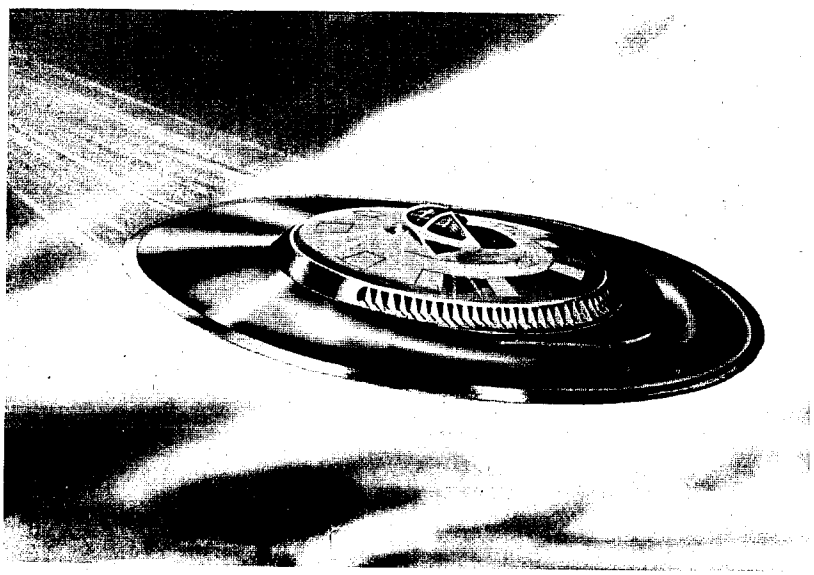
FLYING SAUCERS:

AN ANALYSIS OF THE AIR FORCE PROJECT BLUE BOOK SPECIAL REPORT No. 14



THIRD EDITION
JULY, 1966

PREPARED BY
DR. LEON DAVIDSON

Author's Note to Readers of the Third Edition:

This new and enlarged edition of the Blue Book Special Report No. 14 is being issued because of the demand which has steadily continued since this was first published in 1956, and which is now increasing because of recent sightings. The upsurge of national magazine and television publicity and trade books, in the first half of 1966, is reminiscent of the similar period in 1952, which preceded the great 1952 "flap". The author states here his belief that the C.I.A. was and is responsible for much of this; the reader may make his or her own evaluation.

Many early press releases and other rare documents have been included in this edition, which even the Air Force itself claims to have copies of no longer. (See p. C5.) The Table of Contents (p. ii) shows where these may be found. Comments by the author appear on the first page of each of the four Parts into which this edition is divided.

The author's files contain many more documents which might be of interest to serious students of the subject, but which had to be omitted from this book because of the pressure of space. These include the full 39-page transcript of the famous press conference of Maj. Gen. John A. Samford at the Pentagon on July 29, 1952, at the height of the Washington "flap", in which he unhesitatingly denied that the U.S. had any secret devices which had no mass and unlimited power! (See inside back cover for reproduction of first page of transcript.)

Another item in the files is Air Force Regulation 200-2, which the Air Force no longer issues to the public. (See p. C5.) The author also has his unclassified notes on the contents of the 1949 Project GRUDGE Report (See p. A1) including complete lists of the cases studied in that report, correlations of the sightings, remarks on each case, the official case numbers and locations, etc. Another item is the four-page list of questions presented to Major Fournet at the Pentagon on Nov. 5, 1952 (See pp. A1,A2) together with his startling answers.

Other available material includes copies of articles written by the author on "The CIA and the Saucers", an "Analysis of a Pre-1947 Sighting" (discussing the probable cause of the Roerich sighting in the Gobi Desert in 1927), results of detective work establishing the origin of a small radioactive disk reported by N.I.C.A.P., discussions of the Tremonton films, articles on Adamski, electronic countermeasures, an "Open Letter to Saucer Researchers" (See p. B1), and studies of the source of the recording of code messages received by radio by acquaintances of John Otto in Chicago in 1957, etc. Files of correspondence with military and civilian agencies, Congress, etc., are also available.

Please write to the publisher of this Third Edition, at the address shown on the back outside cover of this book, if interested in obtaining copies of any of this specific material. Costs will depend on the volume of requests, method of reproduction, etc. Please indicate whether you might be interested in purchasing a "Source Book on Saucers", containing a large amount of this material.

July 4, 1966 Leon Davidson

COVER ILLUSTRATION: Official Air Force sketch of AVRO aircraft. (See p. D2)

With the compliments of the autha
to Harold Weisberg, whose
patriotic service in publishing
"Whitewash..." should benefit
the cause of Freedom.

Leon Davidson
11/12/66

FLYING SAUCERS: An Analysis of the

AIR FORCE PROJECT BLUE BOOK SPECIAL REPORT NO. 14

by Dr. Leon Davidson

Third Edition

consisting of

Part A: Early Air Force Press Releases
Part B: The CIA Panel Report of 1953
Part C: The Current (1966) Air Force Blue Book Release
Part D: Analysis of the Special Report No. 14

with an appendix consisting of a photo-offset copy of
the full text of the Air Force Project Blue Book
Special Report No. 14, dated May 5, 1955
and some of the important tables and
figures from that report

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This Third Edition of the Blue Book Special Report No. 14 is loyally and Respectfully Dedicated to the late

John Fitzgerald Kennedy

President of the United States
1961--1963

If he might have been allowed to live through his full span of office, the invisible government which increasingly stretches out from our para-military complex would have been kept under better control; and vice versa.

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*Note. All page numbers given in this Table of Contents refer to the large handwritten numbers in the upper outside corners of the printed pages, as assigned for this Edition.

Part A: Early Air Force Press Releases on Flying Saucers, etc.

History and Background of this Collection

My interest in flying saucers began in New Mexico in 1949 when I started work at Los Alamos Scientific Laboratory. A local epidemic of "green fireballs" during the previous year (see p. A6) had led to the formation of one of the first flying saucer study groups, the Los Alamos Astrophysical Association. This was composed of scientists and engineers in the Lab., with official support. After joining this informal group, I carefully studied the secret Project GRUDGE Report which had been sent to the Lab. by the Air Force to help these studies.

In the GRUDGE Report (Report No. 102 AC 49/15-100, "Unidentified Flying Objects", Project GRUDGE, Project XS-304, Release date August 1949, written by Lt. H.W.Smith and Mr. G.W.Towles, Air Materiel Command HQ, Wright Field), I was greatly impressed by Prof. Hynek's chapter, in which he stated his opinion that the green fireballs of the Southwest were probably connected with U.S. research activities. I also was impressed with the chapter by the Air Force Chief Scientist, who concluded that the saucers couldn't possibly be Russian devices, but who never even mentioned the possibility that they might be American. Another interesting item in the report was a copy of RAND Corp. letter L-2563, March 29, 1949, asking for access to the Air Force files on the Maury Island incident (later discussed in great detail in the book "The Coming of the Saucers", by Ken Arnold and Ray Palmer.)

The press release on p. A3 appeared word-for-word in the Recommendations section of the GRUDGE report, in compliance with a letter from an Air Force general (also given in the report), dated in January 1949, directing that the project name be changed from SIGN to GRUDGE, and that the investigation be discontinued by the end of 1949. The report was issued in August 1949.

On behalf of the Los Alamos Astrophysical Association, I wrote to the Air Force requesting access to the original report files, which had been "microfilmed for research use" at Wright Field. I then visited Lt. Smith there on May 17, 1950, and was able to get some details from him, but instead of forwarding more data to Los Alamos, the Air Force took back our copy of the GRUDGE report, and the letter on p. A3 was sent to me. The Los Alamos Lab. officials also ceased then to support our saucer research efforts.

In January 1952 I moved to Arlington, Va., and asked to inspect the saucer files at the Pentagon, per letter on p. A3. The reply, enclosing two press releases, is reproduced on pages A4 and A5. I visited Lt. Col. Searles and Mr. Al Chop at the Pentagon A.F. Press Desk several times, and examined the paraphrased version of the GRUDGE Report there, verifying that my notes made at Los Alamos were covered by this declassified publicly available document.

Further correspondence followed, and I was invited to the Pentagon in Nov. 1952 to meet Col. W. A. Adams and Maj. Dewey J. J. Fournet for discussion of my contention that saucers, if real, were American. I presented a four-page list of questions, the answers to which proved to me that the A.F. "investigation" of saucers was completely a cover-up for something else. Col. Adams asked Maj. Fournet to give me a private showing of the "Tremonton films" which, at the time, convinced me that the saucers must indeed be real. (See my article in Leonard Stringfield's "C.R.I.F.O. Newsletter", Sept. 1954 issue, and see Capt. Ruppelt's article in "True" Magazine, May 1954.)

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While working in Washington in 1952, I had seen classified photos of a certain Navy guided missile which disproved (to me, at least) the Air Force denials that the U.S. had no devices which looked like some of the saucers reported by the public. Major Fournet stated that he knew nothing about this missile, and I sincerely believe that he really didn't! Of such stuff are U.S.A.F. saucer investigators deprived!

While trying to clear a proposed article reporting this sad state of affairs, I was paid a visit by a team of three men, from the Office of Naval Intelligence, the Army Counter-Intelligence Corps, and the Inspector of Naval Materiel. These three men assured themselves that I had seen the missile photos legitimately in the course of my work, and that I had not compromised security procedures in handling my proposed release. (The O.N.I. man wore black, incidentally, for the information of those readers who have heard about saucer researchers being silenced after a visit from "three men in black.") A letter from Senator Flanders (p. A8) was a reply to my correspondence to Congress about this missile and the U.F.O.'s.

In letters to the Secretary of Defense and others in 1953, I pointed out that the Air Force's attitude of ridiculing and operationally ignoring all saucer sightings could allow an enemy to send aircraft or missiles through our defenses easily, merely by putting enough flashing lights on them to cause them to be reported as "flying saucers". (I personally verified that this would be possible, by working as a volunteer in the White Plains Filter Center of the Ground Observer Corps, and observing the treatment accorded to reports of strange objects.)

Perhaps as a result of such arguments, the Air Force revised its regulation AFR 200-2 in August 1954, pointing out that saucer reports should be taken seriously, just in case.... The Air Force also stopped denying that saucers might be American devices, by dropping from its 1954 (and later) press releases the denial paragraph which it had used up through 1953. (Compare the bracketed paragraphs in the press releases reproduced on pages A10, A14, and A17.) I then wrote and got cleared the letter shown on p. A19, pointing out the new position taken by the Air Force.

The 1953 release about the "Hell Roarer" flare (p. A20) shows a typical cause of some flying saucer reports, and furthermore shows how <u>legitimate</u> secret military activities have led to flying saucer reports. These usually receive immediate perfunctory denials that U.S. activities or aircraft had had anything to do with causing the reports. Such denials are properly justified because of the secret nature of the activities at the time. The later admissions (as in the p. A20 press release, for example) tend not to catch up with the original denials, so that such events get established in the saucer literature as "authentic" cases. (See my article "ECM + CIA = UFO" in the March-April 1960 issue of <u>Flying Saucer Review</u> (London, England).)

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

11 [illegible]

Mr. Leon Davidson
2153 B 47th Street
Los Alamos, New Mexico

Dear Mr. Davidson:

In reply to your letter of 24 April 1950, the project concerned with "flying saucer" investigation and analysis was discontinued as a special intelligence activity last year. I am inclosing a press release made 27 December on the subject.

At the time the project was discontinued, summary reports and opinions related to the first 244 incidents had been reproduced in a form convenient for use by the press or interested persons. This material was turned over to the Directorate of Public Relations, Hq. USAF, to be used at the Pentagon Building in Washington in answering inquiries, and is available for your inspection.

Sincerely,

[signature]

[illegible], Jr.
[illegible], USAF
[illegible] Air Technical Intelligence

1 Incl
Press Release

DEPARTMENT OF DEFENSE
OFFICE OF PUBLIC INFORMATION
Washington 25, D. C. No. 629-49

IMMEDIATE RELEASE DECEMBER 27, 1949 RE 6700, Ext. 75131

AIR FORCE DISCONTINUES
FLYING SAUCERS PROJECT

The Air Force has discontinued its special project investigating and evaluating reported "flying saucers" on the basis that there is no evidence the reports are not the results of natural phenomena. Discontinuance of the project, which was carried out by the Air Force, was concurred in by Departments of the Army and the Navy.

The Air Force said that all evidence and analyses indicate that the reports of unidentified flying objects are the result of:

(1) Misinterpretation of various conventional objects.

(2) A mild form of mass hysteria.

(3) Or hoaxes.

The project was established two years ago at Wright-Patterson Air Force Base, Dayton, Ohio, Headquarters of the Air Force's Air Materiel Command. Since January 1948 some 375 incidents have been reported and investigated. Assisting special investigators were scientific consultants from universities and from other governmental agencies.

The Air Force said that continuance of the project is unwarranted since additional incidents now are simply confirming findings already reached.

END

A3

DEPARTMENT OF DEFENSE
OFFICE OF PUBLIC INFORMATION
WASHINGTON 25, D. C.

21 April 1952

Mr. Leon Davidson
804 S. Irving Street
Arlington 4, Virginia

Dear Sir:

Your letter of April 3, 1952 to Col. John M. Schweizer, Jr. has been referred to me for reply.

At Room 2E-765 in the Pentagon, a copy of the summary reports and opinions concerning unidentified aerial objects is available for your examination. The Office of Public Information is open from 9:00 AM until 6:00 PM Monday through Saturday. No appointment is necessary to see this document; an officer will be present to aid you in any way.

I have taken the liberty of inclosing a brief summary of the study on "flying saucers", and a copy of a recent Air Force statement on this subject.

Thank you for your interest in this matter. Please feel free to call upon me in regard to this matter.

Sincerely,

DEWITT R. SEARLES
Lt. Col., USAF
Chief, AF Press Desk

Incls.

DEPARTMENT OF DEFENSE
OFFICE OF PUBLIC INFORMATION
Washington 25, D. C.

IMMEDIATE RELEASE April 3, 1952 LI 5-6700, Ext. 75131

IN ANSWER TO INQUIRIES:

The Air Force has not discontinued the study of unidentified flying objects (popularly known as "flying saucers"). It is true that this study has changed from a special project to a general function. This means that the Air Force placed the evaluation of these sightings in normal staff channels.

Every attempt is made to investigate sightings reported to the Air Force. In most cases, these sightings have proved to be weather balloons and natural phenomena. There remain, however, a number of reported sightings that cannot be thus explained, and as long as this is true, the Air Force will continue to study the problem. USAF Field Commands have been alerted to report unconventional aerial objects in an effort to obtain additional information.

The public should not interpret these continued efforts to mean that new evaluations have been made, or that new conclusions have been reached. This is not the case. Detailed reports and particularly photographs from people who have sighted unusual aerial manifestations will be welcome. Reports may be submitted to the nearest USAF installation and to be of value should contain as much detail as possible.

E N D

ENCLOSED WITH LETTER FROM
AIR FORCE DATED APRIL 21,1952

DEPARTMENT OF DEFENSE
OFFICE OF PUBLIC INFORMATION
WASHINGTON 25, D. C.

ENCLOSED WITH LETTER FROM
AIR FORCE DATED APRIL 21, 1952

I am unable to supply you with copies of the press releases on "flying saucers" issued by the Department of Defense as the demand for these releases has completely exhausted our supply. However, the information contained in these releases is summarized below and constitutes the official opinion of the Air Force on the subject of "flying saucers."

In the Fall of 1947 the United States Air Force took official notice of reports of so-called "flying disks" 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.

On December 30, 1947 the Air Force directed its Air Materiel Command, at Wright-Patterson Air Force Base, Dayton, Ohio, to set up a project to collect and evaluate all available facts concerning reported flying saucer incidents.

To perform this job the Air Materiel Command obtained the services of well known scientists, such as astronomers, psychologists, electronic specialists, and meteorologists.

On December 27, 1949, after 375 reported sightings had been investigated, at a total cost above normal operations of more than $34,000, the Air Force, with the concurrence of the Army and the Navy, announced the findings of the "flying saucer" project.

The evidence indicated that the reports of unidentified flying objects could be accounted for under three major headings:

(1) Misinterpretation of various conventional objects.
(2) A mild form of hysteria.
(3) Or simple hoaxes.

There remain, however, a number of reported sightings that cannot be thus explained, and as long as this is true, the Air Force will continue to study the problem.

As to what the objects were that were sighted by B-29 crew members over Korea during the night of January 29-30th, 1952, no conclusive evaluation has been made at the present time. Competent intelligence personnel are charged with the responsibility of further investigation.

Air Crew sightings - for the most part routine reports on enemy tactics and equipment - are an important part of the intelligence functions of any command. These reports are made to the responsible officers for such action as may be necessary.

It has been suggested that what people actually have been seeing is the result of some of our own secret experiments, guided missiles, or new types of planes or flying weapons. This is emphatically not the case. None of the three military departments nor any other agency in the government is conducting experiments, classified or otherwise, with disc-shaped flying objects which could be a basis for the reported phenomena.

The Air Force would like to assure the public that, inasmuch as the air defense of the United States is an Air Force responsibility, it has continued and will continue to receive and evaluate through normal military channels any substantial reports of unusual aerial phenomena.

Please call on me if I can be of further service.

Sincerely,

DeWITT R. SEARLES
Lt. Col., USAF
Chief, AF Press Desk

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DEPARTMENT OF DEFENSE
OFFICE OF PUBLIC INFORMATION
WASHINGTON 25, D. C.

19 June 1952

Mr. Leon Davidson
804 South Irving Street
Arlington, Virginia

Dear Mr. Davidson:

Your letter of June 12 to the Secretary of Defense has been referred by this office to the Air Technical Intelligence Center at Dayton, Ohio, for any action they may deem fitting.

This agency, as you know, is conducting the official investigation into "flying saucer" reports.

The data included in your correspondence may be of interest to ATIC inasmuch as considerable work has already been done on correlating reported sightings.

The Air Force does not concur with the theory outlined in your letter, which although interesting is hardly compatible with the Armed Services Unification Act.

For your information we are enclosing two recent releases which set forth the Air Force position to date on the status of "flying saucer" investigations.

Thank you very much for your interest in this matter.

Sincerely,

DEWITT R. SEARLES
Lt. Col., USAF
Chief, Air Force Desk
Press Branch

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(The two releases, enclosed in the letter of 19 June 1952, have been retyped below to enable clear reproduction. They are verbatim copies.)

IN ANSWER TO INQUIRIES ABOUT FLYING SAUCERS: 17 June 1952

Secretary of the Air Force Thomas K. Finletter and other Air Force officials were briefed on May 8 concerning USAF investigations of "flying saucer" reports over the past five years.

The Secretary summed up the briefing, which was conducted by Air Technical Intelligence officials, by stating:

"No concrete evidence has yet reached us either to prove or disprove the existence of the so-called flying saucers.

"There remain, however, a number of sightings that the Air Force investigators have been unable to explain. As long as this is true the Air Force will continue to study 'flying saucer' reports."

To this end, detailed reports and particularly photographs from people who sight unusual aerial manifestations will continue to be welcomed. Reports may be submitted to the nearest USAF installation and, to be of value, should contain as much detailed information as possible.

END

(Author's note: On May 9, 1952, the day after the above-mentioned briefing, President Truman issued a revision to a Confidential memo to Executive Departments concerning public statements about new weapons, revising a memo dating back to 1950.)

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IN ANSWER TO INQUIRIES: 17 June 1952

The United States Air Force is continuing its study of unusual light phenomena, which are frequently reported seen in the skies over the southwestern part of the country.

This is a phase of the continuing study by the Air Force into the nature of the upper atmosphere. It is possible that such phenomena could be the result of natural occurrences in the upper atmosphere which as yet are not understood.

In New Mexico, where the lights are frequently seen, Air Force scientists have made attempts to photograph the phenomena simultaneously from three different locations. Such a series of photographs might enable the scientists to determine, by triangulation, the size, altitude, direction and speed of the light source.

Several of these phenomena were visible during the course of these camera studies. In a few instances, a single camera did obtain a record. The scientists were unsuccessful, however, in their efforts to secure simultaneous exposures from three different points.

The development of special photographic equipment may make it possible to gather data hitherto unobtainable by ordinary photographic methods.

This equipment consists of a grating camera which separates light into its component colors (spectrum) and registers them on different portions of a film. The principle involved is the same as that used by astronomers in determining the composition of stars.

In this manner Air Force scientists may be able to determine the composition of the light phenomena and consequently identify the source.

The cameras will be used by a number of Air Force units throughout the Southwest. It is anticipated that a year or more will be required to secure sufficient data on which even tentative conclusions can be based.

END

UNITED STATES DEPARTMENT OF

COMMERCE

CHARLES SAWYER, SECRETARY WASHINGTON 25, D. C.

Civil Aeronautics Administration

CAA-52-458 FOR RELEASE: AM's THURSDAY, Dec. 11

1952

CAA TRACES PART "FLYING SAUCERS" TO ATMOSPHERIC CONDITIONS

A report just issued by the Civil Aeronautics Administration on last summer's wave of "flying saucers" traces many of the "unidentified targets" to secondary reflections of the radar beam by atmospheric conditions.

Concerned with the possible detrimental effects on air traffic control, the CAA Technical Development and Evaluation Center made a study concentrating on the scores of such targets sighted by the Washington Air Route Traffic Control Center radar. It also surveyed experience of the CAA tower radars at Atlanta, Boston, Chicago, Cleveland, Minneapolis, and New York.

Correlation of controllers' reports with Weather Bureau records indicated that a temperature inversion almost always existed when such targets appeared on the radar.

Apparently, the study says, reflections were produced by isolated refracting areas which traveled with the wind at or near the temperature inversion levels. These areas, possibly atmospheric eddies created by the shearing action of dissimilar air strata, were not of sufficient density to produce direct returns, but could bend the radar beam downward to give a ground return.

Horizontal movement of these areas would produce a movement twice as great in the image being received on the radar scope, and in a parallel direction. This ties in with the fact that when the speed of targets on the radar was divided by two, their motions corresponded closely to the reported wind directions and velocities at certain altitude levels. In nearly all cases, the temperature inversion levels were at or adjacent to these altitudes.

The fact that the radar targets always moved in one direction eliminated the possibility that they were surface vehicles, the report says, since some vehicles would have been moving in the reverse direction.

No evidence was found of hovering or of sudden increases in speed by any target. The study ascribes reports of sudden accelerations of targets to supersonic velocities to a controller's transfer of identity from a faded target to another target which was just appearing on a different section of the scope.

C.A.A. PRESS RELEASE
DECEMBER 11, 1952

Atlanta, Minneapolis, and New York International (Idlewild) reported no unidentified targets. The CAA tower at Boston's Logan Field has noticed them on rare occasions, and the tower at La Guardia had one instance. Chicago Midway and Cleveland Municipal have observed unidentified targets many times, the former particularly when temperature inversions have been in effect.

The report concludes that the presence of such targets has little effect on the control of air traffic, except that they can become a nuisance where helicopter operations are prevalent, since radar returns from small 'copters sometimes present the same characteristics. Where a collision course is involved, the controller gives traffic information, since pilots would rather be warned about a spurious target than not be warned about a legitimate one.

The report recognizes the need for securing additional evidence on the problem, through observations with more versatile equipment.

- aviainfo -

A7

RALPH E. FLANDERS
VERMONT

United States Senate
WASHINGTON, D. C.

April 16, 1953

Mr. Leon Davidson
6-4 S. Irving St.
Arlington 4, Virginia

Dear Mr. Davidson:

In reply to your letter of April 13th, I will say that the Air Force has furnished me with the enclosed form letter which they use to reply to persons writing in about the flying saucer incidents. I have not been able to confirm that the Air Force has promised a detailed public report and apparently they regard this as the public information which they are now in a position to release. I hope you will find in it something of interest.

Sincerely yours,

Ralph E. Flanders

encl.

RALPH E. FLANDERS
VERMONT

United States Senate
WASHINGTON, D. C.

April 21, 1953

A 8

Mr. Leon Davidson
804 S. Irving Street
Arlington 4, Virginia

Dear Mr. Davidson:

In reply to your letter of April 18, will say that I have been privileged to witness some demonstrations of missils which might conceivably resemble a flying ball. Of course, I am not at liberty to give any details. I would find it, however, a little difficult to line them up with the reports of such objects that have been received.

Sincerely yours,

Ralph E. Flanders

DEPARTMENT OF DEFENSE
OFFICE OF PUBLIC INFORMATION
WASHINGTON 25, D. C.

FORM LETTER PROVIDED BY THE
AIR FORCE IN APRIL, 1953, AS
FORWARDED BY SENATOR FLANDERS.

The following information concerning Air Force investigations of unusual aerial phenomena is submitted in answer to your request.

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.

On December 30, 1947 the Air Force directed its Air Materiel Command, at Wright-Patterson Air Force Base, Dayton, Ohio, to set up a project to collect and evaluate all available facts concerning "flying saucer" sightings.

To perform this task the Air Materiel Command obtained the services of civilian and military astronomers, psychologists, electronic specialists, meteorologists, aeronautical engineers, and physicists.

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.

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.

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.

Subsequent to December 1949, these investigations have been conducted as a normal intelligence function, rather than a special project, by the Air Technical Intelligence Center, Wright-Patterson Air Force Base, Dayton, Ohio.

To date, the Air Force has undertaken to investigate and analyze about 1500 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 occurrences or man-made objects.

The unexplained reports, however, which are in the order of 20 percent of the total, cannot be definitely associated with these familiar things.

Difficulty in Evaluating Reports

The difficulty in disposing of these unexplained reports is based largely upon the insufficiency of accurate basic data such as size, shape, composition and flight characteristics (speed, acceleration, altitude, exact maneuver pattern, etc.) of the objects.

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.

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.

It is now felt, however, that reports from people whose training and experience in observing aerial objects qualify them to obtain essential data are the only ones likely to produce material suitable for systematic analysis. The Air Force is planning to provide additional tools to help these observers obtain the basic data it needs.

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.

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 this activity than before. Also, our present efficient communication facilities and news media provide an incentive for reporting unusual observations, for publicizing 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.

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Source of Reports

The majority of reports of aerial phenomena have come from civilians. About 8 percent come from civil airlines pilots, while approximately 25 percent are reported by military personnel. Reports have been received also from highly qualified scientists. Although primary significance is attached to reports from qualified observers, there is no intention to discredit untrained observers.

Radar Sightings

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).

Temperature inversion reflections 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.

Such radar sightings have resulted in hundreds of fruitless intercept efforts.

One scientific theory holds that light can be similarly reflected from a layer of warm air above the earth and, if proven to be correct, this could account for some visual sightings.

Bearing out the theory 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 25 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.

Ionized clouds are believed to be the cause of some unidentified 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.

Policy Regarding Attempted Interception

No orders have been issued by the Air Defense Command to its fighter units to fire on unidentified aerial phenomena. The Air Defense Command is charged with air defense of the United States, and its mission is to attack anything airborne which is known or appears to be hostile. This should not be interpreted to mean that our pilots will fire haphazardly on anything that flies.

Attempts at interception are not made every time that unidentified images appear briefly on an Air Force radar scope. Current Air Force interceptors are short-range, short-duration, high-speed aircraft and can be employed most effectively when it is possible to track a target by visual or radar means so that its position in the air at some future time may be predicted with a reasonable degree of accuracy.

Methods of Evaluating

The first step in evaluating sightings of unusual aerial phenomena is to collect all available data and check it against known airborne objects such as balloons, aircraft, missiles, meteors, and weather phenomena. If still unexplained, reports from reliable sources, with sufficient details, are turned over to specialists in various scientific fields for further analysis.

Future Plans for Evaluating

As stated earlier, there is a need for better reports from trained observers using adequate equipment. The Air Force intends to implement its present study with instruments wherever possible.

The recent development of special photographic equipment may make it possible to gather data hitherto unobtainable through ordinary photographic methods. This equipment consists of a diffraction grating camera which separates light into its component parts (spectrum) and registers them on film. The principle involved is that used by astronomers in determining the composition of the stars. In this manner Air Force scientists may be able to determine the characteristics of the phenomena and subsequently identify the source.

Another proposal involves the use of a continuously operating Schmidt telescope equipped with a camera. This telescope has a wide aperture lens and is capable of covering a cone of 150 degrees or nearly the whole sky from horizon to horizon. This equipment will make it possible to get on a series of photographic plates a complete record of what happens in the sky at night.

What "Saucers" Are Not

The Air Force has stated in the past, and reaffirms at the present time, that these unidentified aerial phenomena are not a secret weapon, missile or aircraft, developed 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.

Your interest in this matter is greatly appreciated. Please call upon us if we may be of further service.

Sincerely yours,

A10

A11

DEPARTMENT OF DEFENSE
OFFICE OF PUBLIC INFORMATION
Washington 25, D. C.

ISSUED ABOUT DECEMBER, 1953

F A C T S H E E T

The following information concerns Air Force investigations of unusual aerial phenomena.

The Air Force first took official notice of reports of so-called "flying saucers" in the Fall of 1947 when reports from the public indicated that the matter might involve the air defense of the United States. The Air Materiel Command, Wright-Patterson Air Force Base, Dayton, Ohio, was directed to set up a project to collect and evaluate all available facts concerning "flying saucer" sightings.

The Air Materiel Command, in turn, obtained the services of civilian and military astronomers, psychologists, electronics specialists, meteorologists, aeronautical engineers, and physicists to aid in study and research.

Two years later, on December 27, 1949, after 375 reported sightings had been investigated, the Air Force announced the findings of the "flying saucer" project.

The majority of the sightings could be accounted for as misinterpretations of conventional objects, such as balloons and aircraft. Others could be explained as meteorological phenomena or light reflections from crystalized particles in the upper atmosphere. Some were determined to be hoaxes. However, there still remained a few unexplained sightings.

The investigation of unknown aerial phenomena was then transferred to the Air Technical Intelligence Center at Wright-Patterson Air Force Base as a continuing project.

During 1952, the bumper year for "saucer" sightings, 1,700 reports were received by the Air Force, of which 70 percent came from civilian sources. Approximately 20 percent of the sightings were unexplainable on the basis of information received.

MORE

A12

During 1953, by mid-year, only 250 reports had been received, of which nearly 50 percent came from military sources. The number of unexplainable sightings dropped to 10 percent.

The drop in unexplained sightings is largely due to the increased accuracy and the completeness of reports being received. To be of value, a report should include such basic data as size, shape, composition, speed, altitude, direction, and the maneuver pattern of the objects. Without such information, it is almost impossible to establish the identity of the object sighted. In addition, a recent study has shown a direct correlation between the number of sightings reported and the publicity given to "saucers" by the nation's press.

In order to overcome this lack of basic data, and to standardize all reports, a detailed questionnaire was prepared by the Air Technical Intelligence Center and is now submitted to each person reporting an unidentified aerial object. It is felt that the information thus obtained will lower still more the number of unexplained sightings.

The majority of all reported sightings have been found to involve either man-made objects such as aircraft or balloons, or known phenomena such as meteors and planets.

Present-day jet aircraft, flying at great speeds and high altitudes, are often mistaken for unknown objects by the untrained observer. Sunlight reflections from the polished surfaces of aircraft can be seen plainly even when the aircraft itself is too distant to be visible.

Weather balloons also account for a substantial number of sightings. These balloons, sent to altitudes of 40,000 feet and higher, are launched from virtually every airfield in the country. They are made of rubber or polyethylene, swell as they gain altitude, have very good reflective qualities, carry small lights when launched after dark, and can be seen at very high altitudes.

In addition to the ordinary weather balloon, huge 90-foot balloons, which sometimes drift from coast to coast, are used for upper air research. These balloons also have a highly reflective surface and are visible at extreme altitudes.

Frequently, unusually bright meteors and planets will cause a flurry of reports, sometimes from relatively experienced observers. At certain times of the year, Venus, for instance, is low on the horizon and will appear to change color and move erratically due to hazy atmospheric conditions.

Approximately 12 percent of all sightings reported are from military and civilian radar facilities. It is fairly well established that some of these images are ground objects reflected from a layer of warm air above the earth (temperature inversion).

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Temperature inversion reflections can give a return on a radar scope that is as sharp as that received from an aircraft. Speeds of these returns reportedly range from zero to fantastic rates. The "objects" also appear to move in all directions. Such sightings have resulted in many fruitless intercept efforts.

Bearing out the theory 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 10 to 25 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. (One scientific theory holds that light can be similarly reflected from a layer of warm air above the earth. If this proves to be correct, many visual night sightings could be accounted for.)

There are a small number of unexplained reports which involve a combination of seeing the object and detecting it on radar simultaneously. In each case the object appeared at night time, and had the appearance of simple lights.

Ionized clouds have probably caused some unidentified radar returns. Thunderstorms are identifiable by radar, and radar is used aboard some aircraft and ships to avoid them. Radar returns have also been received from birds, ice formations in the air, balloons, ground reflections, frequency interference between other radar stations, and windborne objects. Obviously such returns are very difficult to identify, especially when they occur during darkness.

As stated earlier, the difficulty of evaluating reports of all types is based largely upon the lack of basic data surrounding the sighting. It is felt that the detailed questionnaire will remedy the situation in part.

In addition, special photographic equipment has been developed for distribution to selected air base control towers and Air Defense Command radar sites. This equipment consists of a diffraction grating camera which separates light into its component parts (spectrum) and registers them on film. The principle involved is that used by astronomers in determining the composition of the stars. In this manner Air Force scientists may be able to determine the source of unidentified lights. As yet, no photographs from this camera have been received.

There have been some misconceptions concerning the Air Force handling of "flying saucer" reports. One of these misconceptions is that the Air Force is either withholding "flying saucer" information from the public or cloaking it beneath a security classification. This is untrue.

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The names of the persons involved in the sightings are withheld in respect of their privacy. They are free, however, to say what they please. Reports which divulge the capabilities of our aircraft, radar, and electronic equipment are classified for obvious reasons. All other information with respect to sightings is a matter of public record.

Another misconception centers about photographs of "flying saucers". The Air Force does not possess photographs which prove the existence of "flying saucers". Because still photographs can be so easily faked, either by using a mock-up or model against a legitimate background, or by retouching the negative, they are practically worthless as evidence. Innumerable objects, from ashtrays to wash basins, have been photographed while sailing through the air. Many such photos have been published without revealing the true identity of the objects.

More attention is given to moving pictures of unidentified flying objects since they are more difficult to fake. However, only a very few movie-type films have been received by the Air Force and they reveal only pinpoints of light moving across the sky. The Air Force has been unable to identify the source of these lights. The images are too small to analyze properly. Since ownership of these films remains with the persons taking them the Air Force is not in a position to give them out. The owners may do with them as they please.

Although hoaxes comprise but a small percentage of total reports, some of them prove to be the most sensational and the most publicized. However, to insure that the Air Force will not embarass individuals or groups who are sincere in their beliefs or who may be victims of such hoaxes, the facts brought out in the investigations of these false reports are generally not made public Unfortunately, this policy has often given the erroneous impression that the Air Force is deliberately denying or withholding information which, if revealed, would prove the existence of "saucers".

[The Air Force has stated in the past, and reaffirms at the present time, that unexplained aerial phenomena are not a secret weapon, missile, or aircraft, developed 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.]

By the same token, no authentic physical evidence has been received establishing the existence of space ships from other planets.

E N D

A15

DEPARTMENT OF THE AIR FORCE
Office of Public Information
Washington 25, D. C.

ISSUED ABOUT
OCTOBER, 1964

U. S. Air Force Summary of Events and Information
Concerning the Unidentified Flying Object Program

The Air Force feels a very definite obligation to identify and analyze things that happen in the air that may have in them menace to the United States and, because of that feeling of obligation and pursuit of that interest, the Air Force established an activity known as the Unidentified Flying Object Program.

This program was established in 1947 when unidentified flying objects were being reported in various parts of the United States. The reports of sightings reached a peak of 1,700 in 1952 and dropped to a total of 429 in 1953. During the first nine months of 1954 only 254 sightings were reported.

From a survey of the volume of sightings received by the Air Force, it has been determined that over 80 percent are explainable as being known objects. Generally, sighted objects fall into the category of: balloons, aircraft, astronomical bodies, atmospheric reflections, and birds. All reports of unidentified flying objects result from either radar or visual sightings.

Explanations pertaining to sightings reported from military and civilian radar facilities are as follows:

1. Temperature inversion reflections can give a return on a radar scope that is as sharp as that received from an aircraft. Speeds of these returns reportedly range from zero to fantastic rates. The "objects" also appear to move in all directions. Such sightings have resulted in many fruitless intercept efforts.

To possibly bear out the theory 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 10 to 25 degrees from this altitude. 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. (One scientific theory holds that light can be similarly reflected from a layer of warm air above the earth. If this proves to be correct, many visual night sightings could be accounted for.)

2. Ionized clouds have caused some unidentified radar returns. Thunderstorms are identifiable by radar and radar returns have also been received from ice formations in the air, balloons, ground reflections, frequency interference between other radar stations, and windborn objects. Obviously, such returns are very difficult to identify, especially when they occur during darkness.

MORE

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3. The radar screen has picked up birds and in one case a flock of ducks. Flight interceptions proved these phenomena.

An explanation of known types of visual sightings are as follows:

1. Present-day jet aircraft, flying at great speeds and high altitudes, are often mistaken for unknown objects by the untrained observer. Sunlight reflections from the polished surfaces of aircraft can be seen plainly even when the aircraft itself is too distant to be visible. The exhaust of jet aircraft emits a trail and often this is seen rather than the aircraft itself.

2. Weather balloons account for a substantial number of sightings. These balloons, sent to altitudes of 40,000 feet and higher, are launched from virtually every airfield in the country. They are made of rubber or polyethylene, swell as they gain altitude, have very good reflective qualities, carry small lights when launched after dark, and can be seen at very high altitudes.

3. In addition to the ordinary weather balloon, huge 90-foot balloons, which sometimes drift from coast to coast, are used for upper air research. These balloons also have a highly reflective surface and are visible at extreme altitudes.

4. Frequently, unusually bright meteors and planets will cause a flurry of reports, sometimes from relatively experienced observers. At certain times of the year, Venus, for instance, is low on the horizon and will appear to change color and move erratically due to hazy atmospheric conditions. Since the stars are charted and most of their characteristics known, many cases are traced to them. Meteors on the other hand are of rapid single-direction movement and are only visible for a few seconds. Meteor activity is more common at certain times of the year than others, and reports of UFO's have shown a tendency to increase during these periods.

5. Some cases arise which, on the basis of information received are of a weird and peculiar nature. The objects display erratic movements and phenomenal speeds. Since maneuvers and speeds of this kind cannot be traced directly to aircraft, balloons, or known astronomical sources, it is believed that they are reflections from objects rather than being objects themselves. For example: suppose we would hold a mirror in hand under a light, causing a reflection on the ceiling. Only a slight, quick movement of the hand would result in erratic movements and phenomenal speeds of the reflected beam. Reflections may be projected to clouds and haze both from the ground and air. Many things which are common to the sky have highly reflective qualities, such as balloons, aircraft, and clouds. Accurate speeds are also difficult to determine due to the inability of the reporter to judge distance, angles, and time.

6. Brilliant flashing lights that sometimes appear red and white in color have been reported by observers. This type has been traced to a new lighting system of commercial airlines and military aircraft. Atop the tail section of these aircraft highly reflective red and white flasher type lights have been installed and are many times misinterpreted by the ground observer.

A17

In the analysis and investigation of the radar and visual sightings described, there are some yardsticks which have been established from experience and trends to measure and attempt to determine the source of UFO's. Some of these are general in nature and are subject to change as new scientific and factual information is received. It should be remembered that any object viewed from a great distance appears to be round. Nearly all the sightings reported are described as round and would tend to indicate that most of the objects are at a greater distance from the observer than is generally estimated.

Another misconception centers about photographs of unidentified flying objects. At best the majority of photographs have proven non-conclusive as evidence to this program mainly due to type cameras used. Also, it might be mentioned that because still photographs can be so easily faked, either by using a mock-up or model against a legitimate background, or by retouching the negative, they are worthless as evidence. Innumerable objects, from ashtrays to wash basins, have been photographed while sailing through the air. Many such photos have been published without revealing the true identity of the objects.

More attention is given to moving pictures of unidentified flying objects since they are more difficult to retouch. However, only a very few movie-type films have been received by the Air Force and they reveal only pinpoints of light moving across the sky. The Air Force has been unable to identify the source of these lights because the images are too small to analyze properly. Since ownership of these films remains with the persons taking them, the Air Force is now in a position to give them out.

The difficulty of evaluating reports of all types is based largely upon the lack of basic data surrounding the sightings. The drop in sightings during 1953 is largely due to the increased accuracy and the completeness of reports being received. To be of value, a report should include such basic data as size, shape, composition, speed, altitude, direction, and the maneuver pattern of the objects. Without such information, it is almost impossible to establish the identity of the object sighted. In addition, a recent study has shown a direct correlation between the number of sightings reported and the publicity given to "saucers" by the nation's press.

The Air Force took a further step in early 1953 by procuring Videon cameras for the purpose of photographing this phenomena. These cameras were distributed to various military installations. This type camera has two lenses, one of which takes an ordinary photograph, and the other has a diffraction grating which separates light into its component parts. This aids in determining the composition of the object photographed. A small number of photographs have been received from this camera; however, only light spots of no detail have been indicated in the photos to date. As more photographs are taken by these observers, it is believed that a great deal of the mystery will be lifted from the program.

The Air Force would like to state that no evidence has been eceived which would tend to indicate that the United States is being bserved by machines from outer space or a foreign government. No object or particle of an unknown substance has been received and

A 18

no photographs of detail have been produced. The photographs on hand are, at best, only large and small blobs of light which, in most cases, are explainable.

It may be concluded from the above and from past experience that no new significant trends have developed out of these cases. There was an increase in public interest which occurred simultaneously with the publication of various books and articles on the subject; however, this trend has been noted several times previously.

In order to overcome the lack of basic data, and to standardize all reports, a detailed questionnaire is now submitted to each person reporting an unidentified aerial object. It is felt that the information thus obtained will lower still more the number of unexplained sightings.

For observers who wish to report unidentified aerial objects, the Air Force would welcome the information. Attached to this report is a brief basic summary form. It would be appreciated if observers would send the completed form to the nearest Air Force Base.

If and when new developments turn up in this program, the Air Force will keep the public informed.

14 Soundview Ave.
White Plains, N.Y.
February 14, 1955

Security Review Branch
Office of Public Information
Department of Defense
Washington 25, D.C.

Dear Sirs:

I hereby submit the following proposed statement, to be issued by me, to you for security review prior to publication. I plan to send this statement to news services and other media of news dissemination, about March 1, 1955. Your attention before that date would be appreciated. Should you wish me to make certain deletions, please advise me.

The statement follows:

" The U.S.Air Force, after more than seven years of investigation, has at last admitted that sightings of secret American aircraft and missiles have caused those persistent reports of unexplainable "flying saucers" which have bobbed up in the news ever since 1947. This admission, made grudgingly by the Air Force, and without any fanfare, should bring to a close a most ignoble and unhealthy situation, in which one branch of the Department of Defense was "investigating" public manifestations of a secret activity of other branches.

" Although several different activities accounted for the sightings, not all of these can be disclosed at this time. One category of saucer reports, the "green fireballs of the Southwest", was connected in part with the Upper Atmosphere Rocket Research Program, involving artificial meteors. Another category of reports was admitted by the Air Force to be due to flight tests of a new high-intensity light source for night aerial photography. Still another type of saucer which was reported bore strong resemblance to a fantastically-shaped guided missile developed by the applied physics laboratories of a large Eastern university.

" The Air Force, which was not involved in causing these reports, was originally designated to investigate the reports in order to allay public fears which had been aroused by the sudden appearance of strange objects in the skies in 1947. At that time, prior to "Unification", the true nature of the objects could not be divulged to the Air Force junior officers assigned to the investigation. Likewise, security considerations prompted the Government to try to convince the public that no real objects were being seen, but only mirages, hallucinations, etc.

" However, in the past few years, as the facts became more insistent, the Air Force found it increasingly difficult to keep up the pretense that it was conducting an honest scientific investigation. Also, the danger inherent in the situation became evident. Because of the repeated

official statements that any saucers which might be seen were not real, there was an uncomfortable probability that a hostile aircraft or missile which resembled a saucer would pass unchallenged through our Air Defense network. Hence, in August, 1954, an official Air Force Regulation (AFR 200-2) was issued, stating that strange aerial objects must be taken seriously and treated as potentially hostile aircraft.

" In October, 1954, the Air Force, by simply omitting a key paragraph from its annual revision of its flying saucer"fact sheet", quietly admitted that saucers were American objects. These omitted sentences had been based on an erroneous interpretation of Major Gen. John A. Samford's statement, as Director of Intelligence of the Air Force in 1952, that the United States has no secret weapon which "has no mass and unlimited power". The sentences which have now been recanted read:

"The Air Force has stated in the past, and reaffirms at the present time, that unexplained aerial phenomena are not a secret weapon, missile, or aircraft, developed 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."

" In the light of the evidence which has been made available to it in its investigation, the Air Force now finds that it can no longer justifiably make the above-quoted statement. Since the Air Force no longer denies that some of the "weird" saucer reports are due to American objects, it would seem to be appropriate now for the news services of America to wind up this story with appropriate editorial comment."

End of Statement

Sincerely yours,

Leon Davidson

Dr. Leon Davidson

SUBJECT TO REVIEW FOR CLEARANCE OF MILITARY SECURITY

16 17 FEB 1955

OFFICE OF PUBLIC INFORMATION
DEPARTMENT OF DEFENSE

THIS ARTICLE HAS BEEN REVIEWED FOR MILITARY SECURITY BY THE OFFICE OF PUBLIC INFORMATION, DEPARTMENT OF DEFENSE. WHEN PUBLISHED THIS ARTICLE NO STATEMENT SHOULD ACCOMPANY IT INDICATING SUCH REVIEW UNLESS THE FOLLOWING STATEMENT IS INCLUDED THEREIN: "REVIEW OF THIS ARTICLE BY THE DEPARTMENT OF DEFENSE DOES NOT CONSTITUTE VERIFICATION OF FACTUAL ACCURACY OR OPINION."

A19

DEPARTMENT OF DEFENSE
OFFICE OF PUBLIC INFORMATION
WASHINGTON 25, D. C.

February 25, 1955

Dear Mr. Davidson:

This is in reply to your letter of February 22 regarding what you consider to be a change of Air Force position with respect to unidentified flying objects.

The paragraph you refer to was, I discovered some time ago, omitted from the later summary. I can offer no explanation other than oversight, since the omission carries no significance. The oversight appears to be of minor importance, however, since our position in that respect has been a matter of record for a number of years.

We have also made the following statement in answer to questions along this line: "We have been experimenting with new type aircraft and missiles for a long time, and possibly some of them have been reported as unidentified flying objects. However, the number of such sightings would be negligible. We have nothing which spins through the air like a disc, pulsates, glows, dematerializes, changes color, goes from a mid-air standstill to supersonic speed, soundlessly glides through the sonic barrier, or turns at square angles in full flight, as some sighters report."

I might point out that your paper, submitted earlier to the Security Review Branch, was reviewed only from the standpoint of military security. It should not be assumed that such review constitutes confirmation, or even agreement, with the material therein. I am sure a red stamp to that effect was placed upon this paper.

Sincerely,

ROBERT C. WHITE
Captain, USAF
Air Force Press Desk

Mr. Leon Davidson
14 Soundview Avenue
White Plains, New York

A20

PUBLIC INFORMATION OFFICE
HEADQUARTERS AIR RESEARCH AND DEVELOPMENT COMMAND
P. O. BOX 1395
Baltimore 3, Maryland
Telephone Lexington 9-2616, Ext. 89 - 90

FLAT PM RELEASE - 7 AM EDT - Wednesday, 15 July 1953 NO. 70-53

THIS RELEASE, DATED IN 1953,
IS NOT IN CHRONOLOGICAL ORDER.

NEW USAF DEVICE FOR TAKING NIGHT AERIAL PHOTOGRAPHS

BALTIMORE, MD. - A new device for providing an intense continuous light source for taking night aerial photographs is being developed for the United States Air Force by a group of scientists and engineers at Wesleyan University, Windsor Locks, Conn., Air Research and Development Command Headquarters announced here (Baltimore) today.

Called the "Hell Roarer", the device enables the taking of night aerial photographs by means of special cameras. The name, given to this mechanism by the Wesleyan group, originated from the roar emitted when in operation. The Air Research and Development Command's Wright Air Development Center, Dayton, Ohio, is working with the Wesleyan group on the development project.

The mechanism, contained in a torpedo-like 12-foot cylinder, attaches to the wing of a reconnaissance aircraft and is controlled by the pilot. Built-in warning signals indicate if anything is wrong, and the entire mechanism can be jettisoned if the plane is endangered. The fuel for the Hell Roarer is atomized or finely pulverized magnesium powder, which burns at an extremely high temperature and must be handled with extreme care. It puts out an intense light of approximately 10,000,000 candlepower and will burn for more than four minutes. The pilot can turn the Hell Roarer on and off as required.

During the first test flights conducted at Windsor Locks by the research group and Air Force personnel, nearby police and field officials were beseiged with phone calls reporting flying saucers or planes going down in flames. An Air Force test conducted near Detroit also brought numerous calls from excited observers.

Successfully tested on maneuvers, the device has given the U.S. Air Force hope that an old military problem has been solved: How to take pictures of enemy activity at night from very low altitudes and at high speeds. The idea was conceived by the Air Force in 1949 and development work started in fall of 1949. The first flight test model was designed and developed by Mr. Robert M. Dawson, a mechanical engineer of Newington, Conn., with the assistance of other Wesleyan University scientists and technicians, who, since 1946, under the direction of Dr. Richmond O. Clarke, have been engaged exclusively in research for the Department of Defense. The first flight test took place late in 1951.

Photographs available on request to ARDC, Public Information Office.

B1

Part B: The CIA PANEL Report of 1953

The material in the Project Blue Book Special Report No. 14 (see Part D) was first prepared in 1952 at the request of the CIA by Air Force contractors and the Project Blue Book staff, for presentation to a panel of scientists early in 1953. (See M.J.Ruppelt's book "The Report on Unidentified Flying Objects", Doubleday, first edition, esp. pp. 293-294, for the background of this Panel.) In June, 1966, one of the Panel members, appearing on a CBS TV Special Report, publicly named the CIA as the "agency" (unnamed by Ruppelt) which had paid for the Panel's activities.

Although the Blue Book Report No. 14 was made public in October 1955 (see page D5), the Panel's report (page B2) was kept secret until given to Maj. D.E. Keyhoe in early 1958, for use in a radio interview. I then wrote to the CIA to get the material, and (see letter on p. B2) the Panel report was given to me on April 9, 1958, for distribution. I then wrote to each Panel member, and to others, to try to clarify the purpose and meaning of their report. Selections from the replies which I received are reproduced on pages B3 to B6.

Note that the main purpose of this Panel study, insofar as the CIA was concerned, apparently was to prepare for a test program to see why people reacted strongly to "flying saucer" sightings. (Several points in the letters touching on this are indicated by marginal notes "See Page B1.") From this, the CIA might have wished to derive some useful psychological warfare techniques.

The sighting report quoted by Maj. Keyhoe in his book "Flying Saucers--Top Secret", pp. 18-20, has all the earmarks of a CIA "field evaluation" of such a psychological warfare gimmick. See my comments on this in my article (on p. 50) "An Open Letter to Saucer Researchers", in the magazine "Flying Saucers", March, 1962 (issue FS-24) published by Ray Palmer, Amherst, Wisconsin, 54406.

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The letter reproduced below shows that the normal channel for scientific study of government problems, the National Academy of Sciences, (which would not have accepted such CIA "guidance" in shaping its results), had not been invited to study the "saucer" sightings, at the same time that the CIA's panel of scientists was set up. Thus one may be justified in doubting that the U.S.Government sincerely wanted an impartial scientific investigation of the "flying saucers" in 1953. This is further shown by the Government's failure to adopt or to publish the recommendations given by the Panel in Paragraph 3 of their report(p. B2).

NATIONAL ACADEMY OF SCIENCES

OFFICE OF THE PRESIDENT
2101 CONSTITUTION AVE.
WASHINGTON 25, D.C.

May 12, 1953

Mr. Leon Davidson
804 South Irving Street
Arlington 4, Virginia

Dear Mr. Davidson:

In reply to your letter of April 5, 1953, the National Academy of Sciences has not been requested by any Government agency to study collected reports on "flying saucers".

As to the question of how the National Academy might be requested to make such a study, the usual procedure is by the negotiation of a contract with the Academy. The Congressional charter which established the Academy in 1863 provided that the Academy should advise the Government on scientific questions without charge except for actual expenses of any investigation which it is to make. In addition, the Academy-National Research Council, have acted in an advisory capacity to many private agencies, both in and out of government, through the machinery of a contract negotiated with the Academy.

Sincerely yours,

L. D. Connell

S. D. Connell
Executive Officer

SDC:rg

DEPARTMENT OF THE AIR FORCE
WASHINGTON

OFFICE OF THE SECRETARY

9 April 1958

Dear Mr. Davidson:

Your letter of 11 March 1958 concerning UFO's, addressed to the Central Intelligence Agency, has been referred to this office for reply.

As requested, I am inclosing a copy of the summary of the Report of the Scientific Panel on Unidentified Flying Objects, dated 17 January 1953. All the findings of the panel are contained in this summary. All personnel associated with this panel have given their permission for use of their name in connection with this report.

Therefore, free distribution to the public may be made at your discretion.

Sincerely,

LAWRENCE J. ZUCKER
Major, USAF
Executive Officer
Public Information Division
Office of Information Services

Incl
a/s

Mr. Leon Davidson
64 Prospect Street
White Plains, New York

(This report was first released by the Air Force on April 9, 1958.)

REPORT OF THE SCIENTIFIC PANEL
ON
UNIDENTIFIED FLYING OBJECTS

17 January 1953

1. The undersigned Panel of Scientific Consultants has met at the request of the Government to evaluate any possible threat to national security posed by Unidentified Flying Objects ("Flying Saucers"), and to make recommendation. The Panel has received the evidence as presented by cognizant Governmental agencies, primarily the United States Air Force, and has reviewed a selection of the best documented incidents.

2. As a result of its considerations, the Panel concludes:

That the evidence presented on Unidentified Flying Objects shows no indication that these phenomena constitute a direct physical threat to national security.

We firmly believe that there is no residuum of cases which indicates phenomena which are attributable to foreign artifacts capable of hostile acts, and that there is no evidence that the phenomena indicate a need for the revision of current scientific concepts.

3. In the light of this conclusion, the Panel recommends:

That the national security agencies 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.

We suggest that this aim may be achieved by an integrated program designed to reassure the public of the total lack of evidence of inimical forces behind the phenomena.

/s/ Lloyd V. Berkner
Associated Universities, Inc.

/s/ H.P. Robertson, Chairman
California Institute of Technology

/s/ S. A. Goudsmit
Brookhaven National Laboratories

/s/ Luis W. Alvarez
University of California

/s/ Thornton Page
John Hopkins University

A letter from a former Air Force officer, in response to request for comment on the Panel Report.

May 7, 1958

Mr. Leon Davidson
64 Prospect Street
White Plains, New York

Dear Mr. Davidson,

has forwarded your letter of April 28th and, although I have retired from the UFO controversy, I will attempt to shed some light on your problem.

First, the Air Force had nothing to do with the meeting of the scientific panel you refer to. It was completely set up and carried out by another government agency. Secondly, to my knowledge, no written report was ever made. Such a report was suggested during the meeting but rejected as a waste of time, effort and money. I didn't mean to infer in my book that a full written report was made.

I don't recall seeing the mimeographed piece of paper that you enclosed in your letter ; the only piece of paper I ever saw that was produced by the panel was an unclassified two-sheet statement which I believe was designed to be released to the press. It was referred to as "the white paper on UFO's." It was given to Air Force intelligence by the agency sponsoring the meeting and at least one copy reached ATIC but it was never released to the press. It said essentially the same thing as the one you enclosed in your letter except it spelled out each point in a little more detail and it was the source of the quote on page 291 of my book.

In stating the above, I do not mean to infer that the piece of paper describing the panel meeting which you enclosed in your letter (and which I assume was released by the Air Force) is incorrect. It could well be in addition to the two-page document I referred to.

Now, in regard to the recommendations: several days after the panel meeting I went from Dayton to Washington and, along with Brigadier General Garland, then the Chief at ATIC, visited the agency that sponsored the panel meeting. We were told that the panel had recommended:

a. Project Blue Book be expanded.
   1. Specialists should be added to the staff.
   2. Instruments should be set up.
b. All secrecy should be stripped from the project.

I assume that these were the written recommendations of the panel because they were being read from a piece of paper and I had heard the panel verbally agree on them a few days before.

After I returned to ATIC, General Garland told me he had discussed the recommendations with Major General Samford, then the Director of Intelligence, and that I was to carry them out.

Recommendation "a" above could not be carried out because of a lack of money and the virtual impossibility of getting civil service positions at ATIC. Secondly, there were many people who doubted the value of expanding the project. As a "next-best" move, the 4602nd AIS of Air Defense Command was tied into Project Blue Book and, in actuality, the project was quadrupled in size.

General Garland personally pushed the recommended instrumentation program but again money was the problem. I visited many people and companies to get information on tracking equipment. The instrumentation program was carried out but degenerated down to the famous grid-camera fiasco, which is well known, and an ADC effort in accelerating their program to put cameras on radar scopes. (The grid-camera program was in the mill at the time but had bogged down.)

In my book I stated that the reason for these recommendations was that the panel was not sure about the UFO reports; there might be something there. This was true; there might be something. But the panel's major reason for recommending that the UFO investigation program be expanded, I understood from the discussion, was to learn why so-called "experienced people" went into a tizzy whenever a UFO was reported. By this I mean pilots were fighting with balloons and planets, radar operators were tracking and plotting interference, etc.

See page B-1

I do not care to discuss this aspect further but I believe you can realize the problem and why I didn't pursue the point in my book.

The panel seemed unanimous in agreeing that an expensive tracking range or system would pay for itself in the negative information it would gather. It would be worth the million or so dollars it would cost to operate the tracking net for a year or two to be able to say absolutely nothing had been detected. The UFO project had already cost that much and the panel could visualize more money being spent if a solution were not reached.

The recommendation to release everything, recommendation "b", was vetoed. The reason was that we had tried it in 1952 and some people took the information we put out in good faith,

THIS LETTER IS CONTINUED ON PAGE B 5

B 3

B4

DEPARTMENT OF THE AIR FORCE
WASHINGTON

OFFICE OF THE SECRETARY

MAY 20 1958

Dear Mr. Davidson:

This is to acknowledge your letter of 27 April 1958 addressed to this office with copies to the Secretary of the Air Force and the Central Intelligence Agency concerning the releasable Summary and the complete Formal Report of the Scientific Advisory Panel on Unidentified Flying Objects convened 14-18 January 1953.

The complete Formal Report of the Panel has not been fully declassified for security reasons. The Formal Report is not available to the general public for distribution or reproduction.

The Formal Report does not contain the following specific recommendations mentioned in Captain Ruppelt's book, "The Report on Unidentified Flying Objects".

p. 293 "The panel didn't recommend that the activities of Blue Book be cut back, and they didn't recommend that it be dropped. They recommended that it be expanded.....the expansion they recommended would require a considerable sum of money. The investigative force of Project Blue Book should be quadrupled in size, they wrote,....."

p. 294 "And lastly, they said that the American public should be told every detail of every phase of the UFO investigation--the details of the sightings, the official conclusions, and why the conclusions were made. This would serve a double purpose; it would dispel any of the mystery that security breeds and it would keep the Air Force on the ball--sloppy investigations and analysis would never occur."

However, the minutes of the various meetings which led to the Formal Report of the Panel do include comments and suggestions of individual members of the panel. This is an unofficial classified supplement to the Formal Panel Report setting forth comments and suggestions of the Panel members, which they believed were unappropriate for inclusion in the Formal Report.

These minutes disclose the fact that members of the panel generally concluded that in view of the complete lack of authenticated evidence an educational training program designed to debunk the existence of interplanetary space ships was required. Captain Ruppelt as an interviewee * testifying before the panel unofficially proposed, for the purpose of analyzing and evaluating reported sightings, teams which would expand the ATIC effort. Captain Ruppelt was not a member of the Panel.

These minutes also disclose that because of the brevity of some sightings and the inability of witnesses to express themselves clearly (semantics) that conclusive explanations could not be expected for every case reported. Furthermore, it was considered that normally it would be a great waste of effort to try to solve most of the sightings unless such actions would benefit a training and educational program. The Panel also endorsed the long accepted method for new scientific knowledge which is for the sighter to prove his point not the explainer. Captain Ruppelt was probably recalling or referring to his conversations with individual members of the panel and to the unofficial supplement when he wrote his book. In any event I can assure you the Formal Report of the Panel does not contain the recommendations as spelled out in your letter of 27 April 1958.

See page 81

For your information the classified portion of the Formal Report and the unofficial supplement do not deal specifically with UFO's but on other matters of intelligence significance which affect the national security.

In our attempt to put the UFO subject in proper perspective, it appears that the Air Force cannot compete with the science-fiction writers. We believe that we have the investigation of the UFO phenomena in responsible hands and that an adequate, thorough, and honest program is being conducted. Regardless, a small but articulate segment of people are under the mistaken belief that the Air Force has not sought the assistance of outstanding authorities from without the Air Force to assist in our evaluation of UFO sightings, and that we are withholding vital UFO information from the public, thereby preventing proper evaluation. We have, on numerous occasions, publicized our conclusions relative to UFO and explained our evaluation processes. This group, nevertheless, continues to claim that UFO's are objects from outer space and demand Congressional hearings on the subject.

You can readily understand the continued interest of this small segment because the subject is so novel and fascinating that it supports over 45 organizations of one type or another. Most of these organizations publish news letters or magazines and they expect the Air Force to furnish them material for their publications. Needless to say, we do not have the resources alloted to this project to fill the numerous individual requests which these organizations make for copies of our investigative reports and other related matter.

Furthermore, we would be remiss in our duty to the American public if we, by our assistance, encouraged these organizations in their sensational claims and contentions. Consequently, we do not give them individual attention but rather make periodic press releases through established news channels. In so doing, we show partiality to no one person or organization nor do we place ourselves in the position of placing our stamp of approval on, or giving preferential treatment to, any one of them.

This press release approach used by all branches of the Government is considered censorship by some of these organizations and, because we will not favor them with our individual attention, they contend that we are keeping vital information from the public. The Air Force was compelled to generally adopt the press release approach because in the past when we furnished factual information to certain writers of UFO books and articles upon their individual requests our action was interpreted as granting approval and clearance to the books and articles in which the information was used.

If we withhold certain information from the public on UFO's it is not done for the purpose of depriving the public of vital information necessary for proper evaluation nor is it done because there is scientific proof of the existence of space craft from other planets and we do not wish to alarm the American public. It is done in the majority of instances to protect the people involved from the idle curiosity of the sensation seekers. In a few limited instances it is done to keep from compromising our investigative processes and, in a few instances, it is done for legitimate security reasons.

The Air Force has a tremendous task in defending this country against weapon systems which we know actually exist and are in the hands of our potential enemies. To divert more man and money away from this most serious mission into a greatly enlarged program for the investigation of UFO's -- objects about which we have been unable to discover one iota of tangible scientific evidence -- would seriously jeopardize the security of this country against a known proven threat; would be allowing the sensation seekers to dictate our defense policies, and would, in our opinion, lay ourselves open to the charge of gross imprudence.

The Air Force does not deny that unknown objects have been seen by responsible people. It is in the interpretation of these sightings that we are questioned. From our investigation covering the past ten or twelve year period, the Air Force contends that when the evidence of these sightings has been examined through the scientific criteria it has led to the conclusion that the objects were not space craft and they did not constitute a threat to the security of this country. As an act of faith, the UFO's can be considered manned or unmanned craft from outer space, but as a scientific fact there has been no authenticated scientific evidence presented to or discovered by the Air Force to support this conclusion.

This is all the information available on the subject at the present time.

If you have a future need for Air Force statistics on this subject, the latest Air Force press release will always be available upon request.

Sincerely,

LAWRENCE J. JACKSON
Major, USAF
Executive Officer
Public Information Division
Office of Information Services

Mr. Leon Davidson
64 Prospect Street
White Plains, N. Y.

The following is the concluding page of the letter from the former Air Force officer which starts on page B-3.

and which we believed to be fair and honest, and completely misconstrued it.

If I remember correctly, in 1952 Major Dewey Fournet went to great trouble to get permission to give you a briefing and it was, shall we say, rather poorly received.

I trust that this letter answers your questions.

Yours truly

B 6

A letter from a scientist, not on the Panel, who wrote to Panel members he knew, asking about the Report, in 1958.

May 20, 1958

Mr. Leon Davidson
64 Prospect Street
White Plains, N.Y.

Dear Mr. Davidson:

I received one verbal and one written answer to my query. The written answer was quite definite. The release had been written in "governmentese" purposely, but it was not expected that there would be any release. There was to be no further statement from the group. A second man told me more definitely that he was astonished at the wording of the document that he had, presumably signed. He agreed with me about its indefiniteness and thought that it would do harm. But then he pointed out that no matter what you said the flying saucer people would get you somehow or other.

If I hear of anything more of interest I will keep you informed. I find Ruppelt's letter interesting and certainly it throws light on some of the activities of that agency. In my opinion it further verifies Ruppelt's incompetence for the job that he was given. I mean this not as a criticism, because one cannot always control the assignment and doubtless he did the best he could. But I've never seen a project worse handled than the early stages of the flying saucer program. I had one of those "briefing sessions" and particularly recall one incident.

See page 81

In my emphasis that these were natural phenomena, say mirages for example, one of the men said "suppose that we granted for a moment, that you are correct. Doesn't it occur to you that we might be able to use this information in reverse?"

"You mean as a counter measure?" I asked.

"Exactly!"

"You mean you would like to use this phenomenon, say, to produce an image of Christ over the kremlin?"

"Yes that's an excellent example," he said.

"Absolute nonsense!" I replied. I then went on to state emphatically that I was not going to be muzzled by any considerations of security or secrecy in this development. As I recall, General Sanford was present at these meetings.

As a result, they agreed to open up the Blue Book files to me. In fact Ruppelt was requested to bring them to me so that I could study them. Well, not only did Ruppelt never come, but he further immediately moved in to classify the files and I was not permitted, as Keyhoe and others have indicated, to get this information. On one occasion, however, I was told to come over and see all of the files and they would throw them open.

I went over to the Pentagon where the scientist in charge of this bureau immediately pulled out great drawers of these things and said "now here you can see for yourself exactly what is in them." He said "I know you have security clearance."

I asked him if the files were classified and that if anything that I happen to see in those files and wanted to quote it would be similarly classified. He said yes that I was not permitted to quote. I said "no thank you!" and thus avoided what might conceivably have been a trap to muzzle me.

Sincerely yours,

C1

Part C: The Current (1966) Air Force Release on Project Blue Book

Pages C-1 through C-8 comprise the complete text of the document issued by the Air Force in February 1966 as its current "press release" for the public. The only deletions (made necessary by limitstions of space) are a "Suggested Reading List" of books on astronomy, atmospheric phenomena, etc., which constituted page 6, and a Fireball Report Form which formed page 10. If desired, these missing pages may be obtained from the publisher (see back cover for address) at a nominal charge to cover reproduction and handling expenses.

The cover letter from the Air Force which accompanied this document is reproduced on page C-4, occupying what was a large blank space in the original document. Pages 4 and 5 of the original document, which were each half-blank, have been combined on page C-5. Pages 6 and 10 have been omitted, as stated above.

PROJECT

BLUE BOOK

1 FEBRUARY 1966

C 2

PROJECT BLUE BOOK

The United States Air Force has the responsibility under the Department of Defense for the investigation of unidentified flying objects (UFOs). The name of this program, which has been in operation since 1948, is Project Blue Book. It has been identified in the past as Project Sign and Project Grudge.

Air Force interest in unidentified flying objects is related directly to the Air Force responsibility for the air defense of the United States. Procedures for conducting this program are established by Air Force Regulation 200-2.

The objectives of Project Blue Book are two-fold: first, to determine whether UFOs pose a threat to the security of the United States; and, second, to determine whether UFOs exhibit any unique scientific information or advanced technology which could contribute to scientific or technical research. In the course of accomplishing these objectives, Project Blue Book strives to identify and explain all UFO sightings reported to the Air Force.

HOW THE PROGRAM IS CONDUCTED

The program is conducted in three phases. The first phase includes receipt of UFO reports and initial investigation of the reports. The Air Force base nearest the location of a reported sighting is charged with the responsibility of investigating the sighting and forwarding the information to the Project Blue Book Office at Wright-Patterson Air Force Base, Ohio.

If the initial investigation does not reveal a positive identification or explanation, a second phase of more intensive analysis is conducted by the Project Blue Book Office. Each case is objectively and scientifically analyzed, and, if necessary, all of the scientific facilities available to the Air Force can be used to assist in arriving at an identification or explanation. All personnel associated with the investigation, analysis, and evaluation efforts of the project view each report with a scientific approach and an open mind.

The third phase of the program is dissemination of information concerning UFO sightings, evaluations, and statistics. This is accomplished by the Secretary of the Air Force, Office of Information.

The Air Force defines an unidentified flying object as any aerial object which the observer is unable to identify.

Reports of unfamiliar objects in the sky are submitted to the Air Force from many sources. These sources include military and civilian pilots, weather observers, amateur astronomers, business and professional men and women, and housewives, etc.

Frequently such objects as missiles, balloons, birds, kites, searchlights, aircraft navigation and anticollision beacons, jet engine exhaust, condensation trails, astronomical bodies and meteorological phenomena are mistakenly reported as unidentified flying objects.

The Air Force groups its evaluations of UFO reports under three general headings: (1) identified, (2) insufficient data, and (3) unidentified.

C3

Identified reports are those for which sufficient specific information has been accumulated and evaluated to permit a positive identification or explanation of the object.

Reports categorized as Insufficient Data are those for which one or more elements of information essential for evaluation are missing. Some examples are the omission of the duration of the sighting, date, time, location, position in the sky, weather conditions, and the manner of appearance or disappearance. If an element is missing and there is an indication that the sighting may be of a security, scientific, technical, or public interest value, the Project Blue Book Office conducts an additional investigation and every attempt is made to obtain the information necessary for identification. However, in some instances, essential information cannot be obtained, and no further action can be taken.

The third and by far the smallest group of evaluations is categorized as Unidentified. A sighting is considered unidentified when a report apparently contains all pertinent data necessary to suggest a valid hypothesis concerning the cause or explanation of the report but the description of the object or its motion cannot be correlated with any known object or phenomena.

TYPES OF UFO IDENTIFICATIONS AND EVALUATIONS

There are various types of UFO sightings. Most common are reports of astronomical sightings, which include bright stars, planets, comets, fireballs, meteors, auroral streamers, and other celestial bodies. When observed through haze, light fog, moving clouds, or other obscurations or unusual conditions, the planets, including Venus, Jupiter, and Mars have been reported as unidentified flying objects. Stellar mirages are also a source of reports.

Satellites are another major source of UFO reports. An increase in satellites reported as UFOs has come about because of two factors. The first is the increase of interest on the part of the public; the second is the increasing number of satellites in the skies. Positive knowledge of the location of all satellites at all times enables rapid identification of satellite sightings. Keeping track of man-made objects in orbit about the earth is the responsibility of the North American Air Defense Command Space Detection and Tracking System. This sophisticated electronic system gathers complex space traffic data instantly from tracking stations all over the world.

Other space surveillance activities include the use of ballistic tracking and large telescopic cameras. ECHO schedules are prepared by the NASA Goddard Space Flight Center at Greenbelt, Maryland, and schedules of the South/North equator crossings are prepared by the Smithsonian Institution at Cambridge, Massachusetts. From the data produced by these agencies, satellites mistakenly reported as UFOs can be quickly identified. Some of these are visible to the naked eye.

Aircraft account for another major source of UFO reports, particularly during adverse weather conditions. When observed at high altitudes and at some distance, aircraft can have appearances ranging from disc to rocket shapes due to the reflection of the sun on their bright surfaces. Vapor or condensation trails from jet aircraft will sometimes appear to glow fiery red or orange when reflecting sunlight. Afterburners from jet aircraft are often reported as UFOs since they can be seen from great distances when the aircraft cannot be seen.

The Project Blue Book Office has direct contact with all elements of the Air Force and the Federal Aviation Agency civil air control centers. All aerial refueling operations and special training flights can be checked immediately. Air traffic of commercial airlines and flights of military aircraft are checked with the nearest control center, enabling an immediate evaluation of aircraft mistakenly reported as UFOs. However, since many local flights are not carried, these flights are probable causes of some reports.

C 4

Balloons continue to be reported as UFOs. Several thousand balloons are released each day from military and civilian airports, weather stations, and research activities. There are several types of balloons - weather balloons, rawinsondes, radiosondes, and the large research balloons which have diameters up to 300 feet. At night, balloons carry running lights which cause an unusual appearance when observed. Reflection of the sun on balloons at dawn and sunset sometimes produce strange effects. This usually occurs when the balloon, because of its altitudes, is exposed to the sun. Large balloons can move at speeds of over 100 miles per hour when moving in high altitude jet windstreams. These balloons sometimes appear to be flattened on top. At other times, they appear to be saucer-shaped and to have lights mounted inside the bag itself due to the sun's rays reflecting through the material of the balloon. The Balloon Control Center at Holloman Air Force Base, New Mexico, maintains a plot on all Military Upper Air Research Balloons.

Another category of UFO evaluations labeled Other includes missiles, reflections, mirages, searchlights, birds, kites, spurious radar indications, hoaxes, fireworks, and flares.

Aircraft, satellites, balloons, and the like should NOT be reported since they do not fall within the definition of an unidentified flying object.

DEPARTMENT OF THE AIR FORCE
WASHINGTON

OFFICE OF THE SECRETARY

JUN - 3 1966

Dear Mr. Davidson:

Blue Book Special Report #14 was a one time report, and we have no plans to replace or revise it.

I am inclosing the current report on Project Blue Book for your information. You will note from this report that the conclusions are essentially the same as those made in Special Report #14.

Sincerely,

JOHN P. SPAULDING
Lt Colonel, USAF
Chief, Civil Branch
Community Relations Division
Office of Information

1 Atch
Project Blue Book

Mr. Leon Davidson
64 Prospect St.
White Plains, New York

C5

CONCLUSIONS

To date, the firm conclusions of Project Blue Book are: (1) no unidentified flying object reported, investigated, and evaluated by the Air Force has ever given any indication of threat to our national security; (2) there has been no evidence submitted to or discovered by the Air Force that sightings categorized as unidentified represent technological developments or principles beyond the range of present day scientific knowledge; and (3) there has been no evidence indicating that sightings categorized as unidentified are extraterrestrial vehicles.

The Air Force will continue to investigate all reports of unusual aerial phenomena over the United States. The services of qualified scientists and technicians will continue to be used to investigate and analyze these reports, and periodic reports on the subject will be made.

The Air Force does not deny the possibility that some form of life may exist on other planets in the universe. However, to date, the Air Force has neither received nor discovered any evidence which proves the existence and intra-space mobility of extraterrestrial life. The Air Force continues to extend an open invitation to anyone who feels that he possesses any evidence of extraterrestrial vehicles operating within the earth's near space envelope to submit his evidence for analysis. Initial contact for this purpose is through the following address:

PROJECT BLUE BOOK INFORMATION OFFICE
SAFOI
WASHINGTON, D C 20330

Anyone observing what he considers to be an unidentified flying object should report it to the nearest Air Force Base. Persons submitting a UFO report to the Air Force are free to discuss any aspect of the report with anyone. The Air Force does not seek to limit discussion on such reports and does not withhold or censor any information pertaining to this unclassified program.

The following items are for internal use only and are not available for distribution to the public. These concern internal management and procedures for forwarding UFO reports to the appropriate agency:

1. Air Force Regulation 200-2

2. JANAP 146

The Air Force has no films, photographs, maps, charts, or graphs of unidentified flying objects. Photographs that have been submitted for evaluation in conjunction with UFO reports have been determined to be a misinterpretation of natural or conventional objects. These objects have a positive identification.

The Air Force no longer possesses, and thus does not have for distribution, outdated reports on Project Sign, Project Grudge, Blue Book Special Report No. 14, and outdated Project Blue Book press releases. Non-military UFO publications should be requested from the publisher, not the Air Force.

C 6

TOTAL UFO (OBJECT) SIGHTINGS

(Compiled 17 Jan 66)

YEAR	TOTAL SIGHTINGS	UNIDENTIFIED	SOURCE
1947	122	12	Case Files
1948	156	7	Case Files
1949	186	22	Blue Book, page 108
1950	210	27	Case Files
1951	169	22	Case Files
1952	1,501	303	Blue Book, page 108
1953	509	42	Case Files
1954	487	46	Case Files
1955	545	24	Case Files
1956	670	14	Case Files
1957	1,006	14	Case Files
1958	627	10	Case Files
1959	390	12	Case Files
1960	557	14	Case Files
1961	591	13	Case Files
1962	474	15	Case Files
1963	399	14	Case Files
1964	562	19	Case Files
1965	886	16	Case Files
	10,147	646	

C 7

STATISTICAL DATA FOR YEARS 1953-1964

(Compiled 1 Nov 65)

TOTAL CASES BY CATEGORY

	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	TOTAL
Astronomical	175	137	135	222	341	231	144	235	203	136	85	123	2167
Aircraft	73	80	124	148	218	106	63	66	77	68	73	71	1167
Balloon	78	63	102	93	114	58	31	22	37	19	28	20	665
Insufficient Data	79	103	95	132	191	111	65	105	115	94	59	99	1248
Other	62	58	65	61	120	93	75	94	77	65	58	88	916
Satellite	0	0	0	0	8	18	0	21	69	77	82	142	417
Unidentified	42	46	24	14	14	10	12	14	13	15	14	19	237
TOTAL	509	487	545	670	1006	627	390	557	591	474	399	562	6817

ASTRONOMICAL SIGHTINGS

Meteors	70	92	79	88	179	168	100	187	119	95	57	61	1295
Stars and Planets	101	44	52	131	144	56	40	45	78	36	23	55	805
Other	4	1	4	3	18	7	4	3	6	5	5	7	67
TOTAL	175	137	135	222	341	231	144	235	203	136	85	123	2167

OTHER CASES

Hoaxes, Hallucinations, Unreliable Reports and Psychological Causes	15	6	18	16	37	29	14	13	17	11	16	34	226
Missiles and Rockets	2	1	1	3	2	6	14	12	13	9	13	7	83
Reflections	4	6	4	3	2	7	11	9	3	3	0	2	54
Flares and Fireworks	1	4	8	6	8	3	5	7	4	3	3	7	59
Mirages and Inversions	3	2	4	1	5	2	4	5	6	3	0	2	37
Search and Groundlights	9	6	14	9	12	8	5	6	1	3	2	6	81
Clouds and Contrails	6	3	2	1	9	5	3	4	5	4	5	0	47
Chaff	0	2	0	1	2	6	1	4	3	5	2	1	27
Birds	4	7	2	6	1	1	0	3	2	2	2	4	34
Radar Analysis	15	7	1	8	27	3	8	6	9	0	1	2	87
Photo Analysis	1	1	2	4	1	7	4	6	3	2	3	6	40
Physical Specimens	1	6	5	3	5	10	3	7	4	15	3	8	70
Satellite Decay	0	0	0	0	0	1	0	9	3	3	4	3	23
Other	1	7	4	0	9	5	3	3	4	2	4	6	48
TOTAL	62	58	65	61	120	93	75	94	77	65	58	88	916

C 8

STATISTICS FOR 1965

(Compiled 18 Jan 1966)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
ASTRONOMICAL	10	8	11	4	2	10	27	82	30	27	22	12	245
AIRCRAFT	11	8	14	11	14	7	32	61	20	13	14	5	210
BALLOON	3	2	1	3	0	3	7	6	2	7	0	2	36
INSUFFICIENT DATA	5	4	2	4	4	2	16	24	15	5	3	1	85
OTHER	11	8	7	8	5	6	9	42	7	9	11	3	126
SATELLITE	4	5	5	5	15	5	42	41	24	3	0	3	152
UNIDENTIFIED	1	0	2	1	1	0	2	4	4	0	1	0	16
PENDING	0	0	1	0	0	0	0	2	2	6	4	2	17
TOTAL	45	35	43	36	41	33	135	262	104	70	55	28	887

ASTRONOMICAL CASES

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Meteors	6	6	8	2	2	4	14	26	13	6	9	5	101
Stars and Planets	3	1	3	2	0	5	10	55	16	20	13	7	135
Other	1a	1b	0	0	0	1c	3d	1e	1a	1f	0	0	9
TOTAL	10	8	11	4	2	10	27	82	30	27	22	12	245

(a) Solar Image (b) Moon (c) Sun (d) Reflected Moonlight, Parhelia, Moon (e) Reflected Moonlight (f) Comet Ikeya-Seki

OTHER CATEGORY

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Hoaxes, Hallucinations, Unreliable Reports and Psychological Causes	5	3	4	1	2	1	2	12	1	3	0	0	34
Missiles and Rockets					1			3	1	1	3	1	10
Reflections						1	1	2	1	1	1		7
Flares and Fireworks					1		1	1			1		4
Mirages and Inversions							2	3					5
Search and Ground Lights	2	1	0	1	0	0	1	2	0	0	2	0	9
Clouds and Contrails	1							1	1				3
Chaff												1	1
Birds	1	2		2				3	1	1	1		11
Physical Specimens		1c						1r	1w				3
Radar Analysis				1e		1g		3gmn		1m			6
Photo Analysis			2d1		1d	1j	2kj	5x	1j				12
Satellite Decay	0	1	1	1	0	1	0	2	0	1	0	1	8
Miscellaneous	2ab			2bf		1h		4abbb		1h	3tuv		13
TOTAL	11	8	7	8	5	6	9	42	7	9	11	3	126

(a) Tracer Bullets (b) Misinterpretation of Conventional Objects (c) Metal Ball (d) Developer Smear (e) Anomalous Propagation (f) Kites (g) Electronic Counter Measures (h) Debris in Wind (j) No Image on Film (k) Poor Photo Process (l) Free Falling Object (m) False Targets (n) Weather Returns (p) Emulsion Flaws (r) Plastic Bags (s) Man on Ground (t) Lightning (u) Chemical Trails from Research Rocket (v) Missile Launch Activity (w) Gourd

D 1

Part D: Analysis of Project Blue Book Special Report No. 14

This section includes the full text of the First Edition, which contained certain press releases issued in 1955 at the time that Special Report No. 14 was announced to the public. The material which appeared on the inside covers and outside back cover of the Second Edition has been omitted, as being outdated and non-substantive.

The AFR 200-2 document (pages X-1 to X-4) which is bound in at the center fold of this edition was not included in the first two editions, and should be ignored in any references to page numbers. It did not form part of the contents of the original Special Report No. 14. Additional single copies of the AFR 200-2 document may be requested, free of charge, by writing to the publisher at the address shown on the back cover of this book, enclosing a long self-addressed envelope bearing first-class postage. Give your ZIP-Code.

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON 25, D. C.

December 7, 1956

LEGISLATIVE AND PUBLIC AFFAIRS

Dear Mr. Davidson:

Reference your letter of November 27, I presume that you have received a loan copy of the Blue Book from the New York Office of Information Services. That office was verbally instructed to mail a copy to you.

Regarding reproduction of the Blue Book, the Department of Defense considers this to be your own private affair and neither denies or approves your plan.

I trust this satisfactorily answers your questions.

Sincerely yours,

Philip K. Allen
Deputy, Public Affairs

Mr. Leon Davidson
64 Prospect Street
White Plains, New York

Publisher's Statement

The letter on page D-3 from Gen. Kinney indicates that the U.S.Air Force has not distributed the full 316-page Project Blue Book Special Report No. 14 because the cost would have been prohibitive. A letter from A.F.Secretary Donald A. Quarles, dated July 5, 1956, states: "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."

This privately financed edition of the Blue Book report is being issued as a public service. Through the careful elimination of the bulk of the tables in the original report, the size has been reduced to about 80 pages, without loss of a single word of the main text. The full Tables of Contents of the original report have been retained, so that the reader may know exactly what has been omitted. The only purpose in the omissions has been to bring the cost down to a reasonable level, so that widespread distribution could be established.

It is guaranteed that there has been no change, alteration, or editing of the material on any page of the Report No. 14 which is reproduced herein. Each page has been reproduced photographically exactly as it is in the original Air Force edition. Every single page of the main text has been reproduced. No part of the text has been omitted.

No author's name appeared on the original edition, and the title page was exactly as shown on page 1 below. Any errors or faults of logic, etc., in the main body of the Report No. 14 are those of the original Air Force author or authors.

The only ways in which the page arrangement of this copy differs from the original Air Force edition are as follows:

[1] The Chi Square tables on pages 62-67 and 70-75 of the original report were arranged one table per page. For economy, these have been placed two per page in this edition.

[2] Page 76 of the original edition has been reproduced in two parts, as pages 43 and 50 (upper page numbers) of this edition, to emphasize the division between sections and avoid split-up of the text by the Chi Square tables.

[3] The case numbers have been written in on the sketches of the twelve "good UNKNOWN SIGHTINGS" (pages 52 to 64 of this edition). The original edition did not put such numbers on the sketches.

[4] The heading at the top of page 69 (this edition) originally accounted for two pages of the report, and was incorporated at the top of page 69 for economy.

Please note: The original report assigned double page numbers to some pages, as is usual Government practise when a blank page follows a printed page. This is the case on page 82 of this edition, which was labeled pages "295 and 296" in the original edition.

D-3

DEPARTMENT OF THE AIR FORCE
WASHINGTON

OFFICE OF THE SECRETARY

15 November 1956

Dear Mr. Davidson:

I know that during the past several months you have had considerable correspondence with the Air Force and the Defense Department regarding Special Report #14, the Air Force Project Blue Book. The intent of this letter is to inform you of our position on the Blue Book as defined by the Secretary of the Air Force.

We distributed a press release and a summary at the time the report was officially released. We made the full report available in the Information Offices of this Headquarters and in the Air Force Information Offices in New York and Los Angeles. The report is still available at these places. We did not distribute the report itself because the cost was prohibitive.

While the Air Force has never denied anyone access to the above-mentioned locations for the purposes of either reading or copying the report, we have not felt justified to expend public funds to assist in commercial reproduction of the report.

I trust this serves to make clear the position of the Air Force.

Sincerely,

ANDREW J. KINNEY
Brigadier General, USAF
Director of Information Services

Mr. Leon Davidson
64 Prospect Street
White Plains, New York

Analysis of the Project Blue Book Report No. 14

by Dr. Leon Davidson

The Blue Book Report No. 14 is reproduced in the pages following this analysis. The press release on page D-5 (which when issued was accompanied by the Summary of the Blue Book Report, pages vii to ix of the original text) gives the background of the Air Force's investigations which led to the writing of Report No. 14 and its release on October 25, 1955.

A good history of the earlier Air Force investigations of the "saucers" (which include Project SIGN in 1947-48 and Project GRUDGE in 1949-50) is given in the book "The Report on Unidentified Flying Objects" by Edward J. Ruppelt (Doubleday and Co., Inc., New York, 1956).

It will probably be evident to careful readers of the Report No. 14, even in its full original edition, that the Air Force "analysis" will not bear careful scrutiny. Throughout its "investigations", the Air Force has withheld information from the public. As a result, it is impossible for interested members of the general public to find out all that has been reported about flying saucers. The public has not had access to all the photographs and other evidence which the Air Force has amassed on the subject. Under these conditions, the public has not been able to draw the correct conclusions about the nature of the "saucers".

At the end of this analysis, before the body of the Blue Book Report, will be found several paragraphs headed "Suggestion to the Reader". Thoughtful persons who wish to learn the facts about flying saucers may find these suggestions of interest.

The analysis below will be in question-and-answer form.

[1] What percentage of the saucer sighting cases remain "Unknown"?

The press release on the facing page, and the Summary from the report, were the only material made readily available to the public by Project Blue Book. The full text of the report was essentially unavailable to the public, as shown in the Record of Hearings of the House Subcommittee on Government Information (Rep. John E. Moss, Chairman) for Nov. 15, 1956. One might wonder whether the Air Force had actually wanted to keep the full report from the public, and if so, why?

The answer may be found by reading the text and tables of the report, and comparing this with the Summary, distributed publicly with the press release. The key to the answer is contained in Fig. 8 (orig. p. 24) and Tables A1, A2, and A3 (orig. pp. 107 and 108). Fig. 8 shows that Unknown sightings constitute 33.3% of all the object sightings for which the reliability of the sighting is considered "Excellent". Tables A1--A3 agree with this; even if sightings of lesser reliability are included, the percentage of Unknown sightings is not less than about 20%. Note that the information in the main body of the report covers the years 1947--1952.

(analysis continues on page D-7)

NEWS RELEASE
PLEASE NOTE DATE

DEPARTMENT OF DEFENSE
OFFICE OF PUBLIC INFORMATION
Washington 25, D. C.

D-5

IMMEDIATE RELEASE OCTOBER 25, 1955 NO. 1053-55
LI 5-6700, Ext 75131

AIR FORCE RELEASES STUDY ON
UNIDENTIFIED AERIAL OBJECTS

The results of an investigation begun by the Air Force in 1947 into the field of Unidentified Aerial Objects (so-called flying saucers) were released by the Air Force today.

No evidence of the existence of the popularly-termed "flying saucers' was found.

The report was based on study and analysis by a private scientific group under the supervision of the Air Technical Intelligence Center at Dayton, Ohio. Since the instigation of the investigation more than seven years ago, methods and procedures have been so refined that of the 131 sightings reported during the first four months of 1955 only three per cent were listed as unknown. (A summary of the report is attached.)

Commenting on this report, Secretary of the Air Force Donald A. Quarles said: "On the basis of this study we believe that no objects such as those popularly described as flying saucers have overflown the United States. I feel certain that even the unknown three per cent could have been explained as conventional phenomena or illusions if more complete observational data had been available.

"However, we are now entering a period of aviation technology in which aircraft of unusual configuration and flight characteristics will begin to appear.

"The Air Force and the other Armed Services have under development several vertical-rising, high performance aircraft, and as early as last year a propeller driven vertical-rising aircraft was flown. The Air Force will fly the first jet-powered vertical-rising airplane in a matter of days. We have another project under contract with AVRO Ltd., of Canada, which could result in disc-shaped aircraft somewhat similar to the popular concept of a flying saucer. An available picture, while only an artists' conception, could illustrate such an object. (Photograph is available at Pictorial Branch, Room 2D780, Ext. 75331).

"While some of these may take novel forms, such as the AVRO project, they are direct-line descendents of conventional aircraft and should not be regarded as supra-natural or mysterious. We expect to develop airplanes that will fly faster, higher and perhaps farther than present designs, but they will still obey natural laws and if manned, they will still be manned by normal terrestrial airmen. Other than reducing runway requirements we do not expect vertical-rising aircraft to have more outstanding military characteristics than conventional types.

MORE

D-6

"Vertical-rising aircraft capable of transition to supersonic horizontal flight will be a new phenomenon in our skies, and under certain conditions could give the illusion of the so-called flying saucer. The Department of Defense will make every effort within bounds of security to keep the public informed of these developments so they can be recognized for what they are."

Mr. Quarles added: "I think we must recognize that other countries also have the capability of developing vertical-rising aircraft, perhaps of unconventional shapes. However we are satisfied at this time that none of the sightings of so-called 'flying saucers' reported in this country were in fact aircraft of foreign origin."

E N D

Attachment

Since the Summary gives figures of 9% for the Unknown cases in 1953--1954, and only 7% for the Unknown cases in 1955 (up to May 5), it is evident that persons not having the full report available would not know that 20% to 30% of the cases had been left as Unknown in the main study. The Summary absolutely fails to quote any numerical results for 1947--1952. One may surmise that the Air Force did not want the public to know that such a high percentage of the reports remained Unknown, and that this was one reason for making the full report unavailable, for all practical purposes, to the public.

[2] What is the meaning and purpose of the Chi Square test (pages 60--76 of the original edition)?

The paragraph at the bottom of page 60 and top of page 61 (orig. ed.) explains the purpose of the "Chi Square" test, and the statistical theory involved is described on page 61. The reason for making this test was simply this: The author(s) of the report felt that it might be possible to show by this test that the Unknown cases were really just like the Known cases, after all. If this could be shown, it would then have been simple to say that the Unknowns had been essentially the same objects as the Knowns, and there would have been no residual "unknown" type of object ("flying saucer") to talk about.

As it turned out, the author(s) had to admit, at top of p. 68 (orig.) that there was very little probability that the Unknowns were the same as the Knowns. But they refused to admit that this meant that "saucers" could be a real type of novel object. Notice how they carry on the struggle to prove that the Unknowns are the same as the Knowns, until at the end of the "Chi Square Test" section, they admit that the results are inconclusive.

[3] What is the definition of "Flying Saucer" used in the Blue Book Report?

On p. 1 of the original text, third paragraph, a definition is given which is used by the author(s) of the report. It implies that some "secret military weapon" may be involved, by use of the words "Free World" and "intruder aircraft". There is no mention of "interplanetary vehicles" either from terrestrial or extra-terrestrial sources.

Also on page 1, in the second paragraph, is a facetious definition of "flying saucer" which, if adopted, would prevent any identification or explanation of flying saucers, by its very wording.

Unfortunately, the author(s) of the report, when referring to the definition of "flying saucer", (as for instance in their Conclusions, orig. p. 94, fourth paragraph), merely refer to "'flying saucers' (as defined on Page 1)". This leaves somewhat confused the question of which of the two definitions on page 1 they are referring to.

[4] How did the author(s) arrive at the conclusion, given at the end of the first full paragraph on orig. page 93, that "...it is still impossible to develop a picture of what a 'flying saucer' is."?

Persons trained in science and engineering, and those educated in the fields of law, accounting, business, medecine, or other disciplines in which logical thinking is a requisite, should be able to unravel the utter nonsense contained in the section of the report called " The 'Flying Saucer' Model", on orig. pages 76--94. It should be sufficient to call attention to several facts:

(a) The author(s) found only twelve cases reported in enough detail to merit consideration. Anyone who has followed the subject knows of many other cases of detailed sightings which would serve as well, or better, than the dozen selected for the Blue Book analysis.

(b) In discussing these twelve detailed cases, the report omits details such as the names of the localities and other identifying information which there is absolutely no reason to withhold. The reason for this may be to try to hinder readers who might want to compare other versions of those same cases with the versions presented by the report.

For instance, Case I on page 78(orig.) is apparently Cases 151 and 152 of the August, 1949, Project GRUDGE Report (Report No. 102-AC, 49/15-100, HQ, Air Materiel Command, Wright Field). The location is Indianapolis. Case II took place in Flint, Mich. Case III is from Sioux City, Iowa, and is reported as Case No. 7 in the Life Magazine article of April 7, 1952. Case V is the Chiles-Whitted case, from Montgomery, Alabama, which is written up in many books.

(c) The sketches of the objects in the Report have a certain studied awkwardness about them, as if the artist had been instructed to make the objects look as different as possible and as queer as possible. For example, the sketch of Case III resembles two frankfurters lying one across the other. The artist is certainly a skilled draftsman; the shading very clearly shows the cylindrical shapes of the frankfurters. Yet the description given by the pilots in Case III specifies "an airplane with a cigar-shaped body and straight wings". This sketch is absurd as an illustration of that. Likewise, the strange white markings or openings on the Case IX sketches have no relation to the accompanying text.

(d) The failure to place the sketches of Case VI and Case VIII on the same page hides a very remarkable resemblance.

(e) The key to the situation is found in the extra conditions thrown in at the middle of page 91 (orig.). Presumably all twelve cases had fulfilled such conditions or they would not have survived the weeding-out process. (See p. 77, orig.). The prize example is paragraph (6) on page 92. By throwing Case VI out at this point, the author(s) were then able to throw out Case VIII in par.(8), since the match between these two sketches had been lost by eliminating Case VI. Likewise, Case III was eliminated because Case II had been thrown out.

[5] Were the author(s) justified on page 93 (orig.) in saying the following?

"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."

This appears to be another example of faulty logic. The author(s) had just thrown out cases because they did not resemble (supposedly) any other cases. This should be considered evidence that there may be more than one class of "flying saucers". In fact, at the top of page 91 (orig.) the author(s) list four categories of shapes, which might be considered to define four "classes" of saucers.

The logical error here may be seen in the paraphrase of the above quotation: " We found many different types of saucers. We could not find just one class. We could not find even one class. Therefore, we could not find more than one class." This type of reasoning, in which the author(s) of the Blue Book report indulged, is utterly absurd.

[6] What are the important points in the "Conclusions" on p. 94 (orig.)?

The author(s) admit in the first sentence that they cannot prove that "flying saucers" do not exist. In the last sentence, they do not deny that saucers could be novel governmental devices, now existing. Nowhere is there any discussion as to whether or not there is evidence to prove or disprove that saucers might be extraterrestrial objects or devices.

[7] What vitally important technical aspect was omitted from the analysis by the Blue Book Project?

At the bottom of page 6 (orig.), it is explained that, after the study was well under way, it was found that there was a "...need for the definition of a new factor relating to the maneuvers of the object or objects..." [Maneuvers would include the well-known characteristics of hovering, very sharp turns, rapid speed changes, wobbly flight, swinging like a pendulum, etc.] The last paragraph of page 6 (orig.) states "...at the time that the maneuver factor was determined to be critical, it was physically impracticable to...reevaluate the original data. Therefore, no code for maneuverability has been included..."

[8] What significant change was made in the categories provided for final identifications, before the final report was written and issued by the Air Force?

On page 12 (orig) the categories "Insufficient Information" and "Unknown" are explained. The whole report is written on the basis of these two categories and the others listed on page 10 (orig.). However, a most interesting change may be observed on page 295 (orig.) which is page 82 of this edition.

It will be seen, in the codes for Final Identification, that the category originally called "Rockets and Missiles", in the early work of the analysis, was changed to be called "Insufficient Information". Likewise, the final category of "Unknown" had originally been called "Electromagnetic Phenomenon". (The typewritten strikeovers and changes on page 295 (orig.) appear that way in the original Air Force Edition, and this edition is a true photo-copy of that page.)

It is interesting to speculate on the reason for changing the names of these categories. Note that the objects finally "identified" as in the "Unknown" category include almost all of the cases which would seem to be actual "flying saucers" as the public understands the term. Therefore, the fact that the Air Force originally called this category "electromagnetic phenomenon" may indicate that the Blue Book investigative staff had reason to believe that objects like the typical "flying saucer" might be electromagnetically propelled. This is of more than casual interest because of the persistent stories that circulate, which indicate that "saucers" make use of some system of electromagnetic propulsion.

Suggestion to the Reader

After reading the Blue Book Report which starts on the next page, if you feel a desire to see the complete set of tables and graphs (omitted here for reasons of cost), you might try to borrow a copy of the full report from the Air Force. Write to the Secretary of the Air Force, Pentagon Building, Washington 25, D.C., and ask for one of the loan copies of Blue Book Special Report No. 14.

If, after reading the report as given here, you feel that the Air Force should be able to give a definite answer to such specific questions as "Do flying objects of (such and such) shape exist?", you might write to your Congressman or Senator, or to the President of the United States, and ask his assistance in obtaining the answer to your specific question from the Air Force.

On page 37 of the official transcript of the press conference of Maj. Gen. John A. Samford at the Pentagon, July 29, 1952, a question was asked of the General: "Is it some very highly secret new weapon that we're working on that's causing these flying saucer reports?" The General answered: "We have nothing that has no mass and unlimited power!" The transcript indicates [Laughter] at that point, and well it might. If you believe that a more meaningful and definite answer is in order from the Air Force, you might write to any of the officials mentioned above for a specific answer to the specific question quoted in this paragraph.

The publisher of this edition would be very happy to learn of any responses which might be obtained by readers following any of these suggestions. Also, any comments from readers would be welcome.

PROJECT BLUE BOOK

SPECIAL REPORT NO. 14

(ANALYSIS OF REPORTS OF UNIDENTIFIED AERIAL OBJECTS)

PROJECT NO. 10073

5 MAY 1955

AIR TECHNICAL INTELLIGENCE CENTER
WRIGHT-PATTERSON AIR FORCE BASE
OHIO

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LIST OF ILLUSTRATIONS
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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 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

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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.

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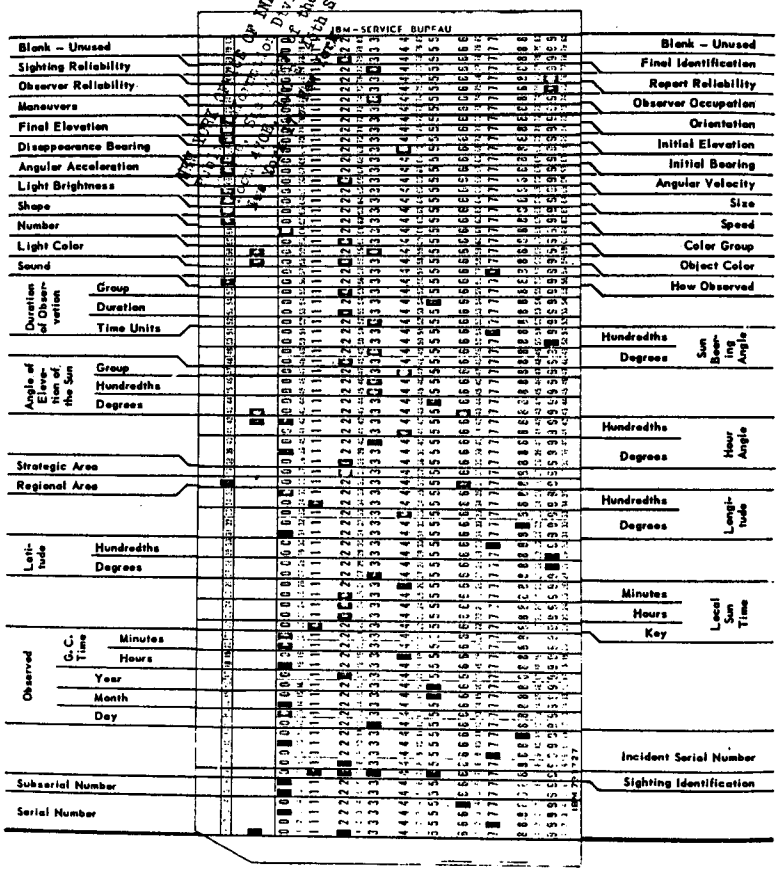
EXHIBIT B8

EXAMPLE OF AN IBM CARD



315 and 316

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.

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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

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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.

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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.

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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.

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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".

See Note at Bottom of Page X4.

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AIR FORCE REGULATION
NO. 200-2

DEPARTMENT OF THE AIR FORCE
WASHINGTON, *18 AUGUST 1954*

INTELLIGENCE

Unidentified Flying Objects Reporting (Short Title: UFOB)

1. Purpose and Scope. This Regulation establishes procedures for reporting information and evidence pertaining to unidentified flying objects and sets forth the responsibility of Air Force activities in this regard. It applies to all Air Force activities.

2. Definitions:

a. *Unidentified Flying Objects (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, and so forth.

3. Objectives. Air Force interest in unidentified flying objects is twofold: First as a possible threat to the security of the United States and its forces, and secondly, to determine technical aspects involved.

a. *Air Defense.* 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 flying objects by the initial observer is real. This requires that sightings be reported rapidly and as completely as information permits.

b. *Technical.* Analysis thus far has failed to provide a satisfactory explanation for a number of sightings reported. The Air Force will continue to collect and analyze reports until all sightings can be satisfactorily explained, bearing in mind that:

(1) To measure scientific advances, the Air Force must be informed on experimentation and development of new air vehicles.

(2) The possibility exists that an air vehicle of revolutionary configuration may be developed.

(3) The reporting of all pertinent factors will have a direct bearing on the success of the technical analysis.

4. Responsibility:

a. *Reporting.* Commanders of Air Force activities will report all information and evidence that may come to their attention, including that received from adjacent commands of the other services and from civilians.

b. *Investigation.* Air Defense Command will conduct all field investigations within the ZI, to determine the identity of any UFOB.

c. *Analysis.* The Air Technical Intelligence Center (ATIC), Wright-Patterson Air Force Base, Ohio, will analyze and evaluate: All information and evidence reported within the ZI after the Air Defense Command has exhausted all efforts to identify the UFOB; and all information and evidence collected in oversea areas.

d. *Cooperation.* All activities will cooperate with Air Defense Command representatives to insure the economical and prompt success of an investigation, including the furnishing of air and ground transportation, when feasible.

5. Guidance. The thoroughness and quality of a report or investigation into incidents of unidentified flying objects are limited only by the resourcefulness and imagination of the person responsible for preparing the report. Guidance set forth below is based on experience and has been found helpful in evaluating incidents:

a. Theodolite measurements of changes of azimuth and elevation and angular size.

b. Interception, identification, or air search

*This Regulation supersedes AFR 200-2, 26 August 1953, including Change 200-2A, 2 November 1953.

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action. These actions may be taken if appropriate and within the scope of existing air defense regulations.

c. Contact with local aircraft control and warning (AC&W) units, ground observation corps (GOC) posts and filter centers, pilots and crews of aircraft aloft at the time and place of sighting whenever feasible, and any other persons or organizations which may have factual data bearing on the UFOB or may be able to offer corroborating evidence, electronic or otherwise.

d. Consultation with military or civilian weather forecasters to obtain data on: Tracks of weather balloons released in the area, since these often are responsible for sightings; and any unusual meteorological activity which may have a bearing on the UFOB.

e. Consultation with astronomers in the area to determine whether any astronomical body or phenomenon would account for or have a bearing on the observation.

f. Contact with military and civilian tower operators, air operations offices, and so forth, to determine whether the sighting could be the result of misidentification of known aircraft.

g. Contact with persons who might have knowledge of experimental aircraft of unusual configuration, rocket and guided missile firings, and so forth, in the area.

6. ZI Collection. The Air Defense Command has a direct interest in the facts pertaining to UFOB's reported within the ZI and has, in the 4602d Air Intelligence Service Squadron (AISS), the capability to investigate these reports. The 4602d AISS is composed of specialists trained for field collection and investigation of matters of air intelligence interest which occur within the ZI. This squadron is highly mobile and deployed throughout the ZI as follows: Flights are attached to air defense divisions, detachments are attached to each of the defense forces, and the squadron headquarters is located at Peterson Field, Colorado, adjacent to Headquarters, Air Defense Command. Air Force activities, therefore, should establish and maintain liaison with the nearest element of this squadron. This can be accomplished by contacting the appropriate echelon of the Air Defense Command as outlined above.

a. All Air Force activities are authorized to conduct such preliminary investigation as may be required for reporting purposes; however, investigations should not be carried beyond this point, unless such action is requested by the 4602d AISS.

b. On occasions—after initial reports are submitted—additional data is required which can be developed more economically by the nearest Air Force activity, such as: narrative statements, sketches, marked maps, charts, and so forth. Under such circumstances, appropriate commanders will be contacted by the 4602d AISS.

c. Direct communication between echelons of the 4602d AISS and Air Force activities is authorized.

7. Reporting. All information relating to UFOB's will be reported promptly. The method (electrical or written) and priority of dispatch will be selected in accordance with the apparent intelligence value of the information. In most instances, reports will be made by electrical means: Information over 24 hours old will be given a "deferred" precedence. Reports over 3 days old will be made by written report prepared on AF Form 112, Air Intelligence Information Report, and AF Form 112a, Supplement to AF Form 112.

a. *Addressees:*

(1) *Electrical Reports.* All electrical reports will be multiple addressed to:

(a) Commander, Air Defense Command, Ent Air Force Base, Colorado Springs, Colorado.

(b) Nearest Air Division (Defense). (For ZI only.)

(c) Commander, Air Technical Intelligence Center, Wright-Patterson Air Force Base, Ohio.

(d) Director of Intelligence, Headquarters USAF, Washington 25, D. C.

(2) *Written Reports:*

(a) Within the ZI, reports will be submitted direct to the Air Defense Command. Air Defense Command will reproduce the report and distribute it to interested ZI intelligence agencies. The original report together with notation of the distribution effected then will be forwarded to the Director of Intelligence, Headquarters USAF, Washington 25, D. C.

(b) Outside the ZI, reports will be submitted direct to Director of Intelligence, Headquarters USAF, Washington 25, D. C. as prescribed in "Intelligence Collection Instructions" (ICI), June 1954.

b. *Short Title.* "UFOB" will appear at the beginning of the text of electrical messages and in the subject of written reports.

c. *Negative Data.* The word "negative"

in reply to any numbered item of the report format will indicate that all logical leads were developed without success. The phrase "not applicable" (N/A) will indicate that the question does not apply to the sighting being investigated.

d. *Report Format.* Reports will include the following numbered items:

(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 arms 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.)
  (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 time-date 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 of each observer, or Georef position, or position with reference to a known landmark.

(6) Identifying information of all observer(s):
  (a) Civilian—Name, age, mailing address, occupation.
  (b) Military—Name, grade, organization, duty, and estimate of reliability.

(7) Weather and winds-aloft conditions at time and place of sightings:
  (a) Observer(s) account of weather conditions.
  (b) 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.
  (c) Ceiling.
  (d) Visibility.
  (e) Amount of cloud cover.
  (f) Thunderstorms in area and quadrant in which located.

(8) Any other unusual activity or condition, meteorological, astronomical, or otherwise, which might account for the sighting.

(9) Interception or identification action taken (such action may be taken whenever feasible, complying with existing air defense directives).

(10) Location of any air traffic in the area at time of sighting.

(11) Position title and comments of the preparing officer, including his preliminary analysis of the possible cause of the sighting(s).

(12) Existence of physical evidence, such as materials and photographs.

e. *Security.* Reports should be unclassified unless inclusion of data required by d above necessitates a higher classification.

8. Evidence. The existence of physical evidence (photographs or materiel) will be promptly reported.

a. *Photographic:*
  (1) *Visual.* The negative and two prints will be forwarded, all original film, including wherever possible both prints and negatives, will be titled or otherwise properly identified as to place, time, and date of the incident

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(see "Intelligence Collection Instructions" (ICI), June 1954).

(2) *Radar.* Two copies of each print will be forwarded. Prints of radarscope photography will be titled in accordance with AFR 95–7 and forwarded in compliance with AFR 95–6.

b. *Materiel.* Suspected or actual items of materiel which come into possession of any Air Force echelon will be safeguarded in such manner as to prevent any defacing or alteration which might reduce its value for intelligence examination and analysis.

9. Release of Facts. Headquarters USAF will release summaries of evaluated data which will inform the public on this subject. In response to local inquiries, it is permissible to inform news media representatives on UFOB's when the object is positively identified as a familiar object (see paragraph 2b), except that the following type of data warrants protection and should not be revealed: Names of principles, intercept and investigation procedures, and classified radar data. For those objects which are not explainable, only the fact that ATIC will analyze the data is worthly of release, due to the many unknowns involved.

BY ORDER OF THE SECRETARY OF THE AIR FORCE:

N. F. TWINING
Chief of Staff, United States Air Force

OFFICIAL:

K. E. THIEBAUD
Colonel, USAF
Air Adjutant General

DISTRIBUTON:

S; X:
ONI, Department of the Navy 200
G–2, Department of the Army 10

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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.

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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.

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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.

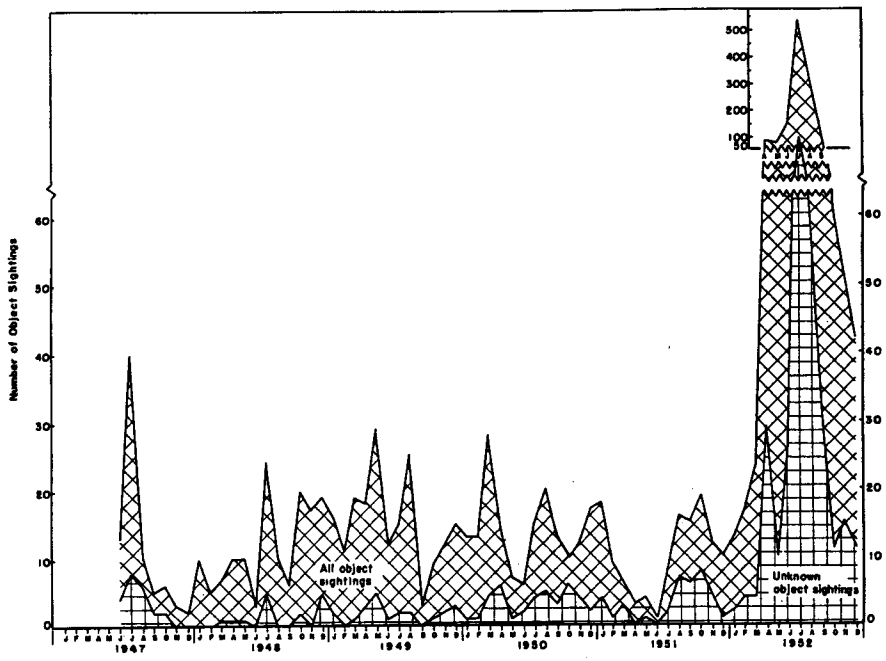

FIGURE 7 FREQUENCY OF OBJECT SIGHTINGS AND UNKNOWN OBJECT EVALUATIONS BY MONTHS, 1947-1952

C-7488

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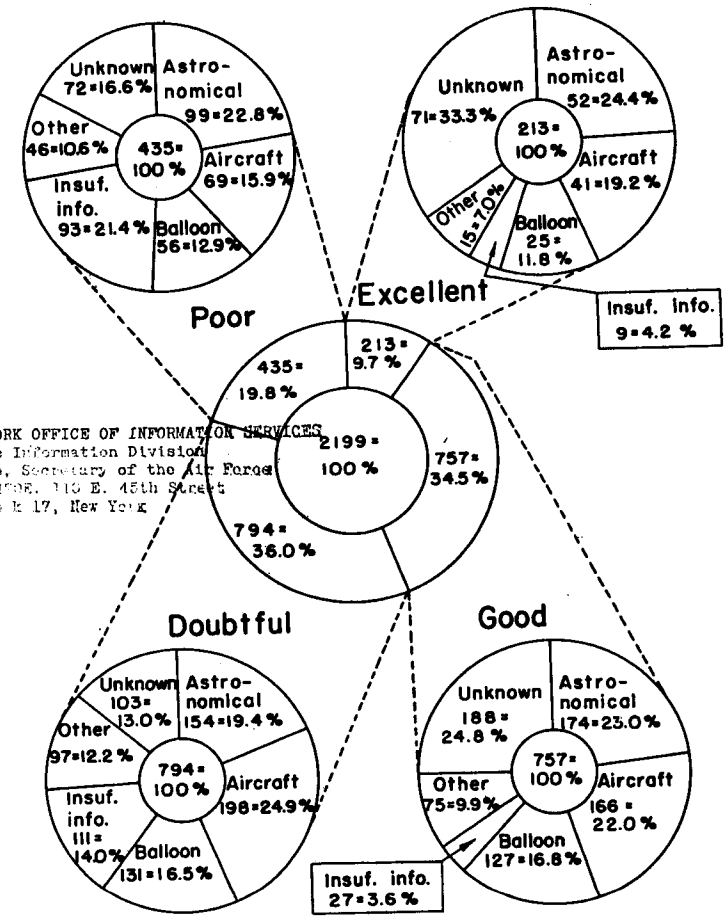

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FIGURE 8 DISTRIBUTION OF OBJECT SIGHTINGS BY SIGHTING RELIABILITY GROUPS WITH EVALUATION DISTRIBUTIONS FOR EACH GROUP

A-7486

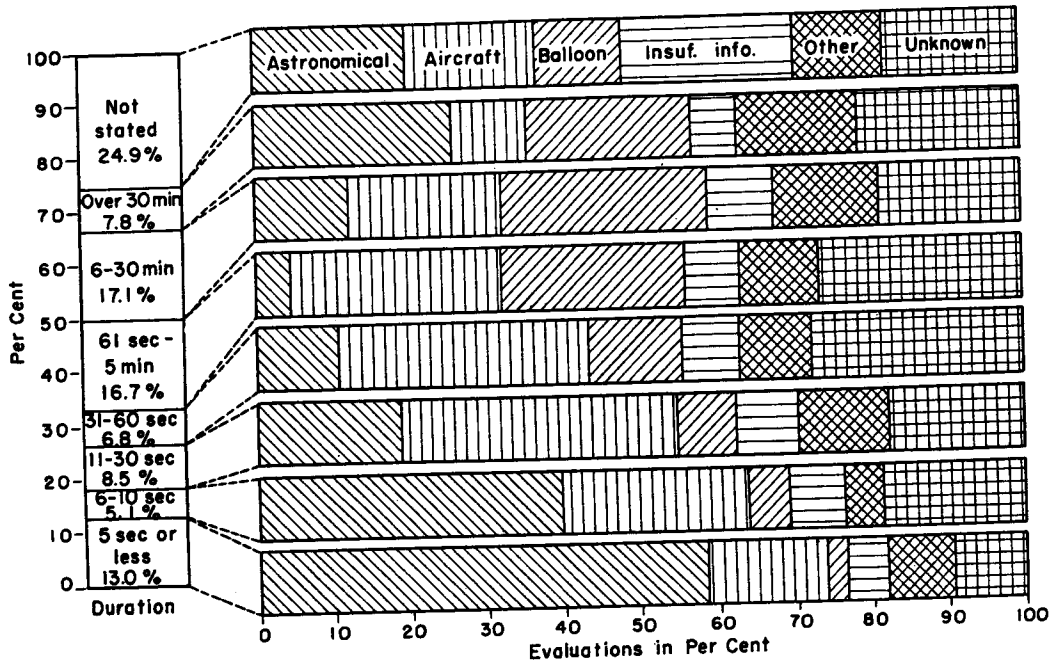

FIGURE 13 DISTRIBUTION OF OBJECT SIGHTINGS BY DURATION OF SIGHTING WITH EVALUATION DISTRIBUTION FOR EACH DURATION GROUP

A-7491

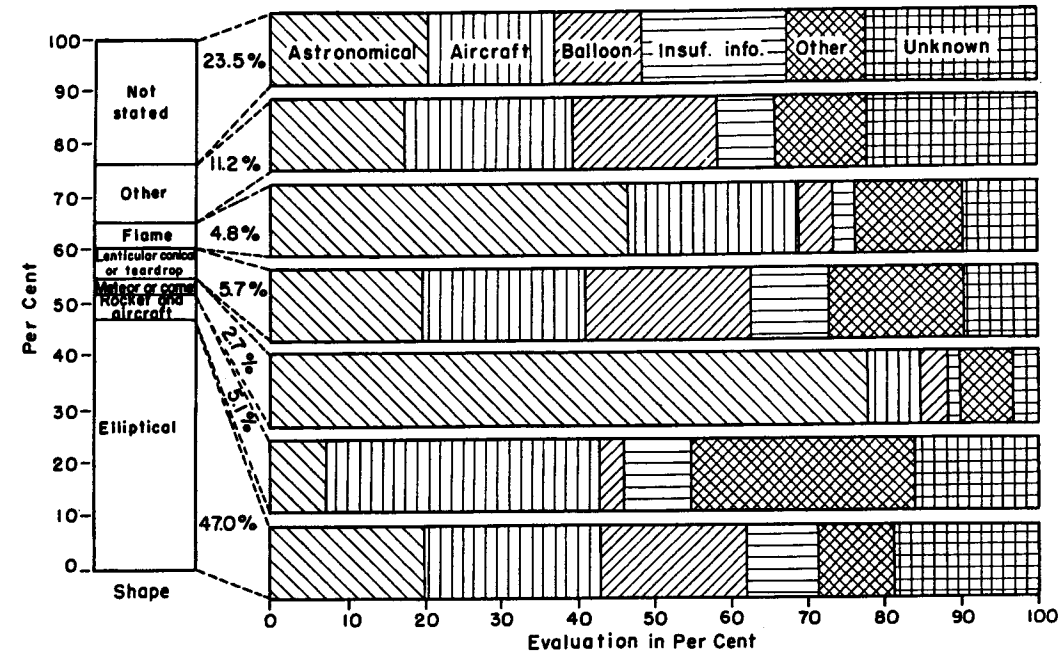

FIGURE 15 DISTRIBUTION OF OBJECT SIGHTINGS BY SHAPE OF OBJECT(S) REPORTED WITH EVALUATION DISTRIBUTION FOR EACH SHAPE GROUP

A-7493

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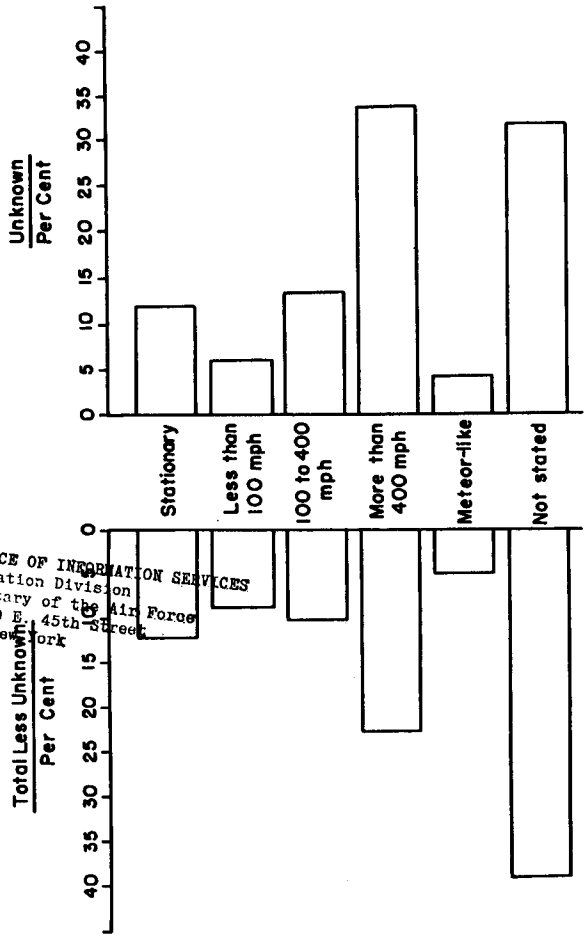

FIGURE 20 COMPARISON OF KNOWN AND UNKNOWN OBJECT SIGHTINGS BY SPEED, 1947-1952

A-7498

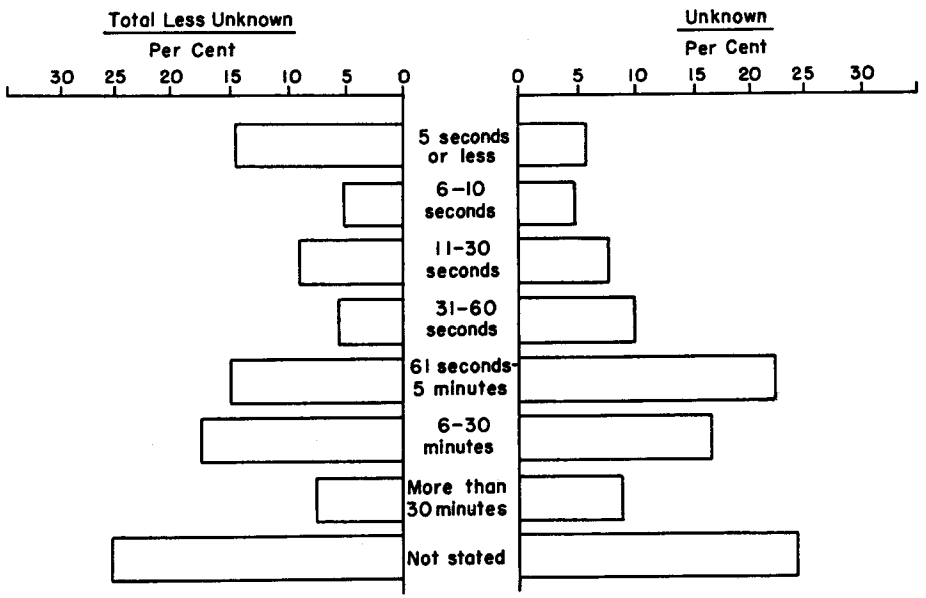

FIGURE 21 COMPARISON OF KNOWN AND UNKNOWN OBJECT SIGHTINGS BY DURATION, 1947-1952

A-7499

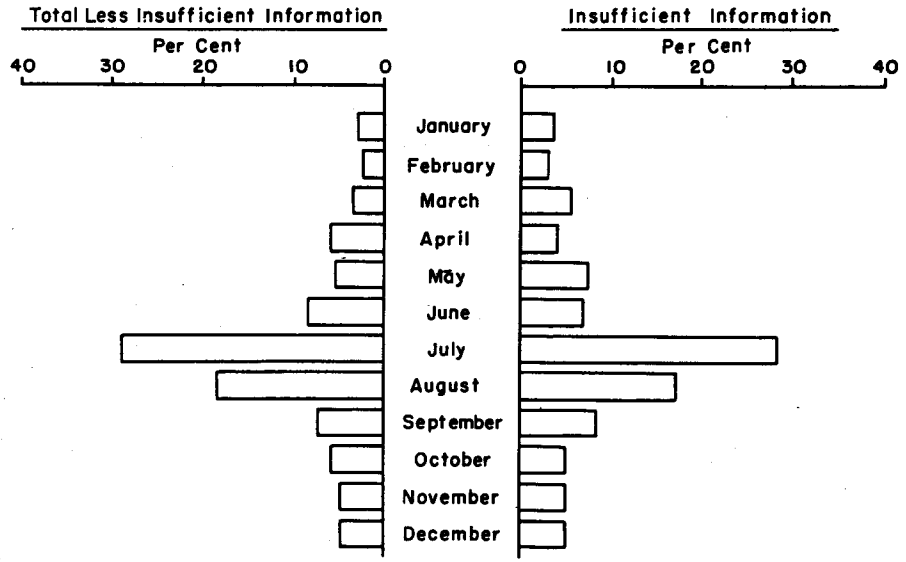

FIGURE 27 COMPARISON OF MONTHLY DISTRIBUTION OF OBJECT SIGHTINGS EVALUATED AS INSUFFICIENT INFORMATION VERSUS TOTAL OBJECT SIGHTINGS LESS INSUFFICIENT INFORMATION

A-7505

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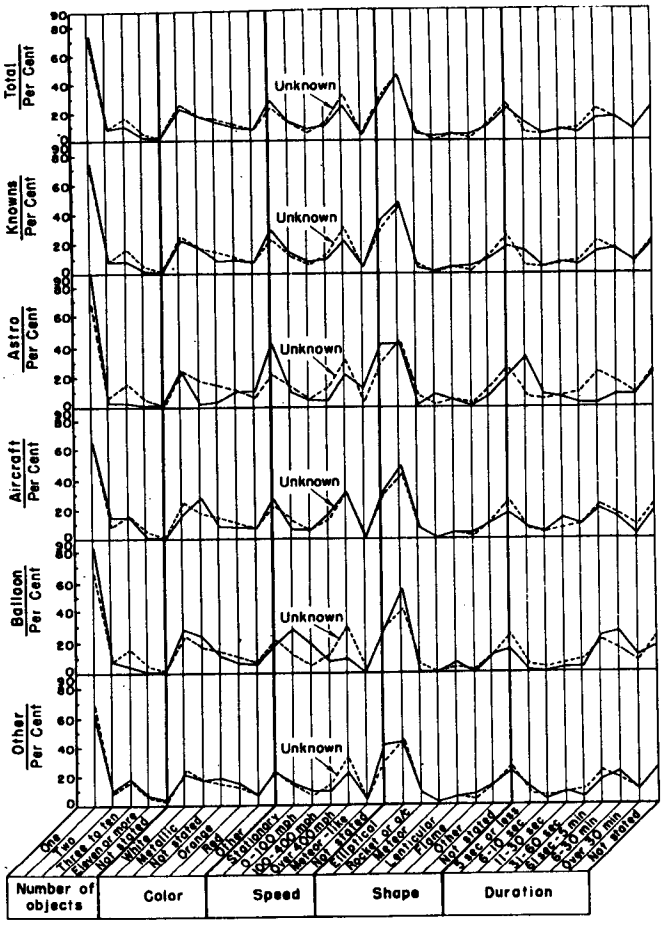

FIGURE 30 CHARACTERISTICS PROFILES OF OBJECT SIGHTINGS BY TOTAL SAMPLE, KNOWN EVALUATIONS, AND INDIVIDUAL KNOWN EVALUATIONS, WITH UNKNOWN EVALUATIONS SUPERIMPOSED

B-7508

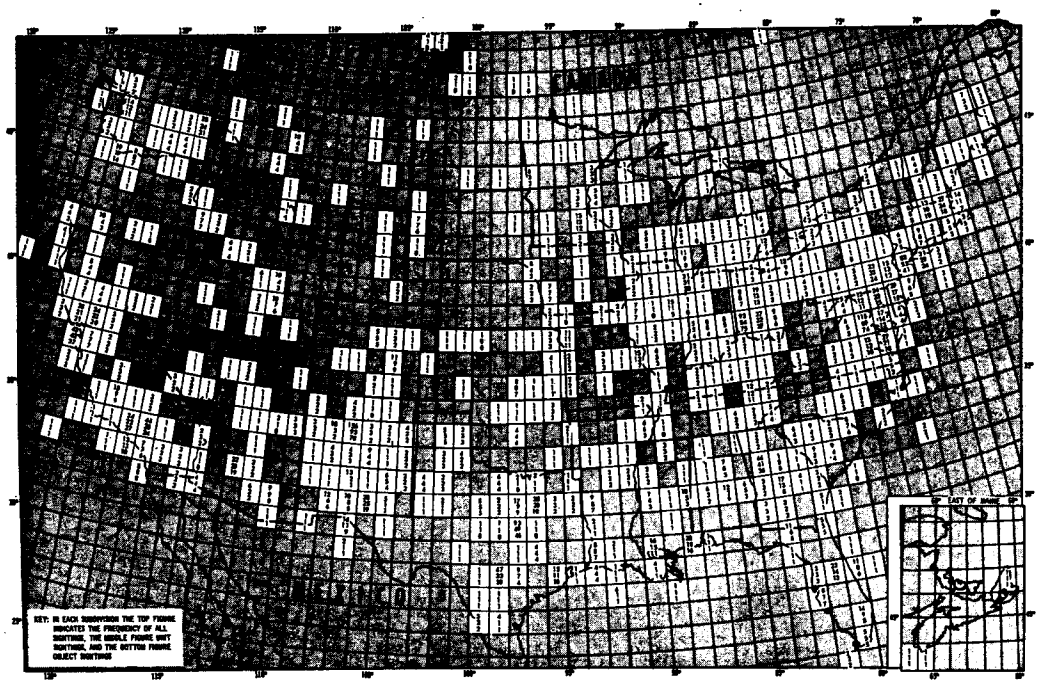

FIGURE 31 FREQUENCY OF OBJECT, UNIT, AND ALL SIGHTINGS WITHIN THE UNITED STATES 1947–1952, BY SUBDIVISIONS OF ONE DEGREE OF LATITUDE AND LONGITUDE

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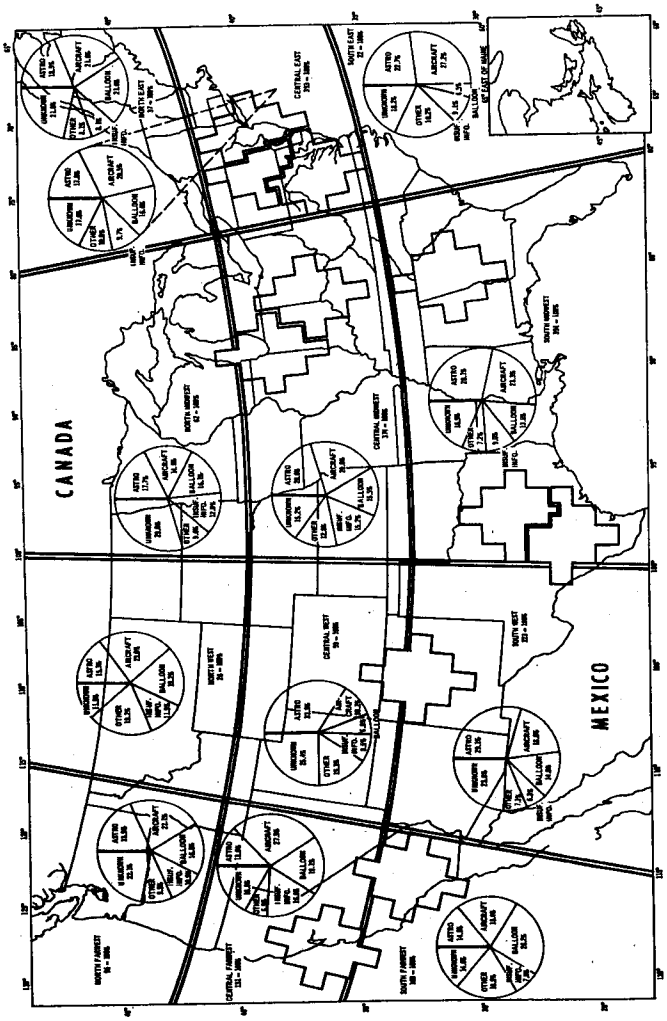

FIGURE 32 DISTRIBUTION OF OBJECT SIGHTINGS BY EVALUATION FOR THE TWELVE REGIONAL AREAS OF THE UNITED STATES, WITH THE STRATEGIC AREAS LOCATED (STRATEGIC AREAS WERE DETERMINED ON THE BASIS OF CONCENTRATION OF OBJECT SIGHTINGS)

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).

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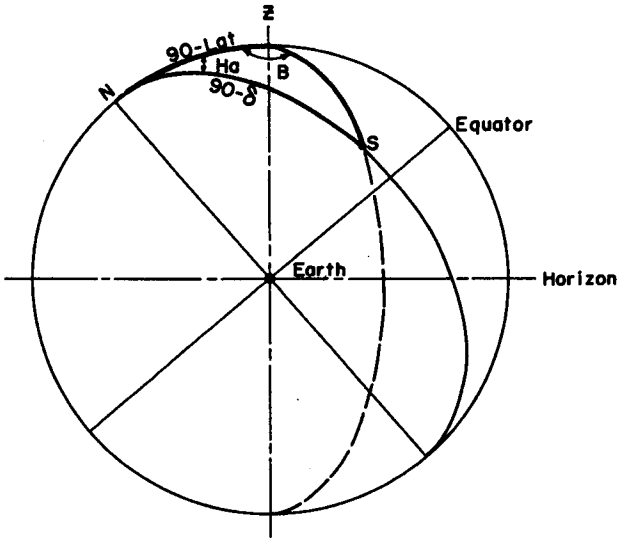

FIGURE 39 DIAGRAM OF A CELESTIAL SPHERE

A-7535

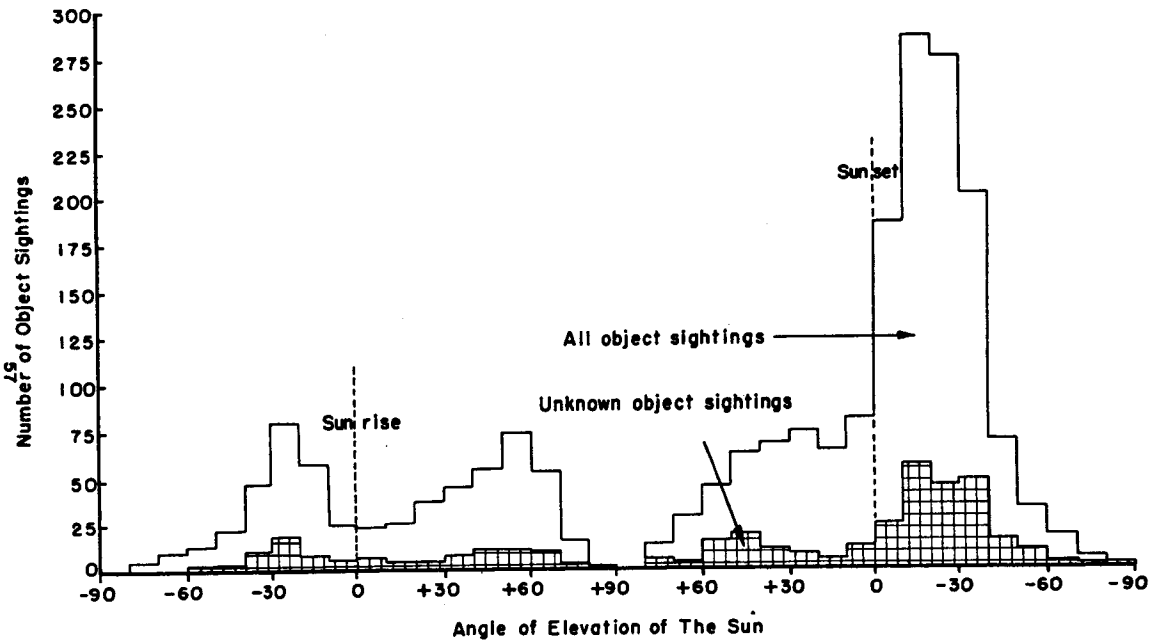

FIGURE 40 FREQUENCY OF OBJECT SIGHTINGS BY ANGLE OF ELEVATION OF THE SUN, INTERVALS OF 10 DEGREES OF ANGLE

A-7936

38

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.

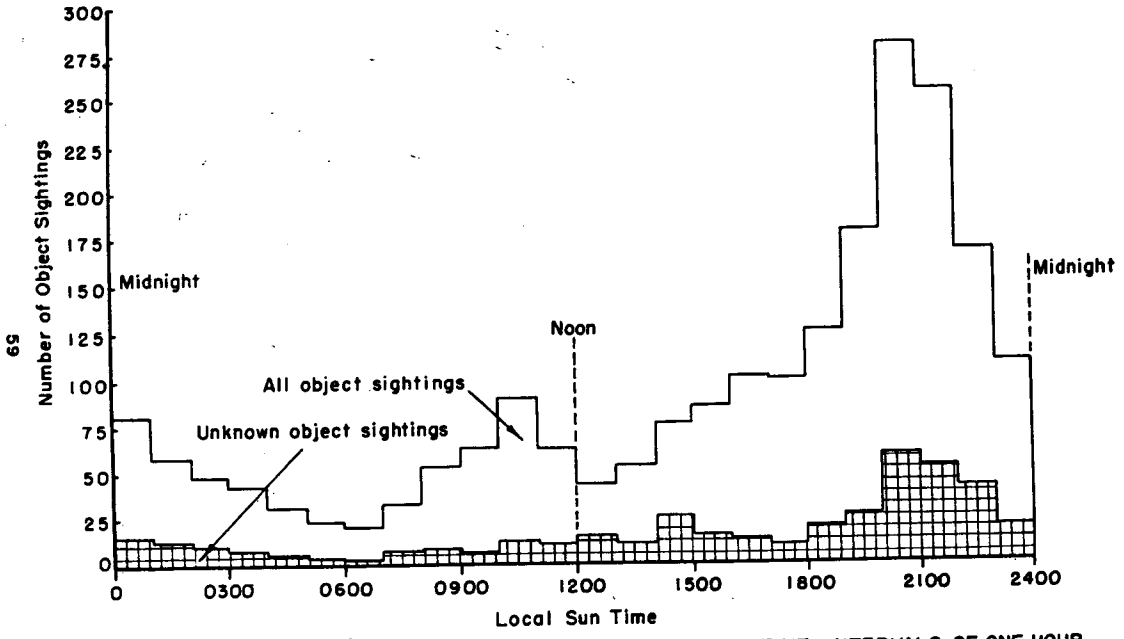

FIGURE 41 FREQUENCY OF OBJECT SIGHTINGS BY LOCAL SUN TIME, INTERVALS OF ONE HOUR

A-7537

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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.

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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.

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.

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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)	$\frac{X^2,(K-n)^2}{K}$
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

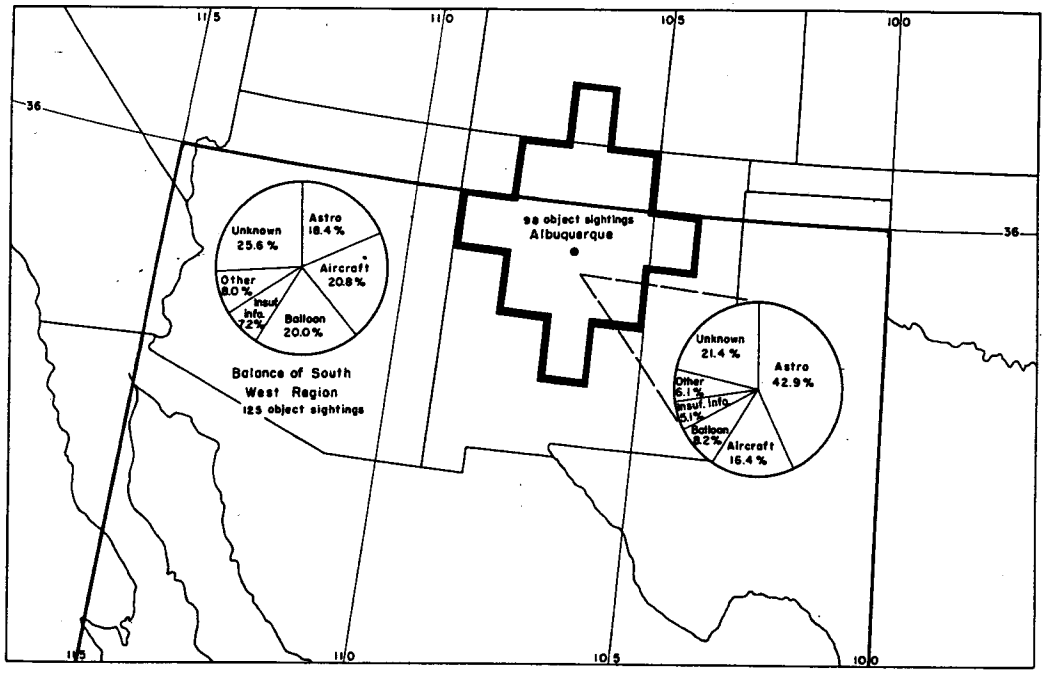

FIGURE 37 COMPARISON OF EVALUATION OF OBJECT SIGHTINGS IN THE STRATEGIC AREAS OF THE SOUTH WEST REGION

A-7515

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	22	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
5%				14.1
1%				18.5

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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

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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

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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)	$\frac{X^2, (K-n)^2}{K}$
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)	$\frac{X^2, (K-n)^2}{K}$
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
5%				9.
1%				13.3

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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

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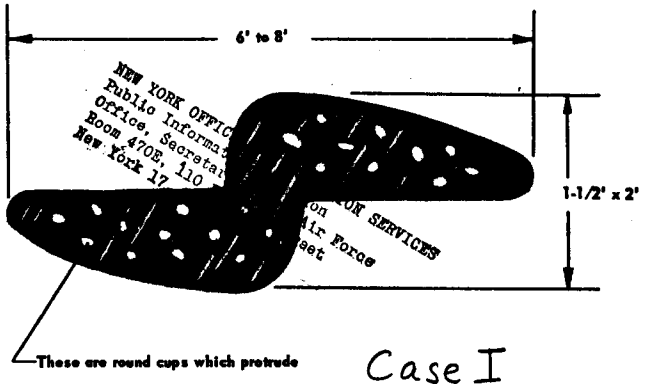
have been familiar objects. However, the resolution of this question with any degree of certainty appears to be impossible.

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.

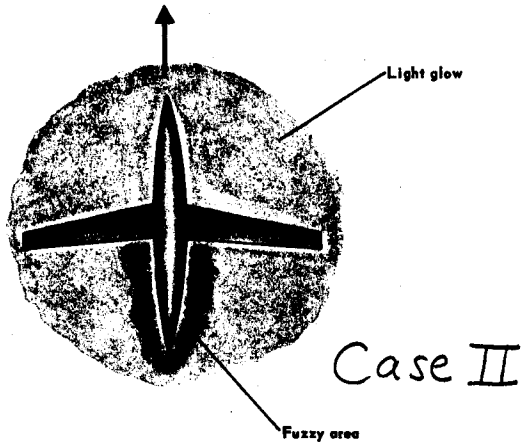


Case II (Serial 4508.00)

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 II

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.

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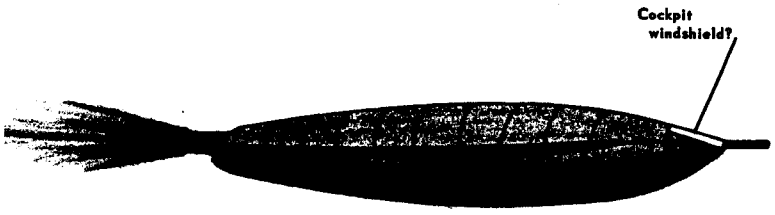
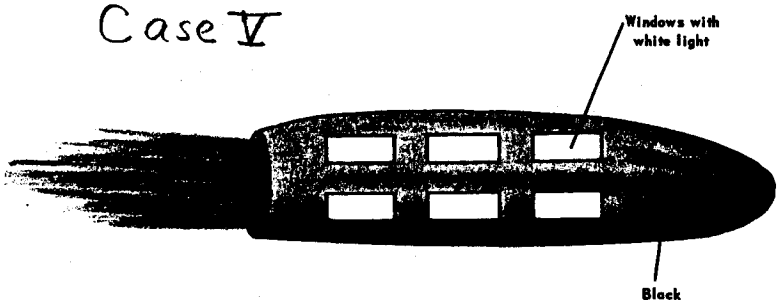
Case V (Serial 0565.00 to 0565.03)

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

Case V



Copilot

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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.

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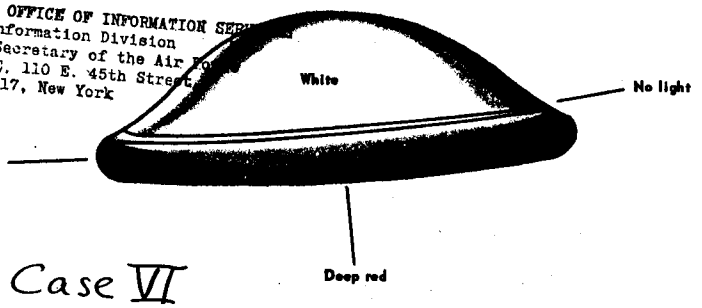
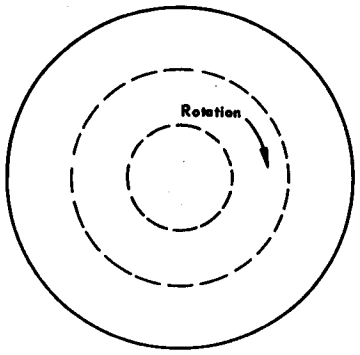


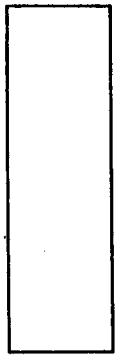
Case VI

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.



Block lines evenly spaced



Proportion 7 to 1

(Dimensions are as shown in observer's original drawing)

Case VII

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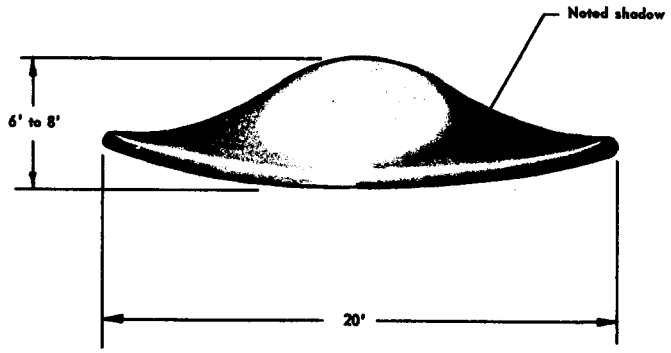
Case VIII (Serial 0576.00)

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.



Case VIII

(Ratio approx. 3:1)

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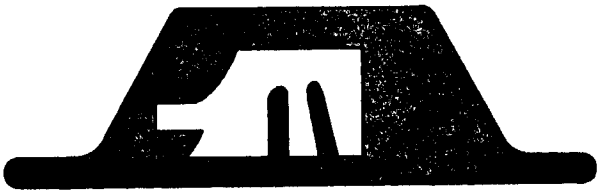
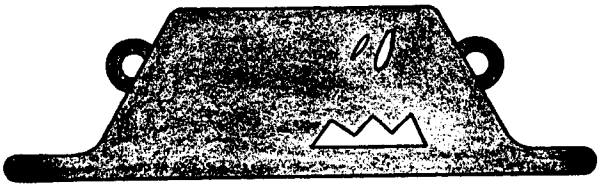
Case IX (Serial 0066.00)

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

Case IX



End view

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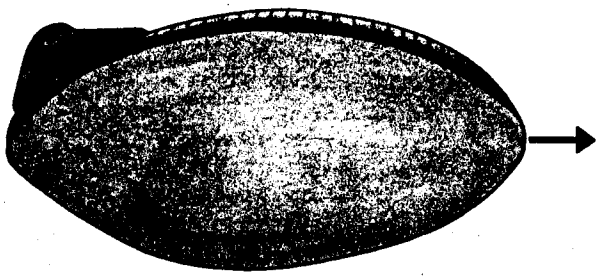
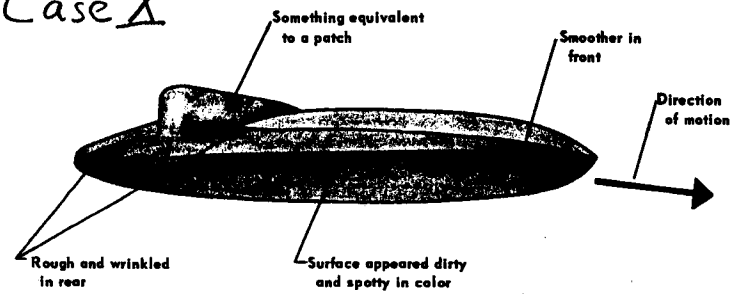
Case X (Serial 1119.00)

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 X



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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.

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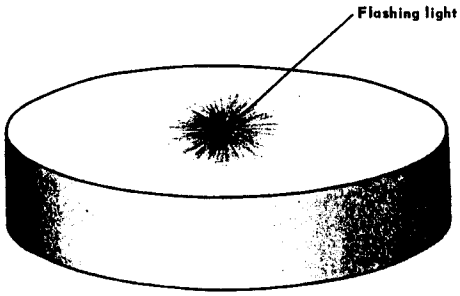
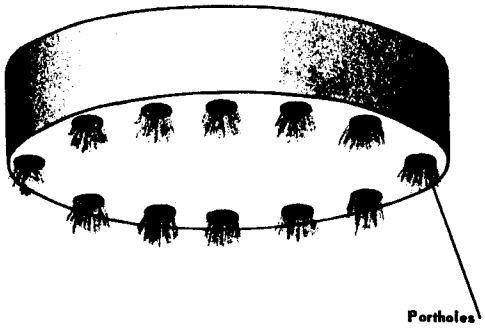


Case XI



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.

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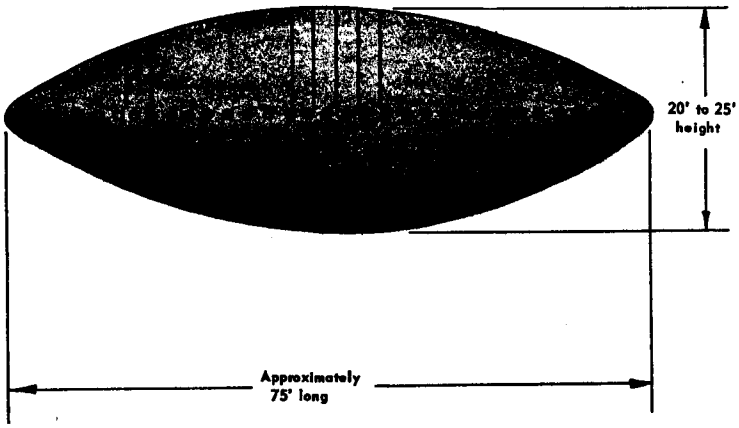

Case XII

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.

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(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.

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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 A1 EVALUATION OF ALL SIGHTINGS BY YEARS

Evaluation	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	270	180	450	8.1	5.4	14.0	7	0	7	6.0	0.0	6.0	17	20	37	6.3	9.5	15.1	16	5	21	4.1	1.2	5.3
1-Astronomical	476	341	817	14.9	10.6	25.5	52	8	60	27.4	6.5	34.2	96	39	135	17.5	19.6	36.5	74	132	206	18.7	33.5	52.2
2-Aircraft	359	288	647	11.1	9.0	20.1	2	2	4	1.7	1.7	3.5	16	5	21	7.8	2.4	10.2	31	26	57	7.8	6.6	14.4
3-Light Phenom.	32	24	56	1.0	0.8	1.8	2	0	2	1.7	0.0	1.7	2	6	8	1.0	2.9	3.9	0	0	0	0.0	0.0	0.0
4-Birds	19	10	29	0.6	0.3	0.9	0	0	0	0.0	0.0	0.0	2	3	5	1.0	1.5	2.5	4	1	5	1.1	0.2	1.3
5-Clouds, Dust, etc.	12	13	25	0.4	0.4	7.8	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
6-Insuffic. Info.	298	0	298	9.3	0.0	9.3	14	0	14	12.0	0.0	12.0	19	0	19	9.3	0.0	9.3	36	0	36	9.1	0.0	9.1
7-Psychological	38	10	48	1.2	0.3	1.5	3	2	5	2.6	1.7	4.3	1	0	1	0.5	0.0	0.5	3	0	3	0.7	0.0	0.7
8-Unknown	689	0	689	21.5	0.0	21.5	28	0	28	23.9	0.0	23.9	22	0	22	13.2	0.0	13.2	56	0	56	14.2	0.0	14.2
9-Other	112	35	147	3.5	1.1	4.6	17	0	17	14.5	0.0	14.5	4	8	12	1.0	2.0	3.0	11	0	11	2.8	0.0	2.8
Total	2300	901	3201	71.9	28.1	100.	105	12	117	89.8	10.2	100	184	81	265	69.5	30.5	100.	231	165	396	58.3	41.5	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	33	7	40	10.5	2.3	13.1	10	4	14	6.2	2.5	8.9	187	144	331	9.3	7.1	16.4						
1-Astronomical	49	25	74	16.0	8.2	24.2	25	17	42	15.6	10.6	26.2	260	170	430	12.9	8.4	21.3						
2-Aircraft	39	15	54	12.7	4.9	17.6	16	8	24	10.0	5.0	15.0	280	202	482	13.9	10.0	23.9						
3-Light Phenom.	0	0	0	0.0	0.0	0.0	2	1	3	1.3	0.7	2.0	26	17	43	1.3	0.8	2.1						
4-Birds	0	0	0	0.0	0.0	0.0	0	1	1	0.0	0.7	0.7	13	5	18	0.6	0.2	0.8						
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	12	13	25	0.6	0.6	1.2						
6-Insuffic. Info.	49	0	49	16.0	0.0	16.0	14	0	14	8.7	0.0	8.7	166	0	166	8.2	0.0	8.2						
7-Psychological	4	0	4	1.3	0.0	1.3	1	1	2	0.7	0.7	1.4	26	7	33	1.3	0.3	1.6						
8-Unknown	71	0	71	23.2	0.0	23.2	52	0	52	32.6	0.0	32.6	465	0	465	22.6	0.0	22.6						
9-Other	7	7	14	2.3	2.3	4.6	8	0	8	5.0	0.0	5.0	65	20	85	3.2	1.0	4.2						
Total	262	54	306	85.3	17.7	100.	128	32	160	80.0	20.0	100.	1460	558	2018	72.4	27.6	100						

TABLE A2 EVALUATION OF UNIT SIGHTINGS BY YEARS

Evaluation	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	228	151	379	2.9	5.9	14.8	7	0	7	7.2	0.0	7.2	14	10	24	9.2	6.5	15.7	11	3	14	4.7	1.3	6.0
1-Astronomical	383	256	639	15.0	10.0	25.0	19	8	27	19.6	8.2	27.8	29	27	56	18.9	17.6	36.9	84	30	114	14.4	32.8	49.2
3-Aircraft	292	236	528	11.4	9.2	20.6	2	2	4	2.1	2.1	4.2	15	4	19	9.8	2.6	12.4	18	12	30	7.6	5.1	12.7
3-Light Phenom.	32	21	53	1.3	0.8	2.1	2	0	2	2.1	0.0	2.1	2	3	5	1.3	2.0	3.3	0	0	0	0.0	0.0	0.0
4-Birds	13	10	23	0.5	0.4	0.9	0	0	0	0.0	0.0	0.0	2	3	5	1.3	2.0	3.3	2	1	3	0.8	0.4	1.2
5-Clouds, Dust, etc.	3	7	10	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
6-Insuffic. Info.	261	0	261	10.2	0.0	10.2	12	0	12	12.4	0.0	12.4	17	0	17	11.1	0.0	11.1	33	0	33	14.0	0.0	14.0
7-Psychological	36	9	45	1.4	0.4	1.8	3	2	5	3.1	2.1	5.2	1	0	1	0.7	0.0	0.7	3	0	3	1.3	0.0	1.3
8-Unknown	499	0	499	19.5	0.0	19.5	24	0	24	24.7	0.0	24.7	16	0	16	10.5	0.0	10.5	33	0	33	14.0	0.0	14.0
9-Other	92	28	120	3.6	1.1	4.7	16	0	16	16.5	0.0	16.5	4	7	11	2.6	4.6	7.2	6	0	6	2.5	0.0	2.5
Total	1839	717	2556	71.9	28.1	100.	85	12	97	87.6	12.4	100	99	54	153	64.7	35.3	100	140	96	236	59.4	40.6	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	22	5	27	10.5	2.4	12.9	9	3	12	6.6	2.2	8.8	165	130	295	9.6	7.5	17.1						
1-Astronomical	42	18	60	20.1	8.6	28.7	22	14	36	15.3	10.2	26.5	239	109	348	13.9	6.3	20.2						
3-Aircraft	20	11	31	9.6	5.3	14.8	16	8	24	11.7	5.8	17.5	211	198	409	12.3	11.5	23.8						
3-Light Phenom.	0	0	0	0.0	0.0	0.0	2	1	3	1.5	0.7	2.2	26	17	43	1.5	1.0	2.5						
4-Birds	0	0	0	0.0	0.0	0.0	0	1	1	0.0	0.7	0.7	9	5	14	0.5	0.3	0.8						
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	7	10	0.2	0.4	0.6						
6-Insuffic. Info.	26	0	26	12.4	0.0	12.4	14	0	14	10.2	0.0	10.2	159	0	159	9.2	0.0	9.2						
7-Psychological	2	0	2	1.0	0.0	1.0	1	1	2	0.7	0.7	1.4	26	6	32	1.5	0.3	1.8						
8-Unknown	42	0	42	20.1	0.0	20.1	38	0	38	27.7	0.0	27.7	344	0	344	20.0	0.0	20.0						
9-Other	6	5	11	2.9	2.4	5.3	8	0	8	5.8	0.0	5.8	52	16	68	3.0	0.9	3.9						
Total	170	39	209	81.4	18.6	100.	109	28	137	79.6	20.4	100.	1234	488	1722	71.7	28.3	100.						

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TABLE A3 EVALUATION OF OBJECT SIGHTINGS BY YEARS

Evaluation	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	207	132	339	9.4	6.0	15.4	7	0	7	8.9	0.0	8.9	12	10	22	8.4	9.0	15.4	11	2	13	5.9	1.1	7.0
1-Astronomical	274	205	479	12.5	9.3	21.8	8	8	16	10.1	10.1	20.2	25	23	48	17.5	16.1	33.6	29	55	84	15.6	29.5	45.1
2-Aircraft	266	209	474	12.0	9.5	21.5	2	2	4	2.5	2.5	5.0	15	4	19	10.6	2.8	13.3	18	12	30	9.7	6.4	16.1
3-Light Phenom.	30	18	48	1.4	0.8	2.2	2	0	2	2.5	0.0	2.5	2	3	5	1.4	2.1	3.5	0	0	0	0.0	0.0	0.0
4-Birds	12	10	22	0.5	0.5	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	0.5	1.6
5-Clouds, Dust, etc.	3	7	10	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
6-Insuffic. Info.	240	0	240	10.9	0.0	10.9	12	0	12	15.2	0.0	15.2	17	0	17	11.9	0.0	11.9	25	0	25	13.9	0.0	13.9
7-Psychological	35	9	44	1.6	0.4	2.0	3	2	5	3.8	2.5	6.3	1	0	1	0.7	0.0	0.7	3	0	3	1.6	0.0	1.6
8-Unknown	434	0	434	19.7	0.0	19.7	22	0	22	27.8	0.0	27.8	15	0	15	10.5	0.0	10.5	22	0	22	11.8	0.0	11.8
9-Other	86	24	109	3.9	1.1	5.0	11	0	11	13.9	0.0	13.9	4	7	11	2.8	4.9	7.7	6	0	6	3.2	0.0	3.2
Total	1585	614	2199	72.1	27.9	100.	67	12	79	84.9	15.2	100.	93	50	143	65.0	35.0	100.	116	70	186	62.4	37.6	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	Tot.l
0-Balloon	21	4	25	12.8	2.4	14.8	8	3	11	6.6	2.5	9.1	148	113	261	9.9	7.5	17.4						
1-Astronomical	25	14	39	14.8	8.3	23.1	16	14	30	13.2	11.6	24.8	171	91	262	11.4	6.1	17.5						
2-Aircraft	22	9	31	13.0	5.3	18.3	15	6	21	12.4	5.0	17.4	193	176	369	12.9	11.7	24.6						
3-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						
4-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						
5-Clouds, Dust, etc.	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0	3	7	10	0.2	0.5	0.7						
6-Insuffic. Info.	24	0	24	14.2	0.0	14.2	19	0	19	11.6	0.0	11.6	148	0	148	9.9	0.0	9.9						
7-Psychological	2	0	2	1.2	0.0	1.2	1	1	2	0.8	0.8	1.6	25	6	31	1.7	0.4	2.1						
8-Unknown	39	0	39	23.0	0.0	23.0	53	0	53	27.3	0.0	27.3	303	0	303	20.2	0.0	20.2						
9-Other	6	3	9	3.6	1.8	5.3	7	0	7	5.8	0.0	5.8	51	18	66	3.4	0.9	4.3						
Total	139	30	169	82.3	17.7	100.	95	26	121	78.5	21.5	100.	1075	426	1501	71.6	28.4	100.						

INDEX OF FORMS

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

CODE 67 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 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	Disappeared suddenly
Y	
0	N
1	NE
2	E
3	SE
4	S
5	SW
6	W
7	NW
8	
9	

CODE 70-71 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 72 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 73 MANEUVERS

X	
Y	
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

CODE 74 OBSERVER OCCUPATION

X	
Y	Civilian, occupation not stated
0	Army, military
1	Navy, military
2	Marine, military
3	Air force, military
4	Coast guard, military
5	Merchant marine, military
6	Commercial air, civilian
7	CAA, civilian
8	Government contractor, civilian
9	Civilian, other

84

DE 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 Birds
5 Clouds, dust, etc.
6 Insufficient information
7 Psychological manifestations
8 Unknown
9 Other

(Not for general distribution)

DEPARTMENT OF DEFENSE

MINUTES OF PRESS CONFERENCE HELD BY

MAJOR GENERAL JOHN A. SAMFORD

DIRECTOR OF INTELLIGENCE, U. S. AIR FORCE

29 July 1952 - 4:00 p. m. - Room 3E-869, The Pentagon

Participating: Major General Roger M. Ramey
Director of Operations, USAF

Colonel Donald L. Bower, Technical Analysis Division, Air Technical Intelligence Center

Captain Roy L. James, Electronics Branch, Air Technical Intelligence Center

Captain Edward J. Ruppelt, Aerial Phenomenon Branch, Air Technical Intelligence Center

Mr. Burgoyne L. Griffing, Electronics Branch, Air Technical Intelligence Center

MR. SCHOOLEY: Ladies and gentlemen, let me remind the military that, while they are welcome here, this is a press conference and let's be sure that the press is all seated before the conference begins.

Let me introduce General Samford, Air Force Director of Intelligence, and General Ramey, Director of Operations. General Samford.

MAJOR GENERAL SAMFORD: I think the plan is to have very brief opening remarks and then ask for such questions as you may want to put to us for discussion and answer. In so far as opening remarks is concerned, I just want to state our reason for concern about this.

The Air Force feels a very definite obligation to identify and analyze things that happen in the air that may have in them menace to the United States and, because of that feeling of obligation and our pursuit of that interest, since 1947, we have an activity that was known one time as Project Saucer and now, as part of another more stable and integrated organization, have undertaken to analyze between a thousand

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