9.7	0	0	0	0.0	0.0	0.0	3	0	3	4.3	0.0	4.3
Psychological	0	0	0	0.0	0.0	0.0	3	0	3	1.8	0.0	0.6	0	1	1	0.0	1.9	1.9	0	2	2	0.0	2.9	2.9
Unknown	1	0	1	16.7	0.0	16.7	92	0	92	19.5	0.0	19.5	15	0	15	28.3	0.0	28.3	15	0	15	21.4	0.0	21.4
Other	0	0	0	0.0	0.0	0.0	16	6	20	3.0	1.3	4.3	0	0	0	0.0	0.0	0.0	0	3	3	0.0	4.3	4.3
Total	5	2	7	71.4	28.6	100	314	158	472	66.5	33.5	100	35	18	53	66.0	34.0	100	35	36	70	46.6	53.4	100.

	Barely Visible						Not Stated																	
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Evaluation	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
Definite	1	1	2	8.3	8.3	16.6	184	180	298	9.0	14.8	23.8												
Intermediate	2	0	2	16.7	0.0	16.7	292	209	501	15.6	9.7	25.3												
Doubtful	1	1	2	8.3	8.3	16.6	252	177	429	11.9	8.2	19.9												
Slight Female	0	0	0	0.0	0.0	0.0	25	11	36	1	0.5	1.6												
Male	0	0	0	0.0	0.0	0.0	15	6	21	0.7	0.3	1.0												
Female, Med. Hi.	0	0	0	0.0	0.0	0.0	9	10	19	0.4	0.5	0.9												
Female, Hi.	2	0	2	16.7	0.0	16.7	235	0	235	10.9	0.0	10.9												
Psychological	0	0	0	0.0	0.0	0.0	31	3	34	1.4	0.1	1.5												
Unknown	4	0	4	33.3	0.0	33.3	494	0	494	22.1	0.0	22.1												
Other	0	0	0	0.0	0.0	0.0	83	21	104	3.9	1.0	4.9												
Total	10	2	12	83.3	16.7	100	1608	541	2149	74.5	25.1	100.												

TABLE XVIII — EVALUATION OF VISUAL SITUATIONS FOR ALL TRADES BY LIGHT BRIGHTNESS

Evaluation	Sunlight on Mirror — Number: Certain	Doubtful	Total	Per Cent: Certain	Doubtful	Total	Sunlight on Aluminum — Number: Certain	Doubtful	Total	Per Cent: Certain	Doubtful	Total	Sunlight on Plaster — Number: Certain	Doubtful	Total	Per Cent: Certain	Doubtful	Total	Sunlight on Stone — Number: Certain	Doubtful	Total	Per Cent: Certain	Doubtful	Total
1-Surveyor	2	4	6	8.7	5.3	8.6	28	19	47	19.1	9.5	23.6	11	8	19	14.9	10.9	13.7	2	2	4	10.0	14.3	12.9
2-Landscape Arch.	17	13	30	73.9	17.3	40.3	11	10	21	7.5	5.0	10.5	9	3	12	12.8	4.1	16.2	2	1	3	10.5	5.3	15.8
3-Architect	5	3	11	21.7	4.0	14.7	23	29	52	16.6	14.6	31.2	5	12	17	7.1	16.2	23.3	0	3	3	0.0	15.7	15.8
4-Light Planes	1	0	1	1.3	0.0	1.3	0	3	3	0.0	1.5	1.5	0	1	1	0.0	1.4	1.4	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0	1	1	2	0.5	0.5	1.0	0	1	1	0.0	1.4	1.4	0	1	1	0.0	5.3	5.3
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	1	0	1	0.5	0.0	0.5	2	2	4	2.8	2.7	5.7	0	0	0	0.0	0.0	0.0
7-Satellite, etc.	5	0	5	21.7	0.0	21.7	17	0	17	7.6	0.0	7.6	9	0	9	12.8	0.0	12.8	1	0	1	6.3	0.0	6.3
8-Psychological	2	1	3	8.7	1.3	10.0	2	2	4	1.0	1.0	2.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Unknown	14	6	14	60.9	0.0	60.9	33	0	33	14.6	0.0	14.6	11	0	11	14.9	0.0	14.9	5	0	5	26.3	0.0	26.3
10-Other	1	3	4	4.3	9.0	13.3	7	2	9	3.5	1.0	4.5	1	0	1	1.4	0.0	1.4	2	0	2	10.5	0.0	10.5
Total	61	24	75	65.0	32.0	100.	133	66	199	65.7	32.5	98.2	47	27	74	63.5	36.5	100.	13	7	19	68.3	36.8	105.

Evaluation	Sunlight on Soil — Number: Certain	Doubtful	Total	Per Cent: Certain	Doubtful	Total	Brighter than Moon — Number: Certain	Doubtful	Total	Per Cent: Certain	Doubtful	Total	Like Moon — Number: Certain	Doubtful	Total	Per Cent: Certain	Doubtful	Total	Duller than Moon — Number: Certain	Doubtful	Total	Per Cent: Certain	Doubtful	Total
1-Surveyor	46	0	46	57.1	0.0	57.1	15	24	39	9.9	6.2	16.1	1	0	1	2.6	0.0	2.6	3	4	7	9.9	7.4	16.7
2-Landscape Arch.	0	1	1	0.0	14.3	14.3	102	58	160	26.5	15.1	41.6	3	9	12	7.9	23.7	31.6	6	11	17	11.1	20.7	31.5
3-Architect	0	0	0	0.0	0.0	0.0	22	44	66	5.7	11.5	17.1	8	2	10	21.1	5.3	26.3	3	3	6	5.6	5.6	11.2
4-Light Planes	0	0	0	0.0	0.0	0.0	6	3	9	1.6	0.8	2.3	1	2	3	2.6	5.3	7.9	1	1	2	1.9	1.9	3.8
5-Birds	0	0	0	0.0	0.0	0.0	1	0	1	0.3	0.0	0.3	0	0	0	0.0	0.0	0.0	1	1	2	1.9	1.9	3.8
6-Clouds, Dust, etc.	0	1	1	0.0	14.3	14.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Satellite, etc.	0	0	0	0.0	0.0	0.0	21	0	21	5.5	0.0	5.5	0	0	0	0.0	0.0	0.0	3	0	3	5.6	0.0	5.6
8-Psychological	0	0	0	0.0	0.0	0.0	3	0	3	0.8	0.0	0.8	0	1	1	0.0	2.6	2.6	0	2	2	0.0	3.7	3.7
9-Unknown	1	0	1	14.3	0.0	14.3	71	0	71	18.5	0.0	18.5	11	0	11	28.9	0.0	28.9	10	0	10	18.5	0.0	18.5
10-Other	0	0	0	0.0	0.0	0.0	9	6	15	2.3	1.6	3.9	0	0	0	0.0	0.0	0.0	0	3	3	0.0	5.6	5.6
Total	5	2	7	71.4	28.6	100.	269	135	385	69.9	35.1	105.	24	14	38	63.2	36.8	100.	29	25	54	53.7	46.3	100.

Evaluation	Barely Visible — Number: Certain	Doubtful	Total	Per Cent: Certain	Doubtful	Total	Not Stated — Number: Certain	Doubtful	Total	Per Cent: Certain	Doubtful	Total	Number: Certain	Doubtful	Total	Per Cent: Certain	Doubtful	Total	Blanks: Certain	Doubtful	Total	Per Cent: Certain	Doubtful	Total
1-Surveyor	1	1	2	4.3	12.5	16.8	151	37	188	9.3	1.3	10.7												
2-Landscape Arch.	1	0	1	4.3	0.0	4.3	232	150	382	14.3	9.3	23.6												
3-Architect	1	1	2	4.3	12.5	16.8	211	138	349	12.9	8.1	21.6												
4-Light Planes	0	0	0	0.0	0.0	0.0	23	11	34	1.3	0.6	2.0												
5-Birds	0	0	0	0.0	0.0	0.0	10	6	16	0.6	0.3	1.0												
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	2	4	6	0.1	0.2	0.3												
7-Satellite, etc.	2	0	2	8.6	0.0	8.6	201	0	201	11.5	0.0	11.5												
8-Psychological	0	0	0	0.0	0.0	0.0	29	3	32	1.7	0.2	1.9												
9-Unknown	1	0	1	4.3	0.0	4.3	360	0	360	24.1	0.0	24.1												
10-Other	0	0	0	0.0	0.0	0.0	72	14	86	4.4	0.8	5.2												
Total	6	2	8	26.0	8.0	34.0	1290	413	1703	79.3	25.3	104.												

TABLE XXI — EVALUATION OF OBJECT SIGHTINGS FOR ALL YEARS BY LIGHT BRIGHTNESS

Evaluation	Sunlight on Mirror						Sunlight on Aluminum						Sunlight on Plaster						Sunlight on Stone					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	2	3	5	3.9	7.9	11.8	27	17	44	11.1	9.5	20.6	11	7	18	15.5	10.0	25.7	2	1	3	12.5	6.2	18.7
2-Astronomical	12	11	23	9.8	15.0	24.7	7	8	15	3.9	4.9	8.8	9	2	11	12.9	2.9	15.8	0	1	1	0.0	6.2	6.2
3-Aircraft	7	2	9	11.5	3.3	14.8	32	27	59	17.5	15.1	32.6	6	10	16	8.6	14.3	22.9	0	3	3	0.0	18.8	18.8
4-Light Phenom.	1	0	1	1.6	0.0	1.6	0	3	3	0.0	1.7	1.7	0	1	1	0.0	1.4	1.4	0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0	1	1	2	0.6	0.6	1.3	0	1	1	0.0	1.4	1.4	0	1	1	0.0	6.2	6.2
6-Clouds, Cond. etc.	0	0	0	0.0	0.0	0.0	1	0	1	0.6	0.0	0.6	0	2	2	0.0	2.7	2.7	0	0	0	0.0	0.0	0.0
8-Insects, Ins.	3	0	3	4.9	0.0	4.9	15	0	15	8.9	0.0	8.9	9	0	9	11.9	0.0	11.9	1	0	1	6.2	0.0	6.2
7-Psychological	2	1	3	3.3	1.6	4.9	2	2	4	1.1	1.1	2.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Unknown	14	0	14	22.9	0.0	22.9	28	0	28	15.5	0.0	15.5	11	0	11	14.5	0.0	14.5	5	0	5	31.2	0.0	31.2
0-Other	1	2	3	1.6	3.3	4.9	6	2	8	3.3	1.1	4.5	1	0	1	1.3	0.0	1.3	2	0	2	12.5	0.0	12.5
Total	42	19	61	68.9	31.1	100	119	60	179	66.5	33.5	100	67	29	70	67.1	32.9	100	10	6	16	62.5	37.5	100

Evaluation	Sunlight on Soil						Brighter than Moon						Like Moon						Duller than Moon					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	4	0	4	66.7	0.0	66.7	14	21	35	9.2	13.8	23.0	1	0	1	2.9	0.0	2.9	5	3	8	16.2	6.1	16.3
2-Astronomical	0	1	1	0.0	16.7	16.7	62	45	139	39.6	14.9	53.6	3	8	11	8.8	23.5	32.3	6	12	18	12.2	16.3	24.5
3-Aircraft	0	0	0	0.0	0.0	0.0	20	41	61	6.0	12.3	18.3	5	2	7	14.7	5.9	20.7	3	3	6	6.1	6.1	12.8
4-Light Phenom.	0	0	0	0.0	0.0	0.0	6	3	9	1.8	0.9	2.7	1	2	3	2.9	5.9	8.8	1	1	2	2.0	2.0	4.0
5-Birds	0	0	0	0.0	0.0	0.0	1	0	1	0.3	0.0	0.3	0	0	0	0.0	0.0	0.0	0	1	1	0.0	2.0	2.0
6-Clouds, Cond. etc.	0	1	1	0.0	16.7	16.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Insects, Ins.	0	0	0	0.0	0.0	0.0	20	0	20	6.0	0.0	6.0	0	0	0	0.0	0.0	0.0	3	0	3	6.1	0.0	6.1
7-Psychological	0	0	0	0.0	0.0	0.0	2	0	2	0.6	0.0	0.6	0	1	1	0.0	2.9	2.9	0	2	2	0.0	4.1	4.1
9-Unknown	0	0	0	0.0	0.0	0.0	61	0	61	18.1	0.0	18.1	11	0	11	32.4	0.0	32.4	10	0	10	20.4	0.0	20.4
0-Other	0	0	0	0.0	0.0	0.0	9	6	15	2.7	1.8	4.5	0	0	0	0.0	0.0	0.0	0	3	3	0.0	6.1	6.1
Total	4	2	6	66.7	33.3	100	215	119	334	64.4	35.6	100	21	13	34	61.8	38.2	100	29	21	49	57.1	42.9	100

Evaluation	Barely Visible						Not Stated																	
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	1	1	2	14.3	14.3	28.6	140	79	219	9.2	5.2	14.4												
2-Astronomical	1	0	1	14.3	0.0	14.3	154	118	272	10.1	7.7	17.8												
3-Aircraft	1	1	2	14.3	14.3	28.6	191	120	311	13.2	8.5	21.5												
4-Light Phenom.	0	0	0	0.0	0.0	0.0	21	8	29	1.8	0.6	2.4												
5-Birds	0	0	0	0.0	0.0	0.0	10	6	16	0.7	0.5	1.1												
6-Clouds, Cond. etc.	0	0	0	0.0	0.0	0.0	2	4	6	0.1	0.3	0.4												
8-Insects, Ins.	1	0	1	14.3	0.0	14.3	158	0	158	10.8	0.0	10.8												
7-Psychological	0	0	0	0.0	0.0	0.0	29	3	32	2.0	0.2	2.2												
9-Unknown	1	0	1	14.3	1.0	14.3	283	0	283	20.3	0.0	20.3												
0-Other	0	0	0	0.0	0.0	0.0	33	11	77	4.1	0.3	5.4												
Total	5	2	7	71.4	28.6	100	1096	349	1445	75.8	24.2	100												

TABLE A16 LOCATION OF OBSERVERS DURING SIGHTING BY MONTHS
FOR ALL SIGHTINGS ALL YEARS

	JANUARY						FEBRUARY						MARCH						APRIL					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total
a																								
b IN CAR	16	1	17	18.8	0.9	12.5	9	2	11	9.9	2.2	12.1	8	1	11	6.8	1.0	6.8	24	3	27	12.0	1.5	13.5
c OUTDOORS	29	4	33	21.3	3.9	24.3	23	1	24	25.3	1.1	26.4	62	2	64	37.5	1.2	38.5	90	4	94	45.0	2.0	47.0
d IN PLANE	31	2	33	22.8	1.5	24.3	27	0	27	29.8	0.0	29.8	20	0	20	12.0	0.0	12.0	16	0	16	8.0	0.0	8.0
e IN BLDG.	12	0	12	8.5	0.0	12.5	2	0	2	2.2	0.0	2.2	22	0	22	13.9	0.0	13.3	20	0	20	10.0	0.0	10.0
f																								
g																								
h																								
i																								
j OTHER	3	0	3	2.2	0.0	2.2	5	0	5	5.4	0.0	5.4	3	0	3	1.8	0.0	1.8	0	0	0	0.0	0.0	0.0
NOT STATED	33	0	33	24.5	0.0	24.3	24	0	24	25.8	0.0	26.3	46	0	46	27.7	0.0	27.7	43	0	43	21.5	0.0	21.5
Total	129	7	136	94.9	5.1	100.	90	3	93	96.9	3.2	100.	163	3	166	98.2	1.8	100.	195	9	200	96.5	3.5	100.

	MAY						JUNE						JULY						AUGUST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total
a																								
b IN CAR	16	0	16	7.7	0.0	7.7	21	2	23	9.3	0.9	10.1	72	12	84	7.9	1.3	9.1	61	3	64	11.7	0.6	12.3
c OUTDOORS	89	5	94	42.9	2.4	45.5	125	3	128	53.9	1.3	55.2	436	4	440	46.9	0.4	47.3	266	9	275	51..	1.5	52.6
d IN PLANE	34	0	34	16.5	0.0	16.5	25	0	25	10.0	0.0	10.0	88	1	89	9.5	0.1	9.6	39	2	39	7.1	0.4	7.5
e IN BLDG.	8	0	8	3.1	0.0	3.1	8	0	8	3.5	0.0	3.5	87	3	90	9.4	0.3	9.7	38	4	42	7.3	0.8	8.1
f																								
g																								
h																								
i																								
j OTHER	2	0	2	1.0	0.0	1.0	2	0	2	0.9	0.0	0.9	15	0	15	1.6	0.0	1.6	8	0	8	1.5	0.0	1.5
NOT STATED	44	0	44	21.1	0.0	21.1	44	0	44	19.3	0.0	19.3	211	0	211	23.1	0.0	22.9	94	0	94	18.0	0.0	18.0
Total	197	5	202	97.8	2.6	100.	225	5	229	97.9	2.2	100.	909	20	929	97.9	2.2	100.	504	17	521	96.7	3.3	100.

	SEPTEMBER						OCTOBER						NOVEMBER						DECEMBER					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total
a																								
b IN CAR	21	2	23	10.8	1.0	11.8	27	1	28	11.8	0.5	12.3	10	4	14	6.1	2.4	8.5	25	7	32	14.7	4.7	19.1
c OUTDOORS	96	5	101	49.7	2.9	52.1	89	1	90	46.9	0.5	46.9	45	3	48	27.4	1.8	29.3	45	5	50	26.9	3.0	29.9
d IN PLANE	26	0	26	13.4	0.0	13.4	27	0	27	14.1	0.0	14.1	34	0	34	20.7	0.0	20.7	19	1	20	11.4	0.6	12.0
e IN BLDG.	11	2	13	5.2	1.0	6.2	25	1	26	13.0	0.5	13.5	33	0	33	20.1	0.0	20.1	14	0	14	8.3	0.0	8.3
f																								
g																								
h																								
i																								
j OTHER	1	0	1	0.5	0.0	0.5	7	0	7	3.6	0.0	3.6	2	0	2	1.2	0.0	1.2	1	0	1	0.6	0.0	0.6
NOT STATED	46	0	46	21.9	0.0	21.9	18	0	18	9.4	0.0	9.4	33	0	33	20.1	0.0	20.1	25	0	25	14.9	0.0	14.9
Total	201	9	210	95.9	4.3	100.	193	3	196	98.4	1.6	100.	157	7	164	95.7	4.3	100.	145	13	158	92.3	7.7	100.

TABLE XXX LOCATION OF OBSERVERS DURING SIGHTINGS BY MONTHS FOR ALL SIGHTINGS 1947

	JANUARY			FEBRUARY			MARCH			APRIL		
	Number			Per Cent			Number			Per Cent		
	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total
a												
b IN CAR												
c OUTDOORS												
d IN PLANE												
e IN BLDG.												
f												
g												
h												
i												
j OTHER												
k NOT STATED												
Total												

NO DATA

	MAY			JUNE			JULY			AUGUST		
	Number			Per Cent			Number			Per Cent		
	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total
a												
b IN CAR				1	1	2	6	0	6	2	0	2
c OUTDOORS				6	0	6	27	0	27	7	0	7
d IN PLANE				3	0	3	11	0	11	3	0	3
e IN BLDG.				0	0	0	1	0	1	1	0	1
f												
g												
h												
i												
j OTHER				0	0	0	0	0	0	0	0	0
k NOT STATED				2	0	2	10	0	10	3	0	3
Total				12	1	13	56	0	56	16	0	16

NO DATA

	SEPTEMBER			OCTOBER			NOVEMBER			DECEMBER		
	Number			Per Cent			Number			Per Cent		
	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total
a												
b IN CAR	0	0	0	0	0	0	9	0	9	1	0	1
c OUTDOORS	3	0	3	50.0	0.0	50.0	8	0	8	0	0	0
d IN PLANE	1	0	1	16.7	0.0	16.7	0	0	0	0	0	0
e IN BLDG.	0	0	0	0.0	0.0	0.0	0	0	0	1	0	1
f												
g												
h												
i												
j OTHER	0	0	0	0.0	0.0	0.0	0	0	0	1	0	1
k NOT STATED	2	0	2	33.3	0.0	33.3	3	0	3	0	0	0
Total	6	0	6	100.0	0.0	100.	19	0	19	3	0	3

PALO ALTO — LOCATION OF OBSERVERS DURING SIGHTINGS BY MONTHS FOR ALL SIGHTINGS OVER

	JANUARY			FEBRUARY			MARCH			APRIL		
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total
a.																		
b. IN CAR	1	0	1	6.3	.0	6.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
c. OUTDOORS	1	0	1	6.3	0.0	6.3	6	0	6	66.7	0.0	66.7	2	0	2	22.2	0.0	22.2	14	0	14	77.8	0.0	77.8
d. IN PLANE	3	2	5	18.8	12.5	31.3	1	0	1	11.1	0.0	11.1	1	0	1	11.1	0.0	11.1	3	0	3	16.7	0.0	16.7
e. IN BLDG.	5	0	5	31.3	0.0	31.3	1	0	1	11.1	0.0	11.1	1	0	1	11.1	0.0	11.1	1	0	1	5.6	0.0	5.6
f.																								
g.																								
h.																								
i.																								
j. OTHER	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
NOT STATED	4	0	4	25.0	0.0	25.0	1	0	1	11.1	0.0	11.1	5	0	5	55.6	0.0	55.6	0	0	0	0.0	0.0	0.0
Total	14	2	16	87.5	12.5	100.	9	0	9	100.0	0.0	100.	9	0	9	100.0	0.0	100.	19	0	19	100.0	0.0	100.

	MAY			JUNE			JULY			AUGUST		
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total
a.																		
b. IN CAR	1	0	1	9.1	.0	9.1	1	0	1	16.7	0.0	16.7	3	0	3	7.7	0.0	7.7	3	0	3	27.3	0.0	27.3
c. OUTDOORS	5	0	5	45.5	.0	45.5	5	0	5	83.3	0.0	83.3	17	1	18	43.6	2.6	46.2	8	0	8	72.7	0.0	72.7
d. IN PLANE	4	0	4	36.4	.0	36.4	0	0	0	0.0	0.0	0.0	5	0	5	12.8	0.0	12.8	0	0	0	0.0	0.0	0.0
e. IN BLDG.	0	0	0	0.0	.0	0.0	0	0	0	0.0	0.0	0.0	5	0	5	12.8	0.0	12.8	0	0	0	0.0	0.0	0.0
f.																								
g.																								
h.																								
i.																								
j. OTHER	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	2.6	0.0	2.6	0	0	0	0.0	0.0	0.0
NOT STATED	1	0	1	9.1	.0	9.1	0	0	0	0.0	0.0	0.0	3	0	3	7.7	0.0	7.7	0	0	0	0.0	0.0	0.0
Total	11	0	11	100.0	.0	100.	6	0	6	100.0	0.0	100.	39	1	39	97.4	2.6	100.	11	0	11	100.0	0.0	100.

	SEPTEMBER			OCTOBER			NOVEMBER			DECEMBER		
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total
a.																		
b. IN CAR	0	0	0	0.0	.0	0.0	2	0	2	6.7	0.0	6.7	0	1	1	0.0	5.0	5.0	6	1	7	21.4	3.6	25.0
c. OUTDOORS	5	0	5	62.5	.0	62.5	13	1	14	43.3	3.3	46.6	9	1	9	90.0	5.0	45.0	10	1	11	35.7	3.6	39.3
d. IN PLANE	1	0	1	12.5	.0	12.5	3	0	3	10.0	0.0	10.0	5	0	5	25.0	0.0	25.0	7	0	7	25.0	0.0	25.0
e. IN BLDG.	0	0	0	0.0	.0	0.0	8	0	8	26.7	0.0	26.7	4	0	4	20.0	0.0	20.0	2	0	2	7.1	0.0	7.1
f.																								
g.																								
h.																								
i.																								
j. OTHER	0	0	0	0.0	.0	0.0	1	0	1	3.3	0.0	3.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
NOT STATED	2	0	2	25.0	.0	25.0	2	0	2	6.7	0.0	6.7	1	0	1	5.0	0.0	5.0	1	0	1	3.6	0.0	3.6
Total	8	0	8	100.0	.0	100.	29	1	30	96.7	3.3	100.	20	2	20	90.0	10.0	100.	28	2	29	92.9	7.1	100.

FEMALE ADULT — LOCATION OF OBSERVERS DURING SIGHTINGS AT MONTHS

FOR ALL SIGHTINGS, AKP

	JANUARY			FEBRUARY			MARCH			APRIL		
	Number: Count / Variable / Total	Per Cent: Count / Variable / Total		Number: Count / Variable / Total	Per Cent: Count / Variable / Total		Number: Count / Variable / Total	Per Cent: Count / Variable / Total		Number: Count / Variable / Total	Per Cent: Count / Variable / Total	
a												
IN CAR	8 / 1 / 9	8.2 / 1.9 / 10.3		5 / 0 / 5	16.7 / 0.0 / 16.7		3 / 1 / 4	7.8 / 1.9 / 9.7		9 / 1 / 10	19.1 / 2.1 / 21.2	
OUTDOORS	18 / 0 / 18	20.5 / 0.0 / 20.5		9 / 0 / 9	30.0 / 0.0 / 30.0		36 / 0 / 36	69.2 / 0.0 / 69.2		19 / 1 / 20	40.4 / 2.1 / 42.5	
IN PLANE	2 / 0 / 2	2.9 / 0.0 / 2.9		1 / 0 / 1	16.7 / 0.0 / 16.7		4 / 0 / 4	7.7 / 0.0 / 7.7		2 / 0 / 2	4.3 / 0.0 / 4.3	
IN BLDG.	10 / 0 / 10	14.7 / 0.0 / 14.7		0 / 0 / 0	0.0 / 0.0 / 0.0		7 / 0 / 7	13.5 / 0.0 / 13.5		4 / 0 / 4	8.5 / 0.0 / 8.5	
b												
c												
d												
e												
OTHER	0 / 0 / 0	0.0 / 0.0 / 0.0		2 / 0 / 2	16.7 / 0.0 / 16.7		0 / 0 / 0	0.0 / 0.0 / 0.0		0 / 0 / 0	0.0 / 0.0 / 0.0	
NOT STATED	15 / 0 / 15	25.4 / 0.0 / 25.4		1 / 0 / 1	5.6 / 0.0 / 5.6		2 / 0 / 2	3.9 / 0.0 / 3.9		11 / 0 / 11	23.4 / 0.0 / 23.4	
Total	58 / 1 / 59	98.3 / 1.7 / 100.		18 / 0 / 18	100.0 / 0.0 / 100.		51 / 1 / 52	98.1 / 1.9 / 100.		45 / 2 / 47	95.8 / 4.2 / 100.	

	MAY			JUNE			JULY			AUGUST		
	Number: Count / Variable / Total	Per Cent: Count / Variable / Total		Number: Count / Variable / Total	Per Cent: Count / Variable / Total		Number: Count / Variable / Total	Per Cent: Count / Variable / Total		Number: Count / Variable / Total	Per Cent: Count / Variable / Total	
a												
IN CAR	1 / 0 / 1	2.2 / 0.0 / 2.2		3 / 0 / 3	12.0 / 0.0 / 12.0		4 / 0 / 4	20.0 / 0.0 / 20.0		11 / 0 / 11	21.2 / 0.0 / 21.2	
OUTDOORS	30 / 3 / 33	66.7 / 6.7 / 73.4		18 / 0 / 18	72.0 / 0.0 / 72.0		9 / 0 / 9	45.0 / 0.0 / 45.0		32 / 0 / 32	61.5 / 0.0 / 61.5	
IN PLANE	3 / 0 / 3	6.7 / 0.0 / 6.7		1 / 0 / 1	4.0 / 0.0 / 4.0		1 / 0 / 1	5.0 / 0.0 / 5.0		0 / 0 / 0	0.0 / 0.0 / 0.0	
IN BLDG.	0 / 0 / 0	0.0 / 0.0 / 0.0		0 / 0 / 0	0.0 / 0.0 / 0.0		0 / 0 / 0	0.0 / 0.0 / 0.0		0 / 0 / 0	0.0 / 0.0 / 0.0	
b												
c												
d												
e												
OTHER	0 / 0 / 0	0.0 / 0.0 / 0.0		0 / 0 / 0	0.0 / 0.0 / 0.0		0 / 0 / 0	0.0 / 0.0 / 0.0		0 / 0 / 0	0.0 / 0.0 / 0.0	
NOT STATED	9 / 0 / 9	17.9 / 0.0 / 17.9		3 / 0 / 3	12.0 / 0.0 / 12.0		6 / 0 / 6	30.0 / 0.0 / 30.0		9 / 0 / 9	17.3 / 0.0 / 17.3	
Total	43 / 3 / 45	95.3 / 6.7 / 100.		25 / 0 / 25	100.0 / 0.0 / 100.		20 / 0 / 20	100.0 / 0.0 / 100.		52 / 0 / 52	100.0 / 0.0 / 100.	

	SEPTEMBER			OCTOBER			NOVEMBER			DECEMBER		
	Number: Count / Variable / Total	Per Cent: Count / Variable / Total		Number: Count / Variable / Total	Per Cent: Count / Variable / Total		Number: Count / Variable / Total	Per Cent: Count / Variable / Total		Number: Count / Variable / Total	Per Cent: Count / Variable / Total	
a												
IN CAR	1 / 0 / 1	33.3 / 0.0 / 33.3		1 / 0 / 1	7.7 / 0.0 / 7.7		2 / 0 / 2	5.9 / 0.0 / 5.9		7 / 0 / 7	25.9 / 0.0 / 25.9	
OUTDOORS	2 / 0 / 2	66.7 / 0.0 / 66.7		5 / 0 / 5	38.5 / 0.0 / 38.5		9 / 0 / 9	26.5 / 0.0 / 26.5		6 / 3 / 9	22.2 / 11.1 / 33.3	
IN PLANE	0 / 0 / 0	0.0 / 0.0 / 0.0		3 / 0 / 3	23.1 / 0.0 / 23.1		6 / 0 / 6	17.6 / 0.0 / 17.6		4 / 0 / 4	14.9 / 0.0 / 14.9	
IN BLDG.	0 / 0 / 0	0.0 / 0.0 / 0.0		0 / 0 / 0	0.0 / 0.0 / 0.0		1 / 0 / 1	2.9 / 0.0 / 2.9		0 / 0 / 0	0.0 / 0.0 / 0.0	
b												
c												
d												
e												
OTHER	0 / 0 / 0	0.0 / 0.0 / 0.0		0 / 0 / 0	0.0 / 0.0 / 0.0		1 / 0 / 1	2.9 / 0.0 / 2.9		0 / 0 / 0	0.0 / 0.0 / 0.0	
NOT STATED	0 / 0 / 0	0.0 / 0.0 / 0.0		4 / 0 / 4	30.9 / 0.0 / 30.9		15 / 0 / 15	44.1 / 0.0 / 44.1		9 / 0 / 9	25.9 / 0.0 / 25.9	
Total	3 / 0 / 3	100.0 / 0.0 / 100.		13 / 0 / 13	100.0 / 0.0 / 100.		34 / 0 / 34	100.0 / 0.0 / 100.		29 / 3 / 29	96.9 / 11.1 / 100.	

TABLE A-17a. LOCATION OF OBSERVED MOVING TURTLES BY MONTHS
DEC. ALL SIGHTINGS, 1969

	JANUARY			FEBRUARY			MARCH			APRIL		
	Number			Per Cent			Number			Per Cent		
	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total
IN CAR	2	0	2	10.5	0.0	10.5	4	0	4	11.1	0.0	11.1
OUTDOORS	2	1	3	10.5	5.3	15.8	5	1	6	14.3	2.8	17.1
IN PLANE	7	0	7	36.8	0.0	36.8	9	0	9	25.7	0.0	25.7
IN BLDG.	0	0	0	0.0	0.0	0.0	1	0	1	2.8	0.0	2.8
OTHER	0	0	0	0.0	0.0	0.0	1	0	1	2.8	0.0	2.8
NOT STATED	6	0	6	31.6	0.0	31.6	11	0	11	31.4	0.0	31.4
Total	19	1	19	100.0	5.3		35	1	36	97.2	2.8	

	MAY			JUNE			JULY			AUGUST		
	Number			Per Cent			Number			Per Cent		
	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total
IN CAR	2	0	2	10.5	0.0	10.5	1	0	1	14.3	0.0	14.3
OUTDOORS	0	1	0	0.0	0.0	0.0	1	0	1	14.3	0.0	14.3
IN PLANE	2	0	2	10.5	0.0	10.5	2	0	2	28.6	0.0	28.6
IN BLDG.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
OTHER	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
NOT STATED	16	0	16	84.2	0.0	84.2	3	0	3	42.9	0.0	42.9
Total	20	0	20	100.0	0.0		7	0	7	100.0	0.0	

	SEPTEMBER			OCTOBER			NOVEMBER			DEC. 1-15		
	Number			Per Cent			Number			Per Cent		
	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total
IN CAR	4	0	4	30.8	0.0	30.8	1	0	1	10.0	0.0	10.0
OUTDOORS	2	0	2	15.4	0.0	15.4	5	0	5	50.0	0.0	50.0
IN PLANE	3	0	3	23.1	0.0	23.1	1	0	1	10.0	0.0	10.0
IN BLDG.	1	0	1	7.7	0.0	7.7	1	0	1	10.0	0.0	10.0
OTHER	1	0	1	7.7	0.0	7.7	1	0	1	10.0	0.0	10.0
NOT STATED	2	0	2	15.4	0.0	15.4	1	0	1	10.0	0.0	10.0
Total	13	0	13	100.0	0.0		10	0	10	100.0	0.0	

TABLE XIII — LOCATION OF OBSERVERS DURING SIGHTINGS BY MONTHS FOR ALL SIGHTINGS, 1951

	January			February			March			April		
	Number			Per Cent			Number			Per Cent		
	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total
IN CAR	2	0	2	7.4	0.0	7.4	1	2	3	6.7	13.3	20.0	0	0	0	0.0	0.0	0.0	1	0	1	33.3	0.0	33.3
OUTDOORS	6	2	8	22.2	7.4	29.6	2	0	2	13.3	0.0	13.3	3	1	4	50.0	16.7	66.7	2	0	2	66.7	0.0	66.7
IN PLANE	9	0	9	33.3	0.0	33.3	9	0	9	60.0	0.0	60.0	1	0	1	16.7	0.0	16.7	0	0	0	0.0	0.0	0.0
IN BLDG.	1	0	1	3.7	0.0	3.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
OTHER	1	0	1	3.7	0.0	3.7	1	0	1	6.7	0.0	6.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
NOT STATED	6	0	6	22.2	0.0	22.2	0	0	0	0.0	0.0	0.0	1	0	1	16.7	0.0	16.7	0	0	0	0.0	0.0	0.0
Total	25	2	27	92.6	7.4	100.	13	2	15	86.7	13.3	100.	5	1	6	83.3	16.7	100.	3	0	3	100.0	0.0	100.

	May			June			July			August		
	Number			Per Cent			Number			Per Cent		
	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total
IN CAR	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	11.1	0.0	11.1	3	1	4	60.0	20.0	80.0
OUTDOORS	3	0	3	60.0	0.0	60.0	1	0	1	100.0	0.0	100.0	2	0	2	22.2	0.0	22.2	12	1	13	60.0	5.0	65.0
IN PLANE	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	11.1	0.0	11.1	2	0	2	10.0	0.0	10.0
IN BLDG.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	4	0	4	44.4	0.0	44.4	1	0	1	5.0	0.0	5.0
OTHER	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	11.1	0.0	11.1	0	0	0	0.0	0.0	0.0
NOT STATED	2	0	2	40.0	0.0	40.0	0	0	0	0.0	0.0	0.0	1	0	1	11.1	0.0	11.1	0	0	0	0.0	0.0	0.0
Total	5	0	5	100.0	0.0	100.	1	0	1	100.0	0.0	100.0	9	0	9	100.0	0.0	100.	19	2	20	95.0	10.0	105.

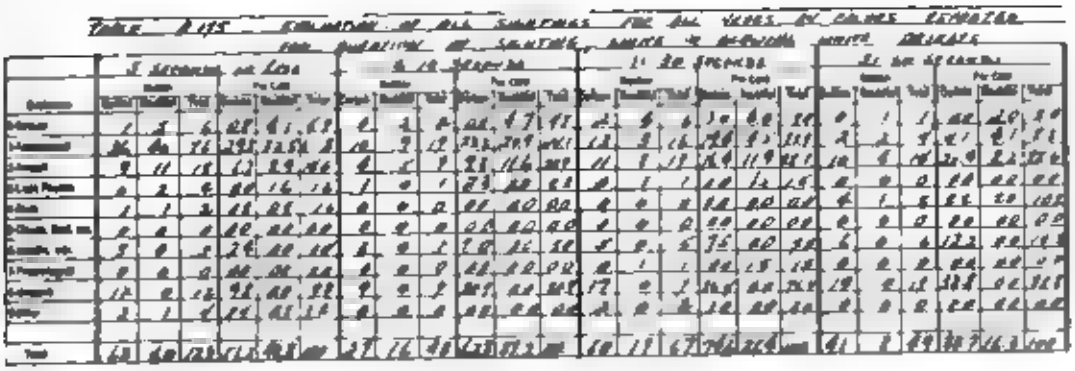
	September			October			November			December		
	Number			Per Cent			Number			Per Cent		
	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total
IN CAR	1	1	2	5.6	5.6	11.2	2	0	2	9.1	0.0	9.1	2	1	3	11.8	5.9	17.7	3	0	3	27.3	0.0	27.3
OUTDOORS	4	0	4	22.2	0.0	22.2	15	0	15	68.2	0.0	68.2	4	0	4	23.5	0.0	23.5	4	0	4	36.4	0.0	36.4
IN PLANE	9	0	9	50.0	0.0	50.0	3	0	3	13.6	0.0	13.6	7	0	7	41.2	0.0	41.2	3	0	3	27.3	0.0	27.3
IN BLDG.	2	0	2	11.1	0.0	11.1	2	1	3	9.1	4.6	13.7	1	0	1	5.9	0.0	5.9	0	0	0	0.0	0.0	0.0
OTHER	0	0	0	0.0	0.0	0.0	3	0	3	13.7	0.0	13.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
NOT STATED	1	0	1	5.6	0.0	5.6	0	0	0	0.0	0.0	0.0	2	0	2	11.8	0.0	11.8	1	0	1	9.1	0.0	9.1
Total	17	1	18	94.4	5.6	100.	22	1	23	96.1	4.4	100.	16	1	17	94.1	5.9	100.	11	0	11	100.0	0.0	100.

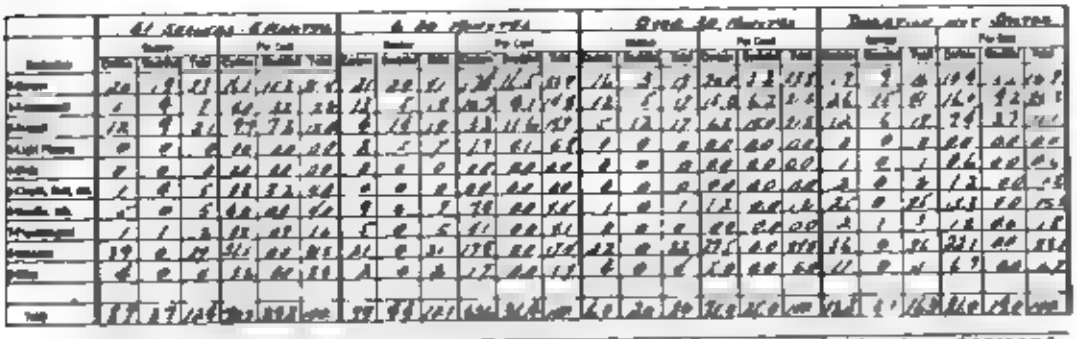
TABLE A 174 LOCATION OF OBSERVERS DURING SIGHTINGS BY MONTHS FOR ALL SIGHTINGS, 1952

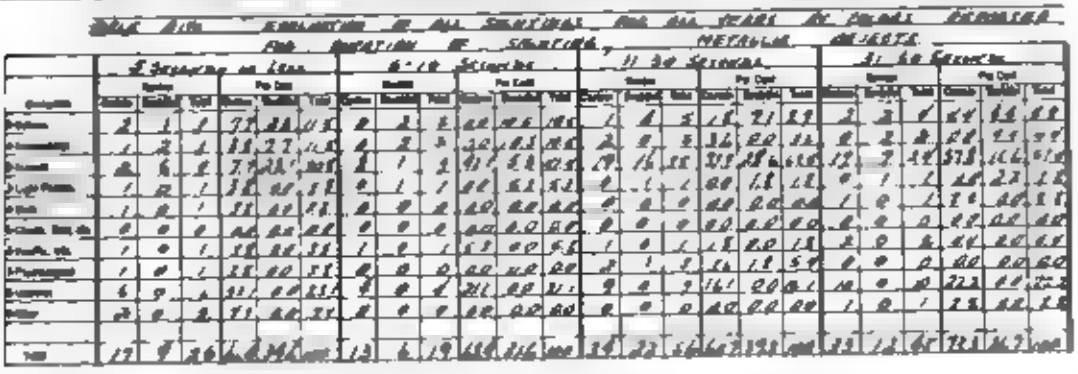
	JANUARY						FEBRUARY						MARCH						APRIL					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total
IN CAR	3	0	3	20.0	0.0	20.0	1	0	1	5.6	0.0	5.6	3	0	3	11.1	0.0	11.1	14	2	16	13.1	1.9	15.5
OUTDOORS	2	1	3	13.3	6.7	20.0	1	0	1	5.6	0.0	5.6	3	1	4	11.1	3.7	14.9	47	3	50	46.1	2.9	48.5
IN PLANE	4	0	4	26.7	0.0	26.7	10	0	10	55.6	0.0	55.6	6	0	6	22.2	0.0	22.2	6	0	6	5.8	0.0	5.8
IN BLDG.	1	0	1	6.7	0.0	6.7	0	0	0	0.0	0.0	0.0	9	0	9	33.3	0.0	33.3	11	0	11	10.7	0.0	10.7
OTHER	2	0	2	13.3	0.0	13.3	1	0	1	5.6	0.0	5.6	1	0	1	3.7	0.0	3.7	0	0	0	0.0	0.0	0.0
NOT STATED	3	0	3	13.3	0.0	13.3	5	0	5	27.8	0.0	27.8	4	0	4	14.8	0.0	14.8	20	0	20	19.4	0.0	19.4
Total	15	1	15	93.3	6.7	100.	18	0	18	100.0	0.0	100.	27	1	27	96.3	3.7	100.	98	5	103	95.2	4.8	100.

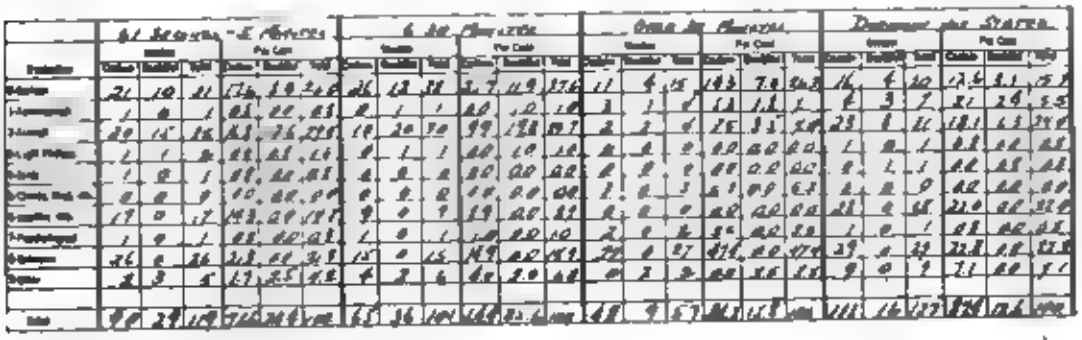
	MAY						JUNE						JULY						AUGUST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total
IN CAR	11	0	11	9.7	0.0	9.7	15	1	16	9.5	0.6	9.1	14	2	16	6.9	0.9	7.8	41	2	43	14.5	0.7	14.8
OUTDOORS	51	2	53	45.1	1.8	46.9	92	3	95	52.3	1.7	54.0	227	5	232	45.2	0.9	46.6	197	7	204	72.4	1.9	54.2
IN PLANE	25	0	25	22.1	0.0	22.1	19	0	19	10.8	0.0	10.8	69	1	69	13.6	0.1	13.7	29	2	31	9.3	0.5	7.9
IN BLDG.	6	0	6	5.3	0.0	5.3	8	0	8	4.5	0.0	4.5	71	3	74	9.0	0.4	9.4	31	4	35	8.5	1.0	9.5
OTHER	2	0	2	1.8	0.0	1.8	3	0	3	1.1	0.0	1.1	15	0	15	1.9	0.0	1.9	3	0	3	1.5	0.0	1.5
NOT STATED	14	0	14	12.4	0.0	12.4	36	0	36	20.9	0.0	20.9	175	0	185	25.5	0.0	23.5	74	0	74	19.1	0.0	19.1
Total	111	2	113	98.2	1.8	100.	172	4	176	97.8	2.3	100.	769	14	782	97.2	1.9	100.	395	15	399	96.2	3.8	100.

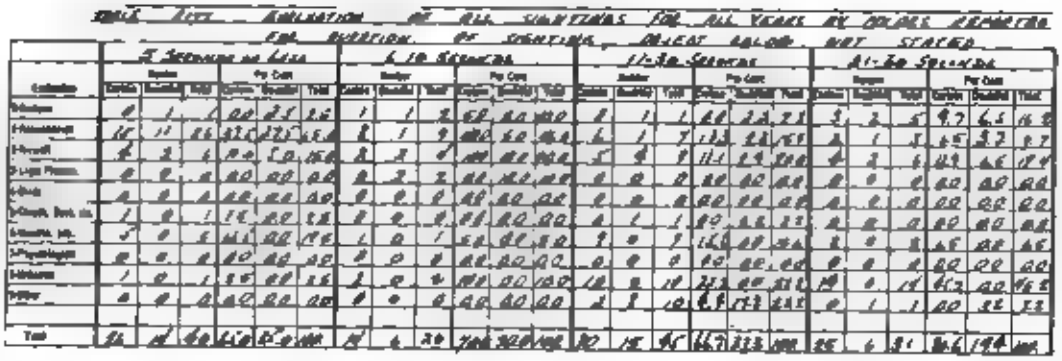
	SEPTEMBER						OCTOBER						NOVEMBER						DECEMBER					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total	Count	Variable	Total
IN CAR	15	1	16	9.3	0.6	9.9	9	1	10	9.3	1.1	10.9	5	2	7	7.0	3.0	10.5	2	3	5	3.0	4.5	7.5
OUTDOORS	51	4	55	44.4	3.1	47.5	33	0	49	16.7	0.0	16.7	19	2	21	28.3	3.0	31.3	10	1	19	29.3	1.5	28.7
IN PLANE	12	0	12	7.4	0.0	7.4	15	0	15	16.3	0.0	16.3	8	0	8	11.9	0.0	11.9	26	1	26	37.3	1.5	39.4
IN BLDG.	8	2	10	4.9	1.2	6.1	14	0	14	15.2	0.0	15.2	21	0	21	31.3	0.0	31.3	10	0	10	15.2	0.0	15.2
OTHER	0	0	0	0.0	0.0	0.0	2	0	2	2.2	0.0	2.2	0	0	0	0.0	0.0	0.0	1	0	1	1.5	0.0	1.5
NOT STATED	33	0	33	19.1	0.0	19.1	7	0	8	7.7	0.0	7.7	10	0	10	14.9	0.0	14.9	5	0	5	7.6	0.0	7.6
Total	124	9	162	95.1	4.9	100.	91	1	92	97.9	1.1	100.	63	4	67	94.0	6.0	100.	57	5	66	92.9	7.1	100.

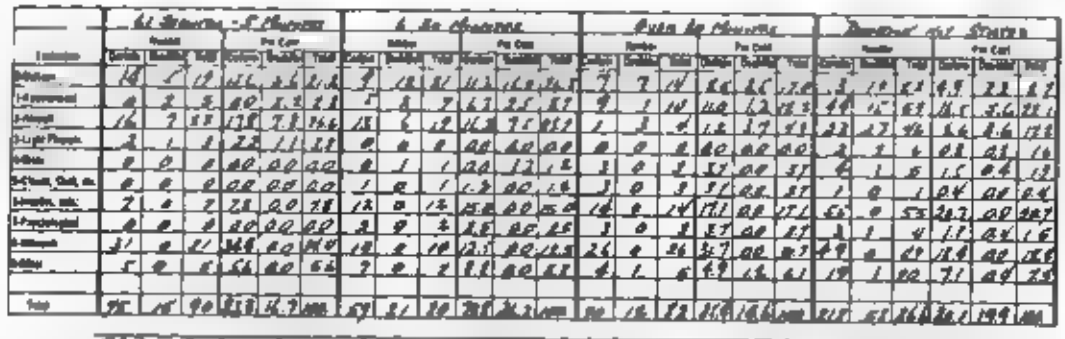


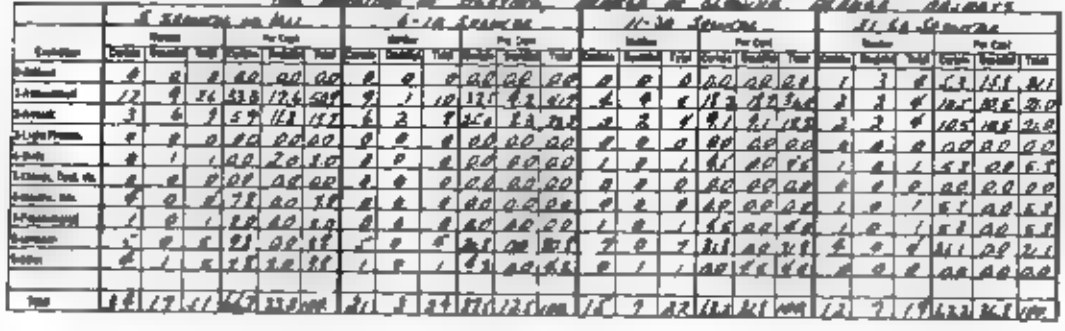


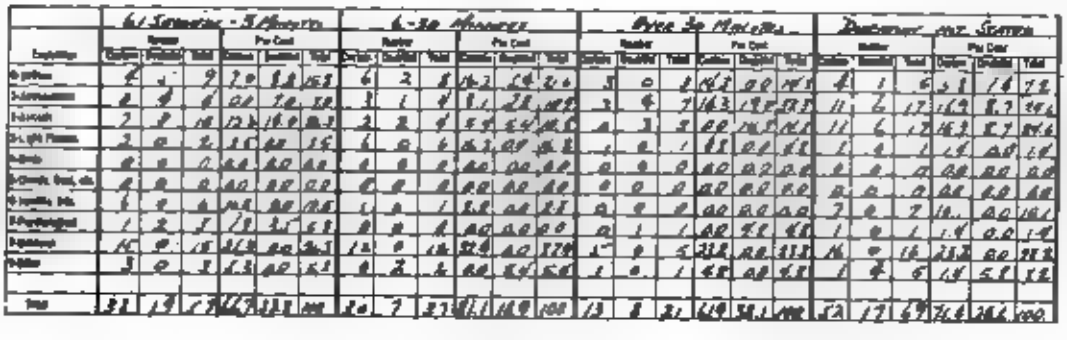


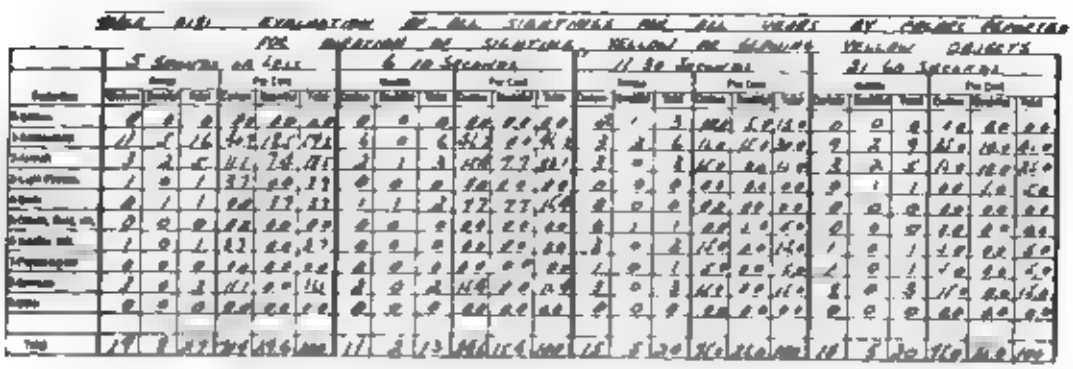


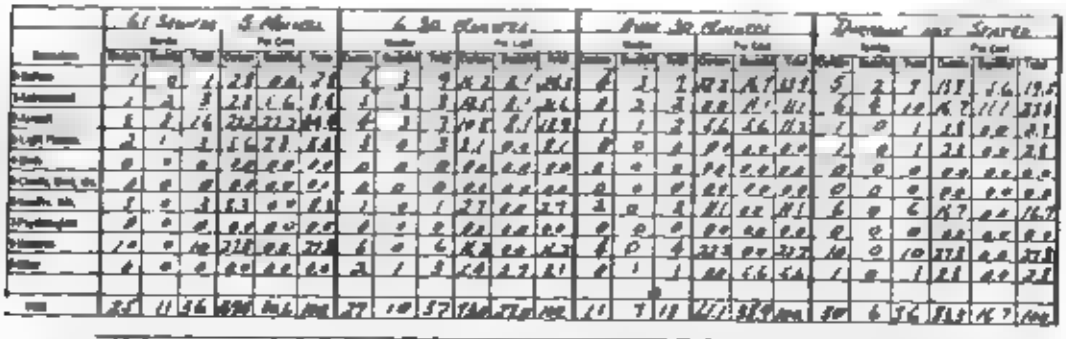


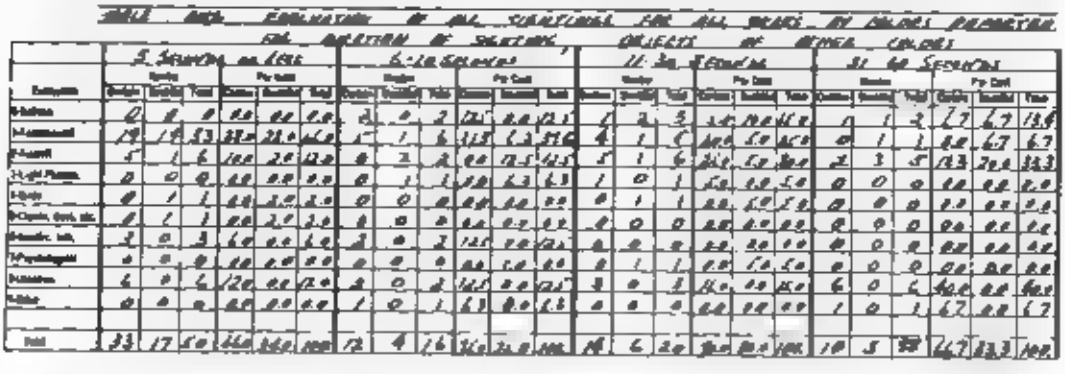


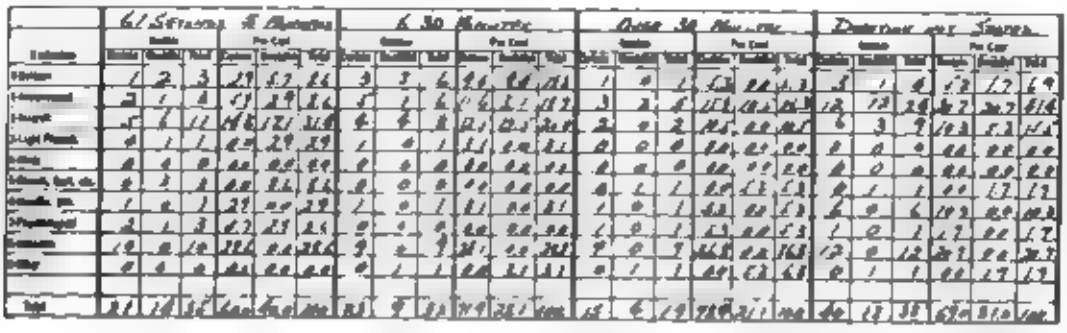


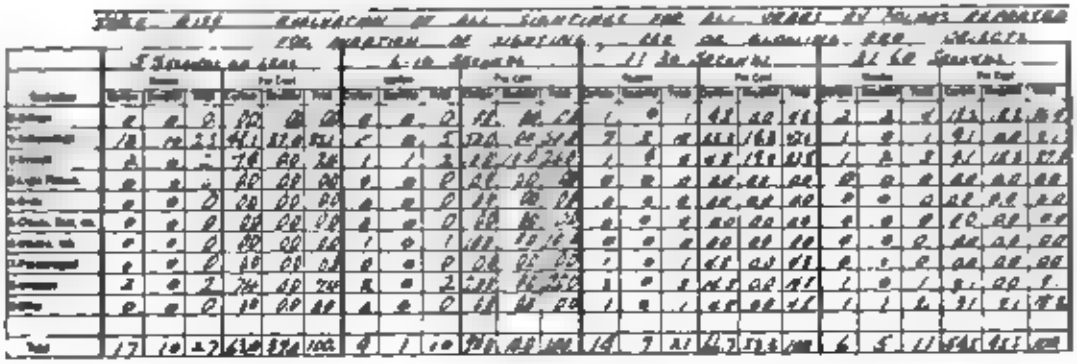


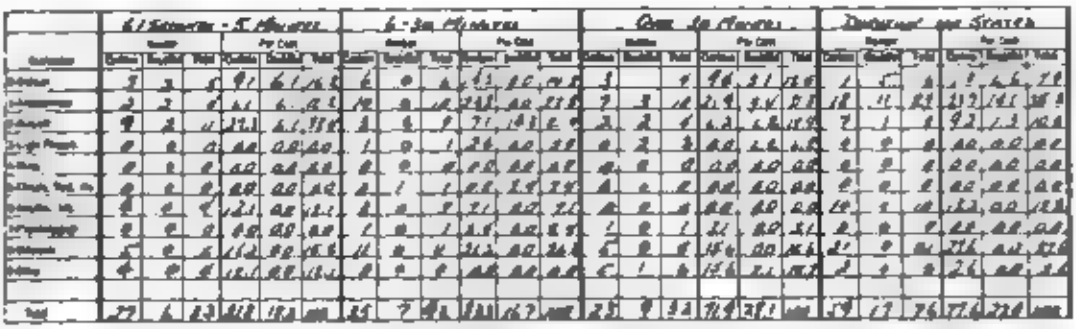


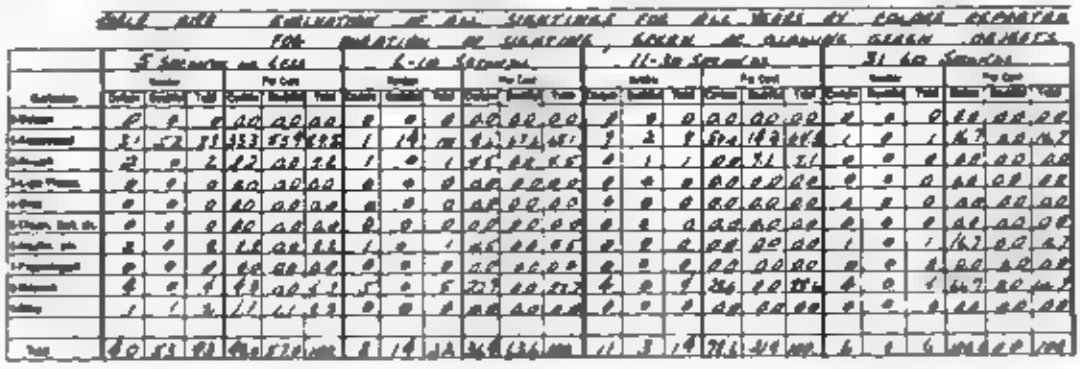


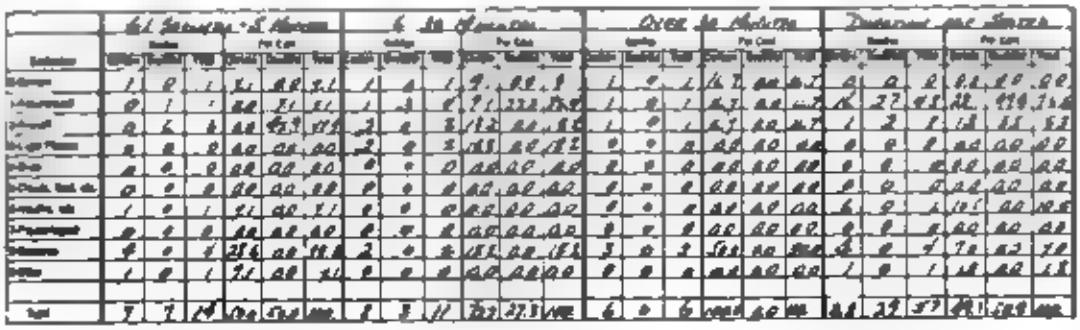


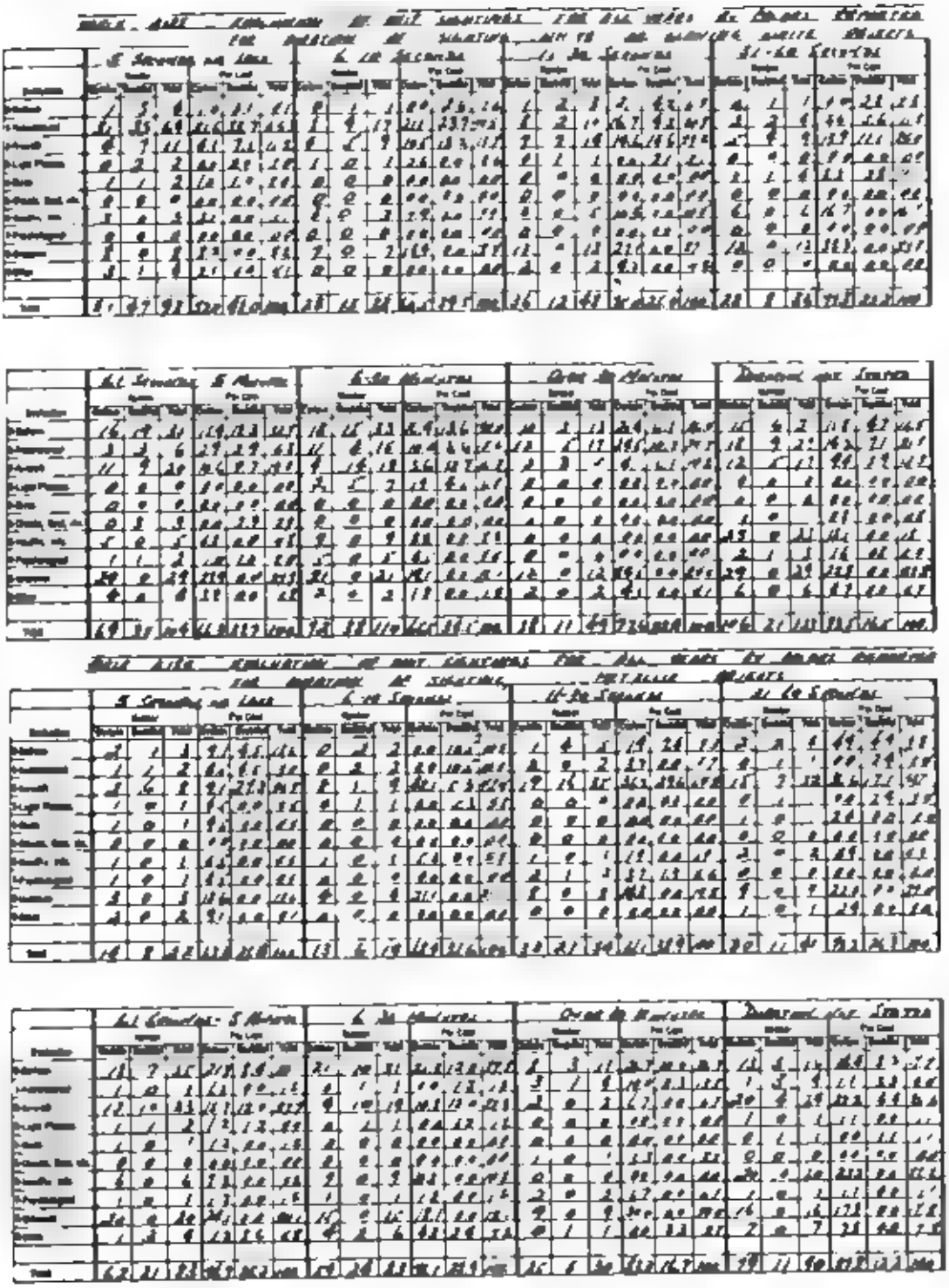


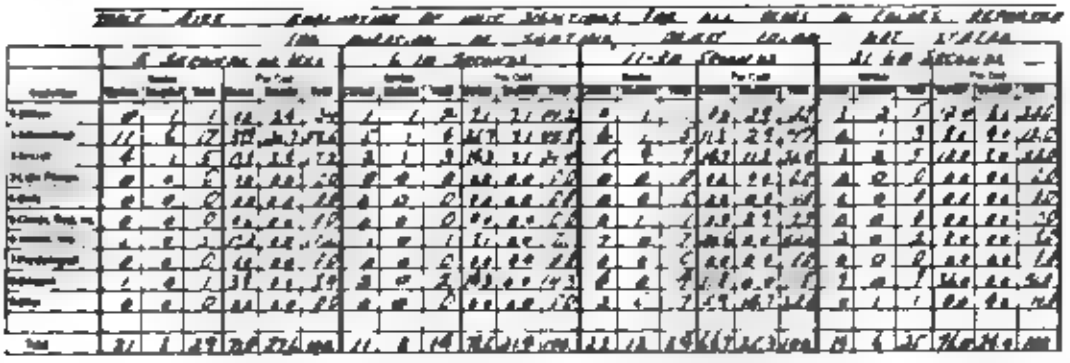


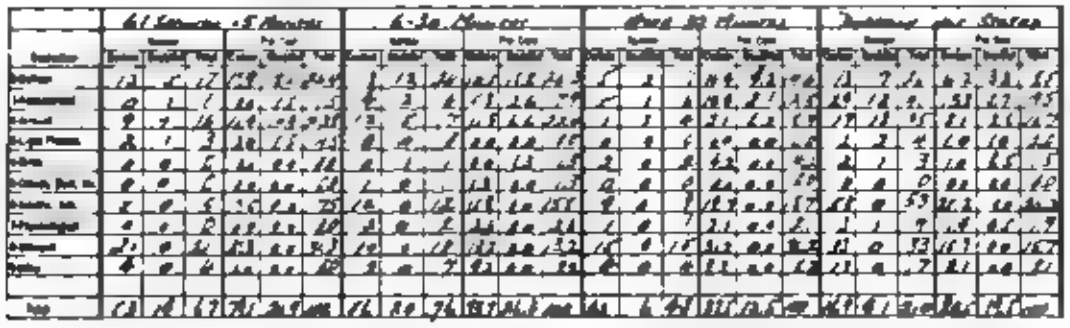


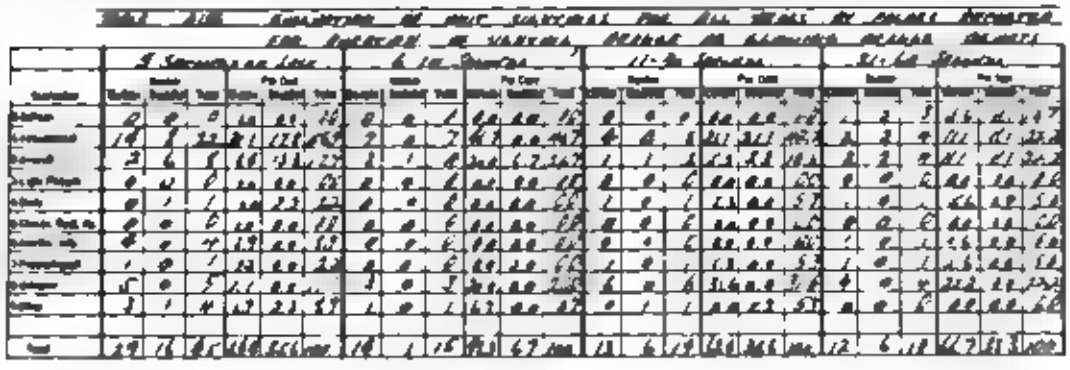


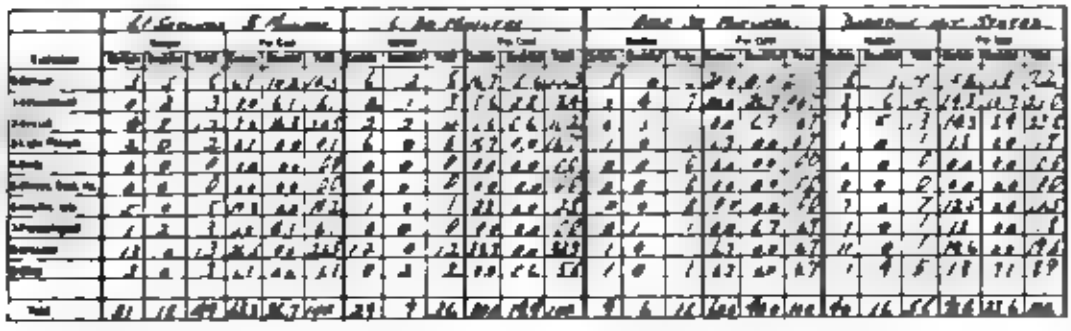


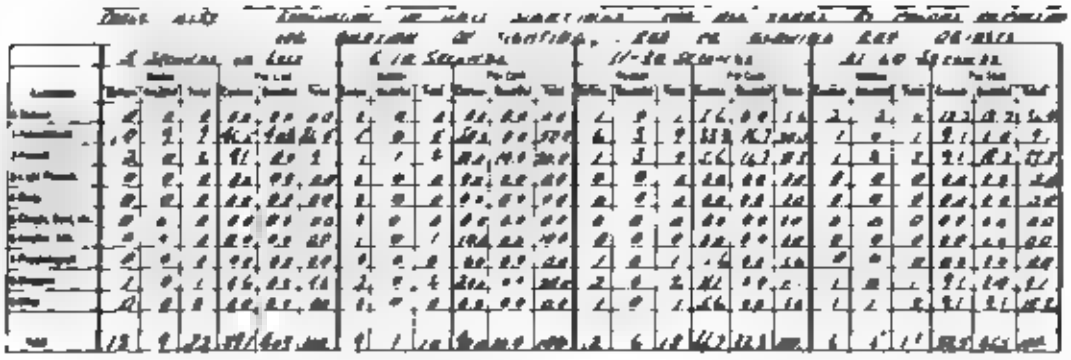


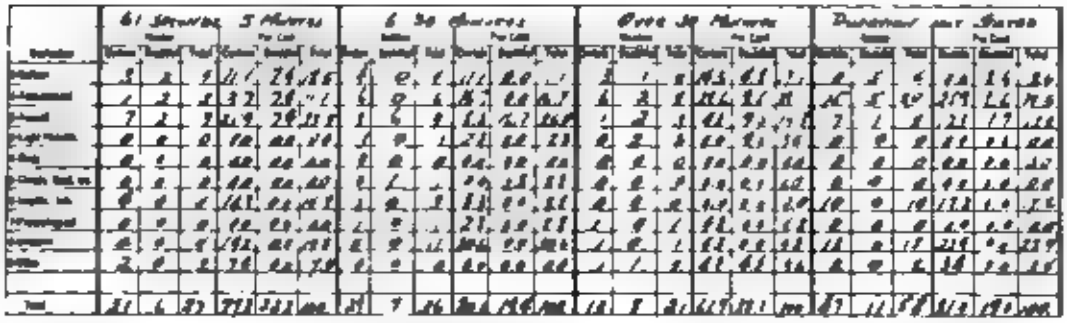


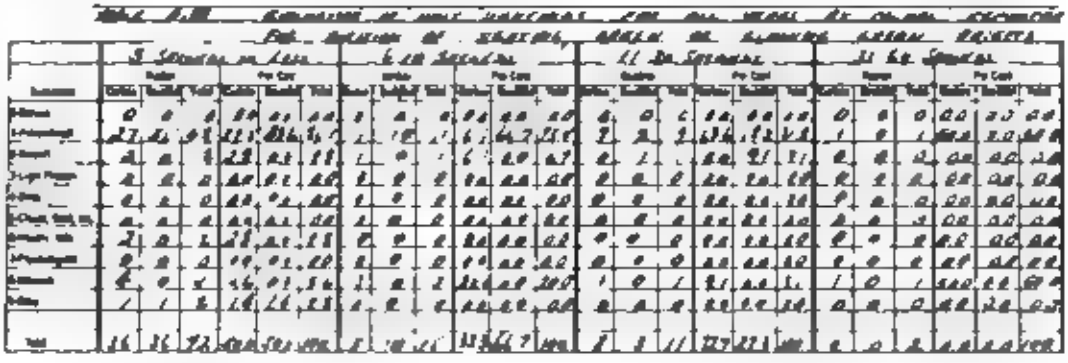


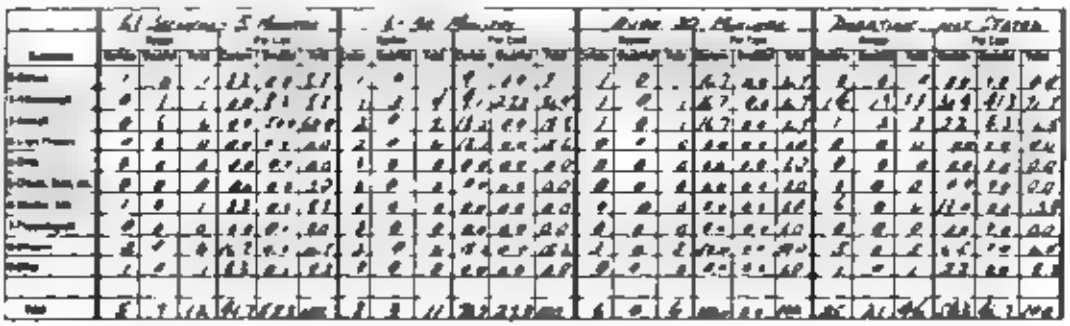


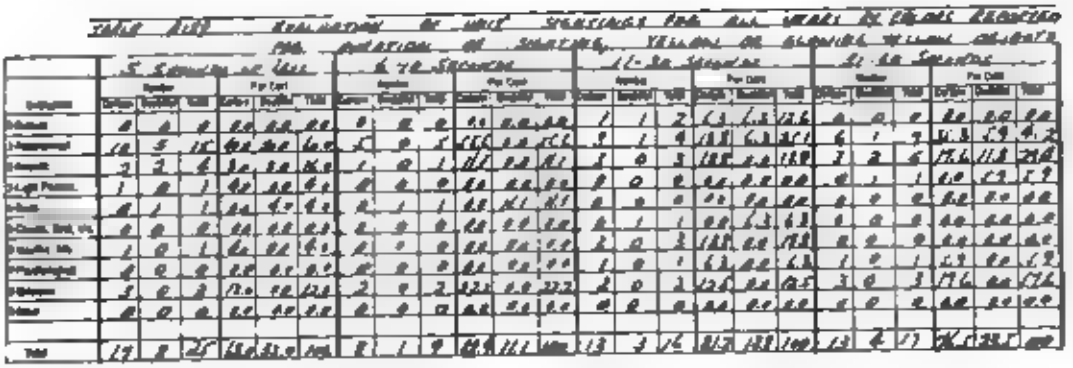


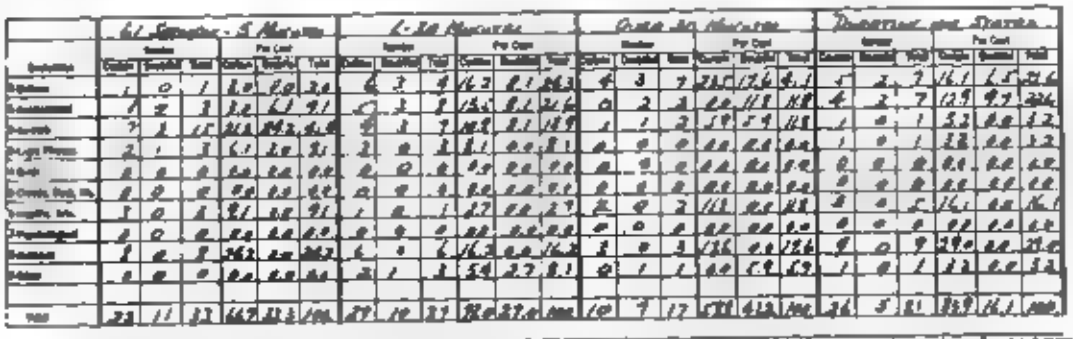


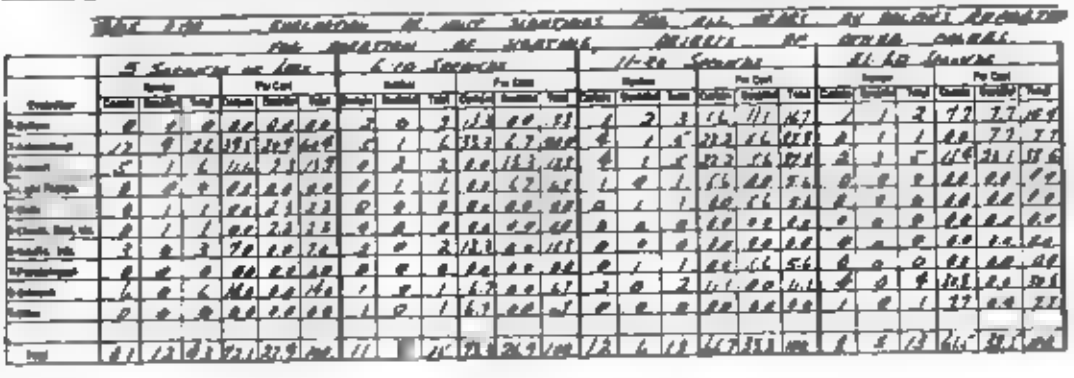


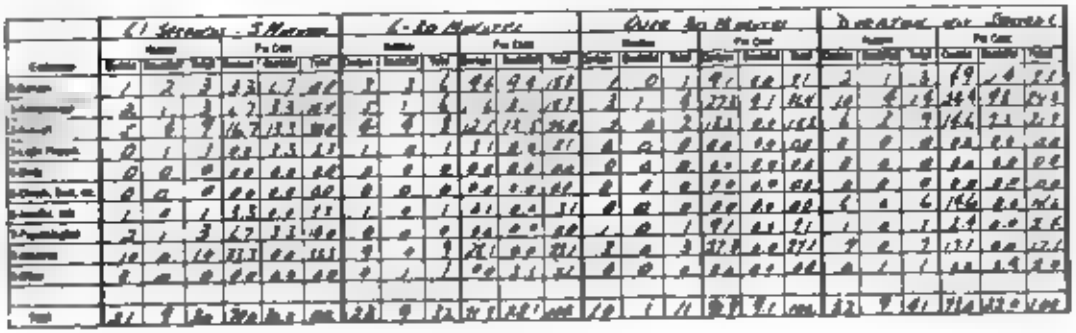


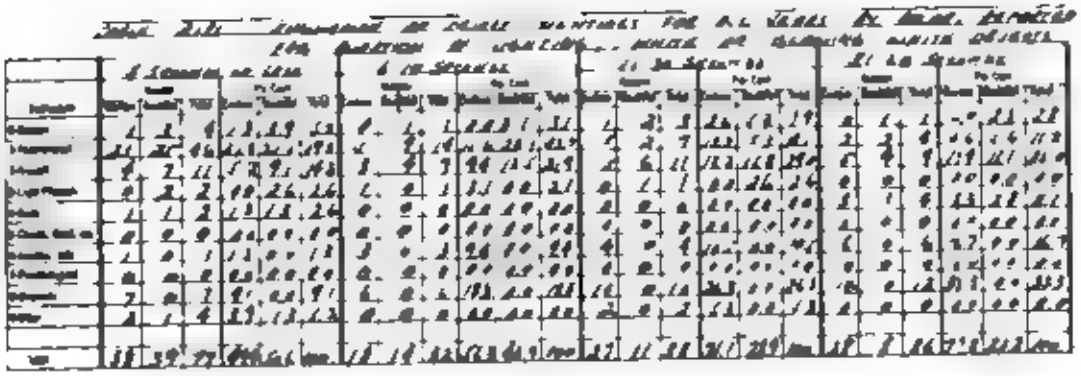


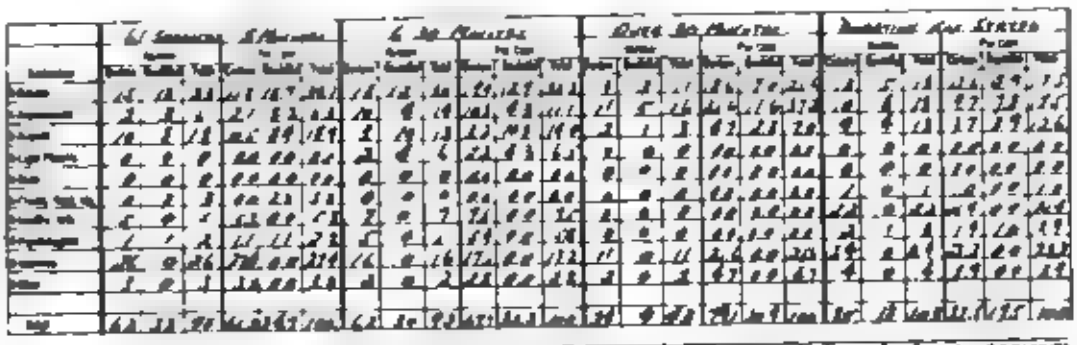


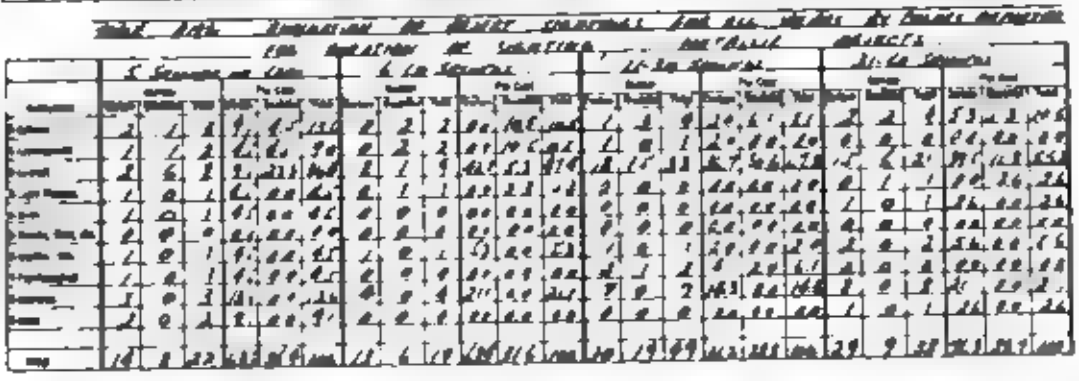


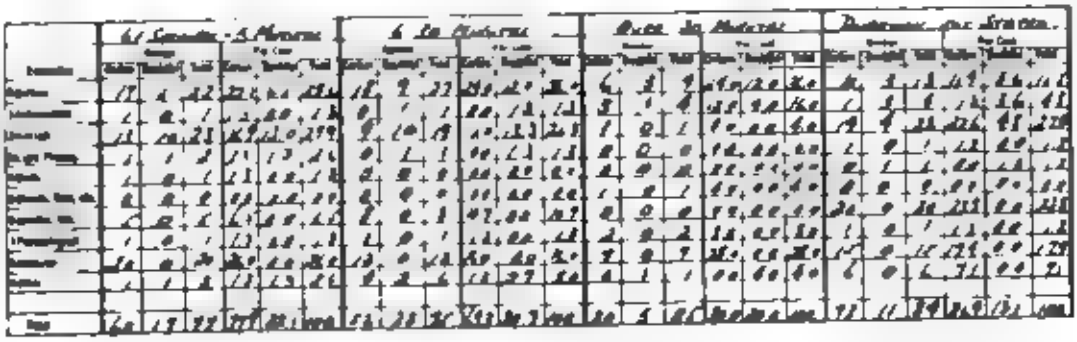


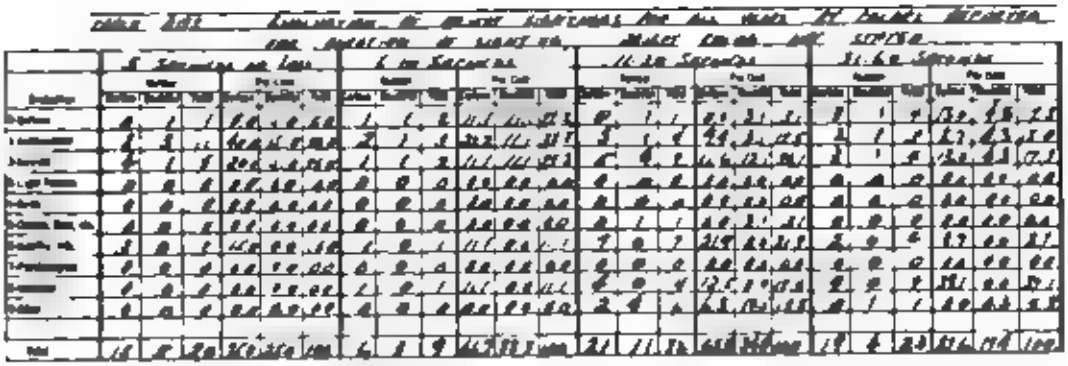


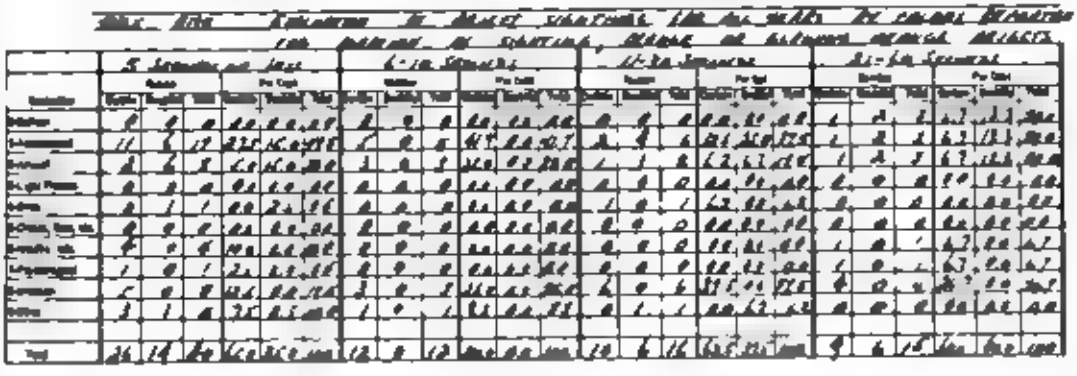


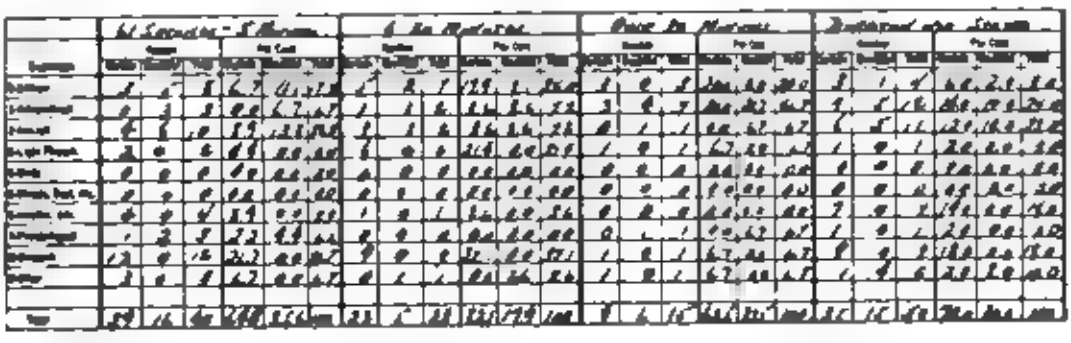












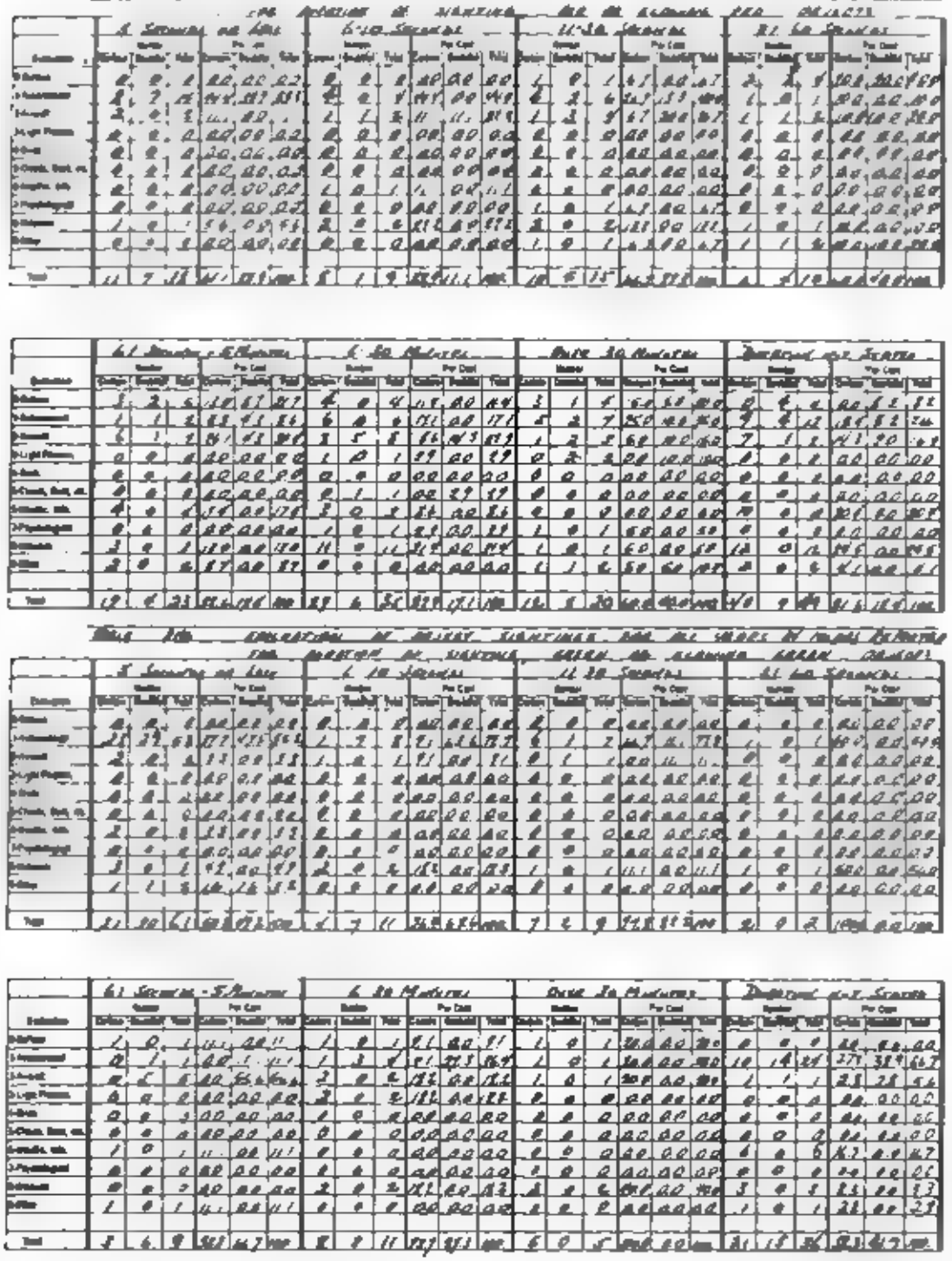


TABLE A122 — EVALUATION OF OBJECT SIGHTINGS FOR ALL YEARS BY COLORS REPORTED FOR DURATION OF SIGHTING, YELLOW OR GLOWING YELLOW OBJECTS

Evaluation	5 Seconds or Less						6-10 Seconds						11-30 Seconds						31-60 Seconds					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	7.7	7.7	15.4	0	0	0	0.0	0.0	0.0
1-Astronomical	6	3	9	35.3	17.6	52.9	5	0	5	55.6	0.0	55.6	1	1	2	7.7	7.7	15.4	2	1	3	15.4	7.7	23.1
2-Aircraft	2	1	3	11.8	5.9	17.7	1	0	1	11.1	0.0	11.1	3	0	3	23.1	0.0	23.1	3	2	5	23.1	15.4	38.5
3-Light Phenom.	1	0	1	5.9	0.0	5.9	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	7.7	7.7
4-Birds	0	1	1	0.0	5.9	5.9	0	1	1	0.0	11.1	11.1	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	7.7	7.7	0	0	0	0.0	0.0	0.0
6-Insuffic. Info.	1	0	1	5.9	0.0	5.9	0	0	0	0.0	0.0	0.0	3	0	3	23.1	0.0	23.1	0	0	0	0.0	0.0	0.0
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	7.7	0.0	7.7	1	0	1	7.7	0.0	7.7
8-Unknown	2	0	2	11.8	0.0	11.8	2	0	2	22.2	0.0	22.2	1	0	1	7.7	0.0	7.7	3	0	3	23.1	0.0	23.1
9-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	12	5	17	70.6	29.4	100	8	1	9	88.9	11.1	100	10	3	13	76.9	23.1	100	9	4	13	69.2	30.8	100

Evaluation	61 Seconds - 5 Minutes						6-30 Minutes						Over 30 Minutes						Duration not Stated					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	1	0	1	3.3	0.0	3.3	6	2	8	18.2	6.1	24.3	4	3	7	23.5	17.6	41.1	4	2	6	14.8	7.4	22.2
1-Astronomical	1	1	2	3.3	3.3	6.6	5	3	8	15.2	9.1	24.3	0	2	2	0.0	11.8	11.8	4	3	7	14.8	11.1	25.9
2-Aircraft	7	8	15	23.3	26.7	50.0	4	2	6	12.1	6.1	18.2	1	1	2	5.9	5.9	11.8	1	0	1	3.7	0.0	3.7
3-Light Phenom.	1	0	1	3.3	0.0	3.3	2	0	2	6.1	0.0	6.1	0	0	0	0.0	0.0	0.0	1	0	1	3.7	0.0	3.7
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insuffic. Info.	3	0	3	10.0	0.0	10.0	1	0	1	3.0	0.0	3.0	2	0	2	11.8	0.0	11.8	4	0	4	14.8	0.0	14.8
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	8	0	8	26.7	0.0	26.7	5	0	5	15.2	0.0	15.2	3	0	3	17.6	0.0	17.6	7	0	7	25.9	0.0	25.9
9-Other	0	0	0	0.0	0.0	0.0	2	1	3	6.1	3.0	9.1	0	1	1	0.0	5.9	5.9	1	0	1	3.7	0.0	3.7
Total	21	9	30	70.0	30.0	100	25	8	33	75.8	24.2	100	10	7	17	58.8	41.2	100	22	5	27	81.5	18.5	100

TABLE A123 — EVALUATION OF OBJECT SIGHTINGS FOR ALL YEARS BY COLORS REPORTED FOR DURATION OF SIGHTING, OBJECTS OF OTHER COLORS

Evaluation	5 Seconds or Less						6-10 Seconds						11-30 Seconds						31-60 Seconds					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0	1	0	1	8.3	0.0	8.3	1	2	3	7.1	14.3	21.4	1	1	2	7.7	7.7	15.4
1-Astronomical	9	6	15	29.0	19.4	48.4	4	0	4	33.3	0.0	33.3	2	0	2	14.3	0.0	14.3	0	1	1	0.0	7.7	7.7
2-Aircraft	4	1	5	12.9	3.2	16.1	0	2	2	0.0	16.7	16.7	3	1	4	21.4	7.1	28.5	2	3	5	15.4	23.1	38.5
3-Light Phenom.	0	0	0	0.0	0.0	0.0	0	1	1	0.0	8.3	8.3	1	0	1	7.1	0.0	7.1	0	0	0	0.0	0.0	0.0
4-Birds	0	1	1	0.0	3.2	3.2	0	0	0	0.0	0.0	0.0	0	1	1	0.0	7.1	7.1	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	1	1	0.0	3.2	3.2	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insuffic. Info.	3	0	3	9.7	0.0	9.7	2	0	2	16.7	0.0	16.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	7.1	7.1	0	0	0	0.0	0.0	0.0
8-Unknown	6	0	6	19.4	0.0	19.4	1	0	1	8.3	0.0	8.3	2	0	2	14.3	0.0	14.3	4	0	4	30.8	0.0	30.8
9-Other	0	0	0	0.0	0.0	0.0	1	0	1	8.3	0.0	8.3	0	0	0	0.0	0.0	0.0	1	0	1	7.7	0.0	7.7
Total	22	9	31	71.0	29.0	100	9	3	12	75.0	25.0	100	9	5	14	64.3	35.7	100	8	5	13	61.5	38.5	100

Evaluation	61 Seconds - 5 Minutes						6-30 Minutes						Over 30 Minutes						Duration not Stated					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	1	2	3	3.6	7.1	10.7	3	2	5	10.3	6.9	17.2	1	0	1	12.5	0.0	12.5	2	1	3	6.3	3.1	9.4
1-Astronomical	1	1	2	3.6	3.6	7.2	5	1	6	17.2	3.4	20.6	3	0	3	37.5	0.0	37.5	6	2	8	18.8	6.3	25.1
2-Aircraft	4	4	8	14.3	14.3	28.6	4	4	8	13.8	13.8	27.6	2	0	2	25.0	0.0	25.0	5	3	8	15.6	9.4	25.0
3-Light Phenom.	0	1	1	0.0	3.6	3.6	1	0	1	3.4	0.0	3.4	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insuffic. Info.	1	0	1	3.6	0.0	3.6	1	0	1	3.4	0.0	3.4	0	0	0	0.0	0.0	0.0	6	0	6	18.8	0.0	18.8
7-Psychological	2	1	3	7.1	3.6	10.7	0	0	0	0.0	0.0	0.0	1	0	1	12.5	0.0	12.5	1	0	1	3.1	0.0	3.1
8-Unknown	10	0	10	35.7	0.0	35.7	7	0	7	24.1	0.0	24.1	1	0	1	12.5	0.0	12.5	5	0	5	15.6	0.0	15.6
9-Other	0	0	0	0.0	0.0	0.0	0	1	1	0.0	3.4	3.4	0	0	0	0.0	0.0	0.0	0	1	1	0.0	3.1	3.1
Total	19	9	28	67.9	32.1	100	21	8	29	72.4	27.6	100	8	0	8	100	0.0	100	25	7	32	78.1	21.9	100

	5 Seconds or Less			6 to 10 Seconds			11 to 30 Seconds			31 to 60 Seconds		
	Number			Number			Number			Number		
	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total
	0	2	2	0	0	0	0	2	2	0	0	0
	3	0	3	1	0	1	0	1	1	0	1	1
	6	2	8	5	0	5	10	3	13	2	1	3
	0	1	1	3	0	3	1	0	1	0	1	1
	2	4	6	0	1	1	1	0	1	1	1	2
	0	0	0	0	0	0	0	0	0	0	0	0
	2	0	2	1	0	1	2	0	2	0	0	0
	0	0	0	6	0	6	0	1	1	0	0	0
	7	0	7	4	0	4	7	0	7	5	0	5
	2	0	2	0	0	0	0	0	0	0	0	0
	22	11	33	11	4	15	21	7	28	13	4	17

	1 Minute - 5 Minutes			6-30 Minutes			Over 30 Minutes			Duration not Stated		
	Number			Number			Number			Number		
	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total
	1	3	4	3	3	6	6	0	6	3	0	3
	0	2	2	0	0	0	2	5	7	1	3	4
	12	10	22	8	15	23	1	1	2	18	4	22
	1	2	3	2	2	4	0	0	0	1	0	1
	0	0	0	0	1	1	0	0	0	2	1	3
	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	7	10	0	10	2	0	2	2	0	2
	0	1	1	0	0	0	0	1	1	1	1	2
	24	0	24	15	0	15	25	0	25	24	0	24
	2	0	2	1	2	3	4	0	4	14	0	14
	44	18	62	39	23	62	40	7	47	66	9	75

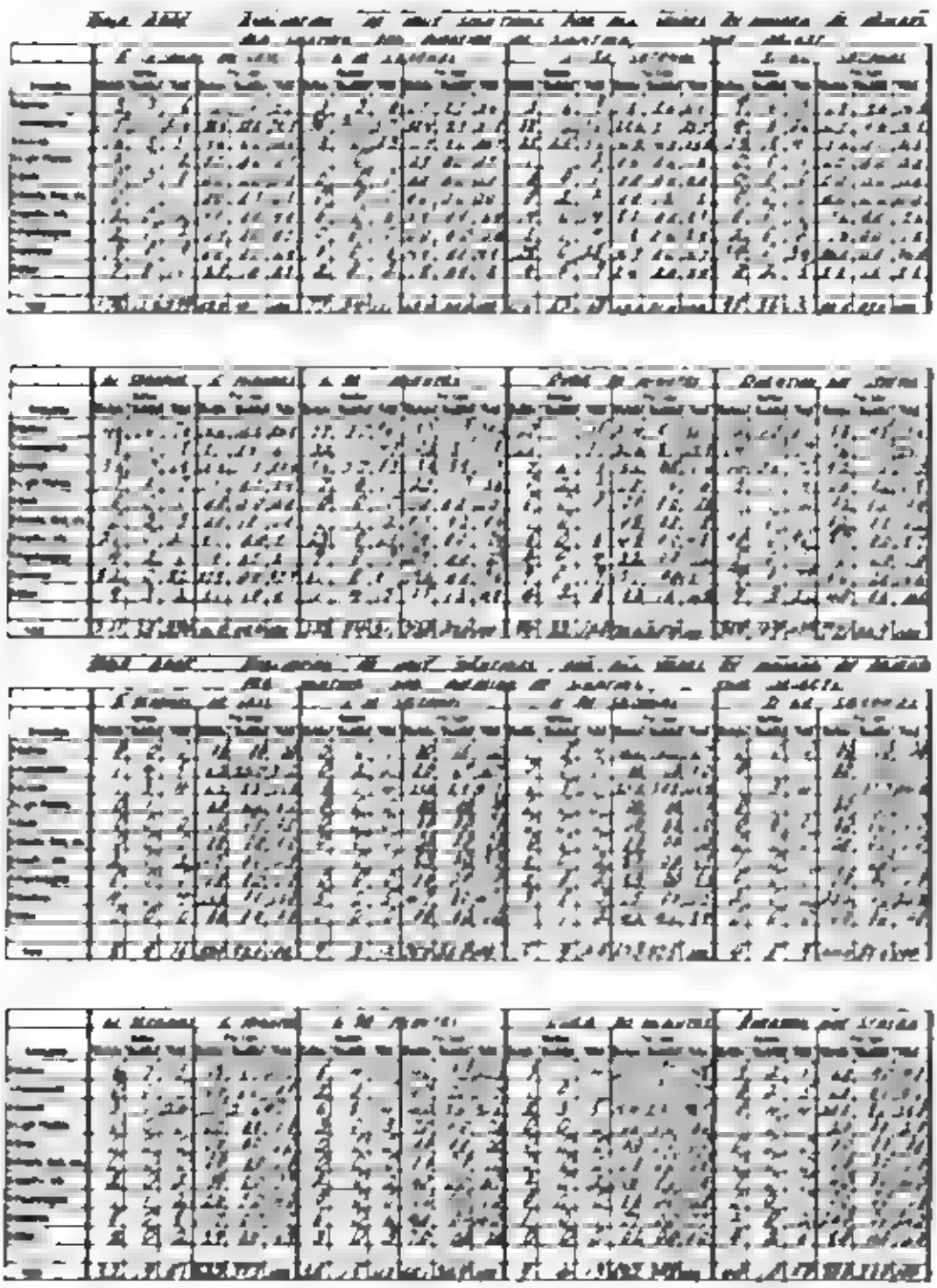
	5 Seconds or Less			6 to 10 Seconds			11 to 30 Seconds			31 to 60 Seconds		
	Number			Number			Number			Number		
	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total
	0	0	0	0	1	1	0	0	0	0	0	0
	0	1	1	0	0	0	0	1	1	0	0	0
	1	2	3	0	1	1	0	0	0	1	0	1
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	1	1	0	1	1	4	1	5
	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	3	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	1	1	0	0	0
	3	0	3	0	0	0	0	0	0	3	0	3
	0	0	0	0	0	0	0	0	0	0	0	0
	7	3	10	2	1	3	0	3	3	8	1	9

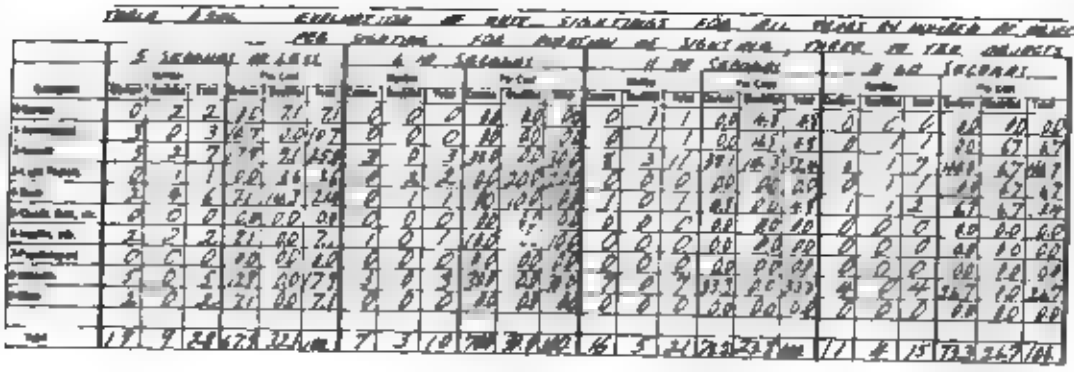
	61 Seconds - 5 Minutes			6-30 Minutes			Over 30 Minutes			Duration not Stated		
	Number			Number			Number			Number		
	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total	Civilian	Disabled	Total
	0	0	0	1	0	1	0	0	0	0	0	0
	0	1	1	0	1	1	6	0	6	1	0	1
	0	2	2	0	0	0	0	1	1	0	1	1
	0	0	0	2	0	2	1	0	1	0	0	0
	1	0	1	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	1	0	1	0	0	0	2	0	2
	0	0	0	0	0	0	1	0	1	0	0	0
	4	0	4	3	0	3	2	0	2	2	0	2
	3	0	3	0	0	0	0	1	1	2	0	2
	8	3	11	7	1	8	21	2	23	7	1	8

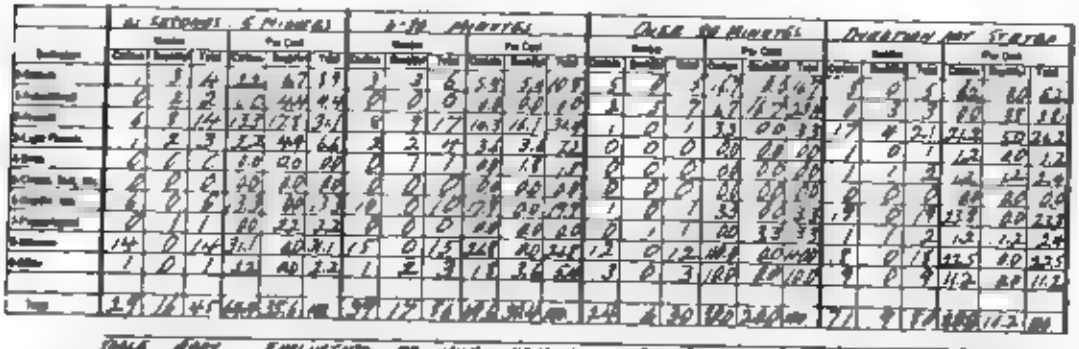
TABLE A 208 EVALUATION OF ALL SIGHTINGS FOR ALL YEARS BY NUMBER OF OBJECTS AND SIGHTING FOR DURATION OF SIGHTING, NUMBER OF OBJECTS NOT STATED

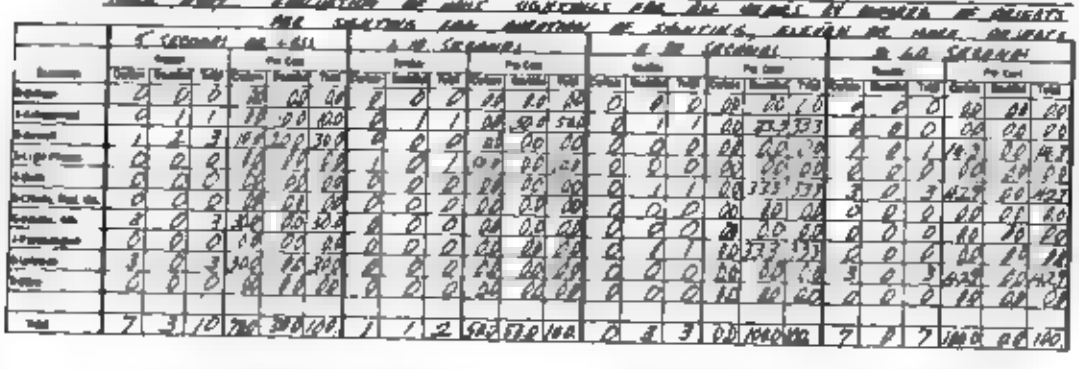
Evaluation	5 SECONDS OR LESS						6-30 SECONDS						31-59 SECONDS					
	Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	0	0	0	0.0	0.0	0.0							1	0	1	50.0	0.0	50.0
2-Astronomical	1	0	1	16.7	0.0	16.7							0	0	0	0.0	0.0	0.0
3-Aircraft	0	1	1	0.0	33.3	33.3							1	0	1	50.0	0.0	50.0
4-Light Phenom.	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0
5-Birds	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0
7-Insects, Ins.	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0
8-Psychological	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0
9-Unknown	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0
10-Other	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0
Total	2	1	3	66.7	33.3	100							2	0	2	100.0	0.0	100

Evaluation	1 MINUTE - 5 MINUTES						5-30 MINUTES						OVER 30 MINUTES						DURATION NOT STATED					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Disp.	Certain	Doubtful	Total
1-Balloon	2	0	2	22.2	0.0	22.2	0	1	1	0.0	33.3	33.3	0	0	0	0.0	0.0	0.0	1	0	1	2.7	0.0	2.7
2-Astronomical	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	5.3	0.0	5.3	11	1	12	29.7	2.7	32.4
3-Aircraft	2	0	2	22.2	0.0	22.2	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	3	4	2.7	8.1	10.8
4-Light Phenom.	1	0	1	16.7	0.0	16.7	1	0	1	0.0	33.3	33.3	0	0	0	0.0	0.0	0.0	0	1	1	0.0	2.7	2.7
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	5.3	0.0	5.3	2	0	2	5.4	0.0	5.4
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	2.7	0.0	2.7
7-Insects, Ins.	1	0	1	16.7	0.0	16.7	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	8	0	8	21.6	0.0	21.6
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	2.7	2.7
9-Unknown	0	0	0	0.0	0.0	0.0	1	0	1	33.3	0.0	33.3	5	0	5	26.3	0.0	26.3	4	0	4	10.8	0.0	10.8
10-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	5.3	0.0	5.3	1	0	1	2.7	0.0	2.7
Total	6	0	6	100.0	0.0	100	2	1	3	66.7	33.3	100	19	0	19	100.0	0.0	100	31	6	37	83.8	16.2	100









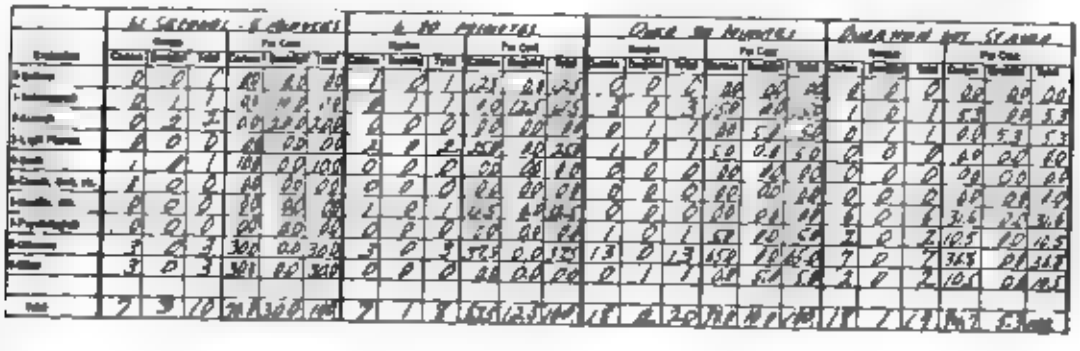
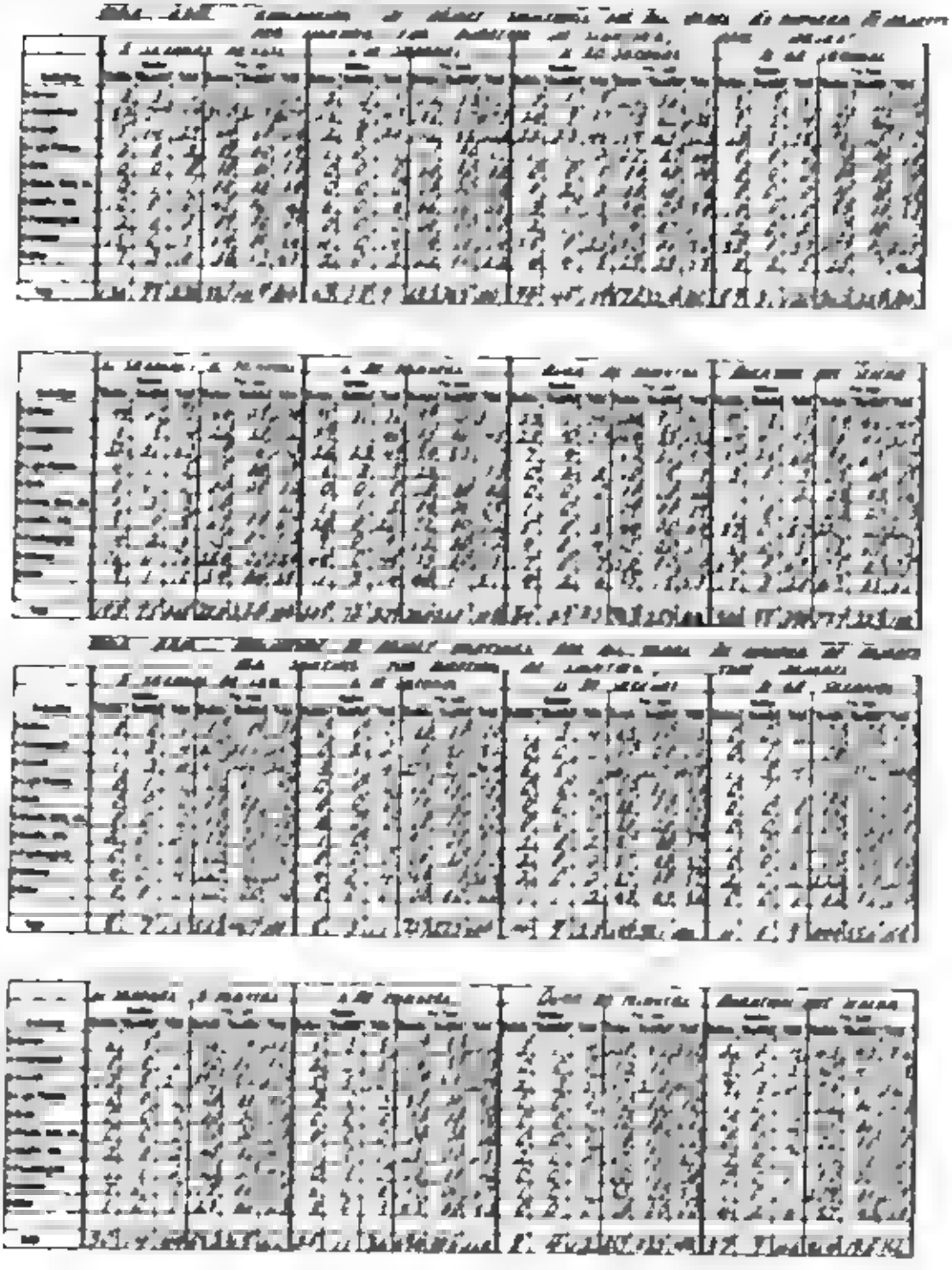
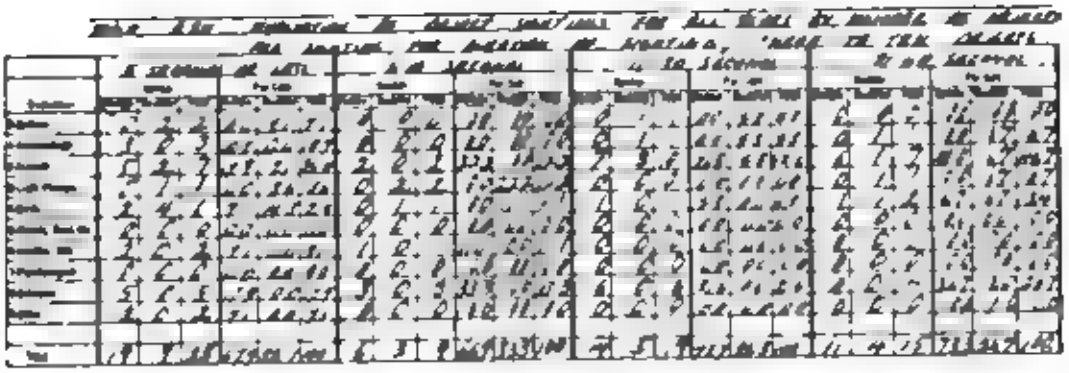


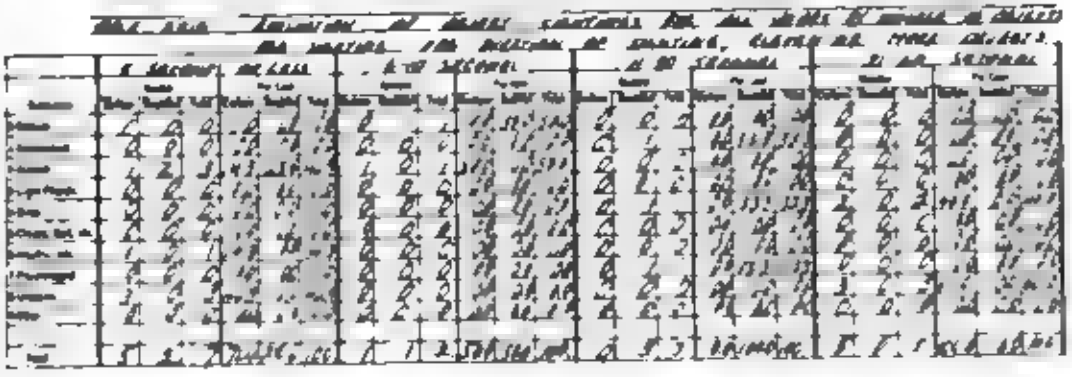
TABLE XXIX. DURATION OF UFO SIGHTINGS FOR ALL YEARS BY NUMBER OF OBJECTS AND SIGHTING FOR DURATION OF SIGHTING NUMBER OF OBJECTS NOT STATED

	5 SECONDS OR LESS						6-10 SECONDS						11-30 SECONDS						31-60 SECONDS					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Evaluation	Civilian	Scientist	Total	Civilian	Scientist	Total	Civilian	Scientist	Total	Civilian	Scientist	Total	Civilian	Scientist	Total	Civilian	Scientist	Total	Civilian	Scientist	Total	Civilian	Scientist	Total
0-Balloon	0	0	0	0.0	0.0	0.0							1	0	1	50.0	0.0	50.0	0	0	0	0.0	0.0	0.0
1-Astronomical	2	0	2	66.7	0.0	66.7							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
2-Aircraft	0	1	1	0.0	33.3	33.3							1	0	1	50.0	0.0	50.0	0	0	0	0.0	0.0	0.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Hoax	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0	1	0	1	100.0	0.0	100.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Psychological	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Other	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	2	1	3	66.7	33.3	100							2	0	2	100.0	0.0	100	1	0	1	100.0	0.0	100

	61 SECONDS - 5 MINUTES						5-30 MINUTES						OVER 30 MINUTES						DURATION NOT STATED					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
Evaluation	Civilian	Scientist	Total	Civilian	Scientist	Total	Civilian	Scientist	Total	Civilian	Scientist	Total	Civilian	Scientist	Total	Civilian	Scientist	Total	Civilian	Scientist	Total	Civilian	Scientist	Total
0-Balloon	2	0	2	40.0	0.0	40.0	0	1	1	0.0	33.3	33.3	0	0	0	0.0	0.0	0.0	1	0	1	3.8	0.0	3.8
1-Astronomical	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	12.5	0.0	12.5	11	1	12	42.3	3.8	46.3
2-Aircraft	1	0	1	20.0	0.0	20.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	3	4	3.8	11.1	15.4
3-Light Phenom.	1	0	1	20.0	0.0	20.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	3.8	3.8
4-Hoax	0	0	0	0.0	0.0	0.0	1	0	1	33.3	0.0	33.3	2	0	2	25.0	0.0	25.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insufficient Info.	1	0	1	20.0	0.0	20.0	0	0	0	0.0	0.0	0.0	2	0	2	25.0	0.0	25.0	8	0	8	30.8	0.0	30.8
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	3.8	3.8
8-Unknown	0	0	0	0.0	0.0	0.0	1	0	1	33.3	0.0	33.3	2	0	2	25.0	0.0	25.0	5	0	5	19.2	0.0	19.2
9-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	12.5	0.0	12.5	1	0	1	3.8	0.0	3.8
Total	5	0	5	100	0.0	100	2	1	3	66.7	33.3	100	8	0	8	100.0	0.0	100	27	6	33	81.8	18.2	100







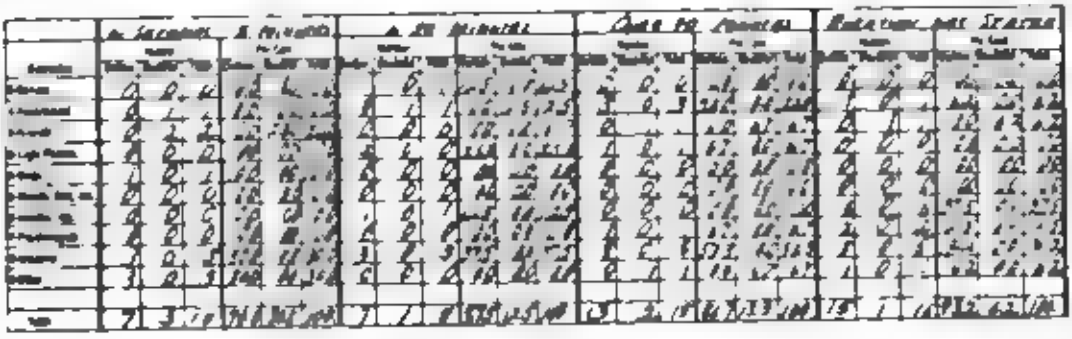


TABLE A2.2 EVALUATION OF OBJECT SIGHTINGS FOR ALL YEARS BY NUMBER OF OBJECTS PER SIGHTING FOR DURATION OF SIGHTING, NUMBER OF OBJECTS NOT STATED

Evaluation	5 SECONDS OR LESS						6-10 SECONDS						11-30 SECONDS						31 OR SECONDS					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	0	0	0	0.0	0.0	0.0							1	0	1	50.0	0.0	50.0	0	0	0	0.0	0.0	0.0
1-Astronomical	1	0	1	50.0	0.0	50.0							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
2-Aircraft	0	1	1	0.0	50.0	50.0							1	0	1	50.0	0.0	50.0	0	0	0	0.0	0.0	0.0
3-Light Phenom.	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
4-Birds	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0	1	0	1	100.0	0.0	100.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Scientific Obs.	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Psychological	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Other	0	0	0	0.0	0.0	0.0							0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Total	1	1	2	50.0	50.0	100.							2	0	2	100.	0.0	100.	1	0	1	100.0	0.0	100.

Evaluation	61 SECONDS 5 MINUTES						6-30 MINUTES						OVER 30 MINUTES						DURATION NOT STATED					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	2	0	2	40.0	0.0	40.0	0	1	1	0.0	33.3	33.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
1-Astronomical	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	14.3	0.0	14.3	9	1	10	81.6	5.8	52.9
2-Aircraft	1	0	1	20.0	0.0	20.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	2	3.8	5.8	7.4
3-Light Phenom.	1	0	1	20.0	0.0	20.0	1	0	1	33.3	0.0	33.3	0	0	0	0.0	0.0	0.0	0	1	1	0.0	5.8	3.8
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	28.6	0.0	28.6	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Scientific Obs.	1	0	1	20.0	0.0	20.0	0	0	0	0.0	0.0	0.0	2	0	2	28.6	0.0	28.6	8	0	8	30.8	0.0	30.8
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	1	1	0.0	5.8	3.8
8-Unknown	0	0	0	0.0	0.0	0.0	1	0	1	33.3	0.0	33.3	1	0	1	14.3	0.0	14.3	3	0	3	11.5	0.0	11.6
9-Other	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	0	1	14.3	0.0	14.3	1	0	1	3.8	0.0	3.8
Total	5	0	5	100.0	0.0	100.	2	1	3	66.7	33.3	100.	7	0	7	100.	0.0	100.	22	4	26	84.6	15.4	100.

TABLE ____ EVALUATION OF ALL VERIFIERS FOR ALL YEARS BY GEOGRAPHIC LOCATION

	TOTAL			NORTH AMERICA			SOUTH AMERICA			EUROPE		
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
Evaluation	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total
0-Perfect	190	179	369	8.4	5.6	14.0	151	143	294	36	36	72
1-Unimportant	478	341	819	18.8	10.5	29.3	385	272	657	93	69	162
2-Trivial	369	282	651	11.1	8.8	20.0	299	227	526	70	55	125
3-Light Plasma	92	80	172	2.8	2.5	5.3	74	64	138	18	16	34
4-Gross	42	38	80	1.3	1.2	2.5	34	30	64	8	8	16
5-Classic, Text, etc.	38	38	76	1.2	1.2	2.4	30	30	60	8	8	16
6-Artifact, Info	295	6	301	9.1	0.2	9.3	237	5	242	58	1	59
7-Psychological	38	18	56	1.2	0.6	1.8	30	14	44	8	4	12
8-Unknown	459	0	459	14.2	0.0	14.2	368	0	368	91	0	91
9-Other	112	55	167	3.5	1.7	5.2	90	44	134	22	11	33
Total	3249	1020	4269	100.1	31.5	131.6	2608	819	3427	641	201	842

	ASIA			AFRICA			AUSTRALIA					
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
Evaluation	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total
0-Perfect	9	6	15	6.1	3.0	11.1	0	1	1	0.0	4.0	4.0
1-Unimportant	18	9	27	15.7	6.1	21.8	7	1	8	28.0	4.0	32.0
2-Trivial	6	10	16	3.5	4.7	12.6	0	3	3	0.0	12.0	12.0
3-Light Plasma	1	0	1	0.9	0.0	0.9	0	0	0	0.0	0.0	0.0
4-Gross	5	0	5	4.3	0.0	4.3	0	0	0	0.0	0.0	0.0
5-Classic, Text, etc.	3	0	3	2.6	0.0	2.6	0	0	0	0.0	0.0	0.0
6-Artifact, Info	4	0	4	3.5	0.0	3.5	0	0	0	0.0	0.0	0.0
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	32	0	32	27.8	0.0	27.8	6	0	6	24.0	0.0	24.0
9-Other	13	4	17	11.3	3.5	14.8	0	0	0	0.0	0.0	0.0
Total	96	29	125	83.6	25.2	108.8	13	5	18	52.0	20.0	72.0

TABLE ____ EVALUATION OF UNIT SCRIPTORES FOR ALL YEARS BY GEOGRAPHIC LOCATION

	TOTAL			NORTH AMERICA			SOUTH AMERICA			EUROPE		
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
Evaluation	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total
0-Perfect	122	150	272	5.9	5.0	10.9	104	128	232	18	22	40
1-Unimportant	168	154	322	14.0	12.8	26.8	143	131	274	25	23	48
2-Trivial	292	295	587	24.4	24.6	49.0	249	251	500	43	44	87
3-Light Plasma	32	31	63	2.7	2.6	5.3	27	26	53	5	5	10
4-Gross	15	10	25	0.6	0.8	2.1	11	9	20	2	1	3
5-Classic, Text, etc.	5	7	12	0.4	0.6	1.0	4	6	10	1	1	2
6-Artifact, Info	241	0	241	20.1	0.0	20.1	206	0	206	35	0	35
7-Psychological	36	9	45	1.4	0.8	3.8	31	8	39	5	1	6
8-Unknown	477	0	477	39.8	0.0	39.8	408	0	408	69	0	69
9-Other	56	51	107	4.6	4.3	8.9	48	44	92	8	7	15
Total	1424	706	2130	118.7	58.8	177.5	1231	603	1834	193	103	296

	ASIA			AFRICA			AUSTRALIA					
	Number		Per Cent	Number		Per Cent	Number		Per Cent	Number		Per Cent
Evaluation	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total	Correct	Incorrect	Total
0-Perfect	7	5	12	2.2	5.4	12.6	0	1	1	0.0	4.7	4.7
1-Unimportant	12	5	17	12.6	5.4	18.1	5	1	7	23.1	4.7	27.8
2-Trivial	8	10	18	8.6	11.2	19.8	3	4	7	14.0	19.0	33.0
3-Light Plasma	1	0	1	1.1	0.0	1.1	0	0	0	0.0	0.0	0.0
4-Gross	2	0	2	2.2	0.0	2.2	0	0	0	0.0	0.0	0.0
5-Classic, Text, etc.	1	0	1	1.1	0.0	1.1	0	0	0	0.0	0.0	0.0
6-Artifact, Info	4	0	4	4.5	0.0	4.5	5	0	5	23.8	0.0	23.8
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	24	0	24	27.2	0.0	27.2	4	0	4	19.0	0.0	19.0
9-Other	10	8	18	11.2	9.0	20.2	0	0	0	0.0	0.0	0.0
Total	69	28	97	78.5	31.7	110.2	17	7	24	80.9	33.4	114.3

* See footnote on next page

TABLE XXII EVALUATION OF OBJECT SIGHTINGS FOR ALL YEARS BY GEOGRAPHIC LOCATION

Evaluation	Total						North America						South America						Europe					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	209	21	230	9.1	6.0	8.4	88	126	214	6.5	6.3	6.4	0	0	0	0.0	0.0	0.0	9	1	8	4.5	1.6	3.1
2-Astronomical	240	105	345	10.5	29.7	12.6	166	197	363	12.3	9.7	11.1	2	0	2	15.0	0.0	15.0	5	4	9	2.5	6.5	3.5
3-Aircraft	946	207	1153	41.1	58.5	42.1	1169	1911	3080	85.9	94.1	90.1	7	0	7	35.0	0.0	35.0	6	1	7	3.0	1.6	2.7
4-Light Phenom.	30	18	48	1.3	5.1	1.8	29	17	46	1.4	0.8	1.3	0	0	0	0.0	0.0	0.0	0	1	1	0.0	1.6	0.4
5-Birds	12	10	22	0.5	2.8	0.8	12	9	19	0.5	0.4	0.5	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Bal. etc.	8	7	15	0.3	2.0	0.6	2	7	9	0.1	0.3	0.4	0	0	0	0.0	0.0	0.0	6	0	6	25.0	0.0	23.0
7-Insufficient Info.	340	0	340	14.9	0.0	13.1	216	0	216	8.6	0.0	8.4	1	0	1	5.0	0.0	5.0	16	0	16	66.0	0.0	61.5
8-Psychological	35	9	44	1.6	2.5	1.7	26	8	34	1.0	0.3	1.3	0	1	1	0.0	12.5	3.8	0	0	0	0.0	0.0	0.0
9-Unknown	414	0	414	18.1	0.0	15.9	276	0	276	10.9	0.0	10.7	1	0	1	5.0	0.0	5.0	10	0	10	41.4	0.0	38.4
0-Other	46	24	70	2.0	6.7	2.7	24	17	41	1.0	0.7	1.6	0	0	0	0.0	0.0	0.0	3	5	8	12.4	19.2	15.4
Total	2285	413	2698	99.9	99.9	100	1928	2519	4447	99.9	99.9	100	20	2	22	100	100	100	57	13	70	100	100	100

Evaluation	Asia						Africa						Australia											
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	7	5	12	9.3	41.7	16.2	0	1	1	0.0	50.0	5.0												
2-Astronomical	9	3	12	12.0	25.0	16.2	5	1	6	50.0	50.0	50.0												
3-Aircraft	41	7	48	54.7	58.3	55.4	0	4	4	0.0	100.0	100.0												
4-Light Phenom.	1	0	1	1.3	0.0	1.3	0	0	0	0.0	0.0	0.0												
5-Birds	2	0	2	2.7	0.0	2.7	0	0	0	0.0	0.0	0.0												
6-Clouds, Bal. etc.	1	0	1	1.3	0.0	1.3	0	0	0	0.0	0.0	0.0												
7-Insufficient Info.	4	0	4	5.3	0.0	5.3	5	0	5	50.0	0.0	50.0												
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
9-Unknown	11	0	11	14.0	0.0	12.2	0	0	0	0.0	0.0	0.0												
0-Other	1	1	10	10.7	2.1	11.4	0	0	0	0.0	0.0	0.0												
Total	60	15	75	100.0	99.9	100	10	6	16	100.0	100	100												

NO

* TOTALS DO NOT AGREE WITH PREVIOUS TOTALS BECAUSE TWO SIGHTINGS OCCURRED AT UNKNOWN LOCATIONS

TABLE XXIX ELEVATION OF ALL SIGHTINGS FOR ALL YEARS BY NORTH AMERICAN LOCATION

Evaluation	North America						United States						Canada						Alaska					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	226	149	380	5.9	6.7	6.1	196	135	331	5.1	5.8	5.4	2	9	11	3.7	6.1	5.6	2	1	3	9.5	2.1	6.1
1-Astronomical	465	225	690	12.1	10.1	11.2	402	192	594	10.4	8.3	9.5	23	6	29	42.6	11.3	19.7	12	0	12	25.5	0.0	19.4
2-Aircraft	445	260	705	11.6	11.7	11.6	373	206	579	9.7	8.9	9.3	10	1	11	18.5	1.9	11.5	9	0	9	19.1	0.0	14.5
3-Light Phenom.	19	23	42	1.0	1.1	1.1	19	23	42	1.0	1.0	1.0	0	0	0	0.0	0.0	0.0	1	0	1	2.1	0.0	1.6
4-Birds	14	1	15	0.6	0.1	0.2	14	1	15	0.6	0.1	0.2	0	1	1	0.0	1.2	1.2	0	0	0	0.0	0.0	0.0
5-Clouds, Fogs, etc.	9	12	21	0.3	0.5	0.7	9	12	21	0.3	0.4	0.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insects, Ins.	211	0	211	9.1	0.0	6.1	161	0	161	2.3	0.0	2.3	4	0	4	7.7	0.0	4.9	2	0	2	4.3	0.0	2.3
7-Psychological	15	9	24	1.3	0.3	0.6	11	9	20	1.3	0.3	0.6	1	0	1	1.2	0.0	0.2	0	0	0	0.0	0.0	0.0
8-Unknown	436	0	436	11.6	0.0	11.5	402	0	402	10.5	0.0	10.5	22	0	22	37.8	0.0	22.3	12	0	12	46.8	0.0	26.8
9-Other	39	24	63	2.1	0.7	1.6	38	21	59	2.1	0.6	1.5	1	1	2	1.7	1.2	1.4	1	0	1	3.5	0.0	1.5
Total	2181	729	2910	11.9	25.1	100	1815	609	2424	11.3	25.1	100	86	15	101	11.6	15.5	100	46	1	47	97.9	2.1	100

Evaluation	Mexico						Hawaii																	
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	2	0	2	16.7	0.0	11.1	5	1	6	9.1	5.3	11.5												
1-Astronomical	1	2	3	8.3	11.1	10.0	4	9	13	11.8	23.1	41.3												
2-Aircraft	0	1	1	0.0	4.2	3.3	1	2	3	2.5	3.5	9.7												
3-Light Phenom.	1	0	1	8.3	0.0	3.3	0	0	0	0.0	0.0	0.0												
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
5-Clouds, Fogs, etc.	0	0	0	0.0	0.0	0.0	0	1	1	0.0	3.2	2.2												
6-Insects, Ins.	2	0	2	16.7	0.0	6.7	2	0	2	6.5	0.0	4.5												
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
8-Unknown	4	0	4	33.3	0.0	13.3	4	0	4	12.9	0.0	9.1												
9-Other	0	0	0	0.0	0.0	0.0	2	0	2	6.5	0.0	4.5												
Total	12	3	15	40.0	10.0	100	18	13	31	41.1	29.5	100												

TABLE XXIX ELEVATION OF UNITE SIGHTINGS FOR ALL YEARS BY NORTH AMERICAN LOCATION

Evaluation	North America						United States						Canada						Alaska					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	246	145	391	9.0	6.0	15.0	205	137	342	7.9	6.1	14.1	3	4	7	6.8	4.7	11.7	2	1	3	6.7	4.9	11.6
1-Astronomical	459	196	655	16.1	8.1	24.5	398	158	556	16.7	6.5	23.2	13	7	20	29.5	4.7	48.0	8	0	8	26.6	0.0	26.6
3-Aircraft	181	115	296	11.3	9.6	20.9	272	210	482	11.3	9.6	20.9	5	0	5	11.3	0.0	11.3	3	0	3	10.0	0.0	10.0
4-Light Phenom.	31	20	51	1.3	0.8	2.1	29	20	49	1.3	0.9	2.2	0	0	0	0.0	0.0	0.0	1	0	1	3.3	0.0	2.3
5-Birds	11	9	20	0.5	0.4	0.8	11	8	19	0.5	0.3	0.8	0	1	1	0.0	1.7	1.7	0	0	0	0.0	0.0	0.0
6-Clouds, Fogs, etc.	2	7	9	0.1	0.3	0.4	2	6	8	0.1	0.3	0.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Insects, Ins.	226	0	226	9.2	0.0	9.2	226	0	226	9.1	0.0	9.1	6	0	6	9.7	0.0	9.7	2	0	2	6.7	0.0	6.7
7-Psychological	36	8	44	1.6	0.3	1.8	36	8	44	1.6	0.3	1.8	1	0	1	1.7	0.0	1.7	0	0	0	0.0	0.0	0.0
8-Unknown	455	0	455	18.5	0.0	18.4	418	0	418	16.9	0.0	16.9	16	0	16	25.0	0.0	25.0	13	0	13	43.3	0.0	43.3
9-Other	77	30	93	3.1	0.8	4.1	72	19	91	2.9	0.9	4.1	2	1	3	3.3	1.7	5.0	2	0	2	6.6	0.0	6.6
Total	1369	1110	2479	55.3	44.7	100	1271	1106	2377	51.6	44.9	96.5	47	13	60	78.3	21.7	100	33	1	34	97.1	2.9	100

Evaluation	Mexico						Hawaii																	
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	1	0	1	8.3	0.0	5.3	3	1	4	23.0	7.7	30.7												
1-Astronomical	1	2	3	8.3	16.7	25.0	4	9	13	30.8	69.2	100.0												
3-Aircraft	0	1	1	0.0	8.3	8.3	1	2	3	7.7	15.4	23.1												
4-Light Phenom.	1	0	1	8.3	0.0	8.3	0	0	0	0.0	0.0	0.0												
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
6-Clouds, Fogs, etc.	0	0	0	0.0	0.0	0.0	0	1	1	0.0	7.7	7.7												
6-Insects, Ins.	1	0	1	8.3	0.0	8.3	1	0	1	7.7	0.0	7.7												
7-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
8-Unknown	4	0	4	33.3	0.0	33.3	2	0	2	15.4	0.0	15.4												
9-Other	0	0	0	0.0	0.0	0.0	1	0	1	7.7	0.0	7.7												
Total	8	3	12	75.0	25.0	100	12	13	30	55.7	44.3	100												

TABLE 1819 EVALUATION OF OBJECT SIGHTINGS FOR ALL YEARS BY NORTH AMERICAN LOCATION

Evaluation	North America						United States						Canada						Alaska					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Daylight	Darkness	Total	Daylight	Darkness	Total	Daylight	Darkness	Total	Daylight	Darkness	Total	Daylight	Darkness	Total	Daylight	Darkness	Total	Daylight	Darkness	Total	Daylight	Darkness	Total
A-Balloon	178	126	304	36	42	15.7	169	121	305	34	43	16.9	3	3	6	6.7	6.7	13.4	2	1	3	6.7	3.3	10.0
B-Astronomical	365	197	562	18.5	9.7	28.2	357	182	539	19.4	9.5	28.9	8	5	13	17.8	10.4	28.2	5	0	5	16.7	0.0	16.7
C-Aircraft	259	181	440	12.6	9.0	21.7	246	187	433	12.5	9.8	22.6	5	0	5	10.9	0.0	10.9	3	0	3	10.0	0.0	10.0
D-Light Phenom.	29	15	44	1.4	0.8	2.2	27	17	44	1.4	0.9	2.3	0	0	0	0.0	0.0	0.0	1	0	1	3.3	0.0	5.3
E-Birds	10	9	19	0.5	0.4	0.9	10	8	18	0.5	0.4	0.9	0	1	1	0.0	2.1	2.1	0	0	0	0.0	0.0	0.0
F-Clouds, Dust, etc.	2	7	9	0.1	0.3	0.4	2	6	8	0.1	0.3	0.4	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
G-Satellite, Inc.	215	0	215	10.6	0.0	10.6	205	0	205	10.7	0.0	10.7	4	0	4	8.5	0.0	8.5	2	0	2	6.7	0.0	6.7
H-Psychological	86	3	89	1.7	0.4	2.1	81	3	84	1.8	0.4	2.2	1	0	1	2.1	0.0	2.1	0	0	0	0.0	0.0	0.0
I-Unknown	396	0	396	19.0	0.0	19.0	369	0	369	19.7	0.0	19.7	14	0	14	29.8	0.0	29.8	13	0	13	43.3	0.0	43.3
J-Other	78	13	91	3.6	0.8	4.6	67	14	81	3.6	0.8	4.3	0	1	1	0.0	2.1	2.1	3	0	3	10.0	0.0	10.0
Total	1462	570	2032	70.9	28.1	100.	1358	546	1904	71.6	28.6	100.	38	10	48	79.2	20.8	100.	29	1	30	96.7	3.3	100.

Evaluation	Mexico						Hawaii																	
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Daylight	Darkness	Total	Daylight	Darkness	Total	Daylight	Darkness	Total	Daylight	Darkness	Total	Daylight	Darkness	Total	Daylight	Darkness	Total	Daylight	Darkness	Total	Daylight	Darkness	Total
A-Balloon	1	0	1	9.1	0.0	8.3	3	1	4	18.7	3.4	14.3												
B-Astronomical	1	2	3	9.1	16.7	25.0	2	9	11	12.5	31.0	39.3												
C-Aircraft	0	1	1	0.0	8.3	8.3	1	2	3	3.6	6.1	10.7												
D-Light Phenom.	1	0	1	8.9	0.0	8.9	0	0	0	0.0	0.0	0.0												
E-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
F-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	1	1	0.0	3.6	3.6												
G-Satellite, Inc.	2	0	2	16.7	0.0	16.7	2	0	2	7.1	0.0	7.1												
H-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
I-Unknown	4	0	4	33.3	0.0	33.3	5	0	5	17.9	0.0	17.9												
J-Other	0	0	0	0.0	0.0	0.0	2	0	2	7.1	0.0	7.1												
Total	9	3	12	75.0	25.0	100.	14	13	28	50.1	49.9	100.												

TABLE A190 EVALUATION OF ALL SIGNINGS FOR ALL YEARS BY UNITED STATES REGIONAL LOCATION

Evaluation	Total						North East						Central East						South East					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	641	118	759	16	5.8	11.4	9	1	10	12.5	2.0	11.4	62	21	83	8.9	6.7	15.6	1	0	1	5.1	0.0	3.1
1-Environmental	601	340	941	14.9	16.7	15.8	6	9	15	8.3	18.4	12.0	41	22	63	5.8	7.0	20.3	5	1	6	16.0	3.	18.7
2-Aircraft	1229	1266	2495	30.5	62.2	41.0	6	6	12	8.3	12.2	9.4	100	46	146	14.2	14.2	28.4	9	4	13	24.3	12.5	39.4
3-Light Phenom.	84	85	169	2.0	4.2	2.8	1	1	2	2.0	2.0	2.0	4	6	10	0.7	1.9	2.1	1	1	2	3.1	3.	3.2
4-Birds	18	9	27	0.5	0.5	0.5	0	0	0	0.0	0.0	0.0	5	0	5	0.9	0.0	0.9	0	0	0	0.0	0.0	0.0
5-Clouds, Dark, etc.	9	16	25	0.2	0.4	0.4	0	0	0	0.0	0.0	0.0	0	9	9	0.0	1.5	1.5	0	0	0	0.0	0.0	0.0
6-Satellite, Mis.	561	0	561	13	0.0	9.1	3	0	3	5.9	0.0	4.9	40	0	40	7.6	0.0	7.6	2	0	2	6.3	0.0	4.3
7-Psychological	97	9	106	1.3	0.2	1.6	1	0	1	2.0	0.0	1.0	5	6	11	1.4	0.6	1.9	0	0	0	0.0	0.0	0.0
8-Unknown	532	0	532	12.5	0.0	8.6	9	0	9	17.6	0.0	17.6	113	0	113	19.2	0.0	19.2	4	0	4	12.5	0.0	12.5
9-Other	88	21	109	2.1	0.5	1.7	0	0	0	0.0	0.0	0.0	13	2	15	2.2	0.3	2.6	2	0	2	6.3	0.0	6.3
Total	4273	1864	6137	69.6	30.4	100	34	17	51	66.7	33.3	100	425	157	582	72.9	27.1	100	25	8	33	75.8	24.2	100

Evaluation	North Midwest						Central Midwest						South Midwest					
	Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	5	10	15	2.8	17.7	6.5	59	55	74	8.1	15	16.4	31	36	69	5.2	5.7	10.9
1-Environmental	13	6	19	4.5	7.6	2.41	94	34	128	10.0	7.8	27.5	61	106	154	12.9	0.7	2.2
2-Aircraft	5	6	9	6.3	5.1	11.4	45	61	106	8.4	8.6	17.1	76	69	135	17.1	0.4	2.5
3-Light Phenom.	0	2	2	0.0	2.5	1.5	11	5	17	2.3	1.7	4.0	6	1	6	0.8	0.2	1.0
4-Birds	1	0	1	1.3	0.0	1.3	3	2	5	0.6	0.4	1.0	6	3	7	0.4	0.5	1.1
5-Clouds, Dark, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Satellite, Mis.	10	0	10	12.7	0.0	11.7	17	0	17	2.9	0.0	2.9	36	0	36	5.9	0.0	5.9
7-Psychological	1	0	1	1.3	0.0	1.3	12	0	12	2.5	0.0	2.5	5	5	6	0.5	0.5	1.0
8-Unknown	22	0	22	27.8	0.0	25.8	96	0	96	15.4	0.0	16.4	101	0	101	16.0	0.0	16.0
9-Other	2	0	2	2.5	0.0	2.5	15	4	19	2.1	0.6	3.6	8	5	13	1.3	0.8	2.1
Total	59	22	79	74.2	27.8	100	357	166	451	74.2	25.8	100	317	216	629	66.3	33.7	100

Evaluation	North West						Central West						South West					
	Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	4	2	6	5.6	4.1	4.9	5	1	6	5.8	1.2	2.0	38	10	48	9.8	2.4	4.8
1-Environmental	10	1	11	13.8	2.0	11.4	29	11	40	33.7	12.8	46.5	41	32	73	10.5	7.7	33.4
2-Aircraft	5	1	6	6.2	2.0	5.2	6	1	7	5.5	1.2	8.1	24	32	56	6.2	7.8	15.2
3-Light Phenom.	0	0	0	0.0	0.0	0.0	1	0	1	1.2	0.0	1.2	4	2	4	0.5	0.5	1.0
4-Birds	1	0	1	1.0	0.0	1.0	0	1	1	0.0	1.2	1.2	0	2	2	0.0	0.5	0.5
5-Clouds, Dark, etc.	3	0	3	4.1	0.0	4.1	0	0	0	0.0	0.0	0.0	5	2	7	1.3	0.5	1.8
6-Satellite, Mis.	3	0	3	4.1	0.0	4.1	5	0	5	5.8	0.0	5.8	27	0	27	7.0	0.0	7.0
7-Psychological	2	0	2	4.1	0.0	4.	4	0	4	4.6	0.0	7.0	0	0	0	0.0	0.0	0.0
8-Unknown	8	0	7	9.6	0.0	8.6	17	0	17	19.8	0.0	19.8	104	0	104	26.9	0.0	26.9
9-Other	13	0	13	16.5	0.0	16.5	3	0	3	3.6	0.0	3.5	6	6	12	1.0	1.6	3.6
Total	45	4	49	91.9	8.2	100	69	17	86	80.6	19.8	100	250	136	386	64.8	35.2	100

Evaluation	North Northwest						Central Northwest						South Northwest					
	Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
0-Balloon	15	5	18	13.3	2.7	6.0	30	16	46	18.0	5.4	23.4	22	12	34	16.6	5.6	24.1
1-Environmental	11	10	21	9.7	5.3	15.4	16	6	22	9.6	3.6	13.2	6	11	17	4.3	7.8	12.1
2-Aircraft	13	11	24	11.5	9.7	21.2	26	23	49	15.7	13.9	29.6	15	6	24	12.5	4.3	17.1
3-Light Phenom.	0	0	0	0.0	0.0	0.0	1	0	1	0.6	0.0	0.6	3	0	3	2.	0.0	2.1
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
5-Clouds, Dark, etc.	1	0	1	0.9	0.0	0.9	0	1	1	0.0	0.6	0.6	0	0	0	0.0	0.0	0.0
6-Satellite, Mis.	13	0	13	11.5	0.0	11.5	26	0	26	15.8	0.0	15.8	12	0	13	8.6	0.0	9.6
7-Psychological	0	0	0	0.0	0.0	0.0	1	2	3	0.6	1.2	1.8	2	1	3	2.1	0.7	2.8
8-Unknown	23	0	23	20.4	0.0	20.4	25	0	25	15.2	0.0	15.2	14	0	14	14.1	0.0	14.1
9-Other	13	0	13	11.5	0.0	11.5	6	2	8	3.6	1.2	4.9	9	4	13	6.4	2.8	9.2
Total	89	26	115	78.8	21.2	100	115	49	164	70.1	29.9	100	107	34	141	76.9	23.1	100

TABLE A261 EVALUATION OF VOTE STATISTICS FOR ALL YEARS BY UNITED STATES REGIONAL LOCATION

Evaluation	TOTAL						NORTH EAST						CENTRAL EAST						SOUTH EAST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total
1-Infarct	806	137	943	9.5	6.1	8.5	71	1	8	14.9	2.6	11.0	66	10	76	9.5	6.3	8.6	1	0	1	1.0	0.0	1.0
2-Atherosclerosis	1196	393	1589	14.1	17.5	14.9	61	1	7	12.8	2.6	11.0	78	29	107	11.2	18.1	12.1	5	1	6	5.0	4.0	4.8
3-Arrest	1276	810	1886	15.1	36.1	21.4	7	5	12	14.9	13.2	14.1	76	57	133	10.9	35.8	15.0	6	2	8	5.0	8.0	6.0
4-Light Photos.	88	20	108	1.0	0.9	1.2	1	1	2	2.1	2.6	2.3	4	6	10	0.5	1.5	1.1	1	1	2	1.0	4.0	2.0
5-Shock	11	8	19	0.1	0.4	0.2	0	0	0	0.0	0.0	0.0	2	0	2	0.3	0.0	0.2	0	0	0	0.0	0.0	0.0
6-Chem. Ord. etc.	6	2	8	0.1	0.2	0.1	0	0	0	0.0	0.0	0.0	3	3	6	0.4	0.8	0.6	0	0	0	0.0	0.0	0.0
7-Accdts. Mis.	1216	20	1236	10.1	0.2	9.1	3	0	3	3.9	0.0	2.9	65	0	65	9.1	0.0	9.1	2	0	2	2.0	0.0	1.0
8-Psychological	99	5	104	1.6	0.5	1.0	1	0	1	2.6	0.0	2.6	8	2	10	1.1	0.4	1.1	0	0	0	0.0	0.0	0.0
9-Natural	418	0	418	3.7	0.0	3.7	9	0	9	23.7	0.0	17.7	41	0	41	5.7	0.0	5.1	4	0	4	4.0	0.0	4.0
10-Other	96	19	115	0.8	0.3	0.1	0	0	0	0.0	0.0	0.0	13	2	15	1.7	0.4	1.1	2	0	2	2.0	0.0	1.0
Total	6511	1414	7925	82.1	17.8	100.	99	10	109	11.3	9.1	100.	396	109	505	78.5	21.6	100.	21	5	26	3.0	4.0	100.

Evaluation	NORTH MIDWEST						CENTRAL MIDWEST						SOUTH MIDWEST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total
1-Infarct	8	2	10	8.5	10.0	11.1	55	11	66	6.2	7.2	15.4	24	32	56	5.6	6.8	12.4
2-Atherosclerosis	12	5	17	12.1	7.1	19.5	79	27	106	15.5	6.5	21.8	19	23	42	4.7	6.6	20.3
3-Arrest	5	4	9	7.1	6.7	12.9	48	40	88	8.0	9.8	17.3	55	47	102	11.8	10.0	21.8
4-Light Photos.	0	2	2	0.0	2.9	2.9	11	7	18	2.6	1.6	4.2	5	1	6	1.1	0.2	1.3
5-Shock	1	0	1	1.4	0.0	1.4	3	2	5	0.7	0.5	1.2	4	3	7	0.9	0.6	1.5
6-Chem. Ord. etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Accdts. Mis.	8	0	8	11.4	0.0	11.4	55	0	55	13.6	0.0	13.6	46	0	46	9.8	0.0	9.8
8-Psychological	1	0	1	1.8	0.0	1.8	12	0	12	2.8	0.0	2.8	3	3	6	0.6	0.6	1.2
9-Natural	22	0	22	31.4	0.0	31.4	65	0	65	16.1	0.0	16.1	30	0	30	6.3	0.0	6.3
10-Other	4	0	4	5.7	0.0	5.7	16	1	16	3.9	0.2	3.9	8	5	13	1.7	1.1	2.8
Total	59	11	70	84.3	15.7	100.	344	103	447	85.2	25.5	100.	194	114	465	41.0	24.0	100.

Evaluation	NORTH WEST						CENTRAL WEST						SOUTH WEST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total
1-Infarct	4	2	6	2.6	4.5	15.5	4	1	5	1.6	1.5	4.2	31	7	38	11.5	2.7	14.5
2-Atherosclerosis	4	1	5	11.9	2.1	26.0	12	11	23	11.5	10.9	22.5	33	21	54	12.6	8.5	21.1
3-Arrest	5	1	6	12.5	2.1	14.7	3	3	6	4.6	4.6	9.2	31	25	46	6.5	5.3	11.6
4-Light Photos.	0	0	0	0.0	0.0	0.0	1	0	1	1.5	0.0	1.5	2	2	4	0.3	0.5	1.6
5-Shock	0	0	0	0.0	0.0	0.0	0	1	1	0.0	1.5	1.5	0	2	2	0.0	0.5	0.5
6-Chem. Ord. etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	2	3	0.4	0.5	1.2
7-Accdts. Mis.	3	0	3	9.8	0.0	9.8	5	0	5	7.7	0.0	7.7	17	0	17	4.5	0.0	4.5
8-Psychological	2	0	2	6.3	0.0	6.3	4	0	4	6.2	0.0	6.2	0	0	0	0.0	0.0	0.0
9-Natural	4	0	4	12.5	0.0	12.5	16	0	16	24.6	0.0	24.6	59	0	59	15.5	0.0	23.5
10-Other	3	0	3	9.4	0.0	9.4	3	0	3	4.6	0.0	4.6	4	5	9	1.5	1.9	3.4
Total	25	4	29	78.5	12.5	100.	49	16	65	75.4	24.6	100.	170	93	263	64.7	35.1	100.

Evaluation	NORTH FARWEST						CENTRAL FARWEST						SOUTH FARWEST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total
1-Infarct	15	3	18	12.9	9.5	11.7	17	11	28	11.4	7.6	18.1	19	12	31	8.1	10.2	18.3
2-Atherosclerosis	11	10	21	10.3	8.3	18.5	15	6	21	8.3	4.1	14.4	6	11	17	5.1	9.2	14.4
3-Arrest	13	9	22	12.0	8.5	20.5	26	18	37	16.5	8.9	25.4	14	6	20	8.9	5.1	17.0
4-Light Photos.	0	0	0	0.0	0.0	0.0	1	0	1	0.7	0.0	0.7	3	0	3	2.6	0.0	2.6
5-Shock	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Chem. Ord. etc.	1	0	1	0.9	0.0	0.9	0	1	1	0.0	0.7	0.7	0	0	0	0.0	0.0	0.0
7-Accdts. Mis.	10	0	10	9.3	0.0	9.3	22	0	22	14.4	0.0	14.4	9	0	9	7.6	0.0	7.6
8-Psychological	0	0	0	0.0	0.0	0.0	1	2	3	0.7	1.4	2.1	3	1	4	2.6	0.9	3.5
9-Natural	23	0	23	21.3	0.0	21.3	22	0	22	14.1	0.0	17.1	22	0	22	16.4	0.0	16.4
10-Other	13	0	13	12.0	0.0	12.0	6	3	9	3.9	1.9	5.9	5	6	11	4.3	5.1	9.4
Total	86	22	108	79.6	20.4	100.	114	35	149	74.0	23.0	100.	84	34	118	71.2	28.8	100.

TABLE 1213. ESTIMATED AGE-SPECIFIC INCIDENCE RATES PER 100,000 POPULATION FOR ALL YEARS BY UNITED STATES REGIONAL LOCATION

Subsite	Total						North East						Central East						South East					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total
1-Buccal	164	121	285	3.6	4.0	3.8	7	1	8	3.5	2.7	3.4	78	67	145	3.7	4.9	4.4	1	0	1	1.5	0.0	1.0
2-Oropharynx	417	182	599	9.2	6.0	8.0	8	3	11	3.8	3.1	3.7	46	34	80	2.2	2.5	2.3	6	1	7	3.3	1.4	2.7
3-Nasal	960	185	1145	21.2	6.1	15.4	8	6	14	3.1	3.6	3.4	60	40	100	2.8	2.9	2.8	5	1	6	2.3	1.4	2.1
4-Larynx	57	17	74	1.3	0.6	1.0	1	1	2	2.2	2.7	2.5	3	6	9	0.8	1.7	1.1	1	1	2	1.4	1.4	1.4
5-Hypopharynx	10	8	18	0.2	0.3	0.2	0	0	0	0.0	0.0	0.0	3	0	3	0.8	0.0	0.4	0	0	0	0.0	0.0	0.0
6-Other Oral, etc.	2	6	8	0.1	0.3	0.2	0	0	0	0.0	0.0	0.0	0	2	2	0.0	0.6	0.3	0	0	0	0.0	0.0	0.0
7-Oesophagus, Stom. etc.	1865	0	1865	41.7	0.0	30.7	5	0	5	2.1	0.0	1.7	35	0	35	1.7	0.0	0.7	2	0	2	0.9	0.0	0.3
8-Small Int. etc.	26	0	26	0.6	0.0	0.4	1	0	1	0.4	0.0	0.3	7	0	7	0.3	0.0	0.2	0	0	0	0.0	0.0	0.0
9-Retroperitoneal	14	8	22	0.3	0.7	0.4	0	0	0	0.0	0.0	0.0	2	2	4	0.1	0.2	0.1	0	0	0	0.0	0.0	0.0
10-Peritoneum	1659	0	1659	37.1	0.0	27.3	8	0	8	3.4	0.0	2.7	49	0	49	2.4	0.0	1.0	4	0	4	1.8	0.0	1.4
11-Other	45	16	61	1.0	0.5	0.8	0	0	0	0.0	0.0	0.0	15	2	17	0.7	0.2	0.5	2	0	2	0.9	0.0	0.7
Total	4700	544	5244	105.0	17.6	86.3	47	10	57	21.0	11.0	18.8	299	114	413	14.4	5.9	10.0	19	3	22	8.4	2.1	5.4

Subsite	North Midwest						Central Midwest						South Midwest					
	Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total
1-Buccal	5	7	12	4.3	11.3	6.1	30	28	58	2.0	2.2	2.1	15	28	43	4.4	7.8	5.8
2-Oropharynx	5	6	11	7.3	5.2	12.3	63	34	97	4.2	2.7	3.6	31	59	110	5.0	16.1	13.1
3-Nasal	5	4	9	8.1	6.5	14.6	62	35	97	4.2	2.7	3.6	50	41	91	13.5	11.5	12.5
4-Larynx	0	2	2	0.0	3.2	2.2	11	5	16	1.9	1.3	1.2	4	0	4	1.2	0.0	1.0
5-Hypopharynx	1	0	1	1.6	0.0	1.6	3	2	5	0.8	0.6	1.1	3	3	6	0.5	0.8	1.6
6-Other Oral, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Oesophagus, Stom. etc.	5	0	5	11.3	0.0	7.9	37	0	37	10.5	0.0	10.2	56	0	56	15.6	0.0	7.4
8-Small Int. etc.	1	0	1	1.6	0.0	1.6	12	0	12	3.4	0.0	3.2	3	2	5	0.8	0.5	1.6
9-Retroperitoneal	1	0	1	1.6	0.0	1.6	12	0	12	3.4	0.0	3.2	3	2	5	0.8	0.5	1.6
10-Peritoneum	15	0	15	23.8	0.0	23.8	57	0	57	15.8	0.0	15.2	26	0	26	6.5	0.0	3.4
11-Other	2	0	2	3.2	0.0	3.2	6	1	15	3.7	0.3	4.0	8	4	12	2.0	1.0	1.6
Total	46	19	65	76.2	26.8	102	279	96	376	77.4	26.6	104	161	150	311	44.9	42.0	87

Subsite	North West						Central West						South West					
	Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total
1-Buccal	3	2	5	4.6	2.7	3.8	2	1	3	5.1	1.7	2.8	15	5	33	12.6	5.2	6.8
2-Oropharynx	3	1	4	4.6	2.5	3.5	11	9	20	18.6	15.3	17.1	31	34	65	11.9	8.2	9.7
3-Nasal	2	1	3	3.2	2.5	2.8	3	3	6	5.1	5.1	5.1	2	2	4	0.8	0.5	0.6
4-Larynx	0	0	0	0.0	0.0	0.0	1	0	1	1.7	0.0	0.9	2	2	4	0.8	0.5	0.6
5-Hypopharynx	0	0	0	0.0	0.0	0.0	0	1	1	0.0	1.7	0.9	0	2	2	0.0	0.5	0.3
6-Other Oral, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	2	3	0.4	0.5	0.5
7-Oesophagus, Stom. etc.	2	0	2	3.2	0.0	2.5	5	0	5	8.5	0.0	4.3	14	0	14	5.9	0.0	2.0
8-Small Int. etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Retroperitoneal	2	0	2	3.2	0.0	2.5	4	0	4	6.8	0.0	3.4	1	0	1	0.4	0.0	0.1
10-Peritoneum	7	0	7	11.1	0.0	8.9	13	0	13	22.0	0.0	11.1	53	0	53	22.3	0.0	7.7
11-Other	3	0	3	4.8	0.0	3.8	3	0	3	5.1	0.0	2.6	4	3	7	1.7	1.2	1.5
Total	22	4	26	34.6	16.8	100	43	14	57	76.3	24.5	100	124	49	173	52.2	20.9	25.1

Subsite	North Eastern						Central Eastern						South Eastern					
	Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total	Cases	Deaths	Total
1-Buccal	12	5	16	3.6	5.2	4.3	16	9	25	12.2	6.9	9.1	1	2	27	4.6	8.7	7.2
2-Oropharynx	10	8	18	10.5	8.6	10.9	11	6	17	8.4	4.6	6.0	5	2	6	8.9	8.7	8.6
3-Nasal	12	9	21	8.6	9.6	9.1	24	12	36	18.3	9.2	13.0	3	2	5	12.6	5.5	7.8
4-Larynx	0	0	0	0.0	0.0	0.0	1	0	1	0.8	0.0	0.4	2	0	2	3.8	0.0	1.9
5-Hypopharynx	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	2	0	2	3.8	0.0	1.9
6-Other Oral, etc.	1	0	1	0.7	0.0	0.4	0	1	1	0.0	0.8	0.4	0	0	0	0.0	0.0	0.0
7-Oesophagus, Stom. etc.	10	0	10	8.6	0.0	6.5	23	0	23	17.6	0.0	8.3	5	0	5	9.5	0.0	4.9
8-Small Int. etc.	0	0	0	0.0	0.0	0.0	1	2	3	0.8	1.5	1.1	1	1	2	1.9	1.0	1.5
9-Retroperitoneal	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
10-Peritoneum	21	0	21	18.1	0.0	13.7	22	0	22	16.8	0.0	8.0	5	2	7	9.5	3.9	6.8
11-Other	6	0	6	5.4	0.0	3.9	2	2	4	1.5	1.5	1.4	2	1	3	3.8	1.9	2.9
Total	72	22	94	62.0	23.4	61.1	94	32	126	71.9	24.5	45.6	26	10	36	49.2	19.4	34.9

TABLE 1224 EVALUATION OF ALL SIGHTINGS IN THE STRATEGIC AREAS OF THE CENTRAL EAST REGION

Evaluation	New York						Harrisburg						Washington						Balance - Eastern Region					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	14	9	23	9.0	5.8	14.8	9	6	15	10.7	7.1	17.8	18	12	30	9.0	7.2	16.2	3	2	5	7	4.9	11.9
2-Astronautical	30	6	36	11.2	3.8	15.0	10	10	20	11.9	11.9	23.8	48	11	59	19.0	4.2	23.2	4	5	9	10.5	11.5	19.0
3-Aircraft	58	18	76	37.2	11.7	48.9	14	10	24	16.7	11.9	28.6	98	37	135	38.8	14.9	53.7	10	14	24	23.	32.5	55.8
4-Light Phenom.	4	1	5	2.6	0.6	3.2	1	0	1	1.2	0.0	1.2	2	2	4	0.8	0.8	1.6	1	6	7	2.3	14.0	16.3
5-Birds	0	0	0	0.0	0.0	0.0	4	0	4	4.8	0.0	4.8	1	0	1	0.4	0.0	0.4	1	2	3	2.3	4.7	7.0
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	8	8	0.0	3.2	3.2	0				2.3	2.3
7-Insects, Ins.	21	2	23	11.8	0.0	11.8	2	0	2	2.4	0.0	2.4	11	0	11	4.2	0.0	4.2	2	2	4	4.7	4.7	9.3
8-Psychological	7	0	7	3.9	0.0	3.9	1	0	1	1.2	0.0	1.2	0	0	0	0.0	0.0	0.0	0	4	4	0.0	9.3	9.3
9-Unknown	26	0	26	14.6	0.0	14.6	15	0	15	17.9	0.0	17.9	53	0	53	20.2	0.0	20.2	8	3	11	9.4	7.0	16.4
10-Other	5	0	5	2.8	0.0	2.8	2	0	2	2.4	0.0	2.4	8	0	8	3.1	0.0	3.1	3	2	5	7.0	4.7	11.7
Total	150	38	188	85.3	14.7	100	58	26	84	69.0	31.0	100	150	60	210	57.6	22.9	100	44	46	90	60.0	40.0	100

TABLE 1225 EVALUATION OF ALL SIGHTINGS IN THE STRATEGIC AREAS OF THE CENTRAL MIDWEST REGION

Evaluation	Chicago						Dayton						Balance of Central Midwest											
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	2	5	7	2.3	6.7	8.0	11	9	20	10.0	6.8	16.8	14	21	35	7.8	10.2	18.0						
2-Astronautical	20	5	25	22.7	5.1	27.8	27	18	45	18.7	9.4	28.1	39	10	49	18.0	6.1	24.1						
3-Aircraft	11	8	19	12.6	9.1	21.6	21	23	44	11.2	12.2	23.4	13	10	23	6.5	4.9	11.2						
4-Light Phenom.	0	1	1	0.0	1.1	1.1	6	4	10	3.2	2.1	5.3	5	3	8	2.4	1.6	3.9						
5-Birds	1	0	1	1.1	0.0	1.1	1	0	1	0.5	0.0	0.5	1	2	3	0.5	1.0	1.5						
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0						
7-Insects, Ins.	11	0	11	12.6	0.0	12.6	20	0	20	10.6	0.0	10.6	21	0	21	10.	0.0	10.						
8-Psychological	5	0	5	5.7	0.0	5.7	2	0	2	1.1	0.0	1.1	5	0	5	2.5	0.0	2.4						
9-Unknown	12	0	12	13.6	0.0	13.6	18	0	18	9.6	0.0	9.6	46	0	46	21.5	0.0	21.5						
10-Other	4	0	4	4.5	0.0	4.5	4	2	6	2.1	1.	3.2	6	0	6	2.8	0.0	2.8						
Total	66	22	88	75.0	25.0	100	126	56	182	66.8	29.8	100	149	46	205	71.2	22.4	100						

TABLE 1226 EVALUATION OF ALL SIGHTINGS IN THE STRATEGIC AREAS OF THE CENTRAL FARWEST REGION

Evaluation	San Francisco						Balance of Central Farwest																	
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	18	3	24	8.0	7.1	15.1	2	6	8	3.7	11.1	14.8												
2-Astronautical	11	3	14	9.8	2.7	12.5	5	3	8	9.3	5.6	14.9												
3-Aircraft	17	11	28	15.2	9.8	25.0	9	12	21	16.7	22.2	38.9												
4-Light Phenom.	0	0	0	0.0	0.0	0.0	1	0	1	1.9	0.0	1.9												
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	1	1	0.0	1.9	1.9												
7-Insects, Ins.	16	0	16	14.3	0.0	14.3	5	0	5	9.3	0.0	9.3												
8-Psychological	1	2	3	0.9	1.9	2.7	0	0	0	0.0	0.0	0.0												
9-Unknown	32	0	32	19.6	0.0	19.6	6	0	6	11.1	0.0	11.1												
10-Other	1	2	3	0.9	1.8	2.7	1	0	1	1.9	0.0	1.9												
Total	96	16	112	75.8	24.2	100	32	22	54	59.3	40.7	100												

TABLE XXIV EVALUATION OF ALL SIGHTINGS IN THE STRATEGIC AREAS OF THE SOUTH MIDWEST REGION

Evaluation	Atlanta						Ohio						San Antonio						Orange or South Midwest					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	6	12	18	6.9	13.8	20.7	3	6	9	3.1	6.3	9.4	7	2	9	11.5	3.3	14.8	17	17	34	5.0	5.0	10.0
2-Astronomical	8	12	20	9.2	13.8	23.0	37	66	97	38.5	68.8	101.3	6	8	14	9.8	13.1	22.9	34	31	65	10.1	9.2	19.3
3-Aircraft	10	11	21	11.5	12.6	24.1	8	7	15	8.3	7.3	15.7	5	6	11	8.2	9.8	18.0	57	35	92	16.9	10.4	27.3
4-Light Phenom.	2	1	3	2.3	1.	3.4	1	0	1	0.7	0.0	0.7	1	0	1	1.6	0.0	1.6	1	2	3	0.3	0.6	0.9
5-Birds	0	0	0	0.0	0.0	0.0	4	1	5	2.8	0.7	3.5	0	0	0	0.0	0.0	0.0	0	2	2	0.0	0.6	0.6
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Lights, Bll.	8	0	8	9.2	0.0	9.2	12	0	12	8.3	0.0	8.3	2	0	2	2.3	0.0	2.3	34	0	34	10.1	0.0	10.1
8-Psychological	0	2	2	0.0	2.3	2.3	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	1	4	0.9	0.3	1.2
9-Unknown	15	0	15	14.9	0.0	14.9	9	0	9	6.2	0.0	6.2	21	0	21	24.4	0.0	24.4	68	0	68	12.0	0.0	12.0
10-Other	1	1	2	1.1	1.1	2.2	1	0	1	0.7	0.0	0.7	1	4	5	1.6	3.3	4.9	5	2	7	1.6	0.6	2.1
Total	44	39	87	46.2	44.8	100.	67	77	144	46.6	53.6	100	43	18	61	70.5	29.5	100	269	98	367	81.9	29.1	100

TABLE XXV EVALUATION OF ALL SIGHTINGS IN THE STRATEGIC AREAS OF THE SOUTH WEST REGION

Evaluation	Albuquerque						Orange or South West																	
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	14	5	19	6.7	2.4	9.1	26	5	31	14.3	2.7	17.6												
2-Astronomical	41	40	81	19.6	19.6	39.2	25	22	46	13.1	12.5	25.6												
3-Aircraft	11	17	28	5.2	8.2	13.4	15	13	28	8.5	7.4	15.9												
4-Light Phenom.	0	2	2	0.0	0.0	0.0	2	2	4	1.1	1.	2.2												
5-Birds	0	1	1	0.0	0.5	0.5	0	1	1	0.0	0.6	0.6												
6-Clouds, Dust, etc.	6	0	6	2.9	0.0	2.9	0	4	4	0.0	1.1	1.1												
7-Lights, Bll.	16	0	16	7.6	0.0	7.6	11	0	11	6.2	0.0	6.2												
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
9-Unknown	58	0	58	27.8	0.0	27.8	51	0	51	29.0	0.0	29.0												
10-Other	1	6	7	0.5	2.9	3.4	3	0	3	1.7	0.0	1.7												
Total	119	91	210	56.7	43.3	100	131	45	176	74.4	25.6	100												

TABLE XXVI EVALUATION OF ALL SIGHTINGS IN THE STRATEGIC AREAS OF THE SOUTH FARWEST REGION

Evaluation	Los Angeles						Orange or South Farwest																	
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	21	10	31	18.3	8.7	27.0	1	2	3	3.8	7.7	11.6												
2-Astronomical	5	12	17	4.3	10.	14.8	1	3	4	3.8	11.5	15.3												
3-Aircraft	14	5	19	12.2	4.3	16.5	4	1	5	15.4	3.8	19.2												
4-Light Phenom.	2	0	2	1.7	0.0	1.7	1	0	1	3.8	0.0	3.8												
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
6-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
7-Lights, Bll.	8	0	8	7.0	0.0	7.0	4	0	4	15.4	0.0	15.4												
8-Psychological	2	1	3	1.7	0.9	2.6	1	0	1	3.8	0.0	3.8												
9-Unknown	31	0	31	27.0	0.0	27.0	3	0	3	11.6	0.0	11.5												
10-Other	8	0	8	7.0	0.0	7.0	1	4	5	3.8	15.4	19.2												
Total	91	34	115	79.1	29.9	100	16	10	26	61.6	38.5	100												

TABLE [illegible] — EVALUATION OF [illegible] SCATTERING OF [illegible] IN THE [illegible] EAST [illegible]

Evaluation	New York																					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Central	Outside	Total	Central	Outside	Total	Central	Outside	Total	Central	Outside	Total	Central	Outside	Total	Central	Outside	Total	Central	Outside	Total	Central	Outside	Total
0-Office	11	7	18	8.6	5.4	13.9	9	6	15	6.6	7.9	11.3	6	9	15	9.4	6.5	14.9	2	2	4	2.2	2.2	4.4
1-Independent	16	6	22	12.4	4.7	17.1	10	5	15	7.5	3.5	11.1	31	10	41	18.9	5.9	24.1	14	5	21	6.5	2.2	8.7
2-Herald	71	9	80	46.0	7.0	62.0	16	18	34	11.9	13.5	25.4	2	25	46	13.0	14.7	27.7	10	3	13	2.9	1.9	4.8
3-Light Plants	2	1	3	1.6	0.8	2.4	1	0	1	1.3	0.0	1.3	0	2	2	0.0	1.2	1.2	1	3	4	0.8	2.1	2.9
4-Birds	0	0	0	0.0	0.0	0.0	2	2	4	2.6	2.7	5.4	1	0	1	0.6	0.0	0.6	0	0	0	0.0	0.0	0.0
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	3	3	0.0	1.8	1.8	0	1	1	0.0	1.0	1.0
6-Insects, Ins.	20	0	20	15.5	0.0	15.5	3	0	3	2.6	0.0	2.6	11	2	13	6.5	1.2	7.6	10	0	10	6.2	0.0	6.2
7-Precipitation	7	0	7	5.6	0.0	5.6	1	0	1	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
8-Unknown	14	0	14	10.9	0.0	10.9	15	0	15	11.3	0.0	11.3	29	0	29	17.1	0.0	17.1	15	0	15	9.6	0.0	9.6
9-Other	5	0	5	3.9	0.0	3.9	2	0	2	1.5	0.0	1.5	3	0	3	1.8	0.0	1.8	3	0	3	1.9	0.0	1.9
Total	146	23	169	113.5	17.5	131.0	56	24	79	43.5	18.6	61.1	122	48	170	71.5	28.2	99.7	63	26	89	49.2	20.1	69.3

TABLE [illegible] EVALUATION OF UNIT SCATTERING IN THE SPECTRUM REGION OF THE CENTRAL FOREST REGION

Evaluation	Chicago						Dayton						Balance of Central Forest											
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Central	Outside	Total	Central	Outside	Total	Central	Outside	Total	Central	Outside	Total	Central	Outside	Total	Central	Outside	Total	Central	Outside	Total	Central	Outside	Total
0-Office	16	5	21	5.5	4.3	9.7	20	9	29	12.0	5.4	17.4	3	17	20	2.2	9.4	11.6						
1-Independent	16	4	20	9.8	2.4	12.2	27	11	38	13.9	6.6	20.5	54	10	64	31.9	5.6	37.5						
2-Herald	11	8	19	7.2	5.3	12.6	8	23	31	4.8	13.8	18.6	12	10	22	7.3	5.6	12.9						
3-Light Plants	0	2	2	0.0	1.2	1.2	4	3	10	2.4	1.8	6.0	5	2	7	2.8	1.1	3.9						
4-Birds	2	0	2	1.2	0.0	1.2	1	0	1	0.6	0.0	0.6	1	2	3	0.6	1.1	1.7						
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0						
6-Insects, Ins.	11	0	11	13.6	0.0	13.6	20	0	20	12.0	0.0	12.0	27	0	27	15.0	0.0	15.0						
7-Precipitation	5	0	5	6.2	0.0	6.2	2	0	2	1.2	0.0	1.2	6	0	6	3.3	0.0	3.3						
8-Unknown	11	0	11	13.6	0.0	13.6	17	0	17	10.2	0.0	10.2	57	0	57	30.6	0.0	30.6						
9-Other	4	0	4	4.9	0.0	4.9	1	1	2	0.6	0.6	1.2	4	0	4	2.2	0.0	2.2						
Total	81	19	81	65.5	13.7	100	100	47	147	59.8	28.1	100	139	41	180	77.4	22.5	100						

TABLE [illegible] EVALUATION OF UNIT SCATTERING IN THE SPECTRUM REGION OF THE CENTRAL FOREST REGION

Evaluation	San Francisco						Balance of Central Forest																	
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Central	Outside	Total	Central	Outside	Total	Central	Outside	Total	Central	Outside	Total	Central	Outside	Total	Central	Outside	Total	Central	Outside	Total	Central	Outside	Total
0-Office	18	5	23	14.6	3.6	17.9	3	1	4	6.2	2.0	11.3												
1-Independent	10	5	15	9.7	3.9	13.6	4	3	7	8.6	7.0	15.6												
2-Herald	17	5	22	6.8	7.8	14.7	3	5	14	20.5	8.6	29.5												
3-Light Plants	0	0	0	0.0	0.0	0.0	1	0	1	2.3	0.0	2.3												
4-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	1	1	0.0	2.3	2.3												
6-Insects, Ins.	16	0	16	15.6	0.0	15.6	5	0	5	11.6	0.0	11.6												
7-Precipitation	1	0	1	1.0	0.0	1.0	0	0	0	0.0	0.0	0.0												
8-Unknown	20	0	20	19.5	0.0	19.5	5	0	5	11.6	0.0	11.6												
9-Other	3	0	3	1.0	1.9	2.9	1	0	1	2.3	0.0	2.3												
Total	80	23	103	77.7	22.3	100.0	31	12	43	72.1	27.9	100												

TABLE A232. EVALUATION OF UFO SIGHTINGS IN THE STRATEGIC AREAS OF THE SOUTH MIDWEST REGION

Evaluation	ATLANTA						WACO						SAN ANTONIO						BALANCE OF SOUTH MIDWEST					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
1-Balloon	6	11	17	3.8	8.9	12.6	6	6	12	2.7	4.6	7.2	2	2	4	4.8	4.8	9.6	15	14	29	6.3	5.9	12.2
2-Astronomical	21	10	31	9.1	12.0	21.1	26	41	66	12.5	21.3	33.8	6	5	11	14.3	11.9	26.2	21	27	48	12.0	11.1	20.1
3-Aircraft	9	9	18	11.7	11.7	23.4	4	7	11	2.6	4.5	7.2	4	6	10	9.5	14.3	23.8	18	26	63	14.0	10.6	24.5
4-Light Phenom.	2	1	3	2.6	1.3	3.9	1	0	1	0.9	0.0	0.9	1	0	1	2.4	0.0	2.4	1	0	1	0.4	0.0	0.4
5-Hoax	0	0	0	0.0	0.0	0.0	4	1	5	3.6	0.9	4.5	0	0	0	0.0	0.0	0.0	0	2	2	0.0	0.8	0.8
6-Clouds, Cloud, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Insufficient Info.	8	0	8	10.4	0.0	10.4	10	0	10	9.0	0.0	9.0	1	0	1	2.4	0.0	2.4	25	0	25	10.6	0.0	10.6
8-Psychological	0	2	2	0.0	2.6	2.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	1	1	4	1.3	0.4	1.7
9-Unknown	10	0	10	13.0	0.0	13.0	9	0	9	8.1	0.0	8.1	12	0	12	28.6	0.0	28.6	59	0	59	24.8	0.0	24.8
0-Other	1	1	2	1.3	1.3	2.6	1	0	1	0.9	0.0	0.9	1	2	3	2.4	4.8	7.2	5	2	7	2.1	0.8	2.9
Total	83	34	117	66.8	46.2	100	57	54	111	51.4	48.6	100	27	15	42	64.3	35.7	100	177	61	238	74.4	25.6	100

TABLE A233. EVALUATION OF UFO SIGHTINGS IN THE STRATEGIC AREAS OF THE SOUTH WEST REGION

Evaluation	ALBUQUERQUE						BALANCE OF SOUTH WEST																	
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
1-Balloon	5	3	8	4.8	2.9	7.7	26	4	30	16.1	2.5	20.9												
2-Astronomical	16	37	53	9.9	21.1	31.0	17	14	31	11.9	9.5	21.7												
3-Aircraft	9	10	19	5.6	9.4	15.0	14	13	27	9.8	9.	18.8												
4-Light Phenom.	0	0	0	0.0	0.0	0.0	2	2	4	1.4	1.4	2.8												
5-Hoax	0	1	1	0.0	0.5	0.5	0	1	1	0.0	0.7	0.7												
6-Clouds, Cloud, etc.	1	0	1	0.5	0.0	0.5	0	2	2	0.0	1.4	1.4												
7-Insufficient Info.	6	0	6	3.0	0.0	3.0	11	0	11	7.7	0.0	7.7												
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
9-Unknown	24	0	24	11.8	0.0	11.8	34	0	34	23.8	0.0	23.8												
0-Other	1	5	6	0.5	2.6	3.0	3	0	3	2.1	0.0	2.1												
Total	63	56	119	31.9	47.1	100	107	36	143	74.8	25.2	100												

TABLE A234. EVALUATION OF UFO SIGHTINGS IN THE STRATEGIC AREAS OF THE SOUTH FARWEST REGION

Evaluation	LOS ANGELES						BALANCE OF SOUTH FARWEST																	
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
1-Balloon	17	10	27	17.2	10.	27.3	1	2	3	5.3	10.5	15.8												
2-Astronomical	8	5	13	8.1	5.	13.2	1	3	4	5.3	15.8	21.1												
3-Aircraft	12	5	17	12.1	5.1	17.2	2	1	3	10.5	5.3	15.8												
4-Light Phenom.	3	0	3	3.0	0.0	3.0	1	0	1	5.3	0.0	5.3												
5-Hoax	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
6-Clouds, Cloud, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
7-Insufficient Info.	8	0	8	8.1	0.0	8.1	1	0	1	5.3	0.0	5.3												
8-Psychological	2	1	3	2.0	1.0	3.0	1	0	1	5.3	0.0	5.3												
9-Unknown	21	0	21	21.2	0.0	21.2	1	0	1	5.3	0.0	5.3												
0-Other	7	0	7	7.1	0.0	7.1	1	4	5	5.3	21.1	26.3												
Total	78	21	99	78.8	21.2	100	9	10	19	47.4	52.6	100												

TABLE XXXV EVALUATION OF OBJECT SIGHTINGS IN THE STRATEGIC AREAS OF THE CENTRAL EAST REGION

Evaluation	New York						Harrisburg						Washington						Balance of Central East					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	8	7	15	7.6	6.7	14.3	7	6	13	6.6	9.5	16.1	12	8	20	11.5	6.6	16.5	11	6	17	9.9	7.4	17.3
2-Astronautical	11	6	17	10.5	5.7	16.2	10	6	16	9.3	9.2	18.5	15	7	22	8.3	6.9	16.1	10	5	15	12.3	6.2	18.5
3-Aircraft	26	8	34	24.8	7.6	32.5	9	9	18	16.8	16.8	33.6	20	24	44	12.7	15.4	28.1	9	9	18	11.1	11.1	22.2
4-Light Phenom.	1	1	2	1.0	1.0	2.0	1	0	1	1.6	0.0	1.6	0	2	2	0.0	1.4	1.4	1	3	4	1.2	3.7	4.9
5-Blank	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
6-Clouds, Bank, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Unidentifiable	17	0	17	16.2	0.0	16.2	1	0	1	1.6	0.0	1.6	10	0	10	6.8	0.0	6.8	10	0	10	12.3	0.0	12.3
8-Psychological	6	0	6	5.7	0.0	5.7	1	0	1	1.6	0.0	1.6	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
9-Unknown	11	0	11	10.5	0.0	10.5	7	0	7	11.5	0.0	11.5	39	0	39	26.7	0.0	26.7	12	0	12	14.5	0.0	14.5
0-Other	7	0	6	6.2	0.0	6.2	2	0	2	3.3	0.0	3.3	3	0	3	2.1	0.0	2.1	3	2	5	3.7	2.5	6.2
Total	88	22	105	100	21.0	100	60	21	61	45.6	34.4	100	103	48	146	70.5	29.5	100	53	28	81	65.4	34.6	100

TABLE XXXVI EVALUATION OF OBJECT SIGHTINGS IN THE STRATEGIC AREAS OF THE CENTRAL MIDWEST REGION

Evaluation	Chicago						Detroit						Balance of Central Midwest											
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	0	5	7	0.0	7.4	10.6	15	8	23	10.8	5.6	16.0	15	15	26	7.9	9.1	17.0						
2-Astronautical	5	6	11	7.6	9.1	16.7	21	11	32	14.6	7.6	22.2	27	7	34	16.5	4.3	20.6						
3-Aircraft	10	8	18	15.2	12.1	27.3	19	18	37	13.2	12.5	25.7	13	9	22	7.9	5.5	13.4						
4-Light Phenom.	0	1	1	0.0	1.5	1.5	6	2	8	4.2	1.4	5.6	5	2	7	3.0	1.2	4.2						
5-Blank	1	0	1	1.5	0.0	1.5	1	0	1	0.7	0.0	0.7	1	2	3	0.6	1.2	1.8						
6-Clouds, Bank, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0						
7-Unidentifiable	12	0	12	18.2	0.0	18.2	30	0	30	13.9	0.0	13.9	27	0	27	16.5	0.0	16.5						
8-Psychological	5	0	5	7.6	0.0	7.6	0	0	0	1.4	0.0	1.4	5	0	5	3.0	0.0	3.0						
9-Unknown	9	0	9	13.6	0.0	13.6	19	0	19	9.7	0.0	9.7	34	0	34	20.7	0.0	20.7						
0-Other	4	0	4	6.1	0.0	6.1	6	1	7	4.2	0.7	4.9	4	0	4	2.4	0.0	2.4						
Total	46	20	66	69.7	30.3	100	102	42	144	70.8	29.2	100	132	34	164	78.7	21.3	100						

TABLE XXXVII EVALUATION OF OBJECT SIGHTINGS IN THE STRATEGIC AREAS OF THE CENTRAL FARWEST REGION

Evaluation	San Francisco						Balance of Central Farwest																	
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total	Certain	Doubtful	Total
1-Balloon	14	7	21	15.1	7.5	22.6	2	6	4	5.5	5.5	22.6												
2-Astronautical	8	3	11	7.6	3.0	11.5	2	3	6	7.9	7.9	15.8												
3-Aircraft	18	7	25	6.1	15	23.6	2	5	12	25.7	13.2	36.9												
4-Light Phenom.	0	0	0	0.0	0.0	0.0	1	0	1	2.6	0.0	2.6												
5-Blank	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
6-Clouds, Bank, etc.	0	0	0	0.0	0.0	0.0	0	1	1	0.0	2.6	2.6												
7-Unidentifiable	15	0	15	6.1	0.0	14.1	7	0	7	18.4	0.0	18.4												
8-Psychological	1	2	3	1.1	2.2	3.3	0	0	0	0.0	0.0	0.0												
9-Unknown	13	0	13	8.8	0.0	12.9	4	0	4	10.5	0.0	10.5												
0-Other	1	2	3	1.1	2.2	3.3	1	0	1	2.6	0.0	2.6												
Total	92	21	93	77.4	22.6	100	27	11	38	71.1	28.9	100												

TABLE XXXI EVALUATION OF OBJECT SIGHTINGS IN THE STRATEGIC AREAS OF THE SOUTH WEST REGION

Evaluation	Albuquerque						Amarillo						Austin						Brownsville					
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total
1-Balloon	6	7	13	7.8	12.7	10.6	5	6	11	8.7	6.3	7.6	6	8	14	5.6	5.6	11.2	12	18	30	7.1	4.2	5.7
2-Astronomical	6	20	26	9.6	15.9	25.4	18	28	46	31.0	24.1	27.1	5	5	10	12.9	12.9	27.8	23	16	39	13.5	9.4	11.3
3-Aircraft	5	8	13	8.2	7.9	20.6	8	9	17	8.6	12.8	10.6	4	6	10	10.7	15.4	26.1	36	23	59	20.7	13.5	34.2
4-Light Phenom.	1	0	1	1.6	0.0	1.6	1	0	1	0.8	0.0	0.8	1	0	1	2.8	0.0	2.8	1	-	1	0.6	0.0	0.6
5-Birds	0	0	0	0.0	0.0	0.0	2	1	3	1.7	0.8	2.5	0	0	0	0.0	0.0	0.0	2	1	3	1.2	0.6	1.8
6-Clouds, Gases, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
7-Weather, Info.	7	0	7	11.1	0.0	11.1	4	0	4	3.3	0.0	3.3	1	0	1	2.8	0.0	2.8	24	0	24	8.4	0.0	8.4
8-Psychological	0	2	2	0.0	3.2	3.2	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	1	4	1.2	0.5	1.7
9-Unknown	4	0	4	6.3	0.0	6.3	6	0	6	7.3	0.0	7.3	8	0	8	22.2	0.0	22.2	5	2	7	2.4	0.9	3.3
10-Other	1	1	2	1.6	1.6	3.2	1	0	1	1.2	0.0	1.2	1	1	2	2.8	2.8	5.6	6	2	8	2.8	0.9	3.8
Total	37	46	83	59.7	40.3	100	45	41	86	52.3	47.7	100	28	14	36	77.8	38.9	100	154	96	250	73.3	45.7	119

TABLE XXIX EVALUATION OF OBJECT SIGHTINGS IN THE STRATEGIC AREAS OF THE SOUTH WEST REGION

Evaluation	Albuquerque						Balance of South West																	
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total
1-Balloon	5	2	7	5.1	2.1	7.2	23	2	25	18.5	1.6	20.1												
2-Astronomical	20	27	47	20.5	27.8	48.3	7	4	11	5.6	3.2	8.8												
3-Aircraft	8	8	16	8.2	8.2	16.4	21	13	34	16.9	10.4	27.3												
4-Light Phenom.	0	0	0	0.0	0.0	0.0	2	2	4	1.6	1.6	3.2												
5-Birds	0	1	1	0.0	1.0	1.0	0	1	1	0.0	0.8	0.8												
6-Clouds, Gases, etc.	1	0	1	1.0	0.0	1.0	0	2	2	0.0	1.6	1.6												
7-Weather, Info.	5	0	5	5.1	0.0	5.1	9	0	9	7.2	0.0	7.2												
8-Psychological	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
9-Unknown	21	0	21	21.4	0.0	21.4	59	0	59	47.2	0.0	47.2												
10-Other	1	2	3	1.0	2.1	3.1	1	0	1	0.8	0.0	0.8												
Total	55	42	97	56.1	42.9	99	49	26	125	39.2	20.8	100												

TABLE XXX EVALUATION OF OBJECT SIGHTINGS IN THE STRATEGIC AREAS OF THE SOUTH FARWEST REGION

Evaluation	Los Angeles						Balance of South Farwest																	
	Number			Per Cent			Number			Per Cent			Number			Per Cent			Number			Per Cent		
	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total	Civilian	Unidentified	Total
1-Balloon	16	8	24	10.0	5.0	15.0	1	3	5	4.3	12.5	16.8												
2-Astronomical	6	7	13	3.8	4.3	8.1	1	3	4	5.3	15.8	21.1												
3-Aircraft	11	5	16	6.1	4.0	10.1	2	1	3	8.6	5.0	15.7												
4-Light Phenom.	2	0	2	1.4	0.0	1.4	1	0	1	5.3	0.0	5.3												
5-Birds	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
6-Clouds, Gases, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0												
7-Weather, Info.	7	0	7	4.3	0.0	4.3	-	1	1	5.3	0.0	5.3												
8-Psychological	2	1	3	1.4	0.7	2.1	1	0	1	5.3	0.0	5.3												
9-Unknown	19	0	19	13.7	0.0	13.7	1	0	1	5.3	0.0	5.3												
10-Other	7	0	7	4.3	0.0	4.3	1	4	5	5.3	21.1	26.4												
Total	69	21	90	45.0	14.0	100	7	12	19	36.8	63.2	100												

APPENDIX B

WORKING PAPER FORMS

255 and 256

INDEX OF FORMS

EXHIBIT B1

TENTATIVE OBSERVERS DATA SHEET

259 and 260

TENTATIVE
OBSERVERS DATA SHEET

Where Choice is Given, Circle Proper Answers, or Insert Answer

1. Date of your observation: _____ Day _____ Month _____ Year

2. Date you reported the observation: _____ Day _____ Month _____ Year

3. What time was it when you sighted the object: _____ Hours _____ Minutes

A.M. P.M. Daylight Standard

Zone: Eastern, Central, Mountain, Pacific, _____ Other

4. Length of time object was observed. Estimate: _____ Hours _____ Minutes _____ Seconds.

5. Where observed:

_____ Postal Address _____ City or Town _____ State _____ Country.

6. Where were you at time of observation:

Inside building, In Car, Outdoors, _____ Other.

7. Were you moving at any time during this sighting: _____ Yes or No.

8. Did you stop at any time during this sighting: _____ Yes or No.

9. If you were moving - give _____ Direction and _____ Speed miles per hour.

10. How was object observed: Naked eye
Eye glasses
Other glass (Window or Windshield)
Binoculars, Telescope, Theodolite
Other _____

11. How did you happen to notice the object: _____

_____

_____

12. Describe what you saw as briefly as possible in the following spaces:

a. Sound_____ b. Shape_____

c. Color_____ d. Size_____

e. Number_____ f. Light brightness_____

g. Light color_____ h. Motion_____

i. Speed_____ j. Other_____

13. How did object disappear from view: Suddenly or Gradually
Circle One

14. At any time did the object:

a. Change direction. b. Change speed. c. Move behind something; Cloud, House, Tree, _____ d. Blend with background. e. Decrease
Other

in size. f. Decrease in brightness. g. Move in front of something.

h._____
Other

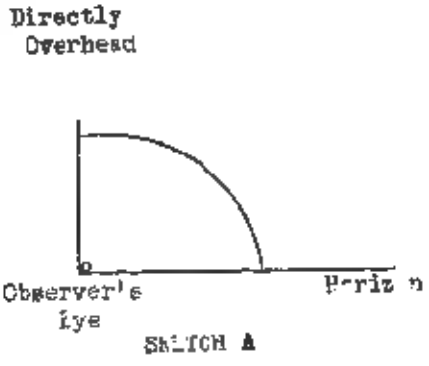
15. When you first looked at the object, what direction were you facing?_____

16. When you last saw the object, what direction were you facing?_____

17. In the following Sketch A, draw lines from the observer's eye to the circular arc to show the apparent elevation of the object in the sky.

A. When first seen, label a.

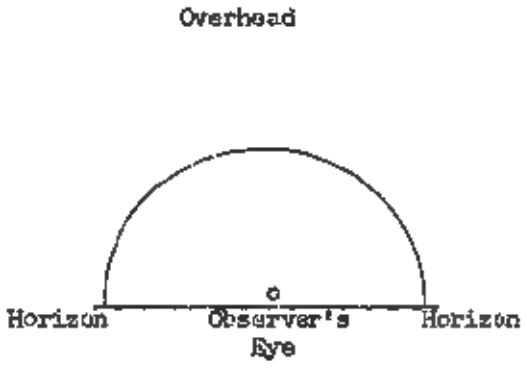
B. When last seen, label b.



SKETCH A

18. On the following Sketch B, label a at the apparent position of the object when first seen and b at point last - 6 seen. Trace the apparent path of the object between points a and b.

If possible label 1, 2, 3, etc., along the traced path to show the successive positions of the object after equal intervals of time during the sighting.



SKETCH B

19. In Sketch C please show the observed features of the object such as;

A. Apparent shape, (were edges pointed or rounded),

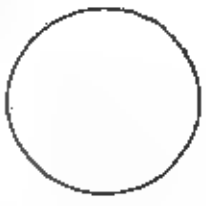
B. Apparent direction of motion (show by arrow), and

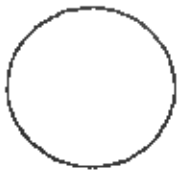
C. Other details, exhaust, trails, tails, surfaces, etc.

SKETCH C

20. The sun and the moon are shown below as they appear in their correct relative size. In this sketch D, show the apparent size of what you saw.

SUN OBJECT MOON





SKETCH D

21. In your own words please describe the sighting you observed. Use sketches if desired. All observations from the time of first sighting to the time of disappearance are important. Include a description of the weather, wind, and cloud conditions at the time of this sighting.

22. Your full name:

23. Your address:

24. Your occupation:

25. Last school you attended:

26. Year of last attendance at this school:

27. Please list the names and addresses of persons who discussed this sighting with you. It is not necessary to list the names of officials or investigators.

28. Further comments which you believe are important should be entered here. Use additional sheets of the same size if necessary.

EXHIBIT B2

TENTATIVE OBSERVERS QUESTIONNAIRE

TENTATIVE
OBSERVERS QUESTIONNAIRE

SECTION A

1. When did you see the object:

1.1 Date: _____ _____ _____
Day Month Year

1.2 Time of Day: _____ _____ A.M. or P.M. (Circle One)
Hrs. Min.

1.3 Time Zone: (Circle One):

a. Eastern
b. Central
c. Mountain
d. Pacific
e. Other _____

(Circle One): a. Daylight Saving
b. Standard

1.4 Circle one of the following to indicate how certain you are of your answer to the above question 1.2:

a. Certain
b. Fairly certain
c. Not very sure
d. Just a guess

2. Where were you when you saw the object:

_____ _____ _____ _____
Postal Address City or Town State Country

Additional Remarks: _____

_____

3. Where were you located when you saw the object:

(Circle One): a. Inside a building
b. In a car
c. Outdoors
d. In an airplane
e. At sea
f. Other _____

3.1 Were you:

(Circle One): a. In the business section of a city?
b. In the residential section of a city?
c. In open countryside?
d. Flying near an airfield?
e. Flying over a city?
f. Flying over open country?
g. Other _____

4. How did you happen to notice the object? _____

_____

_____

5. When did you report to some official that you had seen the object?

_____ _____ _____
Day Month Year

SECTION B

6. What were you doing at the time you saw the object? _____

_____

6.1 What had you been doing for the 30 minutes before you saw the object? Try to list the activity or activities and the approximate amount of time spent on each.

_____

_____

_____

7. Were you moving at any time while you saw the object? (Circle One):

Yes or No

IF you answered YES, then complete the following questions:

7.1 What direction were you moving?
(Circle One): a. North e. South
b. Northeast f. Southwest
c. East g. West
d. Southeast h. Northwest

7.2 How fast were you moving? _____ miles per hour.

7.3 Did you stop at any time while you were looking at the object?

(Circle One): Yes or No

8. What direction were you looking when you first saw the object?

(Circle One): a. North e. South
b. Northeast f. Southwest
c. East g. West
d. Southeast h. Northwest

8.1 What direction were you looking when the object disappeared?

(Circle One): a. North e. South
b. Northeast f. Southwest
c. East g. West
d. Southeast h. Northwest

8.2 Circle one of the following to indicate how certain you are of your answer to the above question and preceding question (8 and 8.1).

a. Certain c. Not very sure
b. Fairly certain d. Just a guess

9. Were you wearing eye glasses when you saw the object? (Circle One):

Yes or No

10. How was the object seen?

(Circle One): a. Through window glass e. Through theodolite
b. Through windshield f. Through sunglasses
c. Through binoculars g. Through open space
d. Through telescope h. Other _____

11. What do you remember about the weather conditions at the time you saw the object?

11.1 CLOUDS (Circle One)

a. Clear sky
b. Hazy
c. Scattered clouds
d. Thick or heavy clouds
e. Don't remember

11.2 WIND (Circle One)

a. No wind
b. Slight breese
c. Strong wind
d. Don't remember

11.3 WEATHER (Circle One)

a. Dry
b. Fog, Mist, or light rain
c. Moderate or heavy rain
d. Snow
e. Don't remember

11.4 TEMPERATURE (Circle One)

a. Cold
b. Cool
c. Warm
d. Hot
e. Don't remember

SECTION C

12. Estimate how long you saw the object?

_____ Hours _____ Minutes _____ Seconds

12.1 Circle one of the following to indicate how certain you are of your answer to Question 12:

a. Certain
b. Fairly sure
c. Not very sure
d. Just a guess

13. Did the object look: (Circle One) Solid or Transparent

14. Did the object at any time:

(Circle One for each question)

14.1	Change direction?	Yes	No	Don't know
14.2	Change speed?	Yes	No	Don't know
14.3	Change size?	Yes	No	Don't know
14.4	Change color?	Yes	No	Don't know
14.5	Break up into parts or explode?	Yes	No	Don't know
14.6	Give off smoke?	Yes	No	Don't know
14.7	Change brightness?	Yes	No	Don't know
14.8	Flicker, throb, or pulsate?	Yes	No	Don't know
14.9	Remain motionless?	Yes	No	Don't know

15. Did the object give off a light? (Circle One): Yes No Don't know

15.1 IF you answered YES, what was the color of the light? _____

16. Tell in a few words the following things about the object?

16.1 Sound _____

16.2 Color _____

17. IF there was MORE THAN ONE object, then how many were there? _____
Draw a picture of how they were arranged and put an arrow to show the direction they were traveling.

18. Did the object at any time:

18.1 Move behind something? (Circle One) Yes No Don't know

IF you answered YES, then tell what it moved behind.

_____

18.2 Move in front of something? (Circle One) Yes No Don't know

IF you answered YES, then tell what it moved in front of.

_____

18.3 Blend with the background? (Circle One) Yes No Don't know

19. Which of the following objects is about the same actual size as the object you saw? (Circle One):

a. Pea	f. Automobile
b. Baseball	g. Small airplane
c. Basketball	h. Large airplane
d. Bicycle wheel	i. Dirigible
e. Office desk	j. Other _____

19.1 Circle one of the following to indicate how certain you are of your answer to Question 19.

a. Certain	c. Not very sure
b. Fairly certain	d. Uncertain

20. Try to tell the following things about the object:

20.1 How high above the earth was it? _____ feet.
20.2 How far was it from you? _____ feet or _____ miles.
20.3 How fast was it going? _____ miles per hour.
20.4 Circle one of the following to indicate how certain you are of your answer to the above questions:

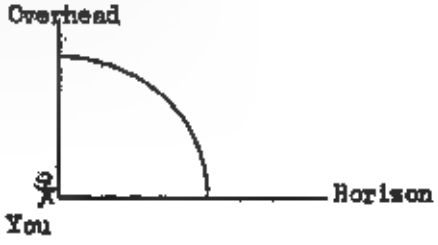
a. Certain	c. Not very sure
b. Fairly certain	d. Just a guess

21. How did the object disappear from view?

(Circle One): a. Suddenly c. Other _____
b. Gradually d. Don't remember

SECTION D

22. In the following sketch, imagine your eye at the point shown. Place an "A" on the curved line to show how high the object was above the horizon (skyline) when you first saw it. Place a "B" to show where it was when you last saw it.



23. In the following sketch place an "A" at the position the object was when you <u>first</u> saw it, and a "B" at its position when you <u>last</u> saw it.

24. Draw a picture that will show the motion that the object made. Place an "A" at the beginning of its path and a "B" at the end of its path.

25. Draw a picture that will show the shape of the object. Label and include in your sketch any details of the object that you saw and place an arrow beside the drawing to show the direction the object was moving.

SECTION S

26. Was this the first time that you have seen an object like this?

(Circle One): Yes or No

26.1 IF you answered NO, then when, where, and under what conditions did you see other ones? _____

_____

_____

27. In your opinion what do you think the object was and what might have caused it?

28. Give the following information about yourself:

NAME _____ _____ _____
Last Name First Name Middle Name

ADDRESS _____ _____ _____ _____
Street City Zone State

[redacted] _____

What is your present job? _____

Age _____

Sex _____

29. Was anyone else with you at the time you saw the object?

(Circle One): Yes or No

29.1 IF you answered YES, did they see the object too?

(Circle One): Yes or No

29.2 Please list their names and addresses:

30. Please add here any further comments which you believe are important. Use additional sheets of the same size paper, if necessary.

EXHIBIT B3

U. S. AIR FORCE TECHNICAL INFORMATION SHEET

277 and 278

U. S. AIR FORCE TECHNICAL INFORMATION SHEET

This questionnaire has been prepared so that you can give the U. S. Air Force as much information as possible concerning the unidentified aerial phenomenon that you have observed. Please try to answer as many questions as you possibly can. The information that you give will be used for research purposes, and will be regarded as confidential material. Your name will not be used in connection with any statements, conclusions, or publications without your permission. We request this personal information so that, if it is deemed necessary, we may contact you for further details.

1. When did you see the object?

____ Day ____ Month ____ Year

2. Time of day: ____ Hour ____ Minutes

(Circle One): A.M. or P.M.

3. Time zone

(Circle One): a. Eastern
b. Central
c. Mountain
d. Pacific
e. Other ____

(Circle One): a. Day light Saving
b. Standard

4. Where were you when you saw the object?

____ Nearest Postal Address ____ City or Town ____ State or Country

Additional remarks ____

5. Estimate how long you saw the object. ____ Hours ____ Minutes ____ Seconds

5.1 Circle one of the following to indicate how certain you are of your answer to Question 5.

a. Certain
b. Fairly certain
c. Not very sure
d. Just a guess

6. What was the condition of the sky?

(Circle One): a. Bright daylight
b. Dull daylight
c. Bright twilight
d. Just a trace of daylight
e. No trace of daylight
f. Don't remember

7. IF you saw the object during DAYLIGHT, TWILIGHT, or DAWN, where was the SUN located as you looked at the object?

(Circle One): a. In front of you
b. In back of you
c. To your right
d. To your left
e. Overhead
f. Don't remember

8. IF you saw the object at NIGHT, TWILIGHT, or DAWN, what did you notice concerning the STARS and MOON?

8.1 STARS *(Circle One)*:

a. None
b. A few
c. Many
d. Don't remember

8.2 MOON *(Circle One)*:

a. Bright moonlight
b. Dull moonlight
c. No moonlight — pitch dark
d. Don't remember

9. Was the object brighter than the background of the sky?

(Circle One): a. Yes b. No c. Don't remember

10. IF it was BRIGHTER THAN the sky background, was the brightness like that of an automobile headlight?:

(Circle One) a. A mile or more away (a distant car)?
b. Several blocks away?
c. A block away?
d. Several yards away?
e. Other _____

11. Did the object:

(Circle One for each question)

a. Appear to stand still at any time?	Yes	No	Don't Know
b. Suddenly speed up and rush away at any time?	Yes	No	Don't Know
c. Break up into parts or explode?	Yes	No	Don't Know
d. Give off smoke?	Yes	No	Don't Know
e. Change brightness?	Yes	No	Don't Know
f. Change shape?	Yes	No	Don't Know
g. Flicker, throb, or pulsate?	Yes	No	Don't Know

12. Did the object move behind something at anytime, particularly a cloud?

(Circle One): Yes No Don't Know. IF you answered YES, then tell what it moved behind: _____

13. Did the object move in front of something at anytime, particularly a cloud?

(Circle One): Yes No Don't Know. IF you answered YES, then tell what it moved in front of: _____

14. Did the object appear: *(Circle One)*: a. Solid? b. Transparent? c. Don't Know.

15. Did you observe the object through any of the following?

a. Eyeglasses	Yes	No	e. Binoculars	Yes	No
b. Sun glasses	Yes	No	f. Telescope	Yes	No
c. Windshield	Yes	No	g. Theodolite	Yes	No
d. Window glass	Yes	No	h. Other _____		

16. Tell in a few words the following things about the object.

a. Sound _____

b. Color _____

17. Draw a picture that will show the shape of the object or objects. Label and include in your sketch any details of the object that you saw such as wings, protrusions, etc., and especially exhaust trails or vapor trails. Place an arrow beside the drawing to show the direction the object was moving.

18. The edges of the object were:

(Circle One):
a. Fuzzy or blurred
b. Like a bright star
c. Sharply outlined
d. Don't remember
e. Other _____

19. IF there was MORE THAN ONE object, then how many were there? _____
Draw a picture of how they were arranged, and put an arrow to show the direction that they were traveling.

20. Draw a picture that will show the motion that the object or objects made. Place an "A" at the beginning of the path, a "B" at the end of the path, and show any changes in direction during the course.

21. IF POSSIBLE, try to guess or estimate what the real size of the object was in its longest dimension. _____ feet.

22. How large did the object or objects appear as compared with one of the following objects *held in the hand* and at about arm's length?

(Circle One):

a. Head of a pin
b. Pea
c. Dime
d. Nickel
e. Quarter
f. Half dollar
g. Silver dollar
h. Baseball
i. Grapefruit
j. Basketball
k. Other _____

22.1 *(Circle One* of the following to indicate how certain you are of your answer to Question 22.

a. Certain
b. Fairly certain
c. Not very sure
d. Uncertain

23. How did the object or objects disappear from view? _____

_____

_____

24. In order that you can give as clear a picture as possible of what you saw, we would like for you to imagine that you could construct the object that you saw. Of what type material would you make it? How large would it be, and what shape would it have? Describe in your own words a common object or objects which when placed up in the sky would give the same appearance as the object which you saw.

25. Where were you located when you saw the object? *(Circle One):*

a. Inside a building
b. In a car
c. Outdoors
d. In an airplane
e. At sea
f. Other _____

26. Were you *(Circle One)*

a. In the business section of a city?
b. In the residential section of a city?
c. In open countryside?
d. Flying near an airfield?
e. Flying over a city?
f. Flying over open country?
g. Other _____

27. What were you doing at the time you saw the object, and how did you happen to notice it?

_____

_____

_____.

28. IF you were MOVING IN AN AUTOMOBILE or other vehicle at the time, then complete the following questions:

28.1 What direction were you moving? *(Circle One)*

a. North
b. Northeast
c. East
d. Southeast
e. South
f. Southwest
g. West
h. Northwest

28.2 How fast were you moving? _____ miles per hour.

28.3 Did you stop at any time while you were looking at the object?

(Circle One) Yes No

29. What direction were you looking when you first saw the object? *(Circle One)*

a. North
b. Northeast
c. East
d. Southeast
e. South
f. Southwest
g. West
h. Northwest

30. What direction were you looking when you last saw the object? *(Circle One)*

a. North
b. Northeast
c. East
d. Southeast
e. South
f. Southwest
g. West
h. Northwest

31. If you are familiar with bearing terms (angular direction), try to estimate the number of degrees the object was from true North and also the number of degrees it was upward from the horizon (elevation).

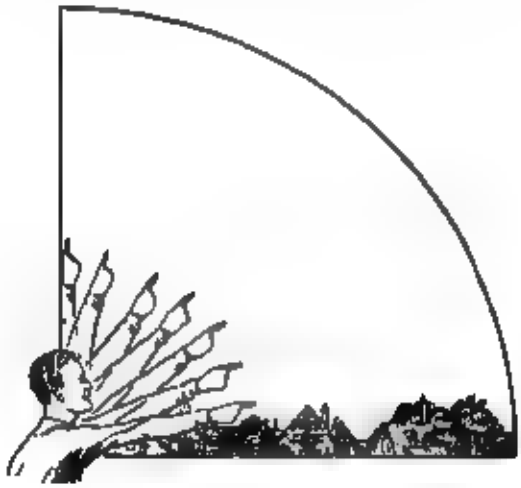
31.1 When it first appeared:

a. From true North _____ degrees.
b. From horizon _____ degrees.

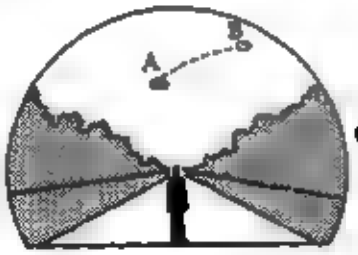
31.2 When it disappeared.

a. From true North _____ degrees.
b. From horizon _____ degrees.

32. In the following sketch, imagine that you are at the point shown. Place an "A" on the curved line to show how high the object was above the horizon (skyline) when you *first* saw it. Place a "B" on the same curved line to show how high the object was above the horizon (skyline) when you *last* saw it.



33. In the following larger sketch place an "A" at the position the object was when you *first* saw it, and a "B" at its position when you *last* saw it. Refer to smaller sketch as an example of how to complete the larger sketch.



34. What were the weather conditions at the time you saw the object?

34.1 CLOUDS *(Circle One)*

a. Clear sky
b. Hazy
c. Scattered clouds
d. Thick or heavy clouds
e. Don't remember

34.2 WIND *(Circle One)*

a. No wind
b. Slight breeze
c. Strong wind
d. Don't remember

34.3 WEATHER *(Circle One)*

a. Dry
b. Fog, mist, or light rain
c. Moderate or heavy rain
d. Snow
e. Don't remember

34.4 TEMPERATURE *(Circle One)*

a. Cold
b. Cool
c. Warm
d. Hot
e. Don't remember

35. When did you report to some official that you had seen the object?

_____ Day _____ Month _____ Year

36. Was anyone else with you at the time you saw the object?

(Circle One) Yes No

36.1 IF you answered YES, did they see the object too?

(Circle One) Yes No

36.2 Please list their names and addresses:

37. Was this the first time that you had seen an object or objects like this?

(Circle One) Yes No

37.1 IF you answered NO, then when, where, and under what circumstances did you see other ones?

38. In your opinion what do you think the object was and what might have caused it?

39. Do you think you can estimate the speed of the object?

(Circle One) Yes No

IF you answered YES, then what speed would you estimate? _____ m.p.h.

40. Do you think you can estimate how far away from you the object was?

(Circle One) Yes No

IF you answered YES, then how far away would you say it was? _____ feet.

41. Please give the following information about yourself:

NAME _____ (Last Name) _____ (First Name) _____ (Middle Name)

[redacted] _____ (Street) _____ (City) _____ (Zone) _____ (State)

TELEPHONE NUMBER _____

What is your present job? _____

Age _____ Sex _____

Please indicate any special educational training that you have had.

a. Grade school _____
b. High school _____
c. College _____
d. Post graduate _____
e. a. Technical school _____
(Type) _____
f. Other special training _____
_____

42. Date you completed this questionnaire: _____ (Day) _____ (Month) _____ (Year)

U. S. AIR FORCE TECHNICAL INFORMATION SHEET

(SUMMARY DATA)

In order that your information may be filed and coded as accurately as possible, please use the following space to write out a short description of the event that you observed. You may repeat information that you have already given in the questionnaire, and add any further comments, statements, or sketches that you believe are important. Try to present the details of the observation in the order in which they occurred. Additional pages of the same size paper may be attached if they are needed.

NAME _____
(Please Print)

SIGNATURE _____

DATE _____

(Do Not Write in This Space)

CODE:

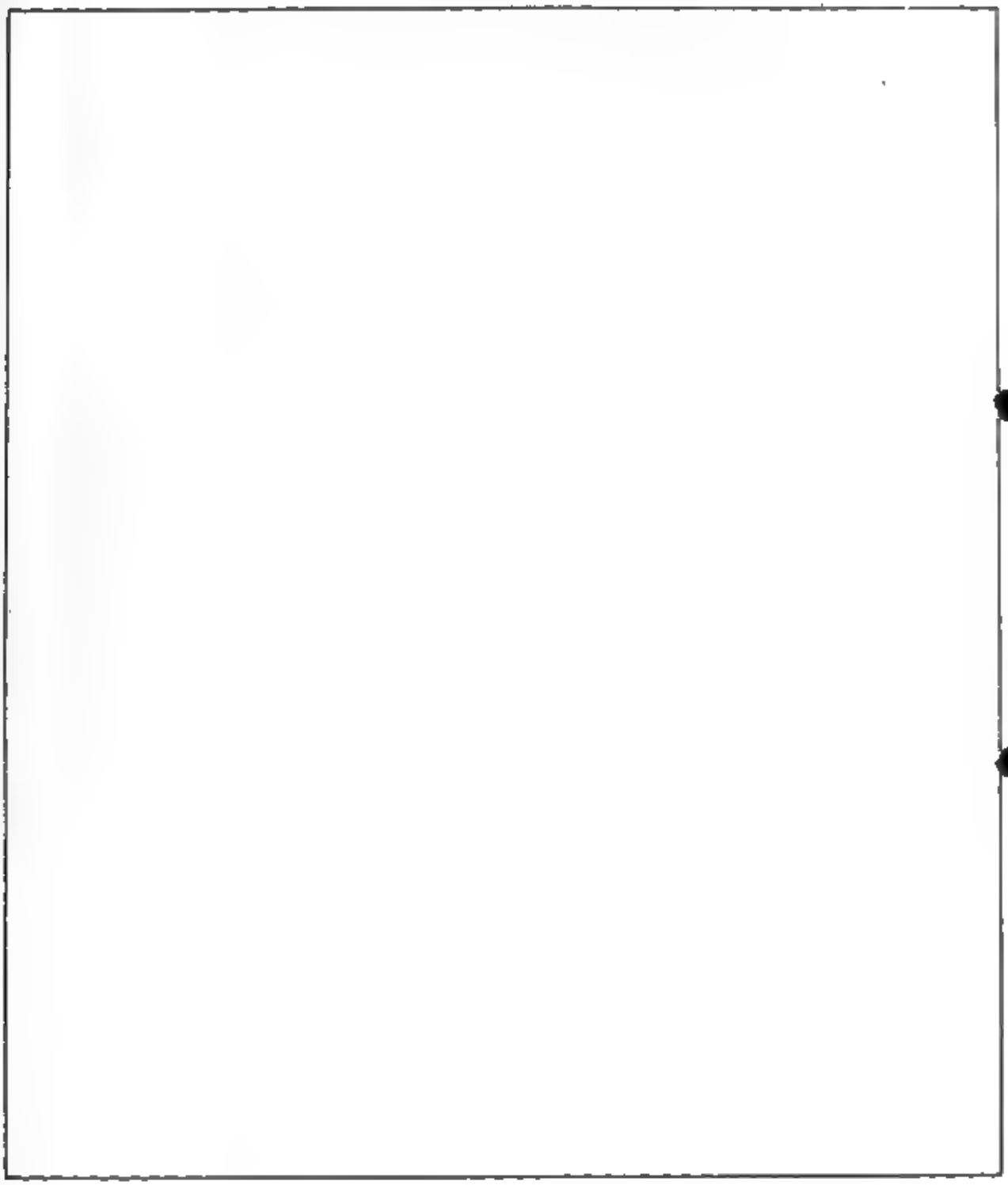


EXHIBIT B4

CODES FOR WORK SHEET

289 and 290

CODES

CODE 1. GENERAL

a. Every column must have at least one entry. If no data are available for any column, the Y should be used.

b. If a number in any column is used to enter data, then X qualifies the data as indicated in the Code for the specific column.

CODE 25 DURATION UNITS

X Y	
0	Days
1	Hours
2	Minutes
3	Seconds
4	
5	
6	
7	
8	
9	

CODE 28 LATITUDE

X Y	South latitude
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

CODE 32 LONGITUDE

X Y	East longitude
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

CODE 41 POSITION

X Y	Variable
0	
1	In car
2	Outdoors
3	In plane
4	In building
5	
6	
7	
8	
9	Other

CODE 42 MOVEMENT OF OBSERVER

X Y	
0	Wasn't moving
1	Was moving - stopped
2	Was moving - didn't stop
3	
4	
5	
6	
7	
8	
9	

CODE 43 OBSERVATION METHOD

X Variable
Y
0 Naked eye
1 Eye glasses
2 Window
3 Windshield
4 Binocular
5 Telescope
6 Theodolite
7 Radar
8 Photographic
9 Other

CODE 44 SOUND

X Variable
Y
0 Motors
1 Jet or rockets
2 Explosion
3 Unlike aircraft
4 Hiss, swishing, whining
5 Rumbling
6 Humming or buzzing
7 None
8 Not stated
9 Other

CODE 45 COLOR

X Variable
Y
0 Metallic
1 Light-glow-luminous
2 Red
3 Orange
4 Yellow
5 Green
6 Blue
7 Violet
8 Black
9 White

CODE 46 NUMBER

X
Y
0 - 1
1 - 2
2 - 3
3 - 4
4 - 5
5 - 6
6 - 7 - 10
7 - 11 - 20
8 - 20 - 30
9 - 31 or more

CODE 47 LIGHT-COLOR

X Variable
Y
0 White
1 Black
2 Grey
3 Red
4 Orange
5 Yellow
6 Green
7 Blue
8 Violet
9 Other

CODE 48 SPEED

X Variable
Y
0 Hovering, stationary
1 Less than 100 m.p.h.
2 100-400 m.p.h.
3 More than 400 m.p.h.
4 Meteor like
5 Not stated
6
7
8
9 Other

CODE 49 SHAPE

X Variable
Y
0 Ellipse
1 Rocket
2 Conventional aircraft
3 Unconventional aircraft
4 Meteor, comet
5 Lenticular
6 Conical
7 Tear drop
8 Flame, tails, fire
9 Other

CODE 50 SHAPE PARAMETER a/b

X - Variable
Y
0 - 0.0
1 - 0.05
2 - 0.1
3 - 0.2
4 - 0.3
5 - 0.5
6 - 0.75
7 - 0.9
8 - 1.0
9 - Other

CODE 51 SUBTENDED VISUAL ANGLE
(Referred to sun diameter)

X - Decreased in size
Y
0 - 0.1
1 - 0.2
2 - 0.5
3 - 0.75
4 - 1.0
5 - 1.5
6 - 2.0
7 - 4.0
8 - 4.0 to 10.0
9 - Other

CODE 52 LIGHT BRIGHTNESS (Intensity)

X Decreased
Y
0 Sunlight on mirror
1 Sunlight on aluminum
2 Sunlight on plaster
3 Sunlight on stone
4 Sunlight on soil
5 Brighter than moon
6 Like moon
7 Duller than moon
8 Barely visible
9 Other

CODE 53 ANGULAR VELOCITY

X Variable
Y
0 Zero
1 Very slow, 1° per second
2 Slow, 3° per second
3 Moderate, 6° per second
4 Rapid, 12° per second
5 Very fast, 30° per second
6 Extremely fast, 90° per second
7 More than 90° per second
8
9 Other

CODE 54 ANGULAR ACCELERATION
(Change in Angular Velocity)

X Variable
Y
0 Zero, V=constant
1 Increasing slowly
2 Decreasing slowly
3 Increasing fast
4 Decreasing fast
5 Increasing very fast
6 Decreasing very fast
7
8
9

CODE 55 APPEARANCE BEARING

X
Y
0 - N
1 - NE
2 - E
3 - SE
4 - S
5 - SW
6 - W
7 - NW
8
9

CODE 56 DISAPPEARANCE BEARING

X	- Disappeared suddenly
Y	
0	- N
1	- NE
2	- E
3	- SE
4	- S
5	- SW
6	- W
7	- NW
8	
9	

CODE 57-58 ELEVATION WITH RESPECT TO GROUND, DEGREES

	Initial		Final
X	Variable	X	Variable
Y		Y	
0	0-9	0	0-9
1	10-19	1	10-19
2	20-29	2	20-29
3	30-39	3	30-39
4	40-49	4	40-49
5	50-59	5	50-59
6	60-69	6	60-69
7	70-79	7	70-79
8	80-89	8	80-89
9		9	

CODE 61 OBJECT ORIENTATION
Apparent inclination of principal axis of object from horizontal

X	Variable
Y	
0	+90 to 60
1	+60 to 30
2	+30 to 10
3	+10 to 0
4	0
5	0 to -10
6	-10 to -30
7	-30 to -60
8	-60 to -90
9	

CODE 62-63-64 CIVILIAN OCCUPATION

Dictionary of Occupational Titles, Vol. II, 2nd Edition, pp. XIX-XXVI. U.S. Department of Labor, Bureau of Employment Security. U.S. Government Printing Office, Washington, D. C., 1949. See pp. XIX-XXVI.

CODE 65 SERVICE

X	
Y	
0	Army
1	Navy
2	Marine
3	Air Force
4	Coast Guard
5	Merchant
6	Commercial Air
7	[redacted]
8	Gov't. Contractor
9	Other

CODE 66 DUTY

X	
Y	
0	Pilot
1	Weather tech.
2	Radar tech.
3	Tower op.
4	Balloon obs.
5	Tech. spec.
6	Guards, lookouts
7	Ground or deck crews
8	Navig. or bombardier
9	Other

CODE 67 RANK EQUIVALENT

X	Officer	X	
Y		Y	
0	Lt. 2nd	0	Private
1	Lt. 1st	1	Private, 1st Cls.
2	Capt.	2	Corp.
3	Maj.	3	Serg.
4	Lt. Col.	4	S. T. Serg.
5	Col.	5	M. Serg.
6	Brig. Gen.	6	Warrant Off.
7	Maj. Gen.	7	Chief Warrant
8	Lt. Gen.	8	
9	General	9	

CODE 76 EVALUATION OF OBSERVER RELIABILITY

X	
Y	
0	Complete
1	Quite
2	Fair
3	Doubtful
4	Poor
5	Not
6	
7	
8	
9	Can't be judged

CODE 77 EVALUATION OF REPORT RELIABILITY

X	
Y	
0	Complete
1	Quite
2	Fair
3	Doubtful
4	Poor
5	Not
6	
7	
8	
9	Can't be judged

CODE 78 PRELIMINARY IDENTIFICATION

X	Possibly
Y	
0	Balloon
1	Astronomical
2	Aircraft
3	Light phenomenon
4	Birds
5	Clouds, dust, etc.
6	Rocket or missile
7	Psychological manifestations
8	Electromagnetic phenomenon
9	Other

CODE 79-80 FINAL IDENTIFICATION

X	Probably
Y	
0	Balloon
1	Astronomical
2	Aircraft
3	Light Phenomenon
4	Birds
5	Clouds, dust, etc.
6	~~Rocket-or-missile~~ Insufficient information
7	Psychological manifestations
8	~~Electromagnetic-phenomenon~~ Unknown
9	Other

EXHIBIT B5

WORK SHEET

297 and 298

WORK SHEET

Observer's Data Sheet Question	Punched Card Column	Code	Description	
	1*			
	2			
	3		Serial No.	Incident serial number
	4			
	5			
	6		Serial No.	Insertion
	7			
	8		Day	
	9			
1.	10		Month	
	11			
	12		Year	Observed
	13			
	14		Day	
	15			
2.	16		Month	Reported
	17			
	18		Day	
	19			
	20		Month	Rec'd ATIC
	21			
	22		Hrs.	Time of observation Greenwich C. T.
	23			
3.	24		Min.	
	25*		Time Units	Duration of observation
	26			
4.	27		Duration	
	28*			
	29			
	30			
	31		Latitude	
	32*			
	33			
	34			Location
5.	35			
	36		Longitude	
	37			
	38			
	39			
	40		Cosine latitude	

* Denotes separate code key is needed.

Observer's Data Sheet Question	Punched Card Column	Code	Description	
6.	41*		Where observer was	
7. 8.	42*		Moving - Stopped	
10.	43*		How observed	
12a.	44*		Sound	
12c.	45*		Color	
12e.	46*		Number	
12. 12g.	47*		Light-color	Appearance Description
12i. 14b.	48*		Speed	
12b. 19	49*		Shape	
12b. 19	50*		a/b	
12d. 14e.20	51*		Size	
12f. 14f.	52*		Light brightness	
	53*		Angular velocity	
4. 12h. 14. 18. 19	54*		Angular acceleration	Motion
15.	55*		Describe appearance	
13. 14. 16	56*		Describe disappearance	
	57*		Initial elevation	
17.	58*		Final elevation	Elevation
	59			
12i. 21.	60		Altitude, 1000 ft.	Altitude
18. 19.	61*		Object orientation	
	62*			
	63			
24.	64		Civilian occupation	
	65*			Observer
	66*			
24.	67*		Service occupation	
	68			
	69			
	70			
	71			
	72			
	73			
	74			
	75			
	76*		Observer	
	77*		Report	Evaluation
	78*		Preliminary	
	79*			Identification
	80*		Final	

* Denotes separate code key is needed.

EXHIBIT B6

CODES FOR CARD BIBLE

301 and 302

CODES

CODE 1. GENERAL

a. These cards (and the corresponding WORK SHEETS) contain data from several sources. Columns referenced to the U. S. Air Force Technical Information Sheet (Form A) must have at least one entry. If no data are available for any column, the Y (or 12 punch) should be used.

b. Columns 22, 23, 24, 25, 26, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, and 51 are calculated from data appearing in the U. S. Air Force Technical Information Sheet (Form A). If the basic data for these calculations are not available, the appropriate columns are left blank.

c. If a number in any column is used to enter data, then X (or 11 punch) qualifies the data as indicated in the Code for the specific column.

CODE 7 SIGHTING IDENTIFICATION
(This column may or may not contain multiple punches)

X	
Y	
0	
1	All sightings
2	Unit sightings, all observers
3	Unit sightings, single observers
4	Unit sightings, multiple observers
5	Object sightings
6	
7	
8	
9	

CODE 22 LOCAL SUN TIME
(Refers to date of G.C.T. observation)

X	
Y	
0	Same day
1	Previous day
2	
3	
4	
5	
6	
7	
8	
9	

CODE 23-26 LOCAL SUN TIME
(Calculated from G.C.T., date, latitude, and longitude)

CODE 27 LATITUDE

X	South Latitude
Y	
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

CODE 31 LONGITUDE

X	East Longitude
Y	
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

U. S. Air Force Technical Information Sheet Question	Punched Card Column	Code	Description	
	38			
	39			
	40		Hour	
	41		Angle	
	42*			
	43*		Angle of	
	44		Elevation	
	45		of the	
	46		Sun	
	47*		Group Classification	
	48		Sun	
	49		Bearing	
	50		Angle	
	51*			
	52*		Time Units	
	53		Duration	
5.	54		of Observation	
	55*		Group Classification	
15.	56*		How Observed	
16a.	57*		Sound	
16b.	58*		Object Color	
16b. 17.	59*		Light Color	Physical
	60*		Color Group Classification	
19.	61*		Number	
11a. 11b. 39.	62*		Speed	
17. 18. 24.	63*		Shape	Description
11f. 21. 22. 24.	64*		Size	
10. 11e.	65*		Light Brightness	
5. 11. 17. 20.	66*		Angular Velocity	Motion
33.	67*		Angular Acceleration	
29. 31. 1.	68*		Appearance Bearing	
23. 30. 31. 2.	69*		Disappearance Bearing	
	70*		Initial Elevation	Description
31. 32.	71*		Final Elevation	
	72*		Orientation	
	73*		Maneuvers	
41.	74*		Observer Occupation	
	75*		Observer Rating	Observer
	76*		Report Rating	
	77*		Reliability Group Classification	
	78*		Final Identification	

* Denotes that separate code key is needed.

CODE 47 GROUP CLASSIFICATION
(Derived from the angle of elevation)

X	
Y	
0	
1	-79.99° to + 79.99°
2	+80.00° to +89.99°
3	+90.00° to +100.00°
4	+100.01° to 130.00°
5	+130.01° to +180.00 and -180.00° to -100.01°
6	-100.00° to -90.01°
7	-90.00° to -80.00°
8	
9	

CODE 48-51 SUN BEARING ANGLE
(Calculated)
CODE 51 SUN BEARING ANGLE

X	East of the Meridian
Y	
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

CODE 52 DURATION TIME UNITS

X	
Y	
0	Days
1	Hours
2	Minutes
3	Seconds
4	
5	
6	
7	
8	
9	

CODE 55 DURATION GROUP CLASSIFICATION

X	
Y	
0	5 second and less
1	6 - 10 seconds
2	11 - 30 seconds
3	31 - 60 seconds
4	61 seconds - 5 minutes
5	6 - 30 minutes
6	Over 30 minutes
7	
8	
9	

CODE 56 OBSERVATION METHOD

X	Variable
Y	
0	Naked eye
1	Eye glasses
2	Window
3	Windshield
4	Binocular
5	Telescope
6	Theodolite
7	Radar
8	Photographic
9	Other

CODE 57 SOUND

X	Variable
Y	
0	Motors
1	Jets or rockets
2	Explosion
3	Unlike aircraft
4	Hiss, swishing, whining
5	Rumbling
6	Humming or buzzing
7	None
8	
9	Other

CODE 58 OBJECT COLOR

X	Variable
Y	
0	Metallic
1	Light, glow, luminous
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Violet
8	Black
9	White

CODE 59 LIGHT COLOR

X	Variable
Y	
0	White
1	Black
2	Grey
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Violet
9	Other

CODE 60 COLOR GROUP CLASSIFICATION

X	Light glow
Y	
0	White
1	Metallic
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Violet
8	Black
9	Other

CODE 61 NUMBER

X	
Y	
0	1
1	2
2	3
3	4
4	5
5	6
6	7 -10
7	11-20
8	21-30
9	31 or more

CODE 62 SPEED

Variable	
Hovering, stationary	
Less than 100 mph	
100 - 400 mph	
More than 400 mph	
Meteor-like	
Not stated	
Other	

CODE 63 SHAPE

X	Variable
Y	
0	Ellipse
1	Rocket
2	Conventional aircraft
3	Unconventional aircraft
4	Meteor, comet
5	Lenticular
6	Conical
7	Teardrop
8	Flame, tails, fire
9	Fire

CODE 64 SUBTENDED VISUAL ANGLE (Referred to sun diameter)

X	Decreased in size
Y	
0	0.1
1	0.2
2	0.5
3	0.75
4	1.0
5	1.5
6	2.0
7	4.0
8	4.0 to 10.0
9	Other

CODE 65 LIGHT BRIGHTNESS (Intensity)

X	Decreased
Y	
0	Sunlight on mirror
1	Sunlight on aluminum
2	Sunlight on plaster
3	Sunlight on stone
4	Sunlight on soil
5	Brighter than moon
6	Like moon
7	Duller than moon
8	Barely visible
9	Other

CODE 66 ANGULAR VELOCITY

X	Variable
Y	
0	Zero
1	Very slow, 1° per second
2	Slow, 3° per second
3	Moderate, 6° per second
4	Rapid, 12° per second
5	Very fast, 30° second
6	Extremely fast, 90° per second
7	More than 90° per second
8	
9	Other

CODE 67 ANGULAR ACCELERATION
(Change in angular velocity)

X Y	
0	Zero, V = constant
1	Increasing slowly
2	Decreasing slowly
3	Increasing fast
4	Decreasing fast
5	Increasing very fast
6	Decreasing very fast
7	
8	
9	

CODE 68 APPEARANCE BEARING

X Y	
0	N
1	NE
2	E
3	SE
4	S
5	SW
6	W
7	NW
8	
9	

CODE 69 DISAPPEARANCE BEARING

X Y	Disappeared suddenly
0	N
1	[redacted]
2	E
3	Se
4	S
5	SW
[redacted]	W
7	NW
8	
[redacted]	

CODE 70-71 ELEVATION
WITH RESPECT TO GROUND, DEGREES

	Initial		Final
X Y	Variable	X Y	Variable
0	0-9	0	0-9
1	10-19	1	10-19
2	20-29	2	20-29
3	30-39	3	30-39
4	40-49	4	40-49
5	50-59	5	50-59
6	60-69	6	60-69
7	70-79	7	70-79
8	80-89	8	80-89
9		9	

CODE 72 OBJECT ORIENTATION
Apparent inclination of principal axis of object from horizontal

X Y	Variable
0	+90° to 60°
1	+60° to 30°
2	+30° to 10°
3	+10° to 0°
4	0°
5	0° to -10°
6	-10° to -30°
7	-30° to -60°
8	-60° to -90°
9	

CODE 73 MANEUVERS

X Y	
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

CODE 74 OBSERVER OCCUPATION

X Y	
0	Civilian, occupation not stated
1	Army, military
2	Navy, military
3	Marine, military
4	Air force, military
5	Coast guard, military
6	Merchant marine, military
7	Commercial air, civilian
8	CAA, civilian
9	Government contractor, civilian
	Civilian, other

CODE 75 EVALUATION OF OBSERVER RELIABILITY

X
Y
0 Complete
1 Quite
2 Fair
3 Doubtful
4 Poor
5 Not
6
7
8
9 Cannot be judged

CODE 76 EVALUATION OF REPORT RELIABILITY

X
Y
0 Complete
1 Quite
2 Fair
3 Doubtful
4 Poor
5 Not
6
7
8
9 Cannot be judged

CODE 77 RELIABILITY GROUP CLASSIFICATION
(Based on observer and report ratings)

Excellent (Observer 0 or 1 and Report 0 or 1)
Good (Observer 0 or 1, Report 2, 3, or 4; Observer 2, 3, or 4, Report 0 or 1; Observer 2, Report 2)
Doubtful (Observer 0 or 1, Report 5 or 9; Observer 2, Report 3, 4, 5, or 9; Observer 3 or 4, Report 2, 3, 4, 5, or 9; Observer 5 or 9, Report 0, 1, 2, 3, or 4)
Poor (Observer 5, 9, or Y, Report 5, 9, or Y)

CODE 78 FINAL IDENTIFICATION

X Probably
Y
0 Balloon
1 Astronomical
2 Aircraft
3 Light phenomenon
4 [redacted]
5 Clouds, dust, etc.
6 Insufficient information
7 Psychological manifestations
8 Unknown
9 Other

EXHIBIT B7

CARD BIBLE

309 and 310

CARD BIBLE

U. S. Air Force Technical Information Sheet Question	Punched Card Column	Code	Description	
	1			
	2		Serial	
	3		No.	Identification
	4			Serial
	5		Sub-	Number
	6		Serial No.	
	7*		Sighting	Identification
	8			
	9		Serial	Incident
	10		No.	Serial
	11			Number
	12			
	13		Day	
1.	14			
	15		Month	Observed
	16			
	17		Year	
	18			Time of
	19		Hours	Observation
	20			Greenwich
2, 3.	21		Minutes	C. T.
	22*		Key	
	23			Local
	24		Hours	Sun
	25			Time
	26		Minutes	
	27*			
	28			
	29		Latitude	
	30			
	31*			Location
	32			
4.	33		Longitude	
	34			
	35			
	36*		Regional Area	
	37		Strategic Area	

* Denotes that separate code key is needed.

Card Deck No. ___ is identified by an X (or 11 Punch) in Column ___.

U. S. Air Force Technical Information Sheet Question	Punched Card Column	Code	Description	
	38			
	39			
	40			Hour
	41			Angle
	42*			
	43*			Angle of
	44			Elevation
	45			of the
	46			Sun
	47*		Group Classification	
	48			Sun
	49			Bearing
	50			Angle
	51*			
	52*		Time Units	
	53			Duration
5.	54			of Observation
	55*		Group Classification	
15.	56*		How Observed	
16a.	57*		Sound	
16b.	58*		Object Color	
16b. 17.	59*		Light Color	Physical
	60*		Color Group Classification	
19.	61*		Number	
11a. 11b. 39.	62*		Speed	
17. 18. 24.	63*		Shape	Description
11f. 21. 22. 24.	64*		Size	
10. 11e.	65*		Light Brightness	
5. 11. 17. 20.	66*		Angular Velocity	Motion
33.	67*		Angular Acceleration	
29. 31. 1.	68*		Appearance Bearing	
23. 30. 31. 2.	69*		Disappearance Bearing	
31. 32.	70*		Initial Elevation	Description
	71*		Final Elevation	
	72*		Orientation	
	73*		Maneuvers	
41.	74*		Observer Occupation	
	75*		Observer Rating	Observer
	76*		Report Rating	
	77*		Reliability Group Classification	
	78*		Final Identification	

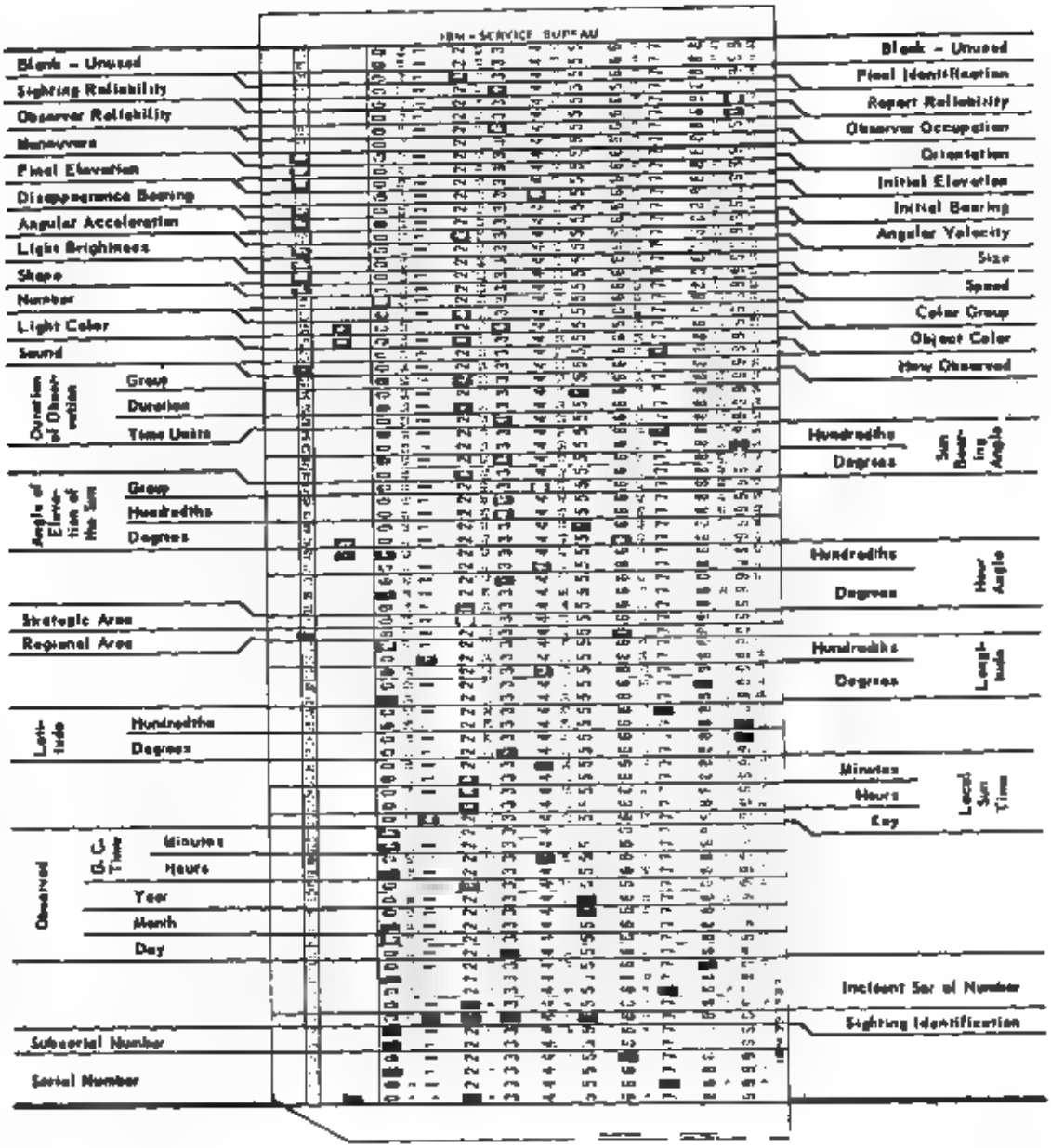
* Denotes that separate code key is needed.

EXHIBIT B8

EXAMPLE OF AN IBM CARD

EXHIBIT BB

EXAMPLE OF AN IBM CARD



Correspondence and miscellaneous file relating to Special Rpt. No. 14

7-3745 - 423

1003288

COPY

6 Feb 1956

Mr. Paul M. Fitts
Ohio State University
Columbus 10, Ohio

Dear Mr. Fitts:

Thank you for your letter of 27 January 1956 in which you request access to a contractors copy of Special Report 14 (Analysis of Reports of Unidentified Aerial Objects).

The contractors work on this report has been completely closed out; therefore, it is felt that your study could best be carried out elsewhere.

Special Report 14 is unclassified and is accessible in various offices of Public Information. Dr. J. Allen Hynek, Ohio State University, also has a copy which you may arrange to borrow for a limited time.

You may be assured that your interest in this program is greatly appreciated.

Sincerely,

WALLACE W. ELWOOD
1st Lt., USAF
Assistant Adjutant

COPY

INCL #2

COPY

COPY

27 January 1956

Commander
Air Technical Intelligence Center
Wright-Patterson Air Force Base, Ohio
ATTN: Captain C. A. Hardin, APOIN

Dear Sir:

While I was head of the Psychology Branch, Aero Medical Laboratory, I reviewed some of the interview data from sightings of unidentified aerial objects and prepared a report giving some psychological interpretations of these reports. Subsequently, about two years ago I served as a consultant to an Air Force contractor in connection with the preparation of a questionnaire to be used in collecting data on project "Bluebird." In connection with this project I was interested in analyzing some of the questionnaire results and I have a letter from this contractor stating that "The Air Force has given us permission to release to you the set of 345 IBM cards provided you agree not to publish any results of your studies without their permission." The IBM cards contain summary questionnaire data.

I would now like to analyze some of these data further and compare my results with those contained in the recently released report on this topic. The purpose of the present letter is to request you to write a letter to the contractor, attention Mr. Verne Ellsey or Mr. Gus Simpson, authorizing them to (a) permit me to examine their copy of the unclassified report recently released of this study, and (b) to discuss the data with me.

I would also appreciate receiving from you a blank copy of the questionnaire, since I did not keep a copy when it was being prepared.

I expect sometime in the near future to prepare a short scientific article, suitable for publication in Science magazine, which I will submit to Air Force Public Relations for clearance. The article will follow the general nature of the anonymous report that appeared in the 1950 issue of Air Force magazine, which article was based on the earlier report that I wrote while at the Aero Medical Laboratory. In other words, it will be an attempt to explain, for a scientific audience, how natural phenomena could lead to the kinds of reports commonly given by people who fail to identify some unusual object or light in the sky.

In support of this request I submit that I am Professor of Psychology and Director of the Aviation Psychology Laboratory, The Ohio State University. I am also a member of the Air Force Scientific Advisory Board, and of the NACA Committee on Flight Safety.

Sincerely yours,
/s/ Paul M. Fitts
Paul M. Fitts

COPY

IN61#3

ROUTING	COORDINATION
ATI	
ATIM	
ATIMG	
ATIMS	
ATIMX	
ATIR	
ATIS	
ATIA	
OTHERS	

Authorisation to Use UFO Data - Dr. Paul M. Fitts

AFOIN-4A4 AFOIN-4B4 19 Apr 56
ATIR: Mr. Whitcher 4B4/Capt Gregory/wm
69216

1. On 5 April 56, Capt Hardin and Capt Gregory, Aerial Phenomena Group, had informal discussions with Dr. Paul Fitts, head of the Ohio State University's Laboratory [redacted] Aviation Psychology, with regard to Dr. Fitts request for authority to use certain basic research data and material used in Project Bluebook Report Nr. 14 "Analysis of Reports of Unidentified Flying Objects."

2. Dr. Fitts was informed, and indicated that he understood, the proprieties and other aspects involved, if publication of the results are contemplated.

3. It is therefore requested that a formal letter of authorization, granting Dr. Fitts the use of subject data, be submitted to Project White Stork substantially as follows:

"Authorization is hereby granted, subject to your approval and procedures, for Dr. Paul M. Fitts, The Ohio State University, to have access to the basic material and data used in the preparation of Special Report Nr. 14 (Analysis of Reports of Unidentified Aerial Objects).

"Dr. Fitts has requested access to this material for the purpose of conducting a study in the psychological aspects of the observational data submitted on unidentified flying objects.

"Dr. Fitts has agreed to confine any results of the material in this study to the use of the Air Force."

L.V. Robinson
for
[redacted]
Actg Chief, Air Sciences Division
Deputy for Science and Components

PERM. ____ TEMP. ____	RETENTION PERIOD
DESTROY	
RETIRE	
FILE AUTHORITY	

ATIC FORM 444 (REV 1 FEB 55) ROUTING AND COORDINATION SHEET

MEMORANDUM FOR DIRECTOR OF INTELLIGENCE
ATTN: Col T. R. Johnson

1. Forwarded herewith are copies of correspondence referred to this office by the Office of the Secretary of the Air Force, from Congressman J. E Moss, Chairman of the House Sub-Committee on Government Information Congressman Moss' letter is self-explanatory.

2. It is requested that this office be furnished information upon which to base a reply to questions set forth by Congressman Moss. Further, request that all questions contained in the above mentioned correspondence be answered in detail so far as possible.

3. Necessary coordination is requested as provided in paragraph 4d, HOI 11-2.

4. Suspense, 1600 hours, 25 June 1956.

5. Any additional inquiries may be addressed to Major E L Secrest, SAFLL-3, Ext 5-3531

/s/ Harry E Morrill
Lt Colonel, USAF
Deputy Chief of Investigations Division
Office of Legislative Liaison

Neal Panned
PIO
Pentagon.
75 181

84th Congress

Congress of the United States House of Representatives

Government Information Sub-Committee
of the Committee on Government Operations

Honorable Donald A. Quarles
Secretary of the Air Force
Department of Defense
Pentagon
Washington, D C.

Dear Mr Secretary:

It is the understanding of the House Government Information Sub-Committee that the Air Force's "full report" on unidentified flying objects entitled, "United States Air Force Project, Blue Book, Special Report No. 14," was issued in October 1955. The Sub-Committee has received complaints that this report, while not classified, is not available to the public except at considerable expense of time and money, since individuals must personally visit the Pentagon in order to read the report.

In view of this fact, could you tell us exactly (1) how many copies of this report were printed and to whom these copies went? (2) Could you also tell us how many requests you have received for Special Report No. 14? Also, (3) how many individuals went to the Pentagon to read the report after its release.

(4) Since our information is to the effect that far more requests have been made than there are copies available, can you tell us what the Air Force has done to satisfy these requests?

(5) If the information in the report is being withheld from the public for any specific reason, we would like to know that reason. (6) If the Air Force claims any statutory authority for withholding information in the report, will you please cite such statutory authority. (7) If the information is being withheld under specific Air Force rule or regulation, would you please cite such rule or regulation and provide copy.

Sincerely yours,

/s/ John E. Moss
Chairman

SAFLL-3/Lt Col.Jorgensen/ru/[illegible]
(Maj.Secrest's case) File Inv. Div. 733

R/H: Ltr fr Congr Moss dtd 17 Jun 56, to copy of AF re info concerning Blue Book rec'd SAFLL-3 20 Jun 56 w/suo 22 Jun 56. Memo to Dir of Intel Req info upon which to base a reply prep'd by Inv. Div 21 Jun 56 w/suo 1600 hrs, 25 Jun 56. Lt-3 rec'd [redacted] memo fm AFIC by way of buckslip from Intel sgd by Lt.Col Johnson dtd 27 Jun 56. Lt-3 prep'd & fwd fnl reply to Chmn Moss 28 Jun & retyped 29 Jun 56

JUL 5 1956

Dear Mr. Chairman:

This is in reply to your letter of 17 June 1956 in which you requested information concerning the report on unidentified flying objects.

On 5 May 1955 the Air Force declassified its special study, Project Blue Book, Report Number 14, "Analysis of Reports of Unidentified Aerial Objects", and on 25 October 1955, the Air Force publicly released a summary of this report. The full report, consisting of over 300 pages, is not available for widespread distribution because of prohibitive costs. It has been estimated that the cost of printing enough copies for distribution to the public through such outlets as libraries and academic institutions would be between $10 and $15 per copy. The summary entitled "United States Air Force Summary of Events and Information Concerning the Unidentified Flying Objects Program" and an Air Force Press Release on Unidentified Flying Objects are available upon request in any quantities desired. Inclosed are copies of the summary and the press release.

In reply to your specific questions, the Air Force printed 100 copies of the report and these were distributed in accordance with the normal Air Force distribution list. The Air Technical Intelligence Center has received 6 inquiries concerning this report - 2 of these inquiries requested copies of the report and the remaining 4 asked for information as to where to go in order to read the report. The Department of Defense, Office of Public Information, has received from 300 to 350 requests for information concerning this report - most of these inquiries came from students in elementary schools, high schools and colleges, and between 8 and 10 individuals visited the Pentagon to read the report after its release. The Air Force has reacted on the summary and the press release previously mentioned to satisfy the demand for information. In addition, the various press associations and prominent periodicals have covered the subject thoroughly. Requests for information are handled, first by replying to the specific question asked, second by enclosing a copy of the summary and press release, and finally by referring the writer to the nearest available report. The report is available for examination by the general public at the Pentagon, Washington, D.C., at the Air Force Section, Office of Information Services, Room 4C928 - 110 East 45th Street, New York 17, New York, and at the Air Force Section, Office of Information Services, Room 1426 - Federal Building, Los Angeles, California. In rare cases of obvious need a copy of the report is made available on loan for reproduction. As an example, one state university has requested and been granted permission to reproduce this report at their own expense.

DISTRIBUTION: SAFLL-1, AFOIN, AFCAV, SAFIS, SAFOC, SAFS, OFFICE OF SECRETARY

SAFLL-3 SAFLL Note: AFIC memo dtd 25 Jun Sgd John C. Friksen,Col,USAF Fwd by Intel (See buckslip sgd Lt.Col. Johnson) AFOIN-X

Ltr to Chm Moss, Subcmte on Government Information (Cont)

The Air Force has no intention of withholding this information from the public. On the contrary, the Air Force has made a very definite effort to make this information available through all possible and reasonable means without undue expense to the government.

Sincerely yours,

(Signed) Donald A. Quarles

Enclosures Summary Rpt & AF Press Release

Honorable John E. Moss
Chairman, Subcommittee on
Government Information
Committee on Government Operations
House of Representatives

JUN 2 1958

MEMORANDUM FOR DIRECTOR OF INTELLIGENCE
ATTN: Lt Col T.R. Johnson, AFOIN-X

SUBJECT: Proposed Reply by the Secretary of the Air Force to the Letter from The Honorable John E. Moss, Chairman, Government Information Sub-Committee of the Committee on Government Operations

1. The following is the suggested material for Secretary Quarles' reply to the subject letter:

a. Although the "full report" (over 300 pages) on unidentified flying objects entitled "United States Air Force Project Blue Book, Special Report Nr. 14" is not available for wide spread distribution because of prohibitive costs, there is a Summary entitled "U.S. Air Force Summary of Events and Information Concerning the Unidentified Flying Object Program" and there is also a copy of the Air Force Press Release on Unidentified Flying Objects by the Department of Defense, Office of Public Information, which are available on request in any quantity desired.

b. In reply to the questions asked in the second paragraph of subject letter, the following information is submitted:

(1) One hundred copies of Project Blue Book Special Report Nr. 14 were printed by the Air Technical Intelligence Center (ATIC) and sent out in accordance with the normal Air Force distribution list, including the Department of Defense, Office of Public Information, which distributed needed copies to its East and West Coast Offices.

(2) The Air Technical Intelligence Center has received eight inquiries concerning this report - two of these inquiries requested copies of the report and the remaining six asked where to go in order to see it. The Department of Defense, Office of Public Information has received from 300 to 350 requests for information concerning Special Report Nr. 14; most of these inquiries came from students in elementary schools, high schools and colleges. Very few requests have come from scientists or other conscientious researchers; however, one State University has requested and been granted permission to reproduce Special Report Nr. 14 at their own expense.

(3) Between eight and ten individuals went to the Pentagon to read the Report after its release.

c. Replying to the third paragraph of subject letter it may be stated, in partial repetition of the previous statement, that:

(1) ATIC has printed and distributed 100 copies of the Report.

(2) The total number of requests for the actual Report or for information thereon is as follows: 350 requests to the PIO, 8 requests to ATIC and 10 visits to the Pentagon to see the Report (the actual percentage in these requests for copies of the full report is extremely small, probably less than 10%).

Because of the technical nature and length of the Report, only the required number of copies for official distribution were printed. The cost of printing enough copies for distribution to the public, through such outlets as public libraries, academic institutions and so forth, would be prohibitive (from $10.00 to $15.00 per copy, depending on the quantity). In view of this the AF has counted on the Summary and the Press Release, mentioned earlier, to satisfy the demand for information. Requests for information are handled, first, by replying to the specific questions asked; second, by inclosing a copy of the Summary and the Press Release and finally, by referring the writer to the nearest available Report Nr. 14 for perusal. In rare cases of obvious need, ATIC forwards a copy of the Report, on loan, or makes it available for reproduction.

d. Replying to the last paragraph of subject letter, the AF has released Project Blue Book Special Report Nr. 14 to the public, under the authorization of AF Regs. 200-2 and 190-16. Marked copies of these are inclosed. The AF has no intention of withholding this information from the public. On the contrary, the Air Force has made a definite effort to get this information to the public; at a press conference held in the Pentagon, on 25 August 1955, the Secretary of the Air Force presented a Summary of Special Report Nr. 14 and a press release. In addition to this, a sufficient number of copies of the Report was made available for study at this meeting.

e. In conclusion it is believed that all possible and reasonable means of keeping the public informed, without undue expense to the Government, are being utilized. The various Press Associations and at

Memo for D/I, Subj: Proposed Reply by the Secretary of the AF to the Ltr from The Honorable John E. Moss

least one prominent national periodical have covered the subject thoroughly; this fact may account for the relatively small number of inquiries on this Report received by the Air Force.

4 Incls
1. AF Reg. 200-2
2. AF Reg. 190-16
3. [redacted]
4. USAF Press Release

JOHN O. ERIKSEN
Colonel, USAF
Deputy Commander

COVER SHEET

SUSPENSE

ORIGIN OF BASIC
Verbal request to Mr. Arcier by Hdq, USAF for plates

DATE

ASSIGNED BY

DATE
November 1956

TYPE

NO.

SUBJECT
Plates for Special Blue Book Report Nr. 14 'Analysis of Reports of UFOs'

ROUTING

Initial "IN" column to denote review prior to action. Initial "OUT" column to denote review of completed action. (X for action; ✓ for coordination.)

IN	OFFICE	OUT	IN	OFFICE	OUT	IN	OFFICE	OUT	IN	OFFICE	OUT	IN	OFFICE	OUT
	OIN-1			OIN-2			OIN-3			OIN-4			AFOIN	
	OIN-1X			OIN-2X			OIN-3X			OIN-4X			AFOIN-X	
													AFOIN-X	
													AFOIN-X1	
													AFOIN-X2	
													AFOIN-X3	
													AFOIN-X4	
													AFOIN-X5	
													AFOIN-Z	
													CABLES	
												NR	FILE	
												R	DISPATCH	

TO: AFOIN-X

DATE: 31 December 1956

FROM: AFOIN-4E4

COMMENT NO.: 1

COMMENTS (Use reverse, if necessary)

AFOIN-4E4/Capt G.T.Gregory/
1te/Ext: 69216

1. Attached are the original plates for subject report, forwarded in accordance with instructions received by your Headquarters.

2. Plates for the cover and summary sheets are unavailable. Inasmuch as the cover will have a different design and format under Government Printing Office publication, this is of small consequence.

3. It is recommended that in order to bring this summary more up to date, pertinent portions of the attached UFO Progress and Status Report be added immediately following the last paragraph of this summary. This should include the UFO statistics for the period 1 June 1955 through 31 May 1956 (paragraph C, a through f., disregarding the parenthetical numbers).

2 Incls
1 Cy Progress & Status
Rpt on UFOs.
2 Plates

AFHQ FORM 7 MAY 56 0-85 PREVIOUS EDITIONS OF THIS FORM MAY BE USED.

GPO 906344

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT-PATTERSON AIR FORCE BASE
[redacted]

4 January 1957

MEMORANDUM FOR DIRECTOR OF INTELLIGENCE
ATTN: LT COL E. W. GREEN, AFOIN-X

SUBJECT: Publication of UFO Special Report Nr. 14

1. In accordance with the Secretary's decision to make available to the general public a low-priced edition of the subject UFO report, we are forwarding herewith the negatives of the present declassified report, together with a Progress and Status Report on the UFO Program for the period 1 June 1955 through 31 May 1956, for transmission, at his request, to Major A. J. Woods, Office of Information Services, Office of Secretary of the Air Force.

2. In view of the fact that the entire historical, statistical and, to some extent, the operational background of the UFO Program, up to date, will thus be presented to the public, it is strongly urged that the Deputy Chief of Staff, Operations be made fully aware of the problems which presently confront the program and the steps which are proposed for their solution. Consequently, it is recommended that the transmission of the negatives of Special Report Nr. 14 to OIS be effected formally by the Director of Intelligence through DCS/O and that they be accompanied by your copy of the "Special Briefing on the UFO Program for General Lewis," dated 4 October 1956, for DCS/O retention. This briefing will serve as a convenient summary of the program for General Everest's use. As stated in this briefing, the principal problems in the UFO program are, first, to improve operations with the object of reducing the number of "unknowns" to as near zero as possible and, second, to cope with the growing problem of public participation in the program. Our recommended solution is to clearly assign the areas of basic responsibility to those elements most competent to handle them. We propose, therefore, a revision of the current AFR 200-2 (short title "UFO") which will rigidly assign investigation to ADC, analysis and evaluation to

D/I (AFOIN-4), and information and public relations to PRO. This revision when completed will be coordinated with ADC and PRO before submission to D/I for concurrence and to the Air Force for eventual approval. It is recommended that this plan also be made known to DCS/O

3. You will recall that Colonel Monts, Captain Hudson and Sergeant Gilliken of the Press Information Branch, OSD Press Desk, during our meeting with them on 28 November 1956, agreed to prepare a press release (based on our special briefing to General Lewis) announcing the availability of Special Report Nr. 14 to the general public. They agreed to submit it to us for coordination and for the addition of a so-called "asymptote statement" by us, before publication. This press release, it is suggested, should also be brought to the attention of DCS/O

4. The foregoing, it is felt, will acquaint all concerned with the situation prior to release to the general public of the Air Force's activities in the UFO field up to the present day.

A. Francis Arcier
Scientific Advisor
AFOIN-4X1

2 Incls
1. Negatives -Spec Rpt Nr. 14
2. Prog & Status Rpt UFO Prog 1 Jun 51-31 May 56

4.	DISTRIBUTION (Continued)				
a. Abbr	b. copy nos.	c. AFSWP No.	d. Addr	e. copy nos.	f. Bureau No.
	#66		Commander, AFS, ATTN: Intelligence Div Eglin AFB, Florida		
	#67,68,69,70, & 71		Commander ADC, ATTN: Int/Div Ent AFB, Colorado		
	72 and 73		Commander, MATS, Andrews Air Force Base ATTN: Int/Div, Wash, 25 DC		
	74 and 75		Commander-in-Chief, SAC, ATTN: Int/Div Offutt AFB, Omaha, Nebraska		
	76 and 78		Commander, TAC, ATTN: DCS/Int Langley AFB, Virginia		
	79		Commander AUSC, Attn: Dir/Int Scott AFB, Ill		
	80		Commander, CONAC, Attn: Int/Div Mitchell AFB, NY, NY		
	81		Commander, Alaskan Air Command, APO 942, ATTN: Dir/Int Seattle, Wash		
	82		Comdr-in-Chief, Pac Alaskan Command ATTN: Asst Chief of Staff J-2 APO 942, Seattle, Wash		
	83		Comdr, USAIRC, ATTN: Int/Div APO 865, New Orleans, La		
	84		Comdr, Pacific, Attn: Int/Div APO 953, San Francisco, Calif		
	85		[illegible] Int/Div APO 928, [illegible]		
	86		[illegible] APO 633, [illegible]		
	[illegible]		[illegible]		
	89		[illegible] [illegible]		
	[illegible]		[illegible]		
	[illegible]		[illegible]		
	[illegible]		[illegible]		
	[illegible]		[illegible]		

27 APR 1953

[redacted]

OPERATIONS REPORT - 20-24 APRIL 1953

A proposed briefing tour of the Eastern Air Defense Force by Project Blue Book is set up to cover the following Air Divisions:

30th A.D., Willow Run, Michigan - 4 May 53
32nd A.D., Syracuse, New York - 6 May 53
BADF, Newburgh, New York - 7 May 53
26th A.D., Roslyn, New York - 8 May 53

As in the case of the Western Air Defense Force and the Central Air Defense Force briefings, the purpose of this briefing is to give the Air Defense Command a better understanding of Project Blue Book and its goals and to increase the reporting efficiency of the Air Defense Divisions. This will be the last in this series of briefings which were originally fostered in joint conferences between ATIC and ADC with the idea that 40 percent of all FLYOBRPT's are submitted originally from ADC units.

Project Blue Book is now compiling information and doing analysis on two of the best recent sightings involving incidents at Port Huron, Michigan, and Luke Air Force Base, Arizona; conclusions, if possible, will be forthcoming in the near future. Of interest is a recent supersonic radar sighting over the Old Baldy Hill area on the Western Korea Front, an informal report of which has been submitted to ATIC. Project Blue Book has submitted an SRI to Headquarters ATLO, Japan, in an attempt to gain more information.

On 22 Apr 53 Project Blue Book personnel visited its contractor in Columbus, Ohio, and were taken on a tour of the facilities used there in analysis of flying saucer reports. The IBM study, which is the most important item in this analysis, has begun statistical evaluations of some 2,000 reports and it is expected that a final written study of these findings will be ready sometime in August 1953. Blue Book personnel were impressed by the thoroughness of the job being done and has confidence that the subject study will

[redacted]

APR 1953

[redacted]

afford many answers to problems heretofore unsolved.

1/Lt R. M. Clason
ATIAE-5

[redacted]

[redacted]

UNCLASSIFIED

OPERATIONS REPORT - 20 - 24 JULY 1953

During the period covered by this report, the frequency of sightings has continued to be low. However, over the weekend several reports were received that have not been evaluated as yet. Two of these were phone calls to the ATIC Duty Officer, and Project Blue Book was advised that several wires were received that haven't been delivered.

Several incidents received from FEAF this week were good reports very well prepared. Six out of seven turned out to be Venus, and the other was a weather balloon released by the North Koreans.

First Lieutenant R. W. Olsson was in Washington on TDY Wednesday and Thursday for the purpose of getting the new Press Release and Air Force Regulation approved. Both of these were accomplished.

The present Air Force Letter that covers the reporting of Unidentified Aerial Objects expires on 1 October 1953. Project Blue Book was informed that the USAF has discontinued issuing AFL's. A new Air Force Regulation will come into effect on 1 October 1953; this will be AFR 200-2.

Representatives from Project Stork returned the remainder of the 1952 reports Friday. According to them, the IBM analysis of the 1952 reports will be finished during the month of August.

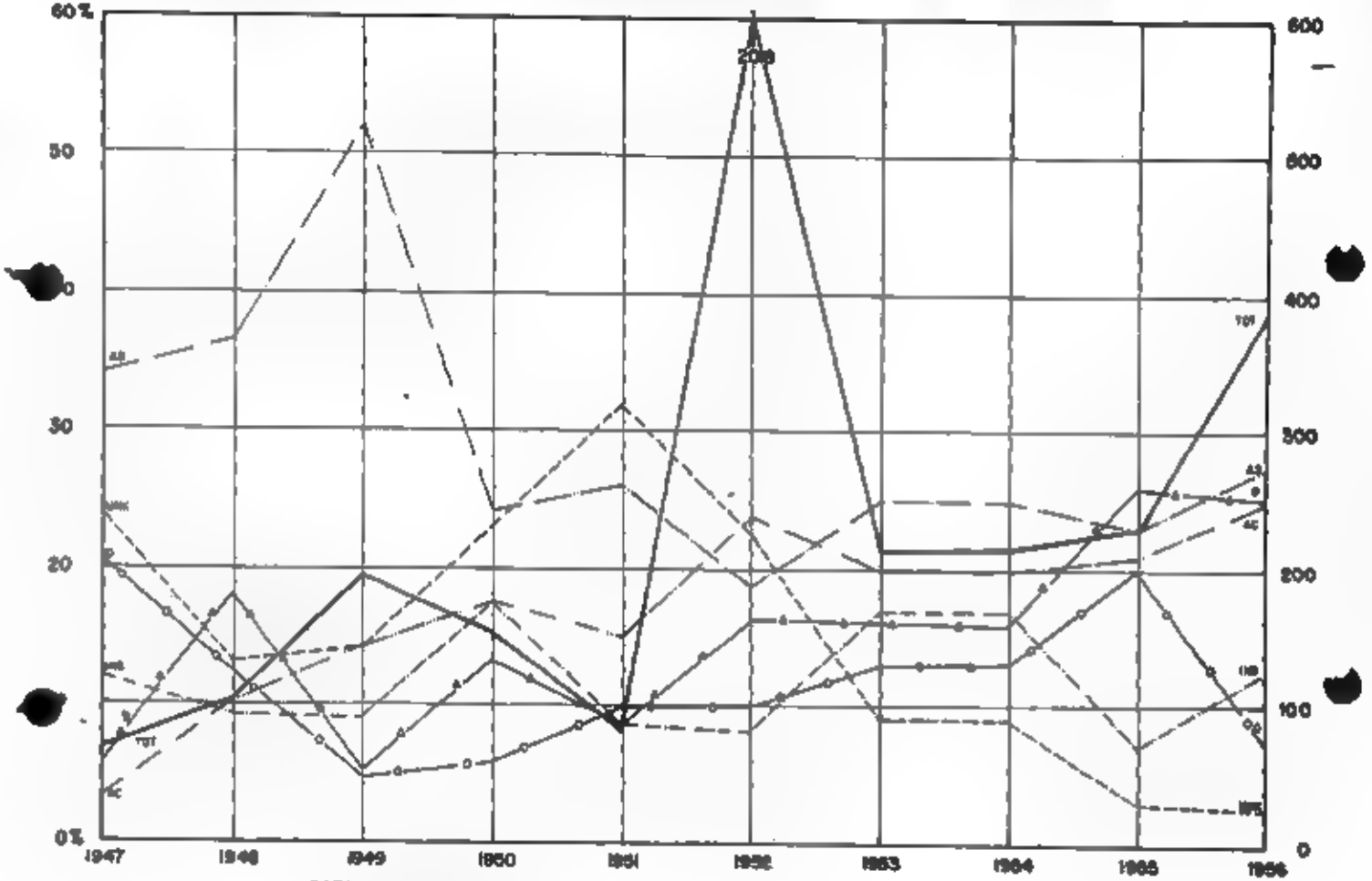
R. W. Castellaw
A/1C, USAF
ATIAB-5

DOWNGRADED AT 3 YEAR INTERVALS;
DECLASSIFIED AFTER 12 YEARS.
DOD DIR 5200.10

UNCLASSIFIED

[redacted]

UNIDENTIFIED FLYING OBJECT STATISTICS FOR THE CALENDAR YEARS 1947 THRU 1956



To Mr. Arcier - Noted - Keep me informed please
HWW

1 February 1957

MEMORANDUM THRU COL GILBERT, AFOIN-4E
DR. MILEY , AFOIN-4E4

TO CAPT GREGORY, AFOIN-4E4

SUBJECT: (Uncld) UFO Program

1. Discussion with Colonel Chappell, Colonel Hurley and Lt Colonel Green on 24 January 1957, resulted in the following decisions:

a. Major James F. Byrne, AFOIN-X1A, Ext. 74903, and Mr. L. A. Sanderson, same affiliation and extension, are assigned as our contact point in D/I. All our communications with the Office of Information Services, Press Information Branch (OSD Press Desk) will go through this contact point. This will assure us continuous assistance in the future handling of this program. They will attend to the coordination work in the Pentagon on our proposed AFR rewrite.

b. They will prepare a "position" for General Lewis which he is expected to approve and send on to DCS/O. This position will state that any present attempt by the Air Force to dissuade Mr. Quarles from his previous order to publish the unclassified Special Report Nr. 14 would help confirm the charges that the Air Force is concealing information from the public. It will also state that the Office of Information Services will send us the Press Release for approval and modification as stated in memo to Lt Colonel Green on 4 January 1957. It will finally state that the revised AFR is approved and that future operations will rigidly adhere to the areas of responsibility assigned.

2. I have invited Major Byrne and Mr. Sanderson to spend two days at ATIC to become familiar with history, files, problems, etc. Capt Gregory should arrange the date and conduct this indoctrination.

Info cy:
Gen Watson ✓
[redacted]
Lt Col Long
AFOIN-4X3
AFOIN-4X4

A. Francis Arcier
Scientific Advisor
AFOIN-4X1

[redacted]

AFOIN-XIA/Major Byrne/bjr/74903
Written 10 May 1957

UNCLASSIFIED

SUBJ: Publication of UFO Special Report Nr. 14

TO: Director, AFOIN-4

MEMO NO. 2
AFOIN-XIA/Major Byrne/bjr/74903

1. The attached proposed revision of AFR 200-2 is submitted for final coordination. Hq USAF coordination has been accomplished and since changes originating with ADC have been incorporated, the Regulation is ready for publication.

2. No substantive changes have been made to the most recent ATIC revision which would vitiate the purpose for accomplishing the revision. Other than deleting minor redundancy and ensuring clarity, the most recent changes attempt to delete any and all portions of the Regulation which might provoke suspicion or misinterpretation by the public. As pointed out by members of SAFIS all unclassified Air Force regulations are made available to the Press. Because of public interest in UFOs, the subject Regulation would receive close examination for any material that either is or out of context might reflect an unfavorable change in Air Force attitude or policy regarding UFOs. In every instance where by inference the Air Force might appear critical of or attempt to deceive the public, the text has been removed or altered. At most, the effect of such deletions or alterations would sacrifice informative material supplied for the convenience of the user of the Regulation.

3. The subject of U.S. persons using the UFO hysteria for personal gain has been informally brought to the attention of the FBI. Documented cases where illicit or deceptive devices or methods are used by individuals to arouse public interest in UFOs should be made available to the FBI through the OSI. This subject is being studied by AFOIN-XI and further development will be brought to your attention.

4. Concurrently with the publication of Report Nr. 14 as an Air Force Pamphlet, the publication of AFR 200-2, revised, should do much toward the relief of AFOIN in the UFO program.

3 Incls
1 & 2 w/d
Added 1 incl
3. Proposed Revision of AFR 200-2

D/I File
D/I Cross Ref
XIA Cmbk
XIA Staybk

COORDINATION: AFOIN-XI
Col Hurley
Lt Col Perlberg
Major Byrne
Mr. Sanderons

UNCLASSIFIED

[redacted]

525

12 July 1957

MEMO TO: Dr. Miley, AFCIN-4E4
Mr. Arcier, AFCIN-4X

SUBJECT: Preface to Project "Blue Book" Nr. 14

1. Reference is made to the recent SAG meeting in which certain points and approaches for preparing subject preface were discussed.

2. Attached herewith is a rewrite of the original preface, incorporating the recommendations and best arguments advanced by the SAG conferees.

3. The preface was prepared around the framework of the original draft, so splendidly prepared by Dr. Byers, and in no way is the substance of his approach and presentation weakened. The objective here was to:

a. introduce the subject in a manner easily understandable to the bulk of the readers.

b. discreetly make it known that we have considered those detractors and UFO experts who are familiar with the report.

c. leave the impression of "good faith" towards the public, admitting we are aware of their interest in the subject.

George T. Gregory

GEORGE T. GREGORY
Captain USAF

ncfs

MEMORANDUM TO: Mr. Arcier, AFCIN-4X1

SUBJECT: Draft, Preface to Report Nr. 14

1. Attached is a draft of subject preface, prepared independently of a similar preface now being revised by you.

2. Subject draft embodies the known viewpoints and desired revisions to a previous preface submitted to Headquarters USAF, as expressed in a number of informal discussions between yourself and the undersigned. These viewpoints were made known to Dr. Hynek, who was then asked to review a copy of the "old" preface, and make some suggestions accordingly.

3. The space for the statistics 1 January 1957 - 30 June 1957 has been left blank. Sgt Hill is in the process of compiling the reports, and making the final evaluations in percentage form.

4. That portion of the preface representing a summary of the events from mid-1955 on, has been reviewed numberous times by both your office and Headquarters USAF. As the last draft was found acceptable, a copy is appended as a continuation and conclusion to this preface.

George T. Gregory

1 Incl
Draft, Preface to Nr. 14

GEORGE T. GREGORY
Captain USAF

Reviewed and Approved:

Dr. H. A. Miley

MEMORANDUM TO: AFCIN-X
ATTN: Major Byrnes

SUBJECT: Preface to Project "Blue Book" Report Nr. 14

1. Attached is a proposed "Preface" to Project Blue Book Report Nr. 14 currently under preparation for public release by your office.

2. Reference telephone discussion between Mr. Sanderson and this office, 6 July 1957 regarding the possibility that the material contained within this preface may be attached as an Appendix rather than a Preface to subject report.

3. It is the opinion of this Center that such a proposal would defeat the purpose of this Preface, which is primarily to:

a. make it known, both to new readers and those familiar with the original report, the reason for its wide release to the general public, and

b. add a summary account of the period mid-1955 to 1957 in the UFO program, which was the original requirement imposed upon this Center prerequisite to the release of the report.

4. The incorporation of these two important points, items a. and b. above, at the very end of the report may be either overlooked or found to be confusing. It is therefore recommended that, for purposes of clarity, the attached be inserted immediately preceding the report proper, either as a "Preface" or "Foreword".

1 Incl
Proposed Preface
to Report Nr. 14

A. FRANCIS ARCHER
Scientific Adviser

NOTE: Red notations and items are for informative and explanatory purposes only. DO NOT TYPE.....

Preface to the Air Force PROJECT BLUE BOOK
SPECIAL REPORT Nr. 14

PROJECT BLUE BOOK's SPECIAL Report Nr. 14 was originally prepared as a classified report intended for the use of Headquarters, United States Air Force. As such, it was written with their background knowledge in mind. Following standard Air Force practice, when the report was declassified, no changes were made to adapt it for popular consumption. It was written as a technical report. All the verbal "bridges" necessary to make its arguments and conclusions obvious were not all included, because it was assumed that these would be supplied by the readers for whom it was originally intended.

Original paragraphs rearranged to give preface proper continuity.

The Air Force PROJECT BLUE BOOK SPECIAL REPORT Nr. 14 has been available to the public through the Air Force's Public Information Offices since November 1955. In order to disseminate the report more widely, in response to the public interest in this subject, the present edition has been printed by the Government Printing Office. With the exception of this "Preface" nothing has been added or deleted from the original report.

The only information that the Air Force has intentionally withheld, is that which might reveal the identity of the sources of the information. The reasons for this should be obvious; no intelligence or investigative agency makes its sources public. On the other hand, no reported information considered essential to the interpretation or appraisal of the data* has been withheld.

* Substituted for "facts" in original. Much of UFO data not facts, but all is info.

Rewritten to change orig statement implying we are not concerned with satisfying the public curiosity.

It should be remembered that the real concern of the Air Force, when dealing with unidentified aerial phenomena, is to establish and appraise the possibility of menace to the United States; however, at the same time it does not disregard the possibility of technological developments outside present day knowledge, which includes extraterrestrial vehicles and contrivances. The interest and speculation on the part of the public in this respect is understandable. It is hoped that this report will satisfy the public's intellectual curiosity.

(Comment to above: we cannot drop the matter by stating we are concerned only if UFOs are a threat - this would be seized upon as an admission that there are space ships and "saucers".)

Tactfully - using the Chi Square merely as an example rather than a rebuttal to some individual's charges.

The best, practical mathematical and analytical tools and techniques were used for this study, keeping in mind that the data used were based primarily on personal impressions and interpretations and not on concrete facts. It was also recognized that some of the methods of data-treatment or analysis may be found unacceptable, or their validity questioned. For example in Report Nr. 14, a tool of statistical analysis, called the "Chi Square Test", was used in an effort to show that the Unknowns were merely unrecognized Knowns. The logic in the results of the Chi Square Test, as a plied to the Unknowns (see page 68 of Report Nr. 14), may best be restated thus: "Granted that it has not been possible to prove statistically that the Unknowns are of the same nature as the Knowns; nevertheless, neither has it been shown that they actually are of a different nature." As far as the original premise (that the Unknowns are merely unidentified Knowns) is concerned, the test therefore

has been inconclusive. The failure of the data to "pass" the Chi Square Test merely means that the two sets of data are essentially different in nature. It is not the nature of this statistical aid to analysis that a positive result is conclusive, but that a negative result does not prove the converse assumption to be true. This is pointed out on page 76 of Report Nr. 14 where it is stated that the Chi Square Test "neither confirms nor denies that the Unknowns are primarily unidentified Knowns."

(Comment: Here we explain or "confess" that certain techniques in the analyses may be weak, e.g. the "CHI SQUARE")

There was no statement in the Conclusions of the original report that the "unknowns" did not represent novel government weapons or devices, because such a statement in a report to Headquarters USAF would have been superfluous. Nor was any mention made of extraterrestrial objects; the latter are embraced in the expression "technological developments outside the range of present day scientific knowledge" appearing at the very bottom of page 94.

With respect to the conclusions reached in this study, it can be stated emphatically that, after ten years of observation, investigation and analysis, there has been no trend or pattern that reveals anything remotely resembling purpose or consistency that can in any way be associated with any menace to the United States. Nothing in the reports of Unknowns necessitates the assumption of extraterrestrial origin. To state that the cause of an aerial phenomenon is "unknown", does not imply that it is "unknowable" within the framework of terrestrial events. To this extent, assuming an aerial phenomenon to be extraterrestrial in

origin because unidentifiable becomes unnecessary, illogical, and unscientific.

The findings of the original Project "Blue Book" Report Nr. 14 terminate as of mid-1955 (see page ix of the Summary). In keeping with the premise that the original report remain unchanged when released to the general public, and recognizing that the reader will be interested in the events of the period following mid-1955, the results of the analyses of unidentified aerial objects for that period will be presented under this preface, rather than in the Summary, normally, the proper place of insertion.

Now, to introduce the addenda for period mid-55 to 57, being transferred from the SUMMARY to the PREFACE.

The chart below presents the results of the analysis of aerial phenomena reported during the period 25 July 1947 to 1 January 1957. The data for the first half of this period were taken from Table A1, page 107 of Report Nr. 14. In transferring the data from this table, the sightings identified as "Light Phenomena", "Birds", "Clouds , Dust, etc.," and "Psychological" have been added into the category "Other", in accord with the categories used in the current method of analysis.

C H A R T

(Having had all the background and explanations necessary, the reader can now be introduced to, and better understand the addenda for the period mid-55 to 57.)

(Addenda - as reviewed and rewritten by Mr. Acuff for final transmittal to D/I.) with minor changes to adopt "Preface"

The period from May 1955 to the end of that year, in which 252 reports were received, indicated but little change in the final percentages of evaluations and conclusions in comparison with the preceding six-month period. However, a gradual rise in the number of UFO reports was noted early in 1956. By summer of that year the number had increased sharply, threatening to approach the number of reports received during the "peak" UFO year, 1952. The number of reports officially received at the end of 1956 totaled 778. Evaluations of the 1956 reports, in terms of percentage, were as follows:

Balloons	- 26.04%
Aircraft	- 24.69%
Astronomical	- 26.30%
Other	- 6.78%
Insufficient Info	- 14.10%
Unknown	- 2.19%

two of

* The influential aspects of these media accounts on UFO sightings should be treated in slightly more detail here.

It should be noted that although the total number of reports for 1956 was over twice as great as for the preceding year, the percentage of "unknowns" was reduced; the result of improvement in reporting, investigating and analytical techniques. (See page of the Summary)

A study into the cause of the sudden increase of UFO reports in 1956 revealed that this was due primarily to the publicity given by the large number of books, articles, motion pictures and television presentations on UFOs or "flying saucers". This increase was also attributed to the large number of so-called "UFO research and investigative organizations, clubs, and societies". All these media had been steadily increasing since mid-1955. Another contributing cause to the increase in sightings was the publicity given to the fact that Mars would be at its closest proximity to the Earth since 1927, a fact that was seized upon by proponents of interplanetary space ships, with a large number claiming that the Earth would be visited by increasing numbers of space ships from that planet.

The influential aspects of two of these media on UFO sightings should be treated in slightly more detail here. In early 1955 there was only a small number of books on "UFOs" and "flying saucers". There are now approximately twenty books on the subject, none of which was sponsored by the Department of Defense or considered in any way official. The period 1955-1956 produced over a dozen science-fiction motion pictures having themes or plots centered around "flying saucers". With regard to the nature, status and possible influence of unofficial UFO organizations and their members, a little over one year ago there were only a handful of these groups in existence. Today over forty such groups are known to the Air Force. They include among their members many well-meaning citizens who have an interest in the subject, and a patriotic desire to help the authorities in their handling of the UFO problem. In general, certain groups, writers, and so-called "experts" on the subject apparently had some influence on the increase of UFO sightings reported or have exploited the subject to their interests.(1)

There is a relationship between the publicity accorded UFO matters and the number of reports received by the Air Force. The chart of UFO report frequency, shown below, compares the effect of the conservative approach of three well known periodicals, with the effects of the less restrained approach of the press. The flood of reports immediately following the well-publicized incidents at Washington, D.C. illustrates this point.

(Insert)
Chart - Frequency of UFO Reports
June - September 1952

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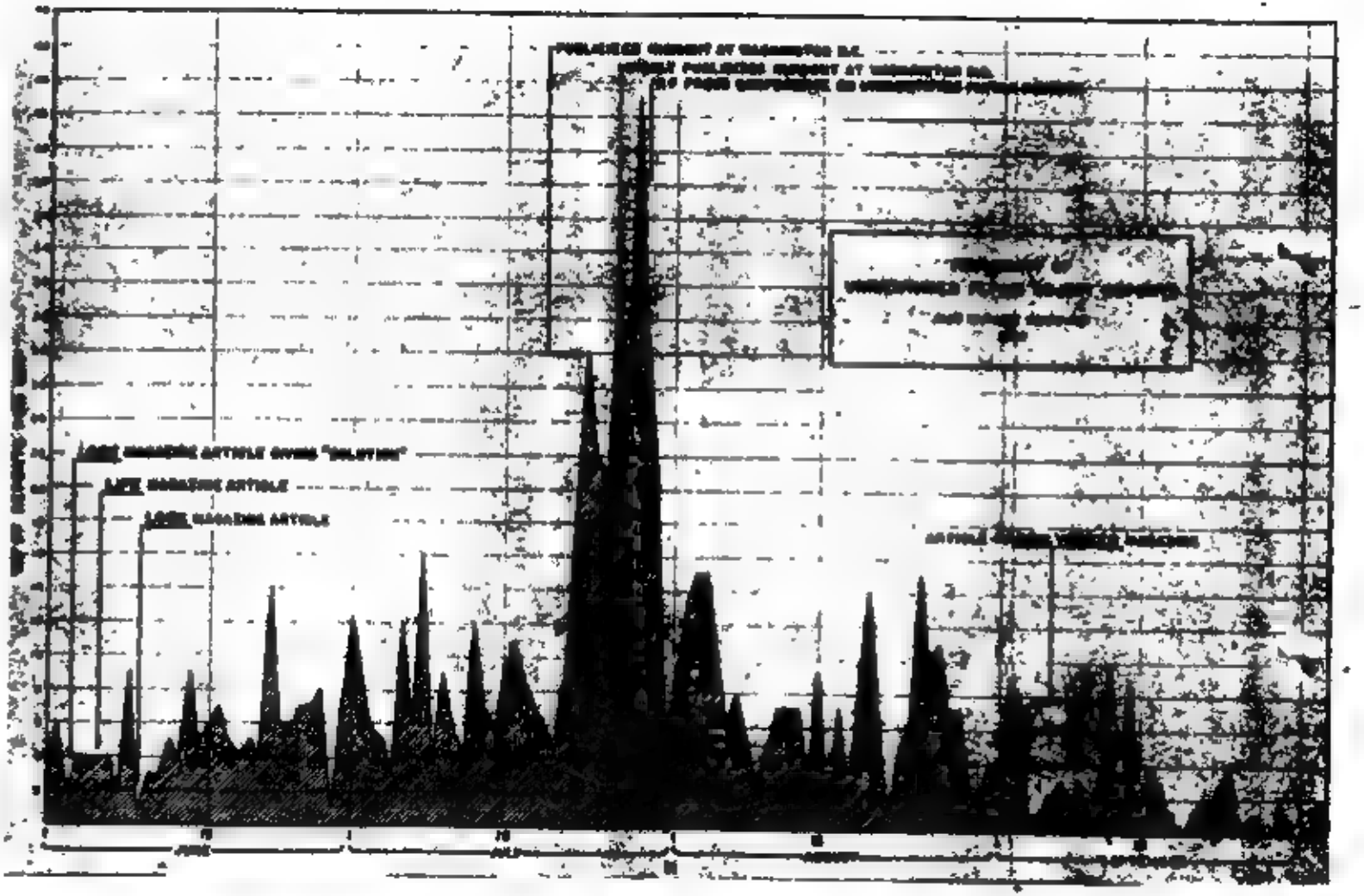
(1) Numerous alleged UFO sightings are reported directly to, or are collected exclusively by unofficial UFO groups. The majority have periodic publications, usually a monthly paper, which describe the sightings with occasional lack of restraint. Weeks or months later, when conclusive studies or "on the spot" investigations are no longer possible, the Air Force is often queried regarding the status or explanation of the incidents. This is also true of UFO reports submitted to the press, particularly to small-town newspapers.



General Motors

The viewpoints of high governmental bodies engaged in aeronautical fields, other than the Air Force, regarding this subject, may be ascertained from an interesting commentary made by two prominent scientists in the closed session of a congressional committee which was recently made public. In answer to queries from members of Congress regarding the existence of "flying saucers", Dr. Hugh L. Dryden and Dr. James H. Doolittle, Director and Chairman, respectively, of the National Advisory Committee for Aeronautics, flatly denied the existence of such space vehicles.(2)

In conclusion, it should be strongly emphasized that the analysis of UFO sightings is based primarily on the personal impressions and interpretations of observers, rather than on accurate, scientific data obtained under controlled conditions. It is therefore doubtful that the number of "unknowns" will ever be reduced to zero.

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(2) During the proceedings these scientists asserted that if any attempt was made to refute all the misinformation that was printed on the subject, "--we would have no time to do anything else. We cannot compete with the science-fiction people." NACA Testimony before House Appropriations Committee, 19 February 1957.

CONCLUSIONS

It can never be absolutely proven that "flying saucers" do not exist. This would be true if the data obtained were to include complete scientific measurements of the attributes of each sighting, as well as complete and detailed descriptions of the objects sighted. It might be possible to demonstrate the existence of "flying saucers" with data of this type, IF they were to exist.

Although the reports considered in this study usually did not contain scientific measurements of the attributes of each sighting, it was possible to establish certain valid conclusions by the application of statistical methods in the treatment of the data. Scientifically evaluated and arranged, the data as a whole did not show any marked patterns or trends. The inaccuracies inherent in this type of data, in addition to the incompleteness of a large proportion of the reports, may have obscured any patterns or trends that otherwise would have been evident. This absence of indicative relationships necessitated an exhaustive study of selected facets of the data in order to draw any valid conclusions.

A critical examination of the distributions of the important characteristics of sightings, plus an intensive study of the sightings evaluated as UNKNOWN, led to the conclusion that a combination of factors, principally the reported maneuvers of the objects and the unavailability of supplemental data such as aircraft flight plans or balloon-launching records, resulted in the failure to identify as KNOWNS most of the reports of objects classified as UNKNOWNS.

An intensive study, aimed at finding a verified example of a "flying saucer" or at deriving a verified model or models of "flying saucers" (as defined on Page 1), led to the conclusion that neither goal could be attained using the present data.

It is emphasized that there was a complete lack of any valid evidence consisting of physical matter in any case of a reported unidentified aerial object.

Thus, the probability that any of the UNKNOWNS considered in this study are "flying saucers" is concluded to be extremely small, since the most complete and reliable reports from the present data, when isolated and studied, conclusively failed to reveal even a rough model, and since the data as a whole failed to reveal any marked patterns or trends.

Therefore, on the basis of this evaluation of the information, it is considered to be highly improbable that any of the reports of unidentified aerial objects examined in this study represent observations of technological developments outside the range of present-day scientific knowledge.

SUMMARY

Reports of unidentified aerial objects (popularly termed "flying saucers" or "flying discs") have been received by the U.S. Air Force since mid-1947 from many and diverse sources. Although there was no evidence that the unexplained reports of unidentified objects constituted a threat to the security of the U.S., the Air Force determined that all reports of unidentified aerial objects should be investigated and evaluated to determine if "flying saucers" represented technological developments not known to this country.

In order to discover any pertinent trend or pattern inherent in the data, and to evaluate or explain any trend or pattern found, appropriate methods of reducing these data from reports of unidentified aerial objects to a form amenable to scientific appraisal were employed. In general, the original data upon which this study was based consisted of impressions and interpretations of apparently unexplainable events, and seldom contained reliable measurements of physical attributes. This subjectivity of the data presented a major limitation to the drawing of significant conclusions, but did not invalidate the application of scientific methods of study.

The reports received by the U.S. Air Force on unidentified aerial objects were reduced to IBM punched-card abstracts of the data by means of logically developed forms and standardized evaluation procedures. Evaluation of sighting reports, a crucial step in the preparation of the data for statistical treatment, consisted of an appraisal of the reports and the subsequent categorization of the object or objects described in each report. A detailed description of this phase of the study stresses the careful attempt to maintain complete objectivity and consistency.

Analysis of the refined and evaluated data derived from the original reports of sightings consisted of (1) a systematic attempt to ferret out any distinguishing characteristics inherent in the data of any of their segments, (2) a concentrated study of any trend or pattern found, and (3) an attempt to determine the probability that any of the UNKNOWNS represent observations of technological developments not known to this country.

The first step in the analysis of the data revealed the existence of certain apparent similarities between cases of objects definitely identified and those not identified. Statistical methods of testing when applied indicated a low probability that these apparent similarities were significant. An attempt to determine the probability that any of the UNKNOWNS represented observations of technological developments not known to this country necessitated a thorough re-examination and re-evaluation of the cases of objects not originally identified, this led to the conclusion that this probability was very small.

The special study which resulted in this report (Analysis of Reports of Unidentified Aerial Objects, 5 May 1955) started in 1953. To provide the study group with a complete set of files, the information cut-off date was established as of the end of 1952. It will accordingly be noted that the statistics contained in all charts and tables in this report are terminated

with the year 1952. In these charts, 3201 cases have been used.

As the study progressed, a constant program was maintained for the purpose of making comparisons between the current cases received after 1 January 1953, and those being used for the report. This was done in order that any change or significant trend which might arise from current developments could be incorporated in the summary of this report.

The 1953 and 1954 cases show a general and expected trend of increasing percentages in the finally identified categories. They also show decreasing percentages in categories where there was insufficient information and those where the phenomena could not be explained. This trend had been anticipated in the light of improved reporting and investigating procedures

Official reports on hand at the end of 1954 totaled 4834. Of these, 425 were produced in 1953 and 429 in 1954. These 1953 and 1954 individual reports (a total of 854), were evaluated on the same basis as were those received before the end of 1952. The results are as follows.

Balloons	- 16%
Aircraft	- 20%
Astronomical	- 25%
Other	- 13%
Insufficient Info	- 17%
Unknown	- 9%

As the study of the current cases progressed, it became increasingly obvious that if reporting and investigating procedures could be further improved, the percentages of those cases which contained insufficient information and those remaining unexplained would be greatly reduced. The key to a higher percentage of solutions appeared to be in rapid "on the spot" investigations by trained personnel. On the basis of this, a revised program was established by AF Reg. 200-2 Subject. "Unidentified Flying Objects Reporting" (Short Title: UFOB) dated 12 August 1954.

This new program, which had begun to show marked results before January 1955, provided primarily that the 4602d Air Intelligence Service Squadron (Air Defense Command) would carry out all field investigations. This squadron has sufficient units and is so deployed as to be able to arrive "on the spot" within a very short time after a report is received. After treatment by the 4602d AISS, all information is supplied to the Air Technical Intelligence Center for final evaluation. This cooperative program has resulted, since 1 January 1955, in reducing the insufficient information cases to 7% and the unknown cases to 3%, of the totals.

The period 1 January 1955 to 5 May 1955 accounted for 131 unidentified aerial object reports received. Evaluation percentages of these are as follows

Balloons	- 26%
Aircraft	- 21%
Astronomical	- 23%
Other	- 20%
Insufficient Info	- 7%
Unknown	3%

All available data were included in this study which was prepared by a panel of scientists both in and out of the Air Force. On the basis of this study it is believed that all the unidentified aerial objects could have been explained if more complete observational data had been available. Insofar as the reported aerial objects which still remain unexplained are concerned, there exists little information other than the impressions and interpretations of their observers. As these impressions and interpretations have been replaced by the use of improved methods of investigation and reporting, and by scientific analysis, the number of unexplained cases has decreased rapidly towards the vanishing point.

Therefore, on the basis of this evaluation of the information, it is considered to be highly improbable that reports of unidentified aerial objects examined in this study represent observations of technological developments outside of the range of present-day scientific knowledge. It is emphasized that there has been a complete lack of any valid evidence of physical matter in any case of a reported unidentified aerial object.

SUMMARY

Reports of unidentified aerial objects (popularly termed "flying saucers" or "flying discs") have been received by the U.S. Air Force since mid-1947 from many and diverse sources. Although there was no evidence that the unexplained reports of unidentified objects constituted a threat to the security of the U.S., the Air Force determined that all reports of unidentified aerial objects should be investigated and evaluated to determine if "flying saucers" represented technological developments not known to this country.

In order to discover any pertinent trend or pattern inherent in the data, and to evaluate or explain any trend or pattern found, appropriate methods of reducing these data from reports of unidentified aerial objects to a form amenable to scientific appraisal were employed. In general, the original data upon which this study was based consisted of impressions and interpretations of apparently unexplainable events, and seldom contained reliable measurements of physical attributes. This subjectivity of the data presented a major limitation to the drawing of significant conclusions, but did not invalidate the application of scientific methods of study.

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Analysis of the refined and evaluated data derived from the original reports of sightings consisted of (1) a systematic attempt to ferret out any distinguishing characteristics inherent in the data or any of their segments, (2) a concentrated study of any trend or pattern found, and (3) an attempt to determine the probability that any of the UNKNOWNS represent observations of technological developments not known to this country.

The first step in the analysis of the data revealed the existence of certain apparent similarities between cases of objects definitely identified and those not identified. Statistical methods of testing when applied indicated a low probability that these apparent similarities were significant. An attempt to determine the probability that any of the UNKNOWNS represented observations of technological developments not known to this country necessitated a thorough re-examination and re-evaluation of the cases of objects not originally identified; this led to the conclusion that this probability was very small.

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As the study progressed, a constant program was maintained for the purpose of making comparisons between the current cases received after 1 January 1953, and those being used for the report. This was done in order that any change or significant trend which might arise from current developments could be incorporated in the summary of this report.

The 1953 and 1954 cases show a general and expected trend of increasing percentages in the finally identified categories. They also show decreasing percentages in categories where there was insufficient information and those where the phenomena could not be explained. This trend had been anticipated in the light of improved reporting and investigating procedures.

Official reports on hand at the end of 1954 totaled 463. Of these, 425 were produced in 1953 and 429 in 1954. These 1953 and 1954 individual reports (a total of 854), were evaluated on the same basis as were those received before the end of 1952. The results are as follows:

Balloons	- 16%
Aircraft	- 30%
Astronomical	- 29%
Other	- 13%
Insufficient Info	- 17%
Unknown	- 9%

As the study of the current cases progressed, it became increasingly obvious that if reporting and investigating procedures could be further improved, the percentages of those cases which contained insufficient information and those remaining unexplained would be greatly reduced. The key to a higher percentage of solutions appeared to be in rapid "on the spot" investigations by trained personnel. On the basis of this, a revised program was established by AF Reg. 200-2 Subject: "Unidentified Flying Objects Reporting" (Short Title: UFOR) dated 18 August 1954.

This new program, which had begun to show marked results before January 1955, provided primarily that the 4602nd Air Intelligence Service Squadron (Air Defense Command) would carry out all field investigations. This squadron has sufficient units and is so deployed as to be able to arrive "on the spot" within a very short time after a report is received. After treatment by the 4602nd AISS, all information is supplied to the Air Technical Intelligence Center for final evaluation. This cooperative program has resulted, since 1 January 1955, in reducing the insufficient information cases to 7% and the unknown cases to 3%, of the totals.

The period 1 January 1955 to 2 May 1955 accounted for 131 unidentified aerial object reports received. Evaluation percentages of these are as follows:

Balloons - 26%

Aircraft - 21%

Astronomical - 23%

Other - 20%

Insufficient Info - 7%

Unknown - 3%

Addenda starts here

The period from May 1955 to the end of that year, in which 232 reports were received, indicated but little change in the final percentages of evaluations and conclusions in comparison with the preceding six-month period. However, a gradual rise in the number of UFO reports was noted early in 1956. By summer of that year the number had increased sharply, threatening to approach the number of reports received during the "peak" UFO year, 1952. The number of reports officially received at the end of 1956 totaled 778. Evaluations, in terms of percentage, were as follows:

Balloons - 26.0%

Aircraft - 8.9%

Astronomical - 26.3%

Other - 6.7%

Insufficient Info - 19.3%

Unknown - 9.1%

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Chart - Frequency of UFO Reports
June - September 1952

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[illegible] verification of the incidents.

[illegible] on UFO matters, [illegible] in closed session of a congressional committee, was made public. In answer to queries from members of Congress on the existence of "flying saucers," Dr. Hugh L. Dryden and Dr. J. Doolittle, Director and Chairman, respectively, of the National Advisory Committee for Aeronautics, flatly denied the existence of such vehicles.(2)

All available data have been included in this study. It was prepared by a panel of scientists, both in and out of the Air Force, who, after considering all the facts, came to the conclusion that all the unidentified aerial objects reported could have been explained if more complete observational data had been available. Insofar as the reported aerial objects which still remain unexplained are concerned, there still exists little information other than the impressions and interpretations of their observers. In brief, the conclusions of this study are based on what the majority of the observers believed. As these impressions and interpretations are replaced by the use of improved methods of investigation and reporting, and by scientific analysis, the number of unexplained cases has decreased rapidly towards the vanishing point. However, it should be strongly emphasized that, as previously stated, since the analysis of UFO sightings is based primarily on the personal impressions and interpretations of observers, rather than on accurate, scientific data obtained under controlled conditions, it is doubtful that the number of "unknowns" will ever be reduced to zero.

Therefore, on the basis of this evaluation of the information, it is considered to be highly improbable that reports of unidentified aerial objects examined in this study represent observations of technological developments outside of the range of present-day scientific knowledge. It is emphasized that there has been a complete lack of any valid evidence of physical matter in any of the cases of reported unidentified aerial objects.

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D. C

APCAG-57/LtCol Miller/jjd/63220 4039

MEMORANDUM FOR ASSISTANT CHIEF OF STAFF, INTELLIGENCE
ATTN: AFCIN-1B1

SUBJECT: Procurement of Printed Matter

1. Reference is made to memorandum from this office dated 16 August 1957, subject: Shortage of Departmental Printing Funds.

2. This Division has evaluated your attached request for procurement of the following printed matter and has placed it in the "DEFERRED" category, i.e., not of immediate operational necessity.

AFP 200-2-Series, "Analysis of Reports of Unidentified Aerial Objects"

3. No procurement action can be taken by this Division on your request until additional funds become available.

2 Incl:
n/c

EARL C. MILLER
Lt Colonel, USAF
Chief, Publications & Forms
Publishing Division, AAG

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D. C

AFCAG-57/LtCol Miller/jjd/OI,220

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2 Incl:
a/c

EARL C. MILLER
Lt Colonel, USAF
Chief, Publications & Printing
Publishing Division AA

2nd Copy for SAFIS

1957

MEMORANDUM FOR OFFICE OF LEGISLATIVE LIAISON
ATTN: CHIEF OF INVESTIGATIONS BRANCH

SUBJECT: Publication of Air Force Project
Report No. 14.

1. Reference your memo [illegible]

2. For your information the original [illegible] an up-to-date summary of UFO analysis has been prepared [illegible] Adjutant General for publication. [illegible] time to say when Project Blue Book will [illegible] for sale. This office has been informed [illegible] have been sharply curtailed and it is [illegible] be available.

3. It should be noted that Project No. [illegible] printed as it was published originally, [illegible] the addition of the latest statistical findings. It has been determined that condensed version would not serve our purpose.

ROUTE-ZO | COORDINATION

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AFCIN-4X2b
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AFCIN-4X3
AFCIN-4X4
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AFCIN-4B
AFCIN-4C
AFCIN-4D
AFCIN-4E
AFCIN-4F
OTHERS

AFOIN-4E4 ATTN: [redacted]

FILE CLASS:
OFFICIAL FILE COPY

OFFICE OF RECORD

Ltr, 19 Feb 58, Subj: Request for Report

AFCIN-4E4 1st Ind 4E4/Capt G.T. Gregory/ma/69216

AIR TECHNICAL INTELLIGENCE CENTER, Wright Patterson Air Force Base, Ohio 27 FEB 1958

TO: Director, Air University Library, ATTN: AUL-6181-A, Maxwell Air Force Base, Alabama

No. 46 of Proj "Blue Book" Rept No. 14

1. Attached is copy #97, subject report, as requested by your office.

2. Also attached is related material regarding the Air Force UFO Program which should be of value to the University in this respect.

3. The new UFO regulation, AFR 200-2, dated 5 February 1958 is now in process of distribution. This will provide additional data from a policy and procedural viewpoint. Sterilized

FOR THE COMMANDER

N. K. Gilbert 2/26/58

N. K. GILBERT
Colonel, USAF
Deputy for Science and Components

8 [redacted]
1. Proj Blue Book 14
Cy #97
2. DOD Releases
1955 & 1957
3. USAF Summary
4. UFO Questionnaire
5. Observer's Sheet
6. Investigator's sheet
7. Radar Data Sheet
8. Analyst's Work Sheet

1 4E4 27 Feb 58
2 4E4 Hq Filed 26 Feb 58

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INITIAL	

UNITED STATES AIR FORCE

AIR UNIVERSITY LIBRARY

MAXWELL AIR FORCE BASE, ALABAMA

BAC-2-AUL-6181-A

SUBJECT: Request for Report

TO: Commander
Air Technical Intelligence Center
Wright-Patterson Air Force Base, Ohio

1. The Air University Library urgently needs an additional copy of the following report and would appreciate your furnishing it:

Project Blue Book: Special Report No. 14
(Project 10073) 5 May 1955

2. The document is in great demand by the Air Command and Staff College and another copy is needed to meet this requirement.

3. In replying please address as follows:

Director
Air University Library
ATTN: AUL-6181-A
Maxwell Air Force Base, Alabama

FOR THE DIRECTOR:

March 25, 1958

Dear Sir:

Please send us the item(s) listed below, for use by our engineering staff. It will help us if you will refer to our request number(s when you send us the material.

NACA request number	Item
C7-117	Project Blue Book
C7-938	Reports 1 through 14 and summary report.

Please send us two copies of each of the above reports. We thank you for your prompt attention.

Very truly yours,

Bertram A. Mulcahy
Chief, Division of Research Information

BAM:mmm

[redacted]
Air Technical Intelligence Center
Wright-Patterson Air Force Base, Ohio
Attn: APOIR-AFTIAC-IB

COVER SHEET

SUSPENSE

ORIGIN OF BASIC

DATE

ASSIGNED BY

DATE | TYPE | NO.

SUBJECT

Request - Progress and Status of "Blue Book" Printing and Dissemination

ROUTING

Initial "IN" column to denote review prior to action. Initial "OUT" column to denote review of completed action. (X for action ✓ for coordination)

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TO: SAFIS-3, Major Tacker

DATE: 2 June 1958

FROM: AFCIN-4E

COMMENT NO.: 1

COMMENTS *(Use reverse, if necessary)*

AFCIN-4E4g/Capt Gregory/ko/69216

1. Reference your letter dated 21 May 58 and NACA letter dated 6 May 58.

2. Similar requests for Project Blue Book #14 have been made to this Center.

3. We cannot fulfill the requirement for loan or reproduction of this voluminous report, as it would be prohibitive in cost, administratively impractical (Ref cy Ltr to AFCIN-X, same subject, attached as Incl #1).

4. "Blue Book" Distribution List (attached as Incl #2) shows 12 copies were sent to PIO, and it is our understanding that there is at least one (1) copy on file with every major USAF PIO Office.

2 Incls:
a/s

H. K. GILBERT
Colonel, USAF
AFCIN-4E

AFHQ FORM 7 MAY 58 0-86 PREVIOUS EDITIONS OF THIS FORM MAY BE USED. GPO 908844

SAFIS-3/Maj Tacker/jmd/73328

21 May 1958

Dear Captain Gregory:

Attached is a letter from the National Advisory Committee for Aeronautics, dated 6 May 1958 (NACA Request #C 7-938), requesting a copy of Report #14 Project Blue Book.

The report is for use of:

Mr. George Mandel
NACA
Cleveland Laboratories
21000 Brookpark Road
Cleveland 31, Ohio

Please arrange, if possible, to furnish Mr. Mandel with a a copy of Project Blue Book he can retain. If this is not feasible, request Mr. Mandel be furnished a copy of the report on a loan basis. NACA can then photostat a copy for their permanent use.

Sincerely,

LAWRENCE J. TACKER
Major, USAF
Executive Officer
Public Information Division
Office of Information Services

Inclosure

Captain G. T. Gregory
Air Technical Intelligence Center
Wright-Patterson Air Force Base
Ohio

COMEBACK-SAFIS-3
READER-SAFIS-1

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

1512 H Street, N.W. Washington 25, D.C.

May 6, 1958

Gentlemen:

Please send us the item(s) listed below, for use by our engineering staff. It will help us if you will refer to our request number(s) when you send us the material.

NACA request number	Item
67-938	Air Technical Intelligence Center Project Blue-Book; Summary Report - Report 14.

We have been referred to you by the Air Technical Intelligence Center.

Very truly yours,

Bertram A. Mulcahy
Chief, Division of Research Information

BAM:mmm

Office of the Secretary of the Air Force
(SAFIS)
Attn: Major Woods
The Pentagon
Washington 25, D. C.

Request - Progress and Status of "Blue Book" printing and Dissemination

Capt G.
Every major USAF PIO [illegible]
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AFCIN-2 8 April 1956

AFCIN-4A1 1

AFCIN-4A1a/Capt Gregory/ao/4-

1. This Center is continuously being contacted for copies of Project "Blue Book," Report Nr 14 from official and non-official sources.

2. As this office has only a limited number of copies (2) available for its own use, these requests, particularly those from official agencies who have a "need-to-know" requirement, cannot be fulfilled. Reference attached [illegible].

3. Any attempt here to break open the permanently bound copies and reproduce the almost 400 pages, in order to fulfill each individual request, would be an impractical, expensive, time consuming process.

4. Printing plates for subject report were submitted to your office in December 1956 for immediate printing and dissemination (Incl #1). Therefore, request the current status of the matter, and instructions concerning the proper disposition or forwarding of requests for "Blue Book" Nr. 14.

4 Incls:
1. Ltr 0-85 dtd 31 Dec 56
2. Cy Distribution List
3. Cy Ltr from [illegible]
4. Cy Ltr from Congressman [illegible]

FRANCIS A. ARCHER
Office of Scientific Advisor
AFCIN-4A1

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21 October 1958

MEMORANDUM FOR DIRECTOR, OFFICE OF SECURITY REVIEW, OSAD (PA)

SUBJECT: Project Blue Book

1. It is permissable to loan Project Blue Book, Special Report #14 for reproduction and unlimited distribution.

2. The Department of the Air Force has no objections to open publication. We have exhausted our supply of this report and have offered it on loan for reproduction in whole or in part many times in the last year.

/s/

[redacted]
Major, USAF
Executive Officer
Public Information Division
Office of Information Services

Coordinated w/Maj James Byrne/AFCIN/74903

SAFIB-3 COMEBACK CY
SAFIB-1 READING CY

APPENDIX G

Dr. Paul L. Wilts

Psychological Analysis of Reports of Unidentified Aerial Objects

U. S. AIR FORCE
HEADQUARTERS, AIR MATERIEL COMMAND
ENGINEERING DIVISION

No. of pages - 7

TSEAMC-ENG/PAT/mnf

MEMORANDUM REPORT ON 26 April 1949

SUBJECT: Psychological Analysis of Reports of Unidentified Aerial Objects

SECTION: Aero Medical Laboratory

SERIAL NO.: MCREXD-696-100 Expenditure Order No. 36-38

A. PURPOSE:

1. At the request of the Technical Intelligence Division, Intelligence Department, AMC, an analysis has been made, from a psychological point of view, of 212 investigations of persons reporting sightings of unidentified aerial objects.

B. FACTUAL DATA:

2. A report of this analysis is attached as Appendix A.

C. CONCLUSIONS:

3. It is concluded by the writer that there are sufficient psychological explanations for the reports of unidentified flying objects to provide plausible explanations for reports not otherwise explainable. These errors in identifying real stimuli result chiefly from inability to estimate speed, distance and size.

D. RECOMMENDATIONS:

4. Test the ability of pilots to estimate the course of a small lighted balloon while doing aerobatics with it at night. It is suggested that several pilots try to fly pursuit curves and collision courses on such targets at night and report accurately their sensations. It would be desirable, but probably impossible, to keep them from knowing the nature of the light source.

5. In all future reports of unidentified objects specify the location of object with reference to polar coordinates (direction and degrees above the horizon) rather than asking individuals to estimate interms. If possible, obtain an estimate of size in terms of the visual angle subtended by the object.

6. In all future investigations determine the angular position of the sun with respect to the unidentified object and the observer.

Also determine the approximate time during which the object was in sight (this information was not available for more than half the reports).

Prepared by: Paul M. Fitts
PAUL M. FITTS, Ph.D.
Chief, Psychology Branch

Prepared by: Shirley C. Brown
SHIRLEY C. BROWN
Psychology Branch

Approved by: A. P. Clark
A. P. CLARK, Lt. Col., USAF
Chief, Aero Medical Laboratory

Approved by: E. J. Rinehart
EDWARD J. RINEHART, Col., MC (USAF)
Chief, Aero Medical Laboratory

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APPENDIX A

PSYCHOLOGICAL ANALYSIS OF REPORTS OF
UNIDENTIFIED AERIAL OBJECTS

The Inaccuracy of Human Observation

Psychologists have long know that human perception is fallible. In fact, part of the science of psychology is concerned with the measurement of errors of observation, and with the discovery of the conditions and laws that govern such phenomena.

Errors of observation may be classified as variable or constant. Variable errors are those in which a number of separate observations are found to differ from one another. The distribution of such errors often follows the normal probability curve. Constant errors are those in which observations are consistently biased in one or another direction. For example, individuals often are guilty of a constant error, in the direction of underestimation, in reporting their ages.

Errors of observation may be classified further as precision errors and identification errors. Inaccuracy in estimating the speed of an aircraft is an example of the former. Mistaking an aircraft for a "flying saucer" is an example of the latter.

It is the purpose of the present report to analyze 212 reports of observations of unidentified flying objects in order to see to what extent these reports can be explained in terms of known psychological facts and principles.

Scientific Method and a Posteriori Data

A word of caution must be injected at the outset of this report. Certain conditions are necessary for drawing valid scientific conclusions.

These conditions are largely lacking in the case of the data available on unidentified flying objects. It is impossible to say with any assurance what any particular individual in this series of 212 reports was actually observing at any particular time. It is only possible to examine the accumulation of available evidence or the accumulation of all reports of a given class (e.g., all reports from supposedly competent observers) and to consider them in a statistical sense. If certain characteristics appear repeatedly in reports from different people it may be possible to infer causal factors.

It will never be possible, on the other hand, to say with certainty that any given observer could not have seen a space ship or an enemy missile, or some other object. It will only be possible to estimate the probability that he could have seen such things.

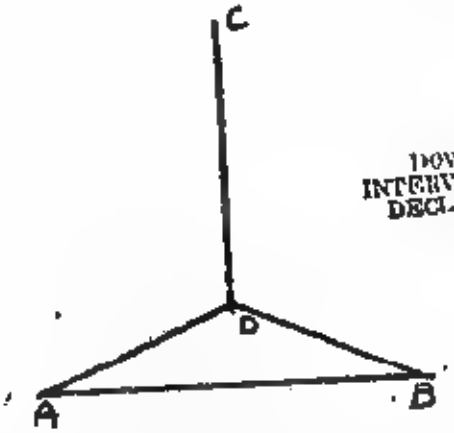
The principal hypothesis to be examined in the following discussion is that reports of unidentified flying objects have the characteristics that would be expected if they were cases of failure, on the part of typical normal individuals, to identify common or familiar phenomena.

Possible Sources of Inaccurate Reports of Flying Objects

There are three broad classes of mistakes in human observations. These are the following: 1. Misinterpreting the nature of real stimuli, 2. Mistaking unreal (imaginary) stimuli for real ones, and 3. Deliberate falsifications. Each of these are considered briefly below.

(1) Errors in Identifying Real Stimuli. All normal, intelligent people experience certain errors of observation. The moon appears much larger on the horizon than when it is high in the sky. A stick looks bent when one end is in water. Distant objects appear relatively close in clear, desert atmosphere. A small point-source of light, if viewed in a dark room, will appear to move about in

the autokinetic illusion (see Guilford, J. P., 1928). In the accompanying figure the line AB looks approximately as long as the line CD, but when you measure them the two will be found to be of quite different lengths.



Visual stimuli originating within the eye itself also give rise to mistaken observations. Muscae volitantes or "flying gnats" are small solid particles that float about in the fluids of the eye and cast shadows on the retina. They often can be seen when you look up at the clear sky, or when you are reading. They move as your eyes move. It is sometimes possible also to see corpuscles or other objects that are circulating within the fluids in the retina of the eye.

Then, of course, everyone from time to time mistakes some more or less familiar object for another object. A probable explanation for many reports of unidentified aerial phenomena is that the object is really something quite familiar, such as an aircraft, a light, or a bird. The observer simply fails to identify it correctly. These errors arise chiefly as a result of inability to estimate speed and distance.

(2) Mistaking Imaginary for Real Events. This error of observation is usually made only by children, by individuals of low intelligence (people who are very suggestible), by people who see visions, or by the mentally ill. It usually is not difficult for an

export to spot this type of person. Reports will be received from such persons especially at times when the radio and newspapers carry accounts of strange phenomena. Relatively few of the 212 investigations considered in this report are of this nature, probably because investigators interviewed only the more reliable type of witness.

(3) Deliberate Falsifications. It is always possible that some persons will give false reports. Circulation of false reports has been a standard psychological warfare technique from earliest times. This procedure might have some utility in wartime, but it hardly seems likely that it would be resorted to at this time. Probably, however, some individuals start false reports of "flying saucers" for the same reason that they turn in false fire alarms.

Some Consistent Points in the Reports of Unidentified Objects.

The following section summarizes some significant facts that come out of a tabulation of 212 reports of interrogations, by USAF Intelligence Officer, of some of the individuals who reported seeing unidentified flying objects. It is understood that these interrogations covered primarily persons that were judged to be reliable. Most of the 212 reports were made by pilots, non-flying officers, professional men, government employees, housewives and other supposedly dependable people.

1. Number of objects. About 79% of the people who reported on the number of objects seen said that they saw only one object.

2. Time the object remained in sight. About half of the persons specifying time in sight saw the object for 60 seconds or less.

3. Altitude and distance of the object. Of those who estimated the distance of the object, two-thirds judged it to be more than a mile away. Ninety percent also thought that it was more than 1,000 feet high.

4. Speed. About half judged that the speed was less than 500 miles an hour. The other half of the judgments varied from 500 miles an hour all the way to "terrific", "tremendous", "inconceivable" and "blue blazes".

5. Background against which viewed. The great majority of observers saw the object against a clear day or night sky.

6. Time of day sighted. About two-thirds as many observations were reported at night as in the day. There are, of course, many more opportunities for observing things during the day. The most popular hours were from 12 noon to 5:00 P.M. and from 7:00 P.M. to 11:00 P.M. at night. Very few (6 only) observations were made from 5:00 to 7:00 P.M., the usual hours of sunset.

7. Color. Observers almost universally reported seeing a light-colored object. Thirty observers reported "white" and twenty-five said "silver". Over 70 percent described glittering, shiny, luminescent, mirror-like, flame-like or other very bright objects. Only six individuals said black or dark.

8. Shape. Over half described the object as either "round", "disc-shaped", "spherical" or "circular". Other descriptions were similar. Very few observers saw any distinctive shape.

9. Size. The majority of observers did not specify the objects' size. Of those who did over half said it was less than 10 feet in its largest dimension. Many compared it with a dime, a lamp, a dot, a weather ballon, a baseball, etc.

Interpretation of the Common Points of All Reports

The words used by observers to describe the appearances of the unidentified objects fall into a surprisingly uniform pattern. The objects were usually reported as being far away, small, bright and without a distinctive shape. They were usually seen against a clear sky

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Interpretation of the Common Points of All Reports

The words used by observers to describe the appearances of the unidentified objects fall into a surprisingly uniform pattern. The objects were usually reported as being far away, small, bright and without a distinctive shape. They were usually seen against a clear sky

and were frequently seen for less than a minute.

First of all, it is obvious that it would usually be impossible for observers to make reliable estimates of the speed, distance, or size of such stimulus objects. It is not possible to estimate accurately the distance of small bright objects viewed against a clear sky, unless the object is identified first. If you know beforehand that an object is a weather balloon, an F-80, or a dirigible you can estimate its speed and distance with some degree of accuracy. In such situations distance is judged on the basis of known size, and speed on the basis of an estimate of distance plus the angular change in position. It must be concluded, therefore, that most of the statements of speed, distance, altitude and size are entirely unreliable and should be disregarded. This is doubly true of observations made at night. The objects seen may actually have been at very great distances, or they may have been relatively close by. In the latter case, of course, they could also have been quite small.

Secondly, it is probable that individuals who saw objects in daylight were in many cases observing either the reflection of the sun on a shiny surface or else looking directly at a light source of high intensity. Aircraft themselves, when viewed against a clear sky, are seen as dark objects against a lighter background unless they are reflecting the sun's rays directly. This fact was recognized during the recent war by camouflage experts who placed bright lights on the leading edges of the wings of aircraft on anti-submarine patrol in order to conceal them from the eyes of submarine lookouts. If observers, during daylight hours, were actually seeing lights, or reflections of the sun, this would account in large measure for their inability to identify the objects. On the other hand, if they were actually seeing enemy missiles, for example, the majority of reports

of daylight sightings should have been of dark objects. It is possible, of course, that they may have thought the objects were bright because they expected all aerial objects to be bright.

On the basis of the evidence thus far considered, the best guess as to the nature of a visual stimulus that would elicit reports of unidentified flying objects is that in the daytime it would be the reflection of the sun from an aircraft, a wind-blown object, etc., and at night some direct light source, such as an engine exhaust, the light on a weather balloon, a running light on an aircraft, a meteor, etc., or lights from the ground or the moon reflected back by birds or other objects in the air.

Discussion of Several Specific Reports

Discussion of a few specific reports will serve to illustrate some of the points brought up earlier, particularly some of the factors that make observations of aerial phenomena inaccurate.

Incidents No. 61 and 163.

In one case (Investigation No. 61) a civilian employee at Pickem Field at 0900 observed what looked like a balloon with a bright object suspended below it. It was estimated to be at about 6,000 ft. The bright object appeared to reflect the sun's rays at times. After a few minutes he looked away and then could not find the object again.

In another case (No. 163) a reserve officer at Van Nuys, California, about an hour before dark saw an object that looked somewhat like a weather balloon at about 2000 ft. He kept it in sight for about an hour. He later concluded that it was at a great height. At first it had the color of a fluorescent electric light but became orange as the sun went down and then rather suddenly became invisible.

Both of these objects could well have been just what they appeared to resemble most--balloons. The sun was low in the sky in both cases.

Reflection of the sun's rays may have given an unusual appearance to the object. The second case illustrates the uncertainty of judgments of height or distance. The object looked near, but when it remained in view for an hour the observer decided that it must be very far away. Actually he probably had nothing on which to base an accurate estimate.

Incidents 61 and 61a.

Two couples saw approximately 12 objects flying in formation at what they judged to be 2000 or 3000 foot altitude over Logan, Utah at 22:30. They were judged to be about the size of pigeons and looked white. All four observers agreed that these objects looked and acted somewhat like birds but all thought they were not birds because they appeared to travel much faster than birds.

As we have seen, it is not possible to judge speed accurately under the conditions of these observations, i.e., when looking at objects of unknown size and distance against a night sky. The objects may actually have been a flock of white birds, flying at a relatively low altitude and reflecting the lights of the city.

Incidents 30, 30b, 30c, and 46, 46a, 46b, 46c, 46d.

During the same space of time (about half an hour) on the night of 7 January 1948 observers at Lockbourne Air Force Base, observers at Clinton County AFB and the pilot of an aircraft flying from Dayton to Washington reported an unidentified object in the sky. All reports agreed as to the color and general appearance of the object, and as to the fact that its light at times was visible through a light overcast. All agreed also that it was seen to the southwest. However, persons at all three locations judged the object to be only a few miles away. To all of them it looked motionless at times, then appeared to gain and lose elevation. A very similar object was seen by numerous

persons at Fort Knox and other towns in Kentucky a few hours earlier. All saw it in the southwest and many thought it was only a few miles away. The Commanding Officer at Goodman Field observed it for 1 1/2 hours, (beginning at 1145). During this time it seemingly remained stationary. It was "chased" by four National Guard pilots, one of whom crashed after having been up to 20,000 feet. It was also reported by persons in Lexington, Madisonville, and Elizabethtown.

The significant fact that emerges from these reports again is the inability to estimate distance. It appears possible that persons over parts of Kentucky and Ohio may have been seeing the same astronomical phenmena which was a great many miles away. Nevertheless each believed it to be relatively near his own location.

Incident No. 172.

A National Guard Pilot returning to Fargo, North Dakota, in a F-51 at approximately 2100 hours saw a small light in the air below him. He was then in the traffic pattern. He dived on the light. The light gained altitude. The pilot "chased" it up to 14,000 feet, making various passes at it and attempts to ram it as he climbed. He finally stalled out.

Several inferences can be drawn from the several reports about this incident. In the first place, when it is night, and a pilot is turning so steeply, and going such violent aerobatics, that he sometimes blacks out, as was the case here, it would be very difficult if not impossible to judge at the same time what another object was doing. In the second place, if the pilot kept his eyes intently on the object, as also was the case here, he would have great difficulty in knowing and reporting later what he himself was doing. The situation is very conducive to loss of orientation. In other words, it is impossible to infer

maneuvering or not maneuvering. It is quite possible that it was simply climbing steeply on a relatively straight course, such as would be taken by a lighted weather balloon.

As a matter of fact, a lighted weather balloon was released by the Fargo Weather Station within 10 minutes of the time the light was first sighted by the P-51 pilot. It is the opinion of the writer that this lighted balloon easily could have accounted for all of the pilot's observations. (It should be noted that the standard 30 inch and 65 inch weather balloons have a vertical speed of about 600 and 1100 ft./min. respectively.)

General Discussion and Summary

In the preceding section the hypothesis has been advanced that most reports of unidentified flying objects have been the result of persons failing to identify familiar phenomena, such as reflections from bright surfaces in the day or lights in a night sky. It is believed that this explanation will account for many of the reports. However, some reports undoubtedly have other explanation.

Vertigo. The term vertigo covers a large group of miscellaneous phenomena including air sickness, disbelief in one's instruments, and partial loss of orientation. The conditions under which some of the observations of flying objects were made were such that they could have produced loss of orientation on the part of an observer. This is especially true for those experiences occurring at night and those in which attempts were made to "chase" the object. Movement is always relative. If the only outside reference is a point of light, and both the observer and the object observed are moving, it would be practically impossible under certain conditions to tell which was moving and which was not, or to separate out the two motions. It is hard enough

to fly a good pursuit curve on another aircraft in good daylight, for example, much less to close on a solitary light at night. The difficulty is due chiefly to the inability to judge distance or speed of a point source of light.

Suggestion. Suggestion works in various ways. Sensational radio and newspaper reports lead a few people to imagine they are seeing things they are not seeing. The effect on most people is to dampen their critical judgment. Under such conditions we are more likely to overlook certain factors, and find it easier to accept the suggested explanation uncritically. The expected result would be to make the reports of most observers slightly less accurate than if they had never heard reports of others seeing "flying saucers". Particularly when the stimulus object is hazy or ill-defined, persons tend to see it as resembling whatever is suggested to them. Carmichael et. al., for example (1932) showed individuals simple designs and gave them the name of an object. When the individuals drew the design from memory, they drew it to resemble whatever the object was that had been suggested to them.

Precedent. An historical precedent can be found for most errors of human observation. Although the writer has not tried to make an historical survey of reports of earlier unidentified aerial objects, he feels sure that there have been many such reports in years past, particularly during and after World War I.

Small Wind-borne Objects. It is possible that some observers may have seen small objects carried aloft by strong winds, or objects dropped from aircraft. Bits of paper, small cartons, etc., may occasionally be carried to a considerable height by strong winds. Aircraft [illegible] sometimes jettison small articles. It would be impossible to

estimate the distance, size or speed of such objects, and it would be easy to fail to recognize them.

Conclusions

It is concluded by the writer that there are sufficient psychological explanations for the reports of unidentified flying objects to provide plausible explanations for reports not otherwise explainable. These errors in identifying real stimuli result chiefly from inability to estimate speed, distance and size.

Recommendations

The following recommendations are offered:

1. Test the ability of pilots to estimate the course of a small lighted balloon while doing aerobatics with it at night. It is suggested that several pilots try to fly pursuit curves and collision courses on such targets at night and report accurately their sensations. It would be desirable, but probably impossible, to keep them from knowing the nature of the light source.

2. In all future reports of unidentified objects specify the location of the object with reference to polar coordinates (direction and degrees above the horizon) rather than asking individuals to estimate distance. If possible, obtain an estimate of size in terms of the visual angle subtended by the object.

3. In all future investigations determine the angular position of the sun with respect to the unidentified object and the observer. Also determine the approximate time during which the object was in sight (this information was not available for more than half the reports).

References Cited

Carmichael, L., Hogan, H. P. and Walter, A. E. An experimental study of the effect of language on the reproduction of visually perceived form. Journal of Experimental Psychology, 1932, 15, 73-86.

Gulford, J. P. Autokinesis and the streaming phenomena. American Journal of Psychology, 1929, 40, 401-417.

CONCLUSIONS

1. Evaluation of reports of unidentified flying objects to date indicates that these flying objects do not constitute a direct threat to the national security of the United States.

2. Reports of unidentified flying objects are the result of:

a. Misinterpretation of various conventional objects.

b. A mild form of mass hysteria or "war nerves".

c. Individuals who fabricate such reports to perpetrate a hoax or to seek publicity.

d. Psychopathological persons.

3. Planned release of unusual aerial objects coupled with the release of related psychological propaganda could cause mass hysteria.

a. Employment of these methods by or against an enemy would yield similar results.

USAFE AIDS TO IDENTIFICATION OF

Aids to Identification of Flying Objects

This handbook has been prepared by laymen in the hope that it will provide guidance in the identification of flying objects which cannot be identified. Comments and suggestions for improvement will be welcome.

TABLE OF CONTENTS

SECTION I

Flying Objects and Their Characteristics

DEFINITION

Air Force Regulation 200-2 defines an unidentified flying object as any airborne object which by performance, aerodynamic characteristics, or unusual features does not conform to any presently known aircraft or missile type, or which cannot be positively identified as a familiar object.

Unusual weather or light conditions may transform many familiar objects into unidentified flying objects. The speed of the observer's aircraft and sudden climb or descent may produce distortions of vision which cause known objects to hover, perform erratic maneuvers, or glow and scintillate during hours of darkness. Many of these flying objects can be identified as follows:

(1) Conventional aircraft observed from unusual angles.
(2) Modern jet aircraft flying at great speeds and high altitudes.
(3) Reflections of sunlight, moonlight, and starlight from aircraft and balloons at great heights.
(4) Searchlight reflections on clouds.
(5) Meteorological and upper air research balloons.
(6) Meteors, comets, and stars.
(7) Planets observed at certain times of the year.
(8) Meteorological phenomena.
(9) Cloud formations.
(10) Birds, especially migratory formations.
(11) Dust and haze.
(12) Kites, fireworks, and flares.
(13) Rockets.
(14) Contrails.

A meteor, a comet, a balloon, or an aircraft, under certain conditions, assumes speeds, movements and shapes which are entirely uncharacteristic of the object under normal circumstances. Aircraft at great heights can appear wingless and projectile-shaped. Objects that appear to hover or move very slowly could be balloons. Flame-tinged, or brightly glowing objects, and those objects appearing to leave a trail of light in their wake may frequently be identified as meteors or comets. Another explainable phenomenon may be caused by the sun's illumination of vapor trails. Moving lights at night, or shiny objects in the daytime, traveling at moderately fast speeds, could be aircraft.

Jet vapor trails illuminated by the sun.

It has been characteristic of many reported observations of unidentified flying objects in the past that they have indicated at least some features of modern aircraft. There have been descriptions including rocket or jet pods, fins or rudders, windows or portholes, propellers, exhausts, etc. High speeds of modern-day aircraft lessen the possibility of detailed observation, and only certain prominent or familiar features of the flying object may stand out in the observer's memory.

BALLOONS

Silvery, transparent, disk-like objects may be balloons. The absence of exhaust or engine noise, or any visible means of propulsion, would support such identification. Weather balloons are often released in clusters and may drift in what appears to be formation, depending on the air currents. They shimmer in reflected sunlight or moonlight, and seem to hover as they pass from one air current to another.

Upper air research balloons may attain great heights and travel great distances before they burst and fall back to earth. They may be observed, therefore, in areas far removed from any logical launching site. Research balloons are usually constructed of material with a highly reflective surface. They often approximate one hundred feet in diameter and are visible, under certain atmospheric conditions, even at extreme heights. Such balloons, seen in reflected light, may seem disk-like in shape and may appear to have an oscillating motion. They carry metallic equipment which can result in electronic [illegible]

An object usually is not a balloon if its speed is too fast. However, some balloons, such as those used for cosmic research, travel in the upper air currents at speeds often in excess of 100 miles per hour. In identifying a flying object as a balloon, it should be borne in mind that a balloon moves with the wind and not against it.

In the field of technological development, new giant weather balloons are being launched to fly at 30,000 feet in an effort to learn more about atmospheric pressures, temperatures, wind directions and velocity over vast stretches of open sea. They will travel high above regular air routes and will be rigged to destroy themselves if they drop below 20,000 feet, or fail to go that high. These balloons are 40 feet in diameter and have a plastic skin only 3/1000ths of an inch thick. Flying at great heights over open water, and reflecting sunlight or moonlight from their plastic skin surface, these balloons could easily be mistaken for unidentified flying objects.

ASTRONOMICAL BODIES

The estimated azimuth and elevation of a flying object can be checked to determine the known location of astronomical bodies. Meteors may be identified by conformance to size, shape and maneuvers described in Section 2, "Meteorological and Astronom-

What may appear to be an unfamiliar flying object soaring through the sky may actually be something tangible, such as this artist's concept of a large weather research balloon.

ical Aspects." During the month of March, the planet Venus is low on the horizon and is extremely bright. It can appear to change color and perform erratic maneuvers when viewed through thin clouds or haze. Meteors, on the other hand, do not pursue an erratic course. When the duration of observation of a flying object is extremely short, it is highly probable that the object is an astronomical sighting.

SHAPE

Shape is an important factor in determining the identity of a flying object. Distortion of shape, due to distance and darkness, enhances the difficulty of identification. Many of the strange shapes reported in the past would appear to be unidentifiable in terms of familiar objects, but in many instances could have been reflections from conventional objects viewed under unusual conditions. Light and shadow produce fantastic distortions, especially when objects are viewed at great distances and in varying degrees of gathering darkness.

An unidentified flying object may assume various shapes. The four most common shapes reported in the past are:

(1) Elliptical or disk shape.
(2) Aircraft shape.
(3) Cigar shape.
(4) Propeller shape.

This variety of shapes is an indication of individual reaction to what may have been familiar or conventional objects seen under unusual conditions, or created in the mind of the observer by his physiological limitations and psychological responses. Fatigue, unusual weather conditions, and the stress of flying at great speeds and high altitudes could induce such manifestations.

One report of an unidentified flying object stated that it was shaped like a conventional aircraft, but was luminous and surrounded by a red glow. This phenomenon could have been an actual aircraft reflecting light from some undetected source within or on the aircraft and glowing from an unusual play of moonlight or starlight on metal [redacted].

A disk-like object, with illuminated portholes, could be a conventional aircraft distorted in shape and stripped of wings by a temperature inversion mirage effect and reflecting light through apparently dual and convergent sets of windows.

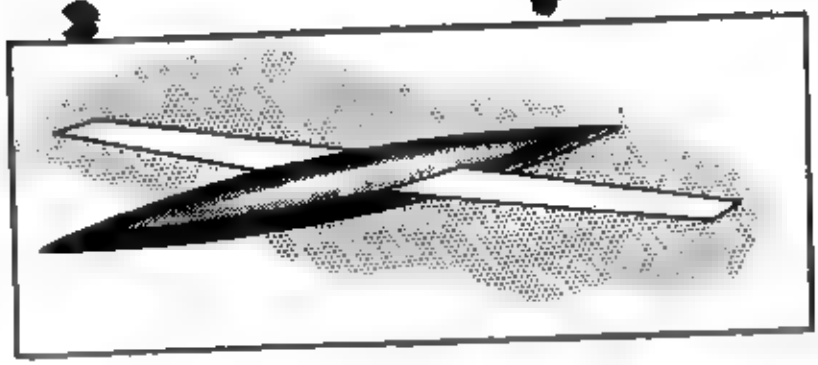
Transparent, cigar-shaped objects, illuminated from the inside and emitting an exhaust, could be jet aircraft at high altitudes where they appear wingless. The mirage effect of a temperature inversion could cause the apparent illumination and transparency.

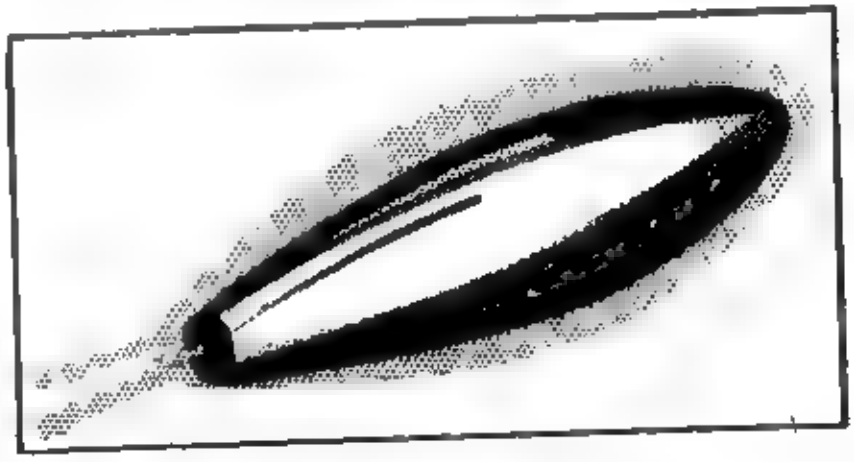
Saucer-shaped objects, which hover and maneuver erratically, could be the planets Venus or Mars seen near the horizon at certain times of the year. When objects are viewed through haze or mist, the limitations of the human eye can produce what appears to be a hovering effect, or erratic movement.

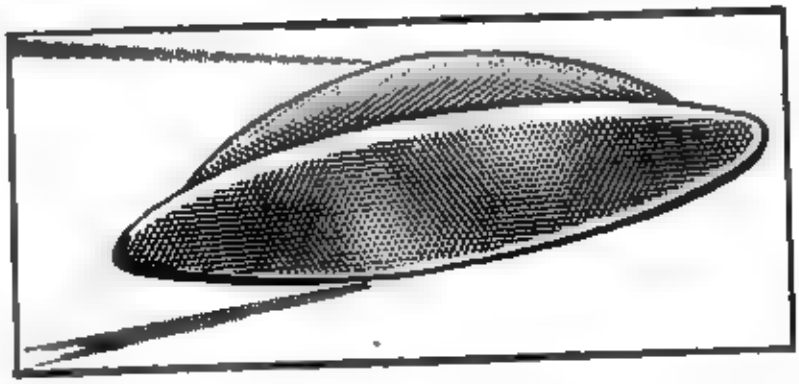
Propeller-shaped objects could be conventional or glider-type aircraft, distorted in shape by mirage effects caused by a temperature inversion.

RADAR SIGHTINGS

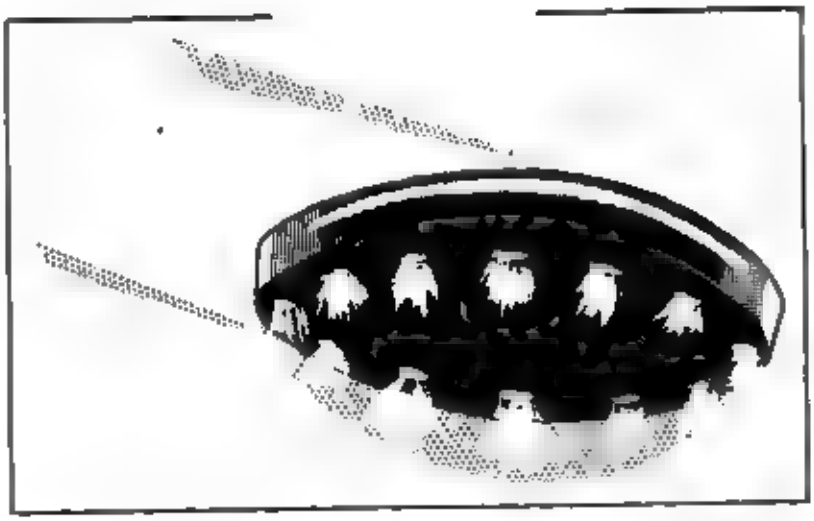
Radar sightings of flying objects frequently may be explained as ground targets reflected by temperature-inversion layer, or as radar echoes of various objects, not all of which are visible to the human eye. Most solid objects produce radar responses which are recognizable. Moving objects, such as aircraft and birds, normally can be identified by the size of the radar blip and by the speed, altitude, and type of movement measured by the radar set. The radar operator should be able to determine whether the responses noted on his scope are real, or are caused by the weather or other phenomena. A blurred effect on the radarscope may indicate a weather target, whereas a solid target, such as an aircraft, will be sharply defined.

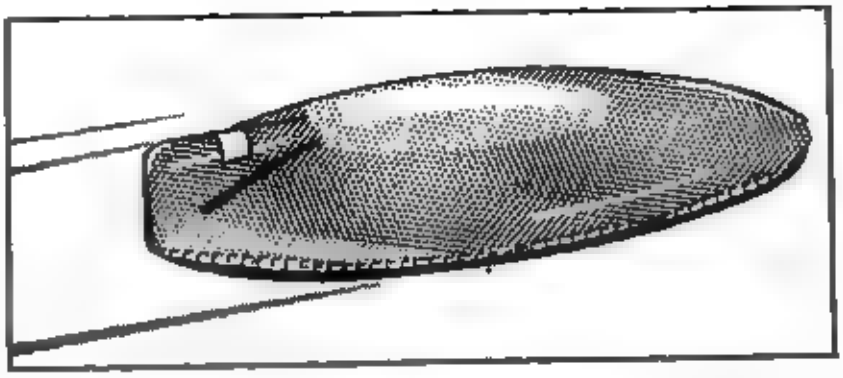


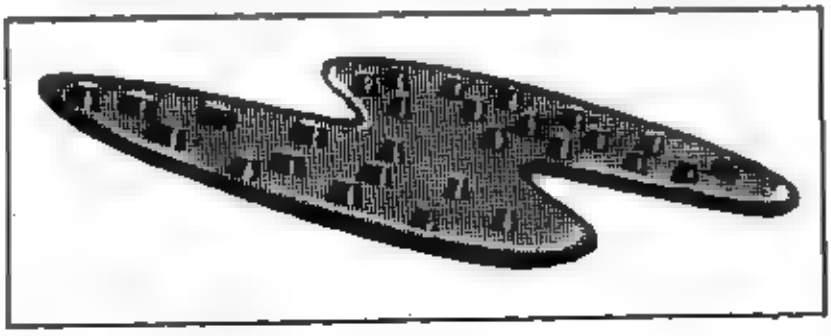




These illustrations were reproduced on the basis of information from reports of sightings and are discussed in the preceding text.







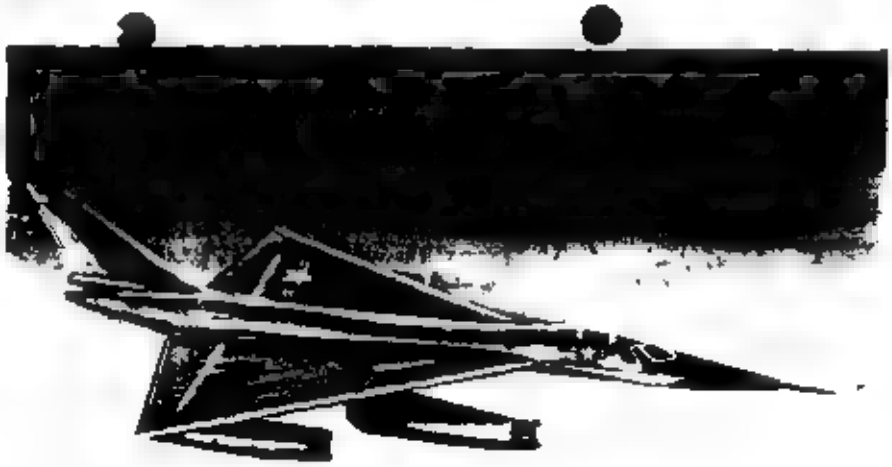
NEW FLYING OBJECTS

A new saucer-domed radar plane, now in the planning stage, is an example of an unfamiliar type of aircraft which, to the uninitiated observer, might appear to fall into the unidentified flying object category.

Technical advancements in the field of supersonic rockets to gather weather data offer possibilities for radar detection of apparently unidentified flying objects. Rockets will be shot into the stratosphere at 3000-plus miles per hour. At a height of 20 miles or more, their warheads will explode and release a cloud of metal foil fragments, which will be tracked by radar to learn wind velocity and direction.

The construction and successful launching of man-made satellites into the edge of space above the earth as part of the International Geophysical Year program, which began on 1 July 1957, may lead to reports of unidentified flying objects. The United States expects to launch a scientific data-gathering satellite in 1958 at the latest. At least one other country has announced intentions of duplicating this feat.

This new radar plane may easily be mistaken for an unfamiliar flying object, under unusual weather conditions, because of its unique configuration.



New USAF delta-wing jet bomber shows unusual configuration.

The satellite developed by United States scientists is a highly-polished, 20-inch sphere to be propelled aloft by a three-stage rocket. Its planned orbit is at a height of about 300 miles and is in the direction of the earth's rotation. Its course will follow a path that will permit its sighting from positions in Europe, North Africa and the Middle East. Although the satellite's size will appear minute at such an extreme altitude, its reflection will be visible to the naked eye under certain weather conditions. Its terrific speed will carry it from one horizon to the other, within the view of an observer, in less than 20 minutes.

Many new types of delta-wing aircraft are under development and some are in production at this time. Certain types are capable of vertical take-off. The unusual configuration of this aircraft lends itself to possible confusion with unidentified flying objects, and a vertical take-off might add to the observer's failure to identify it as a known object.

* * * * *

Analysis thus far has failed to provide a satisfactory explanation for a number of unidentified flying objects. An understanding of some of the phenomena which may cause familiar objects to assume unfamiliar characteristics, together with an awareness of the many new technological developments which may be observed, should result in fewer sightings of this nature. Rational reporting will facilitate analysis of those sightings reported as unidentifiable.

SECTION II

Meterological and Astronomical Aspects

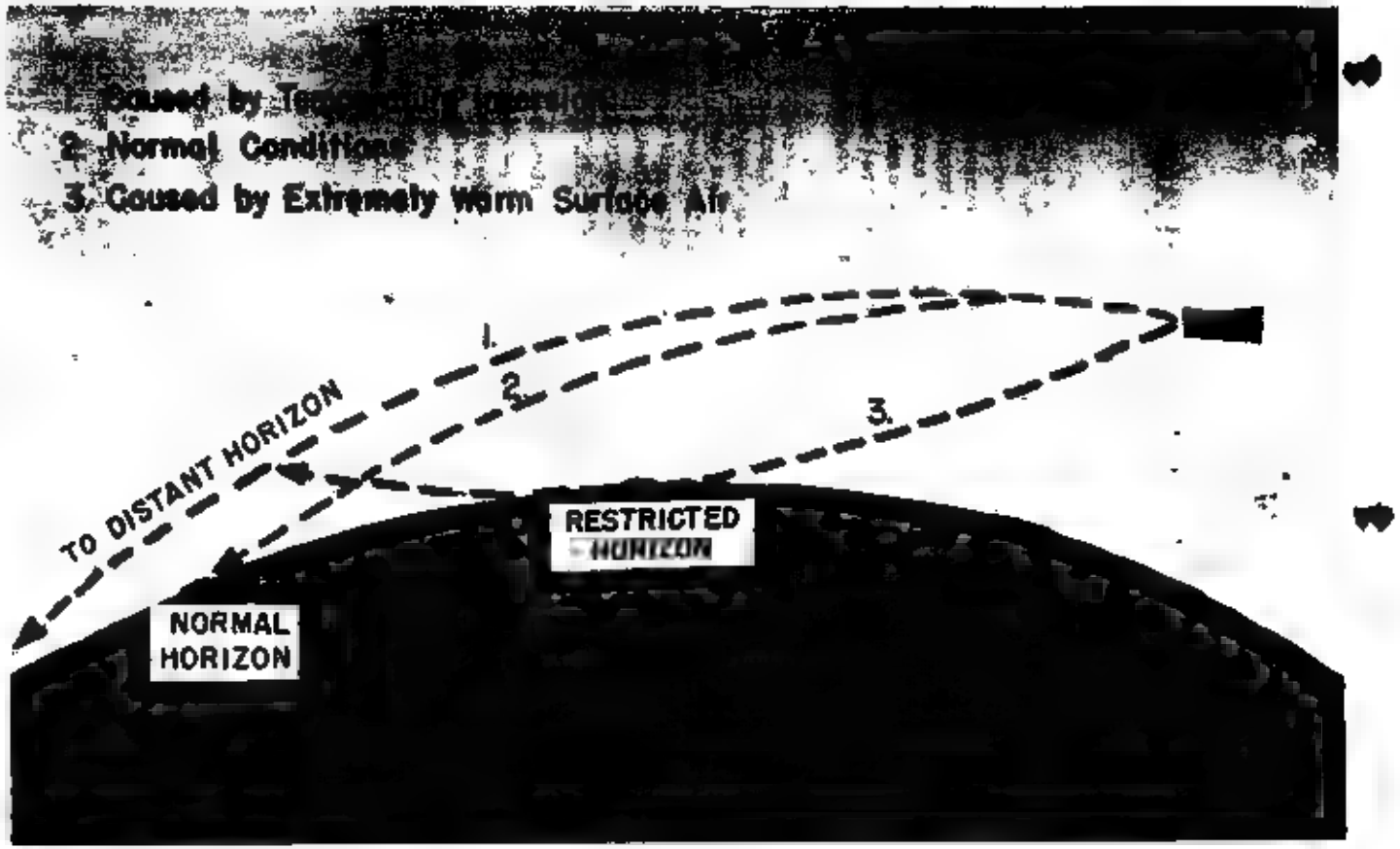
Scientists have been exploring the mysteries of the universe for many centuries and today know a great deal about the composition of the galaxy which includes the earth among its many planets, stars, and other celestial bodies. Yet, many questions remain unanswered and the search for more knowledge in the broad field of astronomy continues. The same is true regarding the earth's atmosphere, and, although considerably more is known regarding the natural laws which govern the sea of air around the earth, there are many aspects of meteorology that are not yet fully understood.

It is not unusual for the mind to become confused by garbled messages, caused by unusual astronomical and meteorological conditions and transmitted to it by the eye. Thus, the sky has been the setting for many strange sights which were not readily understood. Many may have been the result of unusual astronomical and meteorological conditions, which cannot be scientifically explained. However, many types of illusions which appear to be flying objects can definitely be related to astronomical and meteorological phenomena.

Under certain weather conditions, reflection and refraction processes can transform conventional aircraft, automobile lights, planets, meteors, and other identifiable figures into apparently supersonic flying objects of many shapes and colors. Clouds, haze, industrial smoke, water droplets and ice particles in the atmosphere are typical ingredients which make up atmospheric lenses through which many illusions of flying objects are seen. Car lights reflecting on clouds can create luminous disks which dart erratically through the sky at terrific speeds. Other light sources can produce similar illusions with appropriate variations, many of which even have specific colors provided by refraction of the light through water and ice particles in the atmosphere.

MIRAGES

One of the most common causes for optical illusions of distorted and displaced objects is the mirage. Warm air has a lower refractive index than cold air. The air is normally warmer at the surface of the earth and progressively cooler in a fairly steady gradient through higher altitudes. It is through such atmospheric conditions that distant objects are usually viewed and the mind becomes accustomed


2. Normal Conditions
3. Caused by Extremely Warm Surface Air
1.
2
3.
TO DISTANT HORIZON
RESTRICTED
HORIZON
NORMAL
HORIZON

to the impressions conveyed to it through the eye in this normal perspective. Light rays normally travel in a concave path that intersects with the horizon. When the normal temperature distribution is upset, the light rays bend accordingly and optical phenomena result. Causes of mirages follow two basic patterns:

(1) When the surface air is exceptionally warm, the air expands and becomes less dense, causing the convex path to shorten and, under extremely hot conditions, even to become concave.

(2) Under conditions of a temperature inversion, with a layer of warm air over cold air, the path of light rays will lengthen to parallel the earth's surface at greater distances.

These abnormal conditions cause mirages and the eye will see unfamiliar or displaced and distorted images, which the mind is not immediately capable of interpreting correctly. Realistically proportioned mountains, cities and seas may be projected high into the atmosphere. On the other hand, land areas may be distorted and appear as separate images floating in the sky, giving the impression of suspended or flying objects. From an aircraft in flight, a cigar-shaped illusion of a land mass can change size drastically with changes of only a few feet in altitude of the observer's aircraft, thereby giving the illusion that the object is accelerating rapidly, traveling alternately at slow and extreme speeds, going away from the observer or coming toward him. The same is true at night in the case of objects formed by such light sources as search-lights, glow of lights from cities, automobile headlights, and celestial bodies. A temperature inversion can reflect the image of an aircraft to another location in the sky and mirror it as two aircraft, perfectly joined, with one aircraft inverted below the other.

The common mirage, based primarily on temperature distribution, is of course only one type of the numerous meteorological phenomena producing aerial apparitions. Others are caused by reflection and refraction of light through various atmospheric structures, such as different types of clouds, water droplets, ice and frost formations, haze, and smoke. Combinations of meteorological situations, and even combinations of meteorological and astronomical conditions, can produce startling effects.

[redacted]

Combined refraction and dispersion of the earth's atmosphere can cause a celestial body to appear to be at a different location in space and distort its normal color as well. When the object is low on the horizon, this condition is particularly prevalent. The planet Venus, for instance, may appear as bright red on the bottom and bright blue at the top edge, thereby giving the illusion of a flying

This snow-capped mountain, viewed from an aircraft, is actually a mirage, as described by a pilot who experienced the phenomenon Under other type mirage conditions, land masses may appear as cigar-shaped flying objects.

object emitting red exhaust trails. An observer flying in an aircraft may easily mistake such an apparition for a flying object. As the aircraft moves through the atmosphere at an advanced speed, its position relative to the object naturally changes and the atmospheric conditions in line of sight between the aircraft's position and the object may change as well. The object thus may assume apparent characteristics of erratic behavior and fantastic shapes and colors.

PLANETS

Although there are other planets that may resemble flying objects under certain conditions, Venus and Mars are most commonly mistaken in this sense. Venus is the brightest of all the planets and Mars is next. Venus, at its brightest, can be seen in daylight and can cast shadows after dark. This planet is a morning star from January to April, and an evening star during the remainder of the year. Mars is an evening star from January to September and a morning star the rest of the year.

In the past, both Venus and Mars, when low on the horizon, have been observed to change color and move at fantastic speeds, when viewed through haze or mist. Venus appears low on the horizon during the spring and is unusually bright. Mars has been reported to resemble a flying object when it was low on the horizon in early summer. If one of these planets is stared at for any length of time without any balancing point of reference, it can appear to perform erratic maneuvers. Thus, the planets of brighter magnitude in our galaxy provide a constant source of illusionary flying objects.

COMETS

Comets and meteors have their effect in the field of mistakenly-identified flying objects, although sightings of comets are rare simply because their incidence is so low.

Comets are nebulous bodies revolving around the sun for the most part in long ellipses. Although their periods are very uncertain, some few such as Halley's Comet, which pursues unmistakeable ellipses, can be expected to return. The nucleus of a comet, a minute disk of condensed light, strengthens in brilliance the nearer its orbit brings it to the earth. Some comets become bright enough to be discerned even in daylight. Since the long tail of the typical comet is composed of matter repelled away from the sun, it may either follow or precede the head, depending on whether it is approaching or going away from the sun.

Under certain atmospheric conditions, an aircraft, such as the C-118 portrayed here, can appear to be mirrored in its own reflection. The fantasy of this phenomenon may be further exaggerated by distortion through haze or mist.

[redacted]

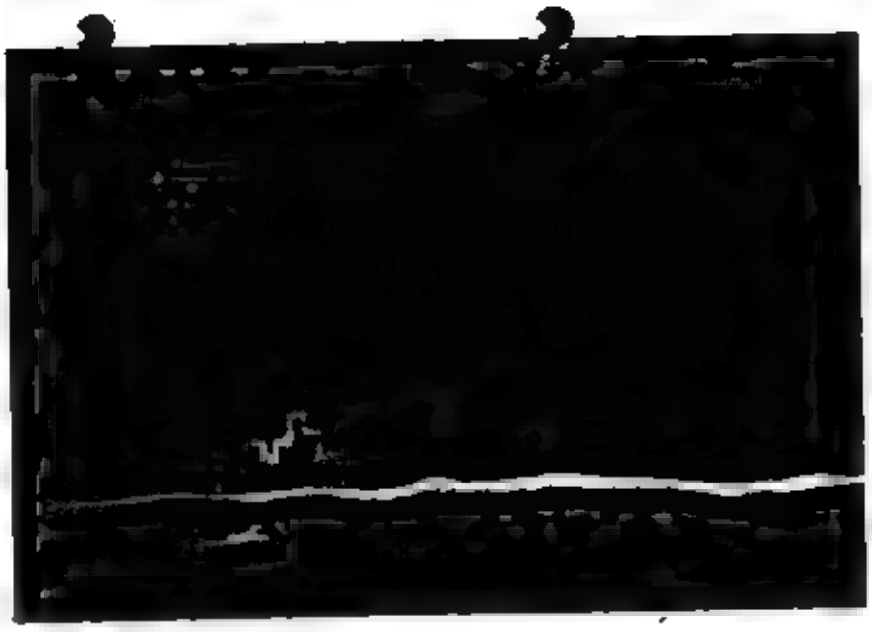
Meteors are particles continually entering the earth's atmosphere where they become so intensely heated they turn into incandescent gas. Theories on the origin of meteors are largely controversial; however, educated guesses range from dissipated comets to disintegrated planets. It is estimated that 24,000,000 meteors, which can be observed by the naked eye, enter the earth's atmosphere during a 24-hour period. These space particles are of various sizes, ranging from the microscopic to the rare ones weighing tons.

Bright meteors are known as fireballs. The ones which penetrate the lower parts of the atmosphere, where they explode with a noise like distant thunder, are called bolides. These are rare--probably no more than a few dozen appear over Europe during an average year. When a meteor, of such size that it is not entirely consumed by frictional heat after it enters the atmosphere, eventually collides with the earth's surface, it is called a meteorite. It is estimated that about 2,000 of these latter enter the earth's atmosphere during an average [redacted]

The appearance and behavior of meteors streaking through the earth's atmosphere take on various fantastic forms, depending upon their size and composition and the meteorological conditions through which they are viewed. A meteor with the brilliance of the Pole Star can be caused by a particle no larger than a grain of sand. A particle no bigger than a pea can become a fireball. Examination of discovered meteorites reveals that most are irregular in shape; however, many become conically shaped in their passage through the earth's dense atmosphere.

Meteors may appear as bright balls or disks with fiery tails, which could be mistaken for jet or rocket-type exhausts. It is not uncommon for meteors to appear as flaming fireballs, with colors ranging from dull red to bright green, and they may even travel in clusters, giving the appearance of flying objects in formation. Meteors may also move relatively slowly and appear to follow a path parallel to the horizon, thereby giving strength to the illusion of flying objects.

Large meteors have long paths and may cross from one horizon to the other in the view of one observer and pass far beyond. They travel in the same direction as the earth in its orbit and their speed upon entering the earth's atmosphere varies. Those meteors overtaking the earth during evening hours may travel initially as slowly as seven miles per second, while those meeting the earth's rotation head-on during morning hours can be traveling more than 40 miles per second. Multiply these types of appearances and behaviors by complementary meteorological phenomena and the prospects for illusionary flying objects are considerably increased.



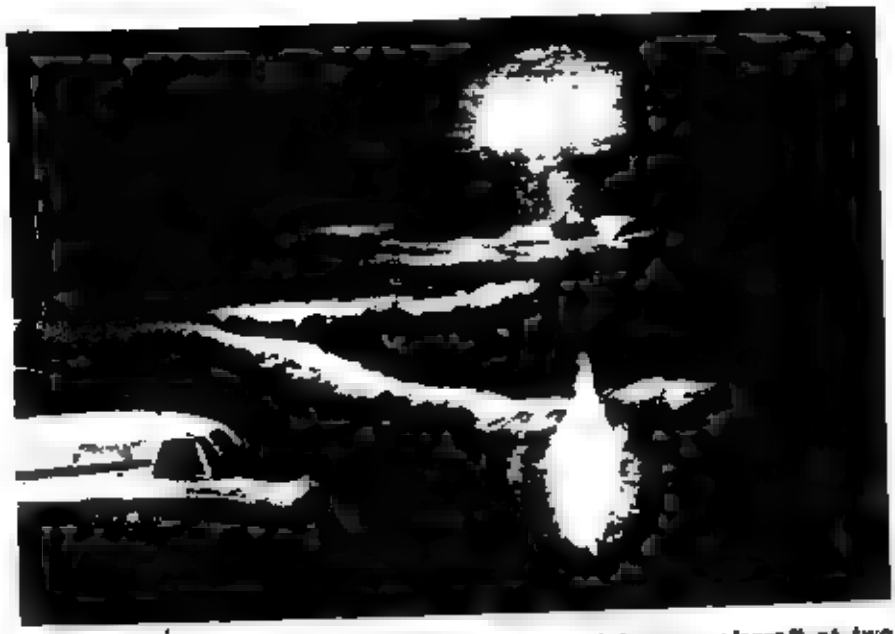
Artist's concept of actual meteor procession.

SUNDOGS AND MOONDOGS

The reflection of the sun in a layer of flat ice crystals can cause a phenomenon known as a sub-sun, commonly called a sundog. This apparition will appear at a point adjacent to the real sun and can be as brilliant as the sun itself. The sub-sun can develop a pattern of other sub-suns, causing a further complicated illusion. At night, the moon will reflect in the same manner under like meteorological conditions. This type of apparition is particularly discernible from aircraft at high altitudes.

The size and brilliance of sundogs and moondogs, and their behavior in relation to the observer's aircraft, will depend upon the location and density of the reflecting source, i.e., ice or frost-crystal formations, and, of course, upon the position and movement of the aircraft. The sundog or moondog may appear to chase the aircraft or fly in formation with it. If the aircraft turns toward the illusion, it may appear to slow down, speed up, and even come toward the aircraft head-on.

Cirrus cloud formations are effective viewing screens for illusions resulting from reflected or refracted light, as they contain ice crystals. These clouds exist in the upper atmosphere, so that conditions are favorable throughout the year for sundog and moondog apparitions. However, such phenomena usually are discernible at lower levels only during winter months in temperate zones.



A moon-dog might appear like this, viewed from an aircraft at two o'clock high from the one in the picture.

AURORAS

The aurora borealis, or northern lights, produces conditions and phenomena which have been associated with mistakenly-conceived flying objects. Auroral activity is associated with the earth's magnetic fields, explosions on the surface of the sun, and other solar activity. The auroral zone in the northern hemisphere follows roughly a circle around, and about 23 degrees away from the magnetic pole. In Europe, auroras are seen only infrequently below 50 degrees.

The aurora borealis cannot be seen in daylight, and during moonlit periods it is inconspicious. It is sometimes bright enough to read by, and on rare occasions, its surface brightness surpasses even that of the moon. The most distinctive form of the aurora is that of a curtain or long wavy band, often with folds and flutings in it. Although the lower edge of the aurora is nearly horizontal, the band as seen from Europe would appear as an arc, due to its great distance from the observer. Auroras may consist of more than one curtain and may appear and disappear rapidly, remain constant for long periods, or move slowly across the sky. Some may appear merely as formless, diffused lighting in the sky. Faint auroras may appear colorless. Bright auroras are usually yellow-green, but other colors such as red, blue, grey and violet sometimes appear. A yellow-green curtain often will be tinged with red around its lower

edge. Auroras may appear high in the sky or low on the horizon, depending on the distance of the particular phenomenon from the observer.

While the chances of the aurora borealis itself being mistaken for a flying object are remote, the erratic lighting conditions it produces may often be a contributing factor to a sighting.

There are other phenomena believed to be associated with auroral activity which can produce apparitions resembling flying objects. Such phenomena occur during magnetic storms and probably are the result of gases emitted from explosions on the sun, and other solar activity. One such phenomenon, observed in northwest Europe, was described as a large brilliant disk which appeared on the east-northeast horizon and moved slowly across the sky, changing into an elongated ellipse, thence back to a disk before it disappeared below the opposite horizon.

This phenomenon was observed by many scientists who were out in force to observe expected auroral displays in connection with the magnetic storm they knew to be in progress. It is believed to have been caused by gases traveling through layers of the upper atmosphere in the auroral zone. Its color was described variously as white, pearly-white, greenish-white and yellowish-white. Calculations based on numerous observations of the phenomenon indicate that it may have been about 70 miles long by 10 miles in diameter.

This phenomenon occurred before the advent of the airplane and all observations were from the ground. However, a phenomenon of this size and brilliance could be seen for hundreds of miles from the air, and in myriad fantastic shapes and maneuvers if complemented by compatible atmospheric conditions. Official astronomical records reveal numerous equally fantastic illusions resulting from phenomena of this sort.

* * * * *

The composition and structure of the earth's atmosphere and the space which lies beyond, and the natural laws which govern them, are complex. The foregoing is not an attempt to relate all apparently unexplainable aerial phenomena to meteorological and astronomical causes. Rather, it is a summation of the more important aspects of meteorology and astronomy which contribute to sightings of illusionary and real flying objects that cannot be identified readily. The information is designed to orient the potential observer in meteorological and astronomical conditions which affect human perception, thereby enabling him to understand the implications involved and report his sightings more rationally and lucidly.

SECTION III

Radar Sightings

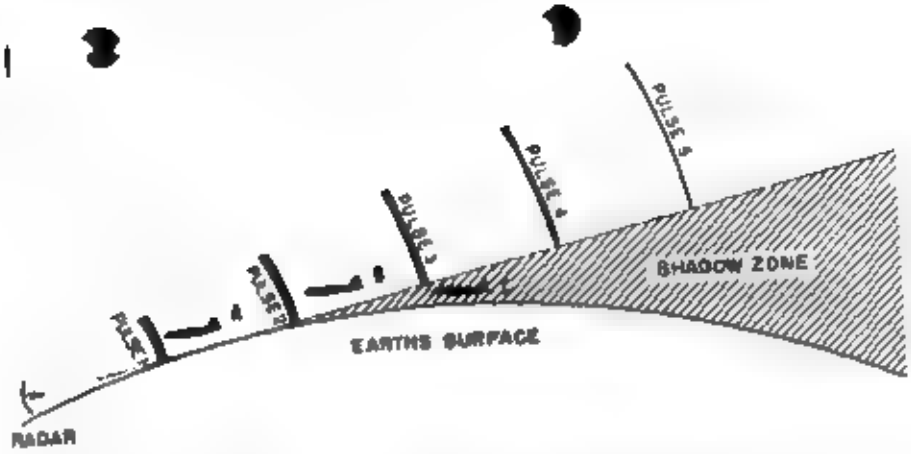
In certain instances, unidentified objects have been observed on radarscopes, both ground and airborne. Generally speaking these radar sightings fall into explainable patterns and are caused by certain meteorological phenomena, or familiar objects that are observed under unnatural circumstances

Radar echoes can be produced by a variety of objects, many of which are not visible to the human eye. A majority of solid objects which return radar energy produce responses on the radarscope that are easily recognizable. Moving objects, such as birds, aircraft and meteorological balloons, are normally recognizable by their size and velocity. However, some balloons, such as ionospheric balloons, ascend to altitudes above those of normal aircraft and travel with the upper air currents, sometimes at speeds above 100 mph. Radar returns from these balloons could give impressions of unidentified objects.

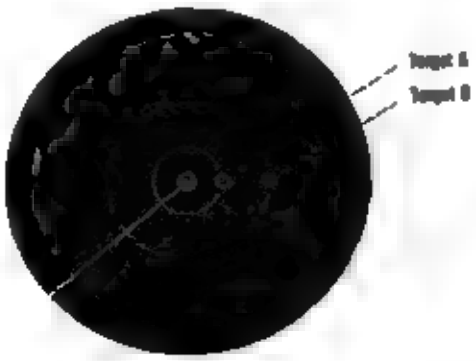
Certain meteorological and astronomical conditions will present radar returns that are unusual. Radar waves must travel through the earth's atmosphere where, like light waves, they may be bent by unusual temperature and moisture conditions. Radar waves may be refracted or reflected by atmospheric conditions to where ground objects may seem to represent an aircraft or flying object. Even with a moving target indicator, reflected images of distant ground objects may appear to be moving because of the movement of air layers.

Temperature inversions, in which a cold air mass is overlaid by a warmer air mass, can greatly increase the distance from which normal radar returns are received. Thus, objects may appear to be much closer than they actually are and these distant objects, superimposed on the normal radarscope picture, may result in misinterpretation and confusion.

Radar echoes may be produced by condensed water vapor in the form of raindrops, ice crystals, or snow. These radar reflections may cover a wide area which has diffused, irregular boundaries and fluctuating intensities. Movement of this water vapor will be determined by the movement of upper air currents, which travel at a speed of as much as 100 mph or more and at altitudes up to 40,000 feet. Normally, these patterns are easily recognizable by their size and radar return; however, they may appear confusing and result in false interpretations.



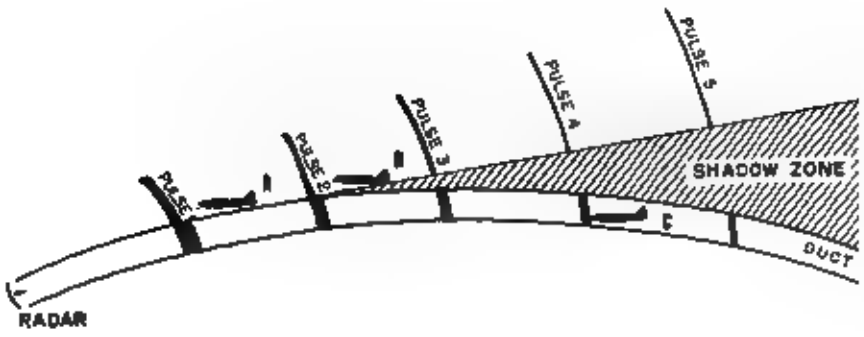
The transmission of a radar pulse, under normal atmospheric conditions, follows line of sight. Therefore the curvature of the earth would place Target "C" in the shadow zone.



The radarscope will show Targets "A" and "B" at normal range, but will not pick up Target "C".

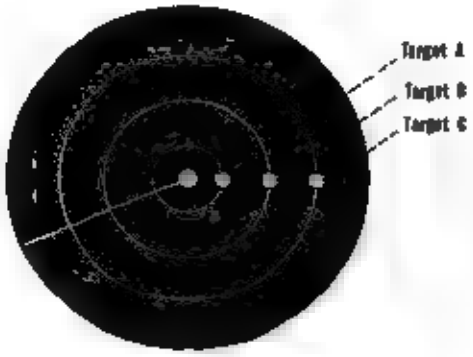
Meteors that enter the earth's atmosphere and get within range of radar may cause reflections that are extremely difficult to verify. Meteors reach the outer fringe of the earth's atmosphere at a rate of something near 100,000 miles per hour, although only a very few actually get within range of radar. Those that do, approach the earth from all angles and at velocities approaching 25,000 mph. Radar responses to these meteors may occur at any range or altitude, depending only upon the capabilities of the radar set. Radar reports resulting from this type of phenomenon can be verified by a study of the expected paths of meteors at the time of the incident.

In addition, there is the possibility that one radar set, which has characteristics similar to those of another radar set within range, may cause interference and unusual responses that could lead to confusion and inaccurate interpretation. Although this type of inter-



Under abnormal conditions, with cool air overlaid by a warmer air mass, a duct is formed through which the radar pulse travels and reflects Target "C" at a much greater distance.

The radarscope will show Targets "A" and "B" at normal range, but distant Target "C" will appear to be at much closer range than it actually is.



ference may cause the appearance of one or even two targets on the radar screen, it can generally be recognized quite easily.

* * * * *

A careful study of unusual radar sightings will almost always disclose that the reason is explainable. Experience in the operation of radar will provide the operator with the ability to recognize most unusual phenomena when they occur. However, occasionally a verification of meteorological or astronomical data may be necessary to substantiate the validity of what otherwise might be considered an unfamiliar flying object.

SECTION IV

Physiological Aspects

Physiological factors may have profound effects upon an individual's ability to observe and to interpret observations accurately. One of the greatest hindrances to human understanding can result from deception of the senses. The sense of sight is, by itself, purely a physical process and the perception and understanding attached to visual sightings is determined largely by memory of past experiences and familiarity with surrounding objects. This relation of experiences to the interpretation of visual sightings permits many errors.

This margin of error may be applicable particularly to aircrew members operating high-performance aircraft, under adverse or unusual weather conditions, under tension, and during periods of extreme fatigue.

The aircrew member is generally familiar with many of the unusual observations associated with meteorological and astronomical phenomena. However, many unusual observations are the result of certain physiological effects that may be unknown or unfamiliar.

Occasionally, objects that exist on the surface of the eye may be mistaken for distant objects. These objects take various forms. Tiny specks of dirt may appear as shimmering globules of light and, if a speck is illuminated by an outside light source, it may appear as a large, out-of-focus blob of light. If this speck is viewed against a dark sky or background, it may be quite spectacular. As this speck floats across the pupil of the eye, it will create the appearance of movement.

Many reported unidentified objects, described as flying saucers, glowing disks, shiny spots or a string of pearls, are nothing more than minute blood capillaries on the surface of the retina of the eye, or tiny corpuscles, which become visible under special conditions of illumination.

Another physiological phenomenon is that of after-image. A sudden flash of light affects the retina of the eye and causes a dark image to remain visible for some time after the light has been extinguished. Flashes of lightning, comets, or meteors will cause this effect and may be confused and interpreted as unidentified flying objects.

Hypoxia, resulting from lack of oxygen, has varying effects on the ability to react and to observe accurately. The effects of hypoxia may vary much in the same manner as those of alcoholic intoxication. Usually vision is affected, reactions are retarded, and observations are distorted. An oxygen mask leak may cause alternating stages of hypoxia and normalcy, with the individual often being unaware of these changes.

In a series of tests conducted at the USAF School of Aviation Medicine to determine the effects of fatigue, it was discovered that extreme fatigue may cause an individual to hallucinate, imagining that he sees a variety of unusual objects, and with a vividness to make them seem quite real. Fatigue, even in minor degrees, will slow down reaction time and reduce ability to observe and interpret observations.

Two phenomena that occur frequently are those of autohypnosis and autokinesis. In both of these reactions, a stationary light will assume apparent movement. In autohypnosis, this reaction is caused by continued attention to an external light source. Autokinesis is the result of observing a stationary light under circumstances in which relation to familiar objects is absent.

There is strong evidence that a great many visual problems, both physical and physiological, arise as a direct result of flight at high altitudes.

When flights are conducted at relatively low altitudes, the visibility of distant targets will be reduced by atmospheric haze. This is because light emanating from objects in space is gradually attenuated by absorption and by primary and secondary scattering along the pathway of sight.

Along with the variation of the contrast by atmospheric interference, there is a shift of the apparent contours. This has been disclosed by experiments performed at the USAF School of Aviation Medicine. From these studies, it was concluded that the apparent angular size and apparent distance of objects depend on the brightness reduction of the atmosphere. With increasing altitudes, the deviation of the apparent luminance from the actual luminance of an object in space will result in the object's appearing brighter than it actually is. This may result in false identification of a normally familiar object.

* * * * *

The physiological effects enumerated above are but a few of the manifestations resulting from known reactions. Many physiological effects resulting from high-performance flight are still in the category of unknowns. However, these factors greatly influence one's ability to understand and interpret sensory reactions. If recognized by the aircrew member, they may aid in identifying unfamiliar objects in flight.

SECTION V

Psychological Aspects

Reasoning ability, degree of susceptibility to suggestion, and general mental attitude are vital factors in identifying and reporting flying objects. Failure to note details accurately and a tendency to overdraw descriptions of sightings can result in failure to identify. An over-active imagination, coupled with physiological strain, can transform unfamiliar meteorological or astronomical phenomena and light aberrations into unidentified flying objects.

Perception and feeling are closely related and can have a marked effect upon understanding. Motivation in many instances determines how we interpret what we see, and expectancy can induce manifestations which are only indirectly related to actual physical phenomena or objects. The separation of what may be observed through the senses from what is known through thought or intuition is difficult, inasmuch as understanding is derived from a combination of both. However, an objective attitude, which permits assessment of observed characteristics, rather than suppositions or theories, will assist the observer in avoiding distorted descriptions.

It has been suggested that the world each of us knows is a world created in large measure from our experience in dealing with our environment. When two points of light, one brighter than the other, are placed at an equal distance from an observer in a dark room, the bright point of light looks nearer than the dim light, if one eye is closed and the observer remains motionless. The direction from the observer, as well as a difference in brightness, will result in an apparent variance in distance. Should two equally bright lights be placed near the floor, one about a foot above the other, the upper light will appear to be at a greater distance from the observer than the lower one. Conversely, when the lights are placed near the ceiling of the room, the lower light will appear to be farther away.

When two partly inflated balloons are illuminated indirectly and fastened in positions about one foot apart, where their relative brightness and inflation can be controlled, the observer will experience a variety of reactions as to what he saw.

If the brightness and size of the two balloons remain the same and the observer views them with one eye at a distance of approximately ten feet, he sees two bright spheres equidistant from his position. If the relative sizes are changed and the brightness remains the same, the larger balloon usually appears nearer. When

the size is changed continuously, the lighted balloons seem to move back and forth, giving the effect of erratic movement of lighted spheres through space. This is true even when observed with both eyes. If the relative brightness is varied constantly and the size remains the same, a similar effect is obtained. When there is a variation in relative size and brightness, most observers are inclined to judge distance by relative size rather than by relative brightness.

The effect of these tests upon the observer is premised on the fact that he draws upon past experience in assessing distance based upon relative size and brightness. He assumes that, since the two points of light appear similar, they are identical and of equal brightness. Therefore, the point of light which seems brighter must be nearer. In the case of the two points of light placed one above the other, past experience leads the observer to assume that, when he looks down, the lower light is nearer and, conversely, that, when he looks up, the higher light is nearer.

With regard to the seeming variance in distance when the size of objects is changed continuously, rarely has the observer seen two fixed objects at the same distance change in size. Usually any change in size of an object results from a change in the position of the object in relation to the position of the observer. As the object draws nearer, it becomes larger, and the reverse is true as it draws farther away. Therefore, in the case of the two balloons, the observer assumes that any change in size of the two balloons results from a variation in distance from his point of observation.

These experiments show how misinterpretations can result from the relation of visual perception to past experience in an effort to understand and recognize the object or objects seen.

When we see an object, we derive an impression not only of its location, but also of its existence as an object, and the location as related to visual perception will color the characteristics it possesses. Objects seen through haze or mist, or in reflected light, will assume characteristics they do not possess normally, but, because they have been perceived visually, the observer tends to accept them as real. Thus, psychologically, he creates an object with characteristics which do not exist in actuality. It is essential, therefore, that the observer analyze his observations in relation to unusual weather or lighting conditions and reject characteristics which deviate from the normal and can be explained by the unnatural conditions under which they were seen.

When we see an unfamiliar object, we draw upon our individual past experience in an attempt to identify it. If the unfamiliar characteristics of the object cannot be related to past experience, we have a feeling of uncertainty and it is then that we draw upon imagination in an effort to relate visual perception to understanding. Imagination is colored by suggestion and herein lies an inherent danger.

We are open to suggestion constantly in our daily lives. Advertising media, artists' concepts, modern-day science fiction, propaganda, exaggerated film versions, publicity on perpetrated hoaxes, and the imaginings of zealots and fanatics all react upon the consciousness in the form of suggestion. When we seek an explanation for the unusual or unfamiliar, and attempt to draw upon imagination instead of rationalisation, suggestion influences our thinking.

* * * * *

Physiological changes due to fatigue and intense strain enhance the susceptibility to suggestion and may induce psychological manifestations which a more rational state of mind would reject. The observer should attempt to evaluate his observations. Objective analysis of those characteristics he has observed, in relation to the conditions under which they were seen, will assist in identification of the unfamiliar object and result in more accurate reporting.

SECTION VI

Visual Perception

Since visual perception supplies the first awareness of a flying object, it is important to know "how to see." Knowing "how to see" will facilitate identification and reporting of flying objects. The following aids to "seeing" to the best advantage are provided from Air Force Manual 51-7, "Your Body in Flight."

SKY SEARCH

It is a common misconception that the eye "takes a picture" of everything within its field of view. This is not true. Pick out any word in this sentence and then move your eye to the next and then the next. You will discover that you can no longer read the first word after having moved your eye about 5 degrees.

You see best in daylight and the eye sees by moving in short jumps. It is not a sweeping but a jerking motion with which you see details around you. This is of the utmost importance to the combat pilot scanning the sky for the enemy. Experiments have shown that the eye sees nothing in detail while it is moving. It sees only when it pauses and fixes an object on its retina. In scanning the sky, do not deceive yourself that you have covered an area with a wide, sweeping glance. The correct way to scan is to cover an area with short, regularly-spaced movements of the eye. The scanning pattern followed depends, of course, on your position in the airplane.

DEPTH PERCEPTION

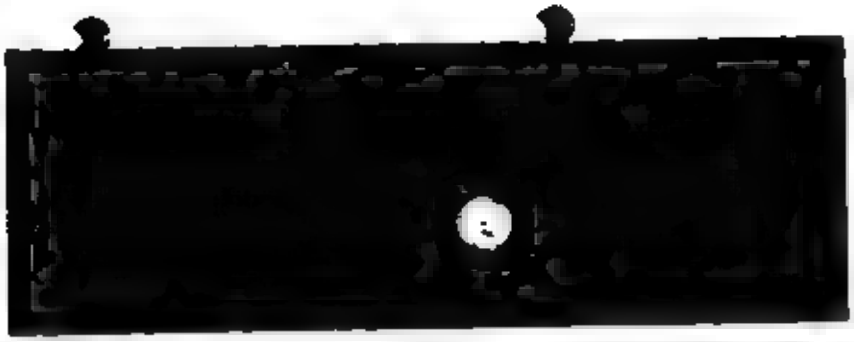
Judgment of distance is done subconsciously in a combination of ways: Close up, we depend on binocular vision, each eye seeing an object from a different angle. At distance beyond binocular range, which is usually the case in flight, we judge it on a one-eye basis. Examples of methods of depth perception follow:

Binocular vision

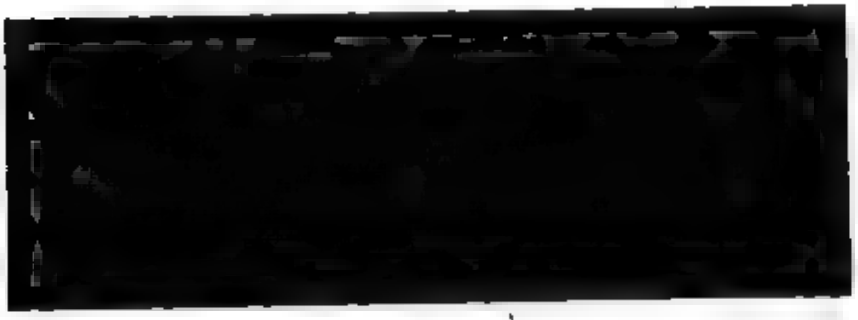
From the known size of an object and how much of our visual field it fills.

From our knowledge of perspective and the convergence of parallel lines at a great distance.

From overlapping — an object overlapped by another is known to be farther away.



From light and shadow — an object casts a shadow away from the observer if the light is nearer.



From aerial perspective — large objects seen indistinctly apparently have haze, fog, or smoke between them and the observer and therefore are usually at a great distance.

From terrestrial association — objects ordinarily associated are judged to be approximately the same distance.

ACCOMMODATION

The eyes change focus to see objects within about 20 feet, but do so almost not at all for distant objects.

SEEING AT NIGHT

It is easy for your eyes to play tricks on you at night when you stare for some time at a light - say, the tail-light of a lead airplane. What happens is technically known as autokinetic movement, or more commonly as stare vision. If the light is stationary, it may seem to move and swing in wide arcs. If the light is moving, it may seem to move to the side when it is actually going straight ahead. The cure for stare vision is don't stare - keep shifting your gaze from point to point.

Another common illusion at night is to see a light expanding or contracting at a fixed distance from you when actually the light is approaching or going away. Again, shift your gaze.

One last tip on seeing at night is to keep your windscreen scrupulously clean. Dust, grease, water droplets, scratches, and the like all obstruct your view, night or day.. Many a speck on the windshield could, after a few hours, take on the silhouette of "an unidentified flying object."

With regard to color perception at night, blue and green lights are seen most easily; red and orange are seen least easily.

From motion parallax — When the observer fixes his sight on one object while his head or body moves, other objects apparently moving in the same direction as he are judged to be more distant, while those apparently moving in the opposite direction are judged to be nearer.

SECTION VII

Reporting

In reporting flying objects, there are certain major characteristics which should be noted. These include:

(1) Number.
(2) Shape.
(3) Color.
(4) Speed.
(5) Acceleration.
(6) Size.
(7) Altitude.
[redacted] Sound.
(9) Light brightness.
(10) Maneuver characteristics.
(11) Range.
(12) Direction.
(13) Initial and final elevation.

Certain variable factors, such as the observer's position or movement during the sighting, speed of observer's aircraft, the position of the sun relative to the observer, the angle of elevation of the sun above the horizon and its bearing from true north as seen by the observer at the time of sighting, and the duration of the observation are important in determining final identification of the flying object.

An estimate of the number of feet at which an object is traveling above the aircraft's altitude may be substantiated by using the range capability of the radar gunsight.

Air Force Regulation 200-2, dated 12 August 1954, establishes procedures for reporting information and evidence pertaining to unidentified flying objects. The reporting format includes the following factors, which will serve as a guide to the observer in assessing the characteristics of flying objects:

(1) Description of the object(s):

(a) Shape.
(b) Size compared to a known object (use one of the following terms: Head of a pin, pea, dime, nickel, quarter, half dollar, silver dollar, baseball, grapefruit, or basketball) held in the hand at about arm's length.

(c) Color.
(d) Number.
(e) Formation, if more than one.
(f) Any discernible features or details.
(g) Tail, trail, or exhaust, including size of same compared to size of object(s).
(h) Sound. If heard, describe sound.
(i) Other pertinent or unusual features.

(2) Description of course of object(s).

(a) What first called the attention of observer(s) to the object(s)?
(b) Angle of elevation and azimuth of the object(s). When first observed.
(c) Angle of elevation and azimuth of object(s) upon disappearance.
(d) Description of flight path and maneuvers of object(s).
(e) Manner of disappearance of object(s).
(f) Length of time in sight.

(3) Manner of observation:

(a) Use one or any combination of the following items: Ground-visual, ground-electronic, air-electronic. (If electronic, specify type of radar).
(NOTE: Air-visual would be applicable here to the airborne observer).
(b) Statement as to optical aids (telescopes, binoculars, and so forth) used and description thereof.
(c) If the sighting is made while airborne, give type aircraft, identification number, altitude, heading, speed, and home station.

(4) Time and date of sighting:

(a) Zulu date-time group of sighting:
(b) Light conditions (use one of the following terms): Night, day, dawn, dusk.

(5) Locations of observer(s). Exact latitude and longitude, or Georef position, or position with reference to a known landmark.

(6) Weather and winds-aloft conditions at time and place of sightings:

(a) Ceiling.
(b) Visibility.
(c) Amount of cloud cover.
(d) Thunderstorms in area and quadrant in which located.

(7) Any other unusual activity or condition, meteorological, astronomical, or otherwise, which might account for the sighting.

(8) Interception or identification action taken.

(9) Existence of physical evidence, such as materials and photographs.

While the above format should be used in reporting unidentified flying objects, there are other details which are helpful to the observer in identifying the flying object, or in reporting its characteristics.

These include:

(1) Relation of the size of the object to the size of the moon or the sun.

(2) Various types of sound, such as rumbling, whining, humming, swishing, explosive, or jet or rocket-type sound.

(3) Color may be described in terms of the color spectrum, with additional details to indicate metallic or luminous characteristics.

(4) Speed may range from a stationary or hovering position to 100 to 400 miles an hour, or to a speed similar to that of a [redacted]

(5) Shape may vary from that of a conventional aircraft to that of an unconventional aircraft and may be described as elliptical or disk-shaped, cigar-shaped, propeller-shaped, conical, rocket-like, meteor-like, or having the characteristics of tails of flame or fire.

(6) Light brightness may be described in terms of dullness or brilliance, by comparison to moonlight, or to the reflection of sunlight on various metals, such as aluminum, or a mirror, or on dull surfaces such as stone or plaster.

(7) The degree of brightness may be related to the apparent distance of the object.

(8) Angular velocity, that is, speed measured in degrees, may vary from zero through very slow, slow, moderate, rapid, very fast, extremely fast (90 degrees per second) to more than 90 degrees per second.

(9) Angular acceleration, or change in angular velocity, may increase or decrease slowly, fast, or very fast.

SUMMARY

The various manifestations that are created by meteorological, astronomical, physiological, or psychological phenomena have been discussed with the intent of assisting the aircrew member in observing and reporting unfamiliar flying objects.

To date, the flying objects reported have imposed no threat to the security of the United States and its possessions. However, the possibility that new air vehicles, hostile aircraft, or missiles, may first be regarded as unfamiliar flying objects by the initial observer is real.

The United States Air Force is charged with the responsibility of safeguarding the United States and its possessions, as well as US forces abroad, from any threat that may arise from the air. In order to discharge this responsibility, it is imperative that all unfamiliar flying objects be reported accurately, so that identification may be made through subsequent investigation.

Current Air Force regulations outline the procedures for reporting unfamiliar flying objects. However, it is believed that a clearer understanding of many natural phenomena, and of how to recognize the conditions under which they occur, will add to the validity of subsequent reports.

COVER SHEET

SUSPENSE

ORIGIN OF BASIC

DATE

ASSIGNED BY

DATE

TYPE

NO.

SUBJECT

AIDS TO IDENTIFICATION OF FLYING OBJECTS

ROUTING

Initial "IN" column to denote review prior to action. Initial "OUT" column to denote review of completed action. (X for action, ✓ for coordination.)

IN	OFFICE	OUT	IN	OFFICE	OUT	IN	OFFICE	OUT	IN	OFFICE	OUT	IN	OFFICE	OUT
	OIN-1			OIN-2			OIN-3			OIN-4			AFOIN	
	OIN-1K			OIN-2N			OIN-3K			OIN-4K			AFOIN-1	
									COMOR AIC				AFOIN-2	
									AFCIN-4				AFOIN-2A	
									AFCIN-4X				AFOIN-2B	
									AFCIN-4X1				AFOIN-3A	
									AFCIN-4X2				AFOIN-3B	
									15 OCT 1957				AFOIN-Z	
													CABLES	
												M & R	FILE	
													DISPATCH	

TO: AFCIN-4X ATTN: Mr. Arcier

DATE: 10 Oct 57

FROM: AFCIN-X1A

COMMENT NO.: 1

COMMENTS (Use reverse, if necessary)

Mr. Sanderson/pah/74903

1. The attached copy of letter from USAFE with inclosure "Aids to Idenfication of Flying Objects" is forwarded for your comments on which to base a reply.

2. Request comments be directed especially to the accuracy and sufficiency of material therein as well as its possible use by other agencies and the general public.

3. Request reply NLT 25 October 1957, in order that General Lewis' reply to Col. Rogers be prepared promptly.

NORMAN B. PERLBERG
Lt Colonel USAF
AFCIN-X1A

Incl.

1. Ltr to Gen. Lewis fr Col Rogers 30 Sept 57
2. Booklet

AFHQ FORM MAY 50 0-86 PREVIOUS EDITIONS OF THIS FORM MAY BE USED.

Rec'd AFCIN-4K/AFOIN-2A 10 Oct 57

SUBJECT: Aids to Identification of Flying Objects

TO: AFCIN-X1A

FROM: AFCIN-4

27 OCT 1957

Comment Nr. 2
Lt/Capt C.T. Gregory
ext/6924

1. Attached publication, prepared for the most part from Project Blue Book, AFR 200-2 and other pertinent guide material originally prepared by this Center, is a commendable effort towards the philosophy enunciated in the D/I-ADC conferences last spring; that all USAF Units be given guides and assistance to properly identify seemingly unidentifiable aerial objects.

2. Up to this time, the only aids to UFO investigation and field analyses have been given to AISS and GOC units (see inclosures 3 and 4, "UFO Guide" now being revised, and GOC "UFO" Poster).

3. A complete review and revision of subject publication would require a respectable effort, which cannot be accomplished within the deadline given in par. 3 of preceding comment. However, a review has disclosed the omission of certain key points, significant clues and leads to UFO identification, and other explanatory items. A number of items were revised; others were clarified. A number of illustrations are submitted to properly clarify or explain key phenomena (Figures 1 through 11). (See inclosure 5, detailed review and suggested revisions.)

4. It would have been more desirable if a draft of the publication had been submitted to the Center for review and corrections, assuming the guide in question is a "final publication item". If not, then it is suggested that it be recommended to USAFE that the revisions, additions and illustrations submitted here be incorporated into the proposed final publication.

5. The UFO guide and GOC poster (inclosures 3 and 4) may also be submitted to USAFE, and should include the original UFO guide prepared for Air Force units "How to make UFLYSRPTS", attached (inclosure 6) both for possible use in the USAFE guide and to demonstrate that the Air Force has not been remiss in UFO material and publications as the letter from USAFE appears to indicate.

[signature]

[illegible] USAF
AFCIN-X2a

6 Incls
1. Ltr to Gen Lewis fr USAFE
2. UFO Guide Booklet
3. UFO Guide - Rough Draft
4. GOC Poster
5. Suggested Revisions to UFO Guide w/12 illustrations
6. ATIC Guide "How to Make UFLYSRPTS"

DRAFT UFO GUIDE TO - U.K.

FILE CLASS:
OFFICIAL FILE CO
OFFICE OF RECO

COORDINATION

AFCIN-4

AFCIN-4X2b AFCIN-4E4

AFCIN-4X2c

AFCIN-4X3

AFCIN-4X4

AFCIN-4X5

AFCIN-4A

AFCIN-4B

AFCIN-4C

AFCIN-4D

AFCIN-4E

AFCIN-4F

OTHERS 4XL

1 FEB 1958

SUBJECT: (U) Aids to Identification of Flying Objects

TO: Office of the Air Attache
ATTN: Col R.W. [redacted]
U.S.E., F.P.O. 100
New York, New York

1. Attached is a draft copy of a proposed "Identification to Flying Objects" which this Center is in the process of revising. For purposes of expediency, a copy of the "suggestions and revisions sheet", and illustrations to be added to the draft are forwarded.

2. Subject material is forwarded in accordance with an informal request made to Captain Gregory of this Center. The material is similar to that used by Headquarters USAFE for the identification of UFOs and recently revised by this Center.

3. Because of current budgetary limitations and manpower restrictions, publication and dissemination of the proposed guide, on a USAF-wide basis, within the near future is unlikely. Therefore, the material may be used as a "master" for the preperation of a document or guide to be assembled by your office in any format desired or as dictated by the requirements of your organization or operations.

4. It should be stated, as a matter of guidance, that a large number of UFO reports submitted from overseas commands and facilities could have been resolved on the spot, by a check and investigation of all pertinent local facilities, and conducting a preliminary field analysis as prescribed in par. 5, AFR 200-2.

5. Also attached is Department of Defense and other material reflecting the work, findings and other aspects on the Air Force "UFO Program." This, together with the aforementioned guide, should provide all basic data necessary for training, indoctrination or informative purposes.

FOR THE COMMANDER

WALLACE W ELWOOD
Capt, USAF
Asst Adjutant

4 Incls
1. Cy, "Aids to Ident of UFOs"
2. Suggested Revisions w/ll Illus
3. USAF Questionnaire
4. DOD Releases

PERM	
TEMP	
90 DAYS	
INITIAL	

ATIC FORM 144 (REV 10 SEP 57) ROUTING AND COORDINATION SHEET

ROUTING SLIP

NEVER USE FOR APPROVALS, DISAPPROVALS, CONCURRENCES, OR SIMILAR ACTIONS

TO (NAME, OFFICE SYMBOL, ROOM NUMBER, BUILDING, AGENCY/POST)	INITIALS	DATE	CIRCULATE
1 Col. Wackwitz			COORDINATION
ORGANIZATION AND LOCATION 4FCIN-9B			FILE
2 Capt Gregory			INFORMATION
3			NECESSARY ACTION
4			NOTE AND RETURN
			SEE ME
			SIGNATURE

REMARKS

Reference our recent private discussion re your theory that the UFO hysteria could be used as a clandestine psychological warfare weapon by the Soviets to seriously disrupt the US Forces.

Attached is my ex-chief and friend, under whom I served in a similar capacity here in ATIC, and now in Britain, England.

The letter is personal. However, it's remarkable how his personal viewpoint of the situation parallels your own.

FROM (NAME OR TITLE)	DATE
Capt. Gregory	25 Nov 57
ORGANIZATION AND LOCATION 4FCIN (Wright)	TELEPHONE 67266

DD FORM 1 FEB 54 95 Replaces DA AGO Form 895, 1 Apr 48, and AFHQ Form 13, 10 Nov 48, which may be used.

DRAFT - UFO GUIDE
TO FEAF

OFFICIAL FILE COPY

OFFICE OF RECORD

COORDINATION

AFOIN-4

AFOIN-4X2b

AFOIN-4X2c

AFOIN-4X3

AFOIN-4X4

AFOIN-4A

AFOIN-4B

AFOIN-4C

AFOIN-4D

AFOIN-4E

AFOIN-4F

OTHERS

MEMORANDUM FOR THE RECORD

5FITI, Hq Fifth Air Force, 5 Nov 57, Subj: Information Requested by
CADF

FCIN-4E6 1st Ind 4E4/Capt G.T. Gregory/wm/69216

AIR TECHNICAL INTELLIGENCE CENTER, Wright Patterson Air Force Base, Ohio

TO: Commander, Fifth Air Force, ATTN: 5FITI, APO 925, San Francisco, [redacted]

1. Attached is a draft copy of a proposed "Identification to Flying Objects" which this Center is in the process of preparing, editing and revising. For purposes of expediency, a copy of the "suggestions and revisions sheet", and illustrations to be added to the draft are forwarded.

2. Because of current budgetary limitations and manpower restrictions, publication and dissemination of the proposed guide on a USAF-wide basis within the near future is unlikely. Therefore, the material may be used as a "master" for the preparation of a document or guide to be assembled by your office in any format desired or as dictated by the requirements of the Japanese Air Defense Command.

3. Also attached is Department of Defense and other material reflecting the work, findings and other aspects on the Air Force "UFO Program". This, together with the aforementioned guide, should provide all basic data necessary for training, indoctrination or informative purposes.

Incls
1. Cy, "Aids to Ident of UFOs"
2. Suggested Revisions w/11 Illus
3. USAF Questionnaire
4. DOD Release

1 4E4 D.T. 22 Nov 57
2 4E4 W.A. Miley 25 Nov 57
3 4E HR

4x1 [illegible]

PERM	
TEMP	
90 DAYS	
INITIAL	

AF FORM 144 (REV 30 FEB 54) ROUTING AND COORDINATION SHEET AF-AFP-O-30 NOV 54

SUGGESTED REVISIONS AND ADDITIONS TO UFO AID

Page 1 DEFINITION: Insert, after 2nd paragraph: "unidentified aircraft" are not within this definition of unidentified flying objects; hence should not be a basis for the submission of UFO reports within the meaning of AFR 200-2. The reporting of "unidentified aircraft" usually results from the sighting of an aircraft which is readily identifiable as an aircraft, but whose origin, type, purpose, destination, etc. may not be known. These are the responsibility of air defense and other pertinent units, and should be "screened" or "filtered" out from the UFO reporting system. This should include jet exhausts, parachute flares, condensation trails, navigation lights or other phenomena known to originate from aircraft or aircraft operations, although the aircraft themselves may not be immediately identified. These "unidentified" familiar objects are not "UFOs".

Page 3 BALLOONS: 2nd paragraph, 5th line: Change "one hundred feet" to read "two hundred feet".

After 2nd paragraph, insert separate paragraph substantially as follows: The majority of balloons released at night carry one or more "running lights", which often contributes to weird or unusual appearances. Many balloons carry metallic, triangular shaped "corner reflectors" suspended some distance below the balloon proper (Fig. 1). Larger, research types, may rise considerable distances before becoming fully inflated, and may often be flattened on top until completely expanded (See Fig. 2). Partially inflated balloons may be caught in

jet streams, assume near horizontal positions, and move with considerable speed. Encountering a flat, circular object (balloon flattened on top) under darkness or adverse weather conditions, arising from below can be startling even to experienced pilots.

Separate paragraph: Balloons can be observed when the sun is behind the horizon and the earth is in comparative darkness (See Fig. 3). This has resulted in a considerable number of UFO reports over the last ten years. The two general "clues" here is that a. the sighting usually is observed just before dawn or little after sunset and b. the shape of the UFO appears either as "disc" or "spherical" and bright reddish-orange, pink, or reddish-white. The coloration is caused by the sun's slant rays reflecting off the [redacted].

Page 4 ASTRONOMICAL BODIES: Separate paragraphs substantially as follows: Meteors will appear to vary in shape from round to elongated, teardrop in shape, and in size from tiny pinpoints to the size of the moon. Colors will range from yellowish-white through red, blue and green hues depending on the atmosphere.

Although observed singly, meteors may be observed in clusters. The time in sight is generally less than 10 seconds. Although improbable that meteoric bodies themselves can be picked up on radar, the meteor trails are generally good reflectors and will often "paint" on radarscopes.

An extremely brilliant, rarely seen form of meteorite is called a "fireball". Fire balls, unlike ordinary meteorites do not burn

themselves out in the upper atmosphere, but persist into the lower levels crashing into the earth's surface. A fireball that explodes before reaching the earth's surface is usually referred to as a "bolide". An encounter with a fireball during darkness can be a frightening experience, as these bodies can suddenly illuminate the surroundings with a dazzling, daylight intensity.

Conclude with (separate paragraph): It has been repeatedly proved that attempting to observe objects later found to be stars, planets or other apparently fixed celestial bodies, through hand-held binoculars or glasses will often give an illusion of unusual manoeuvers, trajectories and speeds. This is particularly true when such bodies are observed under adverse sky or weather conditions.

Page 5 and 21

RADAR SIGHTINGS: Comment: The summary section (page 5) and the detailed Section III (page 21) gives the impression that unidentified objects observed on radarscopes are primarily the result of temperature inversions and other meteorological causes. The following, in substance, should be integrated, as desired, into both sections:

1. "Spurious" blips or returns may also be caused by
   a. Mutual interference between radar units
   b. Jamming
   c. Unknown malfunctioning of equipment
   d. Radar target simulators
2. Even experienced radar operators can err in interpreting radar returns. This is particularly true when operating personnel from radar units located in stable-weather areas are assigned to

localities subject to unusual, turbulent or suddenly changeable weather conditions. Such conditions are generally conclusive to anomolous propagation (See Fig 4 and 5).

3. Ten years experience in the investigation and analyses of the UFO phenomena reported by radar units, has disclosed numerous instances where both airborne and ground radar units have observed what apparently were objects in the air, and found to have actually been ground objects. This was caused by temperature inversions (See Figs 7, 8 and 9).

Page 8 NEW FLYING OBJECTS: Suggest 1st paragraph be changed to read: There are two new radar aircraft now in existence which to the uninitiated may appear as unidentified flying objects or so-called "flying saucers", because of saucer-shaped radar antennas that are affixed to their fuselage (See Fig 6 - WF-2 Radar Aircraft, and the radar Super Constellation).

Page 9 It should be strongly emphasized that many swept-back and delta-wing aircraft can appear as weird and unusual flying objects, particularly when observed under adverse weather or light conditions (See Figs. 10 and 11, Block of Aircraft Photos). The Air Force is in daily receipt of UFO reports describing "flying saucer" objects, which upon investigation are found to be aircraft of the configuration discussed here.

Page 16 METEORS: 1st paragraph, 5th line. Change "24,000,000 meteors" to read "approximately 200,000,000 meteors."

Add separate paragraph on "annual meteoric showers", substantially

as follows: Each year the earth passes through certain meteoric showers at specific times each year, which invariably results in a large number of UFO reports. These annual showers can be exceptionally brilliant, having thousands of meteors and meteor trails. Some of the most prominent of these are the Perseids (August), Orionids (October) and the Leonids (November). The Leonids, for example, which last for approximately 7 days and reaches it maximum about November 16, has provided close to 200,000 meteors between midnight and dawn. Any good astronomical text will furnish the dates and schedules of these periodical showers.

Page 23 Partial paragraph continued from page 22, should read "... may cause the appearance of two or more targets on the radar screen. In some instances hundreds of returns may appear.

MEMORANDUM TO CAPTAIN GREGORY 18 Oct 1957

The data included in the radar portion is correct (with one exception), there is a great deal of information which should be included but which is not there. Some explanation regarding returns due to anamalous propagation which appear as very fast moving targets should be included, since this is one of the principal types of radar reports received.

It should be emphasized that this task would require a respectable effort, and couldn't be dashed off in a matter of a few minutes to meet a short deadline. Some good scope photos of actual anamalous propagation and samples of interference from other radars, returns from clouds, etc, would appear to be more informative than the diagrams and scope sketches showing normal and abnormal propagation which are in the article.

The exception noted in the first paragraph is to the statement that an interferring radar will give one or two returns on the scope. Actually there will usually be many times this many - hundreds of them, in fact. It is true that they are usually easily recognizable.

V. D. BRYANT
AFCIN-4E1a

AFCIN-XI/Mr Sande n/las/74903/15 Nov 57

21 NOV 1957

Colonel Craven C. Rogers
Deputy Chief of Staff, Intelligence
Headquarters, U. S. Air Forces in Europe
APO 633
New York, New York

Dear Buck,

Reference your letter of 30 September, forwarding copies of your booklet on "Aid to Identification of Flying Objects", ATIC reviewed the booklet and felt it was a commendable effort toward solving one of our UFO headaches. However, they felt it would have been more advantageous to you if it had been reviewed by them before publication. It seems that the philosophy of the UFO's has changed since the publication of Project Blue Book and other earlier material. Their review disclosed the omission of certain key points, significant clues and leads to UFO identification, and other explanatory items.

We are in the process of revising AFR 200-2 in order to incorporate some of these new ideas, and to delineate responsibilities for various aspects of the UFO program.

I am sending along for your information the material prepared by ATIC regarding your booklet.

FRANK B. CHAPPELL
Colonel, USAF
Officer, Assistant Chief of Staff,
Intelligence

4 Incls
1. UFO Guide - Rough Draft
2. OOC Poster
3. Suggested revisions to UFO Guide W/12 illustrations
4. ATIC Guide "How to Make UFLIKEPTR"

COORDINATION:
AFCIN-XI
Col [redacted]ley
L/Col Perlberg
Mr. L. Sanderson

Coord cy
ACS/Cross ref
XI Comeback
XI Stayback

File in UFO
Folder

Air Technical Intelligence Liaison Office

5 NOV. 1957

5FITI

SUBJECT: Information Requested by JASDF

TO: Director
Air Technical Intelligence Center
ATTN: AFCIN-4E4 (Capt Gregory)
Wright-Patterson Air Force Base, Ohio

During a course of training given to JASDF (Japan Self Defense Force) intelligence personnel on ATI training, considerable interest was shown on the subject of unidentified flying objects. Request any unclassified reports published by ATIC on this subject which could be given to JASDF personnel.

JACK S. ZEIGLER
Lt Colonel, USAF
Director, ATILO
DCS/Intelligence

HEADQUARTERS
UNITED STATES AIR FORCES IN EUROPE
Office of the Deputy Chief of Staff, Intelligence

SEP 30 1957

APO 633, New York, N.Y.

Major General Millard Lewis
Assistant Chief of Staff, Intelligence
Headquarters, United States Air Force
Washington 25, D.C.

Dear Chief:

Please find attached copies of our publication on unidentified flying objects. Over the past several years all of us in this business have been concerned, directly or indirectly, with this subject. In fact, even here in Europe we are plagued by reports from even our own people which are so poorly rendered that we cannot make head nor tail out of them.

This booklet was published and intended to be used as a training aid and reporting guide. As stated in the first pages, there is no intent to discourage reporting, but rather to acquaint the observer with what he may actually be looking at. We find it mighty discouraging when air crews with thousands of hours to their credit make fantastic reports of what we often know to be natural phenomena.

Other publications may have been prepared in the past by other agencies, but a thorough search by my people failed to locate any real usable aid.

The thought occurs to me that this could well be only the first step in acquainting our people with this sort of thing, and that perhaps ATI could, for example, develop a system of colored slides to be used in a course of instruction on the subject. Perhaps it should be included as a part of our flying training instruction, and it might also be of use to ADC in assisting their Ground Observer Corps. On the other hand, considering reports which we have all seen from commercial air lines people we might make money by offering something of this nature to them.

I hope that in this year of austerity we have not duplicated anyone else, and would appreciate your reaction to the booklet and the suggestions made herein.

DCS/INTEL .. IDC-DC
CONTROL NUMBER 5 .. 09708

Sincerely,

Buck

1 Incl: Booklet (10 cys)

C. C. ROGERS
Colonel USAF
DCS/Intelligence

ROUTING / COORDINATION

AFOIN-4
AFOIN-4X2a
AFOIN-4X2c
AFOIN-4X3
AFOIN-4X4
AFOIN-4A
AFOIN-4B
AFOIN-4C
AFOIN-4D
AFOIN-4E
1 4E4
2. 4E4
3 4E
AFOIN-4F
OTHERS
AFOIN-4X2

FILE CLASS _____
OFFICIAL FILE COPY

OFFICE OF RECORD

AISOC, HQ 4602d AISS (ADC), 25 Apr 57, Subj: UFOB Guidance Material

AFOIN-4E4 1st Ind 4E4/Capt G.T. Gregory/vm/69216

AIR TECHNICAL INTELLIGENCE CENTER, Wright Patterson Air Force Base, Ohio 21 MAY 1957

TO: Commander, 4602d Air Intelligence Service Squadron (ADC), Ent Air Force Base, Colorado Springs, Colorado

1. This Center is currently in process of preparing subject guidance material requested, and should be forthcoming within two weeks of this date.

2. The known difficulty in attempting to provide guidance material on such a complex subject as UFOs, and this Center's desire to present, in a simple manner, the numerous clues, hints, leads and indications to assist both field investigators and lay observers in evaluating and explaining UFO sightings, dictates that the matter be approached properly.

3. Additional research and data is required on all the possible effects that various objects (aircraft, balloons, astronomical bodies, etc) can produce under certain conditions. For example, in a study of UFO reports which indicate binoculars were used at night, there is almost invariably the statement "flashing, erratic or zig-zagging" movements of the UFO. While the reason is obvious to those involved in UFO analyses, the fact that binoculars, focused on a star, planet or moving spot of light, will produce these precise movements if hand-held is often not considered even by experienced intelligence and interrogating personnel. Also, the fact that a large number of weather and research balloons carry lights, which can produce unusual appearances and maneuvers at night, is generally unknown to many.

4. It is suggested that the numerical guidance items under each subject item of an appendix, be followed with a brief, informal commentary on other effects, appearances and maneuvers of each object under given conditions. The material being prepared is designed with this view in mind, and may be used as deemed necessary to your particular requirements.

FOR THE COMMANDER
20/5/57

T. J. CONNAIR, JR.
MAJOR, USAF,

1 Incl
n/c

2

PERM	
TEMP	
90 DAYS	
INITIAL	

TIC FORM 144 (REV 30 FEB 50) ROUTING AND COORDINATION SHEET AF-WP-O-16 NOV 55 1214

25 Apr 1957

AISOC

SUBJECT: UFOB Guidance Material

TO: Commander
Air Technical Intelligence Center
ATTN: AFOIN-4B4
Wright Patterson Air Force Base
Ohio

1. Reference is made to the conversation, 17-18 Apr 57, between Captain Gregory, your center, and A/1C Barth, this organization, concerning UFOB guidance material.

2. In accordance with the views expressed by Captain Gregory, this organization will publish a change to 4602d AISS Squadron Guide 200-2 on/about 1 June 1957.

3. The material to be incorporated into this change includes:

a. An expanded section on meteors, drawn primarily from your letter, AFOIN 4B4, Subject: UGOB Guidance Material - Meteors and Meteoric Showers, dated 14 Nov 56.

b. A new section on Radar Scope UFOBs, including the article from "Electronic Week", which your center forwarded to this organization, and an explanation of Anomalous Propagation.

c. An expanded section on balloons.

4. In order to assist this organization in accomplishing this change, request your center prepare:

a. A discussion on Anomalous Propagation.

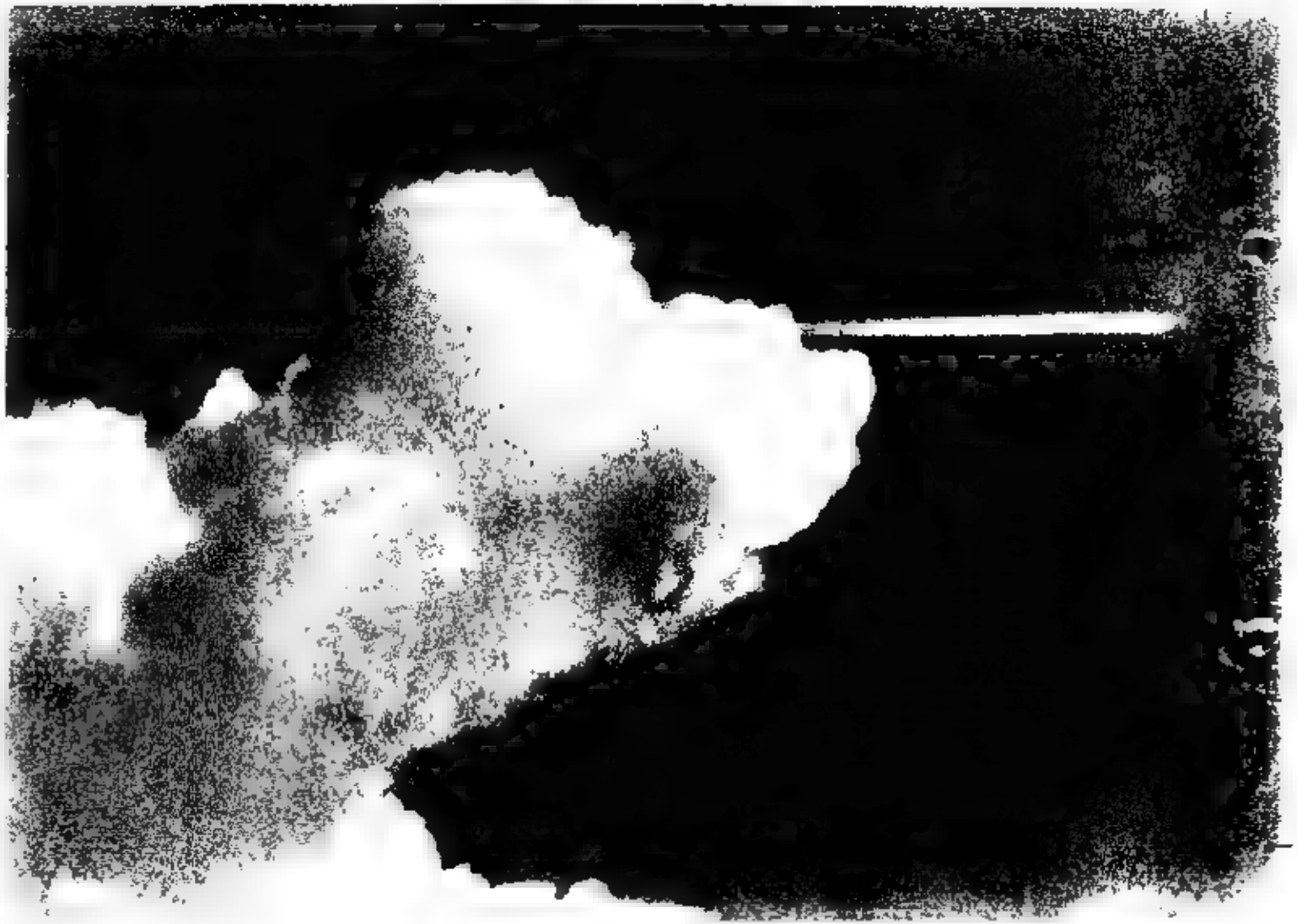
b. Any information on balloons which your center deems appropriate for inclusion in the change.

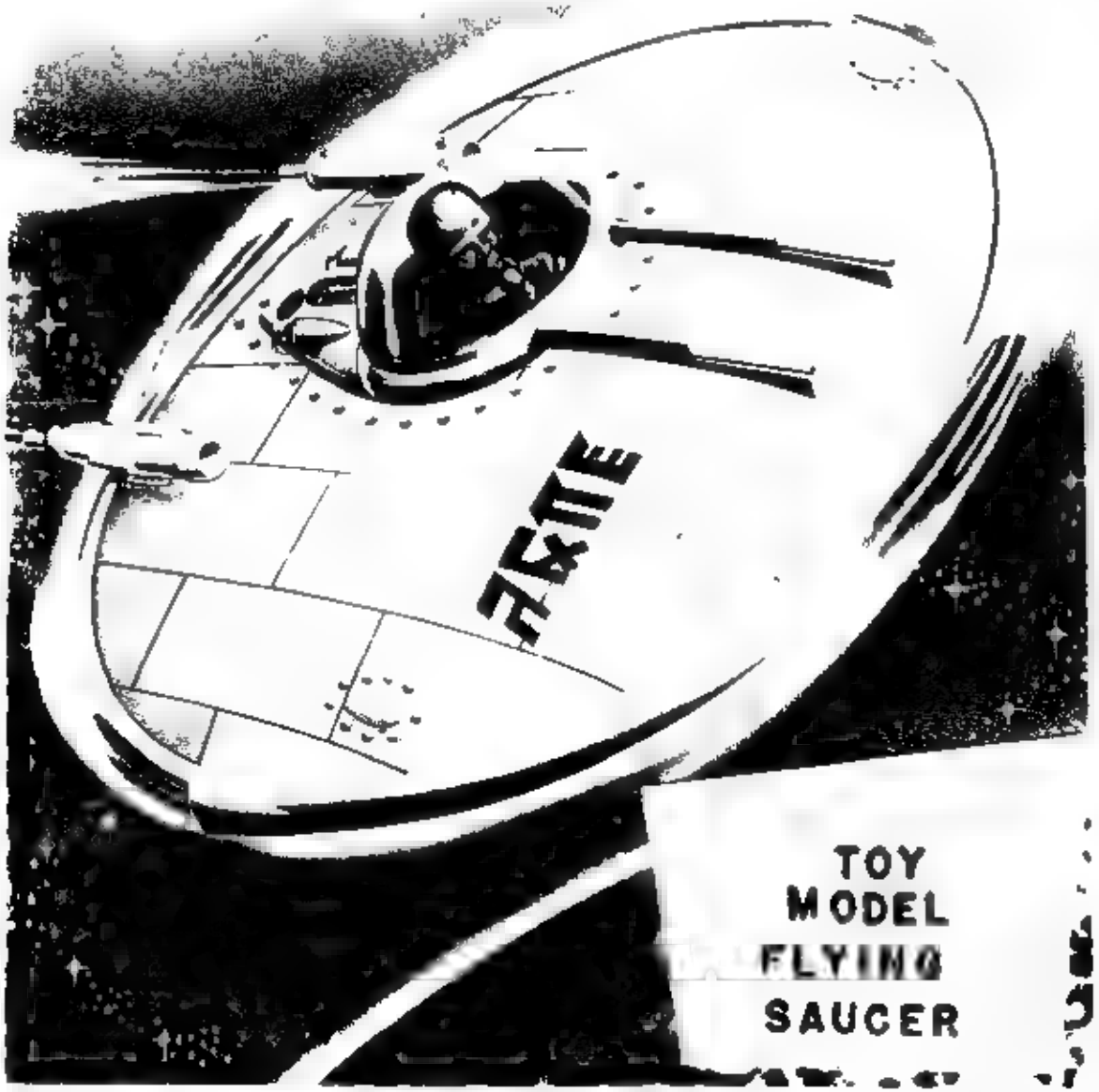
c. Possible suggestions for expanding any of the other sections of Appendix "A", Squadron Guide 200-2, a copy of which is attached.

FOR THE COMMANDER:

/s/ RICHARD B. RANDLE
Major, USAF
Asst Adjutant

1 Incl
App A, SG 200-2

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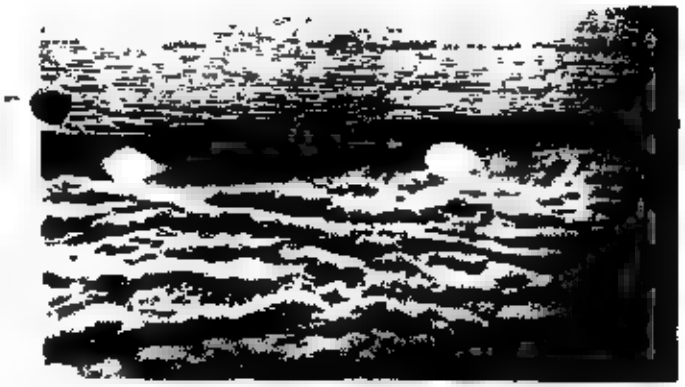


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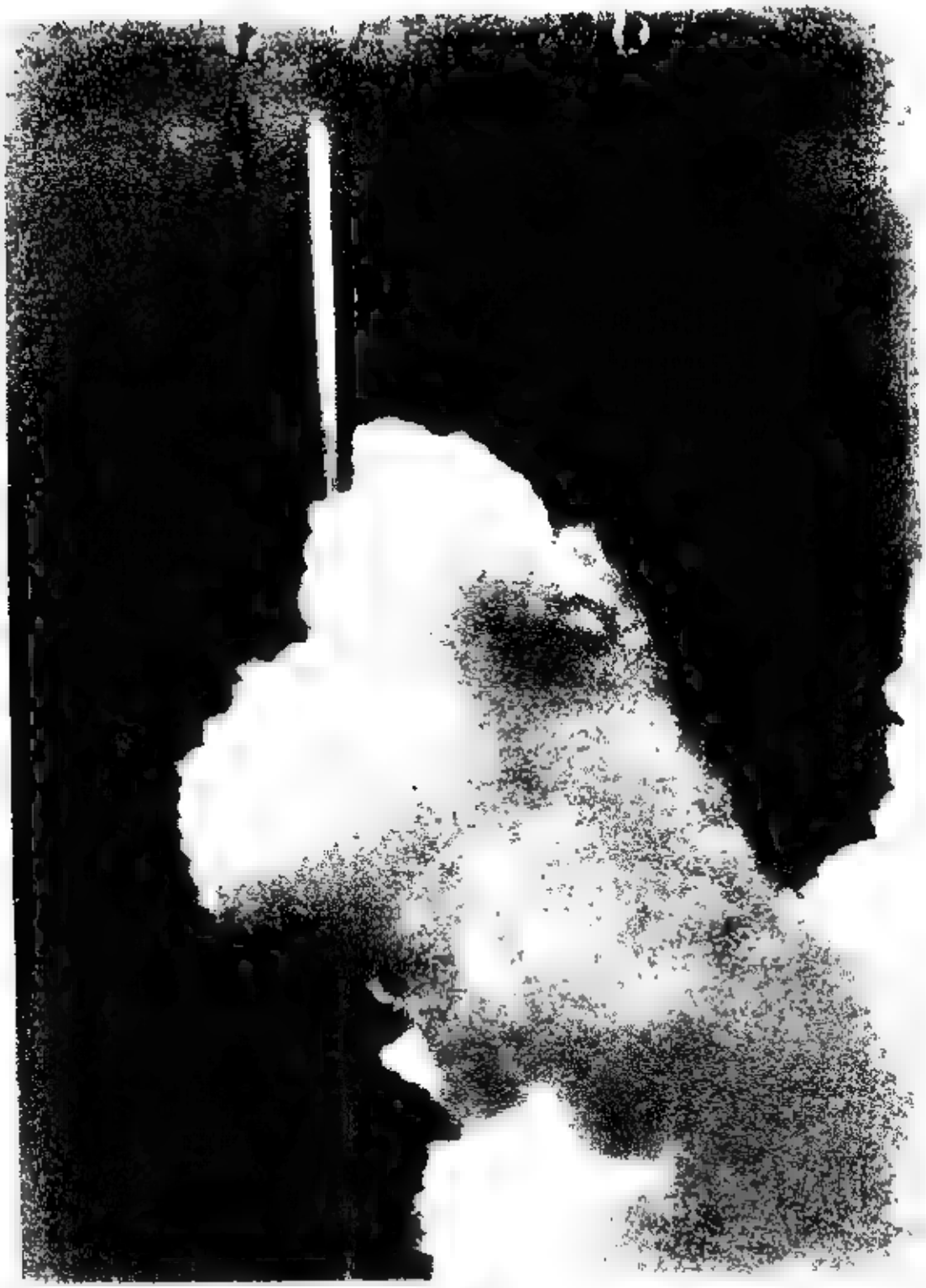


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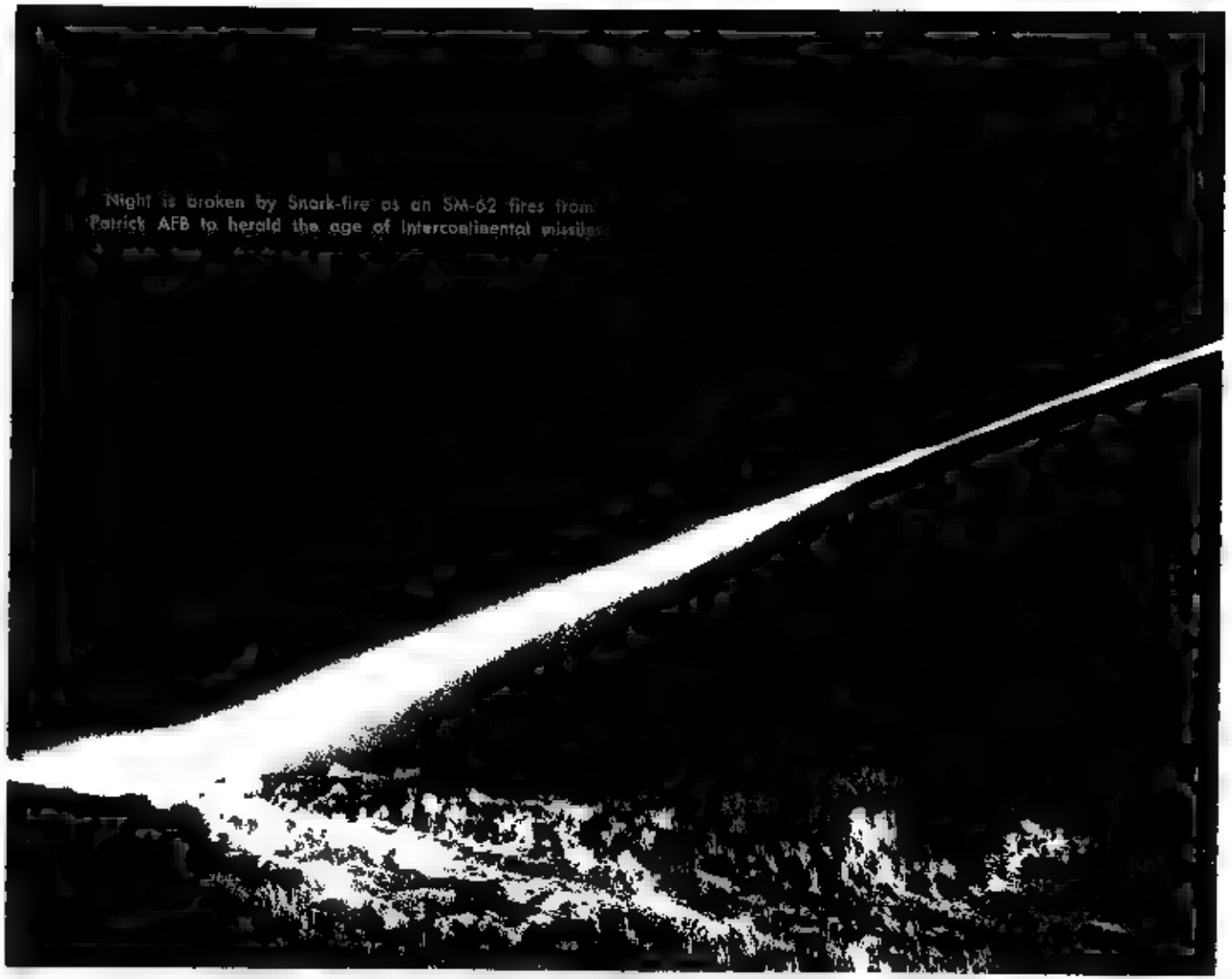
Night is Broken by Snark-fire as an SM-62 fires from
Patrick AFB to herald the age of intercontinental missiles

Research and Technology Division
AIR FORCE MATERIALS LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

EVALUATION REPORT

[redacted]

REPORT NR: MAY 67-2 DATE: 19 April 1967

PROJECT NR: 6011021202 TYPE EVALUATION:

MANUFACTURER: SPEC NR:

SUBMITTED BY: TDET/UFO William F Marley, Jr. ITEM SERIAL NR:

I. PURPOSE:

Analysis to aid in the identification of the material.

II. FACTUAL DATA:

1. The submitted samples, specimens 1 and 2, were given Analytical Branch numbers 7-739 and 7-740.

2. Spectrographic analysis gave the following results:

Specimen #1 Principally antimony, trace (< .1%) iron.

Specimen #2 Principal amounts (> 10%) of aluminum and potassium, minor amounts (.1-1%) of silicon, iron, calcium and magnesium.

3. X-ray emission indicated the presence of sulfur and chlorine in specimen #2.

4. X-ray diffraction indicated Specimen #1 to be antimony metal and specimen #2 to contain potassium chloride.

III. CONCLUSIONS:

Specimen #1 is antimony metal. Specimen #2 contains potassium chloride in some combination with aluminum and sulfur. Oxygen might be present but was not determinable by the techniques used.

ADVISORY PANEL ON THE SCIENTIFIC USE OF BALLOONS

MEETING -- 15 NOVEMBER 1965

TABLE OF CONTENTS

Appendices, continued.

B. Annual Report -- NCAR Scientific Balloon Facility.

C. Institute D'Astrophysique Request for Ballooning Services.

D. University of California Request for Ballooning Services.

E. University of Rochester Suggestion for an Equatorial Expedition.

- END -

SCHEDULE

ADVISORY PANEL ON THE SCIENTIFIC USE OF BALLOONS

MEETING -- 15 NOVEMBER 1965

SCHEDULE

Monday, 15 November 1965

8:30 AM	Convene in Sommers-Bausch Room of the High Altitude Observatory.
11.30 AM	Break for Lunch
1.00 PM	Reconvene in Sommers-Bausch Room

AGENDA

ADVISORY PANEL ON THE SCIENTIFIC USE OF BALLOONS

MEETING -- 15 NOVEMBER 1965

AGENDA

1 Minutes of the meeting of 16-17 September 1964

A copy of the minutes of the meeting of 16-17 September 1964 is enclosed, Appendix A. Acceptance of the minutes, with any necessary corrections, is requested

2. Actions on prior Panel recommendations -- Alvin L Morris

A summary of prior Panel recommendations and the action taken on each will be given orally at the meeting. This is to be given principally for information but the Panel is invited to offer comments

3. Annual Report -- Alvin L Morris

A copy of the Annual Report is enclosed, Appendix B. The Panel is requested to review this report critically and forward it to the Director of NCAR with Panel comments and criticisms.

4. Review of Facility activity in the current calendar year -- Alvin L Morris

A resume of the activity of the Facility during the current fiscal year will be given orally to bring the Panel up-to-date. Key staff members will be available to answer questions, and Panel comments are invited

5. Ballooning requirements -- Thomas W. Bilhorn

Requirements for scientific ballooning appear to be changing The Panel is asked to review the evidence of this change, to be presented orally by Mr Bilhorn, and to comment on our interpretation of the evidence Our future course will be determined by our interpretation of stated and implied requirements, therefore it is important that our interpretation be well founded and intelligent

6 Azimuth stabilization and startracker requirements -- Jack M Angevine

Several users or potential users of NCAR ballooning

Agenda, continued

services have recently stated requirements for startracking and azimuth stabilized platforms. Mr. Angevine will summarize stated requirements and outline possible NCAR positions at the meeting. The Panel is requested to advise NCAR on its proper response to these requirements. Dr Gordon Newkirk of NCAR has been asked to join in the discussion of Agenda Items 6 and 7 to give the view of a user of our flight services.

7 Progress on heavy load launch development program -- Thomas W Bilhorn

Our program to develop and improve heavy load launch equipment and techniques will be critically reviewed by Mr. Bilhorn. Panel comments and recommendations are requested

8. Request by Dr Delbouille of Belgium for balloon flight services -- Alvin L. Morris

Dr. L Delbouille of the Institut D'Astrophysique of the Universite de Liege has requested that NCAR provide flight services for a series of flights planned by him and his colleagues. A brief summary of the experiment they propose and a copy of letters from Doctors L. Delbouille and M. Migeotte are enclosed, Appendix G. Dr. Delbouille and Dr. Roland toured ballooning facilities in the U S. and determined that our facilities meet their requirements best. They were especially concerned about telemetry and command systems; our standard PCM system meets their requirements Additional information has been requested from Dr Delbouille in order that we might assess his operational requirements more realistically. At present we know that he wishes to fly the equipment to altitudes above 80,000 feet, that it consists of a telescope which must be directed with precision (± 5' at first, but more precisely later), that the payload weight will be of the order of 1200 to 1800 pounds, and that he hopes to make the first flight in the autumn of 1966 Additional information will be presented to the Panel at the meeting if it arrives in time.

We foresee no particular operational difficulties and the costs to NCAR beyond our normal operating costs will be almost negligible. Some equipment such as a parachute and an airborne telemetry and command unit may have to be loaned to the project on a long term basis.

The Panel is requested to approve NCAR participation in

Agenda, continued.

the flight series which Dr. Delbouille proposed if in the Panel's view the flights are feasible and warranted by the scientific merit of the proposed experiments.

9 Request by Dr. Luis W. Alvarez of the Space Sciences Laboratory of the University of California for flight services -- Alvin L. Morris

Dr. Luis W. Alvarez of the Space Sciences Laboratory of the University of California at Berkeley has requested flight services on a series of high energy particle experiments. A detailed description of these experiments is enclosed, Appendix D, and Dr. W. E. Humphrey, an associate of Dr. Alvarez, has promised to be on hand to answer Panel questions.

The experiments proposed here will require very careful coordination between the experimenters and Facility personnel over an extended period. As now conceived, some developmental work will have to precede the first physics data gathering flight. The very powerful magnet must be given special protection; for example, we can not launch it with a ferrous launch vehicle in our usual fashion. The equipment is fragile, and we may have to develop special recovery techniques to prevent undue damage on landing. Special facilities, such as a well in which to store the sensitized plates prior to use, will be required.

We have endeavored in the past to conduct development programs which would enable us to meet most scientific ballooning requirements when they were presented to us. The requirements associated with Dr. Alvarez's experiment, although beyond our present capability, appear to be within reach. Further, though they appear to be the specialized requirements of one experiment now, that experiment will require an extended series of flights and it is probably the precursor of similar flights by others. Therefore we believe that we should not overemphasize the special nature of requirements associated with it. On the contrary, we believe that we should undertake the responsibility for providing the ballooning services to meet the requirements of the Alvarez group, seeking developmental funds from that group when unique techniques and equipment must be developed and tested for their program. NCAR must expect to fund those aspects of development which offer immediate significant improvements to general scientific ballooning. It would also expect to pay the fixed costs of operating the Ballooning Facility as it does now for all scientific flights, but it would not pay the cost of balloons, helium

Agenda, continued

and other similar assignable costs

The unusual requirements of this request for services makes it easy to forget the usual operational requirements. These may be summarized as follows: 1) flight altitude -- 85,000 to 100,000 feet, 2) flight duration -- up to 24 hours, 3) approximate weight -- 8,000 pounds, 4) geographical area -- Southern U.S., 5) season -- any time of the year, 6) accelerations on load at launch -- less than 1g, 7) accelerations on landing -- less than 10g, 8) number of flights -- 4 engineering and several physics flights spread over 3 to 7 years.

The Panel is requested to approve NCAR participation in the flight series which Dr Alvarez proposes if in the Panel's view the flights are feasible and warranted by the scientific merit of the experiments proposed.

10. Water vapor measurement comparisions -- John W. Sparkman

This program is a continuation of a program started in November 1962. A meeting was held in Washington, D C. on 7 and 8 October 1965 to explore current interest. A resume of the status of the program and plans for its future will be given by Mr. Sparkman at the meeting Panel comments are invited

11 Another equatorial ballooning expedition suggested -- Robert S. Kubara

A second equatorial expedition has been suggested by Doctors M. F Kaplon and J. G M. Duthie of the University of Rochester A copy of a letter sent by them to the scientists listed is enclosed, Appendix E. NCAR has offered to provide ballooning advice and perhaps ballooning management assistance if it is deemed essential Panel comments are invited.

12. Election of Chairman.

13 Date and time for next meeting

END OF AGENDA

APPENDIX A. MINUTES
PREVIOUS MEETING

APPENDIX A.

NCAR PANEL ON SCIENTIFIC USE OF BALLOONS

MINUTES, 16-17 SEPTEMBER 1964.

NCAR Panel on Scientific Use of Balloons
Minutes
16-17 September 1964

The meeting was called to order at 1:00 p.m. on 16 September 1964 with the following members present: James Angell, Allen Hynek, Urner Liddell and Edward Ney. Present from NCAR were: Thomas Bilhorn, Robert Kubara, Vincent Lally, Alvin Morris, Daniel Rex, Walter Roberts, Stanley Ruttenberg, Samuel Solot and John Sparkman.

Mr. Morris indicated that Drs. Peter Meyer, John Strong and Verner Suomi were unable to attend. Dr. Suomi is assuming new duties at the Weather Bureau and was unable to get away; Dr. Strong is ill; Dr. Meyer was unable to resolve a prior commitment. Since a new Department of Defense representative has not yet been named, the DOD advisors were not invited.

Dr. Rex asked the Panel's reaction to the new schedule of the meeting--starting at noon on one day and ending at noon the following day. There was general agreement that the new schedule was excellent.

Chairman Ney then called the Panel's attention to Agenda Item 1 - Approval of Minutes of Meeting of 19 May 1964. The Panel deferred action on this matter until the members could study the minutes more carefully since none of them had been present at the last meeting.

Discussion of Agenda Item 2 - The Palestine Clam-Shelter Building - was initiated by Dr. Rex who commented that an inflation shelter has been on the Panel agenda and in NCAR's plans for the past two years. The Panel had made suggestions and taken note of progress in the past. We now believe that we have a practical and effective shelter plan and a realistic estimate of its cost. NCAR management has approved the plan for construction, but we wish to have Panel endorsement of the plan before seeking NSF approval.

Dr. Rex had written letters to Dr. Alvin Howell and Dr. Martin Schwarzschild requesting their individual opinions as to the advisability of constructing the shelter. Copies of their responses (attached as Appendix A) were distributed to the Panel members.

Dr. Roberts then pointed out that the inflation shelter had been deleted from the fiscal 1966 budget request with the understanding that NSF would receive a request for supplemental funds for construction of the shelter. He further stated that he felt that the NCAR staff had done a magnificent job of evaluating the capabilities and usefulness of the shelter. Although the staff and Dr. Roberts are completely convinced that the shelter will be a substantial asset to the ballooning program, Dr. Roberts felt the need of a firmer endorsement from the Panel that the inflation shelter should be a positive goal for NCAR before proceeding further.

... the inflation shelter plan included the following ... of use with expected future and currently proposed ... strength of the building and its ability to withstand ... loading with varying degrees of opening and in various ... relative to the wind; increased safety of flight operations, ... density of flight operations; better performance of scientific equipment due to more deliberate and thorough ground check; and reasons for the location of the shelter from the previously proposed site.

Action No. 1: It was moved and seconded that the Panel endorse NCAR plans for the construction of the balloon inflation shelter as presented. Motion passed with Chairman Nay abstaining.

Further discussion of the inflation shelter indicated that some concern existed because the cost estimate was not a firm bid and because there was no price comparison between the clam shelter and other possible designs. It was pointed out that NCAR may have to wait two years to obtain funds to build a shelter and that no contractor would make a bid which would remain binding that long. Also, other design configurations had been considered and had been abandoned for reasons which included ... strength and utility. Detailed cost comparisons did not therefore seem warranted. NCAR felt that the cost estimate was as realistic as possible.

Agenda Item 3 - Proposal for Support of the Spectro-Stratoscope ... Program - was the next item of discussion. The Panel had requested at the last meeting that we obtain comments from outside of NCAR. Copies of the replies to Dr. Roberts' enquiry were distributed to the Panel (attached as Appendix B). Mr. Lally indicated that Mr. Sparkman has been tentatively assigned to the program as manager, that Kiepenheuer has decided to purchase an NCAR developed PCM system, and that Kiepenheuer has proposed to obtain support for balloons, helium, etc. from a US agency. Discussion emphasized that this was an international cooperative program of some importance and that the support required of NCAR is fundamentally operational in nature.

Action No. 2: The Panel endorsed the scientific objectives of the proposal and recommended that NCAR support the program, with the understanding that costs to NCAR would be nominal support costs, not to include balloons, helium, or other directly assignable costs. It was so moved, seconded and carried unanimously.

Mr. Lally, referring to Agenda Item 4 - The IQSY Expedition in India, discussed the background of the IQSY program. He said that responsibility for the program has been assigned to the National Science Foundation and that NSF had suggested that NCAR manage the program. In line with NCAR policy that we avoid accepting and operating field projects other than at our fixed bases, it was decided that NCAR would contract with an industrial group to run the program and that NCAR would provide a program manager and a scientific coordinator.

Mr. [illegible] reported that since there was no record of large [illegible] flying with reliability through the cold [illegible] programs, NCAR had carried out a test program in Panama. As a result of the test program, NCAR had selected Winzen balloons with the stipulation that the balloons be manufactured in Minneapolis with the usual 100% inspection by NCAR, and that manufacture be supervised by a Winzen employee of NCAR's choice. NCAR will take enough balloons to India to provide a 50% back-up for the flights planned.

Mr. Kelly reported that Raven Industries had been selected to [illegible] the field program and that two payloads are planned on most flights. The Indians will provide several observers and will fly [illegible] of their own. A field trip to make diplomatic and logistic arrangements and to select sites is planned.

Action No. 3: It was moved and seconded that the Panel notes with interest the NCAR plans for the IQSY expedition to India, and it (the Panel) assumes the scientific value of the experiments has been evaluated by other means. Motion carried unanimously.

Mr. Kelly then asked the Panel's opinion of NCAR's assumption of this type of program. It was pointed out that previous Panel advice to NCAR was to learn the art and not be simply a contracting agency. In this case we are trying to employ our managerial and technical abilities to best advantage while still giving industry the opportunity to participate and so retain its capability. The Panel informally endorsed Dr. Hay's statement that the approach to the program and its handling are impressive.

Session adjourned until the following morning.

The meeting was called to order again at 9:00 a.m. on 17 September 1964 with discussion of Agenda Item 5 - Annual Report. Discussion was concerned with means to make the annual report more useful. General comments were that cost and budget information should be added to the flight summaries; that a summary sheet for all flights be included to [illegible] in referring to one particular flight; that, if possible, a comment be included as to the scientific results obtained; and that the accuracy of information regarding free lift and ascent rate be carefully checked. There were also several general suggestions concerning development programs specifically materials research, high altitude balloons, and shape configuration analysis using the computer.

Action No. 4: It was moved and seconded that the Panel recommends in developing future plans that NCAR consider computer calculations of shapes involving configurations with circumferential tension. Motion carried unanimously.

Action No. 5: The Panel took note of and discussed the 1963 Annual Report, recommending that in the future each scientific project be described more fully and suggesting that a concise flight summary be provided in which page numbers of the detailed individual summaries are given.

Mr. Lally then distributed a statement concerning actions taken by NCAR on recommendations made by the Panel at earlier meetings (attached as Appendix G).

The Panel then observed that there will be a notable eclipse during 1966 and discussed the possibility for use of balloons, including tethered balloons, for an expedition during the eclipse.

Action No. 6: It was moved and seconded that NCAR make informal enquiry as to progress of the tethered balloon project at NOTS with a possible view toward future cooperation. Motion carried unanimously.

Action No. 7: It was moved and seconded that NCAR take note that a very auspicious total solar eclipse will occur in May 1966 in South America and the South Atlantic which will offer possibilities for good eclipse observations by balloon-borne instruments. Motion carried unanimously.

Following the discussion of NCAR actions on previous Panel recommendations, the Panel returned to Agenda Item 1.

Action No. 8: It was regularly moved and seconded that the minutes of the previous meeting be accepted as read. Motion passed unanimously.

The meeting was then adjourned without setting a time for another meeting.

End of Minutes

APPENDIX B.

ANNUAL REPORT -- NCAR SCIENTIFIC

BALLOON FACILITY.

(Bound Separately)

APPENDIX C.

INSTITUT D'ASTROPHYSIQUE REQUEST

FOR BALLOONING SERVICES.

80301

5 August 1965

Dr. L. Delbouille
Universite de Liege
Institut d'Astrophysique
Cointe-Sclessin
BELGIUM

Dear Dr. Delbouille:

Many thanks for your letter of July 29th, which has been received while Dr. Roberts is away from the office. He will be happy to see it, together with the one from Dr. Migeotte, when he returns toward the end of the month.

Meanwhile, I have sent your letter and enclosures on to Dr. Daniel F. Rex, who is Associate Director of NCAR and Director of the Facilities Division. The decision as to the scheduling of your experiment will be in hands, so I'm sure you will be hearing from Dr. Rex or one of his colleagues directly.

With best wishes.

Sincerely,

Stanley Ruttenberg
Assistant to Dr. Roberts

cc: D. F. Rex
SR/es

UNIVERSITÉ DE LIÈGE

INSTITUT D'ASTROPHYSIQUE

CONTE-SCLESSIN (BELGIQUE)

AUG 3 1965

29 July 1965.

Dr. W.O. ROBERTS
Director - National Center
for Atmospheric Research
BOULDER (Colorado)
U.S.A.

Dear Dr. Roberts,

Now back in Belgium, we have, Dr. Roland and myself, to thank again you and your collaborators (in particular Mr. A.L. Morris) for your excellent reception, the help and all the advices which have been given to us during our last visit.

We have also visited the balloon facilities in Holloman Air Force Base, and our opinion is now clear. The telemetry and ground command possibilities offered by the NCAR do fit much better our experiment, so we have no more any reason to hesitate. You will find, here enclosed, a "more official" letter signed by Prof. Migeotte, and applying formally for NCAR collaboration to fly our gondola.

Confident that our project will be considered with attention, we thank you again, and repeat that we will be pleased to receive you at the Jungfraujoch.

Very sincerely yours,

L. DELBOUILLE

LD/jd.

UNIVERSITÉ DE LIÈGE

INSTITUT D'ASTROPHYSIQUE

CONTE-SCLESSIN (BELGIQUE)

30 July 1965.

Dr. W O ROBERTS
Director - National Center
for Atmospheric Research
BOULDER, Colorado
U.S.A

Dear Dr. Roberts,

Drs. Delbouille and Roland told me how instructive has been their visit to NCAR, and how good are the facilities of the Palestine base.

As you already know, we are preparing now, with the support of the belgian government, a balloon-borne experiment to study the solar spectrum, at high resolution, in the 1.2 to 3 microns region.

You will find, here enclosed, a brief report about these plans. May I officially apply to receive the assistance of NCAR to fly our gondola, at your best conditions ? We actually hope to be ready for a first flight at the end of the autumn 1966.

NCAR telemetry and ground command facilities will fulfill perfectly our requirements, enabling us, in fact, to increase the flexibility and the efficiency of the first planned instrumentation.

If this demand receives your attention, we will be pleased, of course, to provide you any suitable additional information.

M. MIGEOTTE.

MM/jd.

Tentative report

Liege program of high resolution solar spectroscopy from a balloon

---

The study of the solar spectrum in the lead sulfide region (more precisely between 1.2 and 3 microns) is an important problem. Some hydrogen and helium lines appear in that domain, in addition to many other solar lines of relatively high excitation potential. The Michigan atlas, recorded in 1949, is still the only publication covering the parts of this region that we can reach from the ground. Its resolving power of about 30,000 (0.1 cm^{-1}) is not sufficient to give the possibility of studying the profiles of the majority of the solar lines and it seems now feasible to remap the same regions, from a high altitude station, using the latest possibilities of cooled PbS cells and "echelle" gratings of high efficiency. We plan to start such a program in about one year, using the facilities of our laboratory at the Jungfraujoch station.

However, it will be very useful to extend the same kind of observations to fill the "gaps" in the Michigan atlas due to telluric water vapor bands. A high altitude balloon is a powerful tool for such a study, in spite of the fact that many water vapor and carbon dioxide lines will still appear in the records.

We must insist on the importance of reaching the highest possible resolution. Solar physicists are now much more interested in lines profiles, and in center to limb variations of these profiles, than in the simple detection of new solar lines with insufficient resolution. In any case, a high resolution will also help to resolve the blending of solar and remaining telluric lines.

It is possible to estimate that a resolution of about 100,000 will be necessary to reach with sufficient accuracy the profiles of the majority of infrared solar lines. Actual gratings (single passed) have a theoretical resolution of the order of 150,000 at 2.5 microns and 300,000 at 1.25 micron, but it seems difficult (even with the Jungfraujoch installation) to reach easily these values, the limitation being given by the insufficient sensitivity of the detectors.

We have thus decided to design a balloon-borne equipment able to give the actually highest possible resolution, with a solar image of 50 to 60 mm in diameter, as needed by the plans to study center to limb profiles variations.

We have had contacts with a few european colleagues : Dr. de Jager (Utrecht), Dr. Neven (Brussels), Dr. Müller (Geneva). They are interested in our effort to design such an equipment, and they plan to use later on our gondola, in collaboration, to study specific problems.

We shall use a 35 cm diameter Cassegrain reflector (see fig. 1, mirrors M_2, M_3, M_4) installed vertically in the gondola and receiving the solar radiation from a plane mirror (M_1) accurately guided by a servomechanism to maintain the solar image fixed. The entire gondola will be oriented in azimuth by a flywheel actuated, from simple commercial sensors, with an accuracy of a few degrees.

The orientation in declination and the fine guiding in azimuth will be obtained in moving only the relatively light plane mirror. The spectrometer, installed also vertically, parallel to the telescope, will be an Ebert-Fastie of 2,5 meters focal length, equipped with a Bausch and Lomb "echelle" grating of 102 x 208 mm, working at 63°, double-passed with an intermediary slit. It will use a mirror of 40 cm diameter and work at about F : 18. A good PbS cell, cooled with liquid nitrogen, will be used, to reach maximum resolution. In some flights, a broad-band source associated with a fixed thickness Fabry-Perot in an auxiliary optical path through the spectrometer will give fringes useful for accurate interpolations of lines positions.

At the beginning, for the first flights, we shall probably not use a very elaborate guiding system : to study the center of the solar disk, an accuracy of $\pm$ 5', which is easy to obtain, will be good enough. What we keep in mind is to reserve, from the beginning, the possibility to add later on various developments : association of a scanning Fabry-Perot interferometer in serie with the spectrometer, in order to obtain higher resolution to observe the profiles of some solar lines and installation of a very accurate guiding system for center to limb variations studies.

To collect all the obtained information, we have decided to have on-board storage in digital form, on magnetic tape. It will be very useful to have the possibility to act, from the ground, on some parameters : gain and time constant of the amplifier, scanning speed, order to skip part of the pre-recorded program, to give some examples. To make it possible, a sufficiently good telemetry will be necessary, permitting to "see" immediately the spectrum and associated with ground-command facilities.

The total weight of the equipment will be of the order of 1200 to 1800 lbs and we hope to be ready for a first flight in autumn 1966.

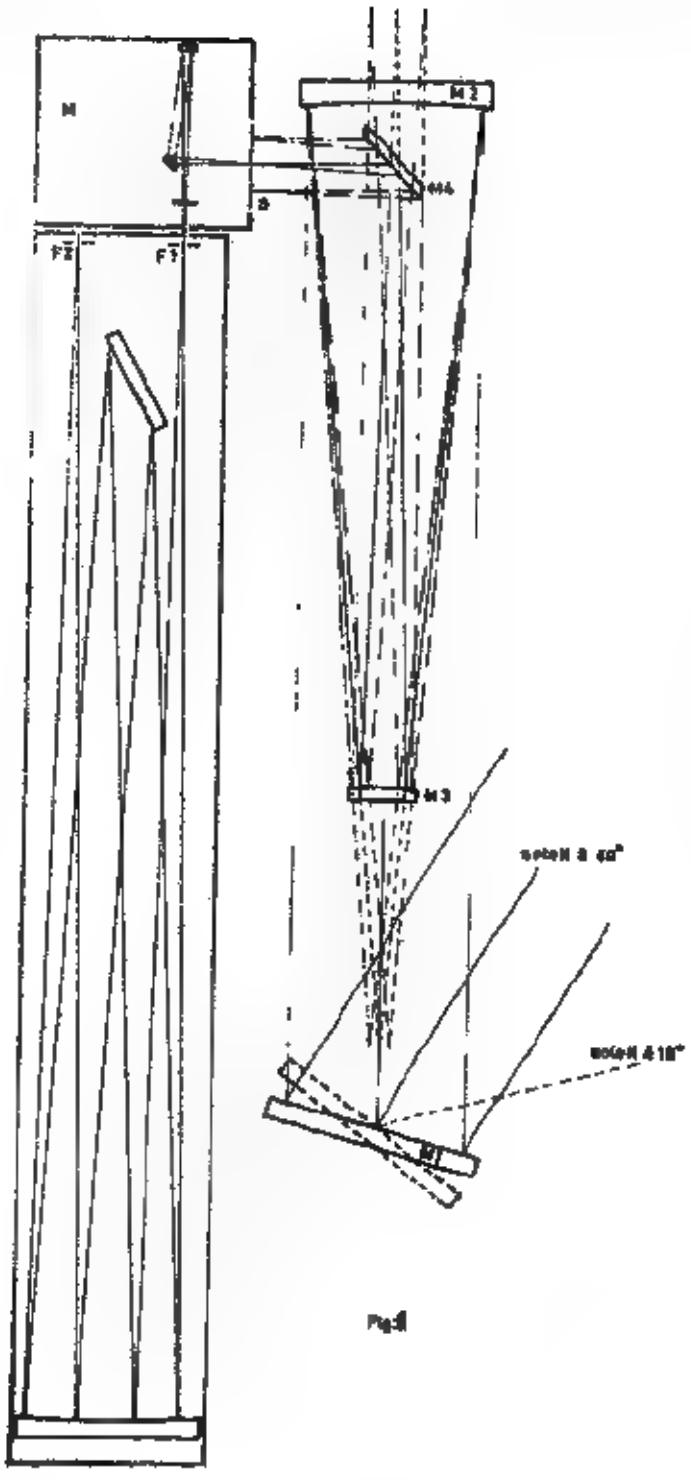

Fig.8

APPENDIX D.

UNIVERSITY OF CALIFORNIA REQUEST FOR BALLOONING SERVICES.

University of California
Space Sciences Laboratory
Berkeley 4, California

September 3, 1964

UCBSSL No. 192

PROPOSAL FOR HIGH ALTITUDE
[redacted]

Duration: Two Years

First year: $1,361,322
Second year: $2,454,018

Principal Investigator: Luis W. Alvarez

Luis W. Alvarez
Prof Luis W Alvarez
Principal Investigator

Burton J. Moyer
Burton J. Moyer
Chairman, Physics Dept.

Samuel Silver
Director

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PROPC . HIGH ALTITUDE PARTICLE PHYSICS EXPERIMENT

L. W Alvarez, W. E. Humphrey

I Introduction

Until about ten years ago, the discovery of all unstable "fundamental particles" had come from cosmic-ray experiments. The pion, the muon, the K mesons, and the three hyperons (Λ, Σ, and Ξ) were all seen first in cosmic-ray experiments. In the past ten years, large accelerators have almost completely supplanted the cosmic radiation as a source of particles for studying the fundamental interactions.*. Cosmic ray physicists have for the most part abandoned their studies of the interactions of the particles and have concentrated their attention on the cosmological aspects of the radiation. This situation has arisen from the well-known fact that artificial beam intensities in the 1-25 BeV energy region far surpass those available in the cosmic radiation.

The situation in the 100-10,000 BeV energy range is strikingly different. There is no artificial intensity now available and none as high as 300 BeV will be available for the order of ten years. It has generally been thought that the cosmic ray intensity available in this region is so low as to make experiments with "natural beams" quite unattractive. We believe, because of the almost simultaneous emergence of a number of seemingly unrelated techniques, that cosmic-ray experiments of a meaningful nature in the range 100-1,000 BeV can be carried out in the upper atmosphere at altitudes around 100,000 feet. [1]

II. Proposal

The environment mentioned above is accessible by balloon and affords flux densities which are useful in terms of present-day high-energy-experimental techniques. We propose to build and fly a balloon experiment capable of making measurements of the momentum of the "natural beam" and preliminary studies

of proton-proton interactions in the energy range above 100 BeV.

In concept this experiment is a return to a rich and abandoned lode with the new tools of the past decade. These new developments offer a refinement in precision in comparison to traditional cosmic-ray experiments which will make possible more detailed studies in and beyond the energy range now planned for exploitation with accelerators to be built in the next decade. In this context the experiment can reveal the gross features of the high-energy physics of the immediate future and, at the same time, perhaps provide helpful guidelines to the design of the machines being planned. In a broader context the realization of this experiment will form a basis of technique and experience for the further practicable exploration into regions of even higher energy.

The initial cost (see Appendix I) of the proposed program is small in comparison to that of the currently-known method of artificially producing high-energy-proton beams or, even, of studying proton-proton interactions at very high energies with storage rings.[2] Its projected operating costs, in terms of "dollars per event measured", are of the same order as those of present practice at lower energies.

III Physical Description of the Experiment

Before discussing what kinds of experiment might be done at high altitudes, let us first examine, in a general way, the proposed arrangement of the experiment, and then take stock of what is available in the upper atmosphere for an experiment.

A. Experimental Arrangement

A system which fulfills the criteria of the previous section is shown schematically in Figure 1. It may be divided functionally into two parts.

The "beam" portion utilizes the Cerenkov threshold effect in gas at low pressure to detect the passage of a proton of energy greater than 100 BeV.

This enables one to discriminate against unwanted particles at lower energies by using the Cerenkov detector output as a firing pulse to wide gap spark chambers in the "experiment" portion. The three principal functions of the "experiment" section are:

1. The analysis of the momentum and direction of an incoming proton obtained by recording its orbit in a transverse magnetic field. The analysis is done by the use of a combined spark chamber/emulsion stack technique which identifies the proton in time and space.

2. The provision of a two-meter liquid hydrogen target for p-p interactions.

3. The display and recording of the trajectories of the interaction products which result from the traversal of the proton by using a wide-gap spark chamber in a second, transverse magnetic field.

After a flight the spark chamber photographs are scanned and measured. Data from the upper chambers give a rough estimate of the momentum of the proton. For those events where greater precision is desired, the emulsions may be scanned. From a knowledge of the proton's initial direction and momentum and data from the interaction chamber films, the vertex can be recreated and the interesting properties of the interaction products computed.

During its flight the system functions automatically and reports the relevant details of its operation to a ground base. A typical balloon flight will probably last about 24 hours. The anticipated duration of the series of balloon experiments is from three to seven years, depending on how well the experimental results live up to the optimistic forecast.

B. Nature of the Primary Radiation

The particle "beam" consists of the natural cosmic rays at the balloon altitude. At altitudes in the vicinity of 100,000 feet, the cosmic rays

are principally primary protons of energy greater than 10 BeV. The Cerenkov trigger system eliminates energies less than 100 BeV, and in the experimental arrangement described above, the flux of particles through the system will be about 10 min^{-1}.

The intensity of primary protons in the energy range above 100 BeV is usually expressed in terms of an "integral flux", J_E, where J_E is the number of particles per cm^2 per steradian per second with energy greater than E. The flux, J_E, as a function of E, is shown in Figure 2. Over the range of interest the flux is given approximately by,

$$J_E = 3\, E^{-1.5}\ cm^{-2}\ sr^{-1}\ s^{-1}$$

with E in BeV. We now introduce a term which is common in the cosmic-ray literature, the geometrical factor is the product of the detector area and the effective solid angle of the detection system. If we have a flux, J_E, and the geometrical factor, G, the counting rate, R_E, is given by,

$$R_E\,(E) = J_E G \text{ events } s^{-1}$$

For our experiment (which we have not yet optimized for counting rate) we have an effective detector area of .4 m^2 and a solid angle of .025 sr (see Figure 5). This gives a G factor of 100 cm^2 sr and a counting rate for protons of energy greater than 100 BeV ($J_{100} \sim 2.5\ 10^{-3}$) of,

$$R_E\ (> 100\ \text{BeV}) = 0.25$$

which is about 15 min^{-1}. Allowing for the inefficiency of the Cerenkov trigger and attenuation of the primary proton before reaching the target, the proton flux through the hydrogen target should be about 10 min^{-1}. To put this number into proper perspective, we note that the 72-inch Hydrogen Bubble Chamber at LRL, Berkeley, pulses 10 times per minute and that it has operated usefully

for long periods of time with approximately 3.6 K^- mesons incident per picture, yielding a particle flux of 35 min^{-1}.

We allow this flux to traverse the liquid hydrogen target, chosen because of the resulting great simplification in experimental interpretation. The target is two meters long and the probability of interaction is about 20%. We therefore expect to observe about two interactions per minute or 3,000 per 24-hour flight. Because of the character of the cosmic-ray spectrum, about 600 of these interactions will involve protons of energy greater than 300 BeV, and about 100 of them will involve protons of energy greater than 1,000 BeV.

The mean free path for high-energy-particle interactions in the atmosphere is about 50 gm cm^{-2} so it is imperative that the experiment be performed at "balloon altitudes". The density of liquid hydrogen is .07 gm cm^{-3} and our target, therefore, has a surface density of 14 gm cm^{-2}. At 100,000 feet altitude, the remaining air mass has a surface density of 9 gm cm^{-2}. Comparing these densities with the atmospheric interaction length of 50 gm cm^{-2}, it is obvious that no useful purpose would be served by going to higher altitudes. For these reasons, we will consider that the normal ballon altitudes of 85-100,000 feet are adequate for the experiment.

In addition to the proton flux, there is also an alpha particle flux of about 7% the intensity of the proton flux with about the same energy distribution in terms of energy per nucleon.[3] Other heavier cosmic-ray components are well below 1% of the proton flux. All cosmic rays heavier than protons should be easily identified by the large pulses they produce in counters.

In summary, then, the effective cosmic-ray "beam" can be thought of as three beams; a 10-per-minute, 100-800 BeV proton beam, and the weaker alpha particle and 1,000 BeV proton beams. These components of the beam may be separated and the momentum should be known to 10% or better for most particles. The nature of the beam can be altered in later flights by inserting into

at target . ...ter to produce a secondary meson and hyperon beams. The obvious way to do this is / the experiment under a few interaction lengths of atmosphere -- say around 75,000 feet. The principal difficulties with this idea are the large electron background which might plague the Cerenkov trigger device, and the problem of identifying the secondary particles.

G Purpose of the Experiment

Studies of cosmic-ray interactions in nuclear emulsion reveal several interesting properties One striking effect is that the average transverse momentum of secondaries is very close to .3 BeV/c, independent of the energy of the incident primary particle [4,5] Another interesting fact is that the inelasticity of the interaction (energy lost by the primary proton) is about 30% at the lower energies, decreasing as the energy increases.[6] Also, the interaction length is fairly independent of primary energy and is around 50 gm cm^{-2}

The secondaries usually have energies well below 1 BeV in the center of mass system.[4] Although interactions taken as a group appear to be symmetric with respect to a plane normal to the incident particle, the individual interactions are sometimes quite asymmetrical.[5,7] More detailed knowledge than this is very hard to obtain with conventional emulsion techniques.[7] There are several reasons for this

1. The analysis of events depends strongly on the knowledge of the momentum of the incident particle in order that the transformation to the center of mass may be carried out correctly With previously used emulsion techniques, the energy of the incident particle may be uncertain by as much as a factor of four [8]

2. The method of detection of the events is highly biased in favor ...vents with high multiplicity of secondaries which produce showers

that serve as the signature of an interaction.[4]

3. The target particle is unknown.

4. Particles are slow.

The experimental techniques outlined in this proposal largely overcome all of these deficiences. The next closest present solution to these difficulties is the work of the Russian group at the Pamir cosmic ray station done with cloud chambers and total absorption proportional counters on a 3900 meter mountain.[9] Even these experiments have about a 30% error for the energy of an incident particle and a rate of 4×10^{-4} events per minute with a LiH target of .10 interaction length. We expect a four order-of-magnitude increase over this in our experiment using the 25 interaction length hydrogen target.

The energy region we propose to study is of particular interest. Above 1,000 BeV, the production of secondary particles can be described phenomenologically by the reaction.

$$N_1 + N_2 \longrightarrow N_1' + N_2' + F_1 + F_2$$

where N_1 and N_2 are the original nucleons and F_1 and F_2 are "fireballs" or clusters of mesons which trail behind the final nucleons, N_1' and N_2'. The fireballs are considered to break up isotropically in their center of mass.[10] In this model, anisotropic secondary emission can be explained in terms of one fireball being weak or absent. The interesting thing about the energy dependence is that below 1,000 BeV, the fireballs appear to separate so slowly that they can interact with each other or form a "dumb-bell"-shaped fireball. Both the distinct fireballs and the fused fireballs could be studied with the proposed experimental techniques. Although the fireball model is pure phenomenology, there are several other theories on a more sound theoretical footing which, under the proper assumptions, are believed to reproduce the general predictions of the fireball model.[11] The fireball model describes

only a portion of the observed events, and even those which are characterized by the fireball hypothesis show deviations. One such deviation is the frequent appearance of a pion which accompanies one of the nucleons after the interaction. This pion is thought to be the decay product of a nucleon resonance produced in the interaction. There is clearly a great deal yet to be learned about the interaction mechanism for proton-proton collisions in the 1,000 BeV energy region.

The above paragraphs serve to suggest that the present proposal would allow an analysis of cosmic ray events along conventional lines but with far more precise information about each interaction, which could be used to test the several existing models for cosmic ray interactions. In addition, there are numerous other experiments proposed for super-high energy accelerators that would also apply to balloon experiments [12] More than likely, this would be merely a starting point, and the ability to examine events in detail not previously available in a relatively unexplored energy range would bring to light new phenomena requiring further investigation.

IV. Experimental Techniques and Design of the Experiment

The experiment we propose to build is a complex undertaking and has a strong developmental aspect, inasmuch as some of the techniques planned for it are novel and some of its components will have to be carefully designed and modeled in prototype. In this section we describe the elements of the experiment and examine the pertinent developmental problems of each from the standpoint of physical and engineering plausibility. The design we present is by no means a final one, but shows that it is possible to meet the experimental criteria within the weight and evnironmental constraints. Although it will be necessary and desirable to make use of computer solutions in the final design, we believe that such a study will present no essentially new results to the analysis presented here

A. The Cerenkov Trigger

One basic problem with cosmic ray balloon experiments is the large flux of low energy (10 to 100 BeV) protons that are of little interest and must be rejected. We propose to make use of the Cerenkov light of a proton passing through gas in order to discriminate against the low energy proton background. For the balloon altitudes at which our experiments would be executed, the Cerenkov light from the atmosphere has a threshold at a proton energy of about 300 BeV. Although this atmospheric Cerenkov light could probably be used as a trigger for protons in excess of 300 BeV,[13] there are several advantages to using a gas other than air. By using a gas of relatively high index compared to air (for example, butane or carbon tetrachloride), the Cerenkov threshold energy can be reduced to about 100 BeV for protons. There are two big advantages to using the lower 100 BeV threshold. First, there is a far larger flux of particles at the lower proton energies, and the proton interactions are still of interest in this energy range. Second, the increased index of refraction results in about a five-fold increase in the photon yield of the particle.

The increased photon yield makes practical a fully enclosed Cerenkov counter of reasonable dimensions. Protons having an energy appreciably above the 100 BeV threshold (say 200 BeV) will yield a sufficient quantity of photons in passing through 10 meters of gas to produce about 6 photo-electrons at the cathode of a photomultiplier, which is sufficient for reliable triggering. (If the Cerenkov threshold is 100 BeV, then the trigger efficiency actually rises to 75% of its maximum efficiency at 150 BeV. The index of the gas can be increased to give an effective 100 BeV cutoff, together with a slight increase in the photon yield over that used in these calculations.) The figure of 6 photoelectrons is achieved through the use of a light collector consisting of aluminized mirrors, and a photomultiplier with a fused silica face (in order to make

ful use of the ultraviolet-rich Cerenkov light) (See Figure 1). For a 100 BeV threshold, the maximum half angle for the cone of Cerenkov light is 10 milliradians, which is small compared to the angle of acceptance required for the protons. Therefore in the design of the light collection optics, it is possible to treat the Cerenkov light as though it has approximately the same direction as the proton. The first mirror serves to image the exit aperture of the experimental train onto collimating stops, so the Cerenkov light is only collected from protons which would pass through the entire apparatus. The required mirror surface is a hyperbola of revolution. The second mirror (an ellipsoid of revolution) serves to further concentrate the light onto photomultipliers located at an even smaller image of the exit aperture. The demagnification of the exit aperture at the photomultiplier is about 7 to 1, so that a 4 inch diameter photomultiplier would detect protons traveling toward a 28 inch diameter aperture at the exit aperture.

The principal source of background for a Cerenkov trigger is electrons. Electrons of 50 MeV energy or greater can trigger the system. The electrons can be discriminated against by placing a radiation length of lead in front of a scintillation counter and detecting the shower produced by an electron. However this technique is only effective for electrons with energies in excess of about 500 MeV. The lower energy electrons can be eliminated by deflecting them out of the "beam" in a magnetic field such as the one that is proposed for momentum analysis of the protons. Cosmic rays below about 10 BeV would be deflected by the earth's magnetic field, so the electron background would consist of electrons produced by proton interactions in the atmosphere above the balloon.

To further reduce accidentals, the Cerenkov trigger would be used in coincidence with scintillation counters just below the Cerenkov light collector and just above the hydrogen target. The counter in front of the target could also

be used to discriminate against particles which interact in the apparatus above the target, by detecting a scintillation pulse in excess of that for a single relativistic particle. The electronics for the Cerenkov counter photomultiplier should be fairly fast (about 10 nanosecond time resolution) up to the pulse height discriminator, which should be set for two or three photoelectron pulses. There is one 5-inch tube (RCA-C70133) that has extended response in the ultraviolet and good time resolution which might do, but quartz-faced 2 inch tubes are available with higher sensitivity in the far ultraviolet, and several such tubes connected in parallel would be suitable for use, at least until a special tube could be fabricated. A quartz faced tube may not be necessary if a "wavelength shifter" is used to convert the ultraviolet light into visible light.[14]

The important practical details that remain to be investigated are the properties of the gas which produces the Cerenkov light and the construction of the light-tight Cerenkov gas container. The gas must be tested to determine that light produced by protons through ionization and recombination is sufficiently small to neglect. Naturally, precautions should be taken to blacken everything possible in the light collector in order to absorb such isotropically emitted light. The gas must also be checked for transparency in the ultraviolet region. The transmission for carbon tetrachloride has been reported in the literature and is satisfactory, but the transmission, and even the exact index of refraction of butane gas must be established. The Cerenkov gas enclosure can be a light structure because the Cerenkov gas is used at approximately local atmospheric pressure. Samples of mylar-aluminum balloon material have been looked at and are probably adequate for the walls of the enclosure. The Cerenkov gas pressure might be used to support the enclosure in the form of a balloon. An alternate light tight enclosure could be fabricated in the form of a bellows-like bag of opaque material. The support cables which attach the experimental apparatus to the balloon would also serve to shape and

support the light-tight bellows. The overall weight of the Cerenkov trigger should not exceed 500 pounds.

B Spark Chamber - Emulsion Techniques

In the energy range of 100 to 1000 BeV, multiple Coulomb scattering is greatly reduced over that normally dealt with in accelerator experiments. In order to take advantage of the potential increase in precision of angular measurement, new techniques must be developed that are capable of measuring angles of the order of a few microradians. We propose that a likely method for accomplishing these measurements is through a union of spark chamber and emulsion techniques.[13] The orbit of a particle can be roughly established (to a fraction of a millimeter) by photographing several spark chambers along the orbit. The precise orbit may be then established by looking in emulsions located along the particle orbit for tracks having the position and orientation predicted by the spark chamber photographs. Flights of about 24 hours would be practical with emulsions. Longer flights would result in increased difficulty of analysis due to a large number of background tracks in the emulsion. The spark chamber serves to provide time resolution and reduces emulsion scanning to a simple operation, while the emulsions provide micron accuracy in measuring the particle orbit. Figure 3 illustrates a possible combination of spark chambers and emulsions.

The ease with which the desired track may be identified from the spark chamber information depends on the number of background tracks. The total primary proton flux is about $2/cm^2$-sec.-sr, or about $1700/cm^2$-sr in a 24 hour flight. Secondaries from interactions in the upper atmosphere and in the apparatus will double or triple this figure. Take as a working figure about $4000/cm^2$-sr in 24 hours. If the position is known to 5 mm and the angle in the emulsion is known to a degree or better (distortion of the emulsion in processing limits the angular resolution), then the background (B) expected for a

our flight in this cell of phase space is

$$B = (\text{flux})(\text{area})(\text{solid angle})$$
$$= (4000)\left(\frac{1}{20}\right)^2\left(\frac{2}{57}\right)^2$$
$$= .12 \text{ background tracks}$$

This estimate is an upper limit to the background. There are several ways to reduce the background problem. One way is to include an additional fourth emulsion plate after the set of 3 emulsions that would normally be used. Any ambiguous tracks found in the first three plates would predict a position in the fourth plate to micron accuracy, and a coincidental track in the fourth plate would be orders of magnitude less likely than in the previous plates. The fourth plate need only be examined in case there is an ambiguity in one of the first three plates. Another trick which could be employed would be to use double emulsion plates arranged to slide against each other under the control of a clock drive Since the time of the interaction is precisely known from the trigger pulse, it is possible to position the plates as they were at the instant the particle passed through, and detect the correct particle by seeking the track which is unbroken at the interface of the emulsion in the region of the emulsion predicted by the spark chambers. Another obvious way to reduce the background is to refine the positional prediction in the emulsion and to improve the angular resolution in the emulsion in order to reduce the size of B. In this regard, recent reports of wire spark chamber performance are encouraging Wire spark chambers avoid the problems of optical recording techniques and their many sources of distortion. The angular resolution might be improved by the use of emulsions which are thinner than the standard .6 mm nuclear emulsion (say 3 mm) and by the use of glass plates with emulsion on both sides of the plate. The latter approach of using two sided emulsion plates is a very attractive arrangement because the angle is then known to a small fraction of a degree by examining the position of the particle before and after

o ir fight in this cell of phase space is

$$B = (\text{flux})(\text{area})(\text{solid angle})$$
$$= (4000)\left(\frac{1}{20}\right)^2\left(\frac{2}{57}\right)^2$$
$$= 12 \text{ background tracks}$$

This estimate is an upper limit to the background. There are several ways to reduce the background problem One way is to include an additional fourth emuls on plate after the set of 3 emulsions that would normally be used. Any ambiguous tracks found in the first three plates would predict a position in the fourth plate to micron accuracy, and a coincidental track in the fourth plate would be orders of magnitude less likely than in the previous plates. The fourth plate need only be examined in case there is an ambiguity in one of the first three plates Another trick which could be employed would be to use double emulsion plates arranged to slide against each other under the control of a clock drive. Since the time of the interaction is precisely known from the trigger pulse, it is possible to position the plates as they were at the instant the particle passed through, and detect the correct particle by seeking the track which is unbroken at the interface of the emulsion in the region of the emulsion predicted by the spark chambers. Another obvious way to reduce the background is to refine the positional prediction in the emulsion and to improve the angular resolution in the emulsion in order to reduce the size of B. In this regard, recent reports of wire spark chamber performance are encouraging Wire spark chambers avoid the problems of optical recording techniques and their many sources of distortion. The angular resolution might be improved by the use of emulsions which are thinner than the standard .6 mm nuclear emulsion (say .3 mm) and by the use of glass plates with emulsion on both sides of the plate. The latter approach of using two sided emulsion plates is a very attractive arrangement because the angle is then known to a small fraction of a degree by examining the position of the particle before and after

traveling through the glass, with essentially no corrections necessary since the glass is relatively distortion free.

As an example of the momentum resolution attainable by emulsion measurements, consider the arrangement of Figure 3 for the case of standard nuclear emulsions (0.6 mm thick) supported on glass plates 3 mm thick. The error in determination of the momentum can be attributed to the uncertainty of the sagitta measurement. One source of sagitta error is the measurement of the track coordinate, which can be done to one or two microns. Another source of error is the mechanical stability of the position of the emulsions with respect to each other, and this is probably also of the order of a few microns. The remaining source of error is scattering in the central emulsion plate. The plate has a nuclear interaction length of only about 1 g/cm^2, so that nuclear interactions will be rare (2%), and undetectable interactions will be much rarer still. For these reasons, only the Coulomb multiple scattering will be considered. There is a "tail" of large angle single scatters for the case of Coulomb scattering, but for the most part, the rms sagitta error (in cm.) will be given by

$$\Delta s = \frac{3\ 1\ \ell}{p}$$ where p = particle momentum in MeV/c and

ℓ = emulsion separation in cm.

The expected sagitta (in cm.) is

$$s = \frac{^2\ell^2}{p}\ (.3H)$$ where H is the magnetic field (uniform, in kilogauss)

It is interesting to note that if the only source of error were Coulomb scattering, then the fractional momentum error would be independent of momentum, as given by the formula

$$\frac{\Delta p}{p} = \frac{\Delta s}{s} \cong \frac{5}{\ell H}$$

This result is valid up to momenta at which the sagitta measurement error comparable to the false sagitta from Coulomb scattering, so it would be reasonable to choose ℓ to give approximately equal measurement and Coulomb errors at the higher useful momenta. As an example, for ℓ = 50 cm, and $p = 10^6$ MeV, Δs = 1.5 microns. Taking the combined sagitta error to be about 3.5 microns, and assuming a magnetic field of 3 kilogauss, the momentum is determined to better than 8% for all protons having a momentum less than 1000 BeV/c.

C Wide-Gap Spark Chambers

The wide-gap spark chamber, or "discharge chamber", recently developed by Alikhanian and his collaborators,[5] triggered by a pulse from the Cerenkov trigger, completes the experimental train in the balloon load. This type of spark chamber appears to be able to provide spatial resolution comparable to that of a hydrogen bubble chamber.

Spark chambers of this type have been built by Strauch[16] at Harvard, and their performance is excellent in all respects. His chambers have the form shown in Figure 4. They are sensitive for 5 μ sec and require no clearing field. The pulser is a Marx generator using 15 standard "color television" capacitors charged in parallel to 30 kV and discharged, by spark gaps in series, at 450 kV. The light intensity is high enough for photography at f/45, so a good depth of focus can be obtained. Strauch[16] advises taking two photographs, one at f/45 and another at f/12, on the chance that fainter tracks may also be present. He shows pictures with about 20 tracks of good quality in the chamber simultaneously. Tracks can branch, as shown in the left-hand side of Figure 4. He compared the measured momentum of cosmic-ray particles in the upper and lower halves of a 32-inch high-double chamber and found the RMS deviation at 1 BeV/c to be about 1.4% in a 15 kG magnetic

field. This is quite comparable to modern bubble chamber standards

We plan to use these chambers for detecting secondaries of the interactions. Strauch[16] reports that tracks can be seen up to 40° from the electric field direction. Assuming $\beta \cong 1$ for secondaries in the center-of-mass system the median angle, θ_m, for secondaries is given by [4]

$$\theta_m \cong \frac{\sqrt{2m_p c^2}}{E_p}$$

where the subscript "p" refers to primary proton. For 200 BeV protons, θ_m is about 6°, and the detectors should have good geometry for most secondaries from an interaction in the hydrogen target. (Actually, the motion imparted to mesons which leave a fireball that travels backward in the center of mass is such that occasional particles come off at angles of 50° or more in the laboratory system. This is a reason for considering thinner targets such as a LiH target. (See Appendix II)

Evidently there is a good deal of development work being done on these chambers and our major effort will be one of adaptation to the problem at hand One interesting developmental experiment will be seeing if the chambers will operate at 230° K, the temperature of the stratospheric environment or, indeed, if they will operate at cryogenic temperatures as a step in simplifying the design of that portion of the experiment.

D. Superconducting Magnets

Magnetic fields are used in this experiment to provide a means of analyzing the momentum of the incident proton and of interaction products from the target. Because of power and weight constraints, these magnets must be superconducting.

Since 1961, when Kunzler and his collaborators[17] stimulated great interest in superconducting magnets by developing wire cored with a high-field

superconductor, Nb_3Sn, many useful coils have been wound. These magnets operate losslessly, utilizing the effect that, at sufficiently low temperatures and below a critical value of applied magnetic field, high-field superconductors have vanishingly small dc resistance and support high critical current densities ($\sim 10^5$ A cm^{-2}). Though the application of this effect has been far less direct than this simple statement would imply, the physics of high-field superconductors is now essentially understood, at least in phenomenological terms, and there are in fact six firms engaged in the commercial production of small research magnets up to 80 kG.

An early attempt to account for the discouraging critical current degradation observed in superconducting magnets was made by Montgomery[18] and by Chandrasekhar and Hulm[19] who introduced the idea that the degradation was dependent on the size of the magnet. This idea reached the status of a theoretical model by Smith and Rorschach[20], but has been discredited in experiments of Coffee and Gauster[20] and, indeed, by the general experience of workers in the field. The most outstanding testimony to its inapplicability is provided by Kon[21], at Lockheed/Palo Alto, who has wound large-diameter hoop coils as part of an Air Force sponsored feasibility study to provide electron shielding for the Agena vehicle. His largest coil is six feet in diameter, has 33 lb. of 10 mil 3NbZr windings, and performs comparably with small coils (field at origin, B_0 = 800 G, field at windings, B_s = 20 kG, critical current, I_C = 18.5 A).

Large values of integrated field are required to resolve the range of momenta under study in this experiment. Inasmuch as the necessary counting rates dictate the use of a large aperture, the field strengths needed are low. Superconducting magnets producing relatively uniform fields are planned. There are four reasons for this design:

(1) An important benefit of field uniformity in a large-gap magnet is

the weight reduction that results from the lowering of the field at the windings and the subsequent relaxation of the motor forces on the windings. If we consider two simple examples of magnet producing the same field, B_0, at the origin, a current loop and a uniform-field sphere, then the conductor mass required for the sphere is 1.18 that for the loop, but the mass needed to constrain the windings is reduced by a factor of B_0/B_s, where B_s is the field at the surface of the windings of the loop In the coils under consideration this involves combined conductor and constraint weight reductions of about 45%

(2) A second, equally important consequence of lowering the winding field is that one operates the superconductor well below the so-called high-field region where its useful application is just emerging. Therefore, we have the comfort of not having to hinge the success of the experiment on the development of 100 kG techniques.

(3) The use of uniform fields tends to minimize the effect of relative displacement of components in the system and reduces errors.

(4) The uniformity also reduces the computation and errors in the data reduction by increasing the order of the corrections which must be applied In operation, the two magnets will first be precooled with liquid nitrogen and then, if practicable, with liquid hydrogen (the enthalpy to be removed is 10^2 MJ) Liquid helium will then be introduced and, when cold, the magnets will be energized. Before the flight begins they will be shorted with a thermally-activated, superconducting or 'persistent" switch. It will probably be necessary to de-energize the magnets before the vehicle returns to earth and, in any case, one will have to provide a means for protecting the magnets and equipment affected by their fields in the event superconductivity is destroyed and a magnet "quenches". Before discussing the dissipation of the stored field energy of a large, superconducting magnet, let us get a feeling

for its plausibility in this application. Although the magnets ultimately designed for this experiment need only take some approximate form of the general ellipsoid and may have access holes at the poles for photography and, possibly, beam windows on the equator, we will consider a simple example of a large-gap, uniform-field coil.

The 1.5 m-diameter, 15 kG field required for the 1 m-square wide-gap spark chamber is produced by a spherical magnet wound with 10 mil-diameter 3NbZr wire supporting a winding current density, J_w, of 2×10^4 A cm^{-2}. The gap field (in practical cgs units) is given by,

$$B_0 = \frac{8\pi J_w t_0}{30}$$

oriented along the polar axis, $\theta = 0$, and the coil has a radial winding thickness of

$$t = t_0 \sin \theta$$

The mass of this shell is given by

$$M = \frac{15\pi B_0 a_0^2 \rho}{4 J_w}$$

Whereas a_0 is the mean radius and ρ is the density of the windings. In the example under consideration, the coil mass is 690 lb. of which 440 lb. is superconductor, the balance being divided between copper-cladding on the wire (140 lb) to help protect it and stabilize its operation against "flux jumping", and high thermal conductivity epoxy and glass filament to bond the structure.

The stress analysis of the spherical magnet is complicated by the finite thickness and strongly anisotropic character of the wire-filament-epoxy composite. Fortunately, the maximum stresses which arise are comparable to those found in current experience and well within the limits

of the materials. The motor forces on the conductor, averaged over the shell thickness, are radial outward and tangentially directed toward the equator. We resolve these into components normal and parallel to the polar axis and assume that normal component is locally supported by the conductor. The resulting hoop stress, s, is given by

$$s = \frac{3}{32\pi} \frac{B^2 a_o}{t_o} (\sin^2\theta + 4\cos^2\theta) \text{ dyne-cm}^{-2}$$

This stress has a maximum value of 2.8×10^4 lb wt in^{-2} at the poles (where the conductor area tends to zero). This is about 13% of the yield strength of the wire.

The parallel component is supported by the shell and results in a maximum attraction between the hemispheres at the equator of

$$S_y = -9/8 \frac{B^2 a_o^2}{8} \text{ dyne}$$

which gives a compressive stress of 4×10^3 lb wt in^{-2}. This is about 1/5 of the low temperature compressive strength of glass filament epoxy. As a result of this loading there will be additional hoop stresses, tensional at the equator and compressional at the poles, having magnitudes of a few thousand lb wt in^{-2}

On the inside face of the windings the local hoop stress in the wire rises to 2.8×10^4 lb wt in^{-2} and gives local sheer stresses as high as 1.6×10^4 lb wt in^{-2}. This is comparable to the shear strength of the epoxy and may require selected orientation of the glass filament. We plan to examine the problem of forces in detail, paying particular attention to local stability and to the dynamic aspects, as it is very important that the superconductor be immobile with respect to the field. In keeping with current practice, ignoring accessibility requirements, let us gain additional rigidity

for the magnet by winding it with 2 lb wt wire tension on the surface of a stainless steel pressure vessel thick enough to provide elastic stability against the collapsing pressure of the windings. This spherical shell is 2 cm thick and weighs 230 pounds bringing the coil weight to 920 pounds

The stored energy in the field generated by this magnet is 3.5 MJ. If the wire carries 20 A, then the inductance is 1.8×10^4 H. This offers no problem so far as energizing is concerned, a 200 V, 4 kW supply can do it in about half an hour. If the magnet is de-energized or, in the worst case, quenches, the situation is not so pleasant, as one must avoid locally annealing the wire or bringing the field down so fast so as to distort the coils or adjacent apparatus.

The way to obviate the problem of quenching is to spread the disturbance as rapidly as possible thermally and, in the case of a large magnet, let the field collapse at a safe rate. The former can be accomplished by providing high local thermal conductivity to a sink of high specific heat and by breaking the coil electrically into many shorted sections so as to promote the quenching generally by mutual coupling The field can be made to decay slowly by providing a very well coupled secondary of low resistance and a short primary time constant so as to decouple it from the energy Fortunately, this is easy to do in a large coil because the fraction of total volume taken up by windings is small.

The time constant, τ_o, of a spherical shell of resistivity, γ, with a current distribution appropriate to the uniform field does not depend on the number of turns in the shell and is approximately given by

$$\tau_o \cong 2\pi \times 10^{-9} \frac{a_o t_o}{\gamma} = 2\pi \times 10^{-9} \frac{M}{\pi a_o \rho \gamma}$$

where M is the mass of the shell of density, ρ The 140 lb of copper cladding on the wire is an almost ideally-coupled secondary, as well as being electrically

and thermally intimate to the superconductor If we assume these relationships to be perfect so that the specific heat of the 3NbZr is available, then the adiabatic dissipation of 3.5 MJ produces a temperature rise of 120°K Unfortunately, the change in the resistivity of the copper with temperature implies a system time constant of about 6 sec. This sounds rather fast, so we will take advantage of the nonlinearity of the dependence of resistivity on temperature and add another 300 lb of copper to get a time constant of about 10 s

As we are constrained by the vehicle weight limitation, we will assert that this solution is satisfactory, though we recognize that the quenching problem constitutes a major development area in building the bigger magnet When we have dealt with the lesser problem of decoupling the primary and ensured the local protection of the superconductor, we will examine the general effect of field collapse. If the 10 s. afforded by 440 lb of copper proves to be impossibly fast, and something of the order of minutes seems reasonable, there are two alternatives. We can keep the copper in the temperature range of its residual resistivity by cooling it with liquid hydrogen from the target A 300 lb copper shell, surrounding the windings for good coupling but thermally isolated from them, would take about 45 s to dissipate the field energy and boil off about 100 liters of LH_2, a reasonable quantity in terms of the boiling heat transfer coefficient for hydrogen and the available area.

If this is insufficient, we can try another metal, like sodium, which generally surpasses copper electrically and thermally at low temperatures and is about two orders of magnitude better in this application because of these properties and its low density Taylor[22] at LRL, Livermore, has studied the use of sodium for cryogenic magnets and reports obtaining residual resistances of the order 10^{-9} ohm-cm in finished magnet assemblies

If we replace copper with sodium in the example of the previous paragraph, we get a decay time of about 4×10^3 s

In charging the magnet, any shorted turn will cause a dissipation of energy at cryogenic temperatures and lengthen the charging time. However, assuming unity coupling between primary and secondary, the energy transfer ratio, R_W, is related to the primary and secondary time constants, τ_p and τ_s, and is given by.

$$R_W = \frac{\tau_s}{\tau_p + \tau_s}$$

We merely need charge the magnet in a time long in comparison to the secondary time constant to avoid this inconvenience

Another problem to be solved in the development of these magnets is the one of quality assurance for the wire. At present it is practicable to buy wire in 20,000 ft lengths. For the bigger magnet this means about 100 pieces of wire. It will be desirable to wind each piece into a solenoid capable of developing about 20 kG at 20 A, using a coil form designed as a supply spool for the winding machine. Each solenoid will be tested at 4.2°K and then, having passed performance specifications, its wire will be wound into the magnet. In order to keep the handling costs down, we will have to work out simpler techniques for winding solenoids than those in current use. We plan to investigate the possibility of using multi-strand conductor, though the economics of this decision depend largely on what kind of warranty agreement we are able to reach with the manufacturers. The present cost of wire is about \$400 lb^{-1}; we have estimated material costs for our magnets at \$600 lb^{-1} to reflect the necessity of the assurance program.

With the provisional assertion that the quenching problem can be solved with the expenditure of an additional 300 lb of vehicle weight, the

magnet now weights 1,220 lbs Although it is not very elegant in terms of engineering design, it is mechanically rugged and magnetically stable, and it will work in principle. Therefore, it appears that superconducting magnets can provide the needed values of integrated field and still be light enough to be useful

E Liquid Hydrogen Target, Structure and Cryogenics

The essential problem here is first to design a strong, lightweight cryostat that will provide the necessary environment and support for the magnets and target and allow the inclusion of the spark chambers, cameras, and other equipment. Then we must integrate this structure into a vehicle which must not only have sufficient mechanical rigidity for the experiment, but must maintain its integrity in response to the rigors of flight, landing, and transportation. It must also be designed with an eye toward the possibility of internal failure or even catastrophe

In order to investigate design problems and get some feeling for the weight of a vehicle which meets these criteria, let us again adopt the simple engineering approach used in the design of the spherical magnet in the preceding section We will construct the cryostat with stainless steel vacuum walls, in the form of cylinders and spheres of sufficient wall thickness to be stable against a pressure of two atmospheres, and use metallized mylar "superinsulation" on the cold vessels to control the radiation heat load This approach, shown in Figure 5, turns out to be crude "state of the art" but serves to set an upper limit to the vehicle weight and, at the same time, emphasizes that we need not go to the sophistication of spacecraft in our ultimate design.

The magnets are oriented as a quadrupole to provide rotational

stability about the vertical. In this orientation the fields add, though the contribution is only about 1%. To first order, this contribution results in a 120 G gradient across the 3 kG analyzing magnet which does not seem serious in terms of the distortion of its shell. However, this is an effect which must be included in the computer design of the entire system. The hydrogen target supports the magnets. Thus a major source of heat load on the helium is returned to hydrogen temperature and all the cryogenic structures are tied together for mechanical ruggedness. As the vacuum shell must be stiff to the atmosphere, we use its strength against members in tension returning to the cold structure. The major support point for the cold structure is the platform on which the Cerenkov detector reposes, this is also the ultimate tie-point to the balloon. Lateral support for the target and magnets is provided by tension members returning to stiffening rings on the vacuum wall. The estimated weights of the components and structural members is given in Table 1. We see that the experiment seems reasonable from this standpoint with a total estimated weight of 7,760 lb, but the problem of landing is a little troublesome.

The vehicle will strike the earth in a more-or-less vertical attitude and it is undesirable that it land on the vacuum wall. Figure 5 shows a truncated tetrahedral pyramidal cage made from welded steel tubing with the experiment hanging inside, supported by elastic members for shock resistance. This design has the advantage that the balloon can be tied to the cage and that, once on the ground, the vehicle retains some of its vertical orientation and has little tendency to roll. It weights 600 lb, but this figure can probably be reduced in design, or we can turn to other possibilities, such as pneumatic pillows of multicellular structure.

Both the ground-surface and stratospheric heat loads on the cryogenic components are given in Table 2. Fortunately, because the ambient

temperature drops to about 230° K, the radiation loads decrease to 30% of the 300° K value and the conduction loads to about 75%. The heat loads consist of radiation from the warm walls, support conduction, and conduction along electrical leads. All of these can be effectively counterflow heat-exchanged with the boiloff of hydrogen, and in particular helium.

The winding support structure of the magnets also acts as a heat exchanger with liquid helium circulation in imbedded copper tubes fed by gravity from a 37 liter storage vessel near the upper magnet. This supply is adequate for a 24-hour flight, including ascension time. All liquid vessels are pressurized to 1 atm absolute to keep the latent heat of vaporization high in the low ambient pressure of the stratosphere and are provided with surge barriers to prevent liquid loss from possible sudden deceleration during ascension. Hydrogen venting is done at a point well removed from the vehicle, and provision is made to jettison the target contents before landing. The total LH_2 enthalpy to 273° K is about 400 MJ, so the most energetically economical thing will be to pressurize the target and eject liquid directly, though this procedure, as well as the whole hydrogen transport problem, deserves careful study.

F Developmental and Operational Support

Having completed our discussion of the specific elements of the experiment and the vehicle design, we will turn now to examine briefly a few relevant areas that have to do with the development and operation of the experiment. Beyond noting that detailed problems relating to the operational support of the working experiment exist and have practicable solutions, we will confine our attention to the development program and those areas affecting it.

The experiment will be operational in two years. In order to achieve

this we must complete prototype testing by the end of the fifth quarter Evidently some elements of the experiment, the vehicle for example, will require little development and may be designed in detail as soon as the physical design of the experiment is completed Others will require considerable development or prototype effort. Fortunately, most of the testing can be done by "flying" the component in an environment chamber in the laboratory One exception to this is the Cerenkov trigger which depends on the cosmic rays of the stratosphere for its complete evaluation. Thus we must make early contact with the realities of balloon-flying. (See Appendix II)

1. The Balloon

At the present time there are three commercial concerns offering their services to balloon users. These companies will handle all aspects of launching and recovery As a rule of thumb, the flight of a balloon with a volume of V million cubic feet costs about 2V thousand dollars. This rate applies to simple balloon systems in the capacity range of about 1 million cubic feet, such as would be used in the first flights (see Appendix II). The larger and more elaborate balloon systems such as would be required for some of the final flights might cost up to 100 thousand dollars For orientation, the 5 million cubic foot Stratoscope II balloon carried a 3-1/2 ton payload to 80,000 feet and cost 53 thousand dollars We shall, therefore, assume that we do not have to become balloon experts in order to use cosmic-ray protons as bombarding particles.

We expect to start making use of these services in the third quarter to obtain data for the Cerenkov trigger development and we will establish a field support effort early to handle these experiments and get familiar with the general problem.

2 Telemetry

The engineering problems associated with the transmission of important flight and experimental data from the vehicle are not serious, except, possibly, for those relating to altitude and power limitations We merely mention the subject because there will be an early need, and more importantly, because nearly every element of the experiment must be considered in the design of the telemetry equipment.

3. Optics

Like telemetry, the optics planned for the experiment are quite conventional. We will need several cameras using standard bubble-chamber film, so that the data may be scanned on existing equipment. Possibly one of the cameras will be used to photograph the spark chambers in the momentum analyzer and another will be used in conjunction with the wide gap spark chamber to obtain stereoscopic photographs. In the latter case, we plan to provide polar access through the chamber magnet for photography (The recent rapid strides being made in "filmless spark chambers" may obviate the need for cameras to record the position of sparks in the upper, narrow-gap chambers)

4. Data Analysis

For the most part, there are no major new problems involved in the scanning or measurement of photographic records which are recovered from a balloon flight. The wide-plate spark chamber will produce photographs that are easily scanned and measured on the standard bubble chamber analysis equipment Spark chamber photos of the type required for use in the emulsion measurements need be measured in only one coordinate to moderate precision. Although this could be done on standard bubble chamber measuring machines, it would probably be more

efficient to build a special one-dimensional measuring device for this particular job. The emulsion measurement would require equipment designed to position and orient the emulsion so that the desired track is in the field of the measuring microscope and roughly along the optic axis. The desired track would appear as a wiggling spot when the microscope scanned through the emulsion depth. Once a track was identified by this technique, the precise position would be determined with respect to a 1 mm grid printed on the emulsion, as is standard practice in emulsion work.

In summary, except for emulsions, the techniques of measurement are quite conventional. The emulsion measurements would differ in that somewhat specialized equipment would be required, and the measurements would be done as the last step in the analysis of events when the particle orbit and the need for the emulsion measurement was established from a preliminary analysis of the other information. Emulsion techniques are not new to the Lawrence Radiation Laboratory. There is presently a technical staff of about 15 persons at Berkeley who scan and measure nuclear emulsions, and a program is already underway to develop automatic equipment for measurement of emulsions.

V. Conclusions

There are reasonable technical grounds for believing that meaningful and precise high-energy-physics experiments in the energy range 100-1,000 BeV and beyond can be performed in the upper atmosphere. The feasibility of these experiments depends on a number of techniques and recent technological developments discussed in this proposal. The cost of the proposed developmental and experimental program (see Appendix I) is small in comparison to other proposed methods of investigation in this energy range, though the comparison must be made with the exploratory nature of the expiments in mind.

VI Personnel and Facilities

Professor Luis Alvarez is the principal (faculty) investigator and Dr W Humphrey, the co-experimenter, will serve as project leader. The Space Sciences Laboratory and its director, Professor S Silver, will have general administrative responsibility for the project and for its relationship to the academic program A number of graduate students who will work with Professor Alvarez for advanced degrees under the program will be employed as research assistants by the Space Sciences Laboratory and special research studies associated with the experiment will be carried out in the Laboratory.

The major part of the development of the instrumentation and the auxiliary equipment will be done by Professor Alvarez' group in the Lawrence Radiation Laboratory where facilities are already available for a project of this magnitude. The Space Sciences Laboratory will give assistance with balloon techniques and instrumentation of telemetry, the staff members of the Laboratory have considerable experience in conducting balloon-borne experiments

VII. Budgets

The budget is set up in accordance with the division of activities described in Section VI The Space Sciences Laboratory and the Radiation Laboratory operate under somewhat different rules and proceedures. In particular, their overhead rates differ. The budget is, therefore, divided into two parts, one covering the work to be conducted by the personnel of the Space Sciences Laboratory and the other covering the work to be done by personnel of the Radiation Laboratory The latter is detailed in quarterly periods in Appendix I which follows the presentation of the composite budget.

Budget and Appendix I not included.

Appendix II

Preliminary Balloon Flights

The proposal outlined in the body of this paper represents what probably would be the most sophisticated package to be used in the program of balloon flight experiments. Such a device requires a great deal of engineering, ground testing and construction time, and the first balloon flight for the entire system would probably not take place until between one and two years after the program started. In the meantime, several smaller pieces of apparatus must be flown in order to test certain of the experimental techniques. Some physics would come out of these first flights. The following paragraphs describe the nature of these first few preliminary balloon flights, and what results would be expected of each. It is unrealistic to list more than a few of the anticipated test flights, because the information from the first few flights will undoubtedly determine the nature and number of further test flights. At the end of the appendix, there is a discussion of alternate configurations to the one proposed in this paper which might provide useful physics later.

Flight 1 and 2

The first flight would probably take place about six months after the beginning of the program. The principal function of this flight would be to test the operation of the Cerenkov trigger system. The most important information from this flight would relate to the durability and opacity of the light tight Cerenkov gas enclosure, and the detecting efficiency of the device. In the first flights, the launching procedure for the rather bulky Cerenkov gas enclosure would be tested.

The experimental train would consist of the Cerenkov trigger assembly itself followed by a series of two or more assemblies consisting of a lead radiator followed by a scintillation counter. The radiator-counter assembly serves to identify electrons which trigger the Cerenkov counter, by detecting the large scintillation pulse resulting from an electron shower in the lead. Several plates are needed because a single plate would not be effective for electron energies in the region below 500 MeV. If all went well, the data from the flight should be consistent with the present estimates of cosmic ray proton flux. In addition, useful information such as background counting rates and the high-energy electron flux would be available. The electron flux as a function of altitude should also be consistent with the incident proton flux and the interaction crossection. It is interesting to note that primary cosmic ray fluxes have been estimated from measurements on the earth's surface. This flight would constitute a direct measure of the integrated high energy proton flux, assuming the Cerenkov detector functioned correctly.

Flights 3 and 4

Shortly following the first flights, further flights would be carried out to test the spark chamber-emulsion technique, and the wide-gap spark chamber. The emulsions from these flights would provide a sample of data with which to develop the measuring techniques. The important point in regard to the wide-gap spark chamber would be the detecting efficiency for a shower of pions produced by a nuclear interaction. The operation of the cameras for the emulsion spark chambers and the wide-gap spark chamber would be checked out in these flights.

The experimental arrangement would consist of the Cerenkov trigger, followed by at least three emulsion plates between a pair of spark chambers,

followed by a target, followed by the wide plate spark chamber, and finally a set of radiators to identify electrons, as in the first flights. Particles which are identified as high energy protons can be considered to have a straight orbit, as an aid in calibrating the emulsion measurements. With a series of three or more emulsions, in the spark chamber-emulsion module, it is possible to establish the stability of the emulsion support frame, as well as measurement techniques. Deviations from straightness for the high energy protons must result from emulsion measurement error, mechanical mounting error, and Coulomb scattering. In fact, if things go well, some estimate of the energy of individual protons might be made on the basis of the multiple scattering of the proton between emulsions.

As a check on the efficiency of the wide-gap spark chamber, the tracks found in the upper half of the chamber could be traced into the lower half of the chamber to make sure no tracks are lost. Another point of interest would be the chamber's ability to detect the individual members of the narrow central cone of pions (those moving forward in the center of mass system). The minimum angle or separation between two resolvable tracks would be established.

These flights would serve as pilot runs to the final experimental configuration. All the major experimental components would be present, and the data analysis system could be applied to data of these flights. Moreover, the physics data available from these relatively simple flights would already be far superior to that presently obtained by conventional emulsion methods.

Flight 5 and beyond

The fifth flight would probably be the earliest possible flight to carry a superconducting magnet. Among the numerous tests in this flight would

be the study of magnetic interference with other equipment such as camera mechanisms, and the new recovery problems. All flights from this point on should yield valuable physics data.

Alternate physics flight configurations

Although it is desirable to fly some balloon flights with a liquid hydrogen target such as described in this proposal, there are also advantages to using other types of target material such as lithium hydride or hydrocarbons. Aside from the obvious simplification achieved by eliminating the bulky cryogenics associated with the hydrogen, there are also advantages in the form of increased counting flux and larger solid angle at the wide gap spark chamber. The increased counting flux comes about as a consequence of the shortening of the entire apparatus with removal of the hydrogen target, which allows us to accept perhaps twice the solid angle of cosmic ray protons. The more favorable geometry at the wide gap spark chamber is the result of being able to place a more compact target immediately above the chamber (perhaps inside the superconducting chamber magnet) and detect large angle secondaries which would be missed if produced in the hydrogen target.

The wide gap spark chamber, as proposed, is a two section chamber. It would probably be useful to fly some flights with material between the two halves of the chamber (for example lead to convert gamma rays for detecting π^0 mesons, or hydrogen rich target material for studying interactions of the secondaries).

A few flights without momentum analysis might also be useful. Although the momentum information from the emulsion measurements would be missing, the rapid decline of the proton flux with energy combined with the

sharp Cerenkov cutoff do provide a fairly sharp energy spectrum for the protons. The proton energy could be roughly described as 150 ± 50 BeV, which would include 65 % of the proton flux. The gain in eliminating the momentum analysis would be the increase in flux from shortening the total length of the apparatus, as well as a reduction of the balloon package weight through the elimination of a superconducting magnet and spark chambers. The analysis of such events would proceed more quickly, without having to make the emulsion measurements for momentum information.

A combination of the above alternatives would lead to a variety of balloon flights of a modest nature in terms of balloon loads, but capable of providing valuable physics data.

TABLE 1.

Component Weights

Component	Sub-comp. weight	Weight
1. Target		
Cyl. walls	400	
Ends	50	
Misc. and plumbing	150	
LH_2 load	230	830
2. Analyzing Magnet		
Superconductor and copper	60	
Wire support	170	
Inside skin	30	
Energy dumping	100	
Misc.	100	460
3. Chamber magnet		
Superconductor and copper	580	
Wire support	300	
Inside skin	70	
Energy dumping	300	
Misc.	150	1400
4. 37 l. Helium Reservoir	100	100
5. Cryostat Structure		
Vacuum wall	1620	
Chamber mag. sphere	110	
Internal support	100	
External support	300	
Landing gear	600	
Misc.	200	2930
6. Cerenkov detector		500
7. Analyzing chamber and emulsion stacks and support		250
8. Wide-gap spark chamber		100
9. Cameras		300
10. Electronics (counters and telemetry)		200
11. Electronics (chamber supplies)		150
12. Film		150
13. Misc.		350
Total weight		7780

TABLE 2

Component Heat Loads (Watts)

Component	Conduction Load	Radiation Load	Total Load (300° K)	Total Load (230° K)
1. Target	0.7	3.5	4.2	1.7
2. Analyzing Magnet	0.2	0.2	0.4	0.22
3. Chamber Magnet	0.63	0.46	1.09	0.60

FIGURE CAPTIONS

Fig. 1 The hyperbolic mirror M_1, the ellipsoidal mirror M_2, and the photomultiplier PM make up the Cerenkov counter C_1. C_1, C_2 and C_3 in coincidence trigger the entire system. To exclude interactions before the target, the pulse height in C_3 must be no more than that of a single particle.

Fig. 2 Integrated flux of high-energy cosmic ray protons as a function of the integration limit energy.

Fig. 3 Spark chambers S_1, S_2, and S_3 are used to locate particle tracks for precise measurement in nuclear emulsions E_1, E_2, and E_3 located in the uniform magnetic field B.

Fig. 4 Schematic of Strauch wide-gap spark chamber.

Fig. 5 Section of proposed experimental structure.

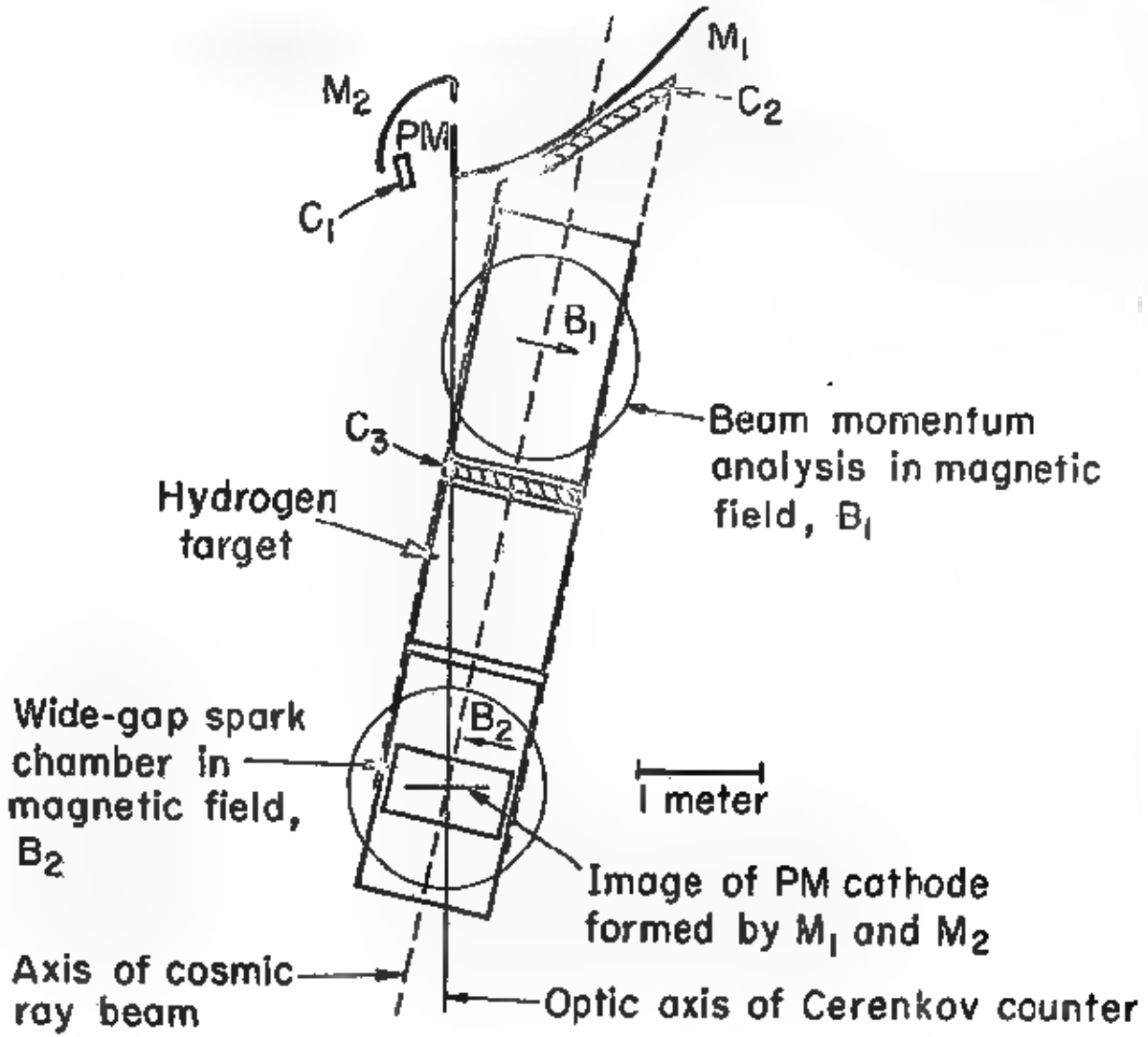
M1
M2
PM
C2
C1
B1
C3
Beam momentum analysis in magnetic field, B1
Hydrogen target
Wide-gap spark chamber in magnetic field, B2
B2
1 meter
Image of PM cathode formed by M1 and M2
Axis of cosmic ray beam
Optic axis of Cerenkov counter

Fig. 1

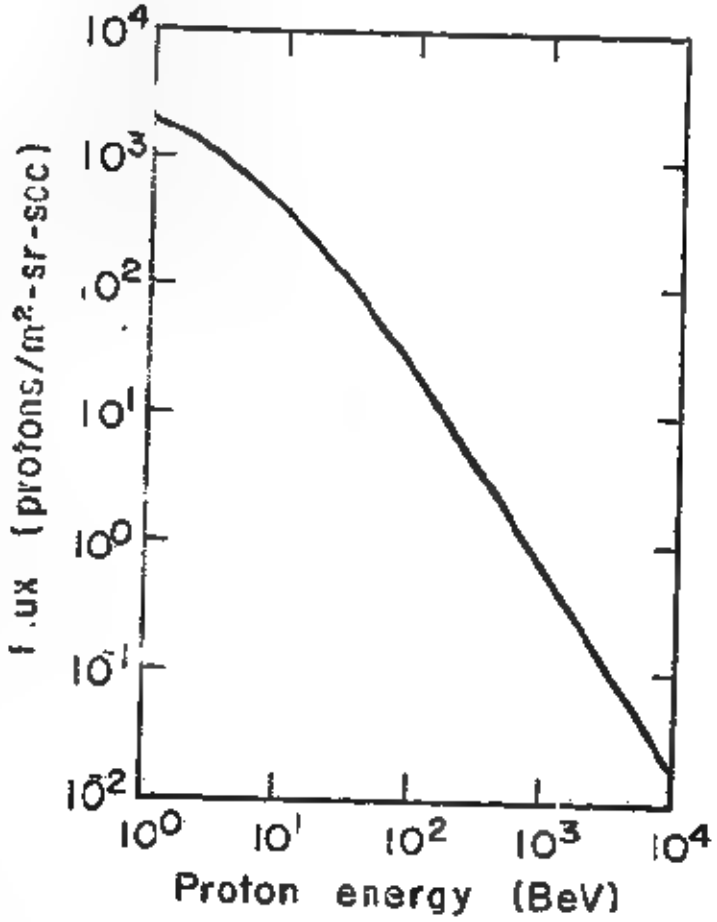
10^4
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Flux (protons/m²-sr-sec)
10^0
10^1
10^2
10^3
10^4
Proton energy (BeV)

Fig. 2

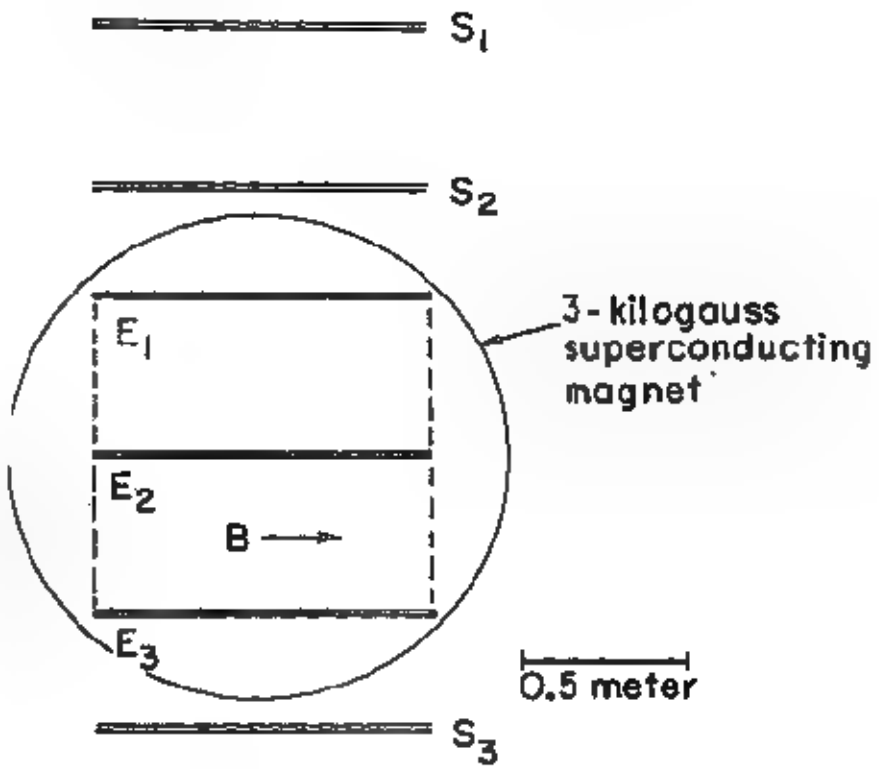
S1
S2
E1
E2
B
E3
3-kilogauss
superconducting
magnet
0.5 meter
S3

Fig. 3

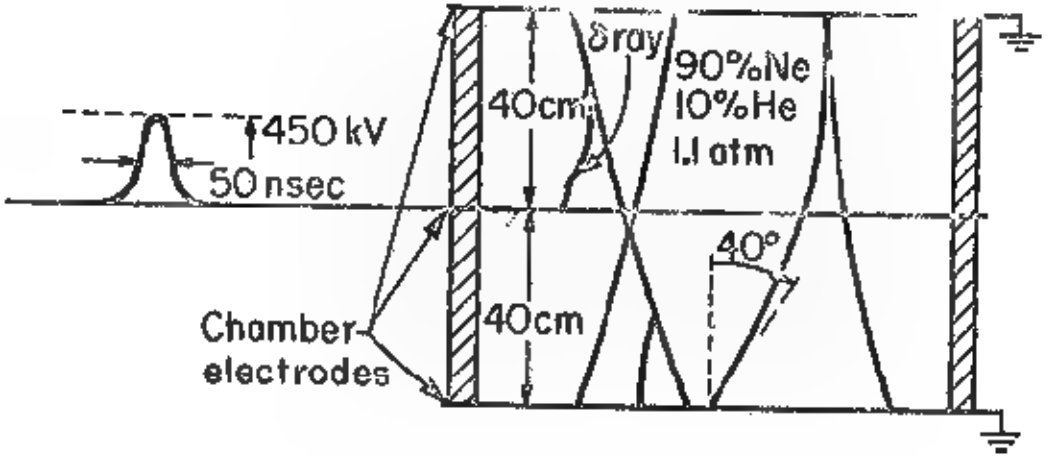
450 kV
50 nsec
40cm
δ ray
90%Ne
10%He
1.1 atm
40°
40cm
Chamber
electrodes

Fig. 4

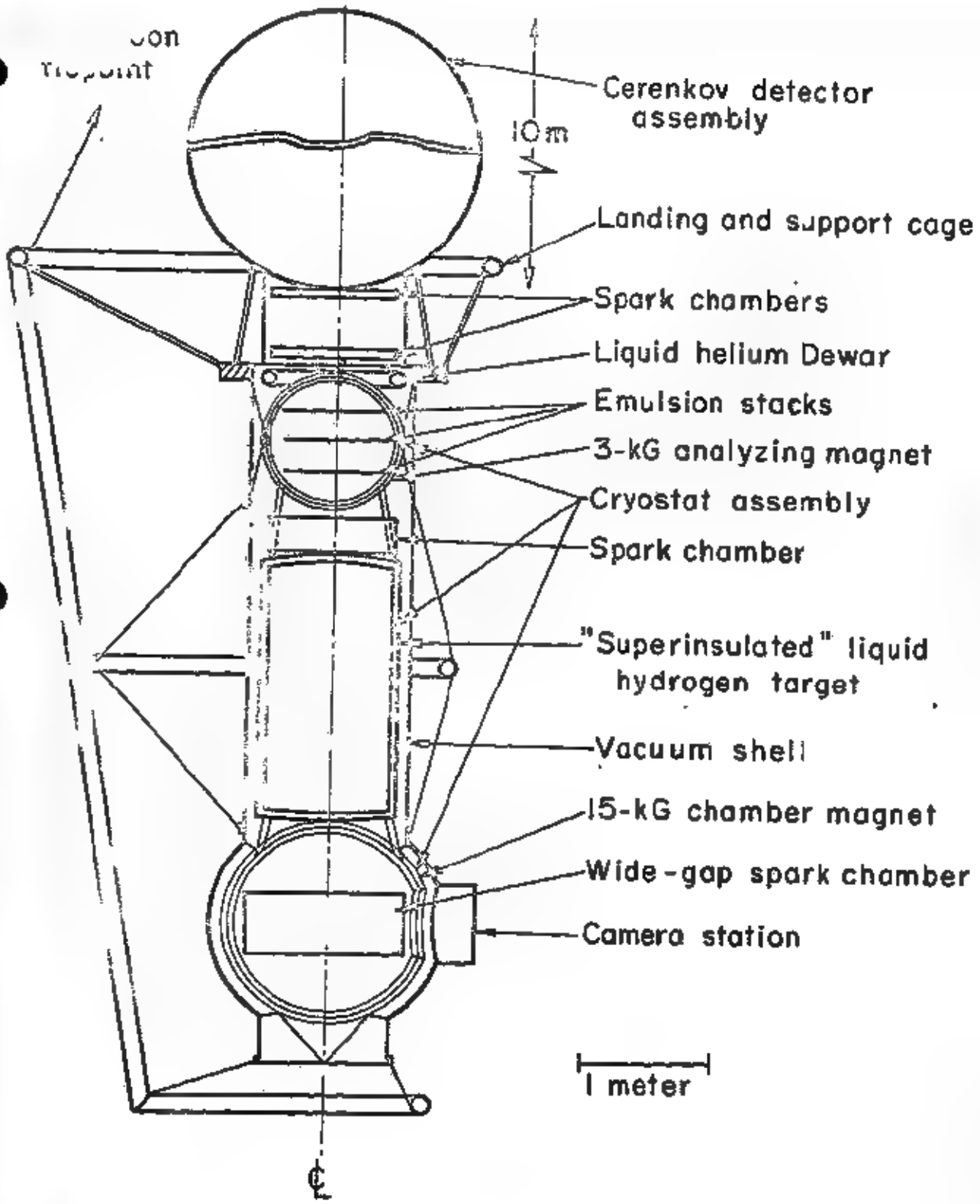
Cerenkov detector assembly
10 m
Landing and support cage
Spark chambers
Liquid helium Dewar
Emulsion stacks
3-kG analyzing magnet
Cryostat assembly
Spark chamber
"Superinsulated" liquid hydrogen target
Vacuum shell
15-kG chamber magnet
Wide-gap spark chamber
Camera station
1 meter
℄

Fig. 5

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22. Clyde Taylor, Lawrence Radiation Laboratory, Livermore, private communication

Professional Qualifications

Luis W. Alvarez received his Bachelor of Science degree in 1932, a Master of Science degree in 1934, and his Ph.D. in 1936, all from the University of Chicago. In 1936 Dr. Alvarez joined the Radiation Laboratory of the University of California, where he is now a professor. He was on leave at the Radiation Laboratory of Massachusetts Institute of Technology from 1940 to 1943 and at the Los Alamos Laboratory of the Manhattan District from 1943 to 1945.

Professor Alvarez is a member of the National Academy of Sciences, American Philosophical Society, American Physical Society, and American Academy of Arts and Sciences. In 1946 he was awarded the Collier Trophy by the National Aeronautical Association for the development of the ground control approach, an aircraft landing system. In 1953 he was awarded the John Scott Medal and Prize by the city of Philadelphia, for the same work. In 1947 he was awarded the Medal for Merit. In 1960 he was named "California Scientist of the Year" for his research work on high-energy physics. In 1961 he was awarded the Einstein Medal for his contribution to the physical sciences. In 1963, he was awarded the Pioneer Award of the AIEEE, and in 1964, he was awarded the National Medal of Science, for contributions to high-energy physics.

At M.I.T., during the war, he was responsible for three important radar systems - the microwave early-warning system, the eagle high-altitude bombing system, and a blind landing system for civilian as well as military applications (GCA mentioned above). While at the Los Alamos Laboratory, Dr. Alvarez developed the detonators for setting off the plutonium bomb. He flew as a scientific observer at both the Almagordo and Hiroshima explosions.

Dr. Alvarez is responsible for the design and construction of the Berkeley 40-foot proton linear accelerator, which was completed in 1947. Since that time

he has engaged in high-energy physics, using the 6 billion electron volt Bevatron at the University of California Radiation Laboratory. His main efforts have been concentrated on the development and use of large liquid hydrogen bubble chambers, and on the development of high-speed devices to measure and analyze the millions of photographs produced each year by the bubble chamber complex. The net result of this work has been the discovery by Dr. Alvarez's research group, of a large number of previously unknown fundamental particle resonances.

William E. Humphrey received the Ph. D. degree in physics from the University of California (Berkeley) in 1961 and joined the physics staff of the Lawrence Radiation Laboratory. Since that time he has been engaged in elementary particle physics research in the development of data analysis equipment and techniques. He has seven publications on physics and five publications on data analysis techniques.

APPENDIX E. UNIV.
OF ROCHESTER

APPENDIX E.

UNIVERSITY OF ROCHESTER SUGGESTION FOR

AN EQUATORIAL EXPEDITION.

THE UNIVERSITY OF ROCHESTER
Rochester, New York, 14627

Department of Physics
and Astronomy

August 4, 1965

Gentlemen:

We have now analysed the results of our balloon flights on the IQSY-EQEX Expedition. Notwithstanding the fact that we obtained only 25% (one out of four) of the flights we wanted, we are so delighted with the results from the one flight and for the promise that it holds in gamma ray astronomy, that we should like to propose another equatorial expedition.

As a result of flying our spark chamber, triggered for gamma rays, at the equator, we are able to set upper limits to the fluxes from several sources of a few times 10^{-5} gammas per cm^2 sec. This is about a factor of 30 better than that obtained to date and is in large measure due to the low secondary background occurring at this latitude with the result that one is able to determine flux limits at a lower level from point sources.

There are quite a few interesting fluxes to look at at the equator and some further down in southern latitudes and we believe that another expedition is certainly merited at this time. At the equator we flew at 6-1/2 grams and flying at a higher altitude would enable us to lower our limits by a factor of two at least or alternately going to a somewhat higher (or lower) latitude, for example Australia, but obtaining a higher altitude would enable us to make statements on fluxes comparable with those obtained at Hyderabad.

We would like at this time to ascertain your interest in participating in such an expedition, since clearly establishing the logistic support for one group or many does not represent that great a difference in cost and effort and the more people from the scientific community that could benefit, the more likely it is to obtain the necessary funding.

We would propose, that roughly speaking, the expedition be scheduled for about two years from now to give appropriate lead time for all parties involved and also so that we could build upon, in a meaningful way, the experience obtained from the last expedition. Preliminary talks with NCAR have indicated they would be willing to play the same role as they did for IQSY-EQEX, and Rochester would be willing to take the lead in responsibility for the formal planning and submission for support from appropriate government agencies. In first approximation, we would ask for support from the NSF and from NASA. We should very much like to have an indication of your interest in participating in such an endeavor and would request a reply by September 1.

We are enclosing a list of people to whom this letter is being sent. We would appreciate your bringing to our attention any omissions we may have made. The list enclosed represents principally those involved in the IQSY-EQEX Expedition.

Sincerely yours,

M. F. Kaplon

J.G.M. Duthie

K. Anderson
C. L. Deney
B. R. Dennis
J.G.M. Duthie
E. Ehrlich
J. T. Ely
R. Fleischer
J. H. Fregeau
M. W. Friedlander
G. M. Frye
D. E. Guss
L. Katz
S. A. Korff
R. S. Kubara
V. E. Lally
L. [redacted]
K. G. McCraken
F. McDonald
P. Meyer
A. [redacted]
E. Ney
[redacted] A. Pomerantz
L. O. Quan
S. Ruttenberg
M. M. Shapiro
B. Stiller
E. P. Todd
C. J. Waddington
J. R. Winkler

SPECIAL REPORT OF THE USAF SCIENTIFIC ADVISORY BOARD AD HOC COMMITTEE TO REVIEW PROJECT "BLUE BOOK"

MARCH 1966

SPECIAL
REPORT OF THE
USAF SCIENTIFIC ADVISORY BOARD
AD HOC COMMITTEE TO REVIEW
PROJECT "BLUE BOOK"

MARCH 1966

MEMBERS PARTICIPATING

Dr. Brian O'Brien (Chairman)
Dr. Launor F Carter
Mr. Jesse Orlansky
Dr. Richard Porter
Dr. Carl Sagan
Dr. Willis H. Ware

SAB SECRETARIAT

Lt Col Harold A. Steiner

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SPECIAL
REPORT OF THE
USAF SCIENTIFIC ADVISORY BOARD
AD HOC COMMITTEE TO REVIEW
PROJECT "BLUE BOOK"

MARCH 1966

I. INTRODUCTION

As requested in a memorandum from Major General E. B. LeBailly, Secretary of the Air Force Office of Information, dated 28 September 1965 (Tab A), an SAB Ad Hoc Committee met on 3 February 1966 to review Project "Blue Book". The objectives of the Committee are to review the resources and methods of investigation prescribed by Project "Blue Book" and to advise the Air Force of any improvements that can be made in the program to enhance the Air Force's capability in carrying out its responsibility.

In order to bring themselves up to date, the members of the Committee initially reviewed the findings of previous scientific panels charged with looking into the UFO problem. Particular attention was given to the report of the Robertson panel which was rendered in January 1953. The Committee next heard briefings from the AFSC Foreign Technology Division, which is the cognizant Air Force agency that collates information on UFO sightings and monitors investigations of individual cases. Finally, the Committee reviewed selected case histories of UFO sightings with particular emphasis on those that have not been identified.

II. DISCUSSION

Although about 6% (646) of all sightings (10,147) in the years 1947 through 1965 are listed by the Air Force as "Unidentified", it appears to the Committee that

most of the cases so listed are simply those in which the information available does not provide an adequate basis for analysis. In this connection it is important also to note that no unidentified objects other than those of an astronomical nature have ever been observed during routine astronomical studies, in spite of the large number of observing hours which have been devoted to the sky. As examples of this the Palomar Observatory Sky Atlas contains some 5000 plates made with large instruments with wide field of view; the Harvard Meteor Project of 1954-1958 provided some 3300 hours of observation; the Smithsonian Visual Prairie Network provided 2500 observing hours. Not a single unidentified object has been reported as appearing on any of these plates or been sighted visually in all these observations.

The Committee concluded that in the 19 years since the first UFO was sighted there has been no evidence that unidentified flying objects are a threat to our national security. Having arrived at this conclusion the Committee then turned its attention to considering how the Air Force should handle the scientific aspects of the UFO problem. Unavoidably these are also related to Air Force public relations, a subject on which the Committee is not expert. Thus the recommendations which follow are made simply from the scientific point of view.

III. CONCLUSIONS AND RECOMMENDATIONS

It is the opinion of the Committee that the present Air Force program dealing with UFO sightings has been well organized, although the resources assigned to it (only one officer, a sergeant, and secretary) have been quite limited. In 19 years and more than 10,000 sightings recorded and classified, there appears to be no verified and fully satisfactory evidence of any case that is clearly outside the framework of presently

known science and technology. Nevertheless, there is always the possibility that analysis of new sightings may provide some additions to scientific knowledge of value to the Air Force. Moreover, some of the case records which the Committee looked that were listed as "identified" were sightings where the evidence collected was too meager or too indefinite to permit positive listing in the identified category. Because of this the Committee recommends that the present program be strengthened to provide opportunity for scientific investigation of selected sightings in more detail and depth than has been possible to date.

To accomplish this it is recommended that:

A. Contracts be negotiated with a few selected universities to provide scientific teams to investigate promptly and in depth certain selected sightings of UFO's. Each team should include at least one psychologist, preferably one interested in clinical psychology, and at least one physical scientist, preferably an astronomer or geophysicist familiar with atmospheric physics. The universities should be chosen to provide good geographical distribution, and should be within convenient distance of a base of the Air Force Systems Command (AFSC).

B. At each AFSC base an officer skilled in investigation (but not necessarily with scientific training) should be designated to work with the corresponding university team for that geographical section. The local representative of the Air Force Office of Special Investigations (OSI) might be a logical choice for this.

C. One university or one not-for-profit organization should be selected to coordinate the work of the teams mentioned under A above, and also to make certain of very close communication and coordination with the office of Project Blue Book.

It is thought that perhaps 100 sightings a year might be subjected to this close study, and that possibly an average of 10 man days might be required per sighting so studied. The information provided by such a program might bring to light new facts of scientific value, and would almost certainly provide a far better basis than we have today for decision on a long term UFO program.

The scientific reports on these selected sightings, supplementing the present program of the Project Blue Book office, should strengthen the public position of the Air Force on UFO's. It is, therefore, recommended that:

A. These reports be printed in full and be available on request.

B. Suitable abstracts or condensed versions be printed and included in, or as supplements to, the published reports of Project Blue Book.

C. The form of report (as typified by "Project Blue Book" dated 1 February 1966) be expanded, and anything which might suggest that information is being withheld (such as the wording on page 5 of the above cited reference) be deleted. The form of this report can be of great importance in securing public understanding and should be given detailed study by an appropriate Air Force office.

D. The reports "Project Blue Book" should be given wide unsolicited circulation among prominent members of the Congress and other public persons as a further aid to public understanding of the scientific approach being taken by the Air Force in attacking the UFO problem.

DEPARTMENT OF THE AIR FORCE
WASHINGTON

OFFICE OF THE SECRETARY

SEP 28 1965

MEMORANDUM FOR MILITARY DIRECTOR, SCIENTIFIC ADVISORY BOARD

SUBJECT: Unidentified Flying Objects (UFOs)

In keeping with its air defense role, the Air Force has the responsibility for the investigation of unidentified flying objects reported over the United States. The name of this project is Blue Book (Attachment 1). Procedures for conducting this program are established by Air Force Regulation 200-2 (Attachment 2).

The Air Force has conducted Project Blue Book since 1948. As of 30 June 1965, a total of 9267 reports had been investigated by the Air Force. Of these 9267 reports, 663 cannot be explained.

It has been determined by the Assistant Deputy Chief of Staff/ Plans and Operations that Project Blue Book is a worthwhile program which deserves the support of all staff agencies and major commands and that the Air Force should continue to investigate and analyze all UFO reports in order to assure that such objects do not present a threat to our national security. The Assistant Deputy Chief of Staff/Plans and Operations has determined also that the Foreign Technology Division (FTD) at Wright-Patterson Air Force Base should continue to exercise its presently assigned responsibilities concerning UFOs.

To date, the Air Force has found no evidence that any of the UFO reports reflect a threat to our national security. However, many of the reports that cannot be explained have come from intelligent and technically well qualified individuals whose integrity cannot be doubted. In addition, the reports received officially by the Air Force include only a fraction of the spectacular reports which are publicized by many private UFO organizations.

Accordingly, it is requested that a working scientific panel composed of both physical and social scientists be organized to review Project Blue Book -- its resources, methods, and findings -- and to advise the Air Force as to any improvements that should be made in the program in order to carry out the Air Force's assigned responsibility.

Doctor J. Allen Hynek who is the Chairman of the Dearborn Observatory at Northwestern University is the scientific consultant to Project Blue Book. He has indicated a willingness to work with such a panel in order to place this problem in its proper perspective.

Doctor Hynek has discussed this problem with Doctor Winston R. Markey, the former Air Force Chief Scientist.

E. B. LeBAILLY
Major General, USAF
Director of Information

2 Attachments
1. Blue Book Report
2. AFR 200-2

AD HOC COMMITTEE ON
UNIDENTIFIED FLYING OBJECTS (UFOs)

AGENDA

Thursday, 3 February 1966

0800	Welcoming Remarks	Commander or Vice Commander, FTD
0805	Introduction	Dr. O'Brien, SAB
0810	The Air Force Problem	Lt Col Spaulding, SAFOI
0830	Briefing on Project Blue Book	Major Quintanilla, FTD
1000	Break	
1015	Review of Selected Case Histories	FTD Staff
1145	Lunch	
1315	Executive and Writing Session	

22 December 1965

SPECIAL
REPORT OF THE USAF SCIENTIFIC ADVISORY BOARD
AD HOC COMMITTEE TO REVIEW PROJECT "BLUE BOOK"

DISTRIBUTION

	SYMBOL	COPIES
Secretary of the Air Force Office of Information	SAFOI	25
Military Director, DCS/R&D	AFRDC	1
Committee Members (1 each) Dr. Brian O'Brien (Chairman) Dr. Launor F. Carter Mr. Jesse Orlansky Dr. Richard Porter Dr. Carl Sagan Dr. Willis H. Ware		6
Commander, Foreign Technology Division		5
DCS/Foreign Technology (AFSC)	SCF	2
Chairman, SAB	AFBSA	1
SAB Secretariat	AFBSA	1

Meeting statistics bearing on this report including all times, dates, places, a listing of persons in attendance and purposes therefor, together with their affiliations and material reviewed and discussed, are available in the SAB Secretariat offices for review by authorized persons or agencies.

APPROVED BY:

Harold A. Steiner

HAROLD A. STEINER, Lt Colonel, USAF
Assistant Secretary
USAF Scientific Advisory Board

EVENING STAR, LODI — FRIDAY, MARCH 25, 196

Deputy Sheriff Clocks a UFO Over Michigan

ANN ARBOR, Mich. (AP)—A Mich. [illegible] deputy sheriff said an unidentified flying object sighted over Southern Mich. last week was tracked—[illegible] and still another UFO was reported yesterday.

Deputy Sheriff David [illegible] Fick of Wayne and Washtenaw County [illegible] what they called a flying saucer [illegible] size of a man's head [illegible] hovering [illegible]

Police were [illegible] the two days [illegible] Ann Arbor, Ypsilanti [illegible]

The report [illegible] of an object [illegible] Ann Arbor [illegible] Mrs. and Mrs. [illegible] who live [illegible] Southern Lower Pen[illegible] Sheriff's [illegible] spotted a [illegible] about [illegible] to [illegible] [illegible]

Nichols said the object [illegible] about the [illegible] across the [illegible]

The [illegible] Dr. [illegible]

Detroit News, WED., March 23, 1966

Fluid Adds New Wrinkle to Squares

(Grand Rapids Press)

Texas Veteran, Son Describe UFO

William VanHorn, 61, the man

[illegible] Say Mysterious Craft Hovered in Swamp

ANN A[illegible] March 21 (UPI)—A[illegible] 40 persons [illegible] 12 [illegible] today [illegible] objects [illegible] by four [illegible] in a swamp [illegible]

[illegible] of the [illegible] object [illegible] closely. A patrolman, Robert Hunawill [illegible] and other [illegible] the area [illegible] craft [illegible] and [illegible]

[illegible] the Air Force [illegible] nothing of the [illegible] The Air Force's [illegible] would not comment.

[illegible] persons who [illegible] the [illegible] swamp [illegible] for traces of the craft found nothing but [illegible] grass, [illegible] and [illegible]

[illegible] the two persons [illegible] were [illegible] to the object, Frank Mann[illegible] years old, and his son, R[illegible] 19, said [illegible] appeared to touch the ground [illegible]

Frederick [illegible] date [illegible] [illegible] of [illegible] for Michigan [illegible] Washtenaw [illegible] not so, [illegible]

Mr. Mann[illegible] there had [illegible] what [illegible] of the [illegible] Mr. Mannor [illegible] the craft [illegible] a [illegible] and was about the [illegible] of a car with a [illegible] [illegible] appearance like coral rock.

It had a b[illegible] light on one end and a white light on the other, he said.

"They were [illegible] and each of them [illegible] like they had a little halo around [illegible]," he said.

Other witnesses saw only the lights, but their descriptions [illegible] the [illegible] of [illegible]

Stanley [illegible] Washtenaw County sheriff's deputy, said he and deputy David Fitzpatrick watched the object fly over their car about the same time the Mannors reported it had taken off.

Officer Hunawill said four other unidentified flying objects had hovered in a quarter-circle over the object in the swamp.

[illegible]

S[illegible] have [illegible] the form [illegible]

Scores of [illegible] have reported [illegible] objects [illegible] and a [illegible] he [illegible] home Sat[illegible]

The Air Force, which [illegible] investigated more [illegible] such reports [illegible] Northwestern Univ[illegible] H. Allen Hynek, its [illegible] tific adviser on [illegible] flying objects [illegible] into the Michigan [illegible]

The late [illegible] at Hillsdale College [illegible] county civil defense director [illegible] a former reporter [illegible] and dean, and 87 coeds [illegible] they watched a glowing object [illegible] ping around campus for four hours.

This report coincided with one near Ann Arbor, where about 50 persons — including 12 policemen — said they [illegible] an eerie object [illegible] over a swamp Sunday [illegible] faster ships hovered over [illegible]

In Bethesda, [illegible] Air Force Col. Howard T. Wright of 5119 Newport Ave., said he and five other persons saw several objects [illegible] home and [illegible] definitely not in my imagination [illegible] were they satellites or airplanes."

[illegible] Object

[illegible] Ann Arbor [illegible] a point of [illegible] be [illegible] ping [illegible]

[illegible] Kohn [illegible] for seven [illegible] before becoming assistant dean of women, assistant professor of [illegible] mother of the dormitory, had the coeds take [illegible] as they watched the object for four hours.

They and William Van Horn, [illegible] years old, Hillsdale County civil defense director, said the object dimmed its lights when [illegible] approached, brightened again when [illegible] went away [illegible] dodged an airport [illegible]

[illegible] Kohn, [illegible] of New [illegible], and Cynthia [illegible], 18, of [illegible], were the first to see the object. They [illegible]

[illegible] The Air [illegible] of [illegible] Air Force [illegible] have been reported several times [illegible]

"[illegible] something [illegible] Mr. Van Horn [illegible] "[illegible] the [illegible] was either [illegible]

[illegible] by [illegible] covered over and near the dormitory before retreating into the swamp, Miss Kohn said. It stayed there for four hours before vanishing, witnesses said.

Wash Post 3-[illegible]

Truth About Flying Objects Hidden by AF, Faithful Say

By Howard Simons
Washington Post Staff Writer

Firm believers that unidentified flying objects are for real and from a far-off supercivilization met the press yesterday amid a torrent of reports about new objects being sighted everywhere, U.S.A.

The believers repeatedly charged the Air Force with deliberately hiding the truth, which if it were known "would bring forth one of the greatest stories of the century."

The believers also "fully backed" Rep. Gerald Ford (R-Mich.) who wants a Congressional investigation of unidentified objects which have lately plagued his home state.

But most of all, the believers want to be believed and loved.

"We want the Air Force merely to end its secrecy on sightings and stop ridiculing competent witnesses," said retired Marine Corps Major Donald E. Keyhoe, a UFO skeptic until his conversion.

Keyhoe now is director of the National Investigations Committee on Aerial Phenomena, an organization whose [illegible] to [illegible] [illegible] the Air Force to own up to the truth and to expose [illegible] keep [illegible] [illegible].

Keyhoe and his colleagues, including scientists, [illegible] [illegible] and [illegible] scorn the "myth of little green men."

Had a visitor from afar ever set foot on the earth? The serious students of UFOs were asked.

There was only one case [illegible], [illegible] Committee staff member [illegible] [illegible]. It happened in April [illegible] near Socorro, N.M., where police officers saw "two small [illegible]" occupants [illegible] out of a UFO.

[illegible] [illegible] noted a reporter, "[illegible] could well be sure they were not green."

"We have no reason to believe they were green," wryly quipped Keyhoe.

The [illegible] for believing that UFOs are for real was put to the test by Keyhoe. It amounted to an argument that thousands of reports from [illegible] persons, including radar operators, [illegible] pilots and missile trackers—had sighted objects, roughly [illegible] persons in all.

The Air Force, which has been investigating UFO reports since 1948, has steadfastly maintained there is no evidence any flying objects have come from somewhere [illegible] this planet.

[illegible] [illegible] [illegible] by the Committee [illegible] of [illegible] UFOs real. The Committee concludes, Keyhoe said yesterday, that "these things are real and must be extraterrestrial because they are so superior to anything we have."

According to Keyhoe, UFOs have been observing the earth for 200 years. He [illegible] [illegible] for why no contact has been made with whoever it is that pilots the UFOs.

One reason is that the Air Force has orders to scare the UFOs away.

A second reason is that until humans [illegible] [illegible] space [illegible] UFO [illegible] regard earth as too primitive [illegible] [illegible] for surveillance purposes.

NATIONAL INVESTIGATIONS COMMITTEE ON AERIAL PHENOMENA
1536 Connecticut Ave., N.W.
Washington, D.C. 20036
Phone: NO 7-9434

Director: Maj. Donald E. Keyhoe (USMC, Ret.)
Ass't. Director: Mr. Richard H. Hall

NICAP POSITION PAPER

GOALS, AIMS, PROGRAM: The basic NICAP goals are to gather, evaluate and disseminate reliable information about UFOs, and ultimately to bring about a full scientific investigation, making use of instruments and the full resources of the scientific community.

Policies and methods are established by a Board of Governors (see list) and implemented by the executive staff.

To achieve the goal of scientific investigation, NICAP has:

(a) Established field investigation units and Affiliates across the country;

(b) Obtained the volunteer services of scientists and other qualified specialists to assist in investigations and evaluations in the U.S. and foreign countries;

(c) Made materials available to Congress and the press;

(d) Urged a Congressional inquiry;

(e) Published our findings and evidence in the "UFO Evidence", a documentary report of over 200,000 words.

OFFICIAL NICAP POSITION ON:

Interplanetary UFOs --- The idea that UFOs may be extraterrestrial in origin is considered a reasonable hypothesis worthy of the most urgent consideration. Furthermore, it is the opinion of many individuals associated with NICAP that this is the most likely explanation of UFOs. However, all theories have been and will continue to be carefully considered.

(more)

(position paper 22222)

All UFOs --- There is no doubt that many sincere persons are deceived by conventional objects such as large research balloons, fireballs and bright planets. But hundreds of extremely well-qualified observers have reported unknown objects, flying singly or in formations, and maneuvering under intelligent control, which no conventional answers can explain. These "unknowns" (USAF term) show definite patterns of appearance and performance. The observers on record include pilots of all the Armed Services and all major airlines, FAA and military control tower operators and radarmen, missile and rocket trackers, government and civilian scientists and engineers, and similarly competent and reliable witnesses in many foreign countries.

The USAF and Project Blue Book --- Our opinion that the U.S. Air Force has practiced excessive secrecy and has withheld significant UFO facts from the public is confirmed by members of the USAF (reserve or retired) on NICAP's Board of Governors and Panel of Technical Advisors. We have also documented the secrecy during our nine years of investigating and evaluating UFO reports. But our criticism is directed at the official secrecy policy, which may be set at a higher level. We realize that Project Blue Book and USAF HQ spokesmen are under orders to explain away UFO sightings and deny UFO reality.

Contactees --- We have investigated numerous claims of individuals who say they have taken trips in spaceships with noble beings from other planets. We have not found a single bit of evidence to back up any of these claims, but we have found frequent evidences of fraud. Because of their circus-like performances, they often have received excessive publicity, and their sensational statements tend to cover up serious facts and substantial reports from reputable persons.

# # #

NICAP BACKGROUND
(1536 Connecticut Ave., N.W., Washington, D.C. 20036)

NICAP--the National Investigations Committee on Aerial Phenomena--is the only full-time private organization investigating UFOs in the United States.

It was founded in 1956 to fill the need for an independent agency which could conduct research openly and seriously on a subject which was bogged down in official secrecy, public ridicule and the baseless wild tales of publicity seekers.

Among NICAP's more than 7500 members are over 300 professional scientists and engineers, at least 200 professional pilots, active and retired military officers, doctors, lawyers, businessmen, and other professional persons.

NICAP's operations involve:

1. Collecting data on UFO sightings;
2. Investigating the most promising cases through 25 Subcommittees composed of technically-trained volunteers throughout the country;
3. Analyzing and evaluating this data with the help of a Panel of Advisers--specialists in many branches of science and engineering;
4. Making the significant data available to the scientific community, Government and the press.

Maj. Donald E. Keyhoe, USMC (Ret). was appointed NICAP Director in 1957, and Richard Hall was appointed his assistant in 1958.

In 1964, NICAP submitted its "UFO Evidence" report to Congress. This thoroughly-documented 200,000 word report is an analysis of investigations through 1963, containing data on the best 750 UFO cases selected from more than 5,000 in NICAP's files. More than 10,000 copies are now in the hands of scientific research organizations, government agencies, universities, military installations and libraries.

NATIONAL INVESTIGATIONS COMMITTEE
ON AERIAL PHENOMENA
1536 Connecticut Ave., N.W.
Washington, D.C. 20036

Maj. Donald E. Keyhoe, USMC (Ret.) — Director
Mr. Richard H. Hall, Assistant Director

ADVISERS LIST

I. Science & Technology

Dr. James C. Bartlett, Jr., astronomy, Baltimore, Maryland
Mr. Norman S. Bean, engineer, WTVJ, Miami, Florida
Mr. Robert Beck, Pres., Color Control Company, Hollywood, California
Mr. Jack Brotzman, physics, Naval Research Lab, Washington, D.C.
Dr. Hugh S. Brown, diagnostician & heart specialist, Spokane, Washington
Mr. A.A. Cochran, electronics engineer, Alexandria, Virginia
Dr. F.P. Cranston, Jr., assoc. professor of physics, Humboldt State College, California
Dr. Fred C. Fair, prof. emeritus of enginbering, N.Y. University
Dr. Robert L. Hall, social psychology, Natl. Science Foundation, Wash., DC
Mr. William H. Hall, electronics technician, Goddard Space Flight Center, Greenbelt, Maryland
Mr. Frank Halstead, astronomy, Duluth, Minnesota
Mr. Leon B. Katchen, atmospheric physicist, Goddard Space Flight Center, Greenbelt, Maryland
Professor N.N. Kohanowski, geology, University of North Dakota
Dr. Fulton Koehler, prof. of mathematics, University of Minnesota
Dr. Magoroh Maruyama, Anthropologist, Stanford University, California
Mr. Delbert C. Newhouse, aviation photography, California
Miss Susan Quinn, M.S. Psychology, Director of Pan American Schools, Richmond, Virginia
Mr. Ralph Rankow, photography, New York, N.Y.
Mr. Frank G. Rawlinson, physics, NASA Space Flight Center, Maryland
Mr. J.R. Riese, research engineer, Lakewood, Ohio
Mr. Arthur H. Sorensen, research geologist, Wallace Idaho
Mr. Kenneth Steinmetz, astronomy, Denver, Colorado
Mr. Walter N. Webb, astronomy, Chas. Hayden Planetarium, Massachusetts

II. Aeronautics & Space

Mr. Don Berliner, aviation writer, Washington, D.C.
Captain C.S. Chiles, Eastern Airlines, New York, N.Y.
Mr. George W. Earley, admin. engineer, major aerospace firm, Connecticut
Mr. Samuel Freeman, past pres., Natl. Aviation Trades Assoc., Bedminster, New Jersey
Mr. Morton Gerla, aviation ordnance, Jamaica, N.Y.
Captain R.B. McLaughlin, USN, missile expert, California
Major John P. McLeod, USAFR, pilot, Jacksonville, Florida
Captain William B. Nash, Pan American Airways, Germany
Mr. W.H. Peters, former First Officer, Pan American, Florida
Mr. L.D. Sheridan, Jr., former USMC pilot, Ponte Verda, Florida
Lt. Col. Howard C. Strand, A.N.G. command pilot, Michigan

III. News & Public Relations

Mr. James C. Beatty, former ground observer corps official, Puerto Rico
Mr. Jou Corbin, Chief, WFBR News Bureau, Baltimore, Maryland
Mr. Lee R. Hunsick, news and radio, Morristown, New Jersey
Mr. Leonard H. Stringfield, public relations official, Cincinnati, Ohio
Mr. George Todt, columnist, Los Angeles Examiner, California

SUMMARY OF CURRENT UFO SIGHTING WAVE

The current wave of UFO sightings can be traced back, almost without interruption, to July, 1965. Sightings were reported from every continent during July and then moved to the U.S. in August. Highlights included photographs taken Aug. 3 in Santa Ana, Calif., and Aug. 8 in Beaver Co., Pa.; the Sept. 3 police sightings in Exeter, N.H. and in Damon, Tex. (both of which are officially listed as "unexplained" by the USAF).

Activity began to pick up in January of this year, following a brief lull. Large numbers of reports came in from New Jersey, New York and Pennsylvania. Throughout this entire period, UFOs have been reported by many persons in eastern Oklahoma.

The March, 1966, sighting wave began about three weeks ago:

March 8, Chesterton, Ind. --- oblong UFO hovered over service station for 4-5 minutes. Appeared silver, with four projections on top.

March 11, Ringwood, N.J. --- Mother Superior of convent saw bright UFO over abandoned mines. Distant light flashed as if signalling.

March 13, Black River Falls, Wis. --- several persons saw UFOs with bright green lights, heard strange beeping sound.

March 14, Southport, Conn. --- three persons saw UFO with domed top and row of red lights pacing their car, then land in front of them.

March 17, Ann Arbor, Mich. --- police saw three UFOs with green and white lights, one of which looked like a top and hovered and maneuvered for three hours.

March 17, Grand Rapids, Mich. --- several persons saw a large, oval UFO with a row of lights or portholes, which made a humming sound.

(more)

(summary 22222)

March 19, LaPorte, Ind. --- spherical UFO with X-shaped "antenna" followed car with swerving motion. Light from UFO glared on car hood.

March 19, Bethesda, Md. --- retired USAF Col. saw light move straight, stop, accelerate, then move on to be joined by second light.

March 20, Dexter, Mich. --- Disc-like object with rough surface, body lights hovered for long period. Police saw antenna-like projections on bottom, oval shape.

March 21, Hillsdale, Mich. --- County CD Director, dean and 87 coeds saw round or oval object hovering and moving 1500 yards away for 3 hours.

March 23, Key West, Fla. --- many persons saw several disc-shaped UFOs with lights flickering arpund rims streak over, stop, streak away.

March 23, Trinidad, Colo. --- two shiny oval objects with domed tops, flat bottoms reported flying in-line above a mountain ridge.

March 23, Joppa, Ill. --- dozen persons saw oblong UFO with bright light in middle, surrounded by smaller lights.

March 24, Hillsdale, Mich. --- train crew watched UFO pace train, pull ahead, hover, then climb.

March 25, Upper Sandusky, Ohio --- top-shaped object hovered over area. UFO had lights on its outer edges.

March 25, Baraboo, Wis. --- red object hovered, maneuvered above farmhouse.

March 25p Ann Arbor, Mich. --- several engineers saw bright red object fly erratically, drop into woods and fly 10' above ground. Size estimated as 30' diameter, 6' height.

March 28, Columbus, Ga. --- glowing, oblong object seen visually and tracked on radar as it maneuvered high in the sky this morning.

# # #

BIOGRAPHICAL DATA ON NICAP PRESS CONFERENCE PARTICIPANTS

MAJ. DONALD E. KEYHOE (USMC, Ret.) --- Director of NICAP
Graduate of the U.S. Naval Academy (and of Pensacola Naval Air Station Flying School. Former Marine Corps airplane and balloon pilot. Former Chief of Information for the Aviation Branch of the Department of Commerce. Former editor for the U.S. Coast and Geodetic Survey. Manager of North Pole airplane tour with Floyd Bennett; aide to Col. Charles A. Lindbergh. Author, lecturer, free-lance writer. NICAP Director since 1957.

DR. LESLIE K. KARBURN --- Member, NICAP Board of Governors
Biophysicist. Emeritus member of the faculty of the University of California School of Medicine. Ph. D. in Engineering Physics from University of London. Fellow of the Institute of Physics and of the Physical Society of London. Established and headed the Bio-Medical Electronics Laboratory of the University of California. Major studies including implantation of telemetering EKG apparatus in dogs for space research, and on elasticity of the aortic wall. Has also done work on inertial navigation, astro-physics and nuclear physics.

MR. RICHARD H. HALL --- Assistant Director of NICAP
Graduate of Tulane University, 1958 (B.A. in Philosophy). Eight years with NICAP as Associate Editor of the "UFO Investigator" and Assistant Director. Wrote and edited "UFO Evidence", the 200,000-word documentary report to Congress in 1964. Established and supervises NICAP investigation network, and maintains liaison with consultants and specialists.

(more)

(biographical 22222)

MR. J. B. HARTRANFT --- Member, NICAP Board of Governors
President, Aircraft Owners and Pilots Association. Member, Executive Committee, Radio Technical Commission of Aeronautics. Member, Board of Directors, Bates Foundation for Aeronautical Education. Recipient, 1966 Award for Achievement of the National Aviation Club.

MR. WILLIAM H. HALL --- Member, NICAP Panel of Special Advisors
RCA Field Engineer, currently working on the Nimbus Project at NASA's Goddard Space Flight Center. More than 10 years experience in radar, communications systems, jet fighter fire control systems and general electronics.

MR. DONALD BERLINER --- Member, NICAP Headquarters Staff
Former newspaper reporter/photographer. Contributing editor, Air Progress magazine. U.S. correspondent, Flight International. NICAP Special Advisor and staff member since 1962.

NATIONAL INVESTIGATIONS COMMITTEE ON AERIAL PHENOMENA
1536 Connecticut Ave., Washington, D.C. 20036
Maj. Donald E. Keyhoe (USMC, Ret.) Director

For Release -- 4 p.m. EST, Monday, March 28, 1966

NICAP URGES PROBE OF NEW UFO SIGHTING WAVE

The National Investigations Committee on Aerial Phenomena (NICAP) today urged the Government to establish a nationwide tracking network and make public the recorded UFO speeds, shapes and maneuvers.

NICAP also urged an end to official secrecy, and fully backed the demand for a Congressional investigation by Rep. Gerald Ford (R., Mich.).

According to the Air Force, NICAP stated, over 200 military and airline pilots who have reported UFO encounters, are incompetent or deluded. In the same way, NICAP said at a Washington press conference, hundreds of military and FAA traffic controllers and radarmen, rocket and missile trackers have been ridiculed. In addition, thousands of other competent citizens -- lawyers, doctors, corporation heads, editors, reporters, newscasters -- have been openly belittled after making UFO sightings public.

The Air Force "swamp gas" explanation for unknown flying objects seen at Dexter and Hillsdale, Mich., were rejected by NICAP and by the witnesses involved. There have been press reports that the AF's No. 1 consultant, Dr. J. Allen Hynek, was ordered to release this explanation, and Hynek has admitted that he "could not prove it." (Dr. Hynek has since denied that he was pressured.)

The new wave has spread to Colorado, Maryland, Georgia and other states. Near Albany, N.Y., a low-flying UFO was reported to have chased a car.

(more)

(NICAP Urges 22222)

Near Ann Arbor, Mich., a disc-shaped UFO, estimated at 30 feet in diameter, 6 feet thick, was reported on March 26 by William Kartlick, a Research Associate at the University of Michigan working on a NASA project; Robert Amick, electronics technician, and Emile Grenier, a Ford Motor Co. electrical engineer. Grenier said the UFO emitted a brilliant red light. After several maneuvers, it descended to about 10 feet and flew parallel with a road for several moments.

Over 8,000 UFO sightings are on record at NICAP, including verified reports by hundreds of veteran pilots, astronomers, tower operators and other qualified observers in the U.S. and abroad. These include detailed daytime encounters with disc-shaped objects, maneuvering singly or in formations, at speeds far surpassing any known aircraft or missile operating in our atmosphere. Evaluation by NICAP has shown definite shapes, patterns and maneuvers, indicating that the unknown objects are operating under intelligent control.

Some of these encounters, especially recent close approaches and "touch landings" have been at extremely close range.

"Either all these witnesses are mistaken or deluded," states NICAP, "or else the UFOs reported by competent observers are real, and the facts are being officially denied and concealed."

A number of USAF officers in NICAP, including Col. Joseph Bryan III, USAFR, and Maj. John McLeod, USAFR, have fully confirmed the official secrecy. Col. Bryan, NICAP Board member, has also stated he knows of hundreds of UFO sightings be reliable observers, many confirmed by radar, proving the objects are far superior to anything known on earth. "These UFOs are extraterrestrial devices observing the earth," Col. Bryan has stated, "The secrecy is wrong and dangerous."

(more)

NICAP emphasizes it is not attacking USAF [illegible]. "We realize they are under strict orders to explain away sightings and deny that UFOs exist, even though some of the attempted explanations seem ridiculous."

"Dangers from official secrecy are increasing," says NICAP. "Several times, airline captains have had to maneuver violently to avoid collisions with UFOs, resulting in passenger injuries. There is a growing risk of accidental war from mistaking UFO formations for a secret enemy attack.

"We recommend all UFO secrecy be ended, except for classified radar, aircraft speeds and similar points. We urge that the USAF tell all pilots what to do if they encounter a UFO -- whether to land, put out their lights, fly straight, or radio for jets."

In a direct statement to NICAP, House Minority Leader Gerald Ford says he could see nothing but benefit from an honest, forthright Congressional investigation. "If the Air Force is right, it will clear up the problem. If they are wrong, they should be criticized."

NICAP agrees that the time has come to stop withholding the truth about UFOs from American citizens.

# # #

WASHINGTON STAR
29 MARCH 66(30)P-3

Viet Nam War Stirs Regrets Of Mrs. Gandhi

Prime Minister Indira Gandhi of India said today she was impressed by the sincerity of President Johnson's desire for peace in Viet Nam.

In a wide-ranging speech prepared for delivery at the National Press Club, Mrs. Gandhi went about as far as a neutral leader could go in supporting the U.S. efforts to start negotiations in Viet Nam.

"We share the world's regret that a peaceful settlement has eluded that troubled land thus far despite many and varied efforts," she said.

India is chairman of the Indian-Canadian International Control Commission set up to supervise the 1954 Geneva Agreement.

Resistant Genoese

Mrs. Gandhi said a new Geneva conference could offer a way out and might yet provide the machinery for a return to the negotiating table." So far the Communist side has rejected Western and non-aligned efforts to hold a new Geneva conference.

Mrs. Gandhi, while stressing India's own economic and social problems, also discussed her own international difficulties with Red China and Pakistan.

She said China cannot push westward at its neighbors and other nations, pointing to strong independent nationalist governments.

She called for a "viable alternative to Asia," and suggested that India can be that Asian alternative as alternative model for economic and social change a democratic socialist model.

Does Book Challenge?

"It is by its efforts to develop its democratic socialism by using its powers and great resources that India brings to China. It is in this respect again that Peking tries to undermine India's establishment, she said.

She added that the task of India is of "the greatest concern to the world and that a stable democratic and prosperous India will by itself be a force for peace and stability."

PHILA. INQ 3/30/66
Thailand Gets U.S. Jets

BANGKOK, Thailand, March 29 Reuters — The United States has dispatched an undisclosed number of F-4 jet fighter planes to Thailand, according to the Thai Air Force chief, Air Chief Marshall Dawalon Chandawongse.

CHICAGO TRIBUNE
30 MARCH 66 P-2

WAR ACTIVITY AGAIN ENGULFS LITTLE GUAM

AGANA, Guam, [illegible] March 30 — After more than [illegible] decades of [illegible] as a [illegible] territory of the United States, Guam is directly involved in a war again.

The role of [illegible] bombers based on Guam from Andersen air [illegible] bear a few miles north of [illegible] has reminded the 65,000 [illegible] indigenous inhabitants of Guam every day that the island is the only American territory going on a direct operational basis in the Vietnamese conflict.

The B-52s flight engaged jets [illegible] from Anderson field on South Viet Nam drop their bombs [illegible] and return without incident [illegible] a flight of more than [illegible] miles.

Pride of Inhabitants

Gov. [illegible] the gubernatorial [illegible] speaking personality of the island prefer to [illegible] any proud of these overseas [illegible] in Viet Nam. Any apprehension [illegible] faced with the same [illegible] bravery that they showed in 1941.

[illegible] and many Vietnamese have [illegible] Dr. Louis Guer[illegible] the Government director of [illegible] recruiters. They have [illegible] demonstrations on Guam against [illegible] administration's [illegible] Viet Nam.

The people of [illegible] gave a [illegible] farewell to [illegible] Gen. Thomas [illegible] who was serving with the [illegible] Forces for at South Viet Nam, and a senior chamber of commerce drive for blood donations for Viet Nam was oversubscribed by 35 per cent on the first [illegible].

Haven't Forgot Fighting

However Guamanese have not forgotten that the islands a United States naval base were shortly after its capture from Spain in 1898 was the first United States territory to fall to the Japanese in World War II. Agana, the capital, was reduced virtually to rubble when the American forces ousted the Japanese [illegible] years later.

The new horizons of war broadened by advanced technology, have made Guam more rather than less vulnerable to attack in any future conflict with super-weapons.

Besides being the western Pacific home of the far-ranging strategic air command which includes the B-52's, Guam also serves the United States submarine squadron with the Polaris missile in the Pacific. A Russian recon[illegible] normally a trawler but [illegible] with electronic gear, keeps a constant watch on the submarine base from just [illegible] and the three-mile limit.

Wants Air Base Shelters

Carlos Camacho, speaker of the Guam [illegible] believes that Guam's [illegible] situation justifies his [illegible] 20 million [illegible] in Washington for a federal [illegible] shelter program on the island.

"That [illegible] expect any thing to happen [illegible] said, "but if anything does happen we will get it first again."

N.Y. JOURNAL AMERICAN Mar 66 P-1 (30)

Where Sky 'Thing' Landed--'Circular' Mark on Earth

By HORT YOUNG
Journal-American Staff Writer

The officer in charge of the Air Force Project investigating unidentified flying objects today said that the "swamp gas" explanation of sightings in Michigan "could not satisfy anybody."

Maj. Hector Quintanilla of Project Blue Book, stationed at Wright-Patterson Air Base in Dayton, Ohio made the statement as new reports of UFOs in Michigan were received.

This time, investigators found a circular shape indented in the ground.

NO RADIOACTIVITY

The circular marking was found at Hillsdale south of Ann Arbor. Hillsdale County Civil Defense Director William Van Horn investigated it in a gravel pit about a mile North of Hillsdale.

A newsman who accompanied Mr. Van Horn to the scene said there was an appreciable increase in the needle reading on a radioactivity measuring device.

The reporter, Hank Wampler of the Hillsdale Daily News, said the circle was about seven feet in diameter with a deep indentation of one to two inches around the circumference.

Mr. Wampler said he and Mr. Van Horn found some black granules resembling charcoal nearby but the particles did not blacken the fingers when they were rubbed.

Mr. Van Horn took samples from the indentations and from the surrounding area to send to the Michigan State Police Crime Laboratory in Lansing for analysis.

For more than a week, residents also have been seeing lighted objects near Ann Arbor.

An all-night Washtenaw County sheriff's deputy Richard Reiser said he and a neighbor saw a lighted yesterday from their front yards on the ground. Flashing red, white and green lights flew overhead at approximately the same time. And 20 other residents of Washtenaw County flooded police agencies with reports of sightings.

[illegible] were less than 200 feet in the air witnesses reported.

Maj. Quintanilla also said that the investigation of sightings last week at Hillsdale—led by Dr. J. Allen Hynek, an astronomer and Blue Book's top consultant—was not completed until last Thursday night.

But Mr. Van Horn said he had been given the "swamp gas" explanation Thursday afternoon.

The Air Force investigators had visited Hillsdale, a small town 100 miles southwest of Detroit, to probe the sighting of a UFO on Monday by 81 Hillsdale College coeds. A [illegible] officer, seven officers, and Mr. Van Horn.

FLYING SAUCERS FOLLOW?

More UFOs were reported in Hillsdale on Tuesday, Wednesday and Thursday nights, the last after Air Force officials had told Mr. Van Horn that gas bubbles were swamp gas.

Asked about the swamp gas explanation the major replied:

"How can it sound satisfied?"

Told that the swamp gas explanation was given to Hillsdale residents as early as Thursday afternoon, the major said:

"How can anybody say Dr. Hynek said that? Dr. Hynek had not talked to a chemist until Thursday night. He did not make his final determination until he talked to a chemist from Michigan University.

The chemist was asked to determine if the UFO could have been swamp gas.

"Just because somebody makes a statement, that doesn't make it a fact, does it?

Maj. Quintanilla also took issue with the National Investigation Committee into Aerial Phenomena, whose director Maj. Donald Keyhoe, USMC (ret.) held a press conference in Washington yesterday, to demand a Congressional inquiry into UFO's and the Air Force's handling of their investigation.

NICAP has long charged the Air Force with suppression of evidence and censorship in connection with UFO sightings.

To this charge, the major responded:

"Our files are open to any accredited newspaperman or anyone writing a book."

In the meantime sightings of UFO's have increased by [illegible] and it made [illegible] the count.

UNIDENTIFIED FLYING OBJECTS (UFO)

Air Force responsibilities on UFO:

- To determine if there is a threat to the United States security.
- To determine whether UFO represents advanced technology or scientific information.

The Air Force activities:

- A completely unclassified program, called Project Blue Book that has investigated over 10,200 reported sightings since 1947.

Procedures are reviewed continuously.

- September 1965-the Scientific Advisory Board (SAB) requested to review Air Force procedures on UFO's.
- March 1966-the SAB reported on its review of the investigations conducted by Aerial Phenomena Branch, Foreign Technology Division, Air Force Systems Command, Wright-Patterson AFB, Ohio.

Points emphasized by SAB:

- No threat to the security of the United States was established.
- Present Air Force program well organized.
- SAB recommendations:
  - Use a few selected universities for scientific support in the investigation of UFO phenomena.
  - Have an officer at each AFSC base support the investigation and available to assist the investigative teams.
  - One university or not-for-profit organization should coordinate the effort of all of the teams.
- The Air Force is examining SAB recommendations:
  - Decision on implementation has not been made.

Representative annual statistics (1965):

- 894 UFOs reported
- 764 positively identified
- 97 lacked sufficient data for conclusion as to nature of object
- 17 investigations still continuing or pending
- 16 remain unidentified (less than 2%)

Summary:

- Following conclusions are supported by extensive investigations and scientific knowledge:
  - Nearly all UFO reports result from observation of natural or conventional objects under normal conditions.
  - No UFO has ever given any indication of threat to our national security.
  - No UFO reported has shown technological advance, data or principles beyond bounds of present day scientific knowledge.
  - No evidence has ever been presented that any UFO has been an extraterrestrial or interplanetary vehicle.

We've Had No Outer Space Guests, AF Secretary Tells Congressmen

WASHINGTON —(AP)— The secretary of the Air Force assured a congressional committee today there is no evidence the Earth ever has been visited by strangers from outer space.

Dr Harold Brown said almost all of the 10,147 unidentified flying objects reported in the past 19 years are easily explained, including the recent sightings in Michigan.

Marsh gases, pranks, planets, comets, meteors, fireballs and auroral streamers were causes he listed for most of the strange, bright objects seen flying through the heavens.

But he told the House Armed Services Committee the "Air Force has an open mind" and will continue to investigate all reports.

He said, too, he is "favorably considering" a suggestion that a civilian scientific panel be appointed to study some of the 846 sightings for which no scientific cause has been established.

The formal hearing on UFOs was a mixture of humor and seriousness, with most members suggesting freak statements about the scientific causes for the aerial phenomena.

"We're hiding nothing," Brown said.

"Most of the reports we get are from sincere, honest people who are puzzled. You might call this a study in puzzlement."

Dr J Allen Hynek, scientific consultant to Project Blue Book, the Air Force's permanent UFO investigation unit, said many of the unexplained UFOs probably had a scientific explanation.

But at any rate, both he and Brown stoutly declared there is "no real evidence" of "extra-terrestrial vehicles."

The Air Force scientific board has just finished a detailed review of UFO's Brown said, "and concluded that the UFO phenomena presents no threat to the security of the United States."

The committee's public hearing on UFOs came after the flurry of strange lights reported around Hillsdale and Dexter, Mich., on March 20 and March 21.

Rep. Gerald R. Ford of Michigan, house Republican minority leader asked Chairman L. Mendel Rivers (D-SC) to investigate. Rivers, in turn asked Brown and Gen. John P McConnell, Air Force chief of staff to be ready to respond to questions when they appeared yesterday to testify on the $48.3 billion 1967 defense budget.

The budget session was postponed for the open UFO session.

Hynek said some of sightings by "the young ladies at Hillsdale college," resulted from "certain young men playing pranks with flares."

And other sightings near Milan, Mich., he said, resulted from trails from a rising Moon and the planet Venus.

At Dexter and in Hillsdale, where most of the sightings were reported, he said they were the result of marsh gases from a swamp.

Sometimes these lights have been called "will-o-the-wisp" and "fox lights," he testified.

Brown put into the record a year-by-year report of the sightings investigated by the Air Force, showing 1952 was the year most people reported seeing something, 1,501. The next highest number came in 1957 with 1,006.

House Foreign Affairs Committee
Hearing Transcript, 30 March 1966
Page 691, following line 19

INSERT FOR THE RECORD

UNIDENTIFIED FLYING OBJECTS

Within the Department of Defense, the Air Force has the responsibility of investigating reports on unidentified flying objects and of evaluating any possible threat to our national security that such objects might pose. In carrying out this responsibility, the Air Force has been - and continues to be - both objective and thorough in its treatment of all received reports on unusual aerial objects over the United States. Under the name Project Blue Book, the Air Force carries out a 3-phase program to (1) make an initial investigation of each report received; (2) make a more detailed analysis of reports not explained in phase 1; and (3) disseminate information on sightings, evaluations, and statistics.

In addition to the Project Blue Book program, the Air Force is continuously reviewing its procedures, and changing them when new courses of action will permit them to do their job more effectively. In this particular area, they have focused the outstanding capabilities of their Scientific Advisory Board on the problems of unidentified flying objects. This capable group has just completed its examination of the problems and made its

recommendations to the Air Force. These recommendations, currently under study, could lead to even stronger emphasis on the scientific aspects of investigating the relatively few reports that warrant extensive analysis - perhaps 100 in a year.

Based on 10,147 reported sightings from 1947 through 1965 (attached), virtually all derived from subjective human observations and interpretations, the Air Force has succeeded in identifying 9,501. The most common of these identified are astronomical sightings that include such things as misidentified stars and planets, comets and meteors, and fireballs and noctilucent streamers. Other major sources of reported sightings include objects such as satellites, aircraft and balloons, and phenomena such as reflections, mirages and spurious radar indications. In its evaluation of these sightings, the Air Force has used carefully selected, highly qualified scientists, engineers, technicians and consultants; and has available its laboratory and test centers, scientific instrumentation, and technical equipment for this purpose. Although the past 18 years of investigating unidentified flying objects have not identified any threat to our national security, or any evidence of extraterrestrial

vehicles; the Air Force will continue to carry out its responsibilities for identification and analyses of such [illegible] by investigating - objectively and with an open mind - [illegible] sightings of unidentified flying objects.

A copy of the Air Force Report Project Blue [illegible] 1 February 1966), together with the Special [illegible] Scientific Advisory Board Ad Hoc Committee to Review [illegible] "Blue Book" (dated March 1966), are included for the [illegible].

Office of Origin: AFRDC
Action Officer: Lt Col [illegible]
Date Prepared: 3 April 1966
Coordination: AFSC, AFSSA [illegible]
Approvals:

SIGHTINGS OF UNIDENTIFIED FLYING OBJECTS

YEAR	TOTAL SIGHTINGS	UNIDENTIFIED
1947	122	12
1948	156	7
1949	186	22
1950	210	27
1951	169	22
1952	1,501	303
1953	509	42
1954	487	46
1955	545	24
1956	670	14
1957	1,006	14
1958	627	10
1959	390	12
1960	557	14
1961	591	13
1962	474	15
1963	399	14
1964	562	19
1965	886	16
	10,147	646

SCIENTIFIC ADVISORY BOARD & RECOMENDATIONS 1966

7-3745 -394

1003854

For Offic[illegible]

SAB

MEMO FOR RECORD

20 April 1966

SUBJECT: Implementing SAB Ad Hoc Committee on Project Blue Book Recommendations

1. The following personnel met at 1400 on 19 April in Room 5D-1014 to discuss how best to implement the recommendations made by the SAB Ad Hoc Committee to review Project Blue Book.

Dr. Brian O'Brien	Colonel Robert Burgess, AFBSA
Dr. Jesse Orlansky	Lt Col Harold Steiner, AFBSA
Lt Col Robert Hippler, AFRTSA	Mrs. Sara Hunt, SAFOI

RETURN TO: Director Aerospace Studies Office ATTN: Archives Branch Maxwell AFB, Alabama

K243 6[illegible]

2. On 5 April 1966, Secretary of the Air Force Harold Brown, in a memorandum to the Chief of Staff, stated that the Committee's recommendations should be accepted and arrangements made for a (sic) scientific team to investigate in depth certain selected sightings of UFOs. General Ferguson was given responsibility for implementing the Committee's recommendations and Lt Colonel Hippler is project officer.

3. Although the Committee's recommendation was clear and succinct, initially there was no unanimous agreement on how to put this recommendation into effect. A basic question is:

(1) Should the contract be with a university or should it be with individuals connected with a university? A great deal of the meeting was taken up discussing these facets of the problem and a clear answer did not evolve. Therefore, it is probable that I, and perhaps some selected members of the Committee, may be asked to meet with Colonel Hippler again.

4. Generally, the concept of using universities (or individuals from universities) is good. Specifically, however, there needs to be a lead university to coordinate and collate the investigations. After some discussion, it was suggested that the University of Dayton is probably most appropriate because it is located close to Hq FTD who will retain management of Project Blue Book. Other universities were suggested that could provide personnel to give areal coverage of CONUS. They are listed below.

East	West	South
Rensselaer, Troy, N.Y.	Utah	Vanderbilt
Columbia	Colorado	Duke
NYU	Iowa	Univ of Florida
Univ of Conn.	Wisconsin	Georgia Tech
Yale	Illinois	Univ of Georgia
Cornell	Chicago	
Univ of Dayton	Univ of Calif (Berkeley)	
Carnegie Tech	UCLA	
	Oregon	
	Washington	
	Rice	
	Univ of Texas	

Copy Nr 4 of 6 Copies

[redacted]

1003854

Colonel Hippler pointed out that it will probably be September before he gets the money to implement this plan. Dr. Orlansky pointed out that because of the summer holiday, Colonel Hippler should make contact with the universities before the end of May.

5. Since we are dealing with an emotional phenomenon, there was some discussion about whether universities (i.e., their presidents) would be willing to get involved with UFOs. Dr. O'Brien suggested that Dr. Stever, as President of Carnegie Tech, might send letters to a few selected university presidents with whom he is acquainted to get some idea of their feelings on this matter. (ACTION: AFBSA). In this way we can learn what a typical reaction might be and also some of the pitfalls to avoid when contacting other universities.

6. There are still several unanswered questions or problem areas:

(a) Since the problem is 99% public relations, it is essential that the investigating teams have some modicum of skill in press relations. It was strongly suggested that a good solid PIO type (perhaps incognito) be included on the first few investigation teams. This caused quite a bit of discussion and a final answer did not evolve.

(b) The objective is to have impartial scientists from schools with good reputations that have never been involved with UFOs.

(c) Considerable thought must be given to how the contract or contracts are to be written.

(d) In order to utilize their talents to the best advantage, it was proposed and accepted that Dr. J. Allen Hynek and Dr. Donald Menzel form the nucleus of a Consultant-Advisor team to work with Hq FTD in determining which sightings the university team should investigate.

(e) When teams are selected, it is strongly recommended that they be brought together at some certain location such as Hq FTD and given a thorough briefing on what is expected of them. This briefing should cover all of the intangibles and pitfalls that must be avoided in order to give good Air Force public relations.

(f) Another question that was not fully resolved is how AFSC should get into the act. The Committee's original thought was that someone from the nearest AFSC base should work with the investigating team. The Committee also recommended that a member of the OSI might work with the university teams and give them the benefit of their investigating experience. It was questioned whether this would help or hurt the Air Force effort. Neither of these questions were fully resolved.

[redacted]

(g) It was pointed out that the National Research Council had conducted an exercise in Disaster Research which had involved some investigating teams similar to the ones we are discussing. Although the committee is now defunct, Mrs. Marjorie Wilson, Government Code 1224 - 230/239 has their reports and will be glad to let us review them.

Harold A. Steiner

HAROLD A. STEINER, Lt Col, USAF
Assistant Secretary
USAF Scientific Advisory Board

[redacted]

DEPARTMENT THE AIR FORCE
OFFICE OF THE SECRETARY

MEMORANDUM

May 31 1961

Mg J

For your info -

SR

FILE

AFRSTA/Lt Col Hippler/52108/hjs/22 Apr 66

Implementation of SAB Recommendations on Project Blue Book

AFCCS

The attached Memorandum for the Record indicates steps taken and plans laid for implementing Secretary [illegible]'s Memorandum of 5 April 1966 to the Chief of Staff on this subject. Copies of the memorandum are being furnished to the Office of Information and the Scientific Advisory Board (SAB). You may wish to pass this information on to Secretary Brown.

1 Atch
AFRSTA Memo for Record,
22 Apr 66

Coordinations:
AFRSTA
Lt Col Hippler
Lt Col Havard
Col Hesseberg

AFSSA

SAF-OI

Additional AFRDC coordination is not required.

Coord Cy, AFRSTA
AFCSA
SAF-OI
AFCCS
[illegible]
[illegible], Ofc of Sig
RF Cy, AFRSTA
Staybook

MEMORANDUM FOR THE RECORD 22 April 1966

SUBJECT: Scientific Panel to Investigate Reported Sightings of Unidentified Flying Objects (UFOs)

1. Official correspondence:

a. SAF-OS to AFCCS, 5 April 1966, specifying arrangements to be made to implement SAB recommendations on "Blue Book."

b. AFCVC to SAF-OS, 14 April 1966, acknowledging that arrangements are being made to implement program.

c. AFRDC to SAF-OI, 14 April 1966, confirming present FTD to SAF-OI route for information on current sightings.

2. Meetings:

With Major Hector Quintanilla, FTD W-PAFB, on current procedures and shortcomings.

With Major Gregory, FTD-AFSC, on administration, procedures and working relations.

With Major Thaddeus W. Kallini, AFNLABA, on transfer of OPI to RDC and recommendations on AFR 200-2.

With SAB (Lt Colonel Harold Steiner) and SAB Ad Hoc Committee members, Dr. Brian O'Brien and Dr. Josue Orlansky, on specifics of the SAB recommendations.

With Colonel Spaulding and Mrs. Sara Hunt, SAF-OI, on everything in general as it impinges on information release. Also spent a short time with General Garland on UFO information release.

3. Telephone conversations (covering the same items as in paragraph 2):

Colonel Eesaberg (AFRSTA) with Colonel Sleeper and Colonel Walker (AFSC-FTD).

Lt Colonel Hippler (AFRSTA) with Lt Colonel Provan (AFSIA).

Lt Colonel Hippler with Lt Colonel Jacks (SAF-OI).

Lt Colonel Hippler with Lt Colonel McEntee (AFSIA).

6. Results:

a. It is expected that the university findings, resulting from in-depth investigations of certain sightings, may indicate whether to continue the FTD UFO program as at present, to increase the effort, or to discontinue all effort and get the Air Force out of the business.

b. It is hoped that better public understanding will result from these investigations. At first, the mere fact that a sighting is earmarked for this scientific investigation may make a "spectacular" out of it and we may lose some ground. Prior press releases of our intentions and objectives may be of aid here.

c. It is possible that there exist some phenomena that may be earmarked for investigation by current university or governmental research programs to gain a better insight into nature. However, such a long-term continuing investigation of specific phenomena would not be a part of this current program.

ROBERT R. HEFFNER, Lt Colonel, USAF
Science Division
Directorate of Science & Technology

MEMO ROUTING SLIP

NEVER USE FOR APPROVALS, DISAPPROVALS, CONCURRENCES, OR SIMILAR ACTIONS

1 NAME OR TITLE: COMMANDER	INITIALS: VCO		CIRCULATE
ORGANIZATION AND LOCATION: VICE COMMANDER	DATE		COORDINATION
2 ASST FOR STAFF SUPPORT (2)	4		FILE
			INFORMATION
3 CHIEF SCIENTIST (2)	CC		NECESSARY ACTION
			NOTE AND RETURN
4 SCIENTIFIC ADVISOR			SEE ME
			SIGNATURE

REMARKS

TDE

TDEW UFO

FROM (NAME OR TITLE)	DATE
ORGANIZATION AND LOCATION	TELEPHONE

DD FORM 1 FEB 95 Replaces DA AGO Form 895, 1 Apr 48, and AFHQ Form 12, 15 Nov 47, which may be used.

5 F-1

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE SYSTEMS COMMAND
ANDREWS AIR FORCE BASE, WASHINGTON, D.C. 20331

REPLY TO ATTN OF: SCFA

2 JUN 1966

SUBJECT: Scientific Panel Investigation of UFO

TO: FTD (TDG)

1. The Deputy Chief of Staff, Research and Development, has notified Systems Command of his assumption of the Office of Primary Respon sibility for Unidentified Flying Objects (UFO).

2. Among several actions currently being considered to strengthen the program, it is the intent of the Air Force to implement a Scientific Advisory Board recommendation to contract with universities to conduct in-depth studies of certain sightings. As the Systems Command element responsible under AFR 200-2 for UFO analysis and evaluation (Project BLUE BOOK), you will be expected to select and recommend significant sightings for in-depth study.

3. Definitive tasking will be provided when the Air Staff has identified specific inputs desired from Systems Command in support of this contemplated action.

FOR THE COMMANDER

for RAYMOND S. SLEEPER
Colonel, USAF
DCS/Foreign Technology

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS FOREIGN TECHNOLOGY DIVISION (AFSC)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

REPLY TO ATTN OF: TDEW/UFO (1st Lt. W. Marley/70916)

SUBJECT: Information on Major Quintanilla's Briefings, 9 Jun 66

10 June 1966

TO: TDGS TDE TDEW

The following information was received from Major Hector Quintanilla, Jr, TDEW, at 0815, 10 Jun 66, regarding his briefings in Washington, D.C., to DDR&E and AFNIN.

a. Major Quintanilla's briefing with Dr. Koslov, DDR&E, 0900, 9 Jun 66, went off extremely well, according to Colonel Franco from AFNIN. Col Franco accompanied Major Quintanilla to the briefing. This was Col Franco's reaction and also was Major Quintanilla's reaction.

b. The briefing yesterday at 1400 for AFNIN, General Thomas, seemed to be successful. At the conclusion of the briefing, General Thomas came up and expressed his appreciation for a most interesting briefing and for bringing him up to date. General Thomas made the remark that if Major Quintanilla came across something interesting not to forget AFNIN. Major Quintanilla said that we would not forget them.

c. Both briefings went off much better than was expected.

d. Major Quintanilla spoke with personnel at Hq USAF regarding the scientific teams that would be participating with the UFO program. He plans to get further information on this subject today, 10 Jun 66.

e. Major Quintanilla will discuss his trip on Monday, 13 Jun 66. He expects to return to Wright-Patterson AFB, this evening, 10 Jun 66.

WF Marley Jr

WILLIAM F. MARLEY, Jr, 1st Lt, USAF
Aerial Phenomena Office

SAB

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE (PUBLIC AFFAIRS)

WASHINGTON, D. C. 20301

NO. 388-66
OXford 7-5131 (Info.)
OXford 7-3189 (Copies)

IMMEDIATE RELEASE May 9, 1966

AIR FORCE TO CONTRACT WITH SCIENTISTS FOR UFO INVESTIGATIONS

The Air Force is taking steps to strengthen scientific investigations of reports it receives on unidentified flying objects (UFO).

The help of more individuals within the scientific community will be sought through contracts calling for prompt, in depth investigation of selected UFO reports. Air Force officials are now discussing the project informally with university and other scientific leaders to determine their interest.

The decision to award the contracts was based on a recommendation by the Air Force Scientific Advisory Board which reviewed the resources, methods and findings of Project Blue Book - the Air Force program to investigate and evaluate UFO reports.

In its report, which was submitted to the Air Force in March, the investigating committee recommended expanding the program to include investigation of selected sightings by independent scientists. The committee also concluded that there has been no evidence that unidentified flying objects are a threat to national security, and complimented the Air Force on the organization of Project Blue Book.

The Air Force is preparing work statements for the new contracts now. Funds for them will be requested from FY 67 and FY 68 budgets.

- E N D -

DEPARTMENT OF THE AIR FORCE
OFFICE OF THE SECRETARY

MEMORANDUM

May 17, 1966

Major Quintanilla:

We attached Radio-TV dialog shown here Chet Huntley, treated the effect that a psychological would be a member of the scientific mission team-

I gave a cy to Stennis & Hospelin —

SAL

SAB

RADIO-TV DEFENSE DIALOG

SUMMARIES ARE NOT TO BE QUOTED

BROADCASTS OF MAY 10, 1966

RADIO-TV REPORTS, INC., WASHINGTON, D. C.

Reports summarized below broadcast this date unless otherwise indicated)

SUMMARY OF BROADCASTS CONTAINED IN THIS DIALOG

In yesterday's news, David BURRINGTON comments on the return of US Marines to the Bong Son area, Chet HUNTLEY reports on UFOs and the upcoming investigations, Sen Vance HARTKE calls on AMB LODGE to answer some of our questions on VN, and the last of a two-part broadcast was televised on VN with the showing of a film on NVN narrated by James CAMERON.

In today's news, Ron NESSEN and Chet HUNTLEY report on the bloody gun battle in Saigon, Garrick UTLEY interviews the Commander of the Seventh Fleet about the air war, Richard O'BRIEN visited Army Laboratories which are producing bullet-proof vests for use in VN, Roger PETTERSON discusses Operation DAVY CROCKETT, Eric SEVAREID offers an appraisal on the charges of American corruption of the VNese, an Army pilot plans to run for Congress, and mistakes have been reported in the assignment of college students to various testing centers for the draft deferment tests.

RED CHINA AND THE BOMB

7:00 AM: The Today Show, NBC-TV

Sander VANOCUR interviewed Sen John PASTORE (D-RI) concerning Red China and the hydrogen bomb.

Q. If it is a question of priorities, and they place the highest priority on this, is it possible to judge how far they are away from exploding a full-scale hydrogen bomb?

A. You can't measure it in terms of days or weeks or years, but I think that Dr. TELLER, who is quite knowledgeable in this area, has placed it in a matter of several years.

Q. What do you think is the primary implication of this, its military ramification or its political?

A. I think it's more political than it might be military at the moment. You have a vast area in Asia and you have this tremendous pressure that is being constantly applied by Red China. You have elements of it in SVN. We had the experience in Korea. We are beginning to feel it now in Thailand. Now, I don't think that the present fear is, or the imminency is, that they're going to drop a bomb on San Francisco or they're going to drop a bomb on Los Angeles, or Chicago or Washington.

I don't think that's the immediate concern, because, after all, they know that our retaliation would be so great. But what you do have there -- if they begin to dangle this bomb over Okinawa and Matsu, and over Korea and

Cont'd Next Column

THE TODAY SHOW (Cont'd)

over Taiwan and over Thailand, you can imagine the impact, the diplomatic impact, that the position of the bomb will have on these other smaller nations. And I think that therein lies the fear. And then, of course, as a result of that comes into play our commitments that we're always talking about. And I think the time is fast coming when America has to analyze its commitments and consider the whole panoramic situation, and do what has to be done, not on the immediate score but on the long pull.

1STCAV RETURNS TO BONG SON AREA

5-9-66

6:30 PM: Huntley-Brinkley, NBC-TV

CHET HUNTLEY: The 1stCavDiv today fired its heavy artillery at point blank range to break up a communist attack near Bong Son. The division was attacked near the battlefield where it killed more than 400 of the enemy last week.

DAVID BURRINGTON (FILM CLIP): In only two months the VC had rebuilt its forces and nearly all of this rich, coastal highland was back under its control. So, the 1stAirCavDiv returned to Bong Son where it had previously fought some of the war's most savage battles.

Intelligence this time was good. The men knew the terrain and soon an entire NVNese battalion was spotted.

Cont'd Next Page

HUNTLEY-BRINKLEY (Cont d)

For three days it was tracked, harassed, and finally surrounded in the hamlet of Wei Son (?) village.

LT ED DUNKLE: As it stands right now, we don't know how many PAVNs are over to our front.

BURRINGTON: By PAVNs you mean NVNese troops.

DUNKLE: NVNese, right. And the situation as it stands, we have an element coming up to our left flank and we're going to support them with fire as they sweep the area through to our front. Now, like I said before, we don't know how many PAVNs are there, but we estimate a battalion. There're supposed to be two battalions in this area now.

BURRINGTON: What all have you thrown at them?

DUNKLE: We had an air strike. We had ARA. We had mortar fire, battalion mortar fire, artillery, machine gun fire, everything, the whole works.

BURRINGTON: Are you a little surprised that they're still holding out?

DUNKLE: I am. I really am. With the stuff we threw in, I'm surprised that they can really hold like they have been doing.

BURRINGTON: Now, this is your first Song Son, in fact, your first real test under fire, is it not?

DUNKLE: That's right. I've been here approximately two and a half weeks.

BURRINGTON: And what's your reaction to this?

DUNKLE: I'm scared, damned scared. I imagine everybody in my platoon is scared right now. But we know we can lick them.

BURRINGTON: Artillery, air strikes and helicopter rockets pounded the enemy position until it was obscured by smoke and dust. As other companies moved in the communist battalion began receiving fire from three sides, and finally its resistance weakened.

Eventually more than 90 bodies were found in the VC position along with a battalion flag. American casualties were generally light, but the second platoon was hit hard. There was less concern about villagers. The feeling was that those who wanted out had been evacuated during the last operation. Those who were left were soon to be VC.

There was a lot of fighting in the villages this time. One hamlet was devastated because an entire NVNese battalion was spotted here early one evening and supposedly surrounded.

COMMENTARY ON UFOS

5-9-66

6:40 PM: Chet Huntley Perspective on the News, NBC

CHET HUNTLEY: This spring people from NH to Mich, from Calif to NJ, have been craning their necks at alleged flashing lights or hovering objects that flash by and disappeared upwards.

The government, with the AF designated as the agency to handle the matter, would simply prefer not to talk about UFOs. But people keep on seeing them nonetheless. After nearly 20 years of this the AF is well organized to investigate these sightings and identify what it can and to file away the remainder as unidentified.

It was just a little obvious recently when a spate of alleged sightings of UFOs broke out in a particular community in Mich. Cong Gerald FORD, who happens to live in that State, apparently so attractive to UFOs, arose in the House and demanded a public hearing. The DEPT DEF managed to get the public hearings shunted aside, but it did beef up its UFO group under the AF to conduct investigations into the matter.

Soon, therefore, teams of scientists will be dotted across the US to investigate thoroughly all UFO sightings. It's interesting and significant that one member of each UFO team is going to be a psychologist. This apparently means that the stability of the UFO observer from here on out is going to be noted.

Thus far there have been 10,147 alleged sightings of UFOs over the years, and 646 of them have not been solved. That isn't a very bad record; in other words, the overwhelming majority of alleged sightings have been studied and have been discovered to be of no consequence. They turned out to be missiles, balloons, birds, kites, searchlights, beacons, astronomical bodies, weather conditions, reflections, mirages, fireworks, flares, and even now and then, hoaxes.

The fact also remains that not a single UFO has ever come into the range of the large instruments that span the skies from vantage points all over the world. And, again, scientists agree that nothing has been uncovered by these sightings which reveal technological developments beyond the range of today's scientific knowledge. But we may expect the confusion to be compounded. The NSA is going to test a flying saucer of its

Cont'd Next Page

CHET HUNTLEY PERSPECTIVE (Cont'd)

own. If it works, we're going to hear about every kind of flying saucer under the sun -- including some from Mars.

FOREIGN FILM ON NVN

3-9-66

9:00 PM. Report From VN, WETA-TV

DAVID SCHOENBRUN hosted the second of two programs devoted to filmed reports made by foreign reporters on the VN war. In this broadcast, James CAMERON of the London Evening Standard, narrated a film entitled "Western Eyewitness in the North of Vietnam." It was more or less a travelog of NVN, without a major theme, except perhaps that NVN is a country inhabited by people, just like any other country, trying to live as normal a lives as possible under the circumstances.

There were scenes of schools, a TB hospital, a park, and some of the industries of NVN. Also shown were an American aircraft, which had been shot down and was on display, the Bay of the Dragons and coal mine areas on the bay, and scenes from the Presidential palace.

During the discussion that followed with Max FRANKEL, Jean LACOUTURE of the French newspaper Le Monde, CAMERON, and SCHOENBRUN, it was pointed out that the NVNese feel they have put up with war for 20 years and can put up with another 20; they don't want to negotiate.

CAMERON pointed out that there is no fighting in NVN, other than the bombing. The war is something abstract to the NVNese peasant. Also, the people are not well informed. They over-emphasized the protest movements in the US and in Europe. They have made a hero of Norman MORRISON who killed himself in front of the PENTAGON. The people are terribly ignorant of the US, they simply see us as an imperialist power.

LODGE SHOULD SPEAK TO THE PEOPLE

5-9-66

11:00 PM. News 7 Final, WMAL-TV

JOSEPH MCCAFFREY: After a leisurely trip back to Washington to report on VN, Amb LODGE is now here. But Indiana Sen Vance HARTKE doesn't feel he should confine his report just to official

Cont'd Next Column

NEWS 7 FINAL (Cont'd)

HARTKE (FILM CLIP): I think Amb LODGE has an obligation and a duty to answer some questions for the American people. They would like some plain talk from the Ambassador, not violating national security, but certainly not hiding behind it. I think the American people are confused by this constant surprising element coming in the situation politically and militarily in VN. We seem to be winning the war every week, but when the week's over we are no better off than we were the week before. In other words, we re winning it by talk and a lot of bombs and a lot of casualties, but we seem to be making no real progress.

GUN BATTLE IN SAIGON

7:00 AM: The Today Show, NBC-TV

GARRICK UTLEY: US officials in Saigon have accepted responsibility for the bloody gun battle which erupted in a Saigon street early Tuesday following a VC terrorist attack.

RON NESSEN (FILM CLIP from Saigon): It was dawn, it was raining, and a truck loaded with Wese men and women, and even some children, was heading down Haibatron (?) St to the Saigon docks to work. At that moment, the truck and its passengers got caught in the wrong place at the wrong time.

A block and a half ahead of them a VC bomb went off in a doorway. A block behind them an American military policeman stepped into the street and fired toward the explosion. Other MPs thought they were VC shots and fired back from ahead with 30-cal machine guns. The truck and its passengers were caught in the middle.

It so happens the street is being repaired at that point, and the truck had to swing to the right toward the Brink (?) Hotel for American officers. Nervous guards thought it might be a truck of VC explosives and they fired on it. The truck driver tried to back away but it was too late.

UTLEY: The US Embassy in Saigon has offered to pay compensation for the victims of the gun battle.

THE AIR WAR IN VN

UTLEY: On a recent visit to Tokyo, the Commander of the Seventh Fleet, VAdm John J. HYLAND, JR, talked with John Rich about the air war.

Cont'd Next Page

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FM CSAF

TO RUETDH/DR BRIAN O BRIEN CONSULTING PHYSICIST P O BOX 117 POMFRET CONNECTICUT 06258

RUWPAM/DR LAUNOR F CARTER VICE PRESIDENT SYSTEM DEVELOPMENT CORPORATION 2500 COLORADO AVENUE SANTA MONICA CALIF 90404

RUEKDA/DR JESSE ORLANSKY INST TUTE FOR DEFENSE ANALYSES 400 ARMY NAVY DRIVE ARLINGTON VIRGINIA 22202

RUEGFU/DR RICHARD W PORTER GENERAL ELECTRIC COMPANY ENGINEERING SERVICES 570 LEXINGTON AVENUE NEW YORK NEW YORK 10022

RUEGMJ/DR CARL SAGAN

SMITHSONIAN ASTROPHYSICAL OBSERVATORY 60 GARDEN STREET

CAMBRIDGE MASSACHUSETTS 02138

RUWPAM/DR WILLIS H WARE HEAD COMPUTER SCIENCES DEPARTMENT THE RAND CORPORATION 1700 MAIN STREET SANTA MONICA CALIF 90406

RUCDSQ/MAJOR HECTOR QUINTANELLA FOREIGN TECHNOLOGY DIVISION WRIGHT PATTERSON AFB OHIO

BT

UNCLAS AFBSA 82596 APR 1966.

1. PLEASE REFER TO REPORT OF THE SAB AD HOC COMMITTEE TO REVIEW PROJECT BLUE BOOK.

2. THE AIR FORCE HAS DECIDED TO IMPLEMENT THE COMMITTEE'S RECOMMENDATION TO FORM AREAL INVESTIGATION TEAMS COMPOSED OF REPRESENTATIVES FROM UNIVERSITIES. IT HAS BEEN SUGGESTED THAT DR. O'BRIEN AND OTHER MEMBERS OF THE COMMITTEE MEET WITH REPRESENTATIVES OF THE AIR STAFF ON 19 APRIL TO ADVISE THEM ON HOW TO IMPLEMENT THE PLAN. IF YOU CANNOT PERSONNALLY ATTEND THIS MEETING, PLEASE PROVIDE ME NOT LATER THAN

18 APRIL YOUR SUGGESTIONS OF UNIVERSITY PEOPLE WHO YOU THINK SUITABLE TO SERVE ON THE INVESTIGATION TEAM. THESE NAMES SHOULD BE SUBMITTED BASED ON YOUR KNOWLEDGE AND SPECIALTY AND SHOULD BE SELECTED TO GIVE AREAL COVERAGE OF THE ENTIRE CONUS.

3. PLEASE CALL ME AT YOUR EARLIEST CONVENIENCE AT AREA CODE 202 - 697-4648 OR 697-8845 IF YOU WANT TO DISCUSS THIS FURTHER.

HAROLD A. STEINER, LT COL, USAF

ASSISTANT SECRETARY

USAF SCIENTIFIC ADVISORY BOARD

BT

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FILE SAB

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS USAF
WASHINGTON, D.C.

REPLY TO ATTN OF: AFBSA

SUBJECT: Unidentified Flying Objects (UFOs)

TO: SAFOI (Maj General E. B. LeBailly) 21 DEC 1965

1. Further to my letter to you on 11 October 1965, the Executive Committee of the AF Scientific Advisory Board has discussed and agreed on action to be taken on your request for a review of the Air Force UFO program.

2. Dr. Brian O'Brien, a member of the SAB, has been asked to convene a small group of scientists to review the Air Force Project Blue Book and report on their findings. A meeting of this committee is scheduled to be held at the Foreign Technology Division headquarters at Wright-Patterson Air Force Base on 3 February 1966. A report is expected shortly after that date.

3. The Wall Street Journal article on this subject forwarded by your memorandum of 16 December has been made available to Dr. O'Brien.

JAMES FERGUSON, Lt General, USAF
Military Director
USAF Scientific Advisory Board

For Official Use Only

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D.C.

REPLY TO ATTN OF: AFBSA

22 December 1965

SUBJECT: Ad Hoc Committee on Unidentified Flying Objects (UFOs)

TO: Members of Committee

1. You are invited to attend a meeting of the USAF Scientific Advisory Board Ad Hoc Committee on UFOs at the Foreign Technology Division, Wright-Patterson AFB, Ohio, on 3 February 1966. An agenda is attached (Atch #1).

2. In 1948, the Air Force initiated Project Blue Book whose objectives were twofold: (1) to determine whether UFOs pose a threat to the security of the United States, and (2) to determine whether UFOs exhibit any unique scientific information or advanced technology which could contribute to scientific or technical research. The objectives of the Ad Hoc Committee are to review the resources, methods, and findings of Project Blue Book and to advise the Air Force as to any improvements that should be made in the program in order to carry out the Air Force's original responsibility. Correspondence from the Secretary of the Air Force Information Office relating to this meeting as well as other pertinent documentation is attached for your information. (Atchs 2, 3, and 4).

3. Quarters for attendees will be available at the Wright-Patterson Visiting Officers Quarters. Please let me know at your earliest convenience when you plan to arrive so that transportation can be provided. My phone is Area Code 202 - 697-8845/697-8404.

Harold A. Steiner

HAROLD A. STEINER, Major, USAF
Assistant Secretary
USAF Scientific Advisory Board

Atch
1. Agenda
2. SAFOI Memo 28 Sep 65
3. SAFOI Memo 16 Dec 65
4. Excerpt fr Wall Street Journal 13 Dec 65

/ Cy to: Dr. Cacciopo

For Official Use Only

AD HOC COMMITTEE ON
UNIDENTIFIED FLYING OBJECTS (UFOs)

MEMBERS

Dr. Brian O'Brien (Chairman)
Dr. Launor F. Carter
Mr. Jesse Orlansky
Dr. Richard Porter
Dr. Carl Sagan
Dr. Willis H. Ware

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AD HOC COMMITTEE ON
UNIDENTIFIED FLYING OBJECTS (UFOs)

AGENDA

Thursday, 3 February 1966

0800	Welcoming Remarks	Commander or Vice Commander, FTD
0805	Introduction	Dr. O'Brien, SAB
0810	Briefing on Project Blue Book	Major Quintanilla, FTD
1000	Break	
1015	Review of Selected Case Histories	FTD
1145	Lunch	
1315	Executive and Writing Session	

APPROVED:

Harold A. Steiner

HAROLD A. STEINER, Major, USAF
Assistant Secretary
USAF Scientific Advisory Board

22 December 1965

For Official Use Only

Doctor J. Allen Hynek who is the Chairman of the Dearborn Observatory at Northwestern University is the scientific consultant to Project Blue Book. He has indicated a willingness to work with such a panel in order to place this problem in its proper perspective.

Doctor Hynek has discussed this problem with Doctor Winston Markey, the former Air Force Chief Scientist.

E. B. LeBAILLY
Major General, USAF
Director of Information

2 Attachments
1. Blue Book Report
2. AFR 200-2

DEPARTMENT OF THE AIR FORCE
WASHINGTON

OFFICE OF THE SECRETARY

DEC 13 1965

MEMORANDUM FOR MILITARY DIRECTOR, SCIENTIFIC ADVISORY BOARD

SUBJECT: Unidentified Flying Objects (UFOs)

Reference is made to our previous correspondence on this subject dated September 28, 1965.

The attached Wall Street Journal story of December 13 is an "opening gun" trained on the relative inadequacy of present UFO investigations. We expect them to increase in number and intensity.

E. B. LEBAILLY
Major General, USAF
Director of Information

1 Atch
Wall Street Journal Story

WALL STREET JOURNAL 23 December 1965

New Fireball Raises Old Question: Do Flying Saucers Exist?

A Journalist, Who 'Talks' to Men From the Stars, Says 'Yes'; Scientists Assail Air Force

By ELLIOTT CARLSON

Staff Reporter of THE WALL STREET JOURNAL

They call it a fireball. The object was sighted a few nights ago by residents and pilots in the north- [illegible] and in Canada. They described it as [illegible]. The Air Force at first [illegible] an unidentified flying object, but now [illegible] it was a meteor. Some other people called it a flying saucer.

Several persons say they saw the fireball land. [illegible] an eight-year-old boy in Lorain, Ohio, says he watched it drop into the woods near his house. A woman in Elyria, Ohio, 10 miles away, claims she saw it plunge into a vacant lot across the street from her home. Others say they saw it streak into Lake Michigan. Firemen and police combed a 75-acre area near Pittsburgh after a woman there saw the object crash to earth "smoldering."

Despite these witnesses and search efforts, however, the thing has yet to be found. In this respect it is like all other unidentified flying objects or UFOs, which are mysterious because they are seen but never found.

Whatever it turns out to be—meteor, satellite part, hoax, weather oddity or man from Mars—it appeared in a banner year for such objects, which almost disappeared from public consciousness following a rush of reports of flying saucers in the mid-1950s. "We've had more reports this year than in any year since 1957 when we had more than a thousand," says a spokesman for Project Blue Book, the Air Force program set up in 1952 to evaluate reports of the phenomena.

Visitors From Outer Space

Nobody knows what the objects are or where they come from, [illegible] a fine batch of theories [illegible] of controversy. The Amalgamated Flying Saucer Clubs of America, Inc., is sure the saucers come from outer space. How do they know? The "space people" have told them.

Not only that, says Gabriel Green, who heads the Clubs, [illegible] space people give [illegible] information about life on other planets and solutions to [illegible] problems on this planet. One suggestion, [illegible] made to Mr. Green [illegible] by a visitor from Alpha Centauri, a nearby star: Run for President as a write-in candidate. He campaigned briefly, then decided not to run.

The National Investigations Committee on Aerial Phenomena (NICAP), a private research organization in Washington, doesn't hold with the theory. "We reject reports of noble beings landing on earth to solve all our problems," says a spokesman. So men from Mars are a lot of bunk? Not necessarily, says the committee. It believes a Congressional investigation would prove that UFOs "are real physical objects [illegible] under the control of living beings." As for [illegible], the spokesman says: "There are a tremendous number of organizations who have been able to appoint themselves experts in this field because it is so confused."

One man who's not confused at all is Charles A. Maney, professor emeritus of physics and mathematics at Defiance College in Ohio. Says the professor: "These objects are unquestionably from outer space." He bases his reasoning on the fact that the objects often interfere with local electrical circuits, indicating to him they have "a means of propulsion associated with magnetic fields."

"There's Nothing To It"

Such notions are scoffed at by astronomers, however. "All this is imagination outside the realm of science," says Donald H. Menzel, director of the observatory at Harvard. "I have examined Air Force cases and discovered the UFOs all have simple explanations in terms of well-known natural phenomena. There's not one cause, but hundreds. Some are quite spectacular, such as reflections from ice crystals or bright stars, searchlights on clouds or high-flying spider webs. [illegible] some people the question of flying saucers is a matter of religious fanaticism," he says.

But Mr. Menzel [illegible] the Air Force [illegible]. Of the [illegible] UFO reports made to the Air Force since 1947, [illegible] remain classified as "unidentified," a spokesman says. He defines this category as containing sightings whose reported data can't be correlated with any known object or phenomenon.

The spokesman quickly adds: "We have never received nor discovered any evidence to prove the existence of [illegible] extraterrestrial [illegible] we continue [illegible] an open mind [illegible] facts [illegible] present any evidence [illegible]. And [illegible] report evaluated by the Air Force has ever given any indication of a threat to our national security."

The Air Force's approach irks some people, however. "The Air Force should admit there are unusual phenomena taking place under our noses of which we know nothing," says I. M. Levitt, director of Fels Planetarium at the Franklin Institute in Philadelphia. He adds: "The Air Force is trying [illegible] that are unexplainable [illegible]."

Robert Risser, director of the Oklahoma Science and Arts Foundation planetarium at Oklahoma City, believes "the Air Force must have had its star-finder upside down during August," when several reports of flying saucers were ascribed by the Air Force to [illegible]. "The constellations of [illegible] and [illegible] weren't visible at the time the Air Force said the sightings were made. I think they made an error."

The whole problem, says J. Allen Hynek, chairman of the department of astronomy at Northwestern University and a consultant to the Air Force, is that the matter should be studied more thoroughly.

"Pressures to conformity in academic circles and fear of ridicule have slowed the study," according to Robert Hall, a sociology professor at the University of Illinois in Chicago.

"The possibility of life on Mars is not the popular thing to consider these days," says Frank B. Salisbury, a professor of plant physiology at Colorado State University. At the risk of being unpopular, he told [illegible] fifth annual Space Conference last year: "There may be some natural [illegible] for these things, but a [illegible] possibility [illegible] to be considered is that UFOs are spaceships from Mars."

Fueling the flying saucer controversy has been the large number of reports from what many people consider reliable witnesses [illegible] scientific backgrounds. Since 1947, [illegible] private, military and commercial pilots have reported sighting strange objects, [illegible] say, according to NICAP.

Atch #4

IMMEDIATE ATTENTION

AMC Form 7D, 15 June 55 MWM 2-60-14IM

Maj. Quintanilla —

Per see attached. Pse
Compile requested materials.

Carcoppo

HARVARD COLLEGE OBSERVATORY
CAMBRIDGE 38, MASSACHUSETTS

12 January 1966

Major Harold A. Steiner
USAF Scientific Advisory Board
Department of the Air Force
Headquarters, United States Air Force
Washington, D. C.

Dear Major Steiner:

With reference to the meeting at Wright-Patterson Air Force Base, there are several reports of ATIC, Project Blue-book or related agencies which I would appreciate having available for inspection and discussion at that time: (1) the report of the 21 April, 1955 events at Kelly-Hopkinsville, Kentucky, (2) the report of the alleged Brazilian naval sightings and photographs of a year or two ago, (3) the February, 1949 report of Project Sign: Unidentified Flying Objects, including Appendix D by J. E. Lipp, and (4) the report of the November, 1952 meeting on UFO's chaired by Professor H. P. Robertson of Caltech, and sponsored by the Office of Scientific Intelligence, Central Intelligence Agency.

With best wishes,

Cordially,

Carl Sagan

CS/ttb

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON, D.C.

REPLY TO ATTN OF: AFBSA

17 January 1966

SUBJECT: UFO Reports and Case Histories

TO: Dr. Anthony Cacioppo
ATD (TDGS)
Wright-Patterson AFB, Ohio

Dear Dr. Cacioppo

I received the attached communication from Dr. Carl Sagan who is a member of the SAB Ad Hoc Committee on UFOs. Dr. Sagan has looked into the UFO matter and specifies several items he thinks would be fruitful for the Committee to discuss at the 3 February meeting. I have cleared this with Dr. O'Brien and we will appreciate your assembling these case histories and reports and making them available to Dr. Sagan and the Committee.

If the reports are not classified it might be advantageous to loan them to Dr. Sagan so he can review them prior to the meeting.

Sincerely

Harold A. Steiner

HAROLD A. STEINER, Major, USAF
Assistant Secretary
USAF Scientific Advisory Board

Atch
Ltr dtd 12 Jan 66

Cy to: Dr. O'Brien
Dr. Sagan

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65

Dr. Anthony Cacioppo
FTD (TDGS)
Wright-Patterson AFB, Ohio

FTD (TDEW)
Wright-Patterson AFB, Ohio 45433
22 April 1966

Dr. Carl Sagan
Smithsonian Astrophysical Observatory
60 Garden Street
Cambridge, Massachusetts 02138

Dear Dr. Sagan,

Are these the type of booklets that you are interested in? I receive these through the mail from a citizen in New York and I have no use for the booklets so you may keep them if you wish.

Sgt. Moody, who retired on 31 March 1966, received the attached booklet, "The Book of Space Ships in Their Relationship With the Earth", and requested that I forward it to you.

Sincerely,

HECTOR QUINTANILLA, Jr, Major, USAF
Chief, Project Blue Book

[redacted]

4900 Test Group (AFSC)

UFO Material

19 Sep 66 – 25 Oct 69

[redacted]

Reported UFO Sightings in and around Albuquerque, N.M.

Reports for the following dates were taken from this folder and interfiled with BLUEBOOK case files under K243.6012-1:

11 Jan 1967
6 Apr 1967
9 May 1967
23 Mar 1968
21 Apr 1968
14 May 1968
14 May 1968
13 Aug 1968
5 Sep 1968
19 Sep 1968
16-17 Jan 1969
25 Oct 1969

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 4900TH TEST GROUP (FLIGHT TEST) (AFSC)
KIRTLAND AIR FORCE BASE NEW MEXICO 87117

REPLY TO ATTN OF: FTTA (Lt Rom/3470)

1 July 1971

SUBJECT: LFO File

TO: AU (USAF Historical Division Archives)

We are returning these files as per AFSC message 291626Z Dec 69.

Sandra J. Rom

SANDRA J. ROM, 2d Lt, USAF
Asst Chief, Administration Branch

1 Atch
a/s

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 4900TH AIR BASE GROUP (AFSC)
Kirtland Air Force Base, New Mexico 87117

SPECIAL ORDER
M-81

17 May 1967

1. CAPT WALTER J BROWNS, FV3116995, 58 WRS, this station, is assigned public quarters 2077 A Mercury Drive, this station, effective 16 May 67. Authority: AFR 30-6.

2. CAPT CHARLES F SMITH, FV3122884, 58 WRS, this station, is assigned public quarters 2003 A Mercury Drive, this station, effective 10 May 67. Authority: AFR 30-6.

3. CAPT PHILLIP E TAYLOR, FV3156504, 58 WRS, this station, is assigned public quarters 2007 B Mercury Drive, this station, effective 11 May 67. Authority: AFR 30-6.

4. 2NDLT STEPHEN M GRIMBLE, FV320522, SWN, is appointed as Zero Defects Project Officer for SWN, vice Maj Harold L Edwards, FR47758, relieved.

5. CAPT CHARLES H VAN DIVER, FR3061050, SWS, is assigned the additional duty as AFSWC Nuclear Safety Officer.

6. CAPT CHARLES H VAN DIVER, FR3061050, SWS, is assigned the additional duty as UFO Investigative Officer. Authority: Paragraph 3c, AFR 80-17.

FOR THE COMMANDER:

DAVID S SHUE, SMSGT, USAF
NCOIC, Admin Svcs Div

DISTRIBUTION:
SWBPP - 5
SWBCA-3 - 1
SWBSH - 12
SWS - 3
SWBTT - 1
SWBA-1 - 1
SWN - 3
58 WRS - 3
CAPT BROWNS, WRS - 16
CAPT SMITH, WRS - 16
CAPT TAYLOR, WRS - 16
2LT GRIMBLE, SWN - 3
CAPT VAN DIVER, SWS - 3

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 4900TH AIR BASE GROUP (AFSC)
Kirtland Air Force Base, New Mexico 87117

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FOR THE COMMANDER

DAVID S SHUE, SMSGT, USAF
NCOIC, Admin Svcs Div

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SWSPP - 5
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SWSSH - 12
SWS - 3
CAPT BROWNS, WRS - 16
CAPT SMITH, WRS - 16
CAPT TAYLOR, WRS - 16
2LT GRIMBLE, SWN - 3
CAPT VAN DIVER, SWS - 3
SWSTT - 1
SWSA-1 - 1
SWN - 3
58 WRS - 3

UNCLASSIFIED

ROUTINE

X AF

AFSWC KIRTLAND AFB NMEX

AFSC

FTD WPAFB OHIO

UNCLAS SWSS-2 15044 Dec 66.

FOR SCFA AND TDEW. Your SCFA 42604. Orien T. Clark, Major, AFSWC (SWSS-2), telephone 247-1711 Ext 2541.

30 1100L

Dec 66

SWSS-2

MSgt Steele, NCOIC, Fly Safe
2541

THOMAS J. STEELE, MSgt, USAF
NCOIC, Flying Safety

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3774

Primary Action to SWL

SWSS-2

RTTE JAW RUEDTAA7319 3612217-EEEE--RUWJFNA.
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TO RUWTNAA/AMD BROOKS AFB TEX
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RUEBA/SSD LOS ANGLES CALIF
RUCIRPA/AEDC ARNOLD AFS TENN
RUWJBOA/AFFTC EDWARDS AFB CALIF
RUWTDOA/AFMDC HOLLOMAN AFB NMEX
RUWNA/AFSWC KIRTLAND AFB NMEX
RUWNA/APGC EGLIN AFB FLA
RUCLMKA/AFETR PATRICK AFB FLA
BT
UNCLAS E F T O SCFA 42694 DEC 66.
FOR BASE COMMANDER. AFCAV MSG AUMAJCOM 2246/66, 12 DEC 66, SUBJ: IMPLEMENTATION OF AFR 80-17, UNIDENTIFIED FLYING OBJECTS, TRANSMITTED FOR NECESSARY ACTION. QUOTE: 1. THE AIR FORCE REGULATION 80-17, UNIDENTIFIED FLYING OBJECTS (UFO), 19 SEPTEMBER 66, AND CHANGE AFR 80-17A, 8 NOVEMBER 1966, EMPHASIZE THE NEED FOR THOROUGH AND TIMELY ANALYSIS AT THE AIR BASE OF ALL REPORTS OF UFO. THE CORONA VIEW BROACHURE, USED AT THE COMMANDERS CONFERENCE AT THE USAF ACADEMY IN SEPTEMBER 66, CONTAINED A MEMORANDUM ON THIS SUBJECT.

PAGE 2 RUEDTAA7319 UNCLAS E F T O
2. A REVIEW HAS BEEN MADE OF REPORTS SUBMITTED IN ACCORDANCE WITH PARAGRAPHS 8 AND 11 OF THE BASIS REGULATION. THIS REVIEW INDICATES THAT TWO STEPS ARE NECESSARY. FIRST, IT IS REQUESTED THAT THE NAME, RANK, OFFICIAL ADDRESS AND TELEPHONE NUMBER OF ONE CONTACT FOR UFO MATTERS AT EACH BASE BE FURNISHED TO HQ USAF (AFRSTA), WASHINGTON, D. C. 20330 BY 4 JANUARY 1967. THIS NAMED CONTACT NEED NOT BE INCLUDED IN THE TEAM WHICH ACTUALLY CONDUCTS AN INVESTIGATION IN ACCORDANCE WITH PARAGRAPH 3C OF AFR 80-17. SECOND, IT IS REQUESTED THAT THE BASE INVESTIGATIVE OFFICERS COMPLY WITH AFR 80-17 AND AFR 80-17A IN THE PREPARATION AND SUBMISSION OF THEIR REPORTS. TOO OFTHEN THE REPORTS ARE NOT ADDRESSED PROPERLY AND THE COMMENTS OF THE INVESTIGATIVE OFFICER ARE LACKING. UNQUOTE.
REQUEST AFSC (SCFA), WITH INFO TO FTD (TDEX), BE NOTIFIED OF CONTACT FOR UFO MATTERS AS REQUIRED BY QUOTED MESSAGE NOT LATER THAN 2 JAN 67.
BT

SWSS-2

Unidentified Flying Objects

Mr. J. J. A. Hennessey
41 Ovington Square
Knightsbridge
London, S.W. 3, England

Dear Mr. Hennessey:

We have researched our records here at Kirtland and find no information relative to "Project Pounce."

It is my suggestion if you still desire this information, that further inquiries be directed to the Secretary of the Air Force, Attention: SAF-OI, Washington D.C.

Sincerely,

[redacted]

JASPER A. WESTBROOK, Colonel, USAF
Vice Commander

41 Ovington Square
Knightsbridge,
London. S.W.3.

The Commander,
Kirtland AFB.

28 DEC 1956

Dear Sir,

Whilst reading through a copy of the 1953 Robertson Panels' report on UFOs, I came across a reference to a method of investigating UFOs proposed by the Kirtland AFB in the early 1950s.

I would greatly appreciate if you would inform me whether you have any data on file at your base regarding the above proposal which went under the code name of "Project Pounce."

Yours sincerely,

JJAH:D.F.

SWSS-2

27 JAN 1967

Unidentified Flying Object Report, Project Grudge

Mr. William J. Dunn
3306 E. Hedges Ave
Fresno, Calif 93703

This office has no knowledge of the project mentioned in your letter.

It is suggested that further inquiries be directed to the Secretary of the Air Force, Attention: SAF-OI, Washington D. C.

ORIEN T. CLARK, Maj, USAF
UFO Officer

SPEWS-IN

24 January 1967

Mr. William J. Dunn
3306 E. Hedges Ave.
Fresno, California 93703

Dear Mr. Dunn:

Your letter of January 17 was forwarded to the Air Force at Kirtland Air Force Base for appropriate action.

Sincerely,

GEORGE B. EUBANK
Major, Inf
Information Officer

Jan. 17, 1950

Mr. William J. Dunn
3306 E. Hedges Ave.
Fresno, Calif. 93703

Attention Commanding Officer

Dear Sir:

On or about December 27, 1949, the Air Force published a report dealing exclusively with Unidentified Flying Objects. The report was officially titled "Unidentified Flying Objects--Project Grudge," Technical Report No. 102-AC-49/15-100. This report was made available to all the press media of the time, and at this time I wish to acquire access to this timely report.

I am now engaged in a quite thorough thesis pertaining to the sightings of Unidentified Flying Objects, and I am in desperate need of a copy of your "Grudge Report." If there is any charge for this report please bill me accordingly.

If it is impossible for me to obtain a copy of this report (I see no reason for this since the report was distributed to various news sources; therefore it can not be classified as "TOP SECRET.") I would greatly appreciate it if you could inform me where I could possible read and evaluate a copy of your "Grudge Report."

Since this letter is of an extremely important nature and time is of the essence for myself, I would appreciate a reply from your office at the earliest possible time. I know that you are extremely busy and my letter will be processed with millions of other letters, therefore it may take some time for you to answer me. Please, I would appreciate an early answer from your office!

Thank you for your time and trouble.

Respectfully yours,

William J. Dunn

DEPARTMENT OF THE ARM

INFORMATION OFFICE
WHITE SANDS MISSILE RANGE
NEW MEXICO 88002

OFFICIAL BUSINESS

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UFO Officer
Kirtland Air Force Base
Albuquerque, N.M.

UFO file

SWS

UFO Investigator's Conference Trip Report

SWGV

1. The following trip report is submitted on the UFO Investigator's Conference conducted at the University of Colorado 12 - 13 June 1967.

a. Dr. E. V. Condon - head of the University of Colorado's UFO Investigative Program - opened the session with a brief history of UFO's:

(1) The first reported sighting was at Mt. Ranier in 1947; the object sighted was described as being saucer shaped, hence, the present name.

(2) In December of the same year, the DOD delegated all investigative responsibility to the Air Force since it was felt that if a threat existed, either from outerspace or a foreign government, the Air Force would be best equipped to handle it.

(3) In 1952, the CIA established a panel for review of all sightings to date. Their report was classified, for unknown reasons, but is essentially declassified now and was mostly routine with explanations of the sightings in the large majority of the cases.

(4) In 1966, due to much criticism of Air Force handling, i.e., a small part of the populace felt the Air Force was concealing the facts, etc., the University of Colorado received a grant from the DOD to investigate - in conjunction with the Air Force - and determine if there was any valid evidence to support the hypothesis that we are receiving extra terrestrial visitors. (Item of interest: Religious cults/sects have been established that believe Jesus lives on Venus. Some persons claim they have made round trips - on inter-planetary vehicles - to that planet and made direct contact with Him).

b. Dr. R. J. Low followed Dr. Condon and discussed the UFO problem in general:

(1) The University of Colorado first thought a methodology of study on the UFO problem could be established after an initial 90 day analysis period; at the end of 180 days, a valid methodology had not yet been produced. Primarily, this was due to their inability to correlate the sightings with science, i.e., controlled experiments which produce valid data on unconfirmed sightings. (One would think, after 20 years, that one of these supposedly extra-terrestrial visitors would have been captured).

(2) Dr. Low continued by stating that because of the inconclusive and inadequate facts available, an attorney has been hired to produce a judgment - on those facts available - to determine whether we should continue to investigate and spend large amounts of taxpayer's money or to discontinue the project at the end of the University of Colorado's investigative period in the early spring of 1968.

(3) Dr. Low stated other studies include:

(a) Human perception.

(b) Press coverage. (Is there an inter-connection or correlation between press coverage and the sightings?)

(c) Optical mirage problems. (Refraction/simulation effects).

(d) Instrumentation. (Is present instrumentation and personnel sufficient, i.e., radar, FAA, weather observers, astronomers, etc.).

(e) To what extent do the reports of UFO's reflect the culture of the times.

(f) Radioactive charged gasses emitted from the sun.

(g) The production of valid photographic evidence.

(h) Possible conspiracy. (Yes or no. If not, how do you convince the public?)

c. Dr. F. E. Roach, astronomer, followed Dr. Low with the following statistics:

(1) This graph represents the total sightings, by year, since 1947:

(2) A breakdown on those sightings follows:

Between 1947 and 1965, the mean unidentified sightings represents 6.4% of the total, however, nearly 20% were unidentified because of "other" and "insufficient data."

(3) A breakdown of those identified between 1953 and 1964 follows:

Those which are astronomical were not reported by qualified astronomers. The astronomical sightings breakdown thusly:

Meteors	1,295
Stars, planets	805
Other	67
Total	2,167

The miscellaneous sightings include missiles, hoaxes, flares, fireworks, mirages, searchlights, chaff, birds, satellite decay, radar analysis, reflections, clouds, and contrails, etc.

d. Dr. M. M. Wertheimer, phychologist, next presented problems of human perception starting with the transmitted energy from the distal event to the proximal stimulus, sensation, perception, cognition and hence to the report to someone, i.e., police, Air Force, etc., and eventually to the University of Colorado. He discussed the following perception stimuli and relationships:

(1) Dust on the cornea of the eye.

(2) Pressure, either external by the fingers or by electrical means, can cause unusual visual images.

(3) After-images from staring at a light source.

(4) Auto kinetics.

(5) Apparent size of image or after-image. (This varies with distance, that is to say, the various sizes can appear the same size with varying distances).

(6) Distortions and illusions.

(7) Gamma movement. (A light the size of a searchlight does not go out or disappear all at once when turned off, but rather seems to fade away).

(8) Personnel error in estimation of celestial angles. (This is consistently wrong when near zero degrees or ninety degrees).

(9) Persons who read about UFO's are more liely to report a UFO.

(10) Non-scientific personalities are more likely to report UFO's.

(11) All "personal recollection" very unreliable.

(12) Photos. (Hoaxes and defects in developing, i.e., reflection and refraction of light source).

e. Drs. D. R. Saunders and J. H. Rush followed with examples of some of the instrusentation required for the conducting of UFO investigations. They compared gaseous light sources to incandescent or tungsten light sources with interpretations of their various spectras. Their presentation included the various types of films available and their usage, and the various angles from which photographs should be made - if we ever have the opportunity to witness this phenomena. Dr. Saunders also covered routine investigative techniques including the witness interview, compilation of data, analysis, and validity of the sighting, etc. (This technique is the same as that used in aircraft accident investigations).

2. And last, but not least, we were instructed to keep "open minds" at all times during our investigations. Since we are now in a period in which space travel lies just ahead, it is within the realm of possibility that others (extra-terrestrial in nature) may also have the same capability. (Did I tell you about the individual who came into the Safety Office last week and wanted to know whom he could contact to obtain information on how to build a flying saucer?)

C. H. VAN DIVER, Capt, USAF
Chief of Safety

UNIVERSITY OF COLORADO
BOULDER, COLORADO 80302

MEMORANDUM

DEPARTMENT OF PHYSICS AND ASTROPHYSICS
202 Woodbury Hall

DATE: 19 July 1967

TO: Air Force Officers Attending UFO Meeting in Boulder June 12 - 13, 1967

FROM Robert J. Low, Project Coordinator, University of Colorado UFO Study

SUBJECT. List of Attendees

Gentlemen:

While we've been working on a written summary of the briefing held in Boulder in early June, we completed the list of attendees, which is distributed herewith. The briefing summary should be along within the month. In the meantime, if you need to contact us by telephone, please feel free to do so any time - at 303-443-2211, Extension 6762 or 7514.

We enjoyed having you and felt that we profited from the discussions. I hope you also considered them worthwhile

END

RJL cjl

Enclosure

UNIVERSITY OF COLORADO
BOULDER, COLORADO 80302

UNIDENTIFIED FLYING OBJECTS PROJECT

DEPARTMENT OF PHYSICS AND ASTROPHYSICS
202 Woodbury Hall

List of Participants

UFO Investigators Meeting
12 and 13 June 1967

	Name	Area Code	Phone	Extension
1.	BACHELDER, Jon P. [Lt.] 551 AEW & C Wg (OIN) Otis AFB, Massachusetts 02542	[ ]	968-4276	
2	BAKER, Glenn C., Jr. [Capt.] Headquarters LMTC OP-S-D Lackland AFB, Texas 78236	[ ]		37247, 3000
3.	BASS, Sion D. 445 Military Airlift Wing Dobbins AFB, Georgia 30060	[ ]	428-4461	348, 668
4.	BERNDT, Harley E. [Maj.] 328 Fighter Wing Richards Gebaur AFB, Missouri	[ ]		
5.	BERNIER, Dean A. [Capt.] 3500 Pilot Trng. Wg. (ATC) Reese AFB, Texas 79401 Attn: SAF	[ ]	885-4511	214
6.	BRYANT, Lee W. [ ] CMR Box 2929 MDOOE Holloman AFB, New Mexico 88330	[ ]		
7.	BUDGE, Ronald J. [Capt.] Travis AFB, California	[707]	438-2457	
8.	BUESINGER, Richard L. [Capt.] 3646th PLT Trng. Wg. (SAF) Laughlin AFB, Texas 78840	[ ]	298-3511	658, 701
9.	CHASE, Lewis D. [Lt. Col.] 341 Combat Support Group (SAC) Chief, Operations Division Malmstrom AFB, Montana 59402 Attn: BO	[406]	731-9990	2215

	Name	Area Code	Phone	Extension
10.	DROMSKY, Boleslaw J., Jr [Maj.] 3560 Pilot Tng. Wg. (SAF) Webb AFB, Texas	[ ]		2524
11.	DUNCAN, John N., Jr. [Maj.] Chief of Intelligence Pope AFB, North Carolina	[ ]	396-4111	56126
12.	EARY, Verla O., Jr. [Capt.] 363rd Combat Support Group Shaw AFB, South Carolina	[ ]	775-7111	2270
13.	GIRARD, Robert M. [Maj.] 78th Combat Support Group (SGOPS) Hamilton AFB, California 94934	[ ]	883-7711	3844
14.	HARRINGTON, William W. [Maj.] 4th Combat Support Group (OTO) Seymour Johnson AFB, North Carolina	[ ]		6162
15.	HAYES, Lindsay A. Base Operations Selfridge AFB, Michigan	[ ]		3115
16.	HENDRIX, Val E. [Maj.] 440th Troop Carrier Wing General Billy Mitchell Field, Wisconsin 53206	[ ]	481-6400	
17.	HERBERT, Neville C. [Capt.] FU 3131038 Sioux City Air Base, Iowa O/L 755	[ ]		
18.	JACOBI, George [Col.] Director of Operations Randolph AFB, Texas	[ ]		4227 4656
19.	KATO, Anton R. [Capt.] 3345th Air Base Group Chanute AFB, Illinois	[ ]	893-311	2020
20.	LA FLAMME, Guy J. [Lt.] Hdqs. Lowry Technical Training Center (ATC) Lowry AFB, Colorado 80230 Attn: XPCP	[ ]		
21.	LEWONOWSKI, Mathew F. Little Rock AFB, Arkansas 72076 Attn. [redacted]	[ ]	988-3316	

	Name	Area Code	Phone	Extension
22.	Lynn, Theodore J. Jr. 19th Combat Sppt. Gp. Homestead AFB, Florida	[ ]		
23.	Matthews, Richard I [Major] Hill AFB, Utah 84401	[ ]	777-2744	
24.	McDaniel, Byron [Major] Sheppard AFB, Texas 0122	[ ]	851-2368	
25	Monson, Richard N. [Capt.] 3393rd Inst. Sqdn. Keesler AFB, Mississipp	[ ]	377-3053	
26.	Moore, Hal W. [Lt./Col] 3902 ABWG. Offutt AFB, Nebraska	[ ]	294-5516	3354
27.	Nelson, Wayne M. [Capt.] 436 ABGp, G436 (OGT) Dover AFB, Delaware 19901	[ ]	734-8211	600 8731
28.	O'Donnell, James [SSgt.] AF 13549630 Cannon AFB, New Mexico	[ ]	784-3311	2643
29.	Parker, James R. [Major] 3535 Nav Trg Wg. Mather AFB, California	[ ]	364-2419	2043/2502
30.	Pedersen, Richard D. [Major] 2624 A Eldorado Amarillo AFB, Texas 79111	[ ]	349-1511	7413
31.	Perry, Charles E. [Lt/Col.] 2856 ABGp Griffiss AFB, New York	[ ]	330-3211	
32.	Peterson, R. W. [Major] 3575 Pilot Tng Wg. Base Operations Vance AFB, Oklahoma	[ ]		2254
33.	Pitkington, John E. [Major] Moody AFB Valdosta, Georgia	[ ]		510
34	Ross, Clement S. [Major] 438th ABGp McGuire AFB, New Jersey	[ ]	724-2100	2717

JUN 7

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON, D.C.
20330

REPLY TO ATTN OF: AFRDC

31 May 1967

SUBJECT: Meeting of Investigators on Unidentified Flying Objects

TO: Base UFO Investigators

1. References:

a. AFR 80-17 and 80-17A, Unidentified Flying Objects (UFO).

b. AFCAV-AIMAJCOM message 2246/66 Dec 66, establishing special contacts for UFO matters at each base.

2. The three attachments pertain to a meeting between the Air Force and the university investigators, scheduled for 12 and 13 June 1967. Either the investigator under AFR 80-17 or the contact established by reference 1b (in those cases where different people are involved) can attend the scheduled meeting. Information required in Attachment 2 should be furnished Mrs. Armstrong prior to 7 June 1967, with a copy sent to Hq USAF (AFRSTA) Washington, D. C. 20330. Telephone numbers for arrangements of Attachment 2 are (Mrs. Armstrong) Area Code 303-443-2211, extension 6762, and for other matters (Lt Col Hippler, AFRSTA) Area Code 202-695-2108 (Autovon 22-52108).

3. It is requested that all addressees attend the scheduled Air Force/University of Colorado Meeting on UFO Phenomena.

OTTO J. GLASSER
Major General, USAF
Assistant DCS/Research
and Development

3 Atch
1. Agenda
2. Arrangement
3. Campus Map

	Act	Info
Instructions		
Ln/CR		
Sec Rev		
Init		
Nec		
CCTV		
HTNR		
All		

has SWS seen this!

UNIVERSITY OF COLORADO
BOULDER, COLORADO 80302

DEPARTMENT OF PHYSICS AND ASTROPHYSICS
202 Woodbury Hall

THE UFO PROBLEM

12,13 June 1967 at the Willard Hotel, Washington, D.C.

Monday, 12 June

I.	Introductory Remarks	[illegible]	8:00 - 9:[illegible] a.m.
II.	The UFO Problem	[illegible]	[illegible] - [illegible]
III.	Discussion		[illegible] - [illegible]
IV.	Perception Problems	[illegible]	[illegible] - [illegible]
V.	Discussion		11:30 - 12:00 p.m.
	LUNCH	12:00 to 2:00 p.m.	
VI.	Statistical Problems	[illegible]	2:00 - 2:30 p.m.
VII.	Discussion		2:30 - 3:00 p.m.
VIII.	Instrumentation	[illegible]	3:00 - [illegible]
IX.	Discussion		[illegible] - [illegible]

Tuesday, 13 June

I.	Investigating Techniques	[illegible]	9:00 a.m. - 12:00 p.m.

a. The Interview Procedure
b. The Questionnaire Form
c. UFOs vs. [illegible]

II. Discussion of the Preceding Sessions

a. Comments and questions from the air base officers 1:30 - 4:00 p.m.

UNIVERSITY OF COLORADO
BOULDER, COLORADO [illegible]

DEPARTMENT OF PHYSICS AND ASTROPHYSICS

[illegible] OF [illegible]

[illegible] UFO [illegible]

[illegible] and 13 [illegible]

Housing: Rooms (single or [illegible] participants [illegible] Kittredge [illegible].

Price: A [illegible] lodging (three nights), [illegible] Monday evening). The cost is [illegible] single room and $16.00 for a double room (for both days).

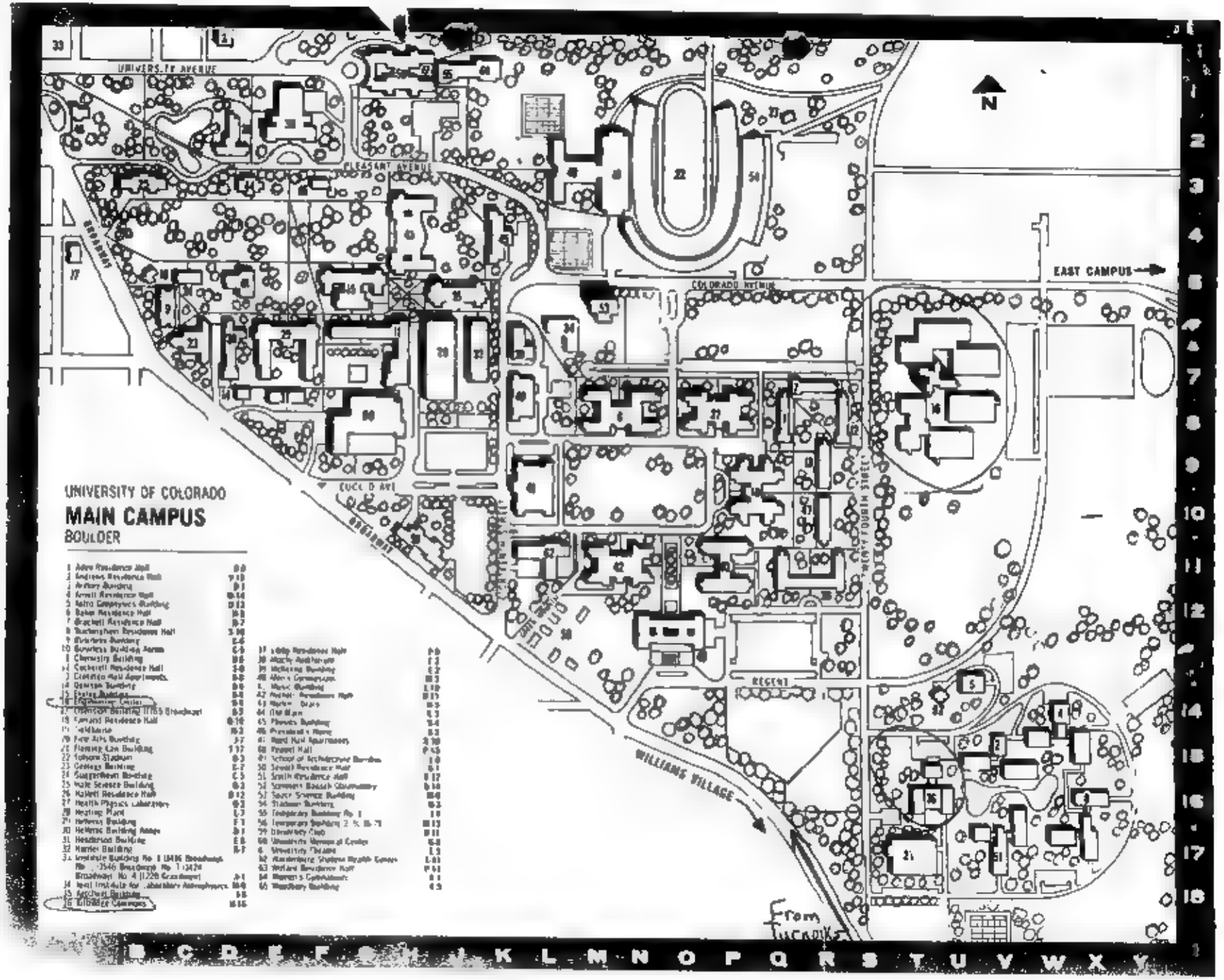
Meals: Breakfast and [illegible] style in Kittredge [illegible] on Tuesday. On Monday night, [illegible], there will be a chuckwagon dinner on top of Boulder's Flagstaff Mountain. All meals are included in the "package" cost shown above.

Note: Participants are responsible for [illegible] to Boulder on Sunday evening, 11 June, and checking into Kittredge Hall (map enclosed). There will be a conference registration desk [illegible] to the regular room check-in desk, at Kittredge Hall on Sunday [illegible] between 7:00 p.m. and 9:30 p.m. and all participants are [illegible] that night, if possible. Additional information will be available at that time as to the location of [illegible] Academy. If you are unable to register at the conference table that evening, come on out to the check-in desk and we'll have a schedule of the [illegible] can tell you how to get to the meeting place.

Please write to

Mrs. Pierre J. [illegible]
209 Academy Hall
University of Colorado
Boulder, Colorado [illegible]

as soon as possible, and let her know your approximate arrival time and what kind of accommodations you wish at Kittredge (single or double).


UNIVERSITY OF COLORADO
MAIN CAMPUS
BOULDER
UNIVERSITY AVENUE
PLEASANT AVENUE
BROADWAY
COLORADO AVENUE
EAST CAMPUS
N
REGENT
WILLIAMS VILLAGE
From Turnpike

Sept 8 May 1964 Note 1

KAFE 8910 M

ANNE 1210 P

D Data Sheet 1.1

MEM 1020 P

KATES 1510 M

D −.52

R +.10

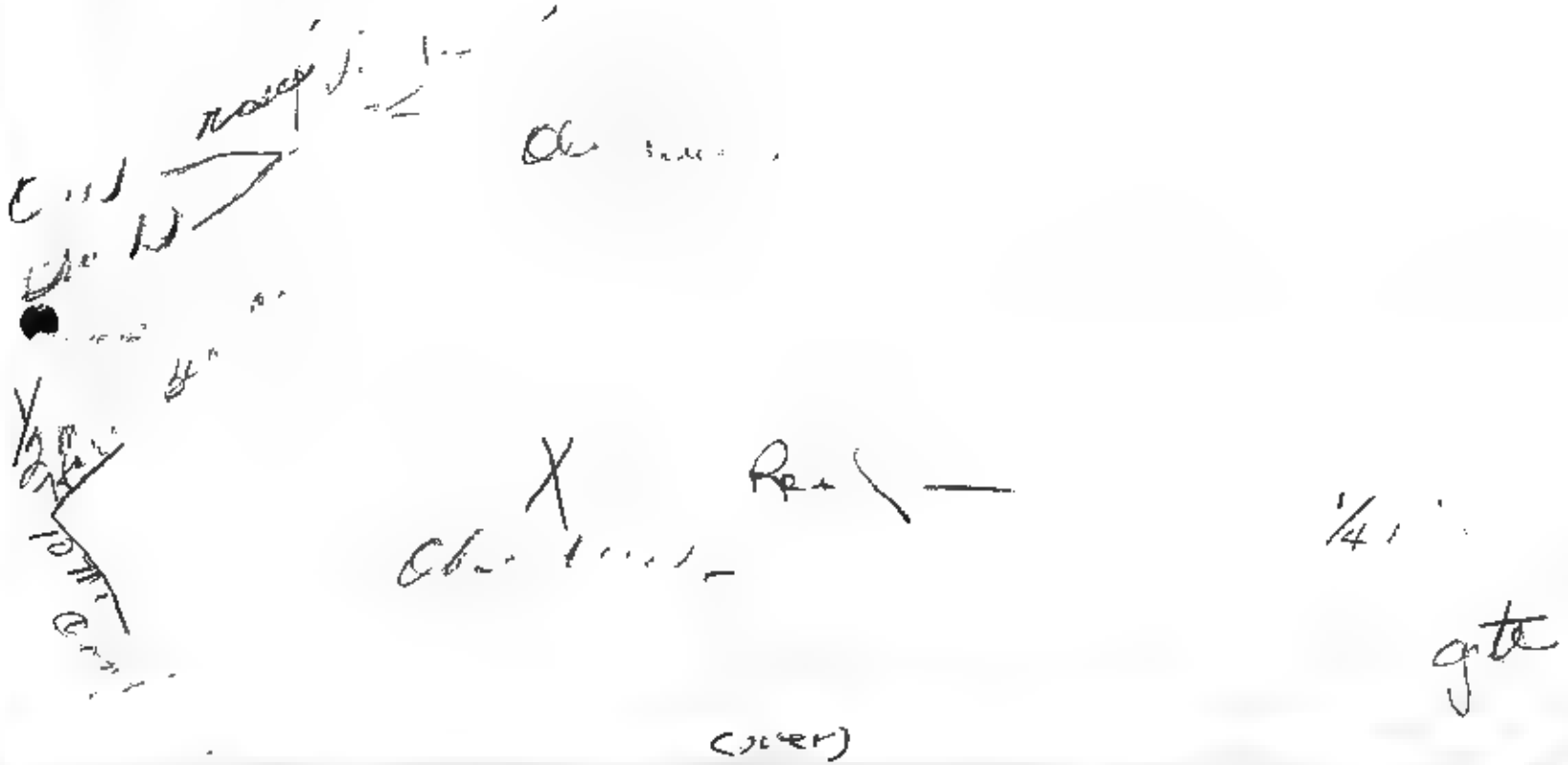
V −.26

ROUTE 8 May 69

KAFB
ABQ
INW 265/42
EED 332/25
ILC
OAL 022/58 (IP) TO ANTELOPE TGT
DELAY 2 hours TTR
OAL
RNO
SAC
MATHER AFB

Total Dist. 1094
Time TO SAC 4+45

753



(Date)

(Name & Telephone Nr. of Individual Receiving Rept)

UNIDENTIFIED FLYING OBJECTS (UFO) - Outline of Reporting Format
(AFR 80-17, 19 Sep 66)

a. Description of the Object(s):

(1) Shape:

(2) Size compared to a known object:

(3) Color: No reflection

(4) Number:

(5) Formation, if more than one

(6) Any discernible features or details

(7) Tail, trail, or exhaust, including its size

(8) Sound

(9) Other pertinent or unusual features

b. Description of Course of Object(s):

(1) What first called the attention of observer(s) to the objects

(2) Angle of elevation and azimuth of object(s) when first observed. (Use theodolite or compass measurement if possible.)

(3) Angle of elevation of object(s) upon disappearance. (Use theodolite or compass measurement if possible.)

(4) Description of flight path and maneuvers of object(s). (Use elevations and azimuth, not altitude.)

(5) How did the object(s) disappear? (Instantaneously to the North, for example.)

(6) How long were the object(s) visible? (Be specific--5 minutes, 1 hour, etc.)

c. Manner of Observation:

(1) Use one or any combination of the following items: Ground-visual, air-visual, ground-electronic, air-electronic. (If electronic, specify type of radar.)

(2) Statement as to optical aids (Telescopes, binoculars, etc.) used and description thereof.

(3) If the sighting occurred, while airborne, give type of aircraft, identification number, altitude, heading, speed, and home station.

d. Time and Date of Sighting:

(1) Greenwich date-time group of sighting and local time.

(2) Light conditions (use one of the following terms: Night, day, dawn, dusk).

e. Location of Observer(s). Give exact latitude and longitude coordinates of each observer, and/or geographical position. In electrical reports, give a position with reference to a known landmark in addition to the coordinates. For example, use "2 mi N of Deeville"; "3 mi SW of Blue Lake," to preclude errors due to teletype garbling of figures.

f. Identifying Information on Observer(s):

(1) Civilian -- Name, age, mailing address, occupation, education and estimate of reliability.

(2) Military -- Name, grade, organization, duty, and estimate of reliability.

g. Weather and Winds-Aloft Conditions at Time and Place of Sightings:

(1) Observer(s) account of weather conditions

(2) Report from nearest AWS or US Weather Bureau Office of wind direction and velocity in degrees and knots at surface 6,000', 10,000', 16,000', 20,000', 30,000', 50,000', and 80,000', if available.

(3) Ceiling

(4) Visibility

(5) Amount of cloud cover

(6) Thunderstorms in area and quadrant in which located.

(7) Vertical temperature gradient

h. Any other unusual activity or condition, meteorological, astronomical, or otherwise, that might account for the sighting.

i. Interception or identification action taken (such action is authorized whenever feasible and in compliance with existing air defense directives).

j. Location, approximate altitude, and general direction of flight of any air traffic or balloon releases in the area that might possibly account for the sighting.

k. Position title and comments of the preparing officer, including his preliminary analysis of the possible cause of the sighting(s).

FTD-CW-16 3-67

FOREIGN TECHNOLOGY DIVISIO

JWS

SOVIET EFFORT TO CONTACT EXTRATERRESTRIAL LIFE

3 FEBRUARY 1967

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

Purpose

To review Soviet scientific efforts relating to the problem of contact with extraterrestrial civiliations.

Conclusions

1. There is a comparatively high level of theoretical discussion in the USSR concerning the existence of extraterrestrial civilizations and the problem involved in detecting these civilizations.

2. Participation of many influential astronomers, radio experts, physicists, etc., in these discussions indicates a considerable importance attached to these problems in the USSR.

3. There is no evidence that practical steps on any large scale are being taken in the USSR to contact or to decipher messages from other civilizations, although there exist small projects, of the size of Ozma in some institutions, notably the Shternberg Astronomical Institute in Moscow.

4. The Soviets have available a number of radio telescopes suitable for an integrated search program, if they choose to begin such a program.

5. Considerable emphasis was made at the Byurakan Conference (1964) on the necessity of a systematic survey of the whole sky in order to locate artificial cosmic radio sources.

6. Such plans, if consistently carried out, would involve the southern hemisphere, possibly Chile, where the Soviet astronomers already have a foothold.

7. International cooperation in such a large undertaking seems unavoidable. Accordingly, Soviet steps to establish such cooperation may be anticipated at the next meeting of the International Astronomical Union in Prague, in August 1967.

8. As in most Soviet scientific activities, there is noticeable emphasis on the practical benefits to be obtained from a systematic effort to contact other civilizations.

SECTION I

HISTORY OF THE PROBLEM

The idea that intelligent beings might exist outside of the earth was debated in antiquity (Anaxagoras, Plutarch, Lucian, etc.). This speculation was frowned upon by the Catholic Church as contradictory to the Christian dogma of the uniqueness of man and his relation to the universe. During the Renaissance the idea of habitable worlds was again revived (Nicolaus Cusanus, Giordano Bruno, Kepler, etc.).

The telescope showed many details on the surface of the planets which generally favored the idea of habitability. It was assumed that man was the goal to which all creation moves and consequently, the celestial bodies did not have any reason to exist unless they served as homes for intelligent beings. In the 18th Century, such scientists as Huygens, Fontenelle, Swedenborg, and others wrote elaborate treatises on the supposed inhabitants of other planets, and even the great philosopher Kant thought that at least some of the planets besides the earth might be inhabited.

Further development of this idea occurred in the early 19th Century. Sir William Hershel, perhaps the greatest observational astronomer of all times, deduced from his own observations that the sun was really a dark body which very well might be inhabited.

He theorized that the brilliant surface of the sun was actually its atmosphere and the so-called sunspots were simply the solid dark surface showing through the rifts of the atmosphere. The very influential French astronomer Arago, as late as 1850, could not find anything wrong with this theory.

In 1832, Von Littrow accepted the idea of J. Lambert (1750) that comets were undoubtedly inhabited and their extensive atmospheres had the purpose of mitigating and preserving the heat of the sun which must vary greatly along the eccentric orbits of those bodies. Both men were leaders in the mathematical theory of comets.

On the moon the German astronomer Gruithuisen could see cities and railroads, and other astronomers speculated what function the rings of Saturn might have to make conditions there more comfortable for the intelligent beings which were undoubtedly there.

In the second half of the 19th Century the science of astrophysics was born and quickly showed that the conditions on the sun, moon, comets, and the majority of the planets were such as to preclude the existence of any life there. The only possibly habitable planets were Venus and Mars, and life on these was highly problematical. It became unfashionable to talk about inhabitants of other planets, and Lowell's ideas about the artificial origin of the canals

on Mars was generally ridiculed.

A few hardy souls here and there continued to maintain that Mars must be habitable regardless of what scientists' observations indicated. In the U.S. such were E.C. Slipher and W.H. Pickering, in the USSR, G.A. Tikhov and especially K.E. Tsiolkovskiy. Tikhov remained essentially a scientist and only tried to prove that terrestrial plants can adapt themselves to the conditions on Mars. Tsiolkovskiy was a dreamer who threw caution to the winds. One of his books, constantly quoted by Soviet astronomers, has the revealing title "Dreams about the Earth and the Heavens." With the development of rocket technology Tsiolkovskiy became in the USSR an almost infallible authority to be quoted along side Lenin and Marx.

The novelists, as usual, were years behind the scientists. H.G. Wells' "The War of the Worlds," appeared in 1905. It was (and still is) extremely popular throughout the world, and many remember the panic in 1938 when this story was dramatized on the radio. Millions of people believed the Martians were landing in New Jersey and marching on New York City.

However, the scientists were rather cool toward the possibility of life on Mars or elsewhere outside the earth. Perhaps the lowest point in the belief of extraterrestrial life was reached in the

1920's when Sir James Jeans showed that the collision of two stars, according to him the only possible mode of the formation of a planetary system, is an extremely improbable event, and it may well be that the earth is a cosmic freak with some kind of mold on it called life.

Doubts were soon thrown on Jeans' theory of the origin of the solar system, and quiet investigations on the origin of life on the earth and other celestial bodies continued. In this respect, A. I. Oparin's work deserves to be mentioned. He is still Director of the Institute of Biochemistry, Academy of Sciences, USSR, and is the author of many articles and several books on this problem.

The situation changed radically with the postwar development of radio astronomy when it became possible to think of a direct contact with extraterrestrial civilizations by means of radio. The beginning of the new approach was sharply marked by the appearance in the British periodical "Nature," of a letter by two U S. scientists, G. Cocconi and P. Morrison, "Searching for Interstellar Communications" (1959). This letter fired the imagination of many people including one of the remarkable Soviet scientists, I. S. Shklovskiy, the author of numerous articles and several books on the subject.

Shklovskiy's first book, "The Universe, Life, and Intelligence,"

appeared in 1962, its second edition in 1965. The first edition was revised by the author, translated by Paula Fern, annotated by the U.S. astronomer C. Sagan, and published in the U.S. in 1966 as "Intelligent Life in the Universe" by I. S. Shklovskiy and C. Sagan.

With the First Conference on "Extraterrestrial Civilizations" (Byurakan Observatory, May 20-23, 1964) which included all the leaders in radio astronomy and some optical astronomers, the problem can be said to have obtained the official recognition of the Soviet Union.

Before proceeding to the details of Soviet schemes for the establishment of contact with extraterrestial civilizations it is important to realize that the whole problem hinges on the answers to three general questions:

(1) What is the origin of the solar system? Without knowing this answer it is not possible to decide whether planets are rare or common around the stars.

(2) What is the nature of life?

(3) What is the origin of life on the surface of the earth?

In spite of a very large amount of work, both East and West, no definite answers to these questions are available. We have to fall back on vague arguments such as "with so many stars some of

them at least must have planets," etc. It is impossible at the present time to prove or disprove the existence of planets of the size of the earth even around the nearest stars, let alone life on these planets. Therefore, the existence of intelligent life elsewhere in the universe is at the present time an article of faith rather than a scientific fact. In this respect, scientists are in exactly the same position as their predecessors were in the 18th Century, or even the ancient Greeks 2,000 years ago. The only difference considered extremely significant by the proponents of life in the universe is modern man's possession of radio communication techniques capable of reaching out to 1,000 light years and more. How to utilize this capability is the subject of animated discussion among the radio astronomers in the West and the USSR

SECTION II

EXISTENCE OF EXTRATERRESTRIAL LIFE

1. General Attitude

The Soviets are emphatic that their materialistic philosophy is in complete agreement with the idea of extra-terrestrial civilizations. According to this philosophy, life is a normal and inevitable consequence of the development of matter, and intelligence is a normal consequence of the existence of life.

Even the best-informed scientists in the USSR, like Oparin and Shklovskiy, must necessarily subscribe to this crude philosophy promulgated more than 100 years ago by Marx and Engels. However, once having stated their materialistic point of view they often introduce reservations. Thus Oparin thinks that the presence of oceans was the necessary factor in the appearance of life on the earth, and Shklovskiy is willing to accept the existence of life only on the earth, but this would be a "miracle."

2. What Kind of Life?

The Soviets seem to be committed to life based on the hydrocarbon compounds, that is essentially the same kind of life that exists on the earth, from bacteria to man. Oparin considers any other basis of life sheer impossibility, and at any rate devoid of any physical meaning. Shklovskiy goes into considerable

detail to show by energy considerations that life must necessarily be based on hydrocarbon reactions.

Speculations common in the West about the possibility of life based on ammonia, or even inorganic compounds (as in Hoyle's novel "The Black Cloud" which appears to be not only alive but even intelligent) do not occur in Soviet literature.

3. Persistence of Terrestrial Type of Life

As conditions on the Moon, Venus, and Mars are known to be severe in terrestrial terms, the problem arises whether even the simplest terrestrial organisms like bacteria can exist there. Experiments to test bacteria and other simple organisms under these conditions are conducted in both the East and West, on a comparable scale. In the USSR, this is done in the Institute of Microbiology, Academy of Sciences, USSR, and probably other places. There is a recent report of the simulation of conditions on Mars for microbial growth by A. I. Zhukova and I. I. Kondrat'yev (1965) of that institute.

The problem has assumed considerable importance as terrestrial bacteria have been shown to possess remarkable endurance and adaptability in planetary conditions. The danger of contemination of planets by terrestrial micro-organisms exists and has required international cooperation since the introduction of space exploration.

4. Search for Life on Mars

Mars is the only planet where conditions remotely approach those on the earth. It was therefore natural that Mars became the focus of attention of astronomers and biologists looking for evidence of life elsewhere in the solar system.

In the U.S., the center of the study of Mars for a long time was the Lowell Observatory, Arizona, where Percival Lowell's work was continued by E. C. Slipher. In the USSR, an indefatigable searcher for evidence of life on Mars was Tikhov.

Tikhov (1875-1960) was a Pulkovo astronomer who had attained considerable international reputation for the excellence of his observational work. In 1909, during one of the great oppositions of Mars, he studied that planet through filters and proved the existence of snow near its poles and clouds in its atmosphere, in spite of the low position of the planet during observations. This work remained little known in the West, and was repeated at the next great opposition in 1924 with substantially the same results by W. H. Wright at Lick Observatory, California.

After his retirement from Pulkovo, Tikhov settled down in Alma-Ata, Kazakh S.S.R., and in 1947 formed there a "Sector of Astrobotany" at the Institute of Physics and Astronomy of the Academy of the Kazakh S.S.R. The idea of this sector (or section) was to study the behavior of plants in conditions approaching those of the Planet Mars, that is the Arctic tundra and high mountains.

Many astronomers and botanists worked at this section which published five volumes of its proceedings (1947-1960). Although this work did not resolve the question of life on Mars, it nevertheless uncovered many remarkable instances of adaptation of plants to extreme climatic conditions. Tikhov's method of obtaining spectra of plants in reflected light to compare with the spectrum of Mars was later employed in the West, especially with the development of the infrared techniques.

With Tikhov's death his section was absorbed by the Institute of Astronomy. Tikhov's works were published in five volumes by the Academy of Sciences, Kazakh S.S.R. They contain 33 of his own papers on the problems of terrestrial plants and existence of life on Mars.

The results of investigations by Tikhov and his collaborators were indecisive so far as the existence of plants on Mars was concerned, paralleling similar results in the West. They simply increased the probability in favor of the existence of such life. The occurrence of intelligent life on Mars is even more difficult to prove than the existence of plants. Shklovskiy's point of view is that Mars once had a civilization which launched its artificial satellites, but is now a dead body.

The question of life on Mars will be resolved only with an actual visit there either of instrumented or manned vehicles.

For this reason, emphasis is being given to the development of techniques for detecting the existence of life on Mars in both the U.S. and the USSR planetary exploration program. The discovery by Mariner 4 of craters on the surface of Mars, however, has little direct bearing on the problem of life there. The same can be said of the presumed absence of the Martian Canals.

Few astronomers believe that there can be any life on Venus or the moon. An exception is N. A. Kozyrev, a Soviet astronomer famous for his observations of the moon, who thinks that the high temperature of Venus refers to its ionosphere, and the surface may be in a condition to allow the development of life.

But even the moon cannot be assumed to be entirely devoid of life. Such is the opinion of A. I. Oparin, the greatest authority on such matters in the USSR. According to the TASS Agency (December 29, 1966), Oparin thinks that organic substances either alive or dead are possible on the moon.

Such an idea would probably be unacceptable in the West, but it was only 30 or 40 years ago that W. H. Pickering, an American astronomer, tried to explain various changes of tint in the moon by colonies of insects appearing and disappearing during the progress of the lunar day.

5. Meteorites and Life

Meteorites are the only bodies of extraterrestrial origin that are available for a study in our laboratories. In connection

with the problem of extraterrestrial life, a large number of mineralogists, physicists, biologists, etc., everywhere are studying meteorites. The proof of the existence of organic substances in meteorites would support the existence of life outside the earth, no matter what the ultimate origin of meteorites might be. But in this problem, as in all other problems concerning extraterrestrial life, there is no simple answer and no convincing proof of the existence of life. The problem has recently been reviewed by A. A. Imshenetskiy (1966), Director of the Institute of Microbiology, Academy of Sciences, USSR, where many investigations of such nature are being carried out.

There are three items in meteorites which must be considered in this connection:

(a) Carbonaceous chondrites are stony meteorites which have some carbon matter (up to five per cent of weight) of possible organic origin. At the present time there are 30 meteorites of this class, which can be divided into three subclasses quite different from each other. At first it seemed that this is indisputable proof of the cosmic origin of organic matter, but later researches proved this improbable. The carbonaceous matter is now considered to be of inorganic origin and similar to matter found in terrestrial rocks.

(b) "Organized elements" in the same meteorites are small

round grains which have been considered as possibly produced by plant spores. The best authority in the USSR on these problems, G. P. Vdovykin, does not think they are of organic origin at all.

(c) Bacteria in meteorites have been reported time and again both in the East and West. In every case they were proved to be introduced into the meteorite after its fall on the surface of the earth.

6. Soviet Attitude Toward Science Fiction

The idea of inhabited worlds naturally evokes in people all sorts of emotions which are not always amenable to scientific treatment. In the Soviet philosophy, scientific fiction occupies an honorable place provided that it is not represented as solid achievements of science. Much of what Tsiolkovskiy wrote, for instance, can be characterized as science fiction, and one of the famous Soviet writers, Alexis Tolstoy was famous for his fantastic stories. Academician Obruchev, the explorer of Siberia, was also a science fiction writer.

However, the Soviets have attempted to draw a line separating science fiction from deliberate fraud and distortion of facts well established by science, and some Soviet scientists, principally astronomers, are busy refuting and criticizing sensationalism by writers who exhibit more exuberance than knowledge. One such writer is Kazantsev, the author of a fantastic

tale, "Guest Out Of Cosmos" (1959), which has had its repercussions abroad also. The main idea is that the Tunguska meteor, which landed in Russia in 1908, was in reality a spaceship from Mars supplied with a hydrogen bomb. This ship blew up over Siberia thus saving the earth from conquest by the Martians. Astronomer Yu. G. Perel' (1959) concedes that a fiction writer may invent anything he pleases, but Kazantsev represents his wild surmises and ignorant theories as scientifically established facts. Kazantsev, however, proceeded to attack official science as concealing from the public the true situation, etc., thus closely paralleling the UFO enthusiasts in the U.S. who accuse the Air Force of suppressing evidence supporting flying-saucer visitations.

Another line of pseudo-scientific effort is directed toward the discovery of traces of contacts of higher civilization with the earth. In the USSR, M. M. Agrest in 1959 put forward an idea that classical myths and biblical stories contain in them vague reminiscences of visits by extraterrestrial highly civilized beings. These are gods coming down to earth, angels flying through the air, destruction of Sodom and Gomorra (evidently by an atomic bomb), kidnapping of people (the biblical Enoch) by the intruders, etc.

The search for information, however, is not restricted to the Bible. Anything is good if it points toward the existence of extraterrestrial civilizations; crude images on rocks in the

Sahara, mythical small men in China, Peruvian fairy tales, are examples. More recently, in the Soviet popular magazine, "Sputnik," 1967, Nr. 1, there is an article by Vyacheslav Zaytsev, "Visitors from Outer Space" which is full of such stories. It is stated that the author spent 30 years of his life collecting this information.

To the credit of Shklovskiy (second edition of his book, Chapter 23) he refutes many of the ridiculous stories which have been propagated very assiduously in the West, particularly in the U.S., where they have been adopted by the adherents of the UFO cult. Other serious Soviet writer-scientists like V. N. Komarov ("Man and Mysteries of the Universe," 1966) also exhibit an exemplary caution.

In general, it appears that the problem of sensationalism in science is exactly the same both in the USSR and the U.S. There are scientists interested in the problem of extraterrestrial civilizations and there are writers who want to publish a breath-taking book. There are even combinations of the two. In the USSR, Shklovskiy is not averse to publicizing his own wild ideas. In the West, there are F. Hoyle and George Gamow of the same type. Modern science is so fantastic that the boundary between possible and impossible is fairly indistinct. Some people, sometimes even bona fide scientists, simply cannot discern this boundary and mix up

solid science, their unconscious desires, and fairy tales into a nightmarish whole. The Soviets cannot escape this situation any more than the Americans and West Europeans.

SECTION III

POSSIBILITY OF ESTABLISHING CONTACT

In view of the complete absence of concrete data on extraterrestrial civilizations the only possible formulation of the problem is this: Assuming that there are extraterrestrial civilizations, what would be the best way of getting in touch with them? This problem is twofold: (1) How can understandable signals be transmitted and (2) how can signals from outer space be detected and interpreted?

Radio signals from other civilizations, no matter how clear and strong, would have had no significance 50 years ago, since nobody on earth could intercept them, let alone interpret. According to modern astrophysics the development of stars is a continuous process and they certainly were not all created at the same time. If there are planets around them, and if there is life on these planets, and if there are civilizations, they must be in various stages of development. The extraterrestrial civilizations obviously must be in a similar or higher state of development than our own in order to make a contact possible.

On the earth, life has existed for something like two or three billion years. Written documents can be traced for some 6,000 years, while in contrast the use of radio for interstellar

communications is less than 20 years old. In other words, the time during which a civilization like ours is in a position to communicate with other civilizations is infinitesimally short in comparison with the duration of life on the planet, and age of the stars.

The next question is how long shall we have this ability to communicate with other civilizations, that is, how long is our civilization likely to endure? The answer to this can be based only on faith and temperament. Shklovskiy thinks that a civilization cannot last longer than 10,000 years for which he is taken to task by his Soviet colleagues. According to the Communist conception our civilization, once reorganized by the adherents of Marx and Lenin, will go on forever as all sources of internal friction will be removed. Therefore, the duration of a civilization should be put down as 10^9 rather than 10^4 years. Western writers would tend to the longer time scale. It is, however, clear that the duration of a civilization is something that cannot be decided a priori. Our own civilization may be said to be 6,000 years old, and whether it will survive for another 4,000 years, or 400 years, or even 40 years is anybody's guess. Some thinkers, notably H.G. Wells and O. Spengler, were very pessimistic in this respect. It is well known that our

civilization has had its ups and downs. The ancient Romans, for instance, were much more highly civilized than their descendants a thousand years later. Therefore, there is no need to postulate a complete destruction of our civilization in order to lose our ability for interstellar communication.

The duration of any civilization is accordingly a guess, and this factor makes all discussions about interstellar contacts very nearly a pure exchange of verbage Shklovskiy, for instance, develops a formula for the average distance between civilizations, d, depending on the time, T, of the duration of the existence of stars and, t, the duration of civilization:

$$d = 5.2 \left(\frac{T}{t}\right)^{1/3} \text{ parsecs}$$

If we put $T = 10^{10}$ years as commonly accepted, and $t = 10^4$ years we compute the average distance between two civilizations in our galaxy to be 520 parsecs or about 1,700 light years. Shklovskiy is evidently afraid of his own result and is willing to take $t = 10^5$ to 10^6 years. Even in this case the distances come out on the order of 100 parsecs or 300 light years.

Similar calculations by L.M. Gindilis, reported in an article entitled, "The Possibilities of Communication with Extraterrestrial Civilizations (Zemlya I Vselennaya, No. 1, 1965) are summarized in Appendix I. Although the assumptions used in Gindilis's calculations are different from Shklovskiy's, Gindilis concludes

that the distance between civilizations in a galaxy is not less than several hundred light years and is probably more than a thousand light years.

Although the results of these two calculations differ, the important feature is that both calculations indicate the extremely large distances involved in attempting to establish communications with extraterrestrial civilizations.

The tremendous distances between the stars is another serious difficulty; they average out to about 3 parsecs or 10 light years, not to speak of the millions of light years separating us from other galaxies. The situation is thus not very encouraging even with the most favorable assumptions about the frequency of the planets and a simultaneous existence of highly developed civilizations on these planets. (Some of the planetary requirements for civilizations to evolve are given in Appendix II.) Soviet radio astronomers such as Troitskiy and Kotel'nikov think that 1,000 light years is the maximum distance at which interstellar communications have any meaning at all, and at this distance the existence of only one civilization similar to ours can be expected.

As is well known, Project Ozma in the US was based on a much greater restriction of the problem. Only the nearest stars were considered and among these only those that were more or

less in the same physical class as our sun.' Only two stars τ Ceti and ε Eridani about 11 light years distant were tried. Signals in the hydrogen line 1420 Mc were sent to these stars from the National Radio Observatory in May-July 1960, and characteristics of the radio emission from these stars analyzed. No evidence of any artificial signals was discovered, and the answer to our own signals, if any, cannot be expected until 1982.

It is not known whether the Soviets ever attempted a similar experiment. They all quote the Ozma project, and the book "Interstellar Communications" published by the NASA in 1963 (in which the Ozma project is described) appears to be one of their fundamental information sources, although, the Soviet expert Khaykin considers Ozma a waste of time and resources (Byurakan Conference, p 90). The inference in most of the Soviet papers, however, seems to be that the Soviets have nothing to offer in the experimental line comparable even to the modest Project Ozma. Experience, however, with Soviet scientific practice, notably their withholding of information on recent scientific activities for several years as was the case with their radio telescope development, makes it advisable to exercise caution in ascertaining their status from published literature alone.

How can the existence of civilizations like ours be discovered? Shklovskiy points out that at least one indication of intelligent activity is available, i.e., the generation of electromagnetic energy by planets which, of course, at stellar distances would merge with their stars. He notes that there are several thousand radio and television stations on the earth, and taking their power into consideration concludes that the brightness temperature of the earth in television wavelengths is some millions of degrees. Moreover, this temperature started rapidly increasing since about 1940. He speculates, therefore, that if a similar situation can be associated with one of the nearest stars it would be prima facie evidence of existence of intelligent life there. He cautions, however, that this possibility requires a long and careful survey of all sources of cosmic origin, something that is not very easy to organize.

Developing the idea of energy criterion, Kardashev points out that the earth civilization is currently utilizing 4×10^{19} ergs/sec and this quantity is rapidly increasing in an exponential way. By extrapolation he concludes that by the year 5000 A.D. humanity will consume 4×10^{33} ergs/sec, which is equal to the output of the sun and by the year 8000 A.D. to the energy output of the whole galaxy, that is 4×10^{44} ergs/sec.

Obviously such possibilities require the harnessing of the whole energy of the sun of which the earth intercepts now only one part in two billion. Projects of this sort are in existence, one of them being Dyson's Sphere to capture and retain the energy of the sun. The utilization of the galaxy will then be the next problem.

Kardashev sets up a classification of civilizations according to the energy criteria as follows:

(1) Technological level approaches that of terrestrial civilization; consumption of energy 4×10^{19} ergs/sec.

(2) Civilization utilizing the whole energy of the star, that is, of the order 4×10^{33} ergs/sec.

(3) Civilization, having at its disposal the energy of its galaxy, is about 4×10^{44} ergs/sec.

Further, Kardashev, basing his argument on our own experience, thinks that Stage 1 is reached in a few billion years. Stage 2, according to him, should develop within several thousand years after Stage 1 had been reached. Stage 3 should be developed in not more than 10 million years after Stage 2. Thus indicating that the 10,000 years postulated by Shklovskiy for the existence of a civilization is not satisfactory to at least some Soviet astronomers.

The evidence of the existence of a civilization of Type 3 would consist of radio phenomena which could not be explained in any

rational way. All this setting up of criteria is highly arbitrary as it presupposes complete understanding of radio astronomical processes which is hardly the case.

An illustration of this humble truth is the controversy produced by Soviet astronomers over STA-21 and STA-102, that is, Nrs. 21 and 102 in the California Institute of Technology Catalogue of Cosmic Radio Sources. They were hastily declared as satisfying the requirements of civilizations of Type 3, and some more of such, LHE-210, LHE-459, and LHE-523 were found at GAISh.

So far as the situation with STA-102 is concerned much doubt has been thrown on Kardashev's claim that its period variation in radio frequency should be considered as an artificial signal with a period of 100 days, drawing our attention to this galaxy. Astronomers in the West failed to confirm its periodic variation and it is generally considered now of the quasar type, that is, a perfectly natural, although not yet perfectly understood, object.

Yu. N. Pariyskiy investigated, on Kardashev's request, sources STA-21 and STA-102 with the great Pulkovo radio telescope (Byurakan Conference, pp 54-60), but his conclusions are hardly in favor of the artificial origin of the radio emission from these two sources. He finds that their radio properties

are similar to those of some other cosmic sources and the strength of the signals under the most favorable assumption exceeds by several orders of magnitude the strength that we can reasonably expect from civilizations of Class 2 or 3.

The criteria which an artificial signal from another civilization should satisfy, according to Kardashev, are:

(1) The small angular size of the source. This he considers an extremely important if not a decisive indication of the artificiality of the source.

(2) Maximum intensity of signal in the range 3-10 cm.

(3) Variability of the signal in time.

Much of the discussion at the Byurakan Conference was centered on these criteria, some participants declaring that many natural objects could satisfy them. V.I. Slysh (Byurakan Conference, pp 61-67) thinks that a simultaneous fulfillment of these criteria by a cosmic source would constitute a presumption (but not a proof) of its cosmic origin. The question whether a cosmic radio source is artificial or not can be settled according to Slysh only by a systematic survey of the whole sky by means of a radio interferometer with a resolving power 0.1". This at least would eliminate all sources that are clearly natural, so that attention could be concentrated on a few suspicious objects. He does not indicate whether the Soviet technical capacity is

adequate to meet this challenge.

1. Means of Communication

Assuming that there are extraterrestrial civilizations willing to communicate, consideration must be given to how this may be accomplished. There are three possible ways of doing this:

(a) Direct contact, that is, interstellar travel, seems to be excluded from serious consideration despite the fact that this mode of communication is the most appealing to human imagination. Even assuming that physiological requirements of inhabitants of various planets are identical, the problem of travel, aggravated by tremendous distances, still remains. The various proposals of photon rockets, etc., (for which Dr. Stanyukovich is famous in the USSR) taking advantage of the relativity dilatation of time will not be of much use even when they are technically possible. According to Sagan the flight with acceleration of 10 m/sec^2 would allow a trip to the Andromeda galaxy in 28 years so far as the passengers in the rocket are concerned. However, for the home civilization that sent them this would be equivalent to 1.5 million years. A round trip taking three million years is of doubtful value. The information returned may have been made obsolete by better systems developed after the mission departed.

(b) Radio contact is a method for exchange of signals which is now technically possible but the distances at which it is effective are very small in comparison with the size of the universe.

Only one way radio contact, of course, is not limited by distance. We may imagine a civilization in the Andromeda galaxy that sent out signals "to whom it may concern" a million and a half years ago. We would just now be receiving them.

(c) Possible contact by means of masers, lasers, and other modern electronic means.

L.M. Gindilis (1965) in his survey of the problem gives a tabulation summarizing the present situation. This tabulation is shown in Table I, where d denotes the distance between civilizations in light years, and t_c the life time of a civilization. This t_c, as has already been remarked is of a highly speculative nature. Shklovskiy takes it to be of the order of 10,000 years, Gindilis thinks it should be billions of years, that is, comparable to the life-time of the planets themselves.

The bulk of discussion in the USSR (as well as in the West) is on the selection of suitable radio frequencies and other characteristics of radio waves for interstellar communications. The hydrogen wavelength 21 cm originally proposed as having a

TABLE I

TYPES OF CONTACT BETWEEN CIVILIZATIONS

Distance Between Civilizations, light years	Possible Types of Contact
$d < 100$	All types are possible.
$100 < d < 1{,}000$	(1) One-way radio communication (2) Two-way radio communication possible (3) Direct contacts by bodily visits possible but unlikely
$1{,}000 < d < t_c$	(1) One-way radio communication (2) Direct contacts, if possible, will be only one way
$d > t_c$	Only one-way radio communication possible.

universal meaning and actually used in the Ozma project is objected to by many scientists both East and West. The reason for this is the abundance of interstellar hydrogen which places the high threshold of radio noise exactly in this line.

The choice of the wavelength for communication is, of course, badly restricted by the known properties of the earth's atmosphere. Moreover, it is equally restricted by the unknown properties of other bodies' atmospheres. It is easy to imagine a planetary atmosphere suitable for life having argon instead of nitrogen which would radically change its transmission properties.

Perhaps the most thorough discussion of this problem was given by Kotel'nikov in the Byurakan Symposium (pp 113-120). The hydrogen wavelength 21 cm is assumed to be impractical for the above-mentioned reasons. He proposes a multi-channel receiver containing a large number of narrow-band filters. If a mono chromatic signal of a certain frequency reaches the antenna it will be automatically recorded and an appropriate channel tuned to that frequency.

Even with this device the coverage of the whole sky is not an easy undertaking. Assuming a limiting distance of 1,000 light years, the number of stars in this space will be of the order of 10 million. To cover the whole sky including all these stars will take exactly one year utilizing antennas and recorders recommended by Kotel'nikov. Further, what guarantee is there

that the signal will be detectable on exactly the date programmed for observation? Kotel'nikov's final conclusion is that it may be possible to discover a civilization of our type by our present radio means if it exists on one star out of 10^6. If this figure is one star out of 10^7 the discovery will be almost impossible, and if a civilization exists only on one star out of 10^8 its discovery will be impossible unless the radio apparatus becomes much more efficient. The criteria of one civilization per 10^6 stars corresponds statistically to the limiting distance of 500 light years. Thus a distance of only 500 to 1,000 light years must be considered as the limiting distance for interstellar communications.

V.S. Troitskiy (ibid., pp 97-112) by an entirely different line of reasoning comes to the same conclusion that even with a narrow direction signal the limiting distance of a civilization detectable by radio is about 1,000 light years. He estimates a power requirement for this distance on the order of 1.6×10^{16} watts. A brief discussion of power requirements from a Soviet reference is contained in Appendix III.

The problem of what to transmit to stellar civilizations and how to interpret signals received from them was only briefly treated at the Byurakan Conference. A.V. Gladkiy (pp 145-146)

expressed only general ideas as to the form a language can take under different conditions. He is a member of the Institute of Mathematics, Siberian Section of the Academy of Sciences, USSR, and being a mathematician he declares that it should not be assumed that mathematics of our stellar correspondents will be the same as ours. A short discussion of the artificial language Lincos developed by the Dutch mathematician Hans Freudenthal does not indicate any Soviet originality in this direction. The attempt to unravel the meaning of the Mayan inscriptions of Yucatan by a mathematical analysis carried out by the same Mathematical Institute of Siberia was not well received in the West, and the Mayan language is probably much simpler than the language of a planet X attached to star Y in galaxy Z. The understanding of stellar language may possibly turn out to be a harder problem than sending or receiving stellar communications. Resolutions of the Byurakan Conference emphasize the importance of linguistic studies in this connection.

As to the other than radio communications with stellar civilizations, the only promising means is an apparatus of the laser type. Shklovskiy discusses it in considerable detail (second edition, Chapter 20), but he cautions that it requires space platforms for its use which are not yet available. As Shklovskiy notes in the introduction to his book, the present

rapid development of radio astronomy, gamma-ray astronomy, X-ray astronomy, etc., indicates possibilities never dreamed of just a few years ago. What is said about stellar civilizations today may become obsolete tomorrow.

The fundamental question whether extraterrestrial civilizations (or even life in general) exist at all has not been answered in these papers nor in similar papers in the West. Nor the next question, whether man-kind is willing to put so much effort into a search which may well prove futile likewise has not been settled.

The Soviets have something to say about this. They rationalize by noting that the development of methods for interstellar communications will be of the greatest advantage to radio technology in general regardless of what the radio technology was originally designed for.

There is also a curious utilitarian streak running through Soviet discussions. In the Soviet periodical ("Sputnik") (1967, Nr.1, p. 179), e.g., the Nobel prize winner, Physical chemist, N. Semyonov, declares that the present knowledge and technology makes possible the regeneration of the atmosphere of Mars which could make Mars a suitable home for humans. Also, some Soviet writers are optimistic that the more advanced civilizations are very anxious to communicate their knowledge to us, even though the Soviets are at times quite unwilling to reveal many of their scientific advancements.

2. Associated Programs, Facilities and Personalities

The only solid basis for the estimate of the Soviet effort in establishing interstellar communications is the book "Extraterrestrial Civilizations" published by the Armenian Academy of Sciences in 1965. It consists of 13 papers delivered on this problem at a conference on May 20-23, 1964, at the Byurakan Observatory. The titles of these papers, in many cases self-explanatory, are given in Appendix IV. There are other indications of the Soviet activity as noted in the text of this report but the total amount of information is very small. The Conference was titled the "First All-Union Conference devoted to the Problem of Extraterrestrial Civilizations." The second Conference was to be called in 1965 but there is no further reference to it in available Soviet scientific literature.

A condensed translation of the resolutions of the Byurakan Conference is given in Appendix V. In it there are a number of institutions in the USSR mentioned as suitable centers for the development of various problems connected with contacting extra-terrestrial civilizations. Appendix VI shows two of the large radio antennas in the USSR.

One of the centers listed by the Byurakan Conference is GAISh (Shternberg Institute) where one of the most influential of the workers on these problems, I.S. Shklovskiy, is located. In a

citation in connection with his election to the corresponding membership of the Academy of Sciences and award of the Lenin prize it is stated that he is in charge of a large theoretical and experimental section of the GAISh. Members of this section carry out astrophysical investigations utilizing the largest optical and radio telescopes, cosmic rockets, and artificial satellites ("Zemlya i Vselennaya," 1966, Nr 5, p 3).

Research at the GAISh of interest in the present connection is carried out by N.S. Kardashev, G.B. Shalomtskiy and other associates of Shklovskiy. They are observing radio galaxies of the quasar type with radio instruments of FIAN (Physical Institute of the Academy of Sciences) on the wavelength 32.5 cm with a view of locating artificial sources.

Quasars are very small objects appearing like stars but with masses approaching those of galaxies. All this is not certain at all and there is no agreement in the interpretation of the observations. The smallness of the apparent size of quazars, which is of the order of 1", is according to Kardashev, a good indication of the possibility of their artificial origin.

It is impossible to say just what practical results of a program like this could be. Kardashev's attempt to explain the periodic fluctuations in the radio emission of source STA-102

(as has already been mentioned) as a communication signal has not been accepted in the West. At any rate, this research may be expected to shed some light on the nature of quasars.

Also, Kardashev and Pashchenko at GAISh (Shklovskiy-Sagan, p 478) will be attempting to detect artificial signals on the 21 cm hydrogen wavelength. The anticipated power of the signals should be relatively great. A negative result from this search would indicate that in our galaxy there are not civilizations with power resources of the order 10^{33} ergs/sec. The investigations on the Andromeda galaxy, M31, will also be conducted. It is perhaps noteworthy that nothing of this can be found in the second edition of Shklovskiy's book, and Sagan inserted this paragraph evidently from direct contact with Shklovskiy. Also, an equivalent to this program does not exist in the West.

Nothing is known of the research programs in this connection at the Pulkovo Observatory or at any other institution named in the resolutions of the Byurakan conference.

In a book "Radio for 70 Years" (1965), Siforov (pp 11-23) in an article titled "Radio Role in Space Exploration" fails to include in his scheme of five steps in the development of radio communications the problem of interstellar communication where it logically belongs. He devotes to this problem exactly two lines:

> "It is not impossible that by radio electronic means the problem of contact with intelligent beings elsewhere in the Universe will be solved."

Pariyskiy and Khaykin of Pulkovo in their review of the development of radio astronomy (ibid, pp 140-153) do mention the problem of interstellar communications in a few lines, but put their faith in the international radio telescope discussed at a meeting of International Radio Union (Tokyo, 1963). No concrete program at Pulkovo or any other place in the USSR is mentioned.

Also nothing is said about observational programs in the detailed review article by L.M. Gindilis (1965), although the picture of the Pulkovo (see Appendix VI) radio telescope is given with a caption:

> "Certain peculiar sources of radio emission that are suspected to be artificial have been investigated with this instrument."

This probably refers to sources STA-21 and STA-102, which were investigated on request from Kardashev (as discussed above), but not to any particular program of investigation.

The only practical approach to this problem would be the organization of a continuous radio survey of all objects within a certain distance, such as 1,000 light years, as indeed is recommended by the Byurakan Conference. This will be a gigantic program requiring monitoring some 10 million objects. Obviously an international cooperation is called for, especially so in the southern hemisphere,

part of which is inaccessible to the Soviet astronomers. As the Soviets are already doing astronomical work in Chile this would be the logical place for the establishment of such a radio telescope for the purposes of such a survey.

Nothing illustrates better the importance of the subject of extraterrestrial civilizations in the USSR than a list of attendants at the Byurakan Conference of 1964 who either delivered papers themselves or participated in the ensuing discussion:

*1. V.A. Ambartsumyan, President, Academy of Sciences Armenian S.S.R.; Director, Dyurakan Observatory.

*2. I.S. Shklovskiy, GAISh.

3. G.A. Gurdzadyan, Byurakan.

4. Ya. B. Zel'dovich, Member Academy of Sciences, USSR.

*5. V.A. Kotel'nikov, IRE, Member Academy of Sciences, USSR.

6. B. V. Kukarkin, Astronomical Council, Academy of Sciences, USSR; GAISh.

7. D. Ya. Martynov, GAISh.

*8. N.S. Kardashev, GAISh.

9. E.G. Mirzabekyan, Byurakan.

10. G.M. Ayvazan, Armenian Academy of Sciences.

11. P.M. Geruni, IRE, Armenian Academy of Sciences.

*12. Yu. N. Pariyskiy, Pulkovo.

13. I.D. Novikov, Mathematics Institute, Academy of Sciences, USSR.

14. Ye. Ya. Bogualavskiy, NII 885.

*15. V.I. Slysh, GAISh.

*16. L.I. Gudzenko, FIAN.

*17. B.N. Panovkin, Council for Radio Astronomy, Academy of Sciences, USSR.

18. A.A. Pistol'kors, Corresponding Member, Academy of Sciences, USSR.

*19. V.I. Siforov, Corresponding Member, Academy of Sciences, USSR; IRE.

20. V.A. Razin, NIRFI.

21. L.M. Gindilis, GAISh.

22. G.S. Saakyan, Byurakan.

*23. S.E. Khaykin, Pulkovo.

*24. G.M. Tovmasyan, Byurakan.

*25. V.S. Troitskiy, NIRFI, Director.

*26. N.A. Smirnova, Pulkovo.

*27. N.L. Kaydanovskiy, Pulkovo.

28. E. Ye. Khachikyan, Byurakan.

29. A.V. Gladkiy, Institute of Mathematics, Siberian Section, Academy of Sciences, USSR.

*Denotes authors of the reports read at the Conference.

The large number of radio astronomers from Byurakan Observatory may be explained by the fact that the Conference was held there. Otherwise, the largest number of representatives (6) was from the GAISh, that is, the Shternberg Astronomical Institute of Moscow University, which is an important organizational and observational center of all astronomical

work in the USSR.

A few remarks can be made about these people.

(1) V.A. Ambartsumyan is the best known theoretical astrophysicist in the USSR, highly respected at home and abroad. He is the past president of the International Astronomical Union, and a member of the Academy of Sciences, USSR. This is the first intimation of his interest in the problem of extraterrestrial civilizations, and his remarks at the meeting were of a general character, apparently made in his capacity as the host of the conference. As a serious worker in the problem he can probably be dismissed.

(2) I.S. Shklovskiy is the most picturesque figure in the above list. He is highly respected abroad for his contributions to theoretical astrophysics and radio astronomy, yet there is a streak in his make-up that baffles observers.

He enthusiastically accepted the idea of extraterrestrial civilizations, criticizing his predecessors Oparin and Fesenkov for their lack of imagination and "pedestrian" attitudes. His work is generally brilliant with a few odd ideas here and there.

One of these was his theory that the Martian satellites are artificial hollow bodies put up by the Martians some half a billion years ago before the Martian civilization expired. This reasoning is based on so many wild assumptions that some astronomers were

convinced that it was a deliberate hoax to see how much nonsense they could swallow. Such hoaxes have occurred now and then in the history of science.

Anyway, Shklovskiy cannot ever claim priority in this idea. In 1950, a book was published in the US by Gerald Heard under the title "Is Another World Watching?" The author believes the UFO's are coming from Mars, and its satellites are platforms for launching Martian flying saucers. There is more than one contact between the world of UFO's and scientific discussions of extraterrestrial civilizations.

But Shklovskiy's reputation apparently has not been damaged in spite of violent criticism of some of his work both at home and abroad. Last fall he was elected corresponding member of the Academy of Sciences, USSR. It is known also that he heads a large research group at the GAISh.

(6) and (7) are well known astronomers at the GAISh. Both, and especially Kukarkin, are political figures who get into everything in the way of astronomy at home and abroad.

(8) N.S. Kardashev, a pupil of Shklovskiy, is one of the ablest men at GAISh and is particularly interested in the problem.

(4) Ya. B. Zel'dovich is a theoretical physicist who has been connected with the FIAN and later with the Institute of Chemical Physics.

(5) V.A. Kotel'nikov is the Director of IRE (Institute of Radio Technics and Electronics) of the Academy of Sciences, USSR. He is known for his radar measurements of the planets. V.I. Siforov (19) is Director of the laboratories of IRE.

(25) V.S. Troitskiy is Director of NIRFI (Radio-Physics Institute at Gor'kov University). He is the author of many papers on radio astronomy, and especially on the moon.

(12) Yu. N. Pariyskiy, (26) N.A. Smirnova, (23) S.E. Khaykin, and (27) N.L. Kaydanovskiy are Pulkovo radio astronomers.

(16) L.I. Gudzenko at the FIAN (Physical Institute of the Academy of Sciences, USSR) is prominent in radio astronomy work.

To the above mentioned persons we can add K.P. Stanyukovich, a rocket expert, who frequently writes on interstellar travel by means of photon rockets; V.I. Krasovskiy, an upper atmospheric specialist; V.A. Bronshten, and some others. The total number of scientists in the USSR actively interested in the problem of interstellar communications and extraterrestrial civilizations is probably in the neighborhood of 50.

Of special significance is the participation of Kotel'nikov and Siforov of IRE both of whom are not only radio scientists of considerable standing but also (especially Siforov) influential political figures. Their activity in the problem of extraterrestrial civilizations indicates the degree of importance that the Soviet

government attaches to it. If recommendations of the Byurakan Conference in regard to construction of new instruments, establishing special sections for the study of the problem at various specified institutes, establishment of a special commission to deal with it, etc., are to be implemented (about which no recent information is available), Siforov and Kotel'nikov will play key roles. The presence of participants like Boguslavskiy, connected with Research Institute Nr 885, and a strange reference (in the resolutions) to P. Ya. 2427 may be indicative of a military interest in this topic.

APPENDIX I

CALCULATIONS BY GINDILIS*

The possibilities of communication with other civilizations depend upon the distances between them. This distance in turn is a function of the size of the universe and the number of civilizations in it.

Restricting himself to our own galaxy, Gindilis (1965) attempts to calculate the number of civilizations coexisting in time with our own. The following equation is used:

$$N_c = Nk_1k_2p_1p_2f(t_c) \qquad (1)$$

Where N_c = number of civilizations in our galaxy coexisting in time with our own.

N = total number of stars in our galaxy.

k_1 = factor that specifies the presence of planetary systems (therefore, Nk_1 is the number of planetary systems in the galaxy).

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* "The Possibilities of Communication with Extraterrestrial Civilizations," by L. M. Gindilis. Foreign Technology Division translation number FTD-HT-66-517/1+2+4 dated 27 September 1966.

**k_2 = factor that specifies the planetary systems with conditions that are suitable for life to begin.

p_1 = probability that life will begin on a planet with suitable conditions.

p_2 = probability that in the process of evolution of living matter on a given planet intelligent beings will develop that are capable of congregating into a society and creating their own civilization.

t_c = lifetime of technologically developed civilizations.

According to Gindilis only the factor k_1 can presently be evaluated more or less reliably. The evaluation is based on a study of the rotational velocity of stars of different spectral classes.

** Gindilis apparently has not defined this term accurately. In his calculations this term k_2 also includes a factor of the probability of how many planets within a planetary system have conditions suitable for life to begin. This second factor is not necessarily equal to one as is discussed in Appendix II.

"As we move along the spectral sequence from stars of type O to stars of type M the temperature of the surface layers changes continuously. Other characteristics of stars, for example, their mass, their luminosity, etc., also change continuously. But the rotational velocity changes continuously only for stars of the early spectral classes from O to F2. Around the F2 class the rotational velocity changes sharply, almost stepwise. The equatorial regions of those stars that are hotter than the F2 class rotate with a velocity greater than 100 km/sec. Stars of the later spectral classes G, K and M practically do not rotate at all; their equatorial velocity is several km/sec. We have the impression that, for some reason, in the process of their development the stars of these spectral classes have lost their initial angular momentum, due to which their velocity is significantly reduced. It is curious that the magnitude of the lost momentum for the stars of the same type as the sun corresponds to the angular momentum of our planetary system. From this we can make a very plausible conclusion that the loss of angular momentum is connected with the formation of planetary systems around the stars in a definite stage of their evolution. One possible mechanism for transferring the angular momentum from a star to the forming planets, in which the role of the transfer agent is played by a magnetic field, was proposed by the English astrophysicist Hoyle. If these

presentations are valid, then we can assume that there are planetary systems around all stars whose spectral classes are later than F2. The overwhelming majority of the stars of the galaxy satisfy this condition, i.e., the k_1 factor in formula (1) must be close to unity."

Gindilis also points out that another important argument in favor of a large number of planetary systems in the galaxy results from observations of "Barnard's Flying Star." Because this star is very close to the solar system, (closest to us after Proxima and Alpha Centauri) it moves rapidly along the celestial sphere in comparison with other stars. Barnard's Flying Star is a red dwarf of the M5 spectral class with a mass of 0.15 that of the sun. Van de Kamp (American) observed that the proper motion (path across the celestial sphere) of this star has periodic oscillations caused by the presence of an invisible dark satellite. The satellite is dark because its mass is only about 1.5 times that of Jupiter and therefore cannot be self-luminous. This could be a giant planet rotating around its star along a strongly elongated orbit.

Professor B. V. Kukarkin (USSR) has noted that wobbling could also be caused by a system of several planets similar to our planetary system, provided the periods of rotation of the planets are approximately comensurate. Kukarkin suggests that the proper

motion of our sun would appear to another civilizations's astronomers to be satisfied by the presence of one giant dark satellite with a period of about 60 years. This is explained by the approximate commensurability of the periods of rotation of the two largest planets of our solar system: five periods of Jupiter correspond to 59.3 years, two periods of Saturn correspond to 58.9 years.

Gindilis continues, "These arguments are not, of course, strong proof of the existence of planetary systems around many stars. However, they indicate that there is a weighty basis for such an assumption. Most investigators consider that planetary systems are well spread throughout the galaxy and that their number can attain one hundred billion ($k_1 \sim 1$)."

"Of course, not all planets are suitable for the evolution of life. Evaluating the number of planets with conditions suitable for life is a rather difficult problem, if only because we know nothing about the life forms that can develop on other planets. We shall not consider this question. The reader can find details about this in the exceptional book of I. S. Shklovskiy 'Universe, Life, Intelligence,' in the books of A. I. Oparin and V. G. Fesenkov, 'Life in the Universe' and Kh. Shepli, 'Stars and People.' The limits for the factor k_2 given there lie in the range from 10^{-6} to 0.06. From this the number of planets in the galaxy with conditions suitable for life is from 10^5 to 10^{10}."

If the element of randomness is excluded, and it is assumed that life must arise in the presence of the necessary conditions (according to Gindilis many scientists think so) then $p_1 = 1$.

Even with the above assumption there is no guarantee that once life has begun it will necessarily evolve into intelligent life. According to Professor A. A. Neyfakh (USSR) even insignificant difference in the physical conditions on different planets in comparison to terrestrial conditions can cause difference in the period of evolution by one or two orders of magnitude.

Because intelligent life developed on earth, the factor p_2 is greater than zero, but from the above discussion not necessarily equal to unity. Thus there is a definite probability that on a planet where some life has developed, this life at sometime in the future will have evolved into intelligent thinking beings. As evident from the preceding discussion, it is not possible to determine this probability p_2.

As described in the main text there is no agreement as to the time span of a civilization. One view is that the lifetime of a civilization t_c is limited and regardless of its length (hundreds, thousands, or millions of years) is small when compared to the cosmic time scale T. Another view is that the lifetime of a technologically developed civilization is indefinitely large and can be only compared with the age of the oldest objects in the universe.

The form of the function $f(t_c)$ depends upon the point of view with regard to the time span of a civilization.

If $t_c \ll T$,

then $f(t_c) = \frac{t_c}{T}$

If $t_c \sim T$,

then $f(t_c) = \frac{T - To}{T}$

where T_o is the time between the formation of a planetary system and the appearance of a technologically developed civilization on it.

Assuming the lifetime of a civilization is limited, the following variables may be substituted into equation (1):

Nk_1k_2 = between 10^5 and 10^{10}

P_1 and P_2 unknown but greater than zero and less than or equal to one.

$f(t_c) = \frac{t_c}{T}$ where T is generally accepted as 10^{10}

Upon substituting into equation (1) under the premise that one wishes to calculate the maximum number of civilizations, the following result is obtained:

$$N_c \sim t_c \qquad (2)$$

Therefore in the most favorable case the number of civilizations coexisting with ours in the galaxy is equal in order of magnitude to their lifetime t_c in years.

Gindilis then quotes two evaluations of the number of civilizations, the first evaluation is that there are not less than one per 10^{12} stars (not less than one civilization in five neighboring galaxies). The second evaluation, more optimistic, is that there is one civilization per 10^6 stars or on the order of 10^5 civilizations in the galaxy.

Gindilis then calculates the average distance $\underline{d}$ between civilizations in the galaxy by using the following formula:

$$d = d_0 \left(\frac{N}{N_c}\right)^{1/3}$$

where d_0 is the average distance between neighboring stars, then assuming $d_0 = 7$ light years one may calculate the average distance d, given values of N and t_c. These results are shown in Table II.

Based on Table II and his discussion about the possible number of civilizations in the galaxy, Gindilis concludes that the distance between civilizations is not less than several hundreds of light years, and it is probably more than a thousand light years.

TABLE II

Distance between civilizations as a function of the number of civilizations.

N/N_c	N_c	d (in light years)
10^2	10^9	32
10^3	10^8	70
10^4	10^7	150
10^5	10^6	320
10^6	10^5	700
10^7	10^4	1500
10^8	10^3	3200
10^9	10^2	7000

APPENDIX II

PLANETARY REQUIREMENTS

If one assumes that the process of the beginning and evolution of life on other planets must be similar to the Earth's (as maintained by Soviet astrophysicist I. S. Shklovskiy). The following series of planetary requirements must be met.

1. "Planets on which life may begin and develop may not evolve too close to or too far away from their star, and their surface temperatures must be favorable to the development of life. However, taking into account that a comparatively large number of planets, say about ten, can originate simultaneously with the star, it may be reasonably expected that at least one or two of them may rotate at distances at which the temperature range remains within the required limits. It is very unlikely that the red dwarfs of the spectral class M, and even later subclasses K, would sustain life on their planets since their radiation energy is insufficient.

2. The mass of an inhabitable planet must be neither too large nor too small. If the gravitational field of a planet is too strong, the original hydrogen-rich atmosphere will not be able to evolve (by a process involving the escape of hydrogen into space) into the oxygen-containing air on which the advanced terrestrial type of life depends; if the gravitational field is too weak, the

atmosphere will escape into space early in the planet's history (Mercury is such an example).

3. A highly organized life may be found only on planets circling sufficiently old stars whose ages may be estimated at several billion years, since enormous intervals of time are necessary for the appearance of any intelligent species on a suitable planet.

4. The star must not vary significantly in its brightness for several billion years. During this time it must reliably and continuously pour forth a steady stream of light and energy, never once pulsating or altering its output to any significant degree. Most stars meet this condition.

5. The star must not be of multiple type, otherwise the orbital motion of its planets would be substantially different from the circular, and the resulting sharp, if not catastrophic, temperature variations on the planet's surface would prelude the possibility of life developing."*

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*The quotation taken from ATD Report 66-57

Not all Soviet scientists completely agree with the listed requirements. F. A. Tsilsin (of the State Astronomical Institute), for example, does not agree that only single stars are capable of having planets which fulfill the other outlined requirements. Tsilsin goes on to point out three instances where a binary star system could have an inhabited planet. In the first of these the two stars are very close together and the planet rotates around their common center of gravity. In the second instance the two stars are far apart and one or both have a planet rotating around them in the favorable temperature zone. In the last case a planet is considered to be in the libration point of the binary star.

Although it's not agreed that each factor listed must be met for intelligent life to develop, as evidenced by the preceding discussion. The list does serve to indicate some of the considerations necessary in trying to accurately determine the probability that intelligent life exists elsewhere.

APPENDIX III

POWER REQUIREMENTS

In considering a radio communication link between our civilization and another civilization, it is of interest to determine the power which must be radiated in the direction of the other civilization.

The power requirement can be calculated by the following equation:

$$W = I_\nu \left(\frac{\lambda}{d_1}\right)^2 2 \left(\frac{\lambda}{d_2}\right)^2 2 R^2 \qquad (1)$$

where d_1 = diameter of the transmitting reflector

d_2 = diameter of the receiving reflector

R = distance between reflectors

Equation (1) reduces to:

$$W = I_\nu \left(\frac{\lambda}{d_1}\right)^2 2 \left(\frac{\lambda}{d_2}\right)^2 2 R^2 = 10^{-24.2} \frac{R^2}{d_1^2 d_2^2} \text{ Watt/cps} \qquad (2)$$

under the assumption that the hydrogen radio frequency line is used and that the other civilization is at a rather high galactic latitude where the level of interference (determined by the cosmic radiation background) is much smaller. Two types of interference which have to be considered are radio emissions from the star around which the inhabited planet revolves and background cosmic radiation. The intensity of this interstellar interference in the

radio-frequency line is not greater than that of the continuous galaxy radio-frequency emission in the same spectral range, which is equal to $10^{-21.5}$ cw/m^2 ster/cps for comparatively large angular distances from the Milky Way band. In the Milky Way the intensity of the hydrogen radio-frequency line is several dozen times greater than the magnitude at the higher galactic latitudes.

As an example, assume that $d_1 = d_2 = 80$ m and that the other civilization is 10 light years away (R = 10). Substituting these values into equation (2), W must be greater than or equal to 100 watts/cps, which is already feasible. It is quite possible that the other civilizations could have a much greater transmission capability and much larger antenna systems than does our civilization. Either or both of these conditions would allow communications over larger distances. Much larger reflectors are being considered which could also increase the radius of communication possibilities. The calculation has shown that communications with other civilizations can be accomplished with modern equipment.

APPENDIX IV

PAPERS READ AT THE BYURAKAN CONFERENCE

1. V. A. Ambartsumyan, Introduction, pp 7-11.

2. I. S. Shklovskiy, "Multiplicity of Inhabited Worlds and the Problem of Establishing Contacts Between Them," pp 15-34

3. N. S. Kardashev, "Transmittal of Inormation by the Extra-terrestrial Civilizations," pp 37-53.

4. Yu. N. Pariyskiy, "Observations of Peculiar Radio Sources STA-21 and STA-102 in Pulkovo," pp 54-60.

5. V. I. Slysh, "Radio Astronomy Criteria of Artificiality of Radio Sources," pp 61-67.

6. L. I. Gudzenko and B. N. Panovkin, "On the Problem of Reception of Signals From Extraterrestrial Civilizations," pp 68-61.

7. S. E. Khaykin, "On the Problem of Contact With Extraterrestrial Civilizations," pp 83-94.

8. G. M. Tovmasyan, "Ring Radio Telescope for the Establishment of a Contact With Extraterrestrial Civilizations," pp 95-96

9. V. S. Troitskiy, "Some Considerations on the Search of Intelligent Signals From the Universe," pp 97-112.

10. V. A. Kotel'nikov, "Contact With Extraterrestrial Civilizations in the Radio Range," pp 113-120.

11. V. I. Siforov, "Some Problems of Search and Analysis of Radio Emission From Other Civilizations," pp 121-128.

12. N. A. Smirnova and N. L. Kaydanovskiy, "Influence of Conditions of Radio Wave Propagation in Cosmic Medium and Atmosphere of the Earth on the Angular Size of the Source," pp 129-135.

13. A. V. Gladkiy, "On Possible Languages for Contact Between Different Civilizations," pp 145-146.

APPENDIX V

RESOLUTIONS OF THE BYURAKAN CONVERENCE
May 20-23, 1964

1. Although materialistic philosophy favors the existence of intelligent extraterrestrial life, at the present time there is no valid proof of such life. However, there are strong indications that such life might exist and might develop civilizations.

A contact with extraterrestrial civilizations would be of the highest importance and interest but until very recently such a contact was clearly impossible. At the present time, however, there is a possibility of establishing interstellar communications by means of electromagnetic waves. The best range for this purpose are frequencies 10^9 to 10^{11}, that is the region of centimeter and decimeter waves.

The present-day technology allows the registration of radio signals across stellar distances. A rapid development of cybernetics makes it possible to formulate the problem of cosmic linguistics. The rapid growth of scientific literature on these subjects, and the first practical steps made in the U.S. to contact extra-terrestrial civilizations clearly show that interstellar communication is an actual scientific problem.

2. It is therefore necessary to undertake the development of an experimental as well as theoretical approach to this problem.

A. Experimental work should be conducted along the following two lines of effort:

(a) A systematic survey of the sky in order to detect signals from objects within 1,000 light years, and sending signals within that distance to possible cosmic correspondents.

(b) A search for signals from the substantially more developed civilizations than our own by applying a careful analysis to discrete cosmic radio sources suspected to be of artificial origin.

To carry out these projects, it is necessary to utilize the already existing apparatus and set up radio interferometers with long base lines of the order of 10^6 to $10^7\lambda^*$, in the centimeter wavelengths.

B. It is necessary to continue and intensify optical investigations having a bearing on the above-mentioned programs. This would include work on planetary and stellar cosmogony, a search for planetary systems, identification of radio sources, and an organization of special investigations outside the atmosphere of the earth.

C. Along with these programs there should be organized studies in adjacent fields:

(a) A theoretical study of statistical properties of artificial radio sources, that is, the establishment of criteria

for the artificiality of signals and the development of methods for the discovery of artificial signals. Further, it is necessary to develop methods of analysis of the statistical properties of radio signals and apply these methods to cosmic sources of suspected artificial origin.

(b) Development of methods of establishing contact and of a cosmic language on the basis of the general theory of linguistics. Also, the development of the theory of decipherment and of the basic principles of the theory of learning.

3. To carry out these programs it is desirable to establish in a number of scientific organizations special working groups. The institutions recommended for this purpose are:

GAISh (Shternberg Astronomical Institute, Moscow University)

GAOAN SSSR (Pulkovo Astronomical Observatory)

BAO AN ArmSSR (Byurakan Astronomical Observatory)

NIRFI (Radio-Physical Institute at Gor'kiy University)

IRE (Institute of Radio Technology and Electronics, AN SSSR)

Siberian Section of the Academy of Sciences, USSR

Mechanical-mathematical Faculty of Moscow University

P. Ya. 2427 (Post Office Box 2427, of some unidentified radio institute).

4. For coordination of research work in various organizations the Astronomical Council and the Council for Radio Astronomy of

the Academy of Sciences, USSR, are asked to organize a special Commission for Interstellar Communications. This Commission should be empowered:

(a) Using the available optical and radio astronomy information to work out for the next conference a program of search for the artificial cosmic sources. A possibility of international cooperation in this task should be considered.

(b) Paying attention to the recommendations of the present conference to work out during 1964-1965 a plan for technical and financial assistance in the problem of interstellar communications. This plan should include the construction of appropriate radio telescopes and of receiving and analyzing apparatus.

The personnel of the proposed commission is recommended as follows:

I. S. Shklovskiy, GAISh, MGU

V. S. Troitskiy, NIRFI, Gor'kiy University

G. M. Tovmasyan, Byurakan Observatory, Armenian AN

Yu. P. Pariyskiy, GAO AN SSR (Pulkovo)

N. S. Kardashev, GAISh, MGU

L. M. Gindilis, GAISh, MGU

B. N. Panovkin, Council for Radio Astronomy, AN SSSr

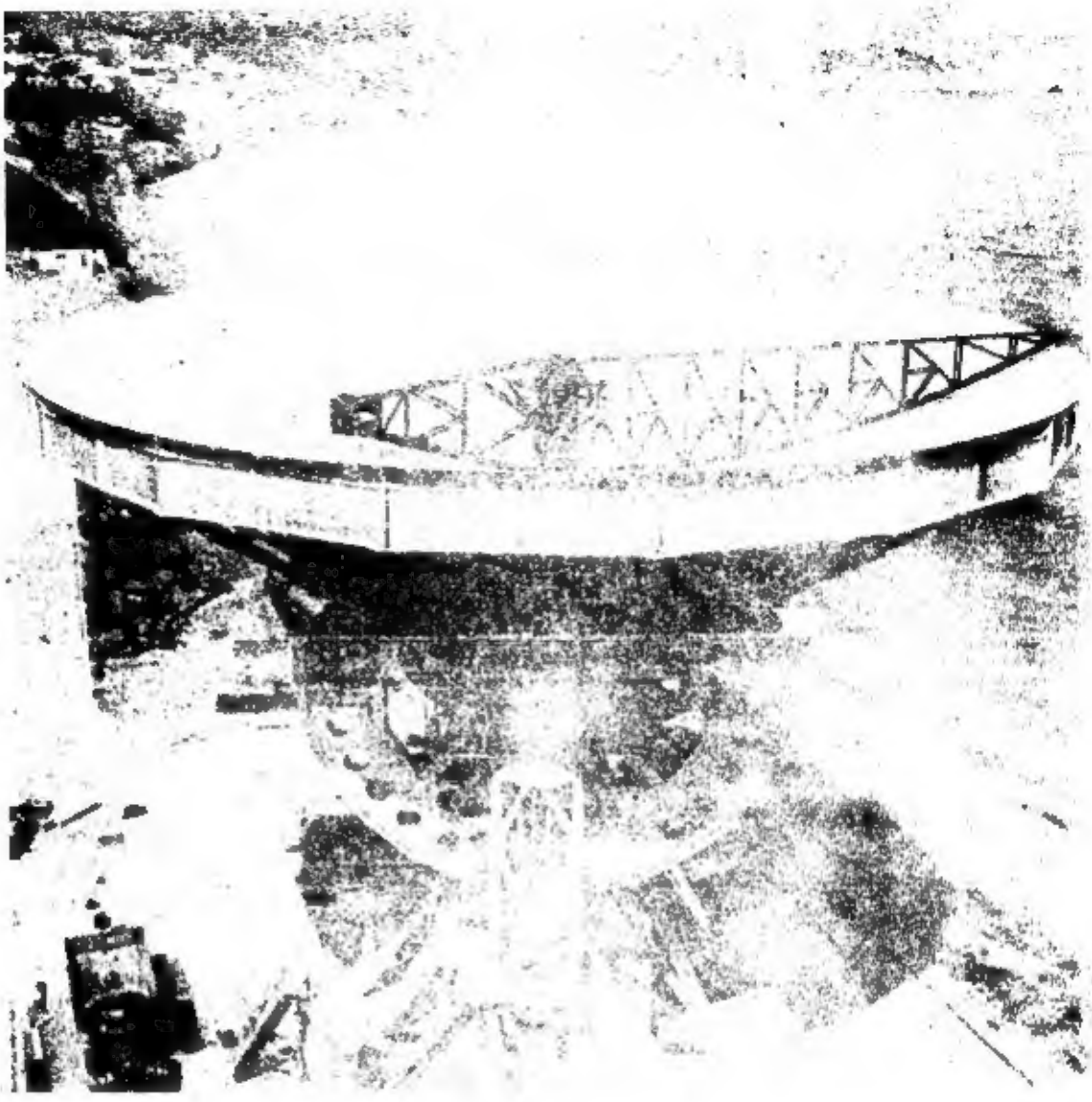
5. It is considered desirable to call the next conference on the problems of extraterrestrial civilizations and interstellar communications in 1965.

6. It is proposed to ask the Academy of Sciences, Armenian SSR, to publish the proceedings of the present conference as a separate book.

APPENDIX VI

DESCRIPTION OF SELECTED ANTENNAS

Presented in this appendix are photos of two of the more advanced radio telescopes used in the USSR for receiving interstellar radio transmissions. The two telescopes are the 22 meter diameter, RT-22 (Shown in Figure 1) and the Pulkovo segmented plate reflector antenna (Shown in Figure 2).



UNCLASSIFIED

Figure 1. RT-22 Radio Telescope.

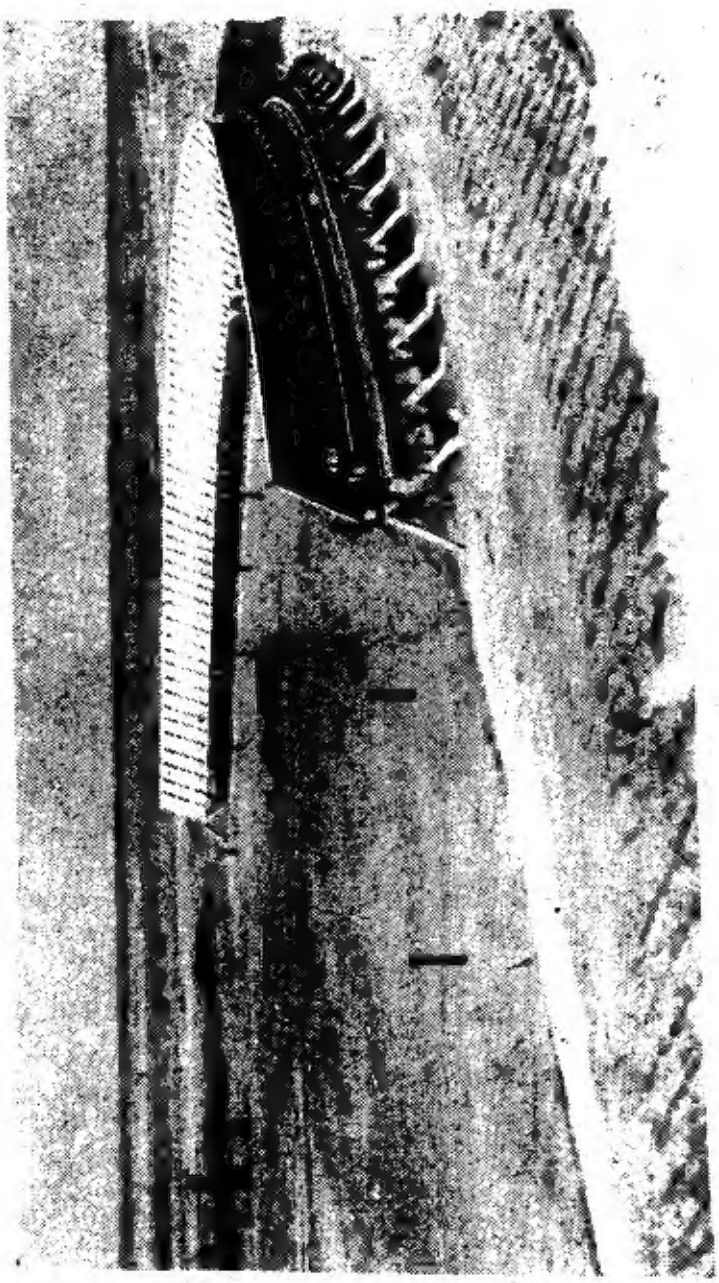


Figure 2. Pulkovo Radio Telescope.

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3. Project White Stork, task response, "A Survey of Recent Soviet Literature on the Problem of Contact with Extraterrestrial Civilizations," 27 January 1967.

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* Bibliography from PWS Task Response which is essentially Sections I, II, and III.