

THE UFO ENIGMA

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ABSTRACT

Unidentified flying objects (UFOs) have been a source of concern, anxiety, and ridicule for more than three decades in the United States, and for centuries on a global scale. The question in the case of UFOs is not whether there is other intelligent life in the universe, but whether it has visited Earth, and if not, then what accounts for the thousands of reports of strange lights and phenomena which seem to have no other explanation? Although the number of reports in the media about UFOs has dwindled in recent years, the film "Close Encounters of the Third Kind" rekindled interest in the UFO debate for a short time, and the movie "E.T. -- the Extraterrestrial" refocused attention on the possible existence of other intelligent life in the universe.

This report is an updated edition of the 1976 CRS study by the same title, and adds material on what has happened since the mid-1970's in terms of U.S. Government involvement in solving the UFO puzzle, and information that has been released under the Freedom of Information Act.

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INTRODUCTION *

Although the term UFO (for unidentified flying object) has been popular for only about 36 years, the phenomenon it refers to has been observed throughout recorded history. It is an unfortunate term, for literally anything seen in the sky and not immediately recognized is included. In the ancient skies, UFOs were especially numerous.

What are today's UFOs? And what type of person reports them to authorities? Publicity seekers, practical jokers, or sane, intelligent people genuinely mystified by something they have seen? This report cannot, and does not attempt to, answer those questions. After 36 years of concentrated interest in this country alone, experts cannot agree on what inhabits our skies. The U.S. Air Force had official responsibility in the field for 21 years and concluded that whatever was there, it was non-hostile and non-alien. But there are many who disagree.

In order for Earth to be visited by beings from other planets, there must be other inhabitants in the universe. The subject of extraterrestrial intelligence, as it is called, is too involved to be included here, and the reader is referred to a previous work by this author for the House Science and Technology Committee entitled "Possibility of Intelligent Life Elsewhere in the Universe" (revised October 1977) for a discussion of this topic.

* The 1983 update of this report was prepared by Mr. George D. Havas of the Library of Congress Science and Technology Division while he was on special detail to the Science Policy Research Division of the Congressional Research Service. The original 1976 report was prepared by Marcia S. Smith of the Science Policy Research Division, CRS.

In addition to discussion about UFOs in general, there have been theories advanced that much of our present day knowledge, and indeed our evolution itself, was helped along by aliens. This "ancient astronaut" philosophy and that of the Bermuda Triangle are discussed briefly in an appendix. They are only of peripheral importance to a discussion of UFOs and are included only because they also deal with alien visits to Earth.

I. WHAT IS A UFO?

A. DEFINITIONS

A UFO is an aerial phenomenon or object which is unknown or appears out of the ordinary to the observer.

U.S. Air Force 1/

A UFO is a moving aerial or celestial phenomenon, detected visually or by radar, but whose nature is not immediately understood.

Carl Sagan
Astronomer and Biologist 2/

A UFO is any reported aerial or surface visual sighting or radar return which remains unexplained by conventional means even after examination by competent persons.

J. Allen Hynek
Astronomer and Project
Blue Book Consultant 3/

The most commonly used definition of a UFO is expressed in both the Air Force and Sagan definitions and encompasses the vast files of sightings that either have or have not been later identified as natural phenomena--12,097 from 1947 to 1967. Hynek's definition is more precise since it covers only those that, after investigation, still remain unidentified and are thought by some to be spaceships from other worlds--697 from 1947 to 1967. 4/

1/ U.S. Air Force. Aids to Identification of Flying Objects. Washington, D.C., U.S. Govt. Print. Off., 1968. p. 28.

2/ Encyclopedia Americana, 1967, p. 43.

3/ Hynek, J. Allen. White Paper on UFOs. Christian Science Monitor, May 23, 1967: 9.

4/ Figures are from U.S. Air Force. Project Blue Book 1968. [n.p., n.d.] p. 7.

Since the term in general use can mean either of the above, one must be careful as to the context in which the term is used. There are naturally thousands upon thousands of reports that would come under the first two definitions, since many people can become confused by natural objects such as the planets and stars, and other natural phenomena like ball lightning are not well understood even by scientists.

For the sake of clarification, William Hartmann (Senior Scientist, Planetary Science Institute, Tucson, Arizona) suggested four groups into which sightings could be classified: UFO--unidentified flying object, the original sighting according to the Air Force and Sagan definitions; IFO--identified flying object, a UFO case that has been concretely solved; EFO--extraordinary flying object, something beyond the bounds of recognized natural phenomena; and AFO--alien flying object. 5/ The last two are relatively subjective, since those who refuse to speculate on the possibility of Earth being visited by extraterrestrial life will classify all unidentifieds into EFOs, and their counterparts on the other side of the question will assume that all unidentifieds are AFOs.

Other acronyms have also been suggested and one that has some support is "anomalous observational phenomena" (AOP). The term was coined by Dr. Robert M. L. Baker who notes that although some unexplained phenomena may be occurring, it "may not be 'flying,' may not always be 'unidentified,' and, perhaps, may not even be substantive 'objects,'" 6/ Unfortunately UFO has become the accepted term, and changing the habits of the masses is no easy chore.

5/ Hartmann, William K. Historical Perspectives: Photos of UFOs. In Sagan, Carl and Thornton Page eds. UFOs--A Scientific Debate. Ithaca, New York, Cornell University Press, 1972. p. 12.

6/ Baker, Dr. Robert M. L. [Testimony] In U.S. House. Committee on Science and Astronautics. Symposium on Unidentified Flying Objects. Hearings, 90th Cong., 2d Sess., July 29, 1968. Washington, U.S. Govt. Print. Off. p. 126.

Douglass Price-Williams has listed four stages through which a UFO report should travel before a determination can be made as to its nature. ^{7/} The first step is the actual reporting of an unexplained aerial incident, where it is labeled a UFO (he also notes a preference for AOP, but acknowledges that UFO has become too rigidly entrenched in our vocabulary). In the second stage, the report is broken down into one of three "populations": (1) reports that are easily explained, without controversy, as known phenomena; (2) reports that one group calls known phenomena while a second group questions that conclusion, and (3) reports that all agree are unknown.

The third stage examines those in the third group (and some from the second). This is the key step, for "failure to define the data at this point makes further analysis unamenable to systematic investigation." Here the questions of witness credibility arises (chapter 2), for the data are usually dependent upon the subjective observations of one or more witnesses, not upon exact measurements. Other than rejecting all present UFO reports and starting anew with a more exact reporting system, Price-Williams suggests going through existing reports searching for clues that can be relied upon to some extent, such as reports where some reference point was available to the witness(es) for distance, size, and speed estimates. Also a cross-correlation of what has been seen over the years in terms of these characteristics might prove valuable.

The final stage of the UFO report calls for a confrontation between data and hypotheses. Price-Williams points out that the crucial test for any hypothesis is for it to be tested, and this is the crucial problem with the extraterrestrial hypothesis. He suggests that outside of actually capturing a specimen,

^{7/} Price-Williams, Douglass R. Psychology and Epistemology of UFO Interpretations. In Sagan and Page, op. cit., p. 224-231.

one would have to "posit a model embodying aerodynamic and engineering properties that are then matched against the observed data as reported." These models are bounded by an upper limit where literally anything is considered possible due to technologies we may not be aware of, and the lower limit which allows not only that the physical model make sense within our framework of knowledge, but that someone be able to construct a realistic model (although not necessarily a working model).

B. DRAWINGS BY WITNESSES

Since Kenneth Arnold's 1947 sighting that began the current interest in UFOs in this country (see chapter 5), many drawings have been made by witnesses to show others what they saw. A few of these are presented below, reprinted with permission from UFOs: A New Look, National Investigations Committee on Aerial Phenomena, (NICAP) 1969.

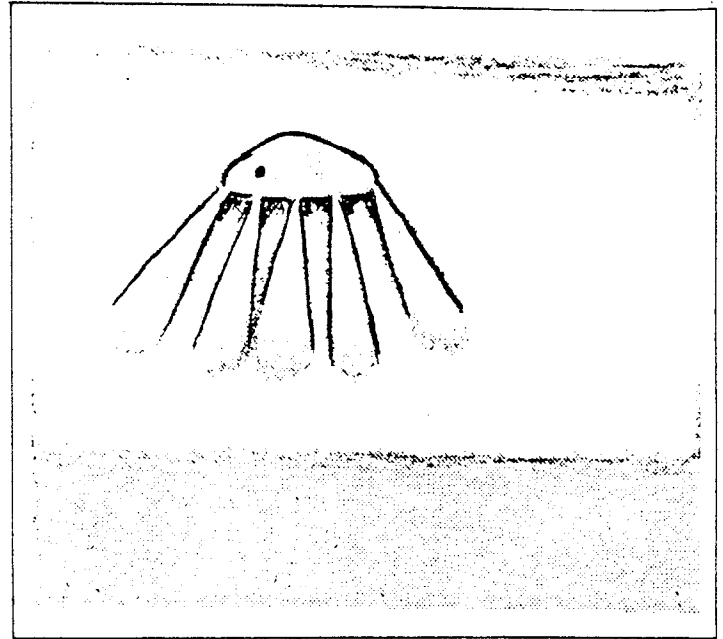
WITNESS SKETCHES

The following graphic portrayal of the UFO mystery makes use of actual witness sketches drawn to describe what they had seen. Some of the drawings had to be touched up for reproduction purposes; however, they have not been altered. A few are artists' renditions carefully based on witness descriptions.

This small sample was selected from hundreds in recent years to illustrate some of the commonly reported types and features. Additional sketches appear throughout the text. (Cf., The UFO Evidence, especially pages 23, 54, 144, 147 and 182).

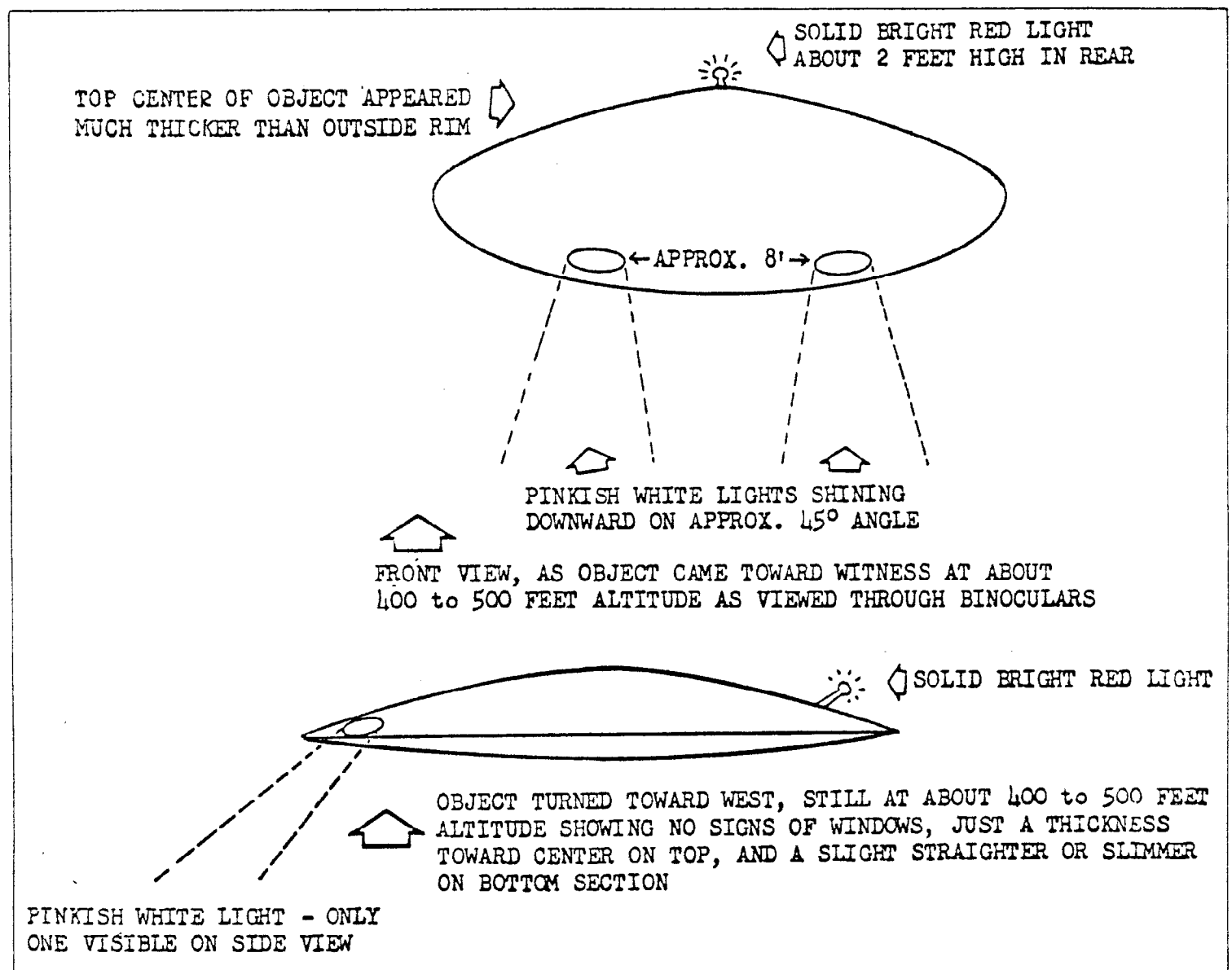
Some of the obvious recurrent features, also typical of thousands of documented verbal reports, are: clear structures most commonly disc-shaped or elliptical; light beams; body lights; rows of "portholes" or lights; domes and other projections; surrounding haze; and physical effects on the environment.

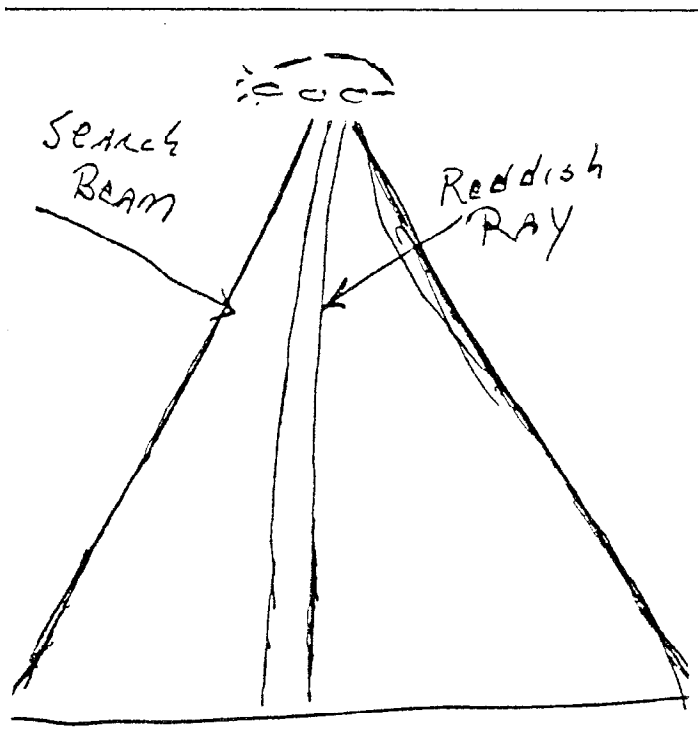
Although it was not possible to give additional details of the sightings here, many of the most complete cases will be reported in full in Volume II of The UFO Evidence scheduled for publication in 1969.



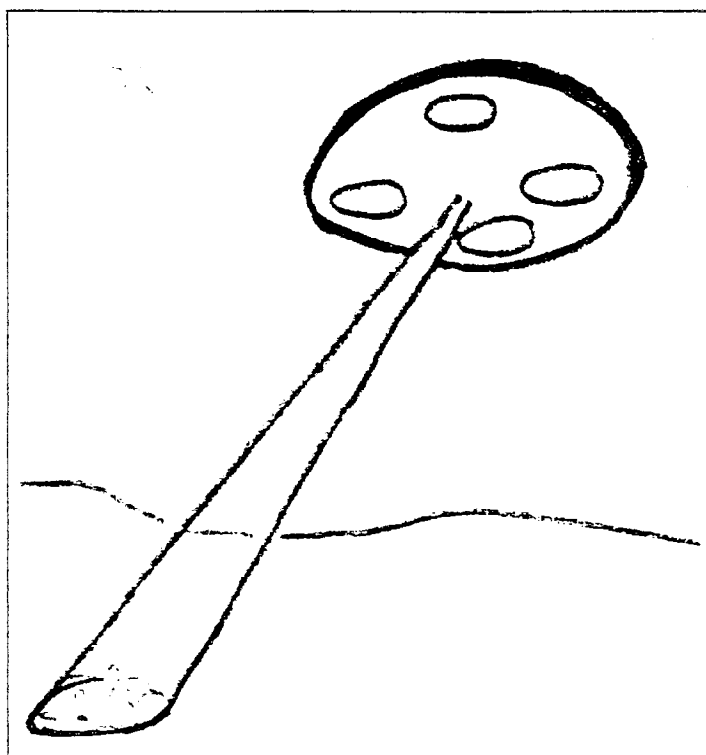
August 16, 1968; Nr. Hamilton, Ohio 11 p.m.; Large group of people saw UFO approach, beam lights down which reflected off Greenbriar Lake.

LIGHT BEAM CASES



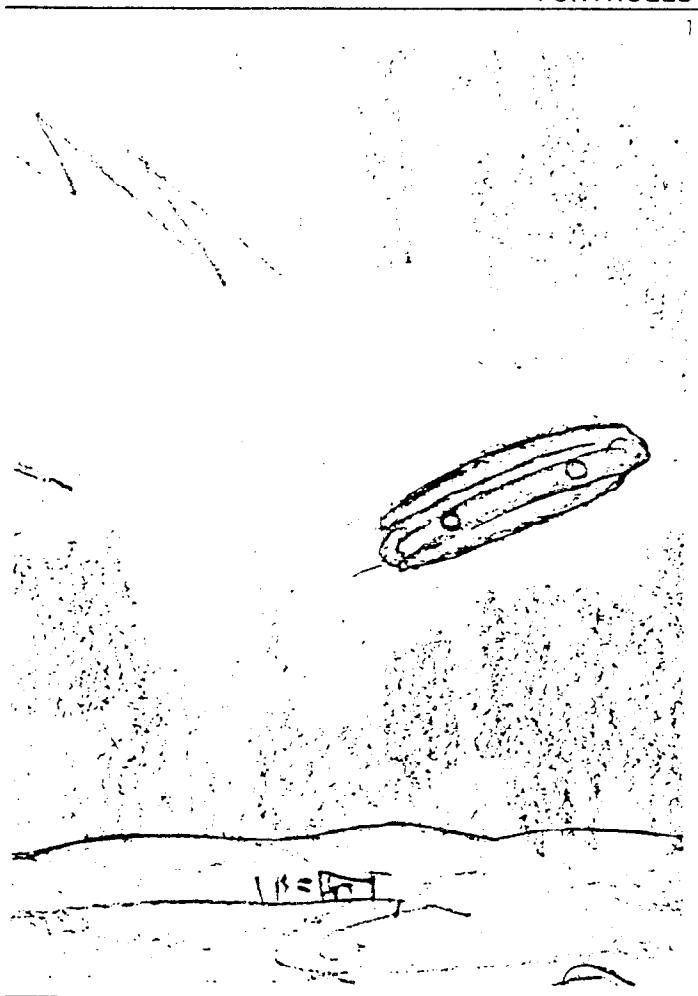


July 15, 1968; Nr. Columbus, Indiana Abt. 3 a.m.; UFO emitted beam like searchlight to ground; also narrower red beam or ray.

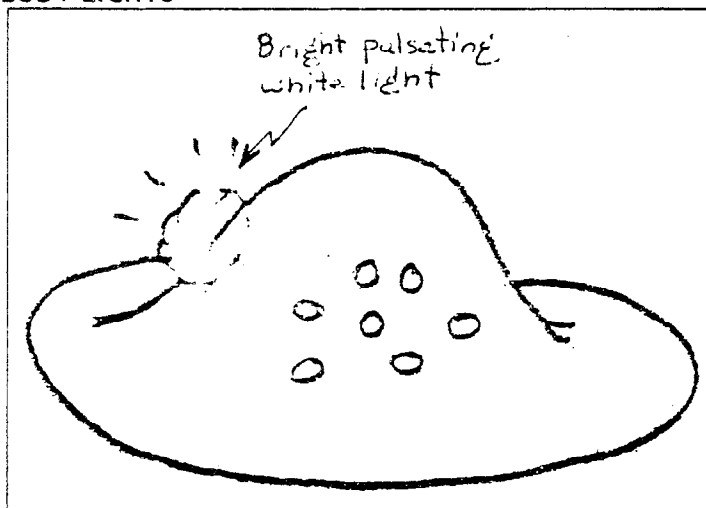


February 16, 1967; Nr. Kingman, Arizona 11:43 p.m.; UFO illuminated ground, joined two other objects as it flew away. three red and one green body lights

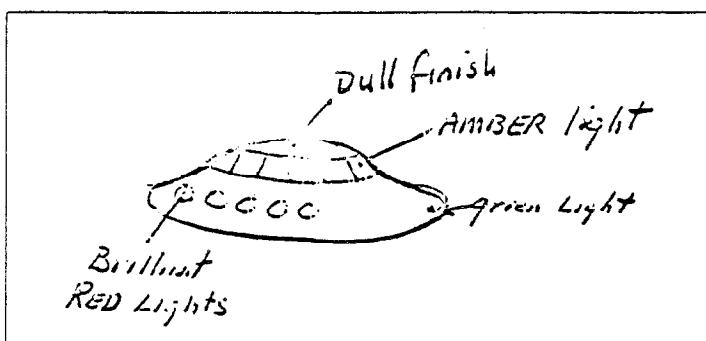
"PORTHOLES" AND BODY LIGHTS



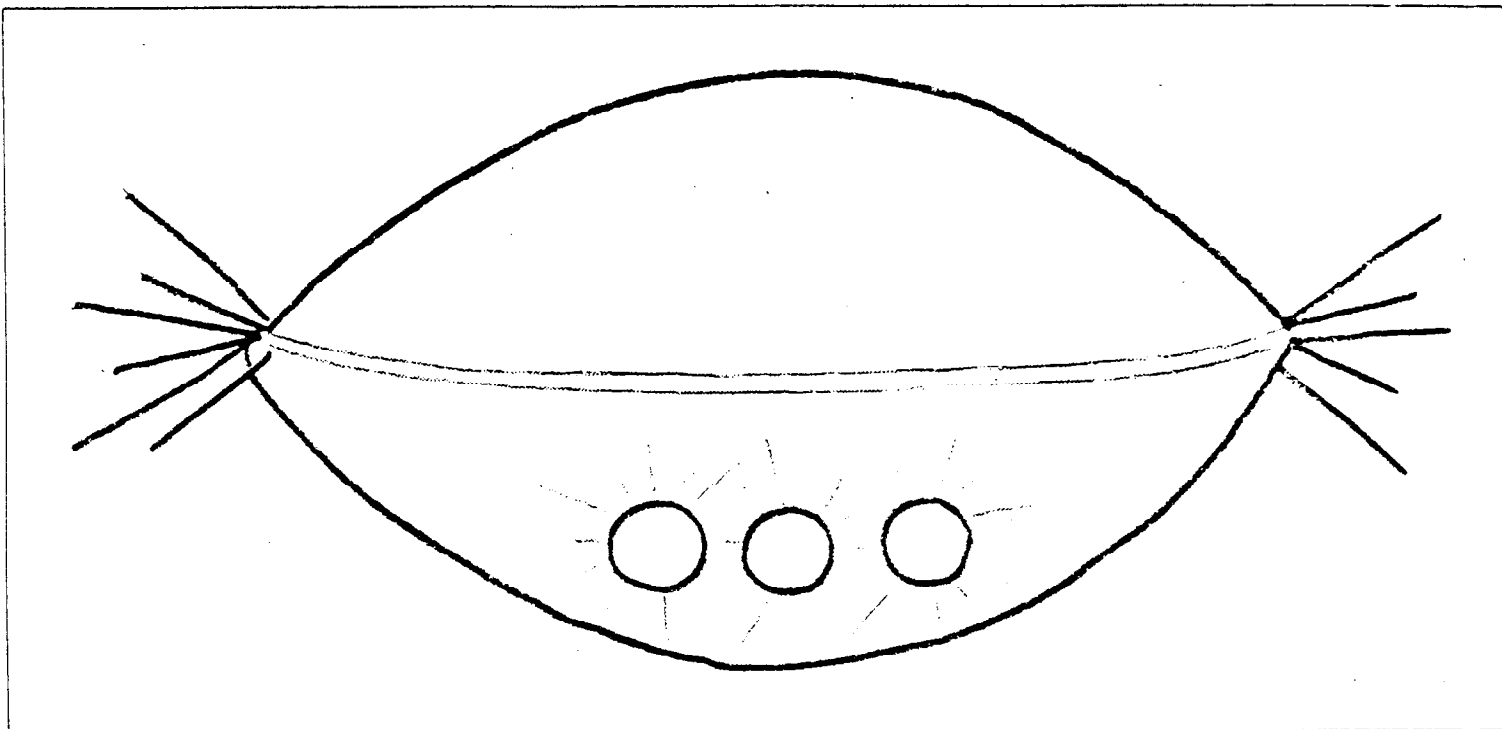
August 19, 1968; Oxon Hill, Maryland 8:25 p.m.; UFO approached, hovered, disappeared upward into clouds, visible several minutes



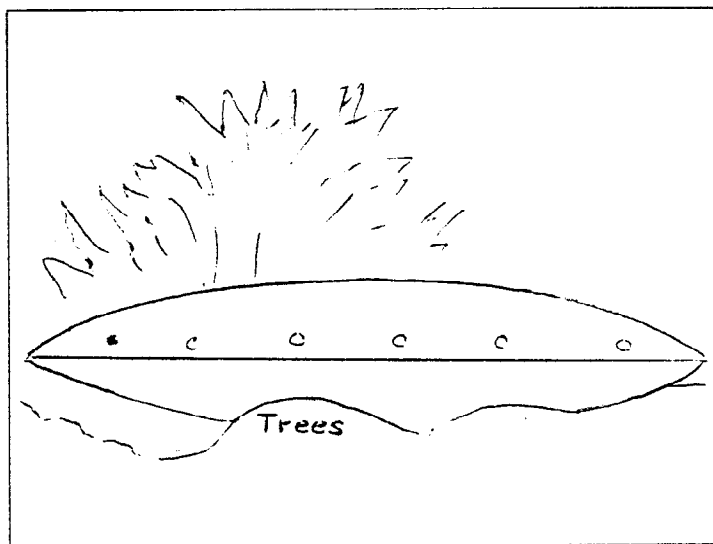
April 12, 1968; Cape Neddick, Maine 11:15 p.m.; UFO seen passing below moon during total eclipse. Body dull red-orange; small red lights, bright pulsating white light on end.



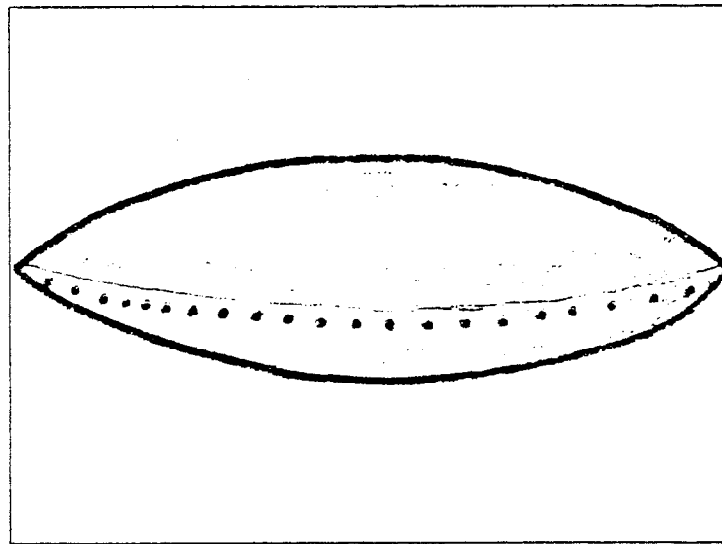
February 22, 1966; So. Kingston, N.H. 9:05 p.m.; UFO maneuvered for 35 minutes; six witnesses; "falling leaf" motion noted.



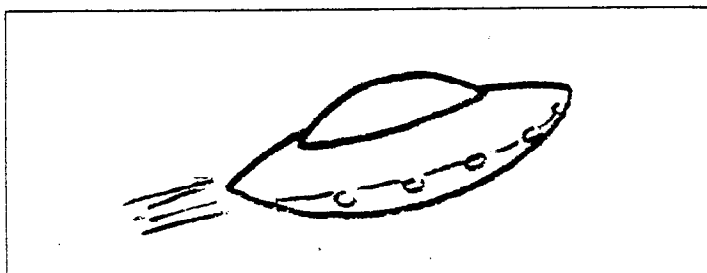
March 22, 1966, Hillsdale, Michigan; UFO sighted in midst of Michigan wave. Yellow light emanated from central band; other lights red, white and green.



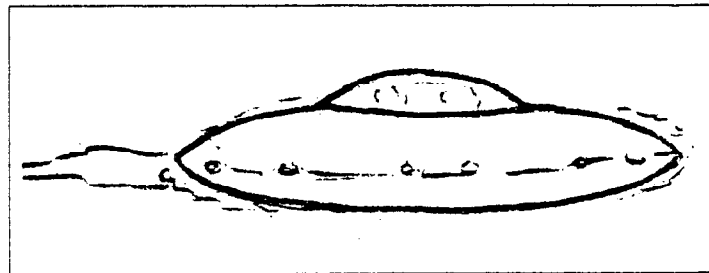
July 26, 1965; Hartshorne, Oklahoma 7 p.m.; UFO hovered 4-5 minutes just above treeline in front of one tall tree, then "whisked away." Upper part silver, lower gray-red; spots like indentations.



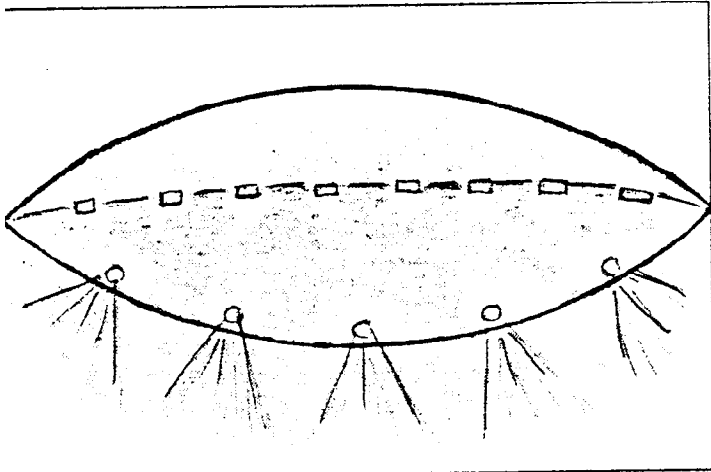
October 14, 1966; Nr. Newton, Illinois 6:45 p.m.; Yellow-orange UFO, blue line around center, red lights just under rim. Object illuminated ground, affected TV, other typical features.



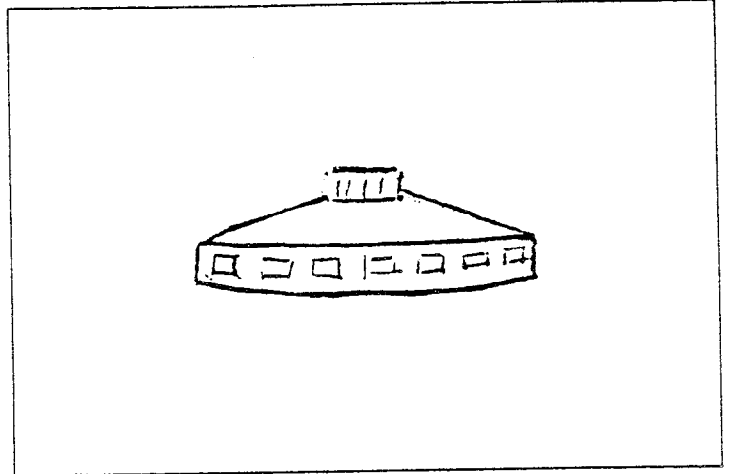
January 15, 1967; No. Granby, Conn. Abt. 5:45 p.m.; UFO emitted white shafts of light from "portholes."



February 15, 1967; Hollywood Bottom, Texas 10:15 p.m.; Family observed UFO with body lights, haze around body, "vibrating" noise. Blue-green light from dome, red-orange from front;(r), bright white trail.

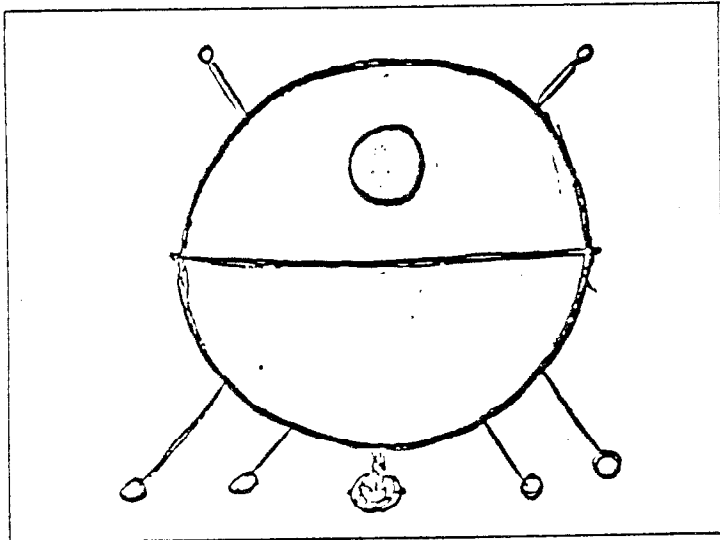


March 19, 1966; Big Rapids, Michigan 5:20 a.m.; UFO surrounded by bluish-white haze. Lights on bottom flicked on and off one at a time. Very similar object sighted 45 miles away at Grand Rapids March 17.

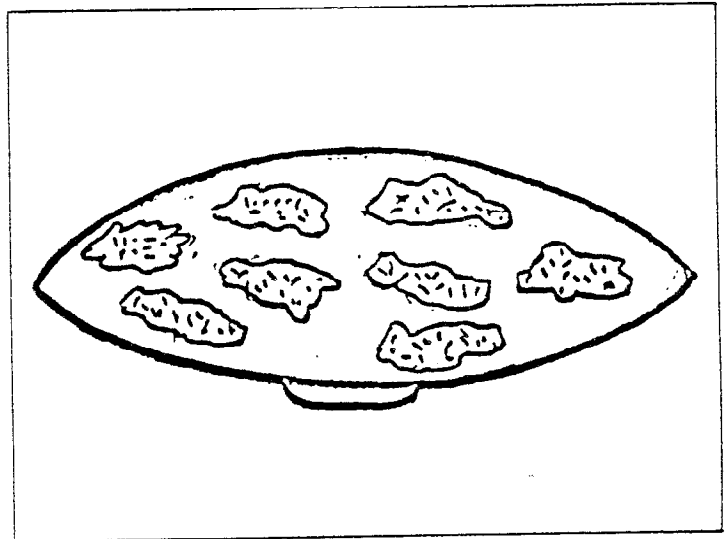


April 22, 1967; Tulsa, Oklahoma 8:10 p.m.; UFO sighted by several witnesses; lights or "ports" appeared to rotate.

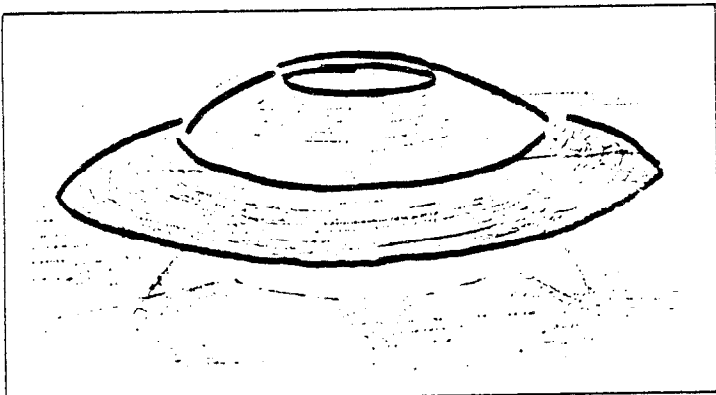
OTHER REPORTS OF STRUCTURED OBJECTS



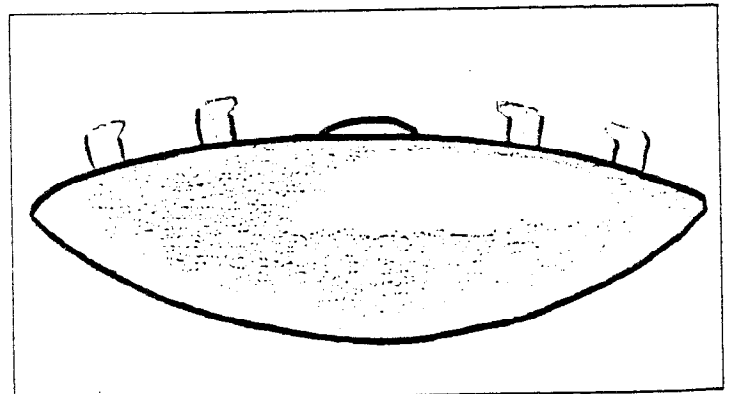
January 19, 1967; Dunbar, W. Va. 9:05 a.m. Merchant saw UFO hovering about 4 feet above Interstate 64, blocking roadway. Aluminum-colored UFO rose rapidly out of sight.



October 7, 1965; Williamstown, N.J. 6 a.m. UFO with patches of shimmering orange light, steady yellow light underneath, moved slowly at tree-top level.



July 19, 1965; Vacluse, Australia 5:30 p.m.; UFO observed taking off from beach; sound of rushing air; dogs barked loudly.



March 8, 1966; Chesterton, Indiana 2:30 p.m.; UFO hovered above cloudbank 4-5 minutes, surrounded by bright, misty haze,

C. TYPES OF ENCOUNTERS

Encounters with UFOs can be placed into three general categories, herein referred to simply as Type I, II, and III:

Type I: The witness sees only a moving light or object with the naked eye or an unknown image on a radar screen. These can be seen either at night or during the day, and many have been photographed.

Type II: The UFO is seen close up and physical effects are noticed, either on the witness or, say, on an automobile engine. This type includes landings when marks are left, but not where aliens are seen.

Type III: Alien beings are either observed in the spacecraft during a Type II encounter, or are actually contacted. This would include those reports of visits aboard spaceships (such as the famous Betty and Barney Hill incident in New Hampshire as discussed in appendix A) and the Pascagoula, Mississippi incident in 1973 (see below).

1. Type I

This is by far the most common type of sighting. From objects that move erratically across the skies to radar images picked up by airport controllers, thousands have been catalogued since 1947 alone. A typical example of this kind of case was reported by J. Allen Hynek:

An example . . . is a case I investigated personally, involving five witnesses, the senior witness being the long-time associate director of a prominent laboratory at MIT. The nocturnal light was first sighted by his son, who had been out airing the dogs. He came bounding into the house crying, 'There's a flying saucer outside.' The senior observer picked up a pair of binoculars on his way out. He told me he didn't expect to see anything unusual but was going out to see what the commotion was all about. For the following ten minutes he was engrossed in what he saw--the nature of the light, its motions, its hovering, and its takeoff. He described the light as having a high color-temperature also though essentially a point source, subtending less than a minute of arc in the binoculars . . . the trajectory of the object was plotted against the framework of the branches of a denuded tree. This observer was a good one, and his report included the condition of his eyes and those of the members of his family. 8/

8/ Hynek J. Allen. Twenty-one Years of UFO Reports. In Sagan and Page, Ibid., p. 45-46.

A case involving radar is typified by the following example:

Lakenheath, England, August 13, 1956, 11:00 P.M.--
3:30 A.M. . . .

Two RAF ground-radar stations detected several objects moving at high speed on a clear moonlit night. The first radar tracked one traveling at about 3,000 miles per hour westward at 4,000 feet altitude; simultaneously, tower operators reported a bright light passing overhead toward the west and the pilot of a C-47 aircraft at 4,000 feet over the airfield saw the bright light streak westward underneath him. The second radar station, alerted by the first, detected a stationary target at about 20,000 feet altitude that suddenly went north at 600 miles per hour. It made several sudden stops and turns. After 30 minutes an RAF fighter was called in and made airborne-radar contacts with the object over Bedford (just north of Cambridge, England). Suddenly the object moved around behind the fighter plane, both being tracked by ground radar. The fighter pilot could not 'shake' the object. A second plane was called in but never made contact and all radar contacts were lost. Several other radar targets were tracked in the same areas and several other small moving lights were seen; all disappeared at 3:30 A.M., by which time a few clouds appeared in the sky. 9/

2. Type II

These are the next most numerous kinds of reports, and can involve several factors. Reports of close encounters with UFOs often include remarks that animals were unusually quiet during the episode or dogs would start whining. Engines have been reported to stop operating in the vicinity of the UFO and cannot be restarted until the object disappears. For those objects which land, reports have been made that the area around the landing site is changed in some manner, whether the grass is burned or bare ground is wet. A good example of a Type II case is given by Ted Phillips, Jr. of the Center for UFO Studies:

9/ Sagan and Page., Ibid., p. xxvi.

Langenburg, Saskatchewan, 1 September 1974. . .

Shortly after 1000 on Sunday morning, 1 September 1974, Edwin Fuhr a 36 year old farmer began harvesting his rape seed crop in a field located some 1,500 feet south of his home. Fuhr had been swathing for nearly an hour, a very light rain had been falling during the morning. As he approached a large slough he slowed the swather and looked up to check his position relative to the grassy area and saw a metal dome about 50 feet away sitting in the grassy area between the slough and the crop. At first he thought it was a metal goose blind. He stopped the machine and walked to within 15 feet of the dome.

As he approached the metal object he noticed that the grass around the base was moving and the object was spinning at a high rate of speed. Fuhr became quite frightened and backed away toward the swather which was still turning at full throttle.

When he reached the machine he moved behind it and climbed up to the seat. At this point he could see the spinning dome from a higher elevation. As he glanced to the left he saw four more metal domes, all the same size and all were spinning. They seemed to be hovering 12 to 18 inches above ground level. . . . He could hear no sound as the swather was still running.

. . . After what seemed several minutes, the objects suddenly burst into the air. The near object left the ground first, followed by the remaining four in order. The objects ascended in a step formation into the overcast sky. At about 200 feet altitude they stopped, a puff of dark gray 'vapor' was seen coming from exhaust-like extensions located at the base of each of the objects. The 'vapor' was about 6 feet in length and was followed by a strong downward gust of wind which flattened the crop that was standing in the immediate area. The ascent took only seconds. After reaching the 200 feet altitude the objects formed a line and remained stationary for about 1-2 minutes. They suddenly ascended into the clouds and were not seen again.

Fuhr learned later that cattle in a nearby field were bellowing and had broken through a fence in four places at about the time of the sighting.

After the objects had disappeared, Fuhr went to the landing area and found five rings of depressed grass. The #2 site has what he described as probe marks where the grass was depressed in 3 foot long areas leading away from the ring on the north side. The grass was swirled in a clockwise fashion at all of the sites. The grass was not dead and had not been burnt. 10/

10/ Phillips, Ted, Jr. Unidentified Flying Objects: The Physical Evidence. New York, American Institute of Aeronautics and Astronautics, 1975. p. 6.

3. Type III

The final class of UFOs is the one responsible for most of the ridicule extended to UFOlogists, for the stories of contacts with extraterrestrial beings seem so implausible. It also is the type depicted in the popular film "Close Encounters of the Third Kind." George Adamski is one of the most famous "contactees" and before he died he authored several books about his trips on board flying saucers to other planets in the solar system. His cases represent an extreme of the Type III encounter, the more common case being something like the Betty and Barney Hill case in Portsmouth, New Hampshire (which is discussed in the appendix under the title "Zeta Reticuli Incident") or the more recent Pascagoula, Mississippi encounter between a spaceship and two shipyard workers. As reported by Philip Klass, the event occurred as follows:

The incident involved Charles Hickson, age forty-two, employed in the small Walker Shipyards, and nineteen-year old Calvin Parker, who had recently come to work in the same shipyard from his home in Laurel, Mississippi. Parker was living with the Hickson's at the time. . . .

Hickson said the two men had been fishing after dark, within several blocks of downtown Pascagoula, when they heard an unusual buzzing or zipping sound. When they turned toward the sound, Hickson said, they saw a flashing blue light coming from a craft that was hovering several feet above the ground.

. . . as soon as the UFO appeared nearby, Hickson said, three strange-looking creatures suddenly emerged from the craft and 'floated' toward the two men. Two of them, he said, grabbed him, and the third was left to handle young Parker. According to Hickson, he and his friend were 'floated' into the UFO through a door which 'didn't open like a door opens--it just appeared, the opening just appeared.' Hickson said he was floated into a very intensely illuminated room and that Parker, apparently, was taken to another. Hickson said he was 'levitated' in a horizontal position while a large round object floated back and forth over his body as if giving him physical examination. . . .

. . . Despite the intense illumination and reported eye injury, Hickson somehow managed to note that the creatures were about five feet tall, with no necks, had gray wrinkled skin 'like an elephant,' long arms and lobster-like claws for hands. Their legs never separated for walking; instead they 'floated,' Hickson said. On their heads, where human ears and a nose would be located, were

small cone-shaped appendages. Below the 'nose' was a 'mouth' which Hickson first described as being a 'hole,' but in a later interview as a 'slit.' . . .

After the two men were carried aboard the UFO, Hickson reported he did not see his friend until sometime later when the two men were floated out and deposited on the riverbank. Parker proved unable to supply even sketchy details of his experience because, as Hickson explained, the youth had fainted at the start of the incident and had not regained consciousness until it was over. Hickson said the creatures had quickly boarded their UFO and it had zipped off into the night. 11/

Some of the above cases have been investigated by both sides of the UFO fringe, especially the Pascagoula case, and some will therefore be discussed later in this paper, but it should be borne in mind that they represent only a small sampling of the cases that have been reported throughout the past 36 years. Summaries of 10 selected cases are given in Appendix A.

11/ Klass, Philip. UFOs Explained. New York, Random House, 1974.
p. 293-296.

II. WITNESS CREDIBILITY

Although UFO reports have been prevalent since the 1940's, it was only in more recent years that studies were made relating to factors that might affect the credibility of those who report the UFOs. In most sightings, there is no hard evidence of any kind, only the reports of eyewitnesses.

Sociologists and psychologists were asked to give their opinions on what type of person reports UFOs, when the evidence seems to be overwhelming that many more UFOs are seen than are reported, for fear of ridicule. J. Allen Hynek reports that when he asks his audiences how many have seen a UFO, more than 10 percent of the audience will raise a hand. When asked how many of them reported the event, few if any respond.

What then is the make-up of UFO reporters, and equally as important, how accurately can a person judge what he is seeing? The situation is probably a stressful one when all faculties are not at their best, and few reference points are available for accurate determination of distance to the object, its size and speed, if moving.

A. SOCIOLOGICAL AND PSYCHOLOGICAL FACTORS

Apparently the first time public attention was focused on this aspect of UFOs was during the 1968 hearings by the House Committee on Science and Astronautics (see chapter 5). Dr. Robert Hall, head of the Department of Sociology at the University of Illinois was called as a witness, and Dr. Roger N. Shepard, Department of Psychology, Stanford University and Dr. R. Leo Sprinkle, University

of Wyoming, submitted papers for the record. A year later the American Association for the Advancement of Science held a UFO Symposium in Boston which included four people from these fields.

Just as other investigators are widely split on the subject of UFOs in general, so are the sociologists and psychologists on the type of people who report UFOs. Drs. Lester Grinspoon and Alan Persky, for example, seem to consider not only the witnesses but those scientists who are vigorously involved in the study of UFOs to be victims of the classic Freudian breast/penis syndrome, thus accounting for the cigar- or saucer-shapes of UFOs. 12/ This author could find no other papers supporting this hypothesis.

Dr. Robert Hall, who was present both at the House hearings and the AAAS symposium, reports that people first try to explain UFOs in terms of familiar objects. Only after the event does not fit into any known category will the witness conclude it is a UFO. He explains that everyone has a set of belief systems that help determine their frames of reference in day-to-day life.

What people believe is usually organized into elaborate systems of belief. That is, each person has a cognitive structure consisting of many items of information and belief which are interdependent, and people are organized into social systems in which each person lends support to belief of others in the system. A lonely belief is an unstable belief. . . .

. . . it appears that people tend in most circumstances to hold beliefs consistent with those of people around them. . . . When reasonable men report events which receive no social support from their friends and do not fit their own prior beliefs, we have to take these reports seriously. 13/

By his reasoning then, as long as the witness is of good standing in the community and meets other criteria set forth in section B of this chapter, his story should be believed.

12/ Sagan and Page, op. cit., p. 233-246.

13/ Ibid., p. 215.

Walter Sullivan, Science Editor of the New York Times, however, points out that UFOs are part of most people's belief systems, put there by the media (it was the media, after all, that coined the term "flying saucer" after Kenneth Arnold's sighting).

It is claimed that witnesses in many of the unexplained UFO cases did not believe in UFOs before their experience with them. My thesis is that we have all been conditioned by the press, radio, and TV--by the general tone of our society--to a hierarchy of beliefs that include for most of the population at least the image of UFOs. 14/

If one does accept that UFOs are a part of virtually everyone's vocabulary, then what other clues can be obtained for determining a witness's reliability? Hall remarks that our legal system has criteria for determining the credibility of witnesses appearing in court, taking into account the person's "reputation in his community, previous familiarity with the event and persons involved in the testimony, apparent motives for prevarication or distortion, and internal characteristics of the testimony such as consistency, recency, verifiable detail and so forth." 15/ Hynek calls this a "credibility index" and feels that "By what right can we summarily ignore [witnesses'] testimony and imply that they are deluded or just plain liars? Would we so treat these same people if they were testifying in court, under oath, on more mundane matters?" 16/

As a consultant for the Air Force for many years, Hynek has had some familiarity with witnesses and has observed that "Very rarely do members of the lunatic fringe make UFO reports. There are many reasons for this; primarily it is simply that they are incapable of composing an articulate, factual, and objective

14/ Sagan and Page, op. cit., p. 39.

15/ Ibid., p. 259.

16/ Ibid., p. 218.

report." 17/ This is an important statement, for it points out one aspect of UFO reports on which there seems to be general agreement, i.e., the more witnesses, the more believable the report. Hynek states:

True, occasionally a lone witness of low credibility will make a highly imaginative report, generated by an obviously natural event. But such reports are a warning to beware of UFO reports from single witnesses. . . . 18/

Philip Morrison agrees. "I would say that no witness is credible who bears a sufficiently strange story. The only hope is for independent claims, several independent witnesses, and then the credibility certainly rises." 19/

There is a danger in this as well, however. There is a psychological condition called hysterical contagion in which a group of people can be led to believe that some event is occurring. It is defined as:

. . . the dissemination of symptoms among a population in a situation where no manifest basis for the symptoms may be established [and where] a set of experiences or behaviors which are heavily laden with the emotion of fear of a mysterious force are disseminated through a collectivity. . . . 20/

The relationship that this condition may have to UFOs is unknown, but both the Condon Report and the AAAS symposium discussed it as a possibility. Two cases cited in both those studies will serve as examples of what the condition entails.

The first is the famous radio broadcast of H. G. Wells' War of the Worlds in 1938. To the listeners of that radio program who had not heard the introductory disclaimer explaining it was only a story and not an actual event, it

17/ Hynek, J. Allen. [Testimony] In U.S. Congress. House. Committee on Science and Astronautics. Symposium on Unidentified Flying Objects, op. cit., p. 5.

18/ Hynek, J. Allen. The UFO Experience: A Scientific Inquiry. Chicago, Henry Regnery, 1972. p. 20.

19/ Sagan and Page, op. cit., p. 282.

20/ Kerckhoff, A. C. and K. W. Black. The June Bug: A Study of Hysterical Contagion. New York, Appleton-Century-Crofts, 1968.

appeared that Earth was in fact being invaded by aliens from another planet. Their reaction was panic with some literally "heading for the hills" and in a few cases, committing suicide. The broadcast occurred at a time when anxiety was high over the threat of war, for Hitler had just occupied Austria and Japan was advancing in China. The populace was primed for news of war and destruction, and panic ensued.

A second case involves a "June Bug" epidemic in a southern factory. In 1962 workers from a section of a textile factory in the South reported a disease symptomized by nausea, skin rash and fainting spells, caused by a tiny insect. In fact, there was no insect. The symptoms had manifested themselves as an outgrowth of strain and frustration felt by the workers.

The Condon report concludes only that this be kept in mind while studying UFO cases, but did not cite it as a definite cause. Dr. Hall at the AAAS meeting decided to ignore it completely as an explanation.

Some effort has been made to liken UFO reports to these cases of hysterical contagion. . . but there are many difficulties in trying to argue that the hard-core cases can be explained in this way. For one thing, the persons reporting UFOs frequently do not interpret them as serious personal threats. They often describe a UFO with puzzlement but not fear. For another, the continuation of UFO reports over at least decades and their spread over all parts of the world would both be unprecedented for a case of hysterical contagion. 21/

Where, then, does this leave the researcher attempting to determine the credibility of a witness? Dr. Roger Shepard, in his statement for the House Science and Astronautics Committee, concluded that:

. . . a scientific study of UFO phenomena is not impossible--just more difficult. For, we are faced for the most part with a problem--not of making physical measurements--but of interpreting

21/ Sagan and Page, op. cit., p. 217.

verbal reports. We are faced, in short, with a problem amenable more to the methods of the psychologist than to those of the physical scientists. 22/

The Condon Report concluded that it would be valuable to have sociologists and psychologists as part of the investigating team on UFO reports 23/ and there seems to be a good deal of evidence suggesting that persons from these disciplines could prove valuable to the effort. But even these professions are not in agreement, so it is doubtful that they will solve the controversy. Dr. Hall stated at the AAAS symposium that:

. . . we find some scientists arguing something like this: 'I can cite hundreds of cases of people who were excited and reported an aircraft, or a star as a UFO and hundreds of humorous cases of unbalanced people with demonstrably false, stories; therefore it is plausible that the rest of the cases are similar.' I know from personal experience as a military flyer in wartime that flyers sometimes shoot at Venus or at an island, believing it to be an aircraft. It would be foolish for me to conclude from this that there were no aircraft in the sky. 24/

Either there must be a distinctive physical phenomenon which these witnesses have observed, or there must be a powerful and poorly understood motivation rooted in projection, or contagion of belief, or a similar mechanism. Given these alternatives, I find it more plausible to believe that there is a distinctive physical stimulus than to believe that multiple witnesses misperceive in such a way as to make them firmly believe they saw something which jars their own beliefs and subjects them to ridicule of their associates. . . . 25/

And just as there are professionals such as Grinspoon and Persky who feel that all UFOs are psychological manifestations, there are those who agree with Dr. Shepard who is convinced, after studying numerous UFO reports, that most

22/ Shepard, Roger N. [Testimony] In U.S. Congress. House. Committee on Science and Astronautics. Symposium on Unidentified Flying Objects, op. cit., p. 224.

23/ Rhine, Mark W. Psychological Aspects of UFO Reports. In Condon, Edward U. Scientific Study of Unidentified Flying Objects. New York, Bantam Books, 1968. p. 597. (Note that this is frequently referred to as the Condon Report.)

24/ Sagan and Page, op. cit., p. 221.

25/ Ibid., p. 219.

sightings are not psychological aberrations and that those who say they are "have neglected to study closely either into the literature on psychopathology, or into that on UFOs. . . ." 26/

B. OTHER LIMITATIONS ON WITNESSES

In addition to the above discussion there needs to be recognition of other factors playing upon a witness to a UFO event that have little if anything to do with their psychological make-up. Dr. Frank Drake reported to the AAAS symposium an experience he had when he was a visiting astronomer at the National Radio Astronomy Observatory in Green Bank, West Virginia. In 1962, a meteor shower occurred in that general area, and while out with colleagues collecting samples of the meteorites, Drake interviewed many witnesses to see what their perception of the shower had been. They found that ". . . a witness's memory of such exotic events faded very quickly. After one day, about half of the reports are clearly erroneous; after two days, about three-quarters are clearly erroneous; after four days, only ten percent are good; after five days, people report more imagination than truth." 27/ As a good example of trying not only to remember certain events but to explain them to an investigator, try to describe a close friend or relative to someone else so that they could pick that person out in a crowd. It is not very easy, even though you may have known that friend or relative for a number of years.

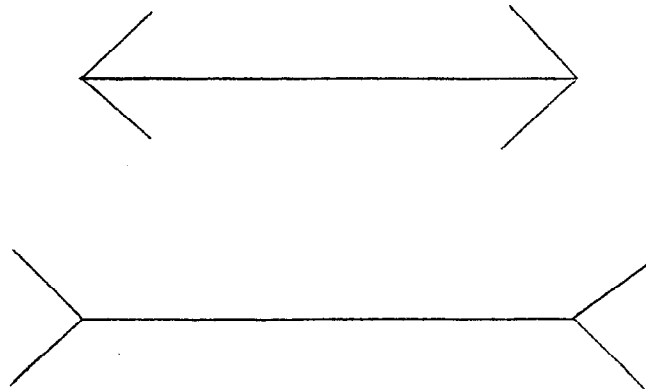
Another, more basic problem is trying to gauge the color, shape, speed and distance to the object. In Drake's example, the meteors were assigned virtually all the colors of the spectrum from red to blue. It is possible that the eye,

26/ Sagan and Page., op. cit., p. 254.

27/ Sagan and Page., op. cit., p. 254.

responding to a sudden burst of light in an otherwise dark environment, can register any color and therefore render witness reports useless. Similarly, some witnesses thought they knew their exact position relative to the meteor shower, so could give good estimates of distance and position. Upon recreating the event, however, they found they were not sure of their location. In one example, a hunter said he knew exactly where his car had been parked, but upon re-examination found (by the litter he had left from his midnight snack) that he had been 100 yards away from the spot he originally showed to investigators.

A good example where seeing is not believing can be shown below with the standard optical illusion shown below. Although the bottom line looks longer, measurement will prove that both lines are the same length.



In 1968, Sydney Walker III, M.D., suggested that a series of physical checks be made on every UFO reporter. Included in his proposed examination would be: a complete physical examination, including a medical history and selected laboratory studies; a neuro-ophthalmologic examination of the eyes to ensure that the cornea, lens, aqueous humor, vitreous humor, retina, the head of the

optic nerve and the pathways to the brain are in order; a detailed neurological examination to assure that a neurologic disease is not causing hallucinations, delusions, distortions or confabulations; and finally, a psychiatric evaluation. 28/

Mark W. Rhine, writing in the Condon Report, placed a great deal of emphasis on the last step.

The testimony of any observer who shows no significant medical or psychological conditions which might distort perception or interpretation must gain in credibility. I would suggest . . . the use of psychological testing . . . when recommended by the psychiatrist. A psychiatric interview, if made a routine part of the evaluation of observers, should carry no social stigma. 29/

What neither Dr. Walker nor Mr. Rhine seem to take into account is that the potential reporters of UFOs may very well shy away from reporting if they know they will be subjected to such tests.

In his statement for the House Committee on Science and Astronautics, Dr. Shepard suggested that the witnesses be assisted in retelling their stories in a three-step procedure. First the witness would record what he saw in his own words with care taken that the interviewer does not give him cues that might bias him. Secondly, the witness would look at a standardized set of pictorial material and choose whatever object came closest to what he saw. The final step would allow him to reconstruct the picture with the help of a qualified artist to make it more nearly an exact replica of what he saw. These last two procedures would be similar to that used in police work to make a composite drawing of a criminal. Shepard points out that this has helped solve many cases, including the Richard Speck murders of eight student nurses in Chicago during the 1960s.

28/ Walker, Sydney III, M.D. Establishing Observer Credibility: A Proposed Method. Journal of the Astronautical Sciences, v. IV Mar.-Apr. 19;68: 92-96.

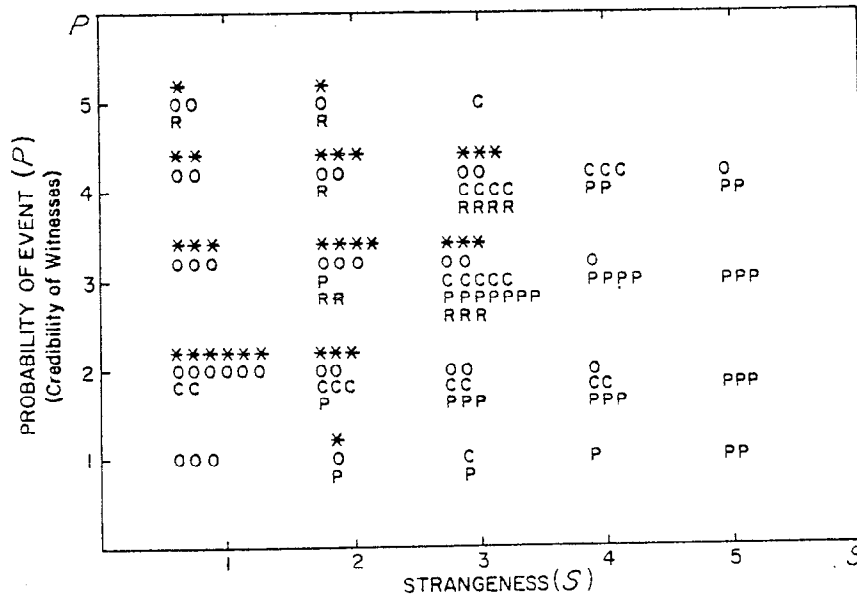
29/ Rhine, Mark W., op. cit., p. 596.

C. STRANGENESS-PROBABILITY CURVE

Faced with all these factors and the problem of how to assimilate them, J. Allen Hynek has devised a "Strangeness-Probability" Curve to determine which cases have the highest probability of being hard-core cases. A complete discussion of the methods he uses can be found in his book The UFO Experience: A Scientific Inquiry (Chicago, Henry Regenery Co., 1972: 22-31) but in essence he defines "strangeness" as how many individual items, or information bits contained in the report demand explanation, and how difficult it is to explain them on the assumption that the event actually took place. Credibility takes into account several factors: "If there are several witnesses, what is their collective objectivity? How well do they respond to tests of their ability to gauge angular rates of speed? How good is their eyesight? What is their general reputation in the community? What is their reputation for publicity-seeking, for veracity? What is their occupation and how much responsibility does it involve? 30/

Hynek then plots cases to determine which are the best, as shown below. Cases falling in the upper right hand corner would be the most potentially important, and as is seen, that region is scarcely populated. The chart does, however, provide a beginning for the search for "good" cases.

30/ Sagan and Page, op. cit., p. 41-42.



Strangeness/probability diagram of UFO sightings. To be considered important, such a sighting must have both a very high probability of having actually occurred and a very high strangeness. The upper right-hand corner of the diagram is not heavily populated. * = nocturnal lights; O = daylight disks; R = radar cases; C = close encounters with no interaction with the environment; P = close encounters with physical effects (landing marks, burnt rings, engine stoppages, etc.).

III. POINT - COUNTERPOINT

It is very difficult in a report like this to express adequately the wide variety of opinions that exist on UFOs. The range goes from the late Donald Menzel who thought there was no possibility that we are being visited by extra-terrestrial beings, to Donald Keyhoe who is certain that we are. In the middle would be someone like J. Allen Hynek who is more disposed toward the view that there is value in studying UFOs if for no other purpose than learning more about atmospheric processes, psychology, and other scientific fields.

This chapter presents some of these various views on different aspects of the UFO problem. If one were to make a spectrum with "true believers" on the left and "true nonbelievers" on the right, the four men who are the subjects of this discourse would appear in the following order: Donald Keyhoe, J. Allen Hynek, Carl Sagan, and Donald Menzel. This is, of course, only a rough estimation of where their positions lie, but will serve as a guide. Four essays are offered, and since each stands alone, they admittedly present only one side of the issue. That is the purpose of this chapter, however, so no attempt is made to balance their views.

A. PROBABLE INVALIDITY OF THE EXTRATERRESTRIAL HYPOTHESIS

Carl Sagan, an astronomer and biologist presently at Cornell University, has been a leader in the field of guessing at how many other intelligent civilizations exist in our galaxy. After a series of long computations (the nature of which have no real relevance to this report) he estimates one million other

intelligent, technical civilizations at least as advanced as ours. But Sagan also is one of the leading opponents of the extraterrestrial hypothesis for UFOs. Is this a contradiction?

To demonstrate his point, Sagan uses the "Santa Claus hypothesis" from the fable that each year, in a time span of about eight hours, an "out-sized elf" visits over a hundred million homes in the United States depositing presents. Sagan calculates that if Claus spends only one second per house, he would have to spend three years just filling stockings, not counting the time spent going from house to house.

This is an example of hypothesis testing independent of reindeer propulsion mechanisms or debates on the origin of elves. We examine the hypothesis itself, making very straightforward assumptions, and derive a result inconsistent with the hypothesis by many orders of magnitude. We would then suggest that the hypothesis is untenable. 32/

Applying this to UFOs, and considering how many "interesting places" there are in our galaxy, he then calculates the number of launches required from his one million galactic civilizations in order for Earth to be visited just once a year: each civilization would have to make 10,000 launches per year. Besides being an enormous technical feat, it would impose a large drain on material resources.

For those who argue that Earth might hold special interest for another civilization, Sagan counters that, at best, certain specialists in, for example, nuclear weapons, would want to visit us. After all, if we discovered a primitive tribe in Africa making fish nets, only anthropologists interested in fish net development would visit the tribe. He considers the idea that we are "special" to the galaxy inconsistent with the theory that there are a million other civilizations

32/ Sagan, Carl. The Cosmic Connection. Garden City, New York, Doubleday, 1973. p. 200.

in the Milky Way alone, not to mention the rest of the universe (there are approximately 10^{11} stars in the Milky Way and 10^{11} galaxies in the known universe). With that many civilizations, what could we have that is so interesting?

Sagan does not entirely dismiss the possibility that we may have been visited in the distant past or that we might be visited in the distant future. Again using the guesstimate of a million other civilizations in this galaxy, if each one launched one ship per year "and even if all of them could reach our solar system with equal facility, our system would, on the average, be visited only once every 100,000 years." 33/

He recounts the history of Sumer, which was perhaps the first civilization, using the contemporary definition of that word. There have been suggestions that they could not have learned skills such as written language, mathematics, and astronomy without a teacher, and that teacher came from another world. Referencing a theory by Drake and Clarke, Sagan adds that the extraterrestrial instructors might have left a "technology monitor beacon" to alert them once we reached a certain technological level. The monitor might measure radioactivity in the atmosphere, for example, and the instructors would know it was time for them to return. At this point Sagan refers back to his comments about the great distances involved in space, and even if speed-of-light travel were possible, it would still take hundreds of years for them to arrive: "we will have to wait until A.D. 2300 or 2400 for their response." 34/ He does not, however, accept the von Daniken theory of ancient astronauts and the relics purportedly left behind.

33/ U.S. Congress. House Committee on Science and Astronautics. Symposium on Unidentified Flying Objects, op. cit., p. 94.

34/ Shklovskii, I. and C. Sagan. Intelligent Life in the Universe. San Francisco, Holden-Day, 1966. p. 463.

He feels each object has "a variety of plausible, alternative explanations. Representations of beings with large, elongated heads, alleged to resemble space helmets, could equally well be inelegant artistic renditions, depictions of ceremonial head masks or expressions or rampant hydroencephalia." 35/

In answer to what people are seeing, Sagan draws on one of his own experiences.

Once when I was on the faculty at Harvard I gave a popular lecture on something or other, and in the question period at the end there were some questions about UFO's. I said that I felt at least a great fraction of them were misapprehended natural phenomena. For some reason that I don't understand, policemen are present at all such public gatherings, and as I walked out after the last question, two policemen outside the lecture hall were pointing up at the sky. I looked up and observed a strange brilliant light moving slowly overhead. Of course, I got out of there fast, before the crowd came out to ask me what it was. I joined some friends at a restaurant and said, 'There's something terrific outside.' Everyone went outside. They really liked it--it was great fun. There it was. It wasn't going away. It was clearly visible, slowly moving, fading and brightening, no sound attached to it. Well, I went home, got my binoculars, and returned. Through the binoculars I was able to resolve the lights; the bright white light was really two closely spaced lights, and there were two lights on either side, blinking. When the thing got brighter we could hear a mild drone; when the thing got dimmer, we couldn't hear a thing. In fact it turned out to be a NASA weather airplane.

B. ALLEGED AIR FORCE SECRECY AND COVER-UPS

When the Air Force was given responsibility for investigating the matter of UFOs in 1948, it instituted a policy of secrecy which came under attack from several directions. Donald Keyhoe, a retired Marine Corps Major, was one of the leaders in trying to expose the information he felt certain the Air Force had. Some of the Air Force reports are explained in other parts of this paper, and

35/ Sagan, Cosmic Connection, op. cit., p. 205-206.

indeed most were kept secret (the Project Sign "Estimate of the Situation," the Robertson Panel's conclusions, and most of the UFO sighting reports, for example).

As someone interested in showing the public that UFOs are for real, Keyhoe found the Air Force a major stumbling block and tried on many occasions to expose their operation. He wrote magazine articles and books, culminating in 1973 with an overview of the entire affair entitled Aliens from Space. In that book he goes through the years of Air Force secrecy and what he called "cover-ups" of incontrovertible evidence that Earth is being visited by spaceships from other worlds.

Keyhoe stated that in December 1969, when the Air Force announced that all UFO cases were solved and cancelled Project Blue Book: "At that very time, AF interceptor pilots were trying to bring down these unknown flying objects by secret orders of the Aerospace Defense Command." ^{36/} He further said that the Air Force continued to investigate incidents even after 1969, concealing their activities from everyone, including Congress.

Some of the early Air Force records were made available in 1967, and NICAP (under the leadership of Keyhoe at that time) published Blue Book Reports 1-12. Keyhoe stated, and copies of the NICAP publication bear out, that the reports were stamped SECRET or CONFIDENTIAL along with a warning statement that if the contents were transmitted to unauthorized persons, it was a crime under the Espionage Act.

Keyhoe discussed cases which do not show up in other literature, involving, for example, jet crashes. He stated that on July 1, 1954 an F-94 Starfire jet was scrambled by Griffiss AFB to intercept a UFO. As the pilot closed

^{36/} Keyhoe, Donald. Aliens from Space. New York, Doubleday, 1973. p. 3.

on the object "Abruptly a furnacelike heat filled both cockpits. Gasping for breath, the pilot jettisoned the canopy. Through a blur of heat waves he saw the radar observer bail out. Stunned, without even thinking, he ejected himself from the plane." The F-94 reportedly crashed in a town, killing four people and injuring five. Keyhoe said this report was still buried in Air Force files, classified SECRET. 37/

Keyhoe also claimed in his book that during the early fifties, the CIA wanted to take over UFO investigations from the Air Force, and they were the ones that first ordered the debunking campaign. The Robertson Panel was the first step in this process, according to Keyhoe and Major Dewey Fournet (Air Force Headquarters Intelligence Unit) was planning to "give the public the facts" but was foiled by the CIA. They ordered him to work up a "national debunking program" and make UFO reports sound like "poppycock." Keyhoe states that similar actions of secrecy and cover-up extended throughout Project Blue Book (including during the Condon study) and continued into the 1970s.

C. HOAXES AND WITNESS CREDIBILITY

The late Donald Menzel, an astrophysicist at Harvard, opposed the UFO "myth" from the early 1950s until his death in 1976. Among the many other problems facing investigators of unfamiliar aerial phenomena are the deliberate hoaxes perpetrated for publicity purposes, and the teen-age pranks. Twenty years ago, Menzel discussed the hoaxes, and explained their origin this way:

The Arnold story was scarcely 24 hours old before the hoaxers, jokers, and publicity seekers of the Nation moved in. The subject matter lent itself admirably to such activities. People had seen saucers in the sky. People wanted to see more. And so the jokers started tossing wheelshaped objects of all sorts and descriptions

37/ Ibid., p. 28.

from the tops of tallest buildings. These activities produced the desired result. The women screamed, as they were supposed to do on such occasions. The men--at least after they realized that the object would not explode--bravely picked it up and showed its true nature. 38/

The most popular hoax seems to be the photograph, for it is considered hard evidence by UFO investigators, although the number of fakes reduces the believability of such "evidence." Menzel discussed the Trindade incident which took place in 1958, wherein the claim was made that the crew of a Brazilian ship had seen a UFO, and a civilian aboard the ship had photographed it. As it turned out, no crew member had seen the UFO, only the photographs of it, and the pictures were considered fraudulent. The three witnesses who had seen the UFO all reported that it was brilliant, but the photos showed only a gray shape. In the one picture that suggested a shape, the mountains in the foreground were quite clear, whereas the UFO was just a dark line with an "indistinct beginning and end, with a faint suggestion of rounding at top and bottom." The photographer was found to have no connection with the Brazilian Navy and was indeed a professional photographer specializing in trick photography. 39/

The pranks add to the noise in the UFO problem, and Menzel provided an excellent example of one, for it also relates to witness credibility. In January 1968, 12 witnesses saw a UFO in Castle Rock, Colorado, a small town 30 miles south of Denver. Their descriptions ranged from "all of a sudden about a dozen lights shined on me, all the color of car headlights that had mud on them"; "a big, real bright light. Not a brilliant light, but a bright one" which moved at different speeds and seemed about 600 feet high and at least 25 feet in

38/ Menzel, Donald and Lyle Boyd. The World of Flying Saucers: A Scientific Examination of a Major Myth of the Space Age. Garden City, New York, Doubleday, 1963. p. 206-216.

39/ Ibid.

diameter; and an egg-shaped bubble about 50 feet long, 20 feet wide and 20 feet deep. Two days later a "slightly embarrassed" mother came forward to explain that her sons had built the UFO from a clear plastic dry-cleaning bag. 40/

The "ludicrously long" size estimates are part of a fault existing in many UFO reports, according to Menzel, and in addition are perceptual problems common to most observers of a strange, sudden phenomenon. Menzel addressed himself to sensory difficulties both in a statement for the 1968 House Science and Astronautics hearings, and at the 1969 AAAS symposium. He gave the following example: A child gets up to go to the bathroom in the middle of the night and turns on a light. One of his parents awakens, is blinded by the sudden illumination, the light goes off, and the parent happens to glance out the window.

He is startled to see a peculiar spot of light floating over the trees and making irregular, jerky motions. He watches the UFO for a minute or two until it finally disappears.

He cannot be blamed for failing to realize that the erratic and often rapid movement of his UFO are those of the after-image, drifting with the similar movements of his own eye. 41/

Among the many mundane objects that are reported as UFOs, Menzel listed birds, kites, hats, paper, plastic sacks, feathers, spider webs and seed pods. He commented that "If you want to see flying saucers just look up."

D. POSSIBLE BENEFITS TO SCIENCE FROM A UFO STUDY

Dr. J. Allen Hynek has had a long association with UFOs. As an astronomer at Ohio State University, he was asked by the Air Force to determine which UFO reports came from known astronomical objects. When Project Blue Book was formed,

40/ Menzel, David. UFOs: The Modern Myth. In Sagan and Page, op. cit., p. 132-3.

41/ U.S. Congress. House. Committee on Science and Astronautics. Symposium on Unidentified Flying Objects, op. cit., p. 202.

Captain Ruppelt formally contracted Hynek to continue that work. His views on the subject have changed during his many years of UFO investigation, and many would now classify him a believer. One of his strongest arguments has been that regardless of whether UFOs are alien spacecraft, the study of UFOs could lead to a greater understanding of other fields of science, such as psychology and physics.

As a scientist himself, Hynek is aware of the methodology needed to deal with the subject and he is also aware of the variety of views of the scientific community. In the latter area, he distinguishes between two classes of scientists who work with the UFO problem:

(1) those scientists who treat the UFO phenomenon with ridicule and contempt, refusing even to examine it, denouncing the subject out of hand; and (2) those scientists who maintain--or might come to believe after examination--that there is a strong possibility that UFOs are purely psychological phenomena, that is, generated wholly by individual or group mental activity. (No scientist who examines the subject objectively can claim for long that UFOs are solely the product of simple misidentification of normal objects and events). 42/

He feels the latter group's views are entitled to discussion and debate, although the views of the former group are not, since they have not examined the data.

Paucity of data is another concern for Hynek. He feels some of this lack of hard core information is due to the investigator not asking questions that would draw such information from the witness. There is also the "signal-to-noise" problem in which the investigator has to separate real UFO reports (the signal) from hoaxes and misidentifications (the noise). But Hynek points out that astronomers are well accustomed to such problems, for they have instrumental errors and atmospheric distortion to contend with.

^{42/} Hynek, J. Allen. The UFO Experience: A Scientific Inquiry, op. cit., p. 7.

That so many of the UFO reports are interpreted as extraterrestrial vehicles, Hynek feels is "obviously unwarranted without a detailed study of the content of reports of unidentified sightings. . . . For, the 'U' in UFO simply means unidentified, and may cover a wide range of unrelated causes." 43/

Throughout his writings, Hynek refers back to some of the great scientific discoveries in the history of our planet, and how unlikely they seemed at the time. For example, the discovery of radium by Mme. Curie.

Let us suppose that . . . there had been a rumor--an old wives' tale, or an alchemist's story--that there existed a miraculous unknown element which could be used in the transmutation of elements, and which had miraculous healing powers and other exotic properties. Would any scientist, . . . have done what Mme. Curie did to lift the signal out of the noise of tons of pitchblende? Hardly, Mme. Curie knew that there was a signal--it wasn't a rumor. 44/

In hearings before the House Science and Astronautics Committee, Hynek asked, "Can we afford not to look toward the UFO skies; can we afford to overlook a potential breakthrough of great significance?" and later added that even though he can only draw conclusions from reliable data, he is allowed a hunch, and that hunch tells him that "there is scientific paydirt in the UFO phenomenon--possibly extremely valuable paydirt--and that therefore a scientific effort on a much larger scale than any heretofore should be mounted for a frontal attack on this problem." 45/

As to which discipline the effort belongs, Hynek suggested an interdisciplinary approach. He found the field more akin to astronomy than physics in that the data are mostly observational, not experimental, and one cannot predict

43/ Hynek, J. Allen. The Emerging Picture of the UFO Problem. Presented to AIAA 13th Aerospace Science Meeting, Pasadena, Calif., Jan. 20-22, 1975. New York, American Institute of Aeronautics and Astronautics, 1975. p. 3.

44/ Ibid., p. 2.

45/ U.S. Congress. House. Committee on Science and Astronautics. Symposium on Unidentified Flying Objects, op. cit., p. 6 and 14.

when something will occur. He suggested that if UFOs do turn out to be extra-terrestrial, the behavioral sciences would certainly prove valuable. He asked for an international effort to establish world-wide trends, stating that if definite patterns are established "the probability that such correlations happened by chance . . . would be vanishingly small. The probability, therefore, that the UFO represents something truly new in science--new empirical observations--would be a virtual certainty. 46/

46/ Hynek, UFO Experience, op. cit., p. 227.

IV. PRE-1947 ACCOUNTS

Those who believe in UFOs often like to remind skeptics that stories that could be construed to suggest extraterrestrial visitors have been around not just since 1947, but throughout recorded history. Erich von Daniken has studied ancient skies in some detail, as will be discussed in the appendix. Among the references used for this purpose is, perhaps surprisingly, the Holy Bible.

A. BIBLICAL SIGHTINGS

It is difficult to assess what import stories from the Bible really have for the study of UFOs, since the Book concerns itself with powers from the heavens that can visit Earth and perform remarkable feats. Opinions vary on how much of this is actual factual reporting and how much is symbolic interpretation. Some UFOlogists, however, seem to claim that most of the references to the Lord and his angels are in fact references to extraterrestrial visitations misunderstood by the people of those times. Some oft cited examples follow.

As I looked out, behold a stormy wind came out of the north, and a great cloud, with brightness round about it, and fire flashing forth continually, and in the midst of the fire, as it were gleaming bronze. And from the midst of it came the likeness of four living creatures. And this was their appearance: they had the form of men, but each had four faces and each of them had four wings. Their legs were straight, and the soles of their feet were like the sole of a calf's foot; and they sparkled like burnished bronze. Under their wings on their four sides they had human hands.

Ezekiel 1:4-6

And the Lord went before them by day in a pillar of cloud to lead them along the way, and by night in a pillar of fire to give to them light, that they might travel by day and by night; the pillar of cloud by day and the pillar of fire by night did not depart from before the people.

Exodus 13:21-22

When they had crossed, Eli'jah said to Eli'sha, 'Ask what I shall do for you, before I am taken from you.' And Eli'sha said, 'I pray you let me inherit a double share of your spirit,' And he said, 'You have asked a hard thing yet, if you see me as I am being taken from you, it shall be so for you; but if you do not see me, it shall not be so.' And as they still went on and talked, behold, a chariot of fire and horses of fire separated the two of them. And Eli'ja went up by a whirlwind into heaven. And Eli'sha saw it and cried 'My father, my father' the chariots of Israel and its horsemen. And he saw him no more.

2 Kings 2:9-12

Brinsley Le Poer Trench has written extensively on Biblical sightings (The Sky People, The Eternal Subject) and calls the Bible "really the greatest flying saucer book of them all. . . ." 47/ Certainly if one were scrupulously to read the Bible, one could probably come up with hundreds of incidents that could be called UFO accounts, although some disagree on what the real catalysts for the writings were.

B. OTHER EARLY REPORTS

In addition to Biblical accounts, many other early accounts have been cited. An example of this would be a 213 B.C. episode written about by Jacques Vallee:

. . . in Hadria an 'alter' was seen in the sky, accompanied by the form of a man in white clothing. A total of a dozen such observations between 222 and 90 B.C. can be listed, but we have eliminated many more sightings reviewed in the literature because we felt that they could best be explained as misinterpretations of meteors or atmospheric phenomena. 48/

The theme expressed in the last sentence is carried through in the Condon Report by Samuel Rosenberg. He keenly points out that:

The wealth of ancient 'UFOs' is due to a basic fact about man's perception of his contemporary universe. A concentrated glance

47/ Le Poer Trench, Brinsley. The Eternal Subject. London, Sovenir Press, 1973. p. 36.

48/ Vallee, Jacques. Anatomy of a Phenomenon. Chicago, Henry Rengery Co., 1965. p. 3.

backward in time quickly reveals that throughout our recorded history (and presumably before that), mankind has always seen UFOs and reported 'sightings' that remained unexplained even after examination by persons believed to be competent. Our earliest ancestor gazed earnestly into terrestrial and outer space to witness an infinite variety of phenomena and--understood virtually none of them. . . . In short, to him everything was a UFO. 49/

He also describes some of the problems facing readers of anthologies of ancient sightings. None of the techniques described in chapter 2 of this report are available to determine the credibility of those reporting the sightings, there is no way to know if the author is quoting from an original document or from someone else's translation, and perhaps most importantly one can't determine author credibility.

An excellent example of the latter is provided by Rosenberg. First, the account of an ancient Indian sighting, as reported by Frank Edwards in Flying Saucers--Serious Business.

A chronicle of ancient India known as the Book of Dyzan is in a class by itself, not only because of its age, but because of a surprising account given therein. The Book is a compilation of legends passed down through the ages before men were able to write, and finally gathered by the ancient scholars who preserved them for us.

They tell of a small group of beings who came to Earth many thousands of years ago in a metal craft which first went AROUND Earth several times before landing. 'These beings,' says the Book, 'lived to themselves and were revered by the humans among whom they had settled. But eventually differences arose among them and they divided their numbers, several of the men and women and some children settling in another city, where they were promptly installed as rulers by the awe-stricken populace.

The legend continues:

Separation did not bring peace to these people and finally their anger reached a point where the ruler of the original city took with him a small number of warriors and they rose into the air in a huge shining metal vessel. While they were many leagues from

49/ Condon, op. cit., p. 481-2.

the city of their enemies they launched a great shining lance that rode on a beam of light. It burst apart in the city of their enemies with a great ball of flame that shot up to the heavens, almost to the stars. All those in the city were horribly burned and even those who were not in the city--but nearby--were burned also. Those who looked upon the lance and the ball of fire were blinded forever afterward. Those who entered the city on foot became ill and died. Even the dust of the city was poisoned, as were the rivers that flowed through it. Men dared not go near it, and it gradually crumbled into dust and was forgotten by men.

When the leader saw what he had done to his own people he retired to his palace and refused to see anyone. Then he gathered about him, those of his warriors who remained, and their wives and their children, and they entered into their vessels and rose one by one into the sky and sailed away. Nor did they return.

This would seem to be an account of an attempt by some extra-terrestrial group to establish a colony on Earth in the distant past. Like so many colonizing attempts by man, it appears to have ended in dissension and conflict. The most interesting portion of the story is the description of the great 'lance that traveled on a beam of light,' which bears a surprising resemblance to a modern rocket and its jet of flame. The effect of this so-called 'lance' brings to mind a rather detailed picture of a nuclear blast and its catastrophic sequels.

If this is a mental concoction of some primitive writer, it is at least remarkable. If it is a reasonably accurate piece of factual reporting, then it is even more remarkable. Since it is unverifiable, we must at this late date classify it as 'interesting, but unproven.' 50/

This would certainly be an excellent example of a UFO landing and another civilization trying to colonize Earth--if it were true. Rosenberg investigated the Book of Dyzan and found that it was not "a compilation of legends passed down through the ages" at all, but rather was written in 1886 by Madame Helene Petrovna Blavatsky in The Secret Doctrine. An unauthorized biographer declared that "the mysterious 'Dyzan manuscript' like the 'Senzar' language they were

50/ Ibid., p. 495-6.

written in, seem wholly to have originated in Madame Blavatsky's imagination" and Rosenberg says that the stanzas are part of "her preposterous Atlantean 'Theory of Cosmic Evolution.'" 51/

The conclusion can be drawn from the above account that second hand reports may lose something in the translation, and even well-meaning authors (which we assume Mr. Edwards to be) can be misled. Therefore, much care should be taken when accounts of ancient extraterrestrial visitors are given.

C. THE WAVE OF 1896

Strange sightings have been made throughout history, including the middle ages in Europe, up to the first "wave" of sightings in 1896. Jacques Vallee in Anatomy of a Phenomenon devotes an entire chapter to sightings preceding the modern wave. Some of the examples he lists involve not only common folk, but astronomers. The latter group was able to explain some of the sightings as astronomical objects, but they themselves experienced some strange events.

On March 6, 1716, the astronomer Halley saw an object which illuminated the sky for more than two hours in such a way that he could read a printed text in the light of this object. The time of the observation was 7:00 p.m. After two hours, the brightness of the phenomenon was reactivated 'as if new fuel has been cast on a fire.' 52/

It is not surprising that with the advent of the telescope and therefore the rise of interest in astronomy, more UFO reports were forthcoming. More and more students were studying the heavens in an attempt to explain the motion of the planets and stars, and most importantly, the position of the Earth in relation to them. Vallee cites numerous cases and notes:

51/ Ibid., p. 496.

52/ Vallee, op. cit., p. 9.

It is certainly audacious to declare that astronomers are unaware of any reliable observation of a UFO when so many computations have been made by some of the founders of modern astronomy in an effort to interpret coherently their observations of strange objects. . . .

We are not, however, claiming that the alleged 'objects' were of artificial construction . . . or that they even existed at all. . . . But we do think that such reports should be assimilated into the general body of observations involved in the UFO problem; those who claim that nothing out of the 'ordinary' has ever been seen in the sky by professional astronomers should be reminded of the existence of these data. 53/

Although most of the sightings in this period were made in Europe, a few were made in the United States. The real beginning of UFO sightings here occurred in 1896. These are usually referred to as "airships" since their general description resembles that object; however, airships were not in evidence for several more years. Le Poer Trench notes that many reports were found to be hoaxes or misidentifications, but quotes Donald B. Hanlon as saying:

After sifting through data . . . , one is left with a hard core of sightings (now over 200) of a rather unlikely looking aerial craft which created much commotion among the observers. The only detectable effect the sightings left on the society of 1896-7 is exactly the same as that left by the modern UFO phenomenon--a psychological impact.

It is clear that the origin of the airship is still very much an open issue. It is also clear that the mystery surrounding its appearance at that particular time in history has deepened. 54/

The sightings occurred over 19 states from November 1896 to May 1897, with a break from January to the middle of March. Descriptions varied considerably from an object 18 inches in diameter and 12 to 30 feet long, to a 70 foot long structure with wings or sails. Lights were usually reported

53/ Ibid., p. 10-11.

54/ Le Poer Trench, op. cit., p. 96.

on the object and it moved both erratically and smoothly. David Michael Jacobs prepared a history of the airship sightings which is published in his book The UFO Controversy in America. One of the most famous of the airship incidents, involving occupants as well, happened on April 19, 1897 in Leroy, Kansas. Jacobs' recounting of the story goes like this:

Alexander Hamilton, his son Wall, and his tenant Gid awoke to cattle noises. Going outside they discovered--to Hamilton's 'utter amazement'--'an airship slowly descending over my cow lot about forty rods from the house.' The cigar-shaped object was three hundred feet long with a carriage made of 'panels of glass or other transparent substance alternating with a narrow strip of some other material'; a large searchlight and smaller red and green lights were attached to it. As it descended to thirty feet above ground and witnesses came to within fifty yards of it, Hamilton could see 'six of the strangest beings I ever saw' inside. The occupants were 'jabbering' but Hamilton could not understand anything. Then the witnesses noticed that a heifer was attached to a red 'cable' emanating from the airship and also was caught in a fence. Unable to free the heifer, the witnesses cut the fence and stood in amazement to see the ship, cow and all rise slowly and sail off.' The next day a neighbor recovered the calf's hide, legs, and head a few miles away. 55/

The case of the mystery airship has never been solved. At that point in time inventors were discussing the building of a vehicle that could travel through the air (not balloons or aircraft, but an airship) and some believed that the first such vehicle had, in fact, been developed and its inventor was making test flights. All those who were working on the problem said that they had not gotten that far in their research or the money was not available for the project. Thus, according to the scientists of the day, no such object was within the technological domain. Just as is done today, some tried to explain all the

55/ Jacobs, David Michael. UFO Controversy in America. Bloomington, Indiana, Indiana University Press, 1975, p. 15.

sightings as hoaxes (and there certainly were a lot of them) or astronomical objects. And again just as is done today, believers said that astronomical objects could not move in the way the airship did, have occupants, land and take away cattle, etc. As Jacobs points out:

To explain the enigma, the public then, as did the public later, looked first for rational explanations--those that would make sense in terms of the scientific and the experimental knowledge of the time. When these were not completely satisfactory, the public turned to more irrational theories. An airship seemed so far out of the realm of current technological knowledge that a gap resulted in people's idea of what should be and what was. Since airships, given the technology of the times, could not have existed, then witnesses who claimed to have seen one obviously had not seen one. . . . This attitude is the crucial link between the 1896-7 phenomenon and the modern unidentified flying object phenomenon beginning in 1947. 56/

D. THE POST-WAR EUROPEAN SIGHTINGS

As can be seen from the preceding discussion, what is called the modern wave of UFO sightings had many precedents, even if one discounts those of ancient origin. From 1897 to 1947, sightings continued, mostly in Europe. Many of these occurred during the last year of World War II and in post-war Europe, centering in Scandinavia.

In 1944, allied bombers reported seeing strange balls of light which paced their planes or danced off their wingtips. Dubbed "foo fighters" from the French word "feu" (fire), they were originally thought to be some type of enemy weapon. Since they never attacked the planes, some considered them psychological warfare weapons, sent to frighten or distract the pilots. Another explanation was that they were static electricity charges, although to date no definite explanation has been uncovered. Jacobs reports that "Ironically,

56/ Ibid., p. 33-34.

after the war the American public learned that the Germans and Japanese had encountered the same strange phenomenon and had explained it as Allied secret weapons." 57/ No further investigation was made.

After the war, reports began coming in from western and northern Europe, centering on Scandinavia, Sweden in particular. Donald Menzel reported that more than 1,000 sightings were made in 1946 in Sweden alone. 58/ Again the first hypothesis was that these were secret weapons made by the Russians with the help of German scientists, although investigators were able to solve 80 percent of the cases as natural phenomena.

The real importance of these sightings is that they set the stage for the beginning of the UFO controversy in America. Objects of unknown origin had been reported, some described as discs or cylinders. The U.S. Air Force was prepared in some respects when, in 1947, Kenneth Arnold began the modern wave of UFO interest.

57/ Ibid., p. 36.

58/ Menzel, Donald. In Sagan and Page, op. cit., p. 131.

V. 1947-1969 ACCOUNTS

A. UNITED STATES1. Kenneth Arnold and the 1947 Wave

In 1947, the United States experienced a series of UFO sightings which are considered the beginning of the modern era of UFOs in this country. The most often cited of these cases is Kenneth Arnold's report in June, which was the first of a new wave of sighting reports in the United States. Ted Bloecher wrote a comprehensive analysis of the "wave of 1947" and cited 853 sightings that occurred that summer, mostly in the Northwest. The volume was published privately in 1967 as Report on the UFO Wave of 1947.

On June 24, 1947 Kenneth Arnold, a fire-fighting equipment salesman from Boise, Idaho, flew his private plane from Chehalis to Yakima, Washington and on the way decided to look for a downed plane that had been missing for several days on the slopes of Mt. Rainier. Arnold was an experienced pilot with over 4,000 hours of flying experience over mountains, an air-rescue pilot, as well as deputy sheriff of Ada County.

About 3:00 p.m. Arnold was approaching Mt. Rainier from the west and a flash of light caught his eye, as if something were reflecting off a mirror. He looked around and saw nine objects rapidly approaching the mountain on a southern heading. As they neared, he saw that they were flat, disc shaped objects arranged in a "diagonally stepped-down echelon formation" stretched out over about five miles. Using the peaks of Mt. Rainier and Mt. Adams as

reference points, he clocked their speed at 1,700 miles per hour. Allowing for some degree of error, he subtracted 500 miles per hour, giving the object a speed well above 1,000 miles per hour. In 1947 the only object that could move that fast was a rocket, and Arnold was certain that that was not what he saw.

The objects swerved in and out of the mountain peaks, and Arnold's description of their moving like "a saucer skipping over water" caused the media to coin the term "flying saucer," an unfortunate misnomer which has remained to this day.

Upon landing at Yakima, Arnold immediately told his story to Central Aircraft general manager Al Baxter, and word quickly spread around the airport. Thus, by the time Arnold reached the next stop on his route, Pendleton, Oregon, a skeptical press was waiting for him. Discovering his good standing in the community and experience as a pilot, the press quickly changed their attitude, and reported the incident as a serious news story. Bloecher reports that of 150 newspapers surveyed, virtually all of them reported the story, many on the front page.

Despite the obvious controversy and investigation spurred by the sighting, it has not been resolved to this day. The official Air Force explanation is that it was a mirage in which the tips of the mountain peaks appeared to be suspended above the mountains due to a layer of warm air. J. Allen Hynek, however, in his investigation for the Air Force, concluded that it was probably a fleet of planes. He found irreconcilable differences in Arnold's data which brought Arnold's calculations into doubt. Arnold had reported that the objects were 20-25 miles away and their size about 45-50 feet long. Hynek noted that an object of that size cannot be resolved by the human eye at that distance, so

therefore, Arnold's distance estimate was wrong. This would mean the objects were closer to the pilot and traveling at subsonic speeds, completely within the capability of 1947 aircraft.

Bloecher counters Hynek's arguments by saying that Arnold had used fixed reference points to determine the distance, so it must have been the size estimate that was incorrect. One should note, however, that earlier in his report, Bloecher states that Arnold had originally misidentified the mountain peaks.

He began to time them as the first object reappeared from behind the outlier peak on the southwest flank of Mountain Rainier. (He later identified this peak as Goat Rocks, but he is probably in error as Goat Rocks is approximately half-way between Mount Rainier and Mount Adams.). 59/

Thus, the accuracy of the distance estimate must also be called into question, leaving the case still unsolved. As mentioned above, the Air Force did not accept Hynek's explanation either or they would have classified it as "possible aircraft."

2. U.S. Air Force Involvement (1948-1969)

A major fear generated by (or a supporting cause of) UFO reports in the late 1940s was that these were new aircraft or secret weapons being tested by the enemy in preparation for another war. Thus, the Air Force was given responsibility for investigating these reports and determining if a threat to the national security existed. The Air Force's involvement began in early 1948 with Project Sign, which was renamed Project Grudge, and later operated under the name Project Blue Book. In total, the Air Force kept records for 21 years (1948-1969) and received over 12,000 reports. Their final conclusion was that

59/ Bloecher, Ted. Report on the UFO wave of 1947. The Author, 1967.
p. 1-2.

although some reported objects remained unidentified, they were not enemy weapons or extraterrestrial craft, but only natural or conventional objects that could not be identified, because of insufficient information.

a. Projects Sign and Grudge (1948-1952)

The many sightings reported in 1947 caused great concern in the Nation, and the Air Force geared up to handle the situation. When the case concerning Thomas Mantell occurred (he died while chasing a UFO in his Air Force plane--see appendix), the Air Force was ready to investigate.

Project Sign was placed under the jurisdiction of the Intelligence Division of the Air Force's Air Material Command at Wright Field, Ohio (now Wright-Patterson Air Force Base). This division was later renamed the Air Technical Intelligence Center (ATIC) and was the base for UFO investigations until 1966 when responsibility was transferred to the newly created Foreign Technology Division. Its function was to "collect, collate, evaluate and distribute to interested government agencies and contractors all information concerning sightings and phenomena in the atmosphere which can be construed to be of concern to the national security."

The wide variety of opinions on UFOs and their origin was present even in 1948 when attention was first focused on the issue. There were those who considered them conventional objects, and those who thought they were extraterrestrial vehicles. Members of the latter group held the reins of power at Sign during its early months, and after the Eastern Airlines incident (see appendix) they issued an "Estimate of the Situation" in which they concluded that UFOs were indeed craft from other worlds. General Hoyt S. Vandenberg, then Chief of

Staff, rejected the report however, citing its lack of evidence to support the theory. The report had been classified Top Secret 60/ and after Vandenberg's action, all copies were reportedly destroyed.

The lack of approval led to a change in policy at Sign, and those who felt UFOs were conventional objects took charge. In February 1949, the Air Force announced that the classified name "Sign" had been compromised, so they were changing the name of the Project to Grudge (and they insist that there was no significance to this title), and the Sign group issued a final report. The change in emphasis was easily spotted in the group's recommendations which read in part:

Future activity on this project should be carried on at the minimum level necessary to record, summarize and evaluate the data received on future reports and to complete the specific investigations now in progress. When and if a sufficient number of incidents are solved to indicate that these sightings do not represent a threat to the security of the Nation, the assignment of special project status to the activity could be terminated. Future investigations of reports would then be handled on a routine basis like any other intelligence work. 61/

Despite its controversial nature and lack of internal consensus, Sign was handled well. They had quickly realized the "signal-to-noise" problem and taken measures to deal with it. Dr. J. Allen Hynek, an astronomer from Ohio State University (now head of the Center for UFO Studies), and the Air Weather Service were respectively requested to sort out those reports which were clearly astronomical objects or weather balloons (and a large percentage were). The staff's major problem was inexperience in determining which cases deserved further study.

60/ Edward Condon debated the security classification of this report, and the allegation that all copies were destroyed. Edward Ruppelt, later head of Projects Grudge and Blue Book, is the source of the above statement. See Condon, op. cit., p. 506; and Ruppelt, Edward. The Report on Unidentified Flying Objects. New York, Doubleday, 1956. p. 85.

61/ United States Air Force, Unidentified Aerial Objects: Project Sign, No. F-TR-2274-IA, Feb. 1949: vi-vii.

Because of unfamiliarity with the phenomenon, the staff spent inordinate amounts of time on sightings that were obviously aircraft, meteors, or hoaxes. The staff also spent much time looking into the private lives of witnesses to see if they were reliable. Sign checked routinely with FBI field offices and criminal and subversive files of police departments, and the staff interviewed the witnesses' fellow employees, friends, and acquaintances. The Sign staff, however, did a creditable job considering that these early sightings usually contained too little information on which to base any kind of judgment and that the Air Force had no standardized method of reporting sightings. 62/

The Air Force continued to investigate UFOs under Project Grudge even though most of the people involved were convinced that these were non-hostile and non-military in nature. The Air Force still wanted to have the controlling hand in investigating reports, which prevented the scientific community from conducting studies of its own, since all the "good" reports were in the hands of, and classified by, the Air Force. In this manner, the Air Force shaped the nature of the controversy for the entire 21 years of its involvement, and Project Grudge was determined to explain every sighting.

To assist in the effort to debunk UFOs, Ruppelt reported that the Air Force selectively granted permission to Sidney Shallet of the Saturday Evening Post to have access to their files for an article on the subject. According to Ruppelt, the Air Force wanted to ensure that the article would expose UFOs as a waste of time.

As a public relations officer later told me 'We had a devil of a time. All of the writers who were after saucer stories had made their own investigations of sightings and we couldn't convince them they were wrong.' . . . I have heard many times, from both military personnel and civilians, that the Air Force told Shallet exactly what to say in his article--play down the UFO--don't write anything that even hints that there might be something foreign in our skies. I don't believe that this is the case. I think he just wrote the UFO story as it was told to him, told to him by Project Grudge. 63/

62/ Jacobs, op. cit., p. 47

63/ Ruppelt, op. cit., p. 88-89.

The article appeared, but had the opposite effect from what the Air Force expected. Phrases such as "rich, full-blown screwiness," and "great flying saucer scare" were meant to convince readers there was nothing to the UFO reports, but within a few days of publication, UFO reports reached a new high. Some attributed this to Shallet's admission that some cases remained unexplained, while others felt that he had thrown suspicion on the Air Force's investigative methods. In any event, Project Grudge was deluged with reports.

This did not deter the Air Force, however, and only six months later Grudge issued its final report. Commenting on 244 of the cases, and despite their best efforts to explain them all (which reportedly were highly speculative in many instances), 23 percent remained unidentified. For these Grudge stated "There are sufficient psychological explanations for the reports of unidentified flying objects to provide plausible explanations for reports not otherwise explainable." In other words, those that could not be identified were psychologically motivated, and that was that. They concluded that the investigation of UFOs should be reduced in scope so that only those reports "clearly indicating realistic technical applications" would be submitted to ATIC. They did, however, suggest that the Psychological Warfare Division be informed of the study results, since if the enemy simultaneously placed a series of aerial objects over the United States and started rumors that they were alien craft, mass hysteria could ensue.

Although many thought Grudge was terminated at the time of this final report, it did in fact continue to operate, although in a much subdued state, for over two more years. Despite its efforts to debunk the reports, public interest continued and magazine articles flourished, as well as books by such writers as Major Donald Keyhoe, later President of NICAP (National Investigations Committee on Aerial Phenomena).

In 1951, Capt. Edward Ruppelt was placed in charge of Grudge, and brought new life to the project, for he was not as convinced as his predecessors that UFOs were not worth studying. He formally contracted Hynek as a consultant, and through his efforts the project's staff and budget were increased. He recognized the unwillingness of many Air Force pilots to report UFO sightings for fear of ridicule and arranged for a new directive to be issued and standardized reporting forms were made available. Air Force Letter 200-5 directed every Air Force base in the world to immediately telegram information on any UFO sighting to Ruppelt at ATIC and other major Air Force commands, with a complete report sent later to ATIC. By 1952, Grudge was a very well organized effort.

b. Project Blue Book and the Robertson Panel (1952-1953)

Nineteen-fifty-two was a boom year for UFO reports, with a record 1,501 reported in that one year alone. One of the most important, if for no other reason than its location, occurred in Washington D.C. (see appendix). The Air Force had renewed its interest, and upgraded Grudge from a project to a separate organization, named Project Blue Book. Ruppelt's budget and manpower continued to increase along with the number of sightings, and he instituted the practice of receiving monthly reports on the status of all reports under investigation. He briefed top officers of the Air Defense Command on using their radarscope cameras (numbering about 30 nationwide) to help detect UFOs, and contracted with Battelle Memorial Institute to perform a statistical analysis of UFO characteristics. He completely revitalized the project.

By the beginning of 1953, ATIC was overwhelmed with reports. Again opinion was split on the significance. Some skeptics began believing in the extraterrestrial hypothesis while others more firmly held to their "conventional

objects" stance. Regardless of what UFOs were, the Air Force decided that the number of reports had to be drastically reduced to ease the concern of the masses, so they asked the CIA to form a panel of top scientists to study the issue. The group was chaired by Dr. H. P. Robertson, and is therefore usually referred to as the Robertson Panel.

Although a sanitized version of this report had been available for a number of years, it was only in December 1974 that the CIA finally declassified the report and made copies available. The members were finally identifiable, together with their affiliations and areas of expertise:

Dr. H. P. Robertson, California Institute of Technology, physics and weapons systems;
 Dr. Luis W. Alvarez, University of California, physics and radar;
 Dr. Lloyd V. Berkner, Associated Universities, Inc., geophysics;
 Dr. Samuel Goudsmit, Brookhaven National Laboratories, atomic structure; and
 Dr. Thornton Page, Johns Hopkins University, astronomy and astrophysics.

In addition to these five panel members, other participants included:

Dr. J. Allen Hynek, Ohio State University, astronomy;
 Mr. Frederick C. Durant, III, Arthur D. Little, Inc., rockets and guided missiles (who served as reporter for the panel);
 Brig. Gen. William M. Garland, Commanding General, ATIC, scientific and technical intelligence;
 Dr. H. Marshall Chadwell, Assistant Director, O/SI, CIA;
 Mr. Ralph L. Clark, Deputy Assistant Director, O/SI, CIA; and
 Mr. Philip G. Strong, CIA.

After studying 75 UFO reports, the panel concluded that there was no evidence of a "direct physical threat to national security" and that the "continued emphasis on the reporting of these phenomena, in these parlous times, result in a threat to the orderly functioning of the protective organs of the body politic." They therefore recommended:

- a. That the national security agencies take immediate steps to strip the Unidentified Flying Objects of the special status they have been given and the aura of mystery they have unfortunately acquired;

- b. That the national security agencies institute policies on intelligence, training, and public education designed to prepare the material defenses and the morale of the country to recognize most promptly and to react most effectively to true indications of hostile intent or action.

To accomplish these ends, they proposed a public education program to train people to identify correctly known objects, as well as a "debunking" effort to lower public interest. They were, they said, impressed by the lack of sound data in the majority of case histories, as well as by the "lack of speedy follow-up due primarily to the modest size and limited facilities of the ATIC section concerned." In effect, they suggested that the Air Force Project be continued at its present level, only with a change in emphasis from attempting to determine the nature of UFOs to convincing the public that nothing was awry in the skies. 64/

Not everyone connected with the panel agreed with its recommendation, however. Hynek was not officially a member of the panel and therefore was not asked to sign the final report, but he stated that he would not have done so in any case, since he considered it unreasonable that the panel could come to a conclusion about UFOs in four days, when he himself had spent more than four years in the field. 65/

The effect of the report was significant. Once again the Air Force changed its position, and now the sentiment was that UFOs were not a threat to national security, UFO reports were, and the purpose of Blue Book would be to educate the public. The Air Force could now say that an impartial and independent group of scientists had found no evidence of extraterrestrial visitation or enemy weapons.

64/ Durant, F. C. Report of Meetings of Scientific Advisory Panel on Unidentified Flying Objects. Convened by Office of Scientific Intelligence, CIA, Jan. 14-18, 1953.

65/ Jacobs, op. cit., p. 96.

Contrary to the panel's recommendation, however, Blue Book's staff and budget began to shrink, not remain level. The Battelle statistical report was finally completed, and it corroborated the panel's position that no threat was evident (this report was later released as Special Report #14--see below). Thus, by the time Ruppelt left the Project and the Air Force in August 1953, only he and two assistants remained. When no replacement came for him, the Project was handed over to Airman First Class Max Futch.

c. Special Report #14 and the O'Brien Report:
Project Blue Book 1953-1966

The period from 1953 to 1966 was an era of public relations for Blue Book. It set about the task of educating the public as to the "true" nature of UFOs, and tried to counteract the interest raised by believers such as Major Keyhoe. Keyhoe had created public discomfort when he published Air Force regulations which prohibited the release of UFO reports to the public (Air Force Regulation 200-2) and made disclosure of sightings described in JANAP (Joint Army-Navy-Air Force-Publication) 146 forms a criminal offense. AFR 200-2 also allegedly suggested that all UFO reports be solved in any way possible. Predictably, the Keyhoe and Air Force factions disagreed on the meaning of the following paragraphs.

Air Force activities must reduce the percentage of unidentifieds to the minimum. Analysis thus far has explained all but a few of the sightings reported. These unexplained sightings are carried statistically as unidentifieds. If more immediate, detailed, objective data on the unknowns had been available, probably these, too could have been explained. However, because of the human factors involved, and the fact that analyses of UFO sightings depend primarily on the personal impressions and interpretations of the observers rather than on accurate scientific data or facts obtained under controlled conditions, the elimination of all unidentifieds is improbable.

AFR 80-17

B-4. Response to Public Interest. The Secretary of the Air Force, Office of Information (SAF-OI) maintains contact with the public and the news media on all aspects of the UFO program and related activities. Private individuals or organizations desiring Air Force interviews, briefings, lectures, or private discussions on UFOs will be instructed to direct their requests to SAF-OI. Air Force members not officially connected with UFO investigations will refrain from any action or comment on UFO reports which may mislead or cause the public to construe these opinions as official Air Force findings.

AFR 80-17

Condon maintained that the critics were misreading the paragraphs, that the first did not in any way suggest speculation as to the nature of a sighting, simply that the investigation of a report should be pursued seriously and thoroughly. The second, he maintains, was simply a method to "minimize the circulation of wild stories and premature reports before an investigation is completed." 66/

To counteract these charges, the Air Force, upon Ruppelt's suggestion, commissioned Battelle to determine if anything in the air "represented technological developments not known to this country," and to build a model of a flying saucer from the data. The Battelle findings were released in 1955 and became labeled Special Report #14. The researchers reported that they could neither devise a model of flying saucer nor find physical evidence that they exist; they found no trends in the data. David Saunders, later a member of the Colorado group that produced the Condon Report, stated that whoever performed the study did it in such a way as to minimize the possibility of finding something significant.

This \$100,000 taxpayer-financed report was issued in May of 1955 and purports to be a sophisticated statistical treatment of all the data in the files up through late 1952, a period when the Air Force was still getting much interesting input. The report contains more than 200 tables filled with numbers. It also makes use

66/ Condon, op. cit., p. 530.

of an elementary statistic known as chi-square to lend credence to its primary argument. I was impressed by the fact that not even the formula used for calculating chi-square was correct. And with remarkable regularity, whoever did these statistics combined the categories so as to minimize his chances of finding anything significant. 67/

Again the Air Force had misjudged public response. Instead of quelling the controversy it gave it more fuel, especially when it was criticized by Ruppelt himself. The group stated that "the probability that any of the UNKNOWNNS considered in this study are 'flying saucers' is concluded to be extremely small, since the most complete and reliable reports from the present data . . . conclusively failed to reveal even a rough model . . . " Ruppelt countered that Battelle had not been asked to explain the unidentified reports or solve the UFO problem, but only to determine if unknown technological developments were evident in their movements.

Nevertheless, the Air Force used Special Report #14 as the foundation of their official stance for many years, for they could still say that the issue had been studied scientifically and the conclusion was drawn that UFOs were not extraterrestrial. As other men became Blue Book Director, public education became the watchword and investigation was left to the private UFO organizations, which began to flourish.

But their public relations campaign was not very effective. More and more people began to think the Air Force was covering up something, that they did indeed have evidence that Earth was being visited by aliens. Two contributing factors to this theory were that the Air Force still refused the media access to their files, and those who knew of Blue Book's activities couldn't believe that such a low-priority, low-budgeted, and minimally staffed operation could

67/ Saunders, David, and R. Roger Harkins. UFOs? Yes New York, World Publishing Co., 1968. p. 115.

actually be investigating reports to the extent the Air Force itself claimed. Thus they believed that Blue Book was a front for a much higher level investigative team. Hynek disagrees with this theory, citing the high turn-over rate among Blue Book directors. After Ruppelt left, the Project in turn was headed by Captain Harden, Captain Gregory, Major Friend and Major Quintanilla. He also states:

All my association with Blue Book showed clearly that the project rarely exhibited any scientific interest in the UFO problem. They certainly did not address themselves to what should have been considered the central problem of the UFO phenomenon: is there an as yet unknown physical or psychological or even paranormal process that gives rise to those UFO reports that survive severe screening and still remain truly puzzling?

Such lack of interest belies any charge of 'cover-up'; they just didn't care. 68/

During the period between the issuance of Special Report #14 (1955) and the 1966 O'Brien report, one of Blue Book's prime concerns was that Congress would call for hearings on what they were doing. To prevent this, whenever a Congressman broached the subject to the Air Force, he was given an individual briefing in which the Air Force convinced him that a hearing would only make the populace think that UFOs were something to be concerned about. At this point the Congressman would usually commend the Air Force on its conduct of the matter, and decide not to hold hearings. 69/

One of these briefings was to a subcommittee, not to an individual Congressman. In 1958, the House of Representatives set up the Select Committee on Astronautics and Space Exploration (later Science and Astronautics Committee, now Science and Technology Committee) to deal with the emerging issue of space

68/ Hynek, UFO Experience, op. cit., p. 180.

69/ See Jacobs, op. cit., chapter 7.

exploration. Rep. John McCormack (D-Mass.) chaired the Subcommittee on Atmospheric Phenomena and decided to hold week-long hearings on UFOs. On August 8, they called on Air Force chief science advisory Francis Arcier, Captain Gregory (head of Blue Book at the time), Majors Best and Byrne of Air Force Intelligence, and Majors Brower and Tacker of the Office Public Information. McCormack announced at the beginning of the session that it was not actually a hearing, and in fact no stenographer was present. Records cited by David Jacobs 70/ were apparently taken by the Air Force participants themselves and are not an official transcript of the meeting. 71/

By the end of the day, Congressman McCormack announced that he was satisfied with the Air Force's handling of the subject and no formal hearings would be necessary. The Air Force had once again averted publicity.

The reprieve did not last long, however, and in 1960 they were called to Capitol Hill again. David Jacobs reports that three committees, House Armed Forces, House Science and Astronautics, and Senate Preparedness, called for a briefing by the Air Force, under the chairmanship of "Congressman Smart." This is an error. Only staff members were present at the briefing, which negates much of the significance given by Jacobs to the briefing. He states that "congressmen for this first time had expressed dissatisfaction with the UFO program and had suggested steps to remedy the situation." In fact, Smart was a staff member of the House Armed Services Committee (not Armed Forces, and his first name is Robert, not Richard) and the other participants listed by

70/ Jacobs, op. cit., p. 160-162.

71/ The late Dr. Charles Sheldon, who was Chief of the Science Policy Research Division, Congressional Research Service, Library of Congress from 1968 to 1979, served as Assistant Director of the Select Committee on Astronautics and Space and later as Technical Director of the permanent House Science and Astronautics Committee. He was present during this entire session and clarified aspects of Jacobs' account.

Jacobs (Spencer Beresford--not Bereford, Richard Hines, and Frank Hammill--not Hammit) were from the staff of the Science and Astronautics Committee. Also, there is no indication that the Senate Preparedness Committee staff participated in this briefing, and Jacobs does not list anyone from that committee. 72/

Although the staff members were not as pleased with Air Force performance as Congressman McCormack had been, little was changed in Blue Book. By 1963 congressional interest had dropped considerably, and this lull continued through 1964.

Ninety-sixty-five was a different matter.

For 17 years, 1947 to 1964, the UFO controversy raged within the confines of special interest groups--the Air Force on one hand and the private UFO organizations on the other. The press, public, and Congress became involved sporadically, but for them the subject of UFOs and the controversy over the phenomenon had only fleeting interest, . . . But the period from 1965 to 1967 marked a turning point in the controversy. Those who had been on the periphery of the controversy became actively engaged in it. The press, public, Congress, and the scientific community all entered the debate over UFOs. As a result, the Air Force finally gave up its near monopoly of the UFO study and asked a university to examine the phenomenon. 73/

By the close of 1965, ATIC had received 887 reports. The media began to report on UFOs again, raising public consciousness, and Hynek suggested that another panel of scientists review the situation and Blue Book's status. As a result, the Ad Hoc Committee to Review Project Blue Book was formed, headed by Dr. Brian O'Brien (its report was called the O'Brien Report).

72/ Dr. Sheldon, at the time of this session, was Technical Director for the Science and Astronautics Committee and again served as the source for the above material. Jacobs' version can be found on pages 176-179 of his book.

73/ Jacobs, op. cit., p. 193.

Joining O'Brien (a physicist) on the panel were: Dr. Launor F. Carter, psychologist, System Development Corporation; Dr. Jesse Orlansky, psychologist, Institute for Defense Analyses; Dr. Richard Porter, electrical engineer; Dr. Carl Sagan, astronomer and space scientist, Smithsonian Astrophysical Observatory; and Dr. Willis H. Ware, electrical engineer, the RAND Corporation. All but Sagan were members of the Air Force Scientific Advisory Board.

They met for only one day, February 3, 1966, reviewing the Robertson Panel report and being briefed by the then head of Blue Book, Major Quintanilla, and the staff of the Air Force's Foreign Technology Division (a newly formed division which took over UFO investigations). In March, the O'Brien group issued its report.

Their assessment of the situation was very similar to the Robertson findings. They stated again that the cases which remained unidentified did so only because of insufficient information to solve them, and cited the fact that even though hundreds of astronomers constantly watched and photographed the sky, they had not recorded any UFOs. They conceded that Blue Book's resources were very scarce (at that time only one officer, a sergeant, and a secretary were involved), but that effort was well organized.

Rather than suggest disbanding Blue Book, the O'Brien panel recommended that it be strengthened.

. . . there is always the possibility that analysis of new sightings may provide some additions to scientific knowledge of value to the Air Force . . . the committee recommends that the present program be strengthened to provide opportunity for scientific investigation of selected sightings in more detail and depth than had been possible to date. 74/

74/ Special Report of the USAF Scientific Advisory Board Ad Hoc Committee to Review Project Blue Book. Condon, op. cit., p. 543.

d. The Condon Report and Termination of USAF
Interest (1967-1969)

Following up on the O'Brien panel's recommendations was no easy matter. UFOs were not considered a subject worthy of investigation by many "impartial" scientists (a requirement on which the Air Force insisted and which ruled out such UFOlogists as Hynek and McDonald) or universities. The Air Force was turned down in turn by MIT, Harvard, the University of North Carolina and the University of California before the University of Colorado accepted the task. Some say that Colorado accepted only because they needed the Government contract, amounting to \$500,000 by the time the project was finished. The requirement for matching funds was waived, so Colorado only had to put up \$1.

They found a highly respected physicist, Dr. Edward U. Condon, to head the project, and debate is also rampant as to why he accepted the assignment. Many of his professional colleagues had turned it down, if for no other reason than lack of time to devote to it (and Condon himself only committed half-time). Condon stated that it was the appeal to his patriotic duty, since the Air Force requested him specifically to head the project, and after some discussion with colleagues, decided to say yes. He adds that "Had I known of the extent of the emotional commitment of the UFO believers and the extremes of conduct to which their faith can lead them, I certainly would never have undertaken the study." 75/

Along with Condon were principal investigators Stuart W. Cook (psychology), Franklin E. Roach (astrogeophysics), David Saunders (psychology), with William Scott (psychologist) listed as a co-principal investigator. Robert Low, Assistant Dean of the Graduate School acted as Project Coordinator, and five research

75/ Condon, op. cit., 548.

associates were hired: Norman E. Levine (Ph.D., Engineering), Ronald I. Presnell (M.S., Engineering), Gerald M. Rothberg (Ph.D., Physics), Herbert J. Strentz (M.A., Journalism), and James E. Wadsworth (B.A., Behavioral Sciences).

The choice of Condon seemed to please both believers and non-believers, for they were convinced of his impartiality and willingness to take a stand against popular opinion. During the McCarthy era he had been branded a communist, and, rather than suffer quietly, demanded a hearing and kept the matter in front of the press. He was subsequently cleared. 76/

Shortly after the project began operating in October 1966, however, doubts began to emerge about its impartiality, and especially that of Condon. In January 1967 Condon stated in a speech that the Government should get out of the UFO business and the phenomenon itself had nothing to it. Future speeches and interviews provided much the same negative attitude. 77/ The situation was further aggravated in July 1966 when two of the project members, Saunders and Levine, discovered a memorandum written by Project Coordinator Low on August 9, 1966, shortly before the project got under way. In it, Low set down some thoughts on how the study should be conducted and wrote:

Our study would be conducted almost exclusively by nonbelievers who, although they couldn't possibly prove a negative result, could and probably would add an impressive body of evidence that there is no reality to the observations. The trick would be, I think, to describe the project so that, to the public, it would appear a totally objective study, but, to the scientific community, would represent the image of a group of nonbelievers trying their best to be objective, but having an almost zero expectation of finding a saucer. 78/

76/ For a biographical sketch of Condon, see Saunders and Harkins, op. cit., p. 32-45.

77/ Jacobs, op. cit., p. 226-227.

78/ The memo was addressed to Dr. E. James Archer, Dean of the Graduate School, and Thurston E. Manning, Faculty Dean. Archer stated that he never

(continued)

Saunders and Levine were distressed by the suggestion of "tricks" and sent a copy of the letter to NICAP President, Donald Keyhoe. Keyhoe forwarded a copy to Dr. James McDonald, a UFOlogist from the University of Arizona, who referenced it in a January 1968 letter to Low. Low read McDonald's letter on February 6 and reportedly was furious. He took the matter to Condon who charged that Saunders and Levine had stolen the letter, and should not have sent it outside the project staff. The two were immediately fired for insubordination. Two weeks later, Low's Administrative Assistant, Mary Louise Armstrong, resigned stating that morale was very low within the project and the participants had no confidence in Low's leadership.

The full story of this incident was written up by John Fuller for Look magazine 79/ and created quite a stir within the academic community and Congress, although public reaction was subdued. NICAP and APRO, who had been providing the Condon staff with reports and preliminary investigations by their members as well as providing other valuable services, quit their support of the committee. In Congress, Representative J. Edward Roush (D-Ind.) organized hearings before the House Science and Astronautics Committee on UFOs, although the Condon committee itself was not reviewed, since it did not come within the committee's jurisdiction (see next section).

Condon stated that he was not aware of the memorandum's existence until the McDonald letter arrived in February 1968, well after the project was underway,

(continued) saw the original memo and was unaware of it until brought to his attention by Roger Harkins. See Saunders and Harkins, op. cit., p. 194. Since the full text of this letter is difficult to obtain, and was such a controversial chapter in the Condon study, it is printed in full as Appendix C.

79/ Fuller, John G. Flying Saucer Fiasco. Look, v. 32, May 14, 1968: 58, 60-63.

and therefore it had no effect on its operation. 80/ Saunders himself had second thoughts about Condon's part in the letter. He had assumed that since Condon was mentioned, he had been aware of it, but admits that Condon might not have been and if he had known that, might have handled the situation differently. 81/ Some criticism may be due both Saunders and Levine for sending the letter to NICAP rather than the Air Force contract monitor.

As a result of the continuing dissension within the group, by the time they finished their study on June 1, 1968, a shadow of suspicion had already fallen over their final recommendations. This may have prompted Condon's decision to send the report to the National Academy of Sciences for review before publication, and the Academy gave the report its stamp of approval.

The NAS panel was comprised of 11 scientists without previous experience in the UFO field, and their review created nearly as much controversy as the report itself. They found that the scope, methodology and conclusions of the work were quite proper:

In our opinion the scope of the study was adequate to its purposes:
a scientific study of UFO phenomena.

We think the methodology and approach were well chosen ⁱⁿ accordance with accepted standards of scientific investigation.

We concur with [the] evaluations and recommendations.

We are unanimous in the opinion that this has been a very creditable effort to apply objectively the relevant techniques of science to the solution of the UFO problem. . . . While further study of particular aspects of the topic (e.g., atmospheric phenomena) may be useful, a study of UFOs in general is not a promising way to expand scientific

80/ Condon, op. cit., p. 550. Note that he says the memo was dated Aug. 10, although the actual date seems to be Aug. 9.

81/ Saunders and Harkins, op. cit., p. 195.

understanding of phenomena. On the basis of present knowledge the least likely explanation of UFOs is the hypothesis of extra-terrestrial visitations by intelligent beings. 82/

The main conclusion of the Condon report, as stated by Condon in his summary, is:

Our general conclusion is that nothing has come from the study of UFOs in the past 21 past years that has added to scientific knowledge. Careful consideration of the record as it is available to us leads us to conclude that further extensive study of UFOs probably cannot be justified in the expectation that science will be advanced thereby. 83/

A page later, however, he adds:

Scientists are no respecters of authority. Our conclusion that study of UFO reports is not likely to advance science will not be uncritically accepted by them. Nor should it be, nor do we wish it to be. For scientists, it is our hope that the detailed analytical presentation of what we were able to do, and of what we were not able to do, will assist them in deciding whether or not they agree with our conclusions. Our hope is that the details of this report will help other scientists in seeing what the problems are and the difficulties of coping with them. . . .

Therefore we think that all of the agencies of the Federal Government, and the private foundations as well, ought to be willing to consider the UFO research proposals along with the others submitted to them on an open-minded, unprejudiced basis. While we do not think at present that anything worthwhile is likely to come of such research each individual case ought be carefully considered on its own merits. 84/

Hynek calls this a "masterpiece of throwing a scrap of political meat to the critic dogs. A more insincere statement can hardly be imagined, and surely Dr. Condon, master in the politico-scientific world, would be the first to recognize it as such." 85/ Whether Condon actually was being devious, or if he simply

82/ Review of the University of Colorado Report on Unidentified Flying Objects by a Panel of the National Academy of Sciences, 1969.

83/ Condon, op. cit., p. 1.

84/ Condon, op. cit. p. 2-3

85/ Hynek, UFO Experience, op. cit., p. 193.

wanted to call attention to the fact that his was only one committee and anyone can make mistakes, is a matter of opinion.

Besides finding fault with the cases that were chosen to be studied (some claim that since most were recent cases, no trends could be established) and the scientific methodology involved, criticism seemed to center around Condon's participation in the study. Of 23 chapters, he wrote only one, which dealt with the historical aspects of Air Force involvement. He wrote the summary and conclusions, but they did not always seem consistent with what the other participants wrote in the rest of the book.

To understand the Condon report, which is difficult to read, due in part to its organization, one must study the bulk of the report. It is not enough to read summaries, such as those by Sullivan and by Condon, or summaries of summaries, on which the vast majority of readers and news media seem to rely. There are differences in the opinions and conclusions drawn by the authors of the various chapters, and there are differences between these and Condon's summary. Not all conclusions contained in the report itself are fully reflected in Condon's summary.

Condon's chapter, 'Summary of the Study,' contains more than its title indicates: it disclosed many of his personal conclusions. Making value judgments was no doubt one reason why Condon was asked to handle the project. One is happy to obtain the judgment of so experienced and respected a man; but one need not agree with it. 86/

In effect, although there were many critics of the Condon report in the scientific community, the general public apparently accepted the Condon conclusion that there was no value in continuing a study of the problem. The Air Force used this reasoning to cancel Project Blue Book in December 1969, and since then has had no official interest in the subject. The Condon Report is, at the very least, an extensive reference work on UFOs.

86/ UFO: An Appraisal of the Problem. A Statement by the UFO Subcommittee of the AIAA. Astronautics and Aeronautics, Nov. 1970: 46.

3. Congressional Interest

Due perhaps to the controversial nature of subject, Congress has been somewhat reluctant to get into the practice of making statements or holding hearings related to unidentified flying objects. National interest was so acute in the 1960s, however, that two committees of the House of Representatives did hold hearings to learn more about the matter and to quell concerns of their constituents. The first was in 1966 by the Armed Services Committee, the second in 1968 by the Science and Astronautics Committee. Their purpose was to serve as a forum, not to solve the question.

a. House Armed Services Committee Hearings (1966).

As might be assumed from the committee's name, the main interest of its hearings was Air Force involvement in UFOs from Project Sign through Project Blue Book. The only witnesses called were from the Air Force: Secretary Harold Brown (accompanied by General McConnell), Major Hector Quintanilla, Jr., and Dr. J. Allen Hynek, consultant to the Project.

In his testimony, Secretary Brown explained the methods used by the Air Force to study UFO reports and announced that of 10,147 cases reported from 1947-1965, identifications had been made of 9,501. He noted that although the Air Force had not identified any national security threat or any evidence of extraterrestrial vehicles, they would continue to investigate reports with an open mind.

In a special report of the U.S. Air Force Scientific Advisory Board Ad Hoc Committee to Review Project Blue Book (the O'Brien Report), submitted with the Secretary's testimony, the statement was made that the 646 unidentified sightings

"are simply those in which the information available does not provide an adequate basis for analysis." 87/

The report went on to suggest that the Air Force increase the resources made available, so scientific investigation of selected sightings could be subjected to this study. The reports would be available upon request and given wide unsolicited circulation among Members of Congress and other public persons.

When asked by the chairman of the Armed Services Committee if anyone thought UFOs were from outside the solar system, Secretary Brown responded:

I know of no one of scientific standing or executive standing or with a detailed knowledge of this, in our organization who believes that they come from extraterrestrial sources. 88/

Dr. Hynek was the next to testify and in response to an accusation that he was an Air Force "puppet" on the subject, he read a statement "which has certainly not been dictated by the Air Force."

Admitting that during his 20 years of association with UFOs, the subject seemed "utterly ridiculous . . . like some fad or craze [that] would subside in a matter of months," Hynek announced that he had chosen 20 cases, still unidentified, for further study to illustrate that no one was hiding the fact that there were still unsolved cases. He also repeated a recommendation he had been making for 13 years that Project Blue Book could not study the reports as closely as was needed and that a civilian group should be appointed.

In questioning from the committee, Rep. Nedzi (D-Mich.) asked about sightings in other countries and when told the Air Force dealt with U.S. sightings

87/ U.S. Congress. House. Committee on Armed Services. Unidentified Flying Objects. Hearings, 89th Cong., 2nd Sess., Apr. 5, 1966. Washington, U.S. Govt. Print. Off., 1966. p. 5995.

88/ Ibid., p. 6005.

only and no one in the other countries was investigating UFO reports, he suggested that there be an exchange of ideas among U.S. and other scientists. The Chairman said an international effort would not broaden the basic data base and might degrade the quality of data, considering the difficulty encountered in getting details in this country.

In general, the Members of the committee expressed disbelief in extraterrestrial vehicles and confidence in the Air Force and Dr. Hynek. Rep. Hebert (D-La.) asked if Dr. Hynek had conferred with Ray Walston on the matter (Mr. Walston portrayed a Martian on a television show at that time.)

b. House Science and Astronautics Committee Hearings (1968)

Despite the reassurance given by the Armed Services Committee, the controversy over UFOs continued and in 1968 another set of hearings was conducted, this time by the House Science and Astronautics Committee. These proceedings were the opposite of the 1966 hearings in that not only were no Air Force witnesses called, but the other witnesses were not allowed to comment on Project Blue Book at all, since the committee did not feel Air Force activities came under their jurisdiction. ^{89/}

Six men presented testimony and six others prepared statements for the record. Due to space limitations, only the oral testimony will be summarized below, although the other six statements are recommended to the reader, as important to a more complete understanding.

^{89/} U.S. Congress. House. Committee on Science and Astronautics. Symposium on Unidentified Flying Objects. Hearings, 90th Cong., 2nd Sess., July 29, 1968. Washington, U.S. Govt. Print. Off., 1968: p. 2.

DR. J. ALLEN HYNEK, DEPARTMENT OF ASTRONOMY, NORTHWESTERN UNIVERSITY

Emphasizing that he was appearing "as a private citizen and scientist and not a representative of the Air Force" Hynek again explained that although he originally held no interest in the subject, his official involvement with UFOs eventually led to an acute interest in certain of the reports.

Although some reports are obviously misunderstandings of natural phenomena, some contain information not readily explainable and of scientific interest. Hynek asked "By what right can we summarily ignore [witnesses'] testimony and imply that they are deluded or just plain liars? Would we so treat these same people if they were testifying in court, under oath, on more mundane matters?" 90/

Hynek pointed out that the most crucial problem for a scientist examining the subject is the lack of hard-core data. "His publicly available source material is almost certain to consist of sensational, undocumented accounts of what may have been an actual event." 91/

He also pointed out several misconceptions about UFOs: that only UFO buffs report sightings; that they are never reported by scientifically trained people; they are never seen at close range; they have never been detected by radar; and they have never been recorded by scientific cameras. 92/ All of these statements are untrue.

Stating that "I do not feel that I can be labeled as a flying saucer 'believer'--my swamp gas record in the Michigan UFO melee should suffice to quash any such idea--but I do feel . . . signals continue to point to a mystery that needs to be solved," he made the following recommendations:

90/ Ibid., p. 5.

91/ Ibid., p. 6.

92/ Ibid., p. 13.

1. That Congress establish a UFO Scientific Board of Inquiry to study those cases that come under his definition of UFO [see chapter 1 of this report];
2. That the United States seek the cooperation of the United Nations to set up means for international exchange of information on UFOs.

PROF. JAMES E. MCDONALD, DEPARTMENT OF METEOROLOGY,
UNIVERSITY OF ARIZONA

Prof. McDonald explained that his intense interest in UFOs began with a visit to the Project Blue Book offices at Wright-Patterson Air Force Base in 1966. In the two intervening years "I have interviewed several hundred witnesses in selected cases, and I am astonished at what I have found." 93/ He was called by the committee to discuss witnesses because of his expertise in the area, both in the United States and abroad.

He pointed out that, contrary to public opinion, those who report UFOs are not usually interested in notoriety. For example, in Australia "People are quite unwilling to tell you about a UFO sighting, afraid acquaintances would think they have 'gone around the bend,' as the Australians put it. Over and over you encounter that. People are reluctant to report what they are seeing." 94/

Another characteristic . . . is the tendency . . . to turn first not to the hypothesis that he is looking at a spaceship, but rather it must be an ambulance . . . or that is a helicopter. . . . There is a conventional interpretation considered first, only then does the witness get out . . . and realize the thing is stopped in mid-air and is going backwards. 95/

McDonald also referred to the fluctuating nature of sightings or waves, and suggested it is only because the media do not put the reports on the wire services

93/ Ibid., p. 18.

94/ Ibid., p. 20.

95/ Ibid., p. 21.

with any regularity. He cites a recent case with over 100 witnesses that received only a short column in a local newspaper. "The ridicule lid keeps these out of sight."

McDonald next turned his attention to a recently espoused theory by Philip Klass that UFOs were in fact ball lightning, a physical phenomenon. He pointed out that during Project Grudge the Air Force concluded that "ball lightning doesn't come near to explaining these sightings" and agreed with that assessment:

One of the most characteristic features of a plasma is its very short lifetime and exceedingly great instability. . . . To suggest that clear weather conditions can somehow create and maintain plasmas that persist for many minutes, and fool pilots with 18,000 flight hours into thinking that they are white- and red-domed discs . . . is unreasonable. 96/

He concluded that "UFOs are entirely real and we do not know what they are . . . The possibility that these are extraterrestrial devices, that we are dealing with surveillance from some advanced technology, is a possibility I take very seriously." He emphatically agreed with Hynek's recommendations for a broad based study and international cooperation. In his written statement he elaborated upon his oral testimony and cited many cases where there was radar contact, multiple witnesses, daylight sightings, etc. to dispel the misconception that these had never occurred.

DR. CARL SAGAN, ASSOCIATE PROFESSOR OF ASTRONOMY, CENTER
FOR RADIOPHYSICS AND SPACE RESEARCH, CORNELL UNIVERSITY

Dr. Sagan was asked to testify on the possibility of extraterrestrial life (see chapter 3). He is a leading proponent of extraterrestrial intelligence and leading skeptic about UFOs being spaceships piloted by other beings.

96/ Ibid., p. 26.

He went through an explanation of how difficult it would be for other civilizations to detect life on Earth, and of communicating with other civilizations in the universe if, in fact, they do exist. (For further information on this subject, see Possibility of Intelligent Life Elsewhere in the Universe, House Committee on Science and Technology, October 1977).

Sagan stated that there is nothing in physics to prevent interstellar travel, although we can't possibly know all the problems that might be involved. He does request "extremely convincing evidence of an advanced technology in a UFO" before he can accept it, though. He stated that he has always kept an open mind, but there are many emotional factors in what makes believers and non-believers.

There are individuals who very strongly want to believe that UFOs are of intelligent extraterrestrial origin . . . things are so bad down here, maybe somebody up there will come and save us from ourselves. . . . There are also predisposing emotional factors in the other direction; people who very much want to believe UFOs are not of extraterrestrial origin, because that would be threatening to our conception of us as being the pinnacle of creation. 97/

Sagan feels that in order to justify an investigation on the order of that suggested by Hynek, harder evidence is required, even though the study would probably aid the studies of atmospheric physics and psychology. He recommended that if Congress was truly interested in studying extraterrestrial life, it should support the Mariner and Voyager programs of the National Aeronautics and Space Administration, and the radio astronomy programs of the National Science Foundation, rather than UFOs.

DR. ROBERT L. HALL, DEPARTMENT OF SOCIOLOGY, UNIVERSITY OF ILLINOIS

Dealing with UFOs from a purely socio-psychological basis, Hall began by examining mass hysteria. He believes that some cases definitely result from "hysterical contagion."

97/ Ibid., p. 91.

Once people are sensitized to the existence of some kind of phenomenon . . . where there is an ambiguous situation requiring explanation, when there is emotion or anxiety associated with this, resulting from the uncertainty, there [sic] are precisely the conditions that have been observed repeatedly as resulting in what I shall call 'improvised news.' 98/

He cited several factors in determining whether hysterical contagion would be at issue: reputation of the witnesses; quality and details of the report; if there are motives for distortion or prevarication; if there is preexisting knowledge of whatever is being reported; if there were multiple witnesses; if observation was through more than one medium (visual as well as radar, for example); and so forth. He concluded that some cases looked very good in relation to the above criteria, and that therefore all UFO sightings cannot be attributed to hysterical contagion. He also noted that assimilation (trying to explain the event in conventional terms before reaching the conclusion it is a UFO) is contrary to hysterical contagion in which people want to see strange objects.

Hall concluded that in the hard-core cases "hysterical contagion is highly improbable."

DR. JAMES A. HARDER, ASSOCIATE PROFESSOR OF CIVIL ENGINEERING,
UNIVERSITY OF CALIFORNIA AT BERKELEY

Dr. Harder was called as a witness to discuss propulsion systems necessary for interstellar travel and the types of maneuvers allegedly seen by witnesses. In Harder's opinion, "on the basis of the data and ordinary rules of evidence, as would be applied in civil or criminal courts, the physical reality of UFOs has been proved beyond a reasonable doubt." 99/

98/ Ibid., p. 101.

99/ Ibid., p. 113.

With that as a basis, Harder discussed possible propulsion systems that could accomplish incredible maneuvers at high speeds and without noise, since many reports did not include noise as a factor. A 1960 California case was used as an example. The UFO was observed by two police officers and an applied chemist from the University of California. The chemist noted that when he viewed the object through his polarized glasses, a series of rings appeared around it. Harder concluded that this was due to atmospheric disturbances from a magnetic field type of propulsion system.

He did remark that at that time the use of magnetic fields for propulsion was impossible, since each time a north pole is created, a south pole is as well, thus cancelling out any advantage. He therefore suggested that UFOs might use gravitational fields in some way of which we are not aware. His conclusion was that the study of UFOs might prove valuable for our civilization. "In the UFO phenomena we have demonstrations of scientific secrets we do not know ourselves. It would be a mistake, it seems to me, to ignore their existence."

Discussion then turned to what was thought to be a piece of a UFO discovered in Brazil. After many tests in that country and the United States, the material was found to consist of unusually pure magnesium. Harder thought that if other pieces of spaceships were searched for, they might easily be found. No concerted effort was being made, however, which substantially decreased the probability of success. He suggested a three point program for obtaining more scientific data of UFOs:

1. Establish an early warning network;
2. Put together instrument packages that could be shipped to a UFO site on short notice;
3. Cooperate with the Air Force for logistics and high speed transport of these packages.

DR. ROBERT M. L. BAKER, JR., SENIOR SCIENTIST, COMPUTER SCIENCE
CORPORATION AND DEPARTMENT OF ENGINEERING, UNIVERSITY OF
CALIFORNIA AT LOS ANGELES

Beginning his testimony on semantical grounds, Dr. Baker cited a preference for the term "anomalous observational phenomena" (AOP) rather than unidentified flying objects for the sake of clarity. Some "UFOs" are not reported to fly at all, and whether they are "objects" or not is still in question.

He then recounted the history of his interest in AOPs beginning in 1954 while he was with Douglas Aircraft Company. He viewed several films sent to Douglas by the Air Technical Intelligence Center for analysis, and became convinced that the objects photographed were not natural phenomena.

Baker then described the problems involved in collecting data that could be used for computer analysis, citing a lack of sensor equipment and systems. He worked only with hard data, such as permanent photographs, rather than soft data such as eyewitness accounts. Therefore, sensitive radar capable of tracking AOPs is crucial. A list of available tracking setups yielded only one which Baker considered adequate, but could not discuss it due to its confidential nature.

Although he felt the phenomena were not natural, he was not willing to say they were extraterrestrial either, and advocated a research program.

Personally, I feel that it is premature for me to agree that the hard and soft data forces the scientific community to give overriding attention to the hypothesis that the anomalous observations arise from manifestations of extraterrestrial beings The potential benefit of such a research project to science should not hinge solely on the detection of intelligent extraterrestrial life, it should be justified by the possibility of gaining new insights into poorly understood phenomena, such as ball lightning. . . . 100/

100/ Ibid., p. 132.

He recommended setting up an interdisciplinary task force to obtain hard and soft data supported by a sensor system designed expressly for that purpose, possibly a phased array radar. In addition, a space-based long-wave-length infrared surveillance sensor system should be set up. He also suggested "technological and behavioral pattern forecasting" studies to assess what extraterrestrial life might be like, and that a study be made of the psychiatric/medical problems of determining witness credibility.

Written Statements

As mentioned above, written statements were provided by six other persons.

The respondents were:

Dr. Donald Menzel, Harvard College Observatory

Dr. R. Leo Sprinkle, Division of Counseling and Testing, University of Wyoming

Dr. Garry C. Henderson, Senior Research Scientist, Space Sciences, General Dynamics

Mr. Stanton T. Friedman, Westinghouse Astronuclear Laboratory

Dr. Roger N. Shepard, Department of Psychology, Stanford University

Dr. Frank R. Salisbury, Head, Plant Science Department, Utah State University

4. Private Organizations

Although official responsibility for UFO investigations was charged to the U.S. Air Force, many felt the issue was not receiving enough serious attention and therefore formed their own organizations. These have played an important role in the study of UFOs since 1952, when the first was formed in this country, and their importance expanded when Project Blue Book was disbanded in 1969. They are now the only places to which one can report a sighting with any expectation of having it investigated.

Over the years a large number of these groups have come and gone, both in the United States and abroad. A few of the larger groups are described below.

a. APRO

The Aerial Phenomena Research Organization was the first private UFO group formed in the United States. Founded in 1952 by a Wisconsin couple, Coral and Jim Lorenzen, APRO claims approximately 3,000 members. The membership rolls have varied substantially over the 31 years of APRO's operation, with the low point coming just after the Condon Report was issued. As its membership diminished, APRO redirected its efforts from collecting reports to computerizing, synthesizing, and analyzing the reports themselves. To facilitate this, they set up groups of scientific consultants in fields such as metallurgy, plant pathology, and psychiatry. Their 45 consultants are listed under four categories: biological sciences, medical sciences, physical sciences, and social sciences.

APRO publishes a monthly newsletter, APRO Bulletin, and occasionally sponsors symposia and publishes their proceedings. The Lorenzens have written several books, separately and jointly. APRO can be contacted at 3910 E. Kleindale Rd., Tucson, Arizona 85712; Telephone: (602) 793-1825.

b. AFSCA

Amalgamated Flying Saucer Clubs of America is primarily interested in extraterrestrial contacts, and disseminates descriptions of the experiences of persons who were allegedly contacted by extraterrestrial beings and books dealing with UFOs. Its publication, Flying Saucers International, appeared between 1956 and 1970. The group can be contacted at P.O. Box 39, Yucca Valley, California 92284.

c. CUFOS

Organized in late 1973, the Center for UFO Studies (CUFOS) is quite unlike either of the above organizations. Rather than a membership group, CUFOS is a core of 26 scientists concerned about UFOs and willing to spend some of their time investigating and debating the issue. It was founded by Northwestern University astronomer J. Allen Hynek, who has figured prominently throughout this report as someone who has been involved with UFOs since 1948. He set up CUFOS with the following purposes: (1) To be a place to which persons can report UFO experiences without fear of ridicule, and with the knowledge that their reports will be given serious scientific attention; (2) To pursue a vigorous study of such reports; (3) To be a source of reliable information to schools, universities, scientific organizations, and the general public; (4) To assist and guide in the international study of the phenomenon; and (5) To aid in coordinating the efforts of the researchers.

The board is assisted by field investigators from the Mutual UFO Network (see below). CUFOS keeps a computerized list of UFO cases that are reported to them, as well as others from the past, and has over 50,000 cases on record. They operate a toll free number for police departments across the Nation, so that a UFO sighting can be passed on from the reporter, to the local police, to CUFOS for possible investigation. Some 80 percent of the cases can be explained as natural phenomena, but those that remain unidentified are subject to further investigation.

A tax-exempt, non-profit organization, CUFOS operates on donations from individuals who are also interested in having UFO cases investigated. Contributors receive the bimonthly International UFO Reporter and/or CUFOS Associate Newsletter, as well as information on books in the field that can be purchased through CUFOS. Technical papers are published in The Journal of UFO Studies

(1979 and 1980 annual issues have appeared thus far). For further information, contact: Center for UFO Studies, P.O. Box 1621, Lima, Ohio 45802; Telephone: (419) 223-2531.

d. CSICOP

The Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP) "attempts to encourage the critical investigation of paranormal and fringe-science claims from a responsible, scientific point of view and to disseminate factual information about the results of such inquiries . . ." CSICOP was formed in 1976 and regards UFOs with skepticism. Critical articles about UFOs and reviews of books, films, and other releases dealing with UFOs appear in the committee's journal, The Skeptical Inquirer. In 1977, the UFO Subcommittee was formed "to provide the public and the news media with authoritative, no-nonsense information on Unidentified Flying Objects. . . ." The CSICOP/UFO Subcommittee may be contacted at 1341 Poe Lane, San Jose, California 95130.

e. The Fund

The Fund for UFO Research was organized in 1979 "to seek public support and to channel money into worthwhile [research] projects that show promise of dispelling myths and/or acquiring reliable scientific information [about UFOs]." The Fund seeks scientific data "that will help to evaluate current theories or provide the basis for new ones." At the present time, the Fund is supporting lawsuits to obtain the release of additional documents about UFOs under the Freedom of Information Act. The Fund, among other projects, supported a psychological study of UFO witnesses who claim to have been abducted by alleged alien

beings, a computer study of UFO reports in Great Britain, and a slide/tape presentation on the subject of UFOs for libraries, schools, and community groups. The Fund's address is Box 277, Mount Rainier, Maryland 20822.

f. MUFON

The Mutual UFO Network was formed on May 31, 1969 to answer four questions about UFOS: are they extraterrestrial craft, and if so, what is their method of propulsion, where do they come from, and what can we learn from the beings that pilot them? The organization is divided into three levels of directors: the overall coordinator, International Director Walter Andrus; State Directors; and State-Section Directors. Membership is only by invitation by one of these directors, so that "only qualified, competent, and sincere people may become involved." Currently there are 1,000 such members.

When J. Allen Hynek set up the Center for UFO Studies (see above), MUFON volunteered the services of its 800 field investigators to support the Center's efforts. MUFON publishes the monthly MUFON UFO Journal, as well as the proceedings from its annual MUFON Symposia. In 1971, they prepared a Field Investigator's manual for studying UFOs, which was updated in 1975 and again in 1982 by Raymond E. Fowler.

MUFON can be contacted at 103 Oldtowne Road, Seguin, Texas 78115; Telephone: (512) 379-9216. For subscriptions to MUFON UFO Journal, write: 26 Edgewood Drive, Quincy, Illinois 62301.

g. NICAP

The National Investigations Committee on Aerial Phenomena was formed in 1956 by Major Donald Keyhoe, who believes in the extraterrestrial hypothesis, and was convinced that the Air Force was waging a conspiracy against him

(which reportedly can be substantiated to some extent). For many years, NICAP's main interest was collecting UFO reports and investigating a small number of them, although it did not draw definitive conclusions. Its stated goals were "scientific investigation and research of reported unidentified flying objects, and encouragement of full reporting to the public by responsible authorities of all information which the government has accumulated."

NICAP was originally headquartered in Washington, D.C., but later moved to the Maryland suburbs. In 1973, Keyhoe retired in favor of John Acuff. In 1982, NICAP elected a new Board of Directors which consisted of three individuals who are also members of the board of CUFOS. The relationship with Acuff was terminated, and NICAP's files were transferred to Glenview, Illinois, near CUFOS, to facilitate access to the material by UFO researchers.

For many years, NICAP published a monthly newsletter, UFO Investigator, which ceased duplication in 1980. Other NICAP documents include The UFO Evidence (1964) and UFOs: A New Look (1969) in which the House Science and Astronautics Committee hearings are summarized and analyzed. NICAP can be reached by writing to P.O. Box 607, Lima, Ohio 45804.

h. VISIT

The Vehicle Internal System Investigative Team focuses its efforts on the scientific and engineering study of the internal systems of unidentified space vehicles and of the physiology of the beings which occupy these vehicles. The data come from transcripts of conversations between psychologists or case investigators and alleged abductees, follow-up conversations with alleged abductees, medical analysis of injuries sustained by witnesses during close encounters with UFOs, and other sources. VISIT has catalogued 86 alleged abduction cases.

Members of this group have published articles in The Unexplained Mysteries of Mind Space & Time, a British weekly, the MUFON UFO Journal, and the Rosicrucian Digest.

VISIT's address is P.O. Box 877, Friendswood, Texas 77546.

i. Others

The following additional organizations collect and offer to provide various UFO-related information:

Society for the Investigation of the Unexplained, P.O. Box 265,
Little Silver, New Jersey 07739

Space and Unexplained Celestial Events Society (SAUCERS), Box 2228,
Clarksburg, West Virginia 26301

UFO Information Retrieval Center, P.O. Box 57, Riderwood, Maryland
21139

B. NON-U.S. REPORTS AND INTERNATIONAL COOPERATION

As mentioned previously, most sightings prior to 1947 took place in Europe-- only the 1896 airship wave became an important chapter in U.S. UFO history. The first part of this chapter has dealt with U.S. sightings only, but the United States certainly was not the only country to experience the phenomena. UFOs have been seen in countries as scattered as France, Australia, Scandinavia, Spain, and New Guinea. A comprehensive study of UFOs around the world would require far too much space for this report, so only a few countries will be discussed below.

1. Brazil

Many skeptics have said that the only way they could accept the extraterrestrial hypothesis would be if they could see a UFO and examine first hand pieces of it to determine if it could be made on Earth. Thus, a great deal of excitement occurred in 1957 when a UFO allegedly exploded over Ubatuba, Brazil. Some of the fragments were picked up and given to APRO representative Dr. Olava Fontes. He took them to the Mineral Production Laboratory in the Brazilian Agricultural Ministry and some pieces later found their way to the U.S. Air Force for analysis. The results showed a very high grade magnesium, and original claims held that it was purer than anything made on Earth, and therefore came from outer space.

The U.S. tests, however, showed that although the sample was indeed very pure, it was no more so than some samples made by Dow Chemical Company. The most interesting fact they found was that impurities that were present differed from the Dow samples. In particular, the percentage of strontium (Sr) was very high, and Dow said they did not put any Sr in their commercial samples. Further investigation by the Condon committee revealed that since 1940, experiments had been made with magnesium, and samples containing from 0.1 percent to 40 percent Sr had been produced. They thus concluded that in 1957 technology was available to make that type of magnesium, and no reason existed for believing that it came from another world. 101/ Later, two APRO metallurgists Drs. Walter Walker and Robert Johnson, found that the metal was solidified in such a way that the grains run in one direction. They claim that no studies of directional graining took place before 1957, so the origin of the fragment is still in question. 102/

101/ Condon, op. cit., p. 94-97. See also Saunders and Harkins, op. cit., p. 170-174, and Dr. James Harder in Symposium on Unidentified Flying Objects, op. cit., p. 120.

102/ Kettlekamp, Larry. Investigating UFOs. New York, William Morrow, 1971. p. 38-39.

Another UFO case took place in Brazil five years earlier near Rio de Janeiro and again was reported by Dr. Fontes. According to the official report, a press photographer and reporter from O Cruzeiro magazine were on assignment at 4:30 p.m. on May 7, 1952 and suddenly saw what appeared to be an airplane flying sideways. The photographer took five pictures in about 60 seconds. The Brazilian Air Force analyzed the photographs and concluded that due to the distances and altitudes involved, it could not be a hoax.

When the Condon staff investigated the case (although they say they did not look into it thoroughly since all they had was third hand reports) they found an inconsistency first pointed out by Donald Menzel and L. G. Boyd. In one of the frames (plate 20 of the Condon Report), the disc is illuminated from the left, while the hillside is illuminated from the right. Menzel and Boyd labeled the case a hoax, while the Condon Report would only go so far as to state that an internal inconsistency existed which left the case open.

2. Soviet Union.

Dr. Feliks Yu. Zigel of the Moscow Aviation Institute appears to be the leading proponent of UFOs in the Soviet Union. In 1968, he published one of the first Soviet articles on UFOs to appear in the West in Soviet Life, a Soviet magazine published for consumption in the United States. In that article he described several USSR sightings; one of them is presented below:

Not one but several reports came from astronomers at the Mountain Astrophysical Station, USSR Academy of Sciences, 12 miles from Kislovodsk, Caucasus.

In July 1967, the station received letters from local newspapers reporting the flight of a strange reddish crescent across the sky at 9:20 p.m. on July 17.

In the very early morning of July 18, 1967, astronomer H. I. Potter . . . noticed a strange formation against a clear starry sky at 2:50 a.m. Moscow time. A white cloud appeared in the northeast at

an elevation of about 20 degrees. Its diameter was twice as long as that of the Moon but its nose was several times less bright.

The cloud itself had a dense milky-white color, with a rosy-red nucleus clearly discernible near its northern end. The cloud expanded and grew paler. A few minutes later the white cloud dispersed completely, but the reddish nucleus remained. . . .

At 8:40 p.m. on August 8, 1967, at the same Mountain Station astronomer Anatoli Sazanov observed an unfamiliar flying object. It was shaped like an asymmetrical crescent with its convex side turned in the direction of its movement. Narrow, faintly luminous ribbons resembling the condensation trail of a jet plane followed behind the horns of the crescent. Its diameter was two-thirds that of the Moon, and it was not as bright. It was yellow with a reddish tinge. 103/

One of the most fascinating events that has occurred in recorded history is the Tunguska (or Tungusky) meteorite that landed in Siberia in 1908. Although many call it a meteorite, in actuality, no one knows for certain what it was.

In broad daylight on June 30, 1908, hundreds of people saw an object crash into the Siberian woods near the Tunguska River. Trees were flattened within a 40 mile radius of the center of the impact with their "tops pointing radially away from the epicenter. Witnesses felt intense heat on their skin. Metal objects near the impact point were melted. . . . Barometric waves circled the globe. Magnetic disturbances were reported on many continents. The energy released . . . is estimated between 10^{16} and 10^{17} joules (the energy range of hydrogen bombs)." 104/

No crater has ever been discovered from the impact, and some suggest that the object exploded up to 10 kilometers above ground, while others say a crater did form, but was immediately filled with water. 105/

103/ Zigel, Felix. Unidentified Flying Objects. Soviet Life, Feb. 1968: 28.

104/ Condon, op. cit., p. 746.

105/ Hobana, Ion and Julien Weverbergh. UFOs from behind the Iron Curtain. London, Souvenir Press, 1972. p. 7.

The Condon Report lists five suggested explanations, two dealing with comet impact, two with meteor impact, and the fifth proposing an antimatter meteoroid. They conclude that it was probably a comet, although they admit the antimatter hypothesis is extremely intriguing. In 1968, Zigel suggested yet another hypothesis which the Condon group did not include: an extraterrestrial craft exploded. He stated that if it had been a comet, it would have been noticed by astronomers long before it impacted Earth, and also contended that the object changed course shortly before impact; a comet would not do this. Thus he concluded it was a UFO, but as mentioned earlier, the case is not yet closed.

UFOlogists in the Soviet Union face many of the same problems as their American counterparts, and perhaps even more. There are no private organizations such as APRO and NICAP, and their Air Force (as far as we know) had nothing similar to Blue Book, which at least served as a collecting point for reports.

The fact that Russia kept quiet about UFOs until the 1960s has its reasons. First of all the Russian authorities just after the Second World War (the Cold War period) felt that UFO reports whether from abroad or originating at home had to be linked with psychological warfare tactics since these 'mysterious' and excited accounts were looked upon as likely to have the sole purpose of creating unrest and fear amongst the people. The second cause . . . is that the Russian authorities, just like the colleagues in the West, did not know what to do apart from debunking all such accounts or hushing them up. For this reason Dr. Donald Menzel's book written in the U.S. in 1953 was published in large numbers in a Russian translation only in 1962. . . . Menzel's book has been fiercely attacked, yet in Russia it enjoys more 'respect' than was ever bestowed on him in his homeland. 106/

The parallel between official Soviet reaction and that in America is amazingly close. Just as happened with the foo fighters during World War II, in which the three major countries all had reports and all assumed they were enemy weapons, Soviet reaction to UFOs was much the same as ours.

In effect it can be said that the UFO situation in the Soviet Union appears to be about the same as in this country. The populace and some scientists are interested, but there is no official support. In this regard the United States is in a better situation, for the freedom of the press provision in the Constitution allows for many publications on the subject. In the Soviet Union, without government approval, little is written and the issue does not receive such wide publicity. Both sides are heard, however, and six months after Zigel's work appeared in Soviet Life, the opposing viewpoint was given in Soviet Science in the News.

. . . three outstanding Soviet scientists, E. Mustel', D. Martynov and V. Leshkovstev, state there are no new facts to support the existence of UFOs. Astronomers, they say, do not see them, scientists who study the Earth's atmosphere do not see them, and the antiaircraft defense forces do not see them. All objects passing over Soviet territory are recognized either by scientists or by the defense forces. The three go on to say that if there really are UFOs, scientists would have been the first to obtain necessary information about them. The Bureau of the Division of General and Applied Physics of the Academy of Sciences recently heard a report . . . that the UFO craze has all the earmarks of 'antiscientific sensation,' and that these conjectures 'have no scientific foundation whatever, and that the observed objects have a very well-known nature.' 107/

Again the similarities are astounding. Zigel quotes cases from astronomers who have seen UFOs and the opposing statement is that astronomers do not see them.

On September 20, 1977, unusual phenomena were observed over Petrozavodsk, capital of the Soviet Republic of Karelia, located about 100 miles northeast of Leningrad. Uncharacteristically, TASS released detailed information about this

107/ Russian UFOs. Soviet Science in the News. As translated and published by Electro-Optical Systems, Inc., Pasadena, California, 1967. No page number provided.

event, which was then carried by Western newspapers and journals. 108/ In subsequent newspaper and journal articles, James Oberg, an employee of McDonnell Douglas Astronautics Co., offered the explanation that the spectacular phenomena were caused by the rocket booster of Kosmos 955, a military satellite which was launched at that time from the Soviet launch site near Plesetsk, east-northeast from Petrozavodsk. 109/

More recently, members of the UFO Subcommittee of CSICOP correlated various UFO sighting reports from the USSR, Argentina, and Brazil with specific launches of Soviet military satellites of the Kosmos series which had been launched from Plesetsk. 110/

Although the existence and location of the Plesetsk launch site has been publicly known in the West since 1965 (based primarily on the research of Geoffrey Perry, head of England's Kettering Group of amateur satellite trackers), the Soviets only officially acknowledged its existence in June 1983. At that time, they commented that launches from Plesetsk had made "a substantial contribution to the legend of flying saucers." 111/

108/ Soviet Sky Puzzle: 'Jellyfish' of Light. New York Times, Sept. 23, 1977: A4. Soviet UFO Due to Secret Launch. Science News, v. 112, Oct. 8, 1977: 230-231. The Petrozavodsk Phenomenon. Sky and Telescope, v. 55, Jan. 1978: 19.

109/ Mysterious Light Sighted in Soviet Union Is Described as a Rocket Booster. New York Times, Sept. 30, 1977: B2. Soviet UFO Due to Secret Launch. Science News, v. 112, Oct. 8, 1977: 230-231. Oberg, James. Close Encounters of a Fabricated Kind. New Scientist, v. 92, Dec. 24/31, 1981: 896-898. Cruikshank, Dale P. and David W. Swift. The Petrozavodsk Phenomenon. Journal of UFO Studies, v. 2., 1980: 91-94.

110/ Cowen, Robert C. Flying Saucers--or Soviet Satellites? Study says 'alien' ships are really military space shots. Christian Science Monitor, June 9, 1982: 1, 6.

111/ Gubarev, V. Notes on History of Plesetsk Cosmodrome. Pravda, June 20, 1983: 3.

A UFO-related event in the Soviet Union was the 1979 publication "by decision of the Section of General Physics and Astronomy, Presidium, Academy of Sciences, U.S.S.R." of a statistical analysis of 256 Soviet UFO sighting reports. The study, Observations of Anomalous Atmospheric Phenomena in the U.S.S.R.: A Statistical Analysis was prepared by L. M. Gindilis, D. A. Men'kov, and I. G. Petrovskaya, three Soviet scientists of different specialties. All the reports were selected by Zigel.

A copy of the study reached the official French UFO research organization, G.E.P.A.N. (part of the Centre National d'Etudes Spatiales), from whence it was eventually transmitted to interested persons in the United States. An English translation of this study is available from the Center for UFO studies.

J. Allen Hynek and Richard F. Haines published a detailed description and evaluation of this statistical study. 112/ The following are some of the major points.

The majority of the sightings occurred in 1967, a peak year for Soviet sighting reports. Thus, "the data may not be representative of the phenomenon as a whole in the U.S.S.R."

- 66 percent of the sightings were witnessed by two or more persons;
- 15 percent were witnessed by larger groups of persons;
- 42 percent of the witnesses were scientists or engineers;
- 67 percent of the witnesses were professionals;
- 87 percent of the reports described a luminous body against a dark sky.

112/ Hynek, J. Allen and Richard F. Haines. Implications of and Comments on Observations of Anomalous Atmospheric Phenomena in the U.S.S.R.: A Statistical Analysis. Journal of UFO Studies, v. 2, 1980: 95-101.

According to Hynek and Haines, "the rigor and scholarly tenor of the paper as a whole allows one to assume that no invalidating selection factor was employed and that the 256 cases do represent a fair picture of those UFO reports which contain enough data to qualify for a statistical treatment."

In an article in the MUFON UFO Journal, 113/ James Oberg states that 44 (or nearly 80 percent) of the multiple sighting reports from the May-October 1967 period of the above statistical study correlate with dates of test flights and re-entries of Soviet satellites of the Fractional Orbital Bombardment System. These vehicles were designed to carry nuclear devices around the South Pole and to drop them, on command, onto selected targets. The test flights flew slightly less than one orbit around the earth, followed by a re-entry through the atmosphere.

3. China

The China UFO Research Organization 114/ was established in May 1980. During its first year of operation, it received more than 500 reports about UFO sightings. One sighting, for example, was in Tibet, where residents of five cities reported nearly the same UFO description: "A bright object surrounded by a ring of blue-white light of variable brightness . . . As it moved, the center brightened and began rotating opposite to the movements of its surrounding rings, which began to dim and widen at the same time." 115/

113/ Oberg, James E. The Great Soviet UFO Coverup. MUFON UFO Journal, no. 176, Oct. 1982: 6-10 and no. 177, Nov. 1982: 6-10.

114/ In a broadcast on November 19, 1980, Radio Beijing called it The Chinese Flying Saucer Research Society and said that it collects and analyzes witnesses' reports on UFOs and conducts theoretical studies.

115/ McNutty, Timothy. Close Encounters of the Peoples Liberation Kind. Chicago Tribune, Sept. 20, 1981: 13.

4. France

At the present time, France is the only country known to have a government organization charged with studying UFOs. Called Le Group d'Étude des Phénomènes Aérospatiaux Non-identifiés (GEPAN), it was established in the late 1970's as part of the Centre National d'Etudes Spatiales (CNES), the France equivalent of NASA. The group is small (reportedly only 2-3 employees) but publishes several reports a year on its activities and UFO related subjects. GEPAN can be reached by writing to CNES, GEPAN, 18 Avenue Ed Belin, 30155 Toulouse, France.

5. International Cooperation

As can be read in the preceding sections of this report, many American UFOlogists have called for international cooperation in determining worldwide trends of UFOs, especially during congressional hearings. In 1967, Dr. James McDonald took the case to the Outer Space Affairs Group of the United Nations. Although this author is not aware of any action taken by that UN committee, Drew Pearson and Jack Anderson noted McDonald's appearance, especially since it took place in the middle of the 1967 Mid-East war, and in a column entitled "UFO's High Among Thant's Worries" stated:

Interesting fact is that U Thant has confided to friends that he considers UFOs the most important problem facing the United Nations next to the war in Vietnam. U Thant made this statement before the war in the Near East, so it's not known how he rates this last international incident compared with UFOs. 116/

116/ Pearson, Drew and Jack Anderson. UFOs High Among Thant's Worries. Washington Post, June 27, 1967: B11.

In his speech to the Outer Space Affairs Group, McDonald emphasized that his contention that the most plausible explanation for UFOs is extraterrestrial vehicles is a hypothesis only, and that an international effort is required to examine the matter. He cited the need for "erasing the ridicule that is quite clearly suppressing open reporting of sightings." In summary, he said:

I urge the United Nations Organization immediately undertake a review of the UFO problem, possibly through the Outer Space Affairs Group. And I hope that all member Nations will be encouraged to institute review boards and study panels to examine UFO sightings in their own countries. . . .

. . . I know of no other current scientific problem that is more intrinsically international in character than this problem of the nature and origin of the unidentified flying objects. Hence, it seems indispensable to secure United Nations involvement in the study of this problem, the global importance of which may be truly enormous. 117/

In the 30th through 33rd sessions of the United Nations General Assembly (1975 through 1978) and in the Special Political Committee in 1977 and 1978, Sir Eric M. Gairy, Prime Minister and Minister of External Affairs of Grenada proposed the "Establishment of an agency or a department of the United Nations for undertaking, coordinating, and disseminating the results of research into Unidentified Flying Objects and related phenomena." At the 1978 meeting, in addition to Sir Gairy, J. Allen Hynek, Jacques Vallee, and Lt. Col. Larry Coyne, a U.S. Army helicopter pilot who allegedly almost had a mid-air collision with a UFO, also made supporting statements. The proposal got no further.

The First International Congress on the UFO Phenomenon, which met at Acapulco, Mexico, April 18 to 24, 1977, congratulated Mr. Gairy for his efforts in a unanimous resolution.

117/ McDonald, Dr. James. Statement of International Scientific Aspects on the Problem of the Unidentified Flying Objects. Submitted to the Outer Space Affairs Group, United Nations Organizations, June 7, 1967.

VI. 1970-1982 SIGHTINGS AND ACTIVITIES IN THE UNITED STATES

In the wake of the Condon committee's report, membership in private UFO organizations dwindled and UFO reports diminished. Many felt that the Air Force had solved all the truly important cases and no longer felt threatened by invasion from another world. Some cases still were reported in the early 1970s (for example, the Delphos, Kansas report--see appendix), but the field was relatively quiet.

A. 1973 FLAP

This quiet period ended in 1973 when a rash of sightings brought attention to the problem once again, and contactee cases found their way to the front pages of the tabloids. By far the most discussed case was the Pascagoula, Mississippi "abduction" incident described in chapter 1, and although this case officially remains open, skeptics claim that the two men had simply had too much to drink, and dreamt the entire event.

But this was not the only case.

The 1973-1974 wave mirrored previous large waves, although by mid-1974 not enough time had passed for investigators to scrutinize the reports thoroughly for misidentifications, hoaxes, and the like. Reports fell into a wide range of UFO sighting categories. Among them were high-level and distant sightings, low-level sightings, car chasing incidents, sightings causing electrical and/or mechanical effects or interference, sightings affecting animals, sightings affecting people physically, sightings causing psychological and mental effects on people, landings with traces left behind and occupant cases. 118/

118/ Jacobs, op. cit., p. 265.

If witness credibility is to be taken into account, certainly one of the most valuable reports came from Ohio Governor John Gilligan and his wife. They said that while driving near Ann Arbor, Michigan on the night of October 15, 1973, they watched a "vertical-shaped, amber colored object" for about a half hour. Gilligan said he didn't know what it was, but was certain it wasn't a bird or a plane. 119/

Philip Klass suggests that the Governor saw the planet Mars which was "at its closest and brightest. . . . And it was to the east-southeast in the sky, near the reported position of Gilligan's UFO." 120/ He goes on to say that the Governor received a lot of publicity, a "not unwelcome thing for anyone in public office." This statement does not square with what has been observed for years, that those who report UFOs are frequently subjected to ridicule by their peers and lose credibility in the community. This is hardly welcome for someone in public office.

Another Ohio incident occurred just three days after Gilligan's report. On October 18, 1973, the four-man crew of an Army helicopter near Mansfield, Ohio spotted a bright red light which seemed to be pacing them. Soon the object began to close on the helicopter and the crew feared a mid-air collision. The crew chief decided to dive to avoid the object, and at an altitude of 1,700 feet, put the craft into a 20° dive at 2,000 feet per minute. The red light stayed with them and suddenly the helicopter was illuminated by a green light. After a few seconds, the UFO turned away and disappeared. When the crew chief checked

119/ UFO is Reported by Ohio Governor. The Washington Post, Oct. 18, 1973: All.

120/ Klass, op. cit., p. 288.

his instruments he found that instead of descending, the craft had ascended to 3,500 feet and was climbing at 1,000 feet per minute. Their radio equipment was not working.

Klass concluded that the crew had merely seen a fireball, and points out that the altitude reading is in reference to sea-level, not to the ground it is flying over. Thus the 1,700 foot altitude reported by the crew chief translated into their being only 400 feet above the ground (the altitude of that part of central Ohio is 1,300 feet). He states that someone in the crew instinctively pulled back on the controls to pull the craft out of its dive because he knew they would crash. The radio did not work, either because the tower operator did not answer the crew, which Klass claims happens on occasion, or because the radio operator on board the helicopter was so excited, he did not stop at any one frequency long enough to establish contact. 121/

But there were many cases, and for the first time during a major wave period, there was no official body to investigate the incident. The public was left to its own imagination as to what was happening. David Jacobs summarizes the period in this way:

Scientists, the news media, the general public, and even the Air Force seemed less opinionated, and more willing to suspend judgment on the phenomenon. The 1973-1974 sighting wave lacked the emotionalism and rancor that had characterized the opposing viewpoints in the waves of the 1950s and 1960s. In general, society seemed more open than ever to the theory that the UFO phenomenon might be legitimate regardless of the objects' origins. The bitter battles of the previous years had ended, and only the phenomenon remained. Yet not all the battle scars had healed, and the spectrum of opinion on UFOs was as wide as ever. 122/

121/ Ibid., p. 333-347.

122/ Jacobs, op. cit., p. 285.

B. ANIMAL MUTILATIONS

The flap of 1973 eventually died down, although some UFO reports continued to come to the attention of private organizations. In late 1974 and early 1975, the focus was on a series of cases that involved mutilation of animals. NICAP reported in its February UFO Investigator that:

For the past three months, [we have] been inundated with calls and letters of inquiries regarding reports of animals that have been mutilated in different parts of the country. . . . The prime target area of the mutilated animals centers around Meeker County, Minnesota.

Their report went on to explain that on December 1, 1974, a farmer in Meeker County reported that one of his calves had been mutilated. Investigators found that the calf's lips had been cut off from one inch above the nose to behind the rear of the left jaw bone. The tongue was removed and the jugular vein slit. Interestingly, only about one cup of blood was on the ground, indicating that someone had collected the rest. The edge of the left ear and the reproductive organs had also been removed. There was no sign of entry to or departure from the area, and a circular bare spot in the snow was discovered. This led some to conclude that UFOs were responsible, although NICAP expressed reservations about this explanation. They revealed that other such mutilation incidents had occurred in Dallas and in sections of California.

In May, NICAP followed up on the story by printing a letter by two men who investigated the matter further, one from NICAP and one from APRO. They found that the "circular bare spot" was not circular at all and "was in fact an irregularly shaped area caused by the snow being compacted by other cattle as they came to sniff the body." They concluded that the mutilation was part of

initiation rites for a satanic cult, whose members had been arrested by Federal authorities. This cult had moved through different areas of the country and was responsible for all the mutilation reports. 123/

C. INFORMATION OBTAINED THROUGH THE FREEDOM OF INFORMATION ACT

In 1977 and 1978, three organizations interested in UFOs obtained the release of about 3,000 UFO-related documents under the Freedom of Information Act from the FBI, CIA, Air Force, and Naval Intelligence. The organizations were Ground Saucer Watch, Citizens Against UFO Secrecy, and Fund for UFO Research. Approximately 300 pages of these documents were provided to CRS for examination by a representative of the Fund for UFO Research. CRS did not, however, verify the authenticity of these documents with the relevant agencies.

1. FBI

The FBI documents covered the time period from 1947 to about 1963. They consist of reports and memoranda about sightings, evaluations of persons reporting the sightings, and directives about procedures to be followed by agents in the field.

It appears from these documents that the FBI was interested in UFOs only from the perspective of its mandate to protect the country's internal security and only to a limited extent--it did not want to act as an agent for the Air Force and collect alleged UFO artifacts or to do all the field work. The FBI's involvement was limited to receiving sighting reports from its special agents and from the public.

123/ Cornett, Robert C. and Kevin D. Randle. Feedback, Readers Write-
Re: Cattle Mutilation in Minnesota. NICAP, UFO Investigator, May 1975: 4.

The following are excerpts from released FBI memoranda and documents:

. . .there are no War Department or Navy Department research projects presently being conducted which could in any way be tied up with the flying disks. (July 10, 1947--16 days after Kenneth Arnold's reported sighting)

. . . the Army is conducting no experimentation with anything which could possibly be mistaken for a flying disc. (August 19, 1947)

This 'flying saucer' situation is not all imaginary. . . .
Something is really flying around. (August 1947)

Several flying objects were observed. They had a mean calculated speed of 27,000 miles an hour. (January 31, 1949)

. . . flying discs are believed to be man-made. . . . It has also been determined that for approximately the past four years the USSR has been engaged in experimentation on an unknown type of flying disc. (March 25, 1949)

Since 1948, approximately 150 observations of aerial phenomena . . . have been recorded in the vicinity of [sensitive] installations in New Mexico. (August 23, 1950)

All the reports dealing with specific sightings of flying objects include similar information regarding the great speed of these objects and their ability to hover. The shapes and sizes of the sighted objects vary.

As the collection, investigation, and filing of reports about UFO sightings became assigned to the Air Force, 124/ the FBI transmitted to that agency the reports it received. Eventually, the FBI received fewer and fewer reports and finally terminated its involvement with UFOs.

124/ As noted in section V, the Air Force initiated Project Sign in 1948 and continued investigating UFO reports officially until 1969.

2. Air Force

The Air Force has a standard reply to any inquiries concerning reports about UFO sightings, as revealed in an unclassified communication dated November 12, 1975 which was released upon the Freedom of Information Act request:

On December 17, 1969 [after the publication of the Condon Report], the Air Force announced the termination of Project Blue Book, the program for the investigation of UFOs. Since then, no evidence has been presented to indicate further investigation by the Air Force is warranted. There are no plans for renewed Air Force involvement in this area.

In November 1975, this reply was used in connection with the numerous overflights and hoverings of UFOs above weapons storage areas and other sensitive locations at several Strategic Air Command bases. Since these UFOs could, or did, affect national security, reports about them were made in accordance with JANAP 146 or Air Force Manual 55-11 guidelines. Reports of these incidents from 1975 are among the released documents.

3. CIA

About 90 to 95 percent of the documents released by the CIA are merely transcripts or translations of reports about UFO sightings obtained from surveys of open, foreign press reports and broadcasts. The following is an excerpt from a released CIA memorandum dated December 2, 1952:

At this time, the reports of incidents convince us that there is something going on that must have immediate attention. . . . Sightings of unexplained objects at great altitudes and traveling at high speeds in the vicinity of major U.S. defense installations are of such nature that they are not attributable to natural phenomena or known types of aerial vehicles.

4. Naval Intelligence

The documents released by Naval Intelligence deal with UFO sighting reports submitted to it by Navy, or related, personnel. The speed of the sighted flying object from one of these reports was calculated to be about 6,700 miles per hour.

There are also some documents from U.S. military attaches and consular officials which deal with UFO sightings in foreign countries.

D. CARTER ADMINISTRATION ACTIVITIES

A few months after the Carter Administration took office, the White House became a focal point for a new wave of inquiries about UFOs--perhaps as a result of the release of several space-related movies and President Carter's campaign promise to remove the veil of government secrecy from the subject of UFOs. The White House press office requested assistance in this matter from Presidential Science Adviser Frank Press. In a letter dated July 21, 1977, Dr. Press recommended to NASA Administrator Robert A. Frosch that NASA become the focal point for all UFO inquiries and that it should set up a desk to which the White House could forward all the inquiries it received. He also recommended that a small panel of inquiry be formed by NASA to see if any new significant findings had come to light about UFOs since the publication of the Condon Report.

In a September 6, 1977 letter to Press, Frosch replied that NASA was responding to UFO-related inquiries with a form letter. (The form letter, Information Sheet FGM 76-6 of the Office of Public Affairs, stated that an extensive study about UFOs closed with the publication of the Condon Report. It summarized the conclusions of that report and advised where one might purchase a copy.

The form letter went on to say that "investigations are continuing under private auspices" and provided the names and addresses of two private organizations which investigate reported UFO sightings.)

Regarding the panel of inquiry, Frosch said that "Before committing to this, . . . we should assure ourselves that an inquiry is justified."

In a press report dated November 26, 1977, 125/ David Williamson, special assistant to the NASA Administrator, was quoted as not favoring "research on something that is not a measurable phenomenon" and in a letter dated December 21, 1977, Dr. Frosch told Dr. Press that NASA was prepared to "continue responding to public inquiries along the same lines as . . . in the past." Regarding further investigation of UFOs, because of the absence of tangible or physical evidence, "we have not been able to devise a sound scientific procedure for investigating these phenomena. [However,] we stand ready to [analyze] any bona fide physical evidence from credible sources." 126/

E. CURRENT AND RECENT SCIENTIFIC STUDIES

Michael A. Persinger of Laurentian University, Sudbury, Ontario, Canada has published several papers which correlate UFO reportings, tectonic strains, and the release of these strains or earthquakes.

In a 1976 article, Persinger theorized that subsurface geological formations which are under tectonic strains could generate piezoelectric effects just before or during fracturing, as stresses are released, or after unusually intense

125/ Carter Is Facing Rebuff on Reviving UFO Probe. Washington Post, Nov. 26, 1977: B5.

126/ Letter, dated Dec. 21, 1977, from Robert A. Frosch, NASA Administrator to Frank Press, Director, Office of Science and Technology Policy, Executive Office of the President.

and sudden changes in air pressure such as during the passage of a cold front. The electric fields so created would be highly localized and column-like and would exceed 100,000 V/m. The ambient air thus would become ionized and luminous, with the shape of the luminosity determined by local geophysical structures. The luminosity would move in the same directions as the subsurface strain releases or fractures. Thus, the luminosity could hover in place, dart upward or sideways, or disappear into the ground. The movement of the electric field would induce electromagnetic disturbances in the vicinity, such as changes or failures in radio transmission and reception, electric appliances, lighting systems, and compasses, and indirect or direct effects on human beings. 127/

Four years later, Persinger performed statistical analyses of over 20,000 UFO reports between 1951 and 1965, in six earthquake regions of the United States, which indicated that the combined numbers of seismic events during six-month periods in northeastern, eastern, and central regions correlated as much as 0.70 with the number of UFO reports during preceding six-month intervals. Other lags, as well as correlations with total U.S. seismic numbers were not statistically significant. 128/

Further study led Persinger to conclude that UFO reports were indices of natural events associated with accumulating tectonic strain within the Earth's crust. He reported that more than 80 percent of the variance in a sample of UFO report numbers within the central and eastern United States between 1950 and 1966 could be accommodated by entering the appropriate three to five measures of geomagnetic or seismic activity of the previous one to three years. In general,

127/ Persinger, Michael A. Transient Geophysical Bases for Ostensible UFO-Related Phenomena and Associated Verbal Behavior. Perceptual and Motor Skills, v. 43, Aug. 1976: 215-221.

128/ Persinger, Michael A. Earthquake Activity and Antecedent UFO Report Numbers. Perceptual and Motor Skills, v. 50, June 1980: 791-797.

UFO report numbers tended to increase two to three years after decreases in geomagnetic activity and the year after increases in the number of local, low-intensity earth tremors. Using these equations, Persinger predicted UFO report numbers within these regions for the years 1967-1981, which he then correlated with actual sightings. 129/

According to Brian Brady of the Denver Research Center of the U.S. Department of Interior, Bureau of Mines, tests are being carried out at that facility in the course of which various rocks and crystals are subjected to pressures until destruction. These pressures are designed to resemble the stresses and pressures which occur in active geological faults. It has been observed that just before their destruction, the pressures cause in these substances piezoelectric effects and visible ionizator luminosity in the air near them. The tests were carried out in air and in various gases. Similar glows were observed in all cases. It is possible that, in addition to visible effects, ultrasonic sounds (inaudible to humans, but perceived by various animals) and electromagnetic and other radiations are also produced during these stressings and structure destructions. 130/

129/ Persinger, Michael A. Geophysical Variables and Behavior: III. Prediction of UFO Reprots by Geomagnetic and Seismic Activity. Perceptual and Motor Skills, v. 53, Aug. 1981: 115-122.

130/ Verbal communication from Brian Brady, Denver Research Center. May 9, 1983.

VII. SUMMARY

Although little media attention has been paid to the subject of UFOs in recent years, the controversy still rages and excites nearly as much emotional response now as it did in 1947. After 21 years of investigating UFOs, the Air Force concluded that whatever was being seen was not hostile, nor a threat to the national security, and therefore needed no further inquiry. The population accepted this view for some time, although questions arose once again as more UFOs were reported, such as during the 1973 flap. Media coverage is still rare in anything but the tabloids and publications of UFO organizations, however.

What then is the future for UFOs? It seems most plausible that the situation will continue on as it has been. Methods have been proposed by different specialists to increase available "hard" data. These suggestions include use of a satellite surveillance system for noting any strange objects in the sky at the time of a "good" UFO report (Eugene Epstein, The Aerospace Corporation); increased study of physical trace evidence, especially soil sample analysis such as that used in the Delphos, Kansas case (Ted Philips, Center for UFO Studies); and correlating similarities in UFO cases from many countries over an extended period of time by use of a computer (Jacques Vall'ee, Institute for the Future). If any of these techniques can produce the data needed to prove, or disprove, the extraterrestrial hypothesis, then headway can certainly be made, however, past experience demonstrates that whatever one camp states is almost immediately challenged if not refuted by the other.

APPENDIX A
SELECTED CASES

This portion of the report gives the basic report and various explanations in ten selected UFO cases. As will be seen, some of the cases are still unsolved. The reports are arranged chronologically, with the title giving date of the event, an identifying name or place, and its type from chapter I.

1. January 7, 1948 (Mantell - Type I)

Captain Thomas Mantell of the Air National Guard led four F-51 planes from Godman Air Force Base near Louisville, Kentucky in chase of a cone-shaped, silvery object tipped with red, approximately 250-300 feet in diameter. Mantell ascended to intercept the object, but it continued climbing. Although there was no oxygen equipment aboard the plane, Mantell continued up to 20,000 feet. Radio contact was lost and several hours later his crashed plane was found; he was dead. The conclusion was drawn that he had blacked out from lack of oxygen.

The original Air Force explanation was that Mantell had been chasing Venus, but in the early 1950s, the Navy released information that they had been testing Skyhook balloons (used for high-altitude photographic reconnaissance) in the area near Louisville on that date. This is now the accepted explanation.

2. July 24, 1948 (Eastern Air Lines - Type I)

Captains Clarence S. Chiles and John B. Whitted, flying an Eastern Air Lines DC-3, reported seeing a large light flying toward them. Only one passenger was awake and he only saw a bright flash outside the window, but the pilots reported that the object was cigar shaped with two rows of windows, and had a red orange flame coming from one end. They estimated its speed as 700 miles per hour and shortly before it would have collided with the plane, made a sharp angular turn and vanished.

This case is still classified unknown, although Hynek and Donald Menzel have concluded it was a meteor.

3. July 2, 1952 (Tremonton, Utah - Type I)

On July 2, 1952, Delbert Newhouse and his family were driving on State Highway 30, seven miles north of Tremonton, Utah, and noticed 10 to 12 objects "milling about in a rough formation" above them. Mr. Newhouse, a Chief Warrant Officer in the Navy with some 2,200 hours logged as a photographer, photographed the objects by means of a hand-held, 16mm motion picture camera equipped with a telephoto lens. As he photographed them, one reversed course and headed in the opposite direction from the rest of the group. No sound was heard and no exhaust trails were observed.

The film was forwarded to Newhouse's superiors, who sent it on to Project Blue Book. That office concluded that they could not have been airplanes or balloons, and probably were a flock of birds. The film was then sent to the Naval Photographic Interpretation Laboratory where analysts studied it frame by frame, and decided the objects were neither planes nor birds, inferring they were extraterrestrial craft. At this time the Robertson Panel was meeting, and

the film and its interpretations were reviewed by the group. In their summary, they listed 11 reasons why they did not believe the objects were extraterrestrial craft, and most likely were birds. They noted that although no information was available on reflectivity of birds, the motion, size and brightness observed strongly suggested that explanation, and if further tests were conducted, the explanation would probably be confirmed. Citing lack of resources, they did not recommend further investigation, and stated that "the burden of proof is on the sighter, not on the explainer."

In 1956, Robert M. L. Baker examined the films for the Douglas Aircraft Corporation and concluded that two phenomena occurring at the same time might possibly account for the objects, although no definite solution could be determined. The case was examined once again during the Condon study, with the investigator presenting a case for and against the bird hypothesis, concluding that "these observations give strong evidence that the Tremonton films do show birds . . . and I now regard the objects as so identified."

4. July 19-20 and July 26, 1952 (Washington, D.C. - Type I)

Between 11:40 p.m. and 3:00 a.m. on the night of July 19-20, two radarscopes at Washington National Airport picked up a group of UFOs that moved slowly at first (100-300 mph) and then sped away at fantastic speeds. During this time airliner crews reported mysterious lights moving erratically up, down and sideways. Two F-96 jet fighters were scrambled from Wilmington, Delaware (the planes were normally stationed at Bolling Air Force Base in Washington, but earlier that day had been moved) and it was a half hour before they reached the scene. As they approached, the objects disappeared. At one time, all three radarscopes at National Airport as well as those at Andrews Air Force Base nearby

picked up the same targets. Early in the morning, National Airport relayed to Andrews that they had a target directly over Andrews' radio tower. The radio operators ran outside and saw a "huge fiery-orange sphere" hovering above them.

The next weekend, July 26, they picked up the objects again. Once again jets were scrambled, and once again the objects disappeared as the jets approached. This time, however, when they disappeared from over Washington, Langley Air Force Base in Virginia (approximately 120 miles south of Washington) reported bright lights and sent a jet to intercept them. As the jet approached, the lights went out "like somebody turning off a light bulb." The targets then reappeared over Washington, and as the jets approached them, instead of disappearing, sped away. After 20 minutes of "tag" the jets ran low on fuel and returned to base. The radar operators noticed a temperature inversion layer surrounding the Washington area, which can cause anomalous radar returns, but stated that they could tell the difference between actual targets and such returns. Nevertheless, the official explanation is that they were radar returns due to weather conditions.

5. July 17, 1957 (RB-47; South Central U.S. - Type I)

An Air Force B-47 (sometimes referred to as an RB-47 due to the special equipment it carried), carrying six officers, was followed by a UFO for over 700 miles as it flew from Mississippi, through Louisiana and Texas into Oklahoma. The intense light was observed visually, was followed by ground radar, and was picked up by electronic gear aboard the plane. In several instances the object appeared or disappeared from all three at once. The object either emitted or reflected electromagnetic radiation at both 2,800 megacycles and in the visible range. It followed the plane at a distance of about ten miles for

quite some time, then changed position rapidly so that it was in front of the plane. The pilot aimed toward the light and as he approached, it disappeared. As the pilot turned to come back, the target reappeared below the plane, and he dove toward it. Again it disappeared. Since the plane was running low on fuel, the crew returned to base.

The Condon committee became aware of this case and decided to investigate, but could find no Air Force records on the incident. Thus they had to rely on the witnesses' testimony, which they considered valid, but since the case was over ten years old and first hand data was impossible to obtain, classified it as unknown. Philip Klass concluded that a combination of various radar returns, relay malfunctions and misidentification or astronomical objects caused the sighting.

6. September 19, 1961 (Hill Encounter; Zeta Reticuli - Type III)

On the night of September 19, Betty and Barney Hill were driving toward their home in Portsmouth, New Hampshire from Canada via Route 3 through the White Mountains. Betty noticed a bright light which seemed to be moving, and and they stopped several times to look at it through binoculars. Finally they discerned a large craft with a double row of windows and after stopping the car, Barney looked at the craft as it hovered over some nearby trees and saw perhaps six figures looking out of the windows. They started to drive away and noticed a beeping sound coming from the trunk, and felt a tingling sensation and drowsiness. Another series of beeps aroused them and they discovered they had traveled 35 miles and could not recall what had happened in between.

After arriving home, Barney noticed a rash on his lower abdomen and that his shoes were scuffed. Betty discovered round, shiny spots on the trunk of the car, which caused a compass to swing wildly when brought near. Ten days later

Betty began having nightmares in which she and Barney had been taken aboard a flying saucer and examined, but it was not until two years later that they both underwent hypnosis in an attempt to find out what happened that night. Separately, they recounted a story of being taken aboard a spacecraft shortly after the first set of beeps. They could communicate with the aliens without speech, and described them as humanoid, with large eyes that reached around to the side of the head, no nose, and a mouth that was a slit without lip muscles. After the beings had performed the physical examinations, the Hills were released and told they would remember nothing of the experience.

As an aftermath of the case, Betty reported that she had been shown a map of the alien's home star group although she was not able to understand it. Under hypnosis she drew the map, in which the stars were connected by lines possibly suggesting trade routes. After several years of research an amateur astronomer, Marjorie Fish, found a star pattern similar to Betty's. The main star is Zeta Reticuli, so this case is now frequently referred to by that title. Although Betty had drawn her map in 1964, the Fish pattern could not have been known until publication of the 1969 edition of Catalog of Nearby Stars.

Other astronomers dispute Fish's findings, however, and note that unless one connects her stars like Betty did, the star patterns themselves bear little resemblance to each other. Betty had observed in 1965 that her stars resembled the constellation Pegasus, and some suggest that there are at least three other patterns that would serve just as well.

7. April 24, 1964 (Socorro, New Mexico - Type II)

At 4:45 p.m., Deputy Marshall Lonnie Zamora was chasing a speeder in Socorro, and noticed a roar and flames off to his right. Upon investigating, he saw a shiny object which he thought was an overturned car, with two people in white coveralls next to it. Upon approaching the object (within 100 feet), he heard a loud roar and saw flames come from under the object. Frightened, he turned and ran back to his car, but did notice that it was egg shaped with a red insignia, and it had risen 20-25 feet off the ground. Soon the roar was replaced by a high-pitched whine, and then silence. Zamora noticed the object heading away from him, and he radioed the sheriff's station to see if the radio operator could catch a glimpse of it. He did not.

Zamora then went back to the site and found burning brush and depressed marks in the ground. Hynek investigated the case for Project Blue Book and seemed convinced that it was secret military aircraft, although nothing matching Zamora's description has yet been found. Philip Klass concludes that the whole affair was a hoax designed to bring tourists to a dying town.

8. March 3, 1968 (Zond IV Reentry - Type I)

About 9:30-9:45 on the evening of March 3, witnesses in at least nine States reported seeing a procession of flying objects. The event sparked dozens of reports to Blue Book, with greatly varying descriptions. Some reported a craft with windows, while others saw three separate objects. The official Air Force explanation, which was accepted at the time by all investigators, was that debris from the Soviet space probe Zond IV (launched March 2) had reentered the atmosphere and disintegrated. Philip Klass cites NORAD as showing in its records that the booster rocket's reentry coincided with the time of the sightings.

A subsequent check of NORAD, RAE and Goddard Satellite Situation reports for that date by this author showed no such reentry. According to those reports, the first debris from Zond IV came down on March 5, two days after the sightings. After checking through the Blue Book files on this incident, several inconsistencies became evident. For example, in a March 4 memo for the record, Sgt. Farrell of SPADATS (part of NORAD) is quoted as saying that the only object that came down March 3 did so over the Pacific, not over the United States. The subsequent Air Force report stated that SPADATS was "quite certain" that it was Zond IV debris.

On April 19, 1968, Major Quintanilla sent a letter to a private citizen stating that "The Space Detection Center, at Colorado Springs, was aware that a piece of satellite debris was reentering our atmosphere and was especially vigilant during this time." They therefore determined that the "target impact point" (TIP) was in either northern Pennsylvania or southern New York. Apparently no search was made to recover fragments from the Soviet vehicle.

Klass later contacted NORAD to find out what he could concerning the discrepancies between their log and the Air Force account. In a January 28, 1976 letter to him, NORAD stated that part of the Zond did decay that night, but the TIP system was not tracking the object and they simply did not notice it (contradicting Major Quintanilla's 1968 letter). Thus, several days later when they discovered fewer objects associated with Zond IV debris in orbit, they "administratively decayed" the third stage of the launch vehicle on March 7, the last day it could have come down. They said the TIP prediction was not made because NORAD thought only a small fragment was decaying. (The RAE estimates this empty stage as weighing 4,000 kilograms).

They suggest the conflicting reports between Sgt. Farrell and Project Blue Book was due to a lack of information on March 4, explaining that Farrell must have been given the wrong information.

NORAD's position now is that they are "quite certain" that it was part of Zond IV that caused the sightings on March 3, 1968, but cannot explain the conflicting reports in Project Blue Book files. Both Air Force memos, one saying it was Zond IV debris and the other saying it was not, were dated March 4, 1968. Someone at NORAD must have known debris from Zond IV had decayed, and therefore it should have been entered in the log.

There is also a question as to why, once the Air Force was aware that a large piece of Zond had decayed (which they must have known on March 4, 1968) they did not send search teams to recover as much of the material as possible. When Kosmos 316 impacted over the Southwestern United States in 1969, three or four States were combed for debris.

James Oberg calculated the Zond IV ground trace for the night of March 3, 1968 and it indicates that the probe was indeed passing over the sighting areas at the time of the reports. The incident still does not have a definitive solution, although no suggestion is made here that the witnesses saw an extraterrestrial vehicle. It could have been a Zond IV fragment, although the NORAD records are of little help on this point, a meteor, or some other natural phenomena. But the Air Force clearly has a number of discrepancies to account for in its records, and this brings into question its thoroughness in investigating other UFO reports.

9. November 2, 1971 (Delphos, Kansas - Type II)

At about 7:00 p.m., a 16 year old boy at his home in Delphos, Kansas, suddenly heard a rumbling sound in his back yard and saw an illuminated object 75 feet away. Although no surface features were seen, he reported that it was domed at the top with a slight bulge at the center. After three to five minutes, the object brightened at the base and ascended with great speed, changing its sound to a high-pitched whine.

Upon investigation of the site, the boy and his parents noticed a glowing ring of soil, and surrounding trees also glowed. The boy's mother touched the soil with her finger and it went numb; when she tried to rub the dirt off on her leg, that also became numb.

Although the soil was not radioactive, it would not permit the entry of water. Soil samples were taken and analysis showed a high presence of organic material, silicate, ferrous oxide and aluminum. The salinity of the soil from the ring was four times greater than that from surrounding soil, and the trace of zinc concentrations was 111 times higher.

Philip Klass considers this case a hoax. He notes that "ring" was actually horseshoe shaped, and concluded that it had been a trough for watering livestock, probably made from galvanized iron which would explain the high zinc and ferrous oxide concentrations. The other properties, such as organic content, could be caused by excrement from the animals that were being watered.

10. September 20, 1976 (Tehran, Iran - Type I)

According to Tehran newspaper reports from September 20 to 22, 1976 and a September 20, 1976 communication from the U.S. consulate in Tehran, during the night of September 18/19, 1976, several reports were received about a bright

object in the sky. When the Mehrabad airport tower operator checked these reports and saw the object with his own eyes, he notified the Imperial Iranian Air Force. The report reached the general in charge, who also looked outside and saw the object and then ordered an F-4 jet fighter aloft to investigate. Ten minutes later, a second F-4 took off after the object.

The pilot of the first plane saw the bright object from a distance of about 80 statute miles and headed toward it. He got within about 29 statute miles of it but could not get closer because the object sped up well beyond the F-4's maximum speed. Furthermore, the F-4's instrumentation and communications went dead at that time. The pilot made several more attempts to close in on the object, but the object evaded him and he headed back to his base. Subsequently, his instruments and communications returned to normal.

The pilot of the second jet saw the bright object from a distance of about 115 statute miles. He closed to within about 31 statute miles and the bright object released a smaller bright object which headed toward him at a great speed. When the pilot attempted to fire an air-to-air missile at this object, his weapons control panel and communications ceased functioning. He then went into a negative G dive to avoid it, and it then went through his loop and flew back to the larger object.

Then another small bright object dropped out of the large object and plummeted toward the earth. However, instead of crashing into the ground, it decelerated just above the ground, made a soft landing, and illuminated an area about two to three kilometers around it.

A commercial airliner which approached the Mehrabad airport about that time also experienced communications failure or interference.

APPENDIX B

ANCIENT ASTRONAUTS AND THE BERMUDA TRIANGLE

Two subjects vaguely associated with the study of UFOs received attention during the early 1970s. The first builds on the Biblical sightings discussed in chapter 4 and presents the theory that much of our present knowledge and civilization came from "ancient astronauts" who journeyed here to assist our developing planet. Erich von Daniken has written most extensively on the subject and his books have sold over 25 million copies. The second theorizes that some extraterrestrial force causes ships and planes to disappear over an area called the Bermuda (or Devil's) Triangle, bounded by Bermuda, Miami and Puerto Rico. Charles Berlitz is a well known author in this field and his writings will serve as the primary discussion point.

Space limitations prevent an extended look at either of these theses, and only one example from each case will be discussed. This is hardly the ideal method for examining these topics, since only a general flavor of the arguments can be gleaned, but the limits of this report dictate such constraints. This author accepts responsibility for the examples chosen, and recommends the cited publications to those who wish to learn more.

1. Ancient Astronauts

Erich von Daniken, a Swiss, is the main promoter of the view that Earth was visited in the past by beings from another world who helped advance our civilization. His book, Chariots of the Gods?, and subsequent works on the

same subject (Gold of the Gods, In Search of Ancient Gods), study various archeological findings and suggest that civilization at that time could not have produced such artifacts. The pyramids, drawings in South America, and the Mayan culture are examples of the areas he explores. The Piri Re'is map will serve here as an example of his theory.

Von Daniken claims that ancient maps belonging to Turkish Navy Admiral Piri (Piri Re'is) in the 1500's show the Mediterranean and Dead Seas, the coasts of North and South America and the contours of the Atlantic. An American cartographer found that when the maps were transferred to a modern globe, they were "absolutely accurate" and reproduced not only the contours of the continents, but the topography of the interiors as well. Specifically, mountain ranges in the Antarctic which were not mapped in modern times until the use of echo-sounding equipment, are shown in detail although they have been covered in ice for thousands of years.

The work of Charles Hapgood, who authored Maps of the Ancient Sea Kings (Chilton Books, 1966), is heavily relied upon by von Daniken, who concludes that the maps could only have been made from an aerial view of the planet, with the focal point above Cairo. This explains the distortion seen in the map, since the curvature of the Earth would alter the appearance of the continents to some extent. Von Daniken states:

How are we to explain that? Should we be satisfied with the legend that a god gave them [the maps] to a high priest? Or should we simply take no notice of them and pooh-pooh the 'miracle' because the maps do not fit into our mental world picture. Or should we boldly stir up a wasp's nest and claim that this cartography of our globe was carried out from a high-flying aircraft or from a spaceship? 131/

131/ von Daniken, Erich. *Chariots of the Gods?* New York, Bantam Books, 1970. p. 16.

He then allows that the maps are not originals and indeed are copies of copies. He comments that even if that is the case and the maps do date only from the 18th century, the facts are still unexplainable--an aerial view is needed. Two pictures of the Piri Re'is map are shown in the book. (von Daniken consistently discusses maps, plural, although only one is shown in the book and most other authors refer to it in the singular.)

An extensive challenge to most of von Daniken's hypothesis can be found in Some Trust in Chariots, a collection of essays by prominent scientists. 132/ Dr. A. D. Crown, University of Sydney, addressed the question of the Piri Re'is map. He first takes issue with the above quotation concerning the map being given to a priest by a god. He states the authorship of the map is well known, with Admiral Piri himself claiming that he had drawn it himself based on older works, including some by a sailor who made three voyages with Christopher Columbus.

No wonder the map is tolerably accurate; it is one of the copies of the cartography of the master explorer. . . . The data do not present a picture of anything but careful cartography of explorers who knew the coast of South America as far south as the Amazon, who had sailed eastwards into the Atlantic parallel to the Brazilian coast, but as yet, had not ventured to the south. That venture was to come in 1519, six years after Piri drew his map. 133/

The next point made by Crown is that the map referred to, and depicted in von Daniken's book, is only a fragment of the original map, showing West Africa, parts of the Indies and South America. With this in mind, he attacks the claim that Antarctica is shown on the map at all. By examining the map, Crown concludes

132/ Thiering, Barry and Edgar Castle, eds. Some Trust in Chariots: Sixteen Views on Erich von Daniken's Chariots of the Gods? Folkestone, England, Bailey Brothers and Swinfen, Ltd., 1972.

133/ Ibid., p. 28-29.

that the southernmost point on the map is Cape Sao Roque, approximately 5° south of the equator. "Thus, despite the claim of von Daniken, Antarctica, echo soundings or no, is not shown on the map."

Relating this to the "distortion" noted by von Daniken, Crown comments that since the map only extends to 5° south of the equator, there would be no distortion if the map were projected onto an azimuthal grid based on Cairo. Thus an aerial view is not necessary.

2. The Bermuda Triangle

In the past 30 years, a legend has grown up concerning the area bounded by Florida, Bermuda and Puerto Rico called the Bermuda Triangle, Devil's Triangle, Limbo of the Lost, and other such names (sometimes the area is expended to cover a wider area than this). The legend tells of ships and planes that have disappeared while making routine trips through the Bermuda Triangle, with no SOS call or other sign of danger, and rescue teams do not recover any wreckage or bodies. In some cases, "ghost" ships are found in the middle of the triangle with no living beings aboard except a dog or cat. The sails are set, and dinner is waiting for the vanished crew to eat it. Investigators rule out tropical storms, although they suspect atmospheric aberrations and electromagnetic disturbances might be a cause. Some suspect a space/time warp may exist at that place on Earth and the missing ships and crews have moved into a different dimension. Others theorize that ancient astronauts left a power source or signal device to guide their own future ships back to this planet and these signals disrupt our navigation instruments and the human mind. The device probably does not operate continuously, therefore accounting for the fact that many ships and planes traverse the area without incident.

Many books have been written on the subject, as well as several rebuttals. For the purpose of this report, Charles Berlitz will serve as the author of record in support of the mystery, and Lawrence D. Kusche as the refuter. The one, single account that traditionally is used as the prime example of Bermuda Triangle treachery concerns the disappearance of five Navy bombers and a rescue plane in 1945. First, the Berlitz account.

On December 5, 1945, five Navy Grumman TBM-3 Avenger torpedo bombers took off from Fort Lauderdale Naval Air Station (NAS), on a routine training flight. Designated Flight 19, the five planes carried a total of 14 crew members (each plane was supposed to carry three crew members, but one man had not reported for duty); five officers plus nine enlisted men. They had enough fuel to fly one thousand miles, the temperature was 65 degrees with a moderate wind, and the sun was shining through scattered clouds. Flight time was scheduled for two hours, and the planes took off between 2 and 2:10 p.m., commanded by Lt. Charles Taylor.

At about 3:15 p.m., a radioman at NAS Tower received a message from Taylor reporting that they were in an emergency situation: "We seem to be off course. We cannot see land. . . . Everything is wrong. . . . We can't be sure of any direction--even the ocean doesn't look as it should." The radio operator instructed Taylor to fly due west, which should have brought them back over land, but Taylor stated he couldn't tell which direction was west.

At 3:30 the senior flight instructor (FI) at NAS picked up conversation between the planes wherein one of the student pilots stated that "I don't know where we are. We must have got lost after that last turn." The FI contacted Taylor and learned that both of Taylor's compasses were out and he thought he was over the Florida Keys. He was then advised to fly north, with the sun on the portside. Shortly thereafter Flight 19 radioed that they had passed over a small island with no other land in sight, indicating they were not over the

Keys after all. Radio contact became more difficult, and the planes apparently could not receive messages from NAS, although NAS could overhear their conversation, which alluded to fuel shortages, 75 mile-per-hour winds, and observations that all the gyros and magnetic compasses were "going crazy." Concern mounted and rescue craft were scrambled, including a Martin Mariner Flying Boat patrol plane with a crew of 13.

At 4:00 p.m. the NAS tower learned that Lt. Taylor had turned command over to a senior Marine Pilot, and the message was received that "We are not sure where we are. . . . We think we must be 225 miles northwest of the base. . . . We must have passed over Florida and we must be in the Gulf of Mexico." The flight leader then apparently turned 180 degrees, which would have brought them back over Florida if they had been in the Gulf, but apparently only sent them further out into the Atlantic. "Some report that the last words from Flight 19 were 'It looks like we are. . . . ' Although other listeners seem to remember more, such as "Entering white water. . . . We are completely lost. . . ." 134/ Sometime after 7 p.m., the Miami Naval Air Station picked up a faint "FT . . . FT . . . " which was part of the call letters of the Flight 19 planes. But this would have been two hours after the planes should have run out of fuel.

During this period a message was received from an officer aboard the Martin Mariner rescue plane that there were strong winds above 6,000 feet. This was the last message received from that plane. A merchant ship reported an explosion in the air about 7:30 p.m., "but if this explosion concerned the five Avengers, it would mean that they were still flying hours after their fuel reserves had been exhausted." 135/

134/ Berlitz, Charles. The Bermuda Triangle. New York, Avon Books, 1975. p. 29.

135/ Ibid., p. 30.

Search vessels combed 380,000 square miles of land and sea, including the Atlantic, Caribbean, parts of the Gulf of Mexico and the Florida mainland, with no results. A Naval Board of Inquiry was convened and Berlitz reports that "'Members of the Board of Inquiry were not able to make even a good guess as to what happened.' Another Board member rather dramatically commented: 'They vanished as if they had flown to Mars.'" 136/ In 1974, Art Ford, who reportedly had followed the case since 1945, revealed that Taylor had said "Don't come after me . . . they look like they are from outer space." Ford said the information came from a ham radio operator, and was later corroborated in part by information which the Navy had kept secret until 1974. The phrase "Don't come after me" was indeed part of the transcript of communication with Taylor.

In rebuttal to the standard account, Kusche reprints long excerpts from the Navy Inquiry Board during which actual transmissions to and from Flight 19 are repeated, and the activities of the radio operators and senior flight instructor are reviewed. One point that should be immediately brought out, since the 1974 "revelation" is often cited as proof of extraterrestrial involvement, is that the phrase "Don't come after me" does indeed occur in a transmission from Taylor, but it is response to the FI who was giving Taylor instructions as to which way to fly to get back to base. The FI told Taylor to fly north while he flew south to meet him, and Taylor replied "I know where I am now. I am at 2300 feet. Don't come after me." 137/

According to the Navy records cited by Kusche, Flight 19 was given weather conditions by NAS and told that although it was clear over Fort Lauderdale, the weather was deteriorating over the Bahamas. Interference was becoming more

136/ Ibid., p. 31-32.

137/ Kusche, Lawrence David. The Bermuda Triangle Mystery--Solved. New York, Harper & Row, 1975. p. 104.

pronounced at this time and Taylor was asked to switch to a less used frequency, but he refused apparently because he feared losing communication with his other planes. Thus contact was lost with NAS, although the tower could pick up transmissions between the planes themselves. Taylor ordered the flight to land in the water together once one of the planes got down to only 10 gallons of gas. The pilots seemed confused as to which direction would take them back to Florida, although Kusche states this was not because all the compasses were malfunctioning, but because they could not get their bearings. Only the commander's plane had lost its compasses.

The planes alternated flying east and west in an attempt to locate land, and made one excursion north to check if they were over the Gulf of Mexico. At approximately 6 p.m., Flight 19's position was calculated by NAS as north of the Bahamas and east of the Florida coast. By this time radio communication from NAS was lost, so the information could not be relayed to the flight. The last communication by any of the planes was 7:04. The fuel supply should have allowed them to remain aloft until 8:00 p.m., and radio communication was attempted until that time. (This directly contradicts the Berlitz account stating that the message heard by the Miami base at 7 p.m. would have occurred two hours after the fuel had been depleted.)

Kusche feels that Flight 19 was lost due to several factors, most importantly the failure of Taylor's compasses. Taylor had recently transferred to Ft. Lauderdale and was therefore not familiar with the geography of the area and could not determine his location by visual references. Other important factors were the refusal to change frequencies and the change in weather over the Bahamas. "Flight 19 was not a group of experienced veterans touching down on a calm sea in the middle of a sunny afternoon--it was one disoriented

instructor and four student pilots attempting to ditch at sea on a dark, stormy night. It was a hopeless situation." 138/ Kusche also states that many of the quotations attributed to the Flight 19 crew do not appear in the Board's records. Nor did Taylor turn command over to a Marine pilot.

Regarding the loss of the rescue plane, Kusche noted that according to the standard account, the Martin Mariner took off from base shortly after 4:25 p.m. In reality it did not leave until 7:27 p.m. and if it had continued on its assigned flight path would have been in the position where the reported explosion took place. The Navy logs state that the time of explosion was 7:50 p.m. which would coincide with the Martin Mariner being at the position where the explosion occurred. "Mariners were nicknamed 'flying gas tanks' because of the fumes that were often present, and a crewman sneaking a cigarette, or a spark from any source, could have caused the explosion." 139/ Also, contrary to the standard version, the Mariner was not the only search plane out at that time, and in fact was not even the first to take off.

In conclusion, Kusche states that the Navy Board was not at all baffled, and it listed 56 "facts" and 56 "opinions" leading to the conclusion that the planes had made forced landings in the sea, and that the weather conditions were not conducive to such a landing.

After examining many such mysteries of the Bermuda Triangle and finding that many of them had solutions for many years that were ignored by writers like Berlitz, Kusche concludes that "There is no theory that solves the mystery." It is no more logical to try to find a common cause of all the disappearances

138/ Ibid., p. 118.

139/ Ibid., p. 119.

in the Triangle than, for example, to try to find one cause for all automobile accidents in Arizona." 140/ After close examination, he states, one can find that weather conditions were far from clear in many of the cases, that search planes have not "combed the area" thoroughly since it is such a huge area to search, and that many of the mishaps occurred at night, thus giving the sea more time to dissipate any debris.

The Legend of the Bermuda Triangle is a manufactured mystery. It began because of careless research and was elaborated upon and perpetuated by writers who either purposely or unknowingly made use of misconceptions, faulty reasoning, and sensationalism. It was repeated so many times that it began to take on the aura of truth. 141/

140/ Ibid., p. 275.

141/ Ibid., p. 277.

APPENDIX C
(Concerning the Condon UFO Report)
[Retyped for legibility]

August 9, 1966

MEMO TO: E. James Archer and Thurston E. Manning

FROM: Robert J. Low

SUBJECT: Some Thoughts on the UFO Project

Jim and Ted:

I have pondered the UFO project and talked to a number of persons about it. Here are a few thoughts on the subject.

Branscomb is very much against it. Gordon Little thinks it would be a disaster. George Benton, likewise, is negative. Their arguments, combined, run like this: In order to undertake such a project one has to approach it objectively. That is, one has to admit the possibility that such things as UFOs exist. It is not respectable to give serious consideration to such a possibility. Believers, in other words, remain outcasts. Branscomb suggested that one would have to go so far as to consider the possibility that saucers, if some of the observations are verified, behave according to a set of physical laws unknown to us. The simple act of admitting these possibilities just as possibilities puts us beyond the pale, and we would lose more in prestige in the scientific community than we could possibly gain by undertaking the investigation. Little indicated you do these things sometimes if there is a real national need. You do them in spite of possible adverse consequences. But, in this case, there is no real national need. Branscomb compares the situation to Rhine and the ESP study at Duke.

Walter Roberts, on the other hand, very much favors our undertaking it. He tried to get Will Kellogg, who is associate director of NCAR for the Laboratory of Atmospheric Sciences, to undertake it. Kellogg is very interested and almost did. He felt, however, he was too committed to do it. Walt hopes very much that we will. He says that he has information that Colorado really is the first choice of the Air Force, that others have not been approached and turned it down. He thinks, contrary to Little, that there is a very urgent need to do it, and he feels that we will gain a great deal in favor among the right circles by performing a critically needed service. He said that we must do it right--objectively and critically--and avoid publicity and all that sort of thing. But having the project here would not put us in the category of scientific kooks.

Branscomb says it would be better if the National Academy takes a contract from the Air Force and then subcontracts the money to us to do the work. He feels it would look much better that way, and I agree. There are, however, measures short of this that would accomplish almost the same thing - i.e., having a very distinguished group of consultant and/or advisors, having a committee in the Academy to whom our final report should be submitted.

Comments:

The analogy with ESP, Rhine, and Duke is only partially valid. The Duke study was done by believers who, after they had finished, convinced almost no one. Our study would be conducted almost exclusively by nonbelievers who, although they couldn't possibly prove a negative result, could and probably would add an impressive body of evidence that there is no reality to the observations. The trick would be, I think, to describe the projects so that, to the public, it would appear a totally objective study but, to the scientific community, would present the image of a group of nonbelievers trying their best to be objective but having an almost zero expectation of finding a saucer. One way to do this would be to stress investigation, not of the physical phenomena, but rather of the people who do the observing--the psychology and sociology of persons and groups who report seeing UFOs. If the emphasis were put here, rather than on examination of the old question of the physical reality of the saucer, I think the scientific community would quickly get the message.

There is another reason, it seems to me, to do this. Except possibly in a field like optical meteorology, I can't imagine a paper coming out of the study that would be publishable in a prestigious physical science journal. I can quite imagine, however, that psychologists, sociologists, and psychiatrists might well generate scholarly publications as a result of their investigations of the saucer observers.

I have not, of course, heard the story presented by the Air Force people. That comes Wednesday morning, the 10th. Ed Condon and Will Kellogg have heard it, however, and they say the project is presented in a very reasonable light.

It is premature to have much of an opinion, but I'm inclined to feel at this early stage that, if we set up the thing right and take pains to get the proper people involved and have success in presenting the image we want to present to the scientific community, we could carry the job off to our benefit. At least, it ought not be rejected out of hand.

Notes:

Walt Roberts pledged NCAR's cooperation and assistance, especially in optical meteorology, a very thinly populated field in the United States. (In Boulder it is represented only at NCAR).

The University persons who have expressed an interest in the project so far are chief types. We'll have to be sure, if we take on the work, that we can find properly qualified people who will actually do the work.

APPENDIX D

HUMAN INDIVIDUAL METAMORPHOSIS

In 1975, the incident that caused most press coverage involved not a UFO sighting, but rather a man and a woman who were claiming that if one joined their movement, Human Individual Metamorphosis (HIM), sometime within the next ten years a UFO would arrive and take one to a higher level of consciousness.

The couple, who variously referred to themselves and Bo and Peep, The Two, Him and Her and other such names, required that a member of HIM give up all material possessions and earthly pleasures, including sex. They spoke to groups in towns throughout the Pacific Northwest, and attracted anywhere from 20 to 100 followers, depending upon various reports. Most of these came from the State of Oregon, where relatives asked the authorities to look into the matter. Police and FBI were powerless, since those who had joined HIM had done so of their own free will, and had asked relatives not to search for them. Therefore, missing person reports could not be filed.

The two people who lead the cult have been identified as Marshall H. Applewhite, a music teacher from Houston, and Bonnie Lu Trusdale Nettles, a nurse, also from Houston. The pair reportedly had been arrested in a stolen car and records show that Applewhite was wanted on charges of failing to return a rental car in St. Louis, as well as on other charges in Houston, and Nettles was wanted for fraudulent use of credit cards. 142/

142/ See Music Teacher, Nurse Led Search for 'Higher Life'. Washington Post, Oct. 18, 1975. Bo and Peep were interviewed by the New York Times. See Phelan, James S., Looking For: The Next World. New York Times Magazine, Feb. 29, 1976:L 12-13, 58-59, 62, 65-66].

Robert Balch and David Taylor, who joined the UFO group in the fall of 1975 and observed its members, later wrote that nearly all the members were long-time seekers of truth who had been on other religious and spiritual trips before. 143/ According to Balch and Taylor, the members had been searching for self-awareness, for ways to become more open, more loving, more human. They were not starry-eyed, religious fanatics. For a few, the group was an escape from a lifetime of unhappiness, or from the tedium of a meaningless existence.

Bo and Peep told the followers that they could reach the "next level," the Kingdom of Heaven, only through a physical metamorphosis, by leaving their humanity behind, the way a butterfly leaves its caterpillar form. Since the group had not been subjected to indoctrinations and lacked a rigid organization, during the long, idle waiting, when no progress was apparent toward any transformation, no UFO came to rescue them, and The Two were away on long, unexplained absences, many members developed doubts, became disillusioned, and defections were high. 144/

Supposedly, the group was still in existence in 1979, somewhere in Wyoming, considerably reduced in size, and highly regimented. 145/

143/ Balch, Robert W. and David Taylor. Salvation in a UFO. Psychology Today, v. 10, Oct. 1976: 58, 61-62, 66, 106.

144/ Ibid.

145/ Flying Saucers in the Wilderness, Religion column, Time, v. 114, Aug. 27, 1979: 58.

APPENDIX E

SAMPLE DOCUMENT RELEASED THROUGH FREEDOM OF INFORMATION ACT

COMPLAINT FORM

HQ IVOS

ADMINISTRATIVE DATA

TITLE KIRTLAND AFB, NM, 8 Aug - 3 Sep 80, Alleged Sightings of Unidentified Aerial Lights in Restricted Test Range.	DATE	TIME	
	2 - 9 Sept 80	1200	
	PLACE		
	AFOSI Det 1700, Kirtland AFB, NM		
	HOW RECEIVED		
	☒ IN PERSON	☐ TELEPHONICALLY	☐ IN WRITING
SOURCE AND EVALUATION			
MAJOR ERNEST E. EDWARDS			
RESIDENCE OR BUSINESS ADDRESS			PHONE
Commander, 1608 SPS, Manzano Kirtland AFB, NM			4-7516
CR <u>44</u> APPLIES			

SUMMARY OF INFORMATION

REMARKS

- On 2 Sept 80, SOURCE related on 8 Aug 80, three Security Policemen assigned to 1608 SPS, KAFB, NM, on duty inside the Manzano Weapons Storage Area sighted an unidentified light in the air that traveled from North to South over the Coyote Canyon area of the Department of Defense Restricted Test Range on KAFB, NM. The Security Policemen identified as: SSGT STEPHEN FERENZ, Area Supervisor, AIC MARTIN W. RIST and AMN ANTHONY D. FRAZIER, were later interviewed separately by SOURCE and all three related the same statement. At approximately 2350hrs., while on duty in Charlie Sector, East Side of Manzano, the three observed a very bright light in the sky approximately 3 miles North-North East of their position. The light traveled with great speed and stopped suddenly in the sky over Coyote Canyon. The three first thought the object was a helicopter, however, after observing the strange aerial maneuvers (stop and go), they felt a helicopter couldn't have performed such skills. The light landed in the Coyote Canyon area. Sometime later, three witnessed the light take off and leave proceeding straight up at a high speed and disappear.
- Central Security Control (CSC) inside Manzano, contacted Sandia Security, who conducts frequent building checks on two alarmed structures in the area. They advised that a patrol was already in the area and would investigate.
- On 11 Aug 80, RUSS CURTIS, Sandia Security, advised that on 9 Aug 80, a Sandia Security Guard, (who wishes his name not be divulged for fear of harassment), related the following: At approximately 0020hrs., he was driving East on the Coyote Canyon access road on a routine building check of an alarmed structure. As he approached the structure he observed a bright light near the ground behind the structure. He also observed an object he first thought was a helicopter. But after driving closer, he observed a round disk shaped object. He attempted to radio for a back up patrol but his radio would not work. As he approached the object on foot armed with a shotgun, the object took off in a vertical direction at a high rate of speed. The guard was a former helicopter mechanic in the U.S. Army and stated the object he observed was not a helicopter.
- SOURCE advised on 22 Aug 80, three other security policemen observed the same

DATE FORWARDED HQ AFOSI		AFOSI FORM 11 ATTACHED ☐ YES ☐ NO	
DATE		SIGNATURE	
8 Sept 80	TYPED OR PRINTED NAME OF SPECIAL AGENT RICHARD C. DOTY, SA		
DISTRICT FILE NO.		DCII RESULTS	
8017R 93-0/22		☒ NEGATIVE ☐ POSITIVE (See Attached)	

aerial phenomena described by the first three. Again the object landed in Coyote Canyon. They did not see the object take off.

5. Coyote Canyon is part of a large restricted test range used by the Air Force Weapons Laboratory, Sandia Laboratories, Defense Nuclear Agency and the Department of Energy. The range was formerly patrolled by Sandia Security, however, they only conduct building checks there now.

6. On 10 Aug 80, a New Mexico State Patrolman sighted an aerial object land in the Manzano's between Belen and Albuquerque, NM. The Patrolman reported the sighting to the Kirtland AFB Command Post, who later referred the patrolman to the AFOSI Dist 17. AFOSI Dist 17 advised the patrolman to make a report through his own agency. On 11 Aug 80, the Kirtland Public Information office advised the patrolman the USAF no longer investigates such sightings unless they occur on a USAF base.

7. WRITER contacted all the agencies who utilized the test range and it was learned no aerial tests are conducted in the Coyote Canyon area. Only ground tests are conducted.

8. On 8 Sept 80, WRITER learned from Sandia Security that another Security Guard observed a object land near an alarmed structure sometime during the first week of August, but did not report it until just recently for fear of harassment.

9. The two alarmed structures located within the area contains HQ CR 44 material.