NATIONAL ARCHIVES MICROFILM PUBLICATIONS

Microfilm Publication T1206

PROJECT BLUE BOOK

Roll 11

Case Files of Individual Sightings

File Nos. 1377-1494

July 2-19, 1952

THE NATIONAL ARCHIVES
NATIONAL ARCHIVES AND RECORDS SERVICE
GENERAL SERVICES ADMINISTRATION

WASHINGTON: 1976

MPH

PROJECT 10073 WORKSHEET

I. GENERAL

1. DATE	2. LOCATION	3. TIME
2 Jul 52	Tremonton, Utah	Local: 1410 MST Zebra: 1910Z

4. WAS OBJECT OBSERVED FROM THE GROUND? ☒ Yes ☐ No
- ☒ Naked Eye
- ☐ Binoculars
- ☐ Telescope
- ☐ Theodolite

5. WAS OBJECT OBSERVED BY GROUND RADAR? ☐ Yes ☐ No
- ☐ By One Set
- ☐ By Two Sets
- ☐ By Three Sets

6. WAS OBJECT OBSERVED FROM THE AIR? ☐ Yes ☐ No
- ___A/C Observed Object
- ☐ Interception Attempted
- ☐ No Intercept Attempted

7. WERE AIRCRAFT SCRAMBLED TO INTERCEPT? ☐ Yes ☐ No
- ___A/C Scrambled
- ☐ Visual Contact Made
- ☐ A/I Contact Made
- ☐ No Contact Made

8. DID OBJECT CHANGE DIRECTION AT ANY TIME? ☒ Yes ☐ No
- ☒ Normal
- ☐ Violent

9. IF OBJECT WAS A "LIGHT", WAS IT:
- ☐ Blinking
- ☒ Steady

10. LENGTH OF TIME IN SIGHT:
- ☐ 1-15 Seconds
- ☐ 1-5 Minutes
- ☐ Over 10 Minutes

11. REPORTING AGENCY (Unit Number and Mailing Address)

CO, Hill AFB, Ogden, Utah

II. ASTRONOMICAL DATA

12. WHAT ASTRONOMICAL ACTIVITY WAS NOTED?

None

13. DID OBJECT APPEAR TO ARCH DOWNWARD?	☐ Yes	☐ No
14. DID OBJECT HAVE A TAIL?	☐ Yes	☐ No
15. DID OBJECT APPEAR TO DISINTEGRATE?	☐ Yes	☐ No

16. TIME OF SIGHTING RELATIVE TO SUNRISE OR SUNSET (Data From Air Almanac)
- ☐ Night
- ☐ Day
- ☐ Sunrise
- ☐ Sunset

III. AIRCRAFT DATA

17. WERE AIRCRAFT NOTED IN AREA?	☐ Yes ☐ One Aircraft ☐ More Than One Aircraft	☒ No
18. WAS ANY SOUND HEARD?	☐ Yes	☐ No
19. WERE THERE INDICATIONS OF HIGH BACKGROUND NOISE?	☐ Yes	☐ No
20. WAS THE OBJECT VIEWED ABOVE 45° ELEVATION?	☐ Yes	☐ No

IV. BALLOON DATA

21. WERE BALLOONS RELEASED IN AREA? ☒ Yes ☐ No

22. TIME SINCE SCHEDULED BALLOON RELEASE: ____ Minutes

23. POSSIBLE BALLOON LAUNCH SITES DOWNWIND OF SIGHTING:

	Location	Type	Launching Agency	Lighted? Yes	Lighted? No	Describe Lighting
a.	Too many objects		too balloons			unless
b.	that were [illegible]	sho	trains in		a	[illegible]
c.	mirages [illegible]					
d.						

(attach overlay)

V. EVALUATION

21. EVALUATION OF SOURCE:

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Unreliable
- ☐ Extremely Doubtful
- ☐ Hoax

22. DETAILS OF REPORT:

- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Insufficient to Evaluate

23. FINAL EVALUATION:

- ☐ Was Balloon
- ☐ Probably Balloon
- ☐ Possibly Balloon

- ☐ Was Aircraft
- ☐ Probably Aircraft
- ☐ Possibly Aircraft

- ☐ Was Astronomical
- ☐ Probably Astronomical
- ☐ Possibly Astronomical

- ☐ Other: _____

- ☐ Insufficient Data For Evaluation
- ☒ Unknown

24. COMMENTS:

Possibilities:
1. Mirage effect - No inversion layer, but there could possibly be lapse rate from 4-10,000'.
2. Birds - Many geese migrating, or seagulls
3. Aircraft - highly improbable

PI ECT 10073 WEATHER DATA SHEET

1. DATE OF OBSERVATION	2. TIME OF OBSERVATION	3. STATION OBSERVING
2 Jul 52	2100 Z	Kelly AFB

4. WINDS ALOFT:

ALTITUDE (feet)	VELOCITY (knots)	DIRECTION (degrees)	ALTITUDE (feet)	VELOCITY (knots)	DIRECTION (degrees)
0			25,000	16	280
1,000			30,000	15	290
2,000			35,000	10	300
3,000			40,000	09	240
4,000	Base alt	4,000 350	45,000	06	250
5,000	5	360	50,000	None	
6,000	6	360	55,000	None	
7,000	6	360	60,000	11	90
8,000	↑		65,000	5	90
9,000			70,000		
10,000	No	Wind	75,000		
12,000	↓		80,000		
14,000	22	270	85,000		
16,000	15	290	90,000		
18,000	13	280	95,000		
20,000	15	290	100,000		

5. WAS AN INVERSION LAYER NOTED? ☐ Yes ☑ No
(If yes, at what altitude? _____)

6. WERE ANY THUNDERSTORMS NOTED IN AREA? ☐ Yes ☑ No
(If yes, at what quadrant? _____)

7. CLOUD COVER:

_____ tenths at _____ feet. _____ tenths at _____ feet.
_____ tenths at _____ feet. _____ tenths at _____ feet.

8. VISIBILITY WAS CAVU MILES.

9. COMMENTS:

ATIC Test Form 333 (13 Aug 52)

surface	4000 ft station alt.	350° at 6 knots
	5000	" 5 knots
	6000	360° at 6 "
	7000	" " "
	8000	Mo mind "
	9000	Mo "
	10000	Mo "
	12000	"
	14000	270° 22 knots
	16000	270° 15
	18000	250° 13
	20000	270° 15
	25	280° 16
	30	290° 15
	35	300° 10
	40	240° 29
	45000	250 06
	50000	Mo.
	55000	"
	60000	90° 11 knots.
	65 "	90° 05

Salt Lake City to Pikeall U.S. Weather Bureau Airline

surface	330° 09 knots	10000 360 07
4000	330 08	12000 360 11
7000	300 05	14000 270 18
8000	250 02	16000 350 13
9000	270 03	18000 280 14
		20000 270 13

16 MM FILM

July 2, 1952

TREMONTON, UTAH; NEWHOUSE

FILE # 1003345

Custody OF Audio-Visual Archives

1975

TREMONTON CASE — BIRDS (SEAGULLS)

Oct 21/00 Z — 2 JULY 2 — Hill AFB, Utah
(MB)

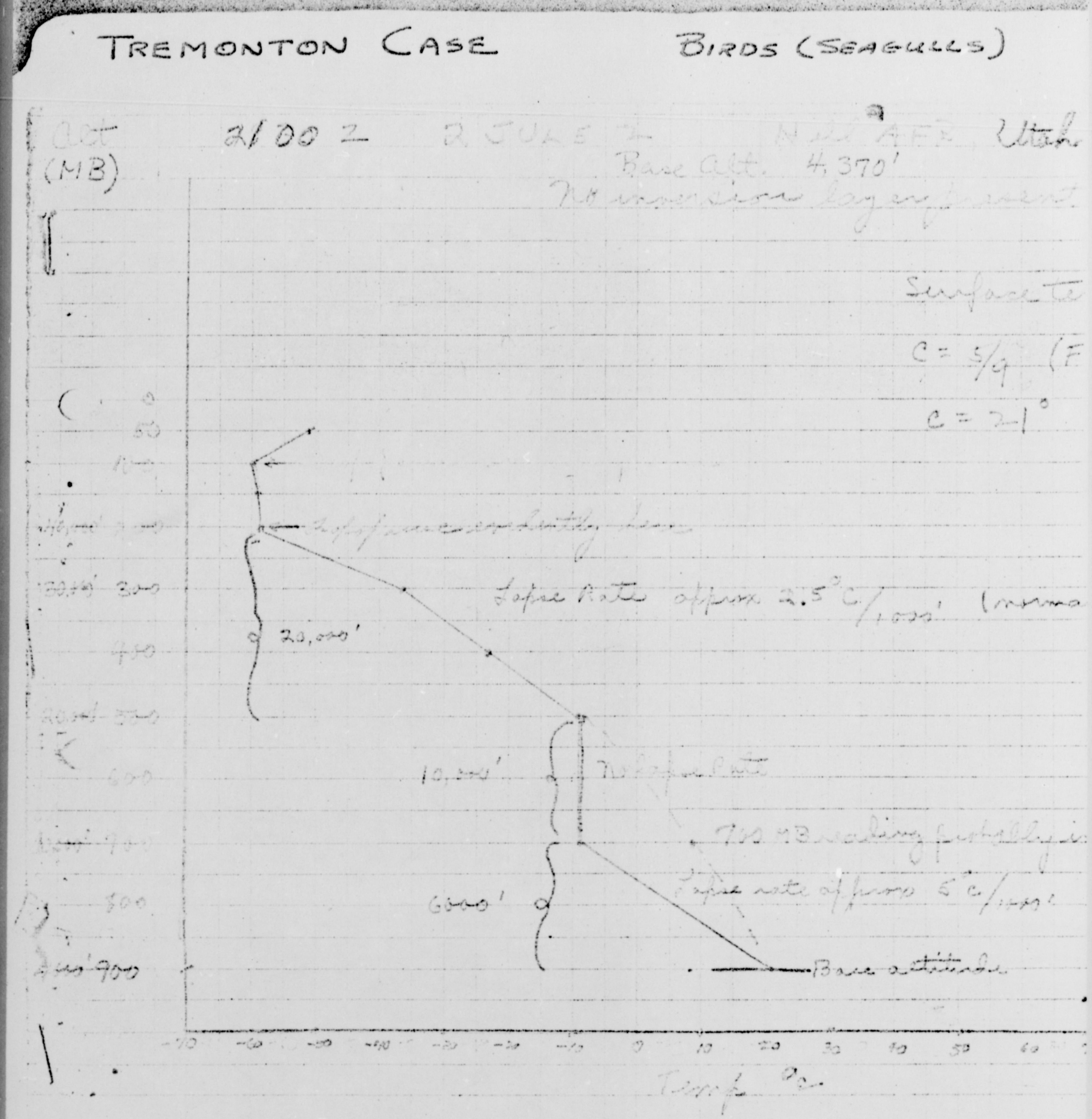
Base Alt. 4,370'

No inversion layer present

Surface

C = 5/4 (F

C = 21°



2 JULY 52

70° F

32)

+9°C (Spur Cofac
[illegible])
approx 2°C/1000

80

[redacted]
COPY

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21 May 1956

MEMORANDUM FOR: The Scientific Advisor

SUBJECT: Report on Preview of Motion Picture "Unidentified Flying Objects"

1. Through the personal assistance of Col. Cross, Chief, Office of Information Services, AMC, an advance copy of the film "Unidentified Flying Objects" was previewed by pertinent members of ATIC on Friday, 18 May 1956, in Bldg 167, Area B, Wright Patterson Air Force Base.

2. The following represent the general comments and opinions with regard to the film previewed:

a. The film, purporting, to be factual and documentary, appears to over dramatize each case sighting.

b. The film strives, through its showing, to maintain the impression that an unknown menace or super-intelligent being, alien to this world, is constantly in the background.

c. The case sightings and the individuals portrayed (the acting was very amateurish for a Hollywood production) was factual to a certain extent. However, the conclusions, specific or implied, are those of the producer's and not those of the Air Force.

d. In each instance of the portrayal of a case, the film dramatically, and with great suspense, presents the incident and circumstances surrounding the sighting, then abruptly drops the matter in a "lady or the tiger" technique. This is, of course, the desired effect, calculated to let the viewer form his own (influenced) conclusions.

3. The following represent the specific comments or conclusions with reference to each case portrayed by the film, as supported by official material or data:

a. Great Falls ([redacted]): We do not agree with the films conclusion "not aircraft, not balloons, not birds." An extremely able and very detailed analyses performed by the scientific laboratory of one of America's largest aircraft companies, indicated, in conclusion, that, 'aircraft reflections might possibly look like the images on the film.' Supporting photos from the same analyses also indicate that an aircraft 100 feet in length, when observed from 10 to 12 miles looked exactly like the individual "white blops" shown. The absence of sound cannot be construed that the object is not an aircraft. As any personal experience will show, an aircraft may often be observed in the air at some distance, yet no sound may be heard.

See page 2 for Comments on Trenton, Case

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[redacted]

[redacted]

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b. Tremonton Case:

(1) We do not agree with the film's conclusion 'not aircraft, not balloons, not birds.' A comparative analyses was made of a copy from the original film strip, and that shown by Green-Rouse by Major Willner and Major Buchmaster, ATIC photo specialists. The original film shows the presence of sea gulls on a number of frames. This is not shown in the Hollywood version.

(2) Further, it is not necessary to state that a particular species of sea gull are prominent in certain parts of Utah. It should be pointed out that the Utah species is almost pure-white in color, in contrast to its smoky or grey-marked sea-coast cousin.

(3) In the opinion of ATIC photo specialists, any under exposure of these sea gulls against a high-lighted sky would tend to 'wash out' details of the body and wing outline of the gulls, giving them a white circular appearance at a distance. ([redacted] openly admitted in the film that he under exposed his 'shots".)

(4) This is confirmed by the original analysis in our files, made in early 1953 by the Photo Reconnaissance Laboratory, WADC. These reports were not shown to Majors Willner and Buchmaster for review until after their analyses (items 1, 2, and 3 above) were completed.

c. Mantell Case: Conclusions of the Air Force are that Capt. Mantell was apparently trying to intercept a fast riding "Sky Hook" balloon. The 'Sky Hook' project was known only to few people at that time. Unlike weather balloons "Sky Hook" balloons were huge (100 feet in diameter), coinciding with Capt. Mantell's statement that "it's tremendous in size!" Capt. Ruppelt confirms the fact that it was a balloon in his book "Report on UFOs", page 60, 3rd paragraph.

d. Fargo Case: Our files indicate that this was undoubtedly an erratic moving balloon which Lt. Gorman encountered. Capt. Ruppelt also confirms this in his book, page 67, top.

e. Airline Pilots Case: As portrayed on the screen this is an apparent attempt to document the '[redacted]. If so, our comment: A description of the UFO alleged to have been closely observed by each of these veteran Eastern airlines pilots will be found in page 81 of the Project Bluebook's Report Nr. 14 'Analysis of Unidentified Flying Objects'. Although both observer's were sitting next to each other and observed the same object together, the sketch made by each pilot separately cannot be said to be similar,

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[redacted]

[redacted]

COPY

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other than that both appeared to be wingless and somewhat cylindrical. This case is classed as an "unknown" by virtue of the high credibility given to observer's of this type.

f. Washington Radar Sighting:

(1) In the Department of Defense "Minutes of Press Conference Held by Major General John A. Samford", 29 July 1952, copy in file at both ATIC and PIO, it was explained to the press that these sightings (pages 5 through 17) may have been the result of a combination of factors: temperature inversions, moisture lapses, and atmospheric conditions which bend radar rays in such a manner that normally undetected ground targets become visible on the radar screen, in a random manner from one antenna rear to the next, thus allowing some misinterpretation that these stationary targets were moving.

(2) It should be emphasized that no photos or motion pictures were ever made of the radar screen, as shown in the motion picture.

(3) The attempt to represent the blips as possible interplanetary space ships, gleefully playing "tag" with our jet aircraft over Washington, undoubtedly will produce the desired dramatic mood and suspense. However, the incident over the radar scope was unscientific, not supported by fact, nor the conclusions of the Air Force.

g. [redacted]: This office has no file on this particular case, regarding an observer, an airline pilot.

GEORGE T. GREGORY
Captain, USAF
Project Monitor - UFO

COORDINATION: (In turn)

/s/ O. D. Hill
M/Sgt. O. D. Hill, AFOIN-4B4

/s/ Robert M. Buckmaster
Major Robert M. Buckmaster
Chief, Photographic Branch

/s/ William F. Willner
Major William F. Willner
Chief, Photo Analysis Branch

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/s/ Roy L. James
Mr. Roy L. James
Actg Chief, Electronics Division

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[redacted]

DISPOSITION FORM

SECURITY CLASSIFICATION (If any).

FILE NO.

SUBJECT: (Uncl) Analysis of Photographs

TO: WCEFP
Attn: Mr. [redacted]

FROM: ATIAA-5

DATE: 16 Sept 52
Lt Rothstein/jos
65365/B263D/PD28

COMMENT NO. 1

Request following be completed as expeditiously as possible on 35mm film delivered by Lt Rothstein to Mr. Chapman:

a. A complete analysis of 35mm film to determine subject matter and to answer inclosed questions.

b. A copy be made of the portion of film containing unidentified aerial phenomena.

c. The portion containing the unidentified aerial phenomena be separated from the rest of the film and the remainder be returned.

for Louis Obenkamp Capt USAF
DONALD L. BOWER, Colonel, USAF
Chief, Technical Analysis Division
Air Technical Intelligence Center

2 Incls
1. Ques regarding film
2. Statement by source

TO: ATIAA-5
Attn: Lt Rothstein

FROM: WCLFP-2

DATE: OCT 10 1952

COMMENT NO. 2
Mr. J. Chapman/ms
31381/B17/B119

1. The 16 mm. Kodachrome film has been examined in detail, and the best available answers to the submitted questions are inclosed, along with additional findings.

2. The aerial phenomena portion of the film will be submitted for duplication as soon as the immediate need for inspection has passed. It is doubtful that the duplicate will be of much value for detailed inspection, as explained by the small spot size and general graininess of the film.

3. The remainder of the film, not associated with the aerial phenomena, has been separated and has been forwarded to Captain Ruppelt of your office.

for Robert Olsen Sk R. Lt
[illegible] B. AVERY, Colonel, USAF
Chief, Photo Reconnaissance Lab
Directorate of Laboratories

4 Incls
Added 2 Incls
3. Answers to stated questions
4. Remainder of film (Und Sep Cov)

CONCURRENCE:
J M Chapman WCLFP-2

2-432

QUESTIONS REGARDING ANALYSIS OF FILM

1. Are images made by light source or reflection?

2. Any indication of what kind of objects could have ceused images? Is there any bird sufficiently actinic to cause images? Could they have been caused by aircraft or balloons?

3. What causes the impression that some objects at times appear to become 2 or 3 objects, at times appear to merge into one?

4. Do all objects have same characteristics?

a. Same apparent shape?
b. Same relative size?
c. Same Color?
d. Same general motion?

5. What are shape(s), color(s), and relative size(s) of objects?

6. To what can the "fade-in" and "fade-out" of the objects be attributed?

7. What type motion is attributable to the objects (about their own axis as well as about the axis of flight path)?

8. Is there any acceleration evident in their motion along flight path axis?

9. Can the motion of the camera (panning and joggling) be allowed for sufficiently to permit determination of the angular velocity of objects which cross the field of view? (Reference particularly the single object which crosses field; photographer states that camera was held motionless while object crossed field of view.)

10. Determine patterns of flight from position plots for each frame, then:

a. Is there any recurring pattern in the relative position of the objects?

b. Do they maintain same relative positions in formation during any maneuvers, particularly violent maneuvers?

c. Is relative position maintained coincidental with movement about their axes?

d. If undulating motion is present among a number of objects which are maintaining a semblance of formation, do those objects undulate in phase? Ditto for tumbling motion.

e. Is there any indication of abrupt changes in direction of flight path through fairly large angles (e.g., 90° or more during interval of 2 or 3 frames)?

STATEMENT BY SOURCE

Place:-

About 7 miles north of Tremonton, Utah, on U.S. Highway No. ~~3[illegible]~~ 30S

Time:-

1110, Wednesday, 2 July 1952.

Camera:-

B&H Automaster, magazine load, 3" telephoto lens, 16 frames per second. Handheld.

Exposure:-

First few feet - f:8. Balance - f:16. Clear sun, cloudless sky. EKCO Kodachrome film - Daylight. Exposure was changed with the mistaken idea of darkening the sky to gain greater contrast. The result was merely general underexposure.

Background:-

Driving from Washington, D.C., to Portland, Oregon, on the morning of 2 July, my wife noticed a group of objects in the sky that she could not identify. She asked me to stop the car and look. There was a group of about ten or twelve objects that bore no relation to anything I had seen before, milling about in a rough formation and proceeding in a westerly direction. I opened the luggage compartment of the car and got my camera out of a suitcase. Loading it hurriedly, I exposed approximately thirty feet of film. There was no reference point in the sky and it was impossible for me to make any estimate of speed, size, altitude or distance. Toward the end one of the objects reversed course and proceeded away from the main group. I held the camera still and allowed this single one to cross the field of view, picking it up again and repeating for 3 or 4 such passes. By this time all of the objects had disappeared. I expended the balance of the film late that afternoon on a mountain somewhere in Idaho.

U. S. NAVAL PHOTOGRAPHIC INTERPRETATION CENTER
U. S. NAVAL RECEIVING STATION
Washington 25, D. C.

Code O1/HWW/lbh
J12 UNCLASSIFIED

MAY 4 1953

Serial: 0105

[redacted]

From: Officer in Charge
To: Director of Naval Intelligence (OP-322H4D)

Subj: Interpretation of Movies of Unidentified Objects; progress report on

Ref: (a) Conf ltr DNI OP322Y5/rtm, dtd 27 Oct 1952 with enclosures thereto
(b) Conf memo, Chief, Topical Division, USAF, AFOIN 2A2, dtd 24 Nov 1952 with enclosures thereto
(c) PIC Conf ltr O1/HWW/gcl, ser 0263 dtd 5 Dec 1952
(d) Rest memo, Chief, Topical Division, USAF, AFOIN 2A2, dtd 16 Feb 1953

Encl: (1) Charts 2-13

1. Reference (a) is a request from U. S. Air Force for the interpretation of movies of unidentified objects taken in Utah, 2 July 1952. Included among the enclosures are approximately 30 feet of processed, 16mm color motion picture film and a list of questions for guidance in determining the type of analysis desired. Reference (b) requested interpretation of additional movies taken in Montana, 1950. This report supercedes reference (c) and presents the test procedures and methods designed to answer the questions contained in enclosure 7 of reference (a). The results and analysis were performed by the Photogrammetry Division, Evaluation Department of this Center and do not necessarily represent the official attitude of the Department of the Navy or this Center.

2. Tests and Procedure.

a. Plots.

The film exposed in Utah is in very poor condition; dry, brittle, and with a tendency to break. After initial viewing, duplication of the film was performed in order to preserve the film. In the duplication process some color correction was made to permit better viewing of the objects. To prepare plots of the objects, a stop frame projector was rigidly mounted at a fixed distance from a finely-ground glass screen. The magnification was 22 times giving a format size of 14.2" wide. This proved very satisfactory and provided a shadow free image upon which overlay plots could be made.

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Encl #2

Code 01/HWW/lbh
J12

Serial: UNCLASSIFIED

[redacted]

MAY 4 1953

Subj: Interpretation of Movies of Unidentified Objects; progress report on

A preliminary detailed study of the Utah film was made and it was decided that:

a. Brightly colored spots of red and green lasting only one or two frames were not to be considered.

b. Water spots could be detected easily and eliminated from the study.

c. The color of the objects was fairly constant as blue-white.

d. Size and luminosity of an object varied through-out the film.

For convenience in interpretation, the film was divided into three parts, each part being considered an entity. Part I consisted of the footage taken at f8; Part II, the footage taken at f16 with a panning motion; and Part III, the footage taken at f16 during which the camera was held steady. Three definite groups of lights were observed through-out the film and plots were recorded as follows:

TABLE I

PLOTS OF POSITIONS

	Parts	Control	Chart
Utah	I II III	Holding to lower group	Not enclosed
	I II	Holding to one object and azimuth of another	2 and 3
	I	Arbitrary 1/2 inch correction per frame for panning	4
	III	Holding to frame outline	5a and 5b
	I	One image held to base line. Every tenth frame to show changes within apparent formations	6

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Montana	I II	Terrestial Objects	7a and 7b

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[redacted]

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MAY 1 1959

[redacted]

Subj: Interpretation of Movies of Unidentified Objects; progress report on

b. Densitometric tests:

Densitometric data were obtained with a Densichron, Model 2150 manufactured by the Welch Scientific Company. The Densichron has a scale range of 0-3. The procedure was to project each frame at approximately 22 times magnification onto a finely-grained-glass screen. The background (sky) was then measured at several places and the density set to 3.0 (variations in background densities were in the order of 0.02 and were regarded as uniform). A set of three readings were made of each of seven objects in Part I, and of the single object in Part III of the Utah Film. Readings were made of the entire Montana film.

Enclosure (8a and 8b) are graphs of the density readings obtained of the two lower groups of objects in frames 1-129 of the Utah film. Enclosure (9) is a density graph of the single object (94 frames) in Part III. Enclosure (10) is a graph where six successive Densichron readings were averaged and advanced one reading each determinant.

Of the Montana film, densities were plotted as above and are enclosures (11) and (12).

The results of the density readings may be questioned in that these objects varied in size so that at the minimum sizes the densichron probe was measuring the entire object, and at the maximum size the probe was measuring only a portion of the objects. Because of this situation only the largest readings obtained b scanning the objects were used. It is understood that normal procedure would be to read the entire object. This was impossible with the equipment on hand.

In addition the film, with which this investigation was conducted, is a duplicate of a copy. This raises the question as to whether the central portion of the objects were burnt out during the duplication processing. Density readings were made to compare the clear areas and the objects. It was found that the minimum difference is 0.4. This indicates that relative luminosity may still be obtained with the procedure used. Concurrent with the density readings, relative sizes of the objects were noted in order to correlate distance and luminosity. Enclosure (13) is a plot of the same object wherein the relationship of distance and luminosity can be detected in Utah film.

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3. Answers to Questions.

Answers keyed to the questions contained in enclosure (7) of reference (a) are hereby presented. They supersede those contained in reference (c) and present the final analysis as requested.

[redacted]

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MAY 4 19[illegible]

[redacted]

Subj: Interpretation of Movies of Unidentified Objects; progress report on

1. Analysis of the graph correlating luminosity and size indicate that as the luminosity of the objects increase, the size is larger also. This could be the effect of viewing directly, a reflecting surface. This is considered not probable because of the length of time they were viewed continuously on the film, approximately 90 seconds, and because of the angle through which they were photographed, approximately 60 degrees.

It is felt that if these images are reflective surfaces, blinking would occur during a period of 90 seconds while passing through an angle of 60 degrees when photographed at the rate of 16 frames per second. This premise would permit highly reflective balloons or spheroids to be a possibility. However, the velocity and acceleration computations (sub paragraph 8) rule this possibility out. It appears, therefore, that if these objects are a reflecting surface, they are of a design, speed, and power not commonly known. The velocity and acceleration attributed to the objects may be caused by light reflected off a highly reflective surface onto an atomospheric screen where a slight angular turn of the reflective surface would appear as high acceleration. This possibility is considered not probable because of the sun angle and atmospheric condition reported at the time of photography and because of the variations in luminosity which, under the above conditions would remain constant.

It is the majority opinion of the group conducting this analysis that these images are light sources. This will explain the non-blinking and variations in luminosity - but not the velocity or acceleration factors. In either case, light source or reflective surface, it appears as if the objects are of a nature which we are not able to identify in terms of natural phenomena or commonly known man-made objects.

2. There is no indication of what kind of objects could have caused the images except that they must be of a construction, design, and material not commonly known. This is indicated by the computed acceleration rate and elocity (answer 8). For the same reasons, birds, aircraft and balloons are ruled out.

3. An analysis of the charts relative to movement indicate that there were group and individual movement. Within a group it appears as if the individual objects were moving counter-clock-wise along an elliptical or similar track. Thus when two objects crossed the camera line of sight they will appear to fuse into one. As they continued along their paths it will appear as if one object became two. This occured at reglar intervals at approximately every 25th frame as plotted in charts 5a and 5b.

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Code 01/KWW/lbh
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Serial:

[redacted]

MAY 4

Subj: Interpretation of Movies of Unidentified Objects;
progress report on

4. All objects appear to have the same characteristics in regards to shape, color, size and relative motion.

5. The shape of the objects appears to be oblate or disk shaped, color; blue-white, and maximum and minimum size; 98 and 16 feet. The size is based on the assumption that the objects are five miles from the observer.

6. Fade in and fade out of the objects were analyzed as in 3 above. In this case the group movement was such that the distance between the objects and camera was increased so that the objects could not be recorded on the film thereby causing the apparent fade-out. Fade-in as attributed to a shortening of the distance from the fade-out area to the camera station.

7. Plots of the groups indicate that the objects move counter-clock-wise relative to the axis of flight path. However, nothing has been detected which indicates motion of the individual objects about their own axis although this motion appears to be likely.

8. In determining the velocity of the objects three assumptions were made:

a. The camera was held steady during Part III of the film.

b. The objects were moving perpendicular to the optical axis, and

c. The objects were five miles from the camera.

It is obvious that (b) is a fallacy; however, this assumption will give the minimum velocity and the actual velocity is greater than computed. The assumption that the objects are five miles from the camera is an arbitrary one. However, based on the emulsion speed and focal length, an object 50 feet in diameter and five miles from the camera will be recorded on the film with sufficient resolution to identify major details of the object. It is felt that if these objects were closer than five miles at the time of recording, details would appear on the film.

Velocity is computed to be 3780 mph for a shift of 1 mm per frame if the object is five miles from the observer. From 55 measurements taken from Part III of the Utah film, the maximum and minimum velocities

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[redacted]

Subj: Interpretation of Movies of Unidentified Objects;
progress report on

were 2457 and 378 mph respectively. These figures differ from those given in reference (c) and were computed from measurements obtained under more controlled conditions. Acceleration was determined from the formula :

$$a = \frac{Vf - VO}{T}$$ where:

a = Acceleration

Vf = final velocity

VO = initial velocity

T = time = 1/16 second

Since "g" is equal to 32.17 ft/sec^2 it was computed that:

Maximum acceleration	= 21,168 mph/sec	= 965 g
Minimum acceleration	= 1,104 mph/sec	= 50 g
Maximum deceleration	= 32,448 mph/sec	= 1479 g
Minimum deceleration	= 272 mph/sec	= 12 g

Velocit and acceleration determinations were also made from the Montana film. In this case, terrestial objects appeared in the film and were held to as control. Subsequently, the velocity and acceleration determinations are considered to be more reliable. On the assumption of (b) and (c) above the maximum and minimum velocities of the left object are 1374 and 361 mph respectfully. For the right object they are 1117 and 189 mph. Accelerations were computed as:

	Left Object	Right Object
Maximum acceleration mph/sec	14,016 = 639 g	12540 = 576g
Minimum acceleration mph/sec	0 = 0 g	0 = 0g
Maximum deceleration mph/sec	13,184 = 601 g	14288 = 651g
Minimum deceleration mph/sec	0 = 0 g	0 = 0g

The above determinations were made from a total of 322 measurements. It was noted that the acceleration and determinations were in multiples of 12.5 approximately. This may be of significance although no study has been conducted to determine this.

9. Velocity and acceleration were treated in sub-paragraph 8 above. Paragraph 2a indicates the controls used during this investigation.

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DECLASSIFIED AFTER 12 YEARS.
DOD DIR 5200.10

[redacted]

Code 01/HWW/lbh
J12

Serial: 0105

UNCLASSIFIED

[redacted]

Subj: Interpretation of Movies of Unidentified Objects; progress report on

10. a. There is no recurring pattern in the relative position of the objects in formation. It appears however, as if the shift in relative positions were regular and that the original formation would be recovered if the continuing action has been recorded.

b. No. However, the same formation is maintained with objects changing positions.

c. No detection of relative positions being maintained coincidental with movement about their axis.

d. No detection of undulating motion of objects in phase either in formation or tumbling motion.

e. There is evidence of abrupt changes in direction of flight path through fairly large angles.

f. Certain objects do appear to remain motionless while other move about.

g. Certain objects disappear while still well within the field of view. This is discussed in sub-paragraph 6 above.

4. Discussion.

During the study and investigation of the unidentified objects, the preliminary data uncovered were revealed to experts (with proper security clearance) in the fields of astronomy and physics. Although they presented certain natural phenomena theories to explain the cause of the objects under certain conditions they were not able to do so under the conditions during which the photography was taken, nor were they able to recognize these objects as man-made.

As to the results of the investigations being reported, no attempt was made to corroborate the opinions presented. Because of the lack of proper equipment, money and personnel, the investigation was limited. There are obvious tests which can be conducted to prove or disprove some of the findings presented. It is suggested that these be undertaken.

5. Reference (d) requests spectrophotometric analysis of the Utah film be made. Preliminary plan of test is underway.

L. W. KEITH

UNCLASSIFIED

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DECLASSIFIED AFTER 12 YEARS.
DOD DIR 5200.10

Copy to:
CNO (OP553)
BuAer (PH)
[redacted]

TELECONFERENCE MESSAGE FORM

(See (tructions on reverse side of t page)

3 Feb 53

1. ITEM NO.	2. SECURITY CLASSIFICATION	3. DATE TRANSMITTED
	UNCLASSIFIED [redacted]	3 February 1953

4. FROM: (Name & Symbol)	5. TO: (Name & Symbol)
Capt E. J. Ruppelt, ATIAE-5	Capt Harry Smith, AFOIE-2A2

Security Information. Reference telephone call from Capt Ruppelt to Capt Harry Smith on 2 Feb 53 regarding data for press release on Tremonton movies. Request final of press release be forwarded by telecon to ATIC for coordination. Movies were taken seven miles north of Tremonton, Utah, on U.S. Highway 30S at 1110 MST on 2 July 52. Camera used was a Bell and Howell Auto Master with the three inch telephoto lens. Camera was hand-held. First few feet of film were taken at F-8; balance at F-16. Sixteen frames per second were used. Movies were taken by Chief Petty Of[redacted]Aviation Supply Depot, Naval Supply Center, Oakland, Calif. [redacted]as driving from Washington, D.C., to Portland, Oregon, on the morning of 2 July 52 when his wife noticed a group of objects in the sky that she could not identify. She asked [redacted] to stop the car and look. There were a group of objects that bore no relation to anything he had seen before, he stated, milling about in a rough formation and proceeding in an apparent westerly direction. He opened the luggage compartment of his car, got a movie camera out of his suitcase and took the pictures. There was no reference point in the sky so it was impossible for

(If more space is needed, continue on a plain sheet of paper.)

7. ORIGINATED BY: (Name, Symbol, Date)	8. COORDINATED BY: (Name, Symbol, Date)
Capt E.J. Ruppelt, ATIAE-5, 3 Feb 53	
9. AUTHORIZED BY:	
DOWNGRADED AT 3 YEAR INTERVALS; DECLASSIFIED AFTER 12 YEARS. DOD DIR 5200.10	
Air Adjutant General, ATIPA	

ANALYSIS DIVISION FILE
10113
FILE NUMBER
INITIALS DATE

[redacted]

UNCLASSIFIED

ATIC Form 200 (11 Dec 51)

INSTRUCTIONS FOR PREPARING AND SUBMITTING FORM

1. Submit ONE copy of the completed form to ATIPA by 1000 hours of day message is to be sent. Unless special arrangements are made with ATIPA for late submission, messages received after 1000 hours will not be sent until the following conference.

2. Complete form as follows:

Block 1. Preparing office omit. Will be completed by telecon operator.

Block 2. If a classified message, stamp in security classification. If not a classified message, enter "Unclassified".

Block 3. Enter date the message will be sent, not date prepared.

Block 4. Enter name and symbol of sender.

Block 5. Enter name and symbol of receiver.

Block 6. If a classified message, enter as the first two words of the message "Security Information," then proceed with the message. If not a classified message, omit the words "Security Information".

Block 7. Originator enter signature and symbol. (May or may not be the same person whose name appears in Block 4.)

Block 8. Coordinators enter name and symbol.

Block 9. Air Adjutant General Enter signature.

Bottom of form. If a classified message, stamp in security classification.

[redacted]

him to make any estimates as to size, speed, or distance. Toward the end of his observation one of the objects reversed course and proceeded away from the rest of the group. He held the camera still and allowed this single object to pass across the field of view of the camera picking it up again later in its travel. He repeated this for two or three passes. By this time all the objects had disappeared.

The movies have been studied by the Photo Reconnaissance Laboratory, Wright Air Development Center, Wright-Patterson AFB, Ohio, and by the U.S. Navy Photo Interpretation Center, Washington, D. C. Since there was no known object such as a cloud, tree, or mountain in the film, it was impossible to make even a rough estimate as to the speed, distance, or size. The size of the images on the movie film were too small to show any details. The movies have been studied by persons engaged in work with balloons and the appearance and action of the objects are similar to that of pillow balloons. These balloons are called pillow balloons due to their similarity to a pillow. Hundreds of these balloons were made and flown in the U.S. and overseas during the Crusade for Freedom. Attempts to trace these balloons to determine whether any left over from the Crusade for Freedom could have been launched in the Tremonton area were negative. Another strong possibility is that the objects were sea gulls soaring thermal air current. Movies of sea gulls taken under similar lighting conditions showed the sea gulls appearing as bright spots of light very similar to those in the movies. At the present time the Air Force contemplates no future action will be taken to identify the objects.

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ANALYSIS DIVISION FILE
10073
FILE NUMBER
INITIALS
3 Feb 53
DATE

ROUTING

JOINT MESSAGEFORM

COMMUNICATIONS CENTER NO.

UNCLASSIFIED

SPACE ABOVE FOR COMMUNICATIONS CENTER ONLY

FROM: (Originator)

CG ATIC

TO: D/I 3G USAF WASH D C

INFO:

DATE-TIME GROUP 271902Z FEB 53 | SECURITY CLASSIFICATION

PRECEDENCE FOR: | ACTION ROUTINE | INFORMATION

☐ BOOK MESSAGE | ☒ ORIGINAL MESSAGE

☐ MULTIPLE ADDRESS | CRYPTOPRECAUTION ☐ YES ☒ NO

REFERS TO MESSAGE:

IDENTIFICATION | CLASSIFICATION

FROM: AFOIN-ATIAE-2-11-2 FOR AFOIN-K

Reference: Telecon 727, 26 Feb 53, CSAF Item #2. ATIC concurs on proposed press release to accompany movies taken by Warrant Officer Lewistown. Suggest you might change fourth sentence to read, Quote: Examination of the film to date allows deduction that the images were caused by surfaces having good light reflective qualities, such as sea gulls, or balloons, or by bodies or substances possessing high intensity light sources. Unquote. Since many people who have been asked to comment on these films have stated that they firmly believed the objects to be sea gulls or balloons, wording the above sentence to include those items indicates the Air Force has given this possibility some thought yet it does not state that we can prove they are balloons or sea gulls.

In reply cite Project Blue Book.

COORDINATION:

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DOD DIR 5200.10

ANALYSIS DIVISION FILE
10073
FILE NUMBER

SECURITY CLASSIFICATION | PAGE | INITIALS | DATE

DRAFTER'S NAME (or signature, when required)
Capt R. J. Ruppelt/vs

UNCLASSIFIED

RELEASING OFFICER'S SIGNATURE
ROBERT M. LAWRENCE, Lt Col, USAF

SYMBOL ATIAE-5 | TELEPHONE 55365 | OFFICIAL TITLE AIR ADJUTANT GENERAL

DD FORM 1 OCT 49 173 REPLACES NME FORM 173, 1 MAY 48, WHICH MAY BE USED.

16—68923-3 ☆ U. S. GOVERNMENT PRINTING OFFICE

ATIAE BRANCH FILE

Appendix III

Separator Number	Diameter Shank	Diameter Upper	Diameter at Lower	Approximate Length of Separator	Slip Fit
1	0	1160	1160	11	Loose
2	1167	1286	1225	12	Loose
3	1267	1300	1313	13 1/2	Loose
4	1300	1370	1370	17	Loose
5	1370	1410	1410	15 1/2	Loose
6	1410	1450	1410	14 1/2	Loose
7	1430	1480	1460	14	Loose

This Case Includes

ONE (1) 7½" x 11" photo
and ONE (1) 2¼" x 2¼"
photo.

CR [redacted]

7 miles north of Tremonton, Utah

1110 MST 2 July 1952

Driving on highway -- Wife noticed objects

Group of objects milling about in rough formation

No reference points by which to estimate speed, distance or size

Size to small on photo to show detail

Poss. Explanation -- Pillow balloons or Birds

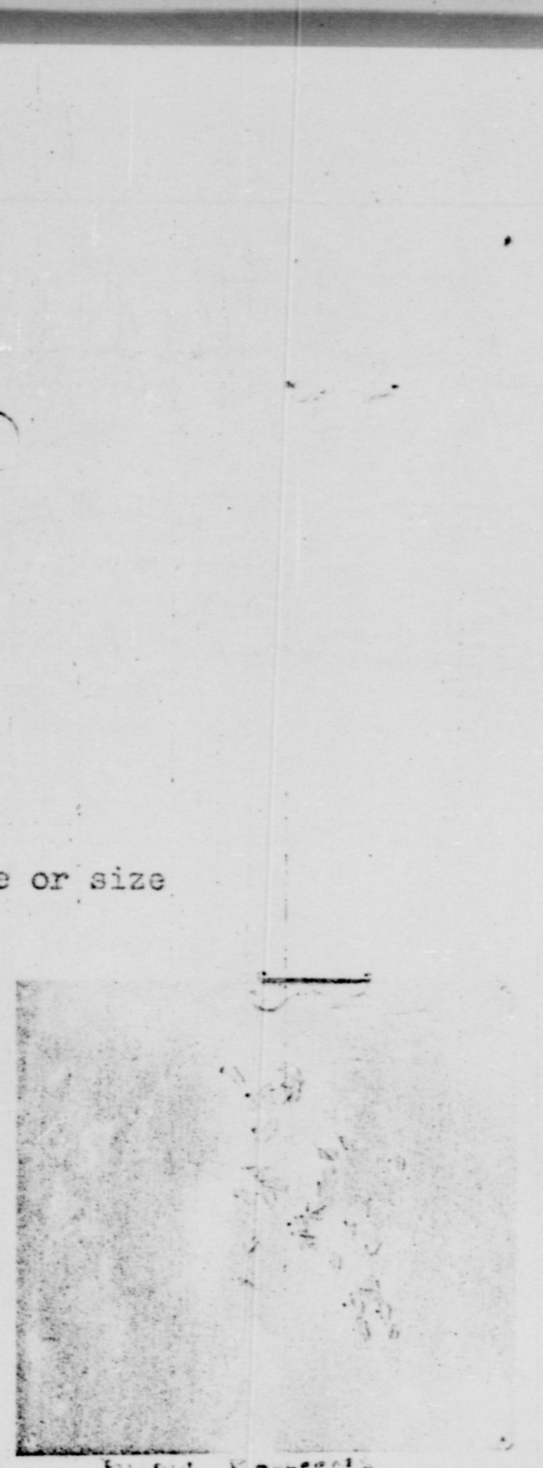
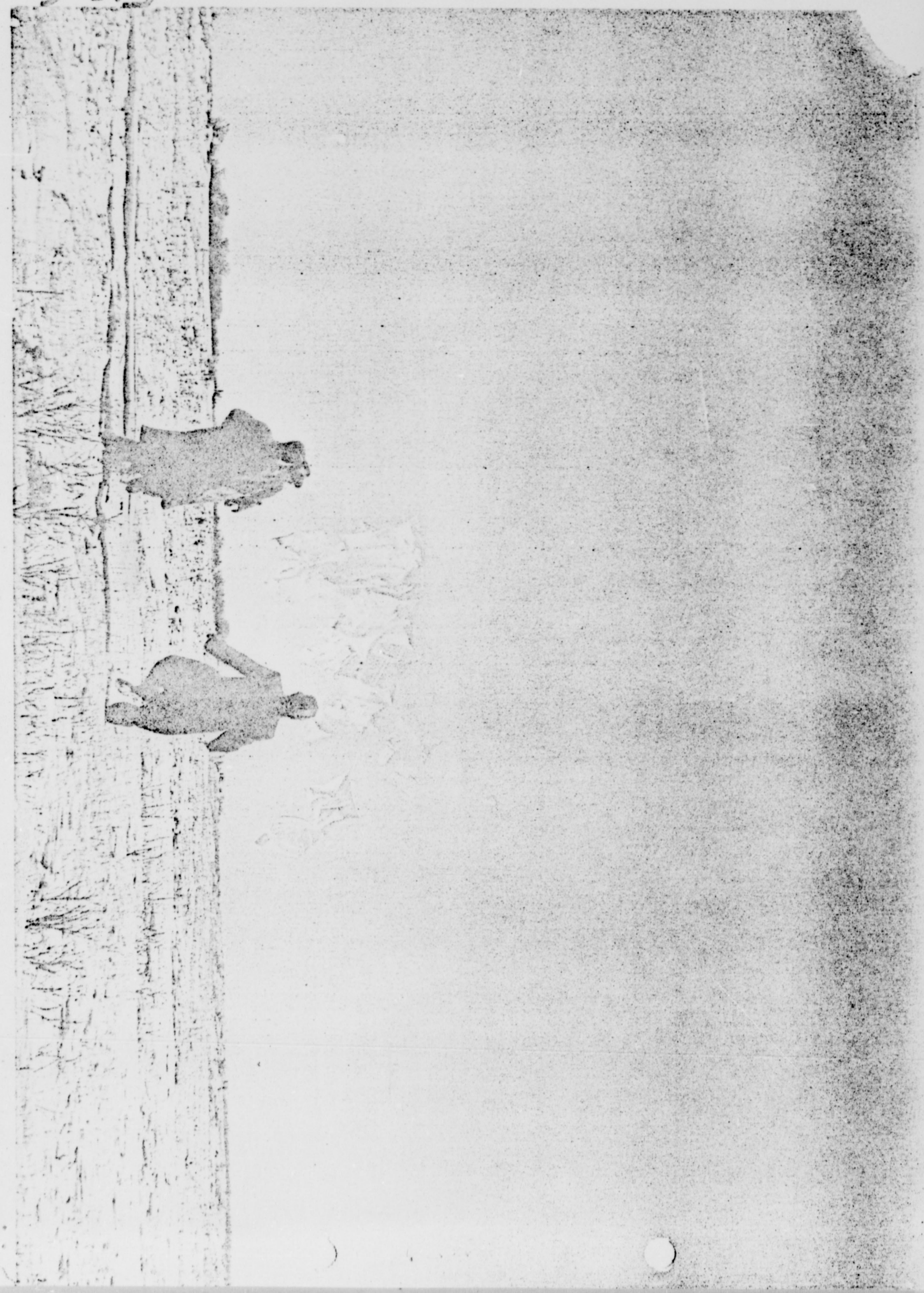


FIG. 6



General Mills Research
Laboratories
2010 E. HENNEPIN AVE.
MINNEAPOLIS 13, MINN.

Photo Laboratory No. [illegible]

Date

Use are "pillow balloons" 2' x 2'. At altitudes and with a cloud or adverse background — these could give a "saucer" appearance when laying in a flat, horizontal position

DOUGLAS AIRCRAFT COMPANY, INC.

Analysis of Photographic Material

PHOTOGRAMMETRIC ANALYSIS OF THE "UTAH" FILM

TRACKING UFO'S

SANTA MONICA DIVISION

PHOTOGRAMMETRIC ANALYSIS OF THE "UTAH" FILM

TRACKING UFO'S

Several Unidentified Flying Objects (UFO's) were sighted and photographed at about 11:10 MST on July 2, 1952 by [redacted] at a point on State Highway 30, seven miles north of Tremonton, Utah (latitude 41° 50', longitude 112° 10'). Mr. [redacted], a Chief Warrant Officer in the U. S. Navy *, was in transit from Washington, D. C. to Portland, Oregon. A map of the area is included as figure 1.

He, his wife and their two children were making the trip by car. Shortly after passing through the city of Tremonton, his wife noticed a group of strange bright shining objects in the air off towards the eastern horizon. She called them to her husband's attention and prevailed upon him to stop the car. When he got out, he observed the objects (twelve to fourteen of them) to be directly overhead and milling about. He described them as "gun metal colored objects shaped like two saucers, one inverted on top of the other". He estimated that they subtended "about the same angle as B-29's at 10,000 feet" (about half a degree - i.e., about the angular diameter of the moon). Next, he ran to the trunk of his car, took out his Bell and Howell Automaster 16mm movie camera equipped with a 3" telephoto lens, loaded it, focused it at infinity and began shooting. There was no reference point above the horizon so he was unable to estimate absolute size, speed or distance. He reports that one of the objects reversed its course and proceeded away from the rest of the group; he held the camera still and allowed this single object to pass across the field of view of the camera, picking it up later in its course. He repeated this for three passes.

During the filming, [redacted] changed the iris stop of the camera from f/8 to f/16. The density of the film can be seen to change markedly at a point about 30% through the sequence (figure 5(b) at f/8 and the other blowups at f/16). The camera was operated at 16 fps.

The color film (Daylight Kodachrome) after processing was submitted to his superiors. The Navy forwarded the film to the USAF-ATIC where the film was studied for several months. According to Al Chop (then with ATIC and presently with DAC) Air Force personnel were convinced that the objects were not airplanes; on the other hand the hypothesis that the camera might have been out of focus and the objects soaring gulls could neither be confirmed nor denied. Mr. Chop's remarks are essentially substantiated by Capt. Edward Ruppelt, reference (1) then head of Project "Blue Book" for ATIC.

---

* At the time he had already logged some 2,200 hours as a chief photographer with the Navy.

This "Utah" film clip together with a "Montana" UFO film clip (Analysis of Photographic Material, Serial 01) came into the possession of Green-Rouse Productions at Samuel Goldwyn Studios, 1041 North Formosa Street, Hollywood, who incorporated both film clips as significant evidence in a Documentary Film, "Unidentified Flying Objects" for release by United Artists to public theaters by May 9, 1956.

A 35mm reprint of the Newhouse "Utah" film was submitted by the Studio to Douglas Aircraft Company for examination. Visual study of the reprints on the Recordak and astronomical plate measuring engine revealed the following: the film comprises about 1,200 frames; on most of the frames there appear many round white dots, some elliptical. The dots often seem clustered in constellations, or formations which are recognizable for as long as seventeen seconds. A relative motion plot (obtained from an overlay vellum trace on the Recordak) of two typical formations are presented in figures 2a and 2b. The objects seem to cluster in groups of two's and three's, see actual blowups, 4a, 5b, and 6c. On some frames they flare up and then disappear from view in 0.25 seconds or less and sometimes they appear as a randomly scattered "twinkling" of dots. The dot images themselves show no structure; they are white and have no color fringes. Examination under a microscope shows the camera to be well focused as the edges of the images are sharp and clear on many of the properly exposed frames. Angular diameters range from about 0.0016 to 0.0004 radians. Their pattern of motion is essentially a curvilinear milling about as shown in figure 2a and 2b. Sometimes the objects appear to circle about each other. There are no other objects in the field of view which might give a clue as to the absolute motion of the cluster.

In the overlay trace, figure 2, the frame of reference is determined by a certain object whose relative motion during a sequence of frames remains rather constant (indicated in the figures). This object is used as a reference point and the lower edge of the frame as abscissa. Assuming the camera to have been kept reasonably uncanted, the abscissa would be horizontal and the ordinate vertical. In the overlay trace, figures 3a and 3b, the particular frame itself is used as the reference. Assuming the camera was held steady (there is an unconscious tendency to pan with a moving object) the coordinate system is quasi-fixed. It is realized that both of these coordinate systems are in actuality moving, possibly possessing both velocity and acceleration.

No altitude or azimuth determination can be made because of lack of background. The only measurable quantities of interest are therefore the relative angular distances between the objects and their time derivatives. Graphs of two typical time variations of relative angular separation and velocity are included as figures 7 and 8. The relative angular velocity is seen to vary from zero to 0.0065 radians per second. The relative angular acceleration had a maximum value of 0.0036 radians per second squared. Supposing the camera was kept stationary the average angular velocities for the object moving across the field are 0.039 and 0.031 radians per second for figures 3a and 3b. The angular velocities in these sequences sometimes vary erratically from 0.07 to 0.01 radians per second. This variation may be attributed in part to camera "jiggling" and in part to the object's

motion. The decrease in average angular velocity between 3(a) and 3(b) could be due to the object's having regressed between filmings just as was reported by [redacted]. Also the average image diameter decreases about 30% over the entire film, indicating a possible over-all regression of the objects.

The following tabulation indicates the hypothetical transverse component of relative velocities and accelerations at various distances. It is noted that the transverse velocity may be only a fraction of the total velocity so that the numbers actually indicate minimum values.

If the object's distance was	Its transverse velocity was	Its transverse acceleration was	Velocity of single object was
100 feet	0.65 ft/sec or 0.44 mph	0.36 ft/sec^2 or 0.011 g	3.8 ft.sec or 2.7 mph
1000 feet	6.5 ft/sec or 4.4 mph	3.6 ft/sec^2 or 0.11 g	39 ft/sec or 27 mph
2000 feet	13 ft/sec or 8.8 mph	7.2 ft/sec^2 or 0.22 g	78 ft/sec or 54 mph
1 mile	23 mph	0.56 g	135 mph
5 miles	115 mph	2.8 g	670 mph
10 miles	230 mph	5.6 g	1300 mph

The objects in the "Utah" and "Montana" films can only be correlated on the basis of two rather weak points. First, their structure, or rather lack of it, is similar. Thus as shown in the "blow-ups", figures 6a and 6b, there are no recognizable differences between them *. Second, the objects on the "Montana" film are manifestly a single pair; on the "Utah" film perhaps 30% of the frames show clusters of objects seemingly also grouped in pairs. See figures 6c and 5b.

The weather report was obtained by the author from the Airport Station at Salt Lake City. The nearest station with available data is Corinne which reported a maximum temperature of 84°, a minimum of 47° and no precipitation. A high pressure cell from the Pacific Northwest spread over Northern Utah during July 2, the pressure at Tremonton would have a rising trend, the visibility good, and the winds relatively light. The absence of clouds and the apparently excellent visibility shown on the films would seem to be in agreement with this report. Through use of references (2) and (3), the sun's azimuth N132°E altitude 65° was computed. No shadows were available to confirm the time of filming.

---

* The images on the "Utah" film appear to be a little brighter. However, possible variations in development techniques would not allow quantitative analysis in this regard.

The image size being roughly that of the Montana film (a few of the objects being perhaps 10% larger than the largest on the Montana) the same remarks as to airplane reflections apply, i.e., they might have been caused by sun reflections from airplanes within one to three miles of the observer, although at these distances they should have been identified as conventional aircraft by the film or the observer. No specific conclusions as to sun reflection angles can be drawn since the line of motion of the objects cannot be confirmed. However, the reported E to W motion of the UFO and their passing overhead coupled with the SE azimuth of the sun would make the achievement of optimal sun reflections rather difficult.

That the images could have been produced by aluminum foil "chaff" * seems possible, at least on the basis of the images shown, as very intense specular sun reflections from ribbons of chaff might flare out to about the size of the UFO.

Examination of figures 4b, 5a, and 5c, obtained from the photogrammetric experiment -- reference Analysis of Photographic Material, Serial 01, Appendix II, show that no significant broadening is produced by flat white diffuse reflectors such as birds, bits of paper, etc. at f/16 under the conditions of the filming. Actual measurements show a slight "bleeding" or flaring of about 10% to 20%.

The rectangular flat white cardboards of the aforementioned experiments represented very roughly the configuration of birds. The light reflected by such a surface is probably greater than that from a curved feather surface of a bird. Figure 4(b) shows the appearance of one and two foot birds. ** (See arrows.) as they might appear on a 16mm frame taken with a 3" telephoto lens f/16 at a distance of 1200', figure 5(a) at 3000' and figure 5(c) at 3300'. Many of the images on the "Utah" film have an angular diameter of 0.0012 radians (some as large as 0.0016 radians), thus they might be interpreted as one foot birds at 600' to 800', two foot birds at 1200' to 1600' or three foot birds at 2400' to 3200'. At these distances, it is doubted if birds would give the appearance of round dots; also they would have been identifiable by the camera if not visually. However, actual movies of birds in flight would have to be taken to completely confirm this conclusion. The following type of gulls have been known to fly at times over this locality: California Herring Gull (a common summer resident), Ring-Billed Gull and the Fork-Tailed Gull, see reference (4).

The images are probably not those of balloons as their number is too great and the phenomenon of flaring up to a constant brightness for several seconds, and then dying out again cannot well be associated with any known balloon observations.

---

* Bits of aluminum foil dumped overboard by planes, often utilized as a countermeasure against anti-aircraft radar. This material might possibly be in the form of large ribbons several feet long and several inches across.

** The dimensions refer to wing spread. The actual exposed white area of a bird is usually less and depends upon the perspective of the observer. This difference has been roughly accounted for in the data given, however, if the body were the principal reflector the distance given should be reduced by a factor of 2 or 3.

Certain soaring insects - notably "ballooning spiders" (reference (5) and (6)) produce bright moving points of light. The author has witnessed such a phenomenon. It is produced by sun reflections off the streamers of silken threads spun by many types of spiders. Caught by the wind, these streamers serve as a means of locomotion floating the spider high into the air. They occasionally have the appearance of vast numbers of silken flakes which fill the air and in some recorded instances extend over many square miles and to a height of several hundred feet. The reflection, being off silk threads, is not as bright as diffuse reflection from a flat white board. Thus no flaring of the images could be expected. The author noted that the sections of the "web" that reflected measured from 1/4" to 1/2" for the largest specimens. Thus the images might be attributed to ballooning spiders at distances of 50 to 100 feet. However, these web reflections ordinarily show up only against a rather dark background and it is doubted if their intensity would be great enough to produce the intense UFO images against a bright sky.

No quantitative densitometer examination of image brightness could be made, as the original film was not available. It is understood from Al Chop that the government analysts did make measurements of this kind on the original films and found the Utah images to be very intense *.

Besides the above remarks, pertinent to the actual images, several facts can be gleaned from the motion of objects. The observations are not apt to support the supposition that the objects were conventional aircraft as the maneuvers are too erratic, the relative accelerations probably ruling out aircraft at distances of over five miles. Several observers familiar with the appearance of chaff have seen the film and concluded that the persistence of the nontwinkling constellations, their small quantity, and the reported absence of aircraft overhead makes chaff unlikely. Furthermore, the single object passing across the field of view would be most difficult to explain on the basis of chaff. These same remarks would apply also to bits of paper swept up in thermal updrafts.

The relative angular velocity might be compatible with soaring bird speeds at distances of less than one mile, the angular velocity of the single object could be attributed to a bird within about one thousand feet. There is a tendency to pan with a moving object - not against it - so the velocities in the table probably represent a lower bound. The motion of the objects is not exactly what one would expect from a flock of soaring birds (not the slightest indication of a decrease in brightness due to periodic turning with the wind or flapping) and no cumulus clouds are present which might betray the presence of a strong thermal updraft. On the other hand the single object might represent a single soaring bird which broke away in search of a new thermal -- quite a common occurrence among gulls -- see reference (7).

---

* In fact, "burned right down to the celluloid backing". See also reference (1).

That the air turbulence necessary to account for their movement if they were nearby inspects (even the single object's motion!) is possible, can be concluded from examination of reference (8). However, if the objects were nearby spider webs the lack of observed or photographed streamers is unusual. Furthermore, the fact that they were visible from a moving car for several minutes is hard to reconcile with localized insect activity.

The phenomenon of atmospheric mirages, reference (9), might conceivably account for the images. Such a hypothesis is hampered by the clear weather conditions and the persistence and clarity of the images. Also no "shimmering" can be detected and the motion is steady. Again the object which breaks away would be difficult to explain.

It has been suggested that spurious optical reflections or light leaks in the camera might be responsible. Examples of such effects have been examined and found to be quite different from the UFO's.

The evidence remains rather contradictory and no single hypothesis of a natural phenomenon yet suggested seems to completely account for the UFO involved. The possibility of multiple hypotheses, i.e. that the Utah UFO's are the result of two simultaneous natural phenomena might possibly yield the answer. However, as in the case of the "Montana" analysis, no definite conclusion could be obtained.

R. M. L. Baker, Jr.
May 16, 1956


American Falls Reservoir
Aberdeen
Alameda
Pocatello
Inkom
Portneuf Reservoir
Chesterfield
Wayan
Blackfoot River Reservoir
Thayne
Bedford
Turnerville
Auburn
Minidoka
Wapi
American Falls
Bancroft
Conda
Soda Springs
Lake Walcott Reservoir
Bannock Peak
McCammon
Lund
Lava Hot Springs
Central
Grace
Rockland
Deep Creek Peak
Arimo
Virginia
Meade Peak
Georgetown
Sherman Peak
Lago
Downey
Liberty
Bennington
Geneva
Montpelier
Malta
Elba
Sublett
Cleveland
Treasureton
Ovid
Paris
Dingle
Oxford
Malad City
Clifton
Mink Creek
Bloomington
Holbrook
Samaria
Dayton
Weston
Preston
Pegram
St. Charles
Naf
Strevell
Stone
Franklin
Fish Haven
Bear Lake
Lake Garden City
Portage
Trenton
Clarkston
Newton
Richmond
Smithfield
Laketown
Snowville
Kelton Pass
Plymouth
Fielding
Park Valley
Observation
Collinston
Hyde Park
Logan
Sage
Kelton
Bothwell
Cedar Spgs
Tremonton
Elwood
Deweyville
Mendon
Providence
Millville
Hyrum
Wellsville
Randolph
Spring Bay
Bear River City
Honeyville
Woodruff
Promontory
Corinne
Brigham
Mantua
Perry
Willard
Great Salt Lake
Bear River Bay
Plain City
North Ogden
Gunnison Island
Promontory Point
Huntsville
Ogden
South Ogden
Wasatch
Hooper
Clearfield
Weber
Layton
Devils Slide
Desert Peak
Fremont Island
Bird Island
Carrington I.
Kaysville
Farmington
Bountiful Peak
Centerville
Bountiful
Woods Cross
Antelope Island
FORT DOUGLAS
Salt Lake City
Hoytsville
Echo City
Henefer
Coalville
Peoa
Oakley
Hayden Pk
Hoyt Park
Kamas
Knolls
Delle
Lake Point
Midvale
Sandy
Park City
Keetley
Draper
Alpine
Midway
Heber
Charleston
Grantsville
Tooele
Bacchus
Murray
Lark
Riverton
Bingham Canyon
Stockton
Desert Peak
11031
TIMPANOGOS CAVE NAT. MONUMENT
Pleasant Grove
Wallsburg
Johnson's Pass
Ophir
N
W
E
S

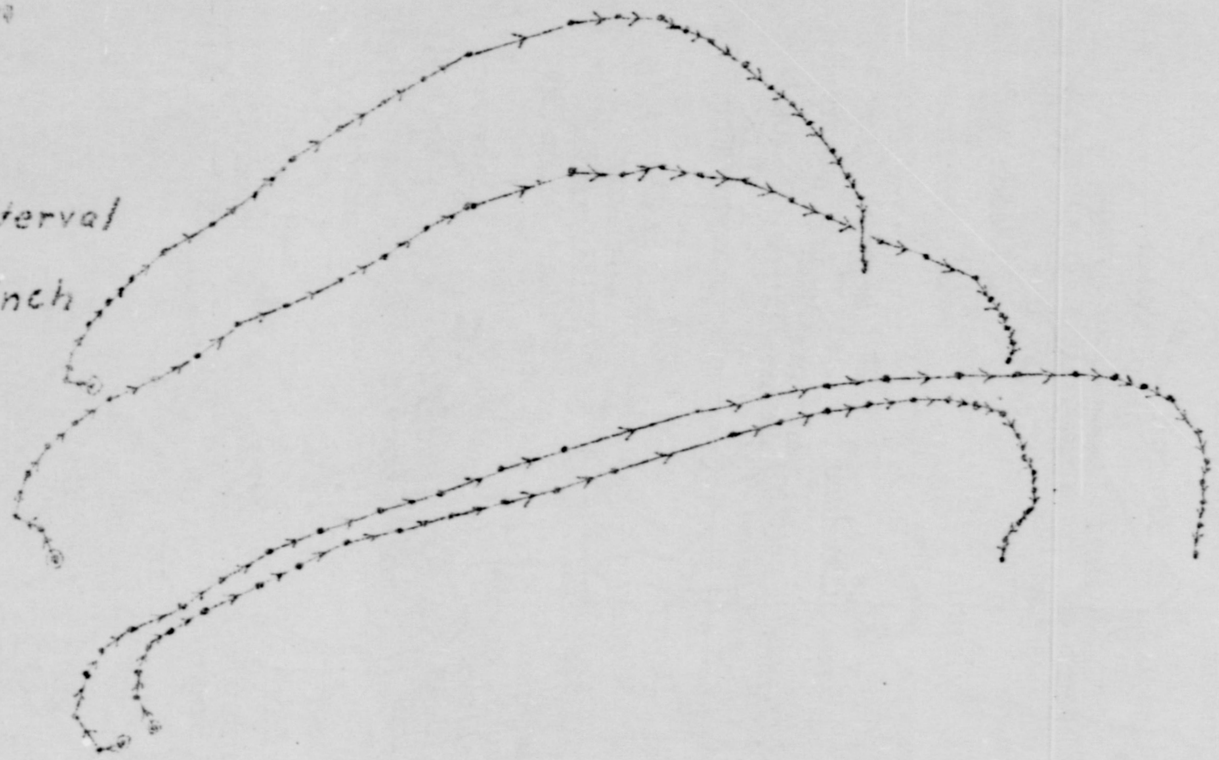
FIGURE 1

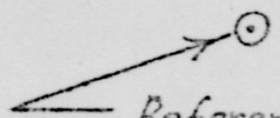
Figure 2

Relative Motion of UFO System

a.) 0.25 Second Interval

0.01 Radians/Inch





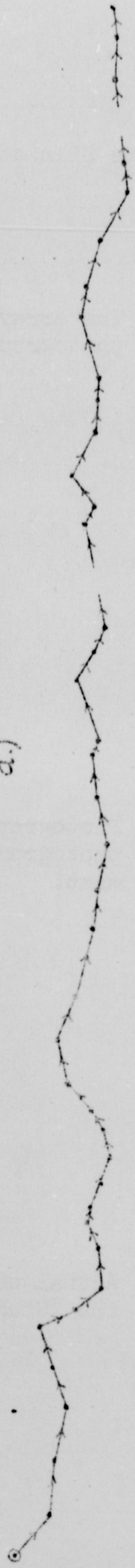
Reference Object for a.)

b.) 1.00 Second Interval

0.02 Radians/Inch



Reference Object for b.)



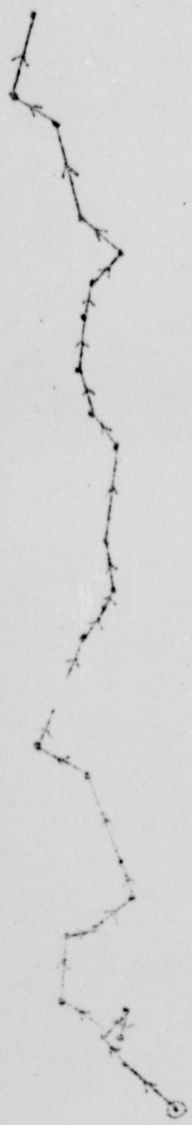


Figure 3.

Motion of UFO Across the Field of View

1/16 Second Interval 0.01 Radians/Inch

FIGURE 4

Enlarged frames taken from 16mm Daylight Kodachrome film at f/16, 16 fps.*

a) The array of objects photographed.

b) Photograph from the photogrammetric experiment.

c) Actual shot taken from the "Utah" film.

---

* All frames are of the same magnification.

FIGURE 5

Enlarged frames taken from 16mm Dalyight Kodachrome film at f/16, 16 fps. *

a) Photogram from the photogrammetric experiment.

b) Actual shot taken from the "Utah" film (at f/8).

c) Photograph from the photogrammetric experiment.

* All frames are of the same magnification.

FIGURE 6

Enlarged frames taken from 16mm Daylight Kodachrome film at f/16, 16 fps. *

a) Actual shot taken from the "Utah" film.

b) Actual shot taken from the "Montana" film (at f/22).

c) Actual shot taken from the "Utah" film.

* All frames are of the same magnification.

FIGURE 7

Graph of Relative Angular Position vs Time

Relative Angular Position, Radians

Time, Seconds

ALBANENE 1951

FORM 25 149
(REV. 3-54)

PREPARED BY: R.M.L. Baker Jr. DOUGLAS AIRCRAFT COMPANY, INC. PAGE:

CHECKED BY: DIVISION MODEL:

DATE: April 8, 1956

TITLE: REPORT NO.: 02

FIGURE 8

Graph of Relative Angular Position

Graph of Relative Angular Velocity

ALBANENE 1561

Photogrammetric
Analysis of "Utah" Film

Serial 02

REFERENCES

(1) Ruppelt, E. J. "The Report on Unidentified Flying Objects". Doubleday and Co., 1956.

(2) The "American Nautical Almanac", 1952.

(3) H.O. No. 214, "Tables of Computed Altitude and Azimuth for Latitudes 40° to 49°.

(4) "Report on Ornithological Specimens", Engineering Department, U.S. Army, Washington, 1874.

(5) Warburton, C. "Spiders", Cambridge 1921, p. 34.

(6) McCook, "American Spiders and Their Spinning Work", Philadelphia, 1893.

(7) Headley, F. W., "The Flight of Birds", Witherby and Co., 1912.

(8) Geiger, Rudolf, "The Climate Near the Ground", Harvard Univ. Press, 1950.

(9) Menzel, D. H., "Flying Saucers", Harvard Univ. Press, 1953.

Address Reply To
OFFICER-IN-CHARGE
And Refer To No.

NT4-28/ 8310/177283

AVIATION SUPPLY DEPOT
NAVAL SUPPLY CENTER
OAKLAND 4, CALIFORNIA

11 August 1952

From: Chief Photographer [redacted], U. S. N.
To: Commanding Officer, Hill Air Force Base, Ogden, Utah

Subj: Motion Pictures of Unidentified Objects in Air

Encl: (1) One (1) fifty-foot roll of processed 16mm color motion picture film

1. Enclosure (1) is forwarded herewith for whatever value it may have in connection with your investigation of the so-called "Flying Saucers". Pertinent data follows:

Place: About 7 miles north of Tremonton, Utah on U. S. Highway No. 30S.

Time: 1110 Wednesday 2 July 1952.

Camera: B&H Automaster, magazine load, 3" telephoto lens, 16 frames per second. Handheld.

Exposure: First few feet - f:8. Balance - f:16. Clear sun, cloudless sky. EKCo Kodachrome film - Daylight. Exposure was changed with the mistaken idea of darkening the sky to gain greater contrast. The result was merely general under exposure.

General Background: Driving from Washington, D. C. to Portland, Oregon, on the morning of 2 July my wife noticed a group of objects in the sky that she could not identify. She asked me to stop the car and look. There was a group of about ten or twelve objects - that bore no relation to anything I had seen before - milling about in a rough formation and proceeding in a westerly direction. I opened the luggage compartment of the car and got my camera out of a suitcase. Loading it hurriedly, I exposed approximately thirty feet of film. There was no reference point in the sky and it was impossible for me to make any estimate of speed, size, altitude or distance. Toward the end one of the objects reversed course and proceeded away from the main group. I held the camera still and allowed this single one to cross the field of view, picking it up again and repeating for three or four such passes. By this time all of the objects had disappeared. I expended the balance of the film late that afternoon on a mountain somewhere in Idaho.

[redacted]

UNCLASSIFIED

Mtl-28/8310/177283 Subj: Motion Pictures of Unidentified Objects in Air

OOI (11 Aug 52) 1st Ind

HQ OOAMA, Hill Air Force Base, Utah, 28 August 1952

TO: Director of Intelligence, Headquarters, USAF, Washington 25, D. C.

1. This report of unidentified flying objects is submitted in accordance with AFL 200-5, dated 29 April 1952.

2. This report is submitted in this form in lieu of submission of AF Form 112, Air Intelligence Information Report, since all information available on this subject is contained in the basic communication.

FOR THE COMMANDING GENERAL:

KERMIT R. KANN
Colonel, USAF
Inspector General

1 Incl
50' roll of processed film

Info cy: Air Technical Intelligence Center, Wright-Patterson AFB, Ohio

To ATIC by DF

Receipt acknowledged by Ltr 9/18/52

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DOD DIR 5200.10

C-143

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DISPOSITION FORM

UNCLASSIFIED

SECURITY CLASSIFICATION (If any) [redacted]

FILE NO.

SUBJECT (Restricted) Movie Film of Flying Objects Taken 2 Jul 52, Vicinity of Tremonton, Utah (Fm: Salt Lake)

TO: Chief, Air Technical Intelligence Center, Wright-Patterson AFB

FROM: Dept of the Air Force, Hq USAF - AFOIN-2A2

DATE: 8 Sept 52

COMMENT NO. 1: Maj Fournet/fh/71016

1. Subject film, received this office 5 Sep 52, is inclosed for appropriate action. Duplicate of report submitted by the photographer, CPO [redacted] (177283, USN), is inclosed for your information in the event that the copy forwarded to you by the IG, Hill AFB, Utah has not been received.

2. A message was dispatched to the CG, WADF on 6 Sep 52, with information copy to you, requesting that an intelligence officer interview CPO [redacted] and determine additional details of the sighting, if available.

3. A message was also dispatched to the CO, Hill AFB, Utah requesting weather information for the period and vicinity in question. An information copy was dispatched to you.

4. It has been ascertained from the Naval Observatory, Washington, D.C. that the position of the sun at the time(1810Z hours, 2 July 52) and the location (4145N - 11210W) in question was 64.5° elevation and 131° azimuth.

5. Suggest the film be submitted to the WADC Photo Lab for complete analysis as soon as possible. The following are suggested questions for this analysis which, if answered, should facilitate evaluation of the incident:

a. Are images made by light source or reflection?

b. Any indication of what kind of objects could have caused images? Is there any bird sufficiently actinic to cause images? Could they have been caused by aircraft or balloons?

c. What causes impression that some objects at times appear to become 2 or 3 where there was originally one, or, conversely, 2 or 3 objects at times appear to merge into one.

d. Do all objects have same characteristics?
   (1) Same apparent shape?
   (2) Same color?
   (3) Same relative size?
   (4) Same general motion?

e. What are shape(s), color(s) and relative size(s) of objects?

f. To what can the "fade-in" and "fade-out" of the objects be attributed?

g. What type motion is attributable to the objects (about their own axis as well as about axis of flight path)?

h. Is there any accelleration evident in their motion along flight path axis?

i. Can the motion of the camera (panning and joggling) be allowed for

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DA AGO FORM 1 OCT 47 897 Replaces WD AGO Form 897, 1 May 46, which may be used. 16—54801-1 U. S. GOVERNMENT PRINTING OFFICE

sufficiently to permit determination of the angular velocity of objects which cross the field of view? (Reference particularly the single object which crosses field; photographer states that camera was held motionless while object crossed field of view.)

j. Determine patterns of flight from position plots for each frame, then:

(1) Is there any recurring pattern in the relative position of the objects?
(2) Do they maintain same relative positions in formation during any maneuvers, particularly violent maneuvers?
(3) Is relative position maintained coincidental with movement about their axes?
(4) If undulating motion is present among a number of objects which are maintaining a semblance of formation, do those objects undulate in phase? Ditto for tumbling motion?
(5) Is there any indication of abrupt changes in direction of flight path through fairly large angles (e.g. 90° or more during interval of 2 or 3 frames)?
(6) Do any objects appear to remain motionless at the same time that others move about?
(7) Can all objects be accounted for at all times or do some literally disappear while still well within field of view?

6. Although [redacted]e did not request that the film be returned to him, it is recommended that the final footage (of the mountain scenery) be returned to him immediately and that he be asked if he is willing to accept a duplicate of the initial footage in lieu of the original. If his reply is affirmative, suggest the duplicate be forwarded whenever available.

7. Request advice of the analytical results as soon as available.

William A. Adams

2 Incls: (w/orig only)
1. Cy of ltr fr [redacted], dtd 11 Aug 52
2. Roll of exposed 16mm film.

WILLIAM A. ADAMS
Colonel, USAF
Chief, Topical Division
Deputy Director for Estimates
Directorate of Intelligence

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[redacted]

[redacted]

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Mtl-28/3310/177283 Subj: Motion Pictures of Unidentified Objects in Air

OOI (11 Aug 52) 1st Ind

HQ OOAMA, Hill Air Force Base, Utah, 28 August 1952

TO: Director of Intelligence, Headquarters, USAF, Washington 25, D. C.

1. This report of unidentified flying objects is submitted in accordance with AFL 200-5, dated 29 April 1952.

2. This report is submitted in this form in lieu of submission of AF Form 112, Air Intelligence Information Report, since all information available on this subject is contained in the basic communication.

FOR THE COMMANDING GENERAL:

KERMIT R. KANN
Colonel, USAF
Inspector General

1 Incl
50' roll of processed
film

√Info cy: Air Technical Intelligence
Center, Wright-Patterson
AFB, Ohio

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DOD DIR 5200.10

[redacted]

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COPY

AVIATION SUPPLY DEPOT
NAVAL SUPPLY CENTER
OAKLAND 4, CALIFORMIA

MT4-28/8310/177283

11 August 1952

From: Chief Photographer [redacted] U. S. N.
To: Commanding Officer, Hill Air Force Base, Ogden, Utah

Subj: Motion Pictures of Unidentified Objects in Air

Encl: (1) One (1) fifty-foot roll of propessed 16mm color motion picture film

1. Enclosure (1) is forwarded herewith for whatever value it may have in connection with your investigation of the so-called "Flying Saucers". Pertinent data follows:

Place: About 7 milesnorth of Tremonton, Utah on U. S. Highway No. 30S.

Time: 1110 Wednesday 2 July 1952.

Camera: B&H Automaster, magazine load, 3" telephoho lens, 16 frames per second. Handheld.

Exposure: First few feet - f:8. Balance - f:16. Clear sun, cloudless sky. EKCo Kodachrome film - Daylight. Exposure was changed with the mistaken idea of darkening the sky to gain greater cort rast. The result was merely general under exposure.

General Background: Driving from Washington, D. C. to Portland, Oregon, on the morning of 2 July my wife noticed a group of objects in the sky that she could not identify. She asked me to stop the car and look. There was a group of about ten or twelve objects.- that bore no relation to anything I had seen before - milling about in a rought formation and proceeding in a westerly direction. I opened the luggage compartment of the car and got my camera out of a suitcase. Loading it hurriedly, I exposed approximately thirty feet of film. There was no reference point in the sky and it was impossible for me to make any estimate of speed, size, altitude or distance. Toward the end one of the objects reversed course and proceeded away from the main group. I held the camera still and allowed this single one to cross the field of view, picking it up again and repeating for three or four such passes. By this time all of the objects had disappeared. I expended the balance of the film late that afternoon on a mountain somewhere in Idaho.

/S/
[redacted]

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CSAF ITEM NBR 7 /[redacted]

[redacted]

TT 3 Y

ACTION

TO ATIAA-5 RUPPELT FR AFOIN-2A2 FOURNET

REF 2 JULY 52 MOVIES VIC TREMONTON UTAH.

IN ADDITION TO PREVIOUSLY RECOMMENDED

ANALYSIS, SUGGEST CHECKING TIME INTERVAL

BETWEEN INSTANTS OF MAXIMUM "GLOW" OF

INDIVIDUAL OBJECT, I. E. BLINKING EFFECT. AND

IF THIS IS OBTAINABLE, IS INTERVAL UNIFORM

FOR A SINGLE OBJECT AND FOR ALL OBJECTS

WHICH EXHIBIT THIS CHARACTERISTIC? IT SHOULD

BE INTERESTING TO CORRELATE THESE RESULTS

WITH OTHER RPTS WHICH MENTION BLINKING

INTERVALS IN CONNECTION WITH SIGHTINGS OF

LIGHTS AND/OR REFLECTIVE OBJECTS.

END CSAF ITEM NBR 7 /[redacted]

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[redacted]

AFOIN-2A2 Mn(Aurnet/Th/75990/Sn 43 864
wrtn 24 Oct 52

[redacted]

AFOIN-2A2

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MEMORANDUM FOR: Director of Naval Intelligence
Attention: Op 922Y5

SUBJECT: Interpretation of Movies of Unidentified Flying Objects

1. The attached movies (see Incl. 1) are possibly the best documentary evidence yet obtained on unidentified flying objects. They have been analyzed by an Air Force photographic laboratory. However, it is our desire to obtain an independent analysis by a separate laboratory in order that we may better interpret the implications of these data. For this reason, it is requested that as complete an interpretation as possible be rendered by a Navy activity.

2. Circumstances surrounding the photography are summarized in Inclosure 2. Additional details were requested by messages which are included as Inclosures 3 and 5 and were obtained in the replies attached as Inclosures 4 and 6. With regard to Inclosures 5 and 6, the final footage of film referred to has been detached and returned to [redacted]. However, it was deduced from this portion that Newhouse obtained excellent results while hand-holding the camera; there was almost no camera motion evident. This deduction was applied to the analysis of that portion of the film depicting the motion of the single object which detached itself from the group as explained in Inclosure 2.

3. A list of representative questions for the interpretation is attached as Inclosure 7. These questions are indicative of the type data desired. Any additional data which can be obtained would be most welcome, particularly as concerns the light intensity of the objects, the formations (including three-dimensional renditions, if possible), comments regarding the possibility that the images were caused by aircraft and the conditions which must have prevailed for aircraft to produce such images, etc.

4. It was determined from the Naval Observatory, Washington, D.C. that the position of the sun at the time and location of the photography was 64.5° elevation and 131° azimuth.

5. Your cooperation in satisfying this request at the earliest practicable time is earnestly solicited.

[redacted]

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AFOIN-2A2 Stayback copy

[redacted]

Memorandum for: Director of Naval Intelligence, Attn: Op 922X5
Subject: Interpretation of Movies of Unidentified Flying Objects (continued)

6. For additional data or referral of specific questions, Colonel W.H. Smith of the Current Intelligence Branch may be contacted direct. His telephone number is 71015.

7 Incls.
1. Movie (w/o ltr only)
2. Cy of ltr fr [redacted]
3. Cy of AFOIN 57264
4. Cy of CAFIN 65202
5. Cy of AFOIN 59732
6. Cy of CAFIN 74096
7. List of questions

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[redacted]

TREMONTON

Mr. M. A. Monts
Air Force Press Room
Room 2E761, Pentagon

1 June 1956

MEMORANDUM FOR DIRECTOR OF INTELLIGENCE
Attn: Lt Colonel T. R. Johnson, AFOIN-X

SUBJECT: (Uncld) UFO Movie

1. The following statements concerning two of the UFO sightings described in the recently released movie, are submitted in response to Mr. Monts' request of 29 May 1956.

a. [redacted] - Montana - 1950. The original Air Force conclusion, based on the interrogation of witnesses and the evaluation of the data, was that the UFOs were, in all probability, two Air Force F-94 fighter aircraft known to be in the vicinity at the time.

Simulated photographs of aircraft at various distances, made by an aircraft manufacturing firm in a recent independent and unsolicited analysis of the Marianna film, show striking similarity to the two white blops in this film.

Based on the degree of credibility accorded this early ATIC evaluation and the strong corroborative evidence supplied by the recent independent analysis, the Air Force has no compelling reason to alter its original conclusion.

b. The [redacted] Case - Utah - 1952. The original film was analyzed by an Air Force Photo Reconnaissance Laboratory shortly after the sighting. The conclusion reached was that a strong possibility existed that the bright spots of light appearing on the film were caused by seagulls soaring in thermal air currents. The credibility of the conclusion was undoubtedly supported by the presence of identifiable seagulls in some of the frames.

This conclusion was further strengthened by movies of seagulls, taken at various distances, which showed them as bright spots of light similar to those in the [redacted] film.

Mr. M. A. Monts, Air Force Press Room, Room 2E761, Pentagon

Memo to D/I (OIN-X), (U) UFO Movie, 1 Jun 56

A recent analysis of the Newhouse film, made by Air Force photo specialists totally unaware of the previous history of this case, yielded the opinion that the bright spots of light on the film were bird reflections in the strong sunlight.

The unanimity of opinion present in all evaluations made in this case leaves little reasonable doubt that the UFOs in the [redacted]ilm were indeed seagulls.

2. Attached is a copy of this memo to be given to Mr. M. A. Monts in the Air Force Press Room in the Pentagon.

JOHN G. ERIKSEN
Colonel, USAF
Deputy Commander

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON 25, D. C.

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IN REPLY REFER TO
Op-322Y5/rtm

5 December 1952

[redacted]

FIRST ENDORSEMENT on PIC ltr ser 0263 of 5 Dec 1952

From: Director of Naval Intelligence
To: Chief, Topical Division, USAF, AFOIN 2A2

Subj: Interpretation of Movies of Unidentified Flying Objects; progress report on

Ref: (c) Dept of Air Force ltr file AFOIN-2A2 of 24 Oct 1952

1. Readdressed and forwarded in compliance with the request contained in reference (c) above and reference (b) of the basic letter.

J. M. Gallagher

J. M. GALLAGHER
By direction

[redacted]

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[redacted]
A subord-nate activity
of U.S. Naval
Photographic Center)

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U. S. NAVAL PHOTOGRAPHIC INTERPRETATION CENTER
U. S. Naval Receiving Station
Washington 25, D. C.

for PEACE OF MIND- BUY SAVINGS BONDS

01/HWW:gcl
All

Serial: [redacted]

DEC 8 1952

CONFIDENTIAL
SECURITY INFORMATION

From: Officer in Charge
To: Chief, Naval Operations

Subj: Interpretation of Movies of Unidentified Flying Objects; progress report on

Ref: (a) Conf ltr DNI OP322Y5/rtm, dtd 27 Oct 1952 with enclosures thereto

(b) Memo, Chief, Topical Division, USAF, AFOIN 2A2 dtd 24 Nov 1952 with enclosures thereto

Encl: (1) Copy of enclosure 7 of reference (a)

1. Reference (a) directed the interpretation of movies of unidentified objects taken in Utah, 1952. Included among the enclosures are approximately 30 feet of processed 16mm color motion picture film and a list of questions for guidance in determining the type of analysis desired. This progress report presents the procedures and methods designed to answer some of the questions contained in enclosure 7 and the results obtained as of this date by the Photogrammetry Division, Evaluation Department of this Center.

2. Tests and Procedure. The film exposed in Utah is in very poor condition; dry, brittle and with a tendency to break. After initial viewing, duplication of the film was performed in order to preserve the one originally received. This consumed approximately two weeks. In the duplication process, some color correction was made to permit better viewing of the objects. For convenience in interpretation, the film was divided into three parts, each part being considered an entity. Part I consisted of the footage taken at f8; part II, the footage taken

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[redacted]

at f16 with a panning motion; and Part III, the footage at f16 during which the camera was held steady. Three definite groups of lights were observed throughout the film and plots were recorded as follows:

Area	Control
Parts I and II	Holding to one group
Parts I and II	Holding to one light and direction of another
Parts I and II	Arbitrary 1/2 inch correction per frame for panning
Part III	Holding to frame outline
Parts I and II	None. Every tenth frame to show changes in two apparent formations.

In addition to the above plots; blowups of exposures on opaque and transparent materials were made for stereoscopic study, assignment of magnitudes of light intensities were made frame by frame, and preliminary studies of colored lights conducted.

3. Comments. From the above plots and studies, the following comments keyed to the list of questions contained in enclosure 1 are:

1. It appears to be a light source rather than reflected light.

2. No indication of kind of objects. No bird known to be sufficiently actinic. Could not have been caused by aircraft or balloons.

3. Comments held in abeyance until further stereoscopic study.

4. Objects have same apparent shape, color, and general motion. Relative size is still under study.

5. Images are circular in shape and bluish-white in color.

6. Comments in abeyance.

7. Comments in abeyance.

8. Acelleration is evident.

9. Velocity was computed to be 3780 mph for a shift of 1mm per frame if the object is five miles from the observer.

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From 34 measurements taken from Part III of the film, the maximum and minimum per frame were 0.2889 and 0.0667mm respectively with a mean shift of 0.1729mm. On this basis the mean velocity is 653.5 mph. Differences in mean velocities due to assumption of variance in distance from the observer may be determined by x/5 times 653.5.

10a. There is no recurring pattern in the relative position of the objects in formation. It appears, however, as if the shift in relative positions were regular and that the original formation would be recovered if the continuing action had been recorded. This should be substantiated or refuted upon completion of the stereoscopic study.

b. Comments held in abeyance
c. Comments held in abeyance
d. Comments held in abeyance
e. Yes
f. Comments held in abeyance
g. Certain objects disappear while still well within the field of view.

4. Discussion. There are many theories and conditions concerning the images photographed which can be explained as natural phenomena. In the analysis conducted, no attempt is made to explain the phenomena nor are the comments tempered by knowledge of present day science (although its influence was felt). Comments are as seen, as analyzed, and as computed; and as such, are partly at variance with the natural phenomena theories.

a. Light Source. The opinion that these images are light sources is based on the time they can be viewed continuously on the film, approximately 90 seconds, and on the angle through which they were photographed, approximately 60 degrees. It is felt that if these images were reflected light, blinking would occur during a period of 90 seconds while passing through an angle of 60 degrees when photographed at the rate of 16 frames per second. Although this premise would permit aircraft and balloons to be the source, they are ruled out because of the velocity determination. If aircraft is assumed to be close enough to permit velocities of present aircraft, they would be close enough for positive identification. If they are too far away for positive identification, then the velocity is too great for any aircraft as we know them.

b. Color. Colors were noted as shades of red, green, blue and bluish-white. It appears however, that except for

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the bluish-white, the colors noted are due to color aberrations in the lens and to processing defects, and are not of the objects themselves which can be observed throughout the entire or major portion of the film. It should be pointed out at this point that unless an image appeared in at least five successive frames, it was regarded as a processing defect. This process of elimination left only 11 images analyzed as the objects.

c. Velocity. In the determination of the velocity of the objects, two assumptions were made; (a) the camera was held steady during Part III of the fim, and (b) the objects were moving perpendicular to the optical axis. It is obvious that (b) is a fallacy; however, this assumption will give the minimum velocity and that the actual velocity is greater than computed. It may be possible to apply a correction factor after the completion of the stereoscopic study, although this is doubtful. With these assumptions and knowing the focal length of the camera, the only unknown in the determination of the velocity is the distance from the observer to the object. This was arbitrarily set at five miles.

d. Size, Pattern and Formation. Analysis has not progressed to the stage where the relative sizes of these images can be stated. This applies also to patterns and formations although it appears as if they do occur. It is expected that stereoscopic analysis of the objects will furnish much information on this subject.

5. Reference (b) requested interpretation of additional movies, approximately 10 feet, taken in Montana, 1950. This film is also in poor condition but is suitable for analyzing the movie. One plot was made of the light path in the area where stationary objects are visible to hold to as control. Analysis of this movie is not sufficiently complete to offer any comment other than the path of light is undulating and is similar to that plotted for the Utah movie. In the analysis of the Montana movie it will be most helpful if the following information can be furnished:

a. Focal length of taking lens.
b. Location and actual distance of observer to the center of the tower.
c. Dimensions of the tower.
d. Lengths of bracing on the tower.
e. Vertical spacing of the bracing or the spacing between bracing measured along the legs of the tower.

It is felt that, since this movie was taken in 1950, the

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above requested information has been obtained for other agencies to assist in their interpretation of the unidentified objects and therefore is available.

6. Interpretation of movies of unidentified flying objects are continuing and upon completion of the analysis a final report will be prepared. Two copies of the report and reference (a) will be sent to your office.

7. Conclusions: None.

8. Recommendations: None.

L. W. KEITH

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[redacted]

[redacted] POINTS FOR ANALYSIS

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The following questions are suggested for guidance regarding the general type of ahalysis desired:

1. Are images made by light source or reflection?

2. Any indication of what kind of objects could have caused images? Is there any bird sufficiently actinic to cause images? Could they have been caused by aircraft or balloons?

3. What causes impression that some objects at times appear to become 2 or 3 where there was originally one; or, conversely, 2 or 3 objects at times appear to merge into one.

4. Do all objects have same characteristics?

   a. Same apparent shape?
   b. Same Color?
   c. Same relative size?
   d. Same general motion?

5. What are shape(s), color(s) and relative size(s) of objects?

6. To what can the "fade-in" and "fade-out" of the objects be attributed?

7. What type motion is attributable to the objects about their own axis as well as about axis of flight path)?

8. Is there any accelleration evident in their motion along light path axis?

9. Can the motion of the camera (panning and joggling) be allowed for sufficiently to permit determination of the angular velosity of objects which cross the field of view? (Reference particularly the single object which crosses field; photographer states that camera was held motionless while object crossed field of view.)

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Encl 1

10. Determine patterns of flight from position plots for each frame, then:

a. Is there any recurring pattern in the relative position of the objects?
b. Do they maintain same relative positions in formation during any maneuvers, particularly violent maneuvers?
c. Is relative position maintained coincidental with movement about their axis?
d. If undulating motion is present among a number of objects which are maintaining a semblance of formation, db those objects undulate in phase? Ditto for tumbling motion?
e. Is there any indication of abrupt changes in direction of flight path through fairly large angles (e.g. 90 degrees or more during interval of 2 or 3 frames)?
f. Do any objects appear to remain motionless at the same time that others move about?
g. Can all objects be accounted for at all times or do some literally disappear while still well within field of view?

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ANALYSIS OF 16 MM. MOTION PICTURE PHOTOGRAPHY OF UNIDENTIFIED AERIAL OBJECTS.

INTRODUCTION

The motion picture was examined both by normal and slow motion projection, and by low power microscope. At the start it was found that the images are much too small to show any detail in the objects; the only effect visible on the film by microscopic examination is a collection of small white spots. They are frequently elongated in the direction of motion with respect to the camera position, but no other significant shape features can be seen.

A Bell & Howell Model D-1-B projector was used to examine the motion of the objects. This projector permits the operator to reverse the motion during motor-driven projection, or to examine any length of film frame-by-frame, by means of a hand crank and frame counter. It was found that the objects are ten in number, in every one but the last of the motion sequences photographed. Occasionally some of these objects moved out of the camera's field of view momentarily.

A list of questions, accompanying the request for this evaluation, are answered below.

ANSWERS TO STATED QUESTIONS

1. It cannot be stated definitely whether the objects are seen by reflected sunlight or because they are self-powered light sources. However, it can be deduced that, if they are light-reflecting only, they are decidedly non-spherical in shape. During part of their flight paths they shine brightly, while at other times they are so dim as almost to escape detection. Furthermore, those objects which are following similar courses show similar brightness fluctuations, which could be caused by their taking similar flight attitudes.

2. It is believed to be reasonably certain that the reflection brightness of these objects exceeds that of any natural diffusing type of reflecting object, such as white birds against the sky. Also, there is no known bird that could emit such a radiation as would be required to produce the observed brightness. Either a large metallic surface of nearly flat shape, or a self-luminous source, is thought to be responsible. This statement, and the deduction of a non-spherical shape, combine to rule out large translucent spherical balloons, but not bright aluminum-surfaced aircraft.

3. Slow motion studies of the objects disclose that, in several instances, two objects on a nearly parallel course pass very close to each other, producing the blending effect. However, in each instance the two separate objects reappear after a moment.

4. and 5. As stated above, the only detail that can be seen is the small bright spot on the blue film, so no object shape can be determined. However, the maximum brightness of all the different spots appears to be the same, when they do become bright. The color at maximum brightness appears to be a clear white. At reduced brightness the spots remain essentially a neutral or grayish

Enc 3

white; no strong colors are noted. As to similar motion, a definite grouping of objects is noticeable. The first two sequences, taken with the sky as a light blue, show what probably are two groups of three objects each, and two groups of two each. The final sequence, against the dark blue sky, shows four pairs of objects, with the fifth pair having drifted upwards, out of the camera's field of view.

6. If the objects are reflecting, the "fade-in" and fade-out" are caused by changes in attitude of decidedly non-spherical objects, as in Answer 1 above. On the other hand, if they are light sources, the variation could be associated with their maneuvering activity.

7. and 8. As explained in the opening paragraph, the objects are only small bright spots on the film. When they dim sufficiently, they become invisible; no dark spots can be identified with these objects. The only visible motion in any single frame is with respect to the camera's field of view. Slow motion examination of successive frames suggests a general flight pattern of sweeping skew curves in space. This concept of object motions produces no sharp breaks in their apparent flight paths, and also makes it practically impossible to detect rapid accelerations or decelerations along these paths.

9. In the sequences during which the camera was held motionless, to record the angular velocity of a single object, it is possible to measure this velocity. Three such passes can be seen. The first was incomplete, picking up the object near the center of the frame. The second and third passes were complete, from one edge of the field of view to the other.

Figure I shows the actual tracings of the object from frame to frame for both Passes No. 2 and No. 3. The distance from lens to screen was 100 inches. The focal length of the projection lens was 2 inches. The enlargement of Figure I over the actual negative size is therefore 50 times. Camera and projector errors, plus small hand-held camera motions, probably account for the deviations from a straight line path. The average calculated angular velocity for both paths is about 2.1 degrees per second. Detailed computations are given in Appendix I.

10a. A slow motion viewing, plus single frame position plots, suggest that the objects are maneuvering in definite formations. However, successive identical positions are not indicated when position plots from any two frames in a sequence are superimposed. For instance, the first sequence of movement lasts 160 frames or 10 seconds. During the first seven seconds, clear plots for all 10 objects can be made. These plots were made at half second intervals or 8 frames apart.

10b. Figure II represents a possible set of flight paths for this interval, derived as explained in Appendix II. It should be remembered that Figure II very likely contains some indeterminate and non-constant camera motion, both horizontal and vertical, caused by tracking the formations. This means that the directions and curvatures as shown may be appreciably different from what a stationary camera would have recorded. However, Figure II does help visualize

the type of motion shown by the objects, moving from right to left, or generally from east to west as the camera was situated. This agrees with Figure I, showing the single object reversing course from left to right, or west to east.

10c and d. The relative positions of these objects in the first sequence follow a definite formation plan of either three pairs, a trio, and a single, or perhaps five pairs (if one of the trio and the single are actually a nearby pair). It appears that the objects tend to remain in position for curved path maneuvering. A possible shift in formation appears at the start of the trio paths. Otherwise, the objects definitely appear to undulate in phase in this sequence; as in the other sequences also.

10e and f. Several repeated slow motion viewings of the entire film do not indicate clearly any abrupt changes in flight path of any part of the formation. At times the camera appears to lag in following the entire group, and some of the ten objects then move outside the field of view momentarily. Whether or not a particular object remains motionless for a moment depends upon the relationship of group movement to camera movement.

10g. As explained in Paragraph 10f, sometimes objects may move out of the field of view. In a few instances, however, certain objects may change in brightness considerably, and practically appear or disappear well within the field of view. In the second sequence, which lasts about 14 seconds, the lower two pairs in Figure II flare up suddenly near the center of the field of view, being invisible a moment before. As they flare up, they appear to curve more rapidly to the left and upwards than the center trio. Reversing this sequence in slow motion shows that these four objects were faintly visible just before they disappeared at about the same position.

A tabulation of flight sequences and durations is listed in Appendix III.

CONCLUSIONS

1. Subject motion picture film apparently records the motions of ten unknown aerial objects, all alike in observed characteristics of movement and size.

2. The exact nature of these objects cannot be determined, because they are visible only as small spots of light. It can be deduced, however, that they are either non-spherical in shape and similar to bright metal in reflectance, or else variably self-luminous by some means.

3. There is apparently a coordination of movement to some extent among these objects. They seem to move in formations which are probably three-dimensional in arrangement. The largest angular size of the entire group is on the order of 6 to 8 degrees of arc.

4. The movements of these objects suggest flight paths consisting of skew curves in space. In one instance a single object changed course and followed a nearly straight line path with reasonable uniformity of motion at an angular velocity of about 2.1 degrees. During this straight line flight it remained reasonably uniform in brightness.

5. It would probably be extremely difficult to imitate this photography for fraudulent purposes.

Appendix I

Calculation of Angular Velocity of Single Aerial Object:

Pass No. 2: 48 spot positions are plotted, representing an elapsed time interval of 47 frames. At 16 frames per second, this gives:

$$\frac{47}{16} = 3.0 \text{ seconds elapsed time}$$

The measured distance on the screen is 15.1 inches. This gives approximately $\frac{15.1}{3.0}$ or 5.0 inches per second for image velocity on the screen.

Pass No. 3: 44 spot positions are plotted, for 43 frames of elapsed time. This time is $\frac{43}{16} = 2.7$ seconds.

The distance travelled is 15.7 inches. This gives $\frac{15.7}{2.7} =$ 5.8 inches per second on the screen. Average of these 2 values is 5.4 inches per second; with an estimated precision of ±15 per cent.

Conversion to Angular Velocity:

Distance from projector lens to screen = 100 inches
Focal length of projector lens = 2 inches
Enlargement of film on screen = 50 times
Image velocity on film = $\frac{5.4}{50} = .11$ inches per second

Focal length of camera taking lens = 3 inches

It is adequately precise to divide the image velocity by the focal length to get the angular velocity in radians per second, then to convert to degrees. We have:

$$\text{Angular velocity} = \frac{.11 \times 57.3}{3} = 2.1 \text{ degrees per second}$$

The precision of this value is also conservatively set at ±15% or ±0.3 degrees per second.

Appendix II

Plotting a Set of Flight Paths from Single Frame Position Plots, with no Reference Points

1. In a case like this, it would be highly desirable if the movement of these objects could be recorded with a stationary motion picture camera. Position plots could be superimposed by observing proper registery of frame edges to indicate the speed and direction of object flight paths.

2. However, it apparently was necessary in this case to follow the formation of objects, to keep them all in view. Therefore no position guide for registering the position plots is available, since no fixed points appear in the sky. Other principles must be used instead.

3. It is stated that the general drift of the entire formation was to the west. A later sequence shows a single object, which had reversed course, moving from left to right in the camera's view. It can therefore be supposed that plotted paths should show a drift from right to left.

4. This is one guide to be used. Another is that position plots should be superimposed without any rotation, since the frames were plotted without rotation. This assumes that the camera was not rotated; but merely moved in combined horizontal and vertical motions.

5. Another general guide is that most of the objects should appear to move in smooth, continuous paths. Several plots, at least 4, should be superimposed on a viewing table, and should be shifted until all or nearly all paths are smooth and show reasonably uniform motion. This compound plot can be transferred to a single sheet, and further plots can be added in the same manner.

6. Figure II was prepared in just this way, using the same 50 diameter enlargement as in Figure I. It will be noted that the final positions of two objects in the central trio are missing. They became so faint that they were lost; no further plotting of this sequence was tried.

Appendix III

Sequence Number	Frame Number Start	Finish	Number of Frames	Approx time of Sec. in Seconds	Sky Color
1	0	160	160	10	Light
2	161	386	225	14	Light
3	387	700	313	19 1/2	Dark
4	700	970	270	17	Dark
5	970	1010	40	2 1/2	Dark
6	1010	1080	70	4 1/2	Dark
7	1080	1140	60	4	Dark

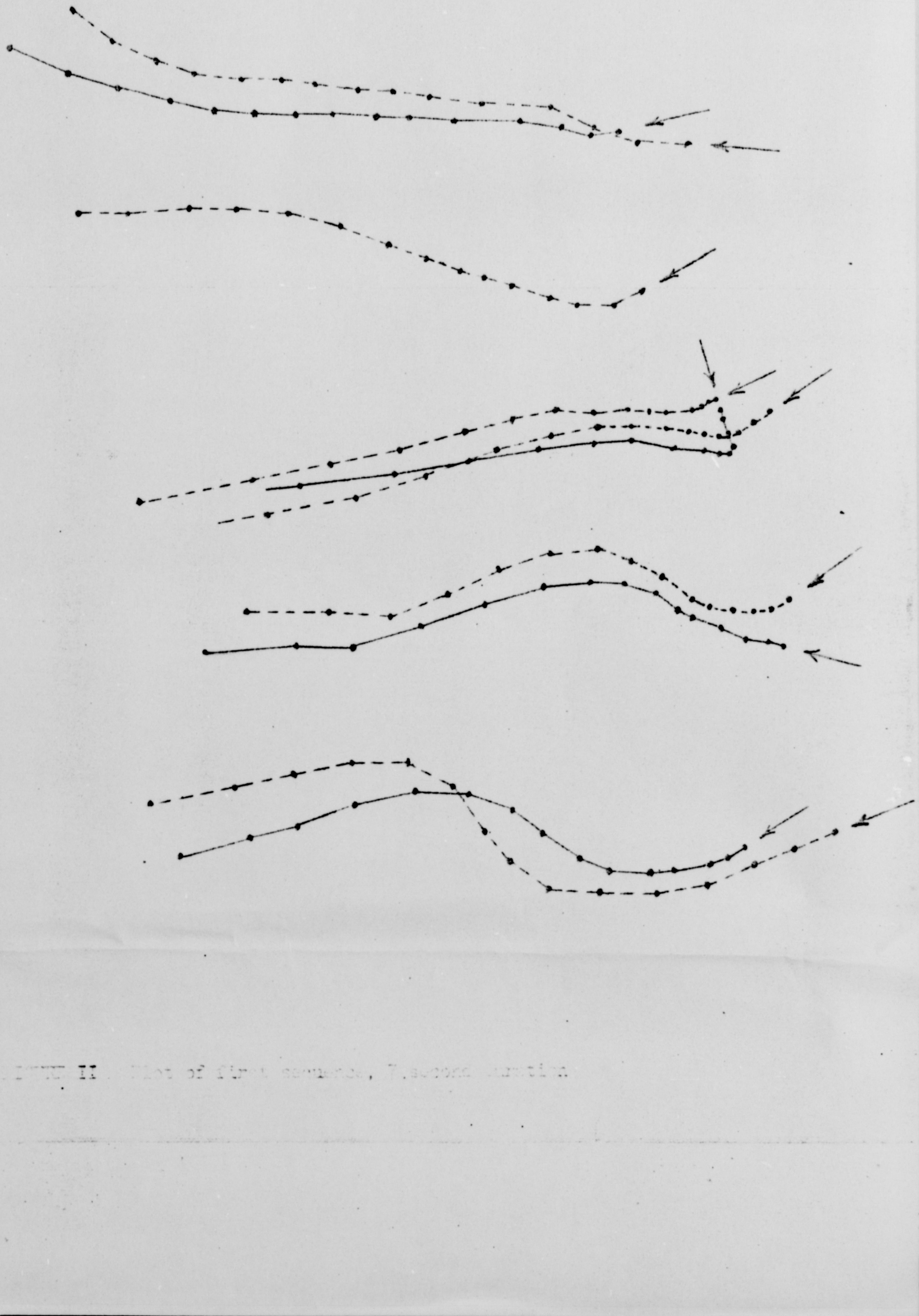
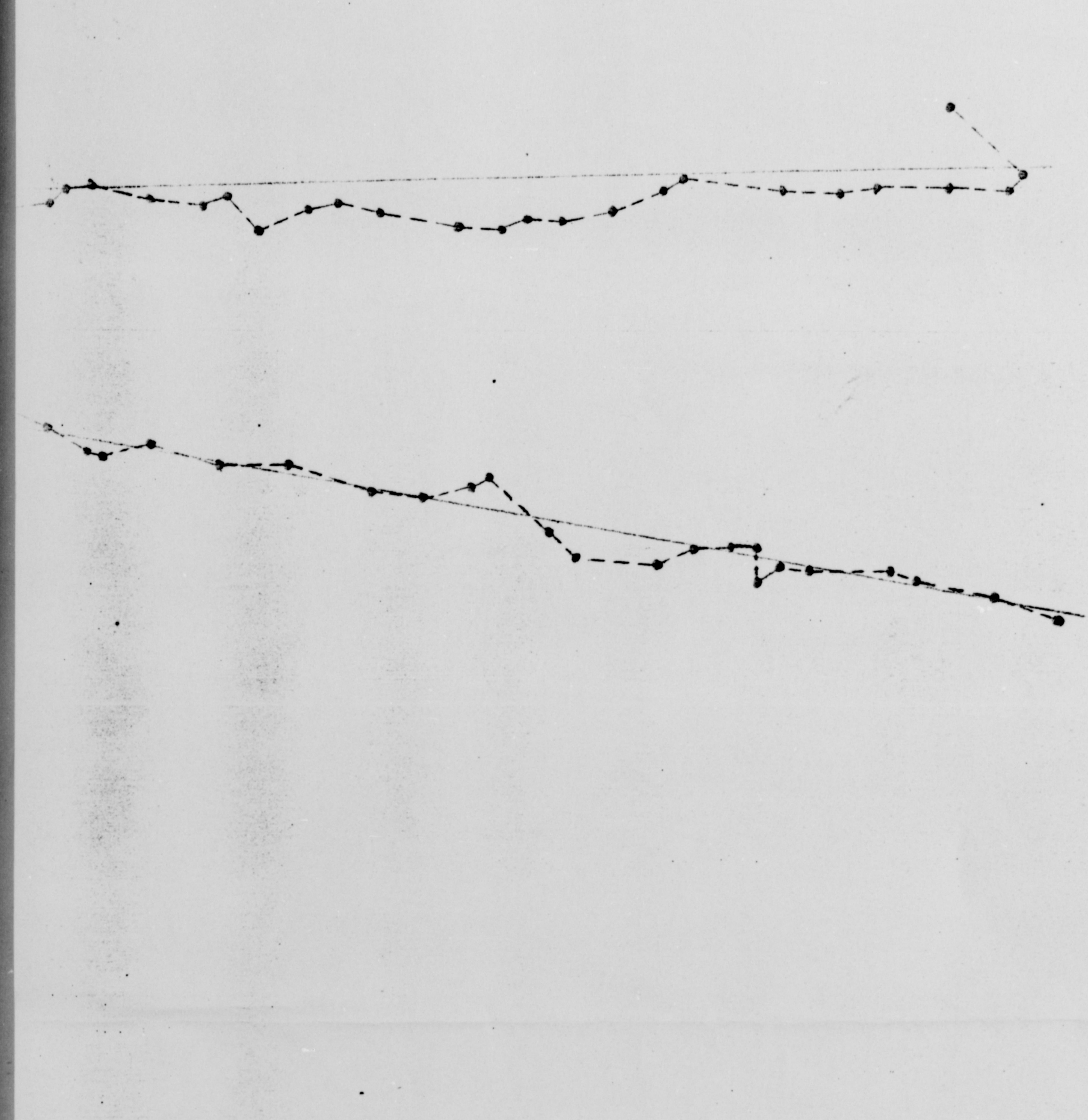


PLATE II. Plot of first sample, Tacoma narrows.

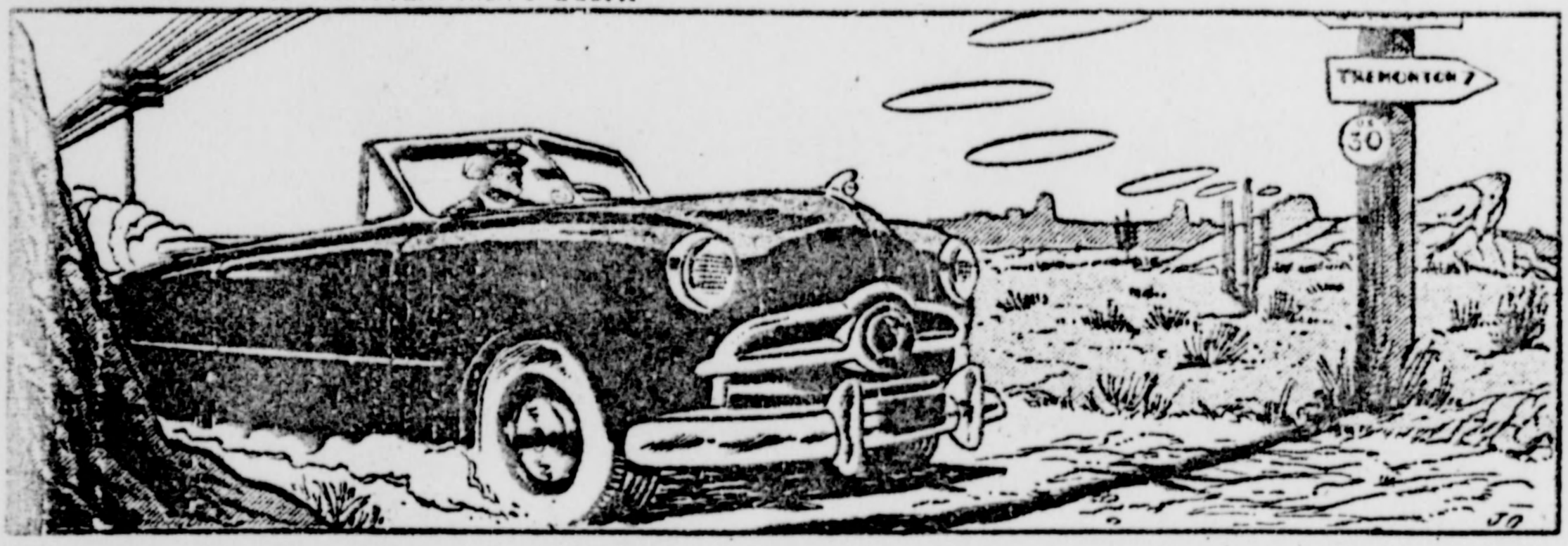


FIGURE I Plot of single object, stationary camera

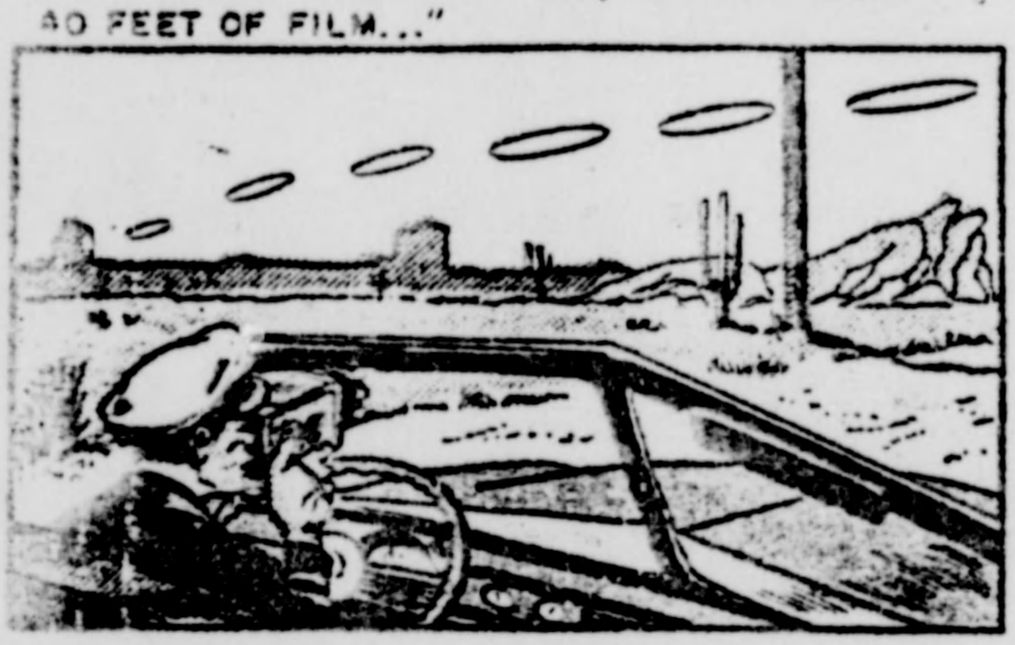


THE UTAH INCIDENT

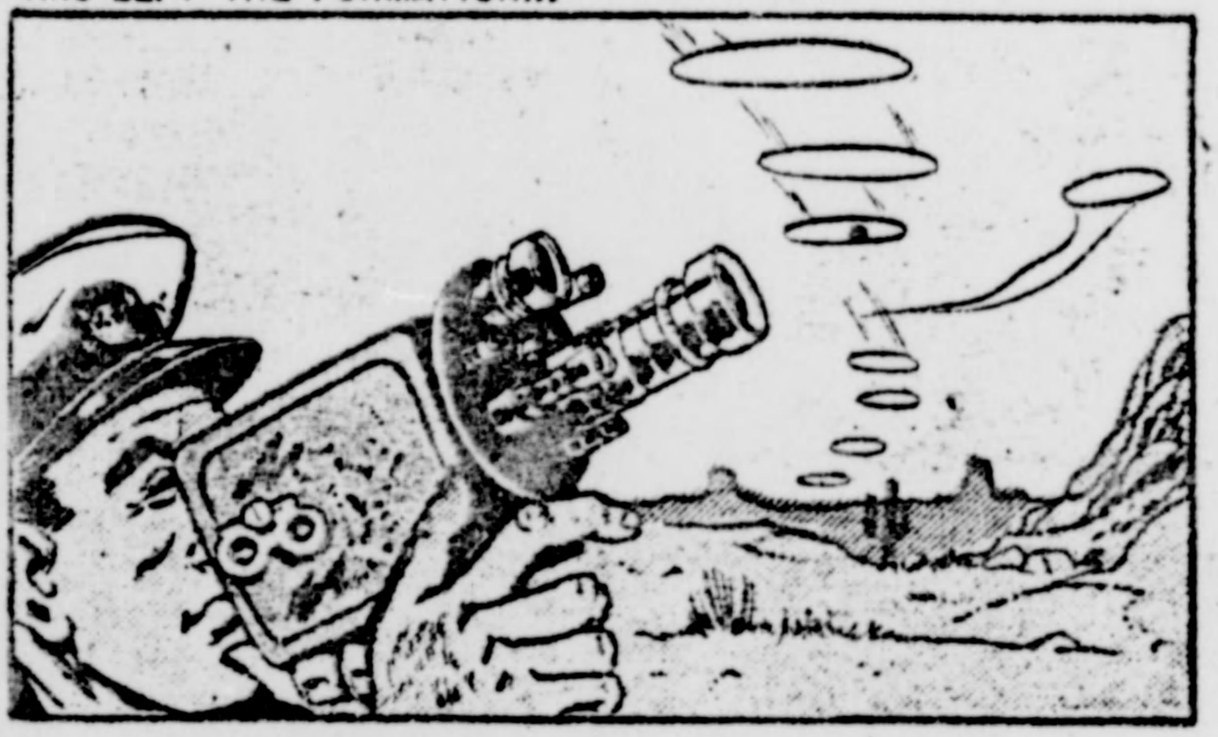
MAJOR DONALD E. KEYHOE, U.S. MARINE CORPS, RET., IN A TELEGRAM SENT TO BRIGADIER GENERAL SORY SMITH AND TO SECRETARY OF THE AIR FORCE HAROLD E. TALBOTT, TOLD THIS STORY: *ON JULY 2, 1952*, NAVY WARRANT OFFICER *DELBERT C. NEWHOUSE* WAS EN ROUTE TO PORTLAND, OREGON. AT 11:10 A.M., HE WAS AT A POINT ON HIGHWAY 30, SEVEN MILES NORTH OF *TREMONTON, UTAH*. SUDDENLY, HE SAW "A GROUP OF ROUND, EXTREMELY BRIGHT OBJECTS MOVING WEST AT A VERY HIGH SPEED..."



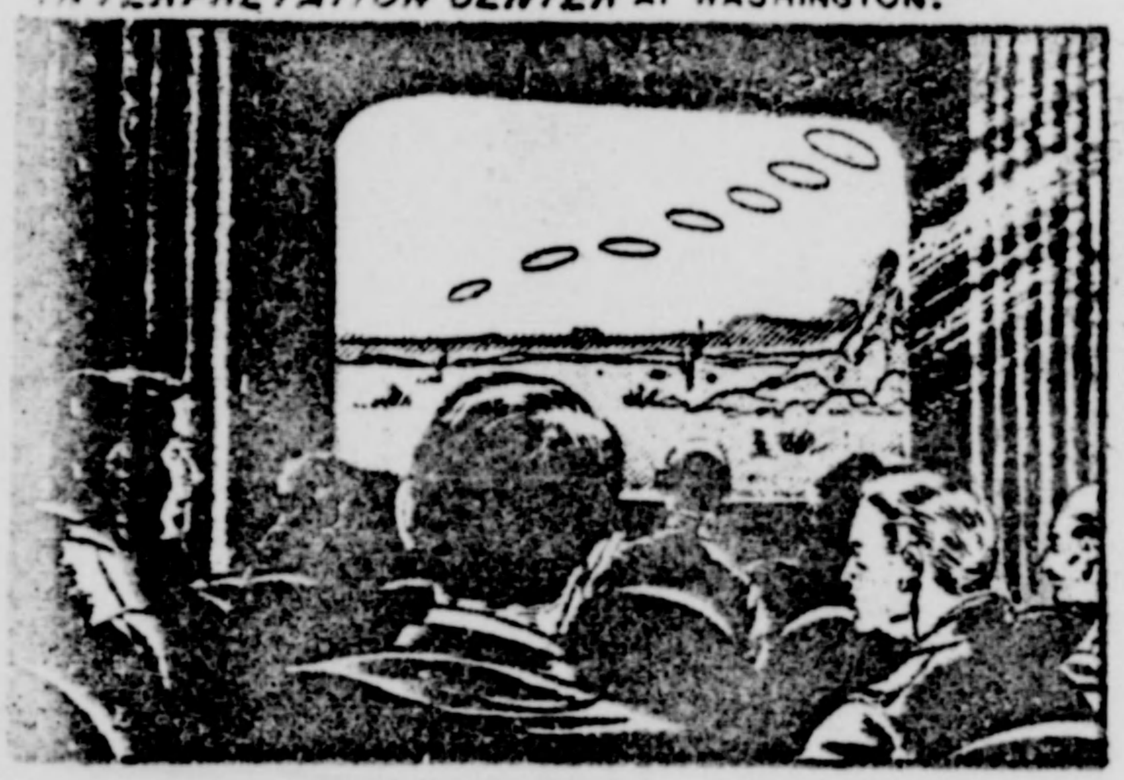
"AS A NAVAL AVIATION PHOTOGRAPHER, NEWHOUSE KNEW THEY WERE NOT AIRCRAFT. USING A BELL AND HOWELL AUTO MASTER MOVIE CAMERA WITH A THREE INCH TELEFOTO LENS, HE SHOT ABOUT 40 FEET OF FILM..."



"NEAR THE END, ONE OF THE OBJECTS REVERSED ITS COURSE AND LEFT THE FORMATION..."



"THE PICTURES WERE STUDIED FOR *MONTHS* BY *THE AIR FORCE PHOTO-RECONNAISSANCE LABORATORY* AT DAYTON, AND LATER BY *THE NAVY PHOTO-INTERPRETATION CENTER* AT WASHINGTON."



"THE LABORATORIES CAME TO THESE CONCLUSIONS:

1. THE AVERAGE SPEED OF THE UNKNOWN OBJECTS WAS SOMEWHERE BETWEEN 653 AND 980 M.P.H.

2. ALL THE OBJECTS APPEARED ROUND, OF THE SAME SIZE, AND THEY GAVE OFF A BLUEISH-WHITE GLOW OF VERY HIGH INTENSITY.

3. THE OBJECTS SEEMED TO BE MANEUVERING IN A CIRCULAR OR ELIPTICAL PATTERN WITHIN THE GROUP AT VERY HIGH SPEEDS.

4. BECAUSE OF THESE HIGH SPEEDS, THE OBJECTS OBVIOUSLY COULD NOT BE BALLOONS OR BIRDS.

5. THEY WERE NOT ANY KNOWN TYPE OF AIRCRAFT.

6. THE SIGHTING COULD NOT BE EXPLAINED BY ANY CONVENTIONAL ANSWER..."

"THE AIR FORCE HAD...PLANNED TO *SHOW* THIS FILM TO THE *PRESS* AND TO MAKE A *STATEMENT* TO THE *PUBLIC*. THIS STATEMENT WOULD *REVEAL* THE *OFFICIAL ANALYSIS*..."



MAJOR KEYHOE, WHO HAD BEEN *GIVEN* THE AIR FORCE DATA ON THE UTAH PICTURES *BEFORE* THE OFFICIALS WHO FAVORED A PUBLIC STATEMENT HAD BEEN *OVERRULED*, THEN DECIDED TO *INCLUDE* THIS INFORMATION IN HIS BOOK, "*FLYING SAUCERS FROM OUTER SPACE*"...*



*HENRY HOLT AND COMPANY, N.Y., PUBLISHERS.—EDS.

"WHEN THE COMBINED AIR FORCE AND NAVY ANALYSIS SHOWED THAT THE SAUCERS COULD *NOT* BE ANY *CONVENTIONAL OBJECTS*, AIR FORCE OFFICIALS *DISAGREED* AS TO *WHAT* SHOULD BE *TOLD* THE PUBLIC. THE PLAN FOR A PUBLIC DISCLOSURE WAS *THEN KILLED*..."



IN A PRESS RELEASE, DATED SEPT. 28, 1953, 4 P.M., HENRY HOLT AND COMPANY ANNOUNCED...

THE *AIR FORCE HAS SECRET MOTION PICTURES OF FLYING SAUCERS* WHICH *PROVE* THEY ARE *INTERPLANETARY CRAFT*, MAJOR DONALD E. KEYHOE, A RETIRED MARINE CORPS OFFICER...DECLARED TODAY. HIS CLAIM, HE SAID, IS *BACKED* BY *OFFICIAL AIR FORCE DOCUMENTS* CONTAINED IN HIS FORTHCOMING BOOK...*



*ACTUAL QUOTE FROM H.H. & CO. RELEASE.—EDS.

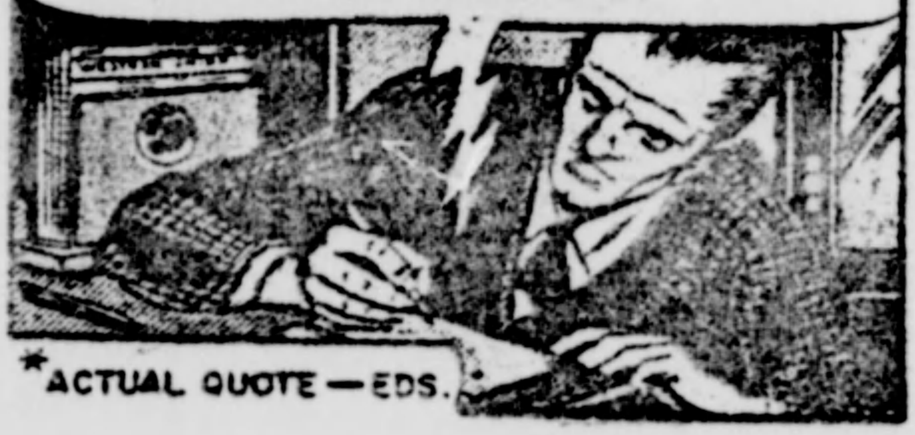
THE CAT WAS OUT OF THE BAG. IN IMMEDIATE RETALIATION, THE OFFICE OF AIR FORCE INFORMATION ISSUED A PRESS RELEASE ON SEPT. 29, 1953...

THE *TREMOTON PICTURES* WERE *RETURNED* TO WARRANT OFFICER NEWHOUSE. THEY WERE OF *NO IMPORTANCE!*



THIS WAS THE *REASON* FOR MAJOR KEYHOE'S *TELEGRAM*. HE SAID:

ON SEPT. 29, YOUR OFFICE *PUBLICLY IMPLIED* THAT I *MISREPRESENTED* THE AIR FORCE ANALYSIS OF THE *UTAH FLYING SAUCER PICTURES* IN MY BOOK... IF THIS IS *TRUE*, THEN AS A *RETIRED MARINE CORPS OFFICER*, I SHOULD BE *SUBJECTED* TO *DISCIPLINARY ACTION*...IF MY *CLAIMS* ARE *INCORRECT*, THEN I RESPECTFULLY SUGGEST THAT... I BE *COURT-MARTIALED* FOR MAKING *FALSE STATEMENTS* ABOUT THE *AIR FORCE ANALYSIS*.*



*ACTUAL QUOTE—EDS.

THE TELEGRAM WAS DATED OCT. 2, 1953. MAJOR KEYHOE WAS NEVER BROUGHT UP FOR DISCIPLINARY ACTION.

WASN'T THE UTAH FILM RETURNED TO W. O. NEWHOUSE MERELY A POOR COPY?

WEREN'T THERE MANY COPIES MADE AND STUDIED?

WHERE IS THE ORIGINAL?

WHAT NEWSPAPER CHAIN HAS BEEN DENIED A SHOWING WITH THE CLAIM THAT ALL COPIES WERE BURNED UP FROM OVERUSE?

This Case Includes

A roll of Motion

picture Film.

7-3745-345

[redacted]

[redacted] GLF

1D-OSI 24-0-257 SPOT INTELLIGENCE REPORT

SUBJECT: (Unclassified) Reporting of Information on Unconventional Aircraft
SPECIAL INQUIRY

TO: Director of Special Investigations
Headquarters, USAF
Washington 25, D. C.

INFORMATION COPY FOR CG, AMC

SYNOPSIS:

On 2 July 1952, Captain ROBERT E. METCALF, 1001 Massachusetts Avenue, Lexington, Massachusetts, reported that he and two other persons observed one unidentified airborne object between 0730 and 0740 hours, EDT, on 1 July 1952. No activity or condition developed that accounts for sighting.

DETAILS:

At approximately 2000 hours, 2 July 1952, Captain ROBERT E. METCALF, 1001 Massachusetts Avenue, Lexington, Massachusetts, reported the observation of one unidentified airborne object between 0730 and 0740 hours on 1 July 1952 to Special Agent LESLIE S. HUBBARD. On 3 July 1952, Captain METCALF was interviewed by Special Agent JULIUS B. POPPINGA, and furnished the following information:

a. Description of object: One (1) milky white object, shaped like an "elongated oval" but "fatter than a cigar", about 100 feet in length or slightly larger than a four-engine airliner, having indistinct outlines at the rear resembling either a very short exhaust or a blurred tail section, with a narrow ridge along the top side, but without wings or any clear aerodynamic features. Object produced no sound, and left no vapor trail or exhaust other than described above. Speed was estimated to be approximately that of jet aircraft, but observer believed the object "hung" in mid-air for a few seconds on two occasions and then proceeded.

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[redacted] GLF

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The course of the object was otherwise without variation in altitude or direction, proceeding at an estimated 40,000 feet toward the southwest.

b. Object was sighted by Captain METCALF at 0730 hours EDT, 1 July 1952, and was observed by him for ten (10) minutes.

c. Sighting was by visual observation through smoked glasses, with no optical or electronic aids.

d. Observer sighted object while standing in the vicinity of Hangar "B" at Laurence G. Hanscom Field, Bedford, Massachusetts.

e. Identifying information on observer: Captain ROBERT E. METCALF, AO 563825, Petroleum Officer, 6520th Supply Squadron, 6520th Test Support Wing, Laurence G. Hanscom Field, Bedford, Massachusetts, is 33 years of age, and has served six years of active duty and five years of reserve duty with the USAF. Captain METCALF is not rated, but appeared thoroughly familiar with all types of aircraft and advised that he has never seen a comparable object.

f. Weather conditions: METCALF advised that at the time of the sighting the sky was perfectly clear, and a slight northeast wind was blowing. Weather conditions at 0730 hours EDT 1 July 1952 were reported by the U. S. Weather Department, Logan International Airport, Boston, Massachusetts, for the Boston area as follows: "Thin scattered clouds at 26,000 feet, northwest wind at 6 miles per hour, visibility 12 miles, temperature 60 degrees."

g. No activity or condition is known that might account for the sightings. However, METCALF stated that his attention was first drawn to the object while he watched the vapor trails of what appeared to be two (2) jet aircraft proceeding in a southeast direction. The object described intersected the jet vapor trails and continued to the southwest.

h. No physical evidence exists, and no interception action was taken. METCALF advised however, that he proceeded to the base operations tower after having observed the object for a few minutes, and that attempts to locate the object with a pair of #750 Navy-type binoculars from that vantage point resulted negatively.

i. Manner of disappearance: METCALF advised that he again saw the object while on the way to the tower, but that its distance had increased considerably, and that from the tower it was no longer visible, with or without binoculars.

METCALF further advised that upon sighting the object he called it to the attention of M Sgt JAMES STIMER, AF 15120440, and M Sgt JOSEPH R. BOSH, AF 11031457, both of 6520th Air Police Squadron, Hanscom Field. On

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[redacted] GLF

3 July 1952, STINER and BOSH were separately interviewed by Special Agent JULIUS B. POPPINGA. Time, location, method of sighting, weather conditions, direction of flight, and disappearance were identical to that reported by METCALF. Several differences will be noted, however, relative to the description of the object.

j. STINER described the object as resembling a small blimp, having a blunt front, cigar-shaped, and similar to an "airplane without wings or tail assembly." STINER noticed no exhaust or noise, and no changes of altitude or course. Length of the object was estimated as two to three hundred feet, and no tail features, wings, or aerodynamic features of any kind were observed. STINER estimated the altitude of the object to be about 20,000 feet. He described its forward motion to be irregular, first barely moving, and then proceeding at "about the speed of a C-47."

k. BOSH advised that he could not estimate the size of the object, but described it as oval-shaped, and believed that it was trailed by two distinct vapor trails, similar to that associated with conventional aircraft at very great altitudes. BOSH noticed no variation in the speed, altitude, or line of flight, and estimated the speed to be about 130 miles per hour and the altitude to be "over 30,000 feet." BOSH noticed no noise, and stated that he could distinguish no wing or tail surfaces. He added that while both STINER and METCALF used sun glasses while observing the objects, he did not, and that his vision was impaired by the brightness of the sky and the sun.

l. Identifying information on STINER and BOSH: M Sgt STINER is 30 years of age, and has served 19 years with the ground forces and 4 years with the Air Force. He has never been on an air crew, and claims no special knowledge pertaining to aircraft, but advised that he has never observed an airplane in flight, at any angle, resembling the object described, and was aware of no known object which might account for it. M Sgt BOSH is 32 years of age, and has served 11 years with the Air Force, primarily in inspection and investigation work. BOSH advised he has done considerable reading in relation to unconventional aircraft, but could not account for the object described in any way.

m. This sighting appears to be a verification and one and the same as sighting observed by ERWIN W. NELSON between 0731 and 0734 hours EDT on 1 July 1952 and reported in 1st District OSI file 24-0-256 on 3 July 1952.

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[redacted]

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1D-OSI 24-0-257

ACTION:

No further action is contemplated by this District Office. Two (2) copies of this report will be forwarded to the Commanding General, Air Materiel Command, Attention: MCIS.

ROBERT S. JONES
Lt Colonel, USAF
District Commander

cc: CG, AMC (dup)

20. Reference CIRVIS report 272314E July submitted by Wright-Patterson Flight Service Center. An unidentified object described as above the size of a house lamp and more brilliant than [illegible]ar, at an altitude of about [illegible] feet, was sighted at an unknown time due east of Burlington, Ohio. The object hovered for 10 minutes then moved south at a terrific rate of speed.

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21. Weather unknown.

22. Witness unknown.

23. Air traffic unknown.

24. Reference CIRVIS report 030442Z July submitted by March Flight Service Center. An extremely bright object was observed for period of several minutes at 1945P on 2 July 1952. The observer plotted object with a protractor and estimated it to be 34 to 38 degrees above the horizon at an angle of 175 degrees. Object broke up into 6 or 8 pieces which appeared to descend toward the ground at a high rate of speed.

25. Weather unknown.

26. Witness: Mr. [redacted], member Los Angeles Police Department. Residence address: [redacted], Highland Park, California. Telephone not given.

27. Air traffic information not given.

28. Comments of Preparing Officer:

a. The sighting reports listed above are unconfirmed, incomplete, and, in some cases, erroneously submitted. However, in the interest of maintaining continuity of flow of sighting reports through the many concerned agencies, it was considered desireable to submit all for information purposes. The evident lack of value of incomplete reports has been brought to the attention of CAA and Flight Service units and, within the Flight Service structure, special training programs have been instituted which should preclude future relay errors.

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PAGE TWO JEDFJ 113

VISIBILITY ONE HALF MILE SNW GROUND FOG; WINDS GENERALLY 240 DEGREES AVERAGE 33 KNOTS PD PART VII PD NEGATIVE PD PART VIII PD NEGATIVE PD PART XI PD NEGATIVE PD PART X PD 6515T AC&W SO INDICATED NO UNUSUAL RADAR OBSERVATIONS PD NO LOCAL ACFT IN VICINITY AT TIME OF SIGHTING PD AF FORM 112 REPT TO FOLLOW PD

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ACTION

1. ATIAA
2. ATIA
3. CG Files

1952 AUG 7 05 02

AUG 1952 09 12

INFO

FM JEDFJ 113

TO JEPHQ/DIRECTOR OF INTELLIGENCE HQ USAF WASH 25 DC

JEDEN/CG AIR DEF COMMAND ENT AFB COLORADO SPRINGS COLORADO

JEDWP/CHIEF AIR TECHNICAL INTELLIGENCE CENTER WRIGHT-PATTERSON AFB DAYTON OHIO

INFO JEPQW/DIRECTOR OF INTELLIGENCE HQ CONAC MITCHEL AFB NY

[redacted]

ITN ATIAA-2C FROM CLN AFXOI 1456 FLYOBRPT NO PD 7-52 CMA REF PAR 7C CMA AFL 200-5 CMA THE FOLG INFO IS SBM: PART I PD TWO CIRCULAR SHAPED LIGHTS CMA APRX 20 FEET IN DIAMETER ; NEGATIVE TRAIL; NEGATIVE EXHAUST; PROPULSION UNKNOWN; NEGATIVE SOUND; OBSERVED TVL HORIZONTALLY AT TREMENDOUS RATE OF SPEED IN EASTERLY DIRECTION ALONG MANITOU BEACH HIGHWAY AND DISAPPEAR FROM SIGHT PD PART II PD 0815Z 3 JUL 52 FOR APRX 7 SECONDS PD PART III PD VISUAL PD PART IV PD OBSERVER DRIVING ON HWY AT APRX 41 DEGREES 52'N CMA 82 DEGREES 15'W TOWARD ROME CENTER ; OBJECTS SOUTH OF OBSERVER; 200 TO 500 FEET; 20 TO 30 FEET ALTITUDE PD PART V PD NEGATIVE WITNESSES CMA RELIABILITY UNKNOWN PD PART VI PD WEA: CLEAR;

UNCLASSIFIED

[illegible] JEPHQ JEDEN JEDWP JEPQW 444

[illegible] JEDFJ 11[illegible]

[illegible] 222112

[illegible] HQ 12 TH AF SELFRIDGE AFB MICH

[illegible] JEPHQ/DIRECTOR OF INTELLIGENCE HQ USAF WASHINGTON 25 DC

[illegible]/CG AIR DEF COMD ENT AFB COLORADO SPRINGS COLORADO

[illegible]/CHIEF AIR TECH INTEL CENTER W-PATTERSON AFB DAYTON OHIO ATTN ATIAA-2C

[illegible] JEPQW/DIRECTOR OF INTELLIGENCE HQ CONAC MITCHEL AFB NY

[illegible] GMIC

[redacted]

[illegible]OI 1456 FLYOBRPT NO. UATW CMA REF PAR 7C CMA AFL 200-5CMA THE FOLG INFO

[illegible]ART I . TWO CIRCULAR SHAPED LIGHTS CMA APRX 20 FEET IN DIAMETERSMCLN

[illegible]EGATIVE TRAIL SMCLM NEGATIVE EXHAUST SMCLN SMCLN PROPULSION UNKNOWN

[illegible]CLN NEGATIVE SOUND SMCLN OBSERVED TVL HORIZONTALLY AT TREMENDOUS

[illegible]TE OF SPEED IN EASTERLY DIRECTION ALONG MANITOU BEACH HIGHWAY AND

[illegible]SAPPEAR FROM SIGHT PD PART II.Z815Z 3 JUL 52 FOR APRX 7 SECONDS PD

[illegible]ART III. VISUAL. PART IV. OBSERVER DRIVING ON HWY AT APRX 41 DEGREES

[illegible]'N CMA 82 DEGREES 15'W TOWARD ROME CENTER SMCLN OBJECTS SOUTH OF

[illegible]SERVER SMCLN 200 TO 600 FEET SMCLN 20 TO 30 FEET ALTITUDE. PART V

UNCLASSIFIED

[illegible]EGATIVE WITNESSES CMA RELIABILITY UNKNOWN PD PART VI. WEA CLN CLEAR

[illegible]CLN VISIBILITY 1/2 MILE CMA GROUND FOG SMCLN WINDS GENERALLY 240

[illegible]REES AVERAGE 33 KNOTS PD PART VII . NEGATIVE . PART VIII. NEGATIVE

[illegible]. PART IX. NEGATIVE. PART X. 661ST AC&W SQ INDICATED NO UNUSUAL RADAR

[illegible]SERVATIONS. NO LOCAL ACFT IN VICINITY AT TIME OF SIGHTING. AF FORM

[illegible]EPT TO FOLLOW.

[illegible]/2134Z AUG JEDFJ

UNCLASSIFIED

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