

PROJECT SIGN AND THE ESTIMATE OF THE SITUATION

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ABSTRACT: Upon becoming aware of the explosion of reports of anomalous aerial phenomena over the United States in the summer of 1947, the U.S. Air Force became alarmed and instituted emergency studies of the “flying disks.” Quickly this task was delegated to Wright-Patterson Air Force Base’s intelligence division, and in January 1948 became a formal project, Sign. Sign investigated the phenomenon for seven months and decided that it was best explained by the extraterrestrial (spacecraft) hypothesis (ETH). An Estimate was produced for the Pentagon giving reasons for this. Elements of very high rank in the Pentagon would not accept this, and their refusal led to a major debate on the ETH, which resulted in the ultimate breakup of the Project Sign team and the destruction of all (with perhaps one exception) copies of the document. This early confrontation set the tone for USAF behavior toward UFOs for the next two years and, after a brief respite in the era of Capt. Edward Ruppelt, until the complete cessation of the formal USAF project on the phenomenon in 1969.

INTRODUCTION

Project Sign was the first official, formal investigative body concerned with the mystery of unidentified flying objects. It was a United States Air Force (USAF) intelligence activity located at Wright-Patterson Air Force Base in Dayton, Ohio. Its bureaucratic location was in Air Materiel Command’s (AMC) Intelligence Division, referred to on the base as T-2. It operated formally for about one year, the calendar year of 1948.

During that year Project Sign collected reports on a large number of cases, conducted some on-site investigations and many interviews, and attempted to analyze the UFO phenomenon in any way available. By the fall of 1948 the lead personnel of Sign decided that their investigations pointed to a conclusion. As was usually done for any intelligence analysis, they then composed what the military called an “Estimate of the Situation” which they sent to their superiors in the Pentagon. Their conclusion: The flying-disk phenomenon was caused by extraterrestrial agencies.

This created a great stir in the Pentagon. Authorities there were unwilling to accept it. The fallout of this consternation resulted in a quashing of the document, and a denial to the public that it had ever existed. This paper will attempt to detail the origins, nature, and functioning of Project Sign, as well as the reasons for the creation, quashing, and denial of the now-famous Estimate.

THE SUMMER OF 1947

The June 24, 1947, sighting of nine disks near Mt. Rainier, Washington, by Idaho businessman Kenneth Arnold started a flurry of reports that began the modern era of UFO sightings. At first, the military did not take these reports too seriously, but they changed their minds considerably in about one week's time. This change of attitude was due to the continued stream of disk reports, many by their own pilots and personnel. In fact, the first week of July 1947 had created considerable excitement within the offices of the Pentagon, with the Air Force Directorate of Intelligence scrambling to make sense of these mysterious overflights and enlisting the aid of their bases, other services, and the FBI (Fitch, 1947).

Gen. George McDonald was director of intelligence for Chief of Staff Gen. Carl Spaatz. But he and Spaatz seemingly played no role in this story. The real energy at the top of the Air Force's command seems to have been Spaatz's junior executive and incoming replacement, Gen. Hoyt Vandenberg. McDonald, too, seemed to be slipping toward retirement as well as his World War II mentor and friend, and much of the action at the Directorate was handled by his executive officer, Brig. Gen. George Schulgen. McDonald and Schulgen presided over the Directorate when it was adjusting to postwar changes and the newness of the Air Force itself (soon to achieve formal independence from the Army).

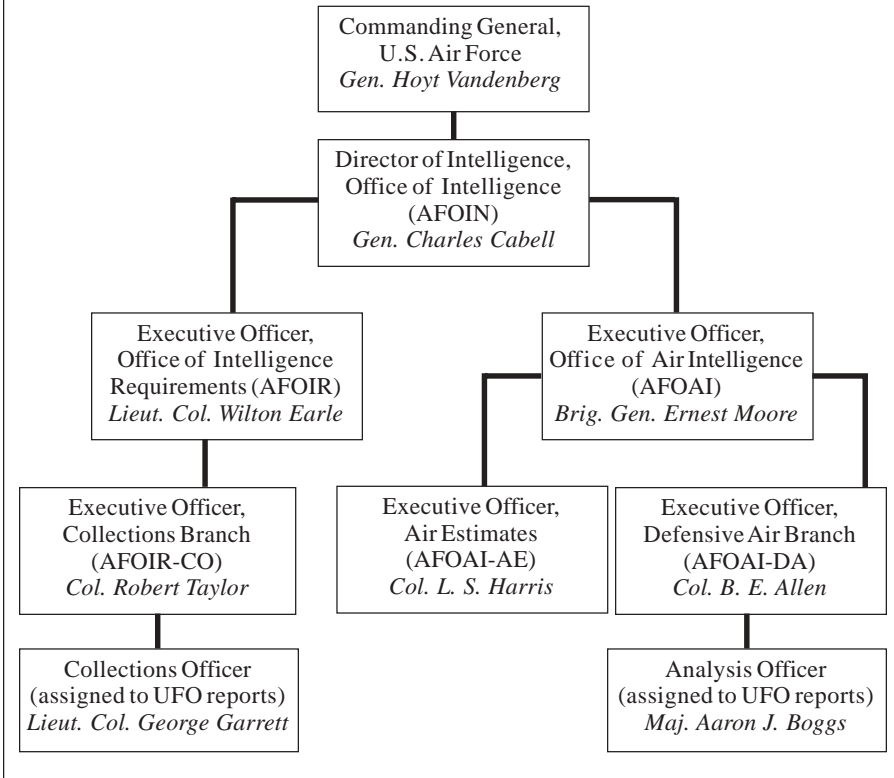
The Directorate had several divisions of which two played major roles regarding UFOs.¹ The primary offices at the Pentagon involved those of the Directorate of Intelligence (AFOIN) and certain locations in the two other divisions, the Air Force Office of Intelligence Requirements (AFOIR) and the Air Force Office of Air Intelligence (AFOAI).

The former had more of a service function, and included the important Collections branch (AFOIR-CO). In this office we find the executive officer, Col. Robert Taylor, and his right-hand man and chief collector of UFO information, Lt. Col. George D. Garrett. Acting Chief Garrett would stay in this position at least to the end of 1949. He would be a veteran source of continuity through this early UFO era, and a person in sympathy with the idea that the flying disks were real, technological objects. AFOIR seems to have been a source of individuals sympathetic to taking UFOs seriously, as it included not only Garrett and Taylor, but Col. Frank Dunn in the main office (who would become Captain Ruppelt's open-minded superior at Wright-Patterson) and Col. (then Major) W. A. Adams of the Documents and Dis-

¹ All offices had letter designators, the "alphabet soup" of military focal points, and these were in the process of changing. I'll give the designators that applied through most of this early UFO period as examples of the relevant organizational structure. In the summer and fall of 1947, USAF used a set of designators beginning with "AFB" for the Pentagon and "TSD" for the T-2 intelligence office at Wright-Patterson. These designators all changed in about December 1947, were tweaked again by early 1950, and totally changed again by the time Project Blue Book Director Capt. Edward Ruppelt took over in late 1951. I give the structural designators for the late 1947–1950 period below. The *real* organizational format seems to have remained essentially the same.

Organizational Chart, USAF Intelligence, ca. 1948

The Pentagon's Directorate of Intelligence was undergoing a reorganization in 1947–1952. Much change also occurred in the executive positions of AFOIN, AFOAI, and its branches. The chart below is representative of the type of structure and staff as it was in the 1948 Project Sign period.

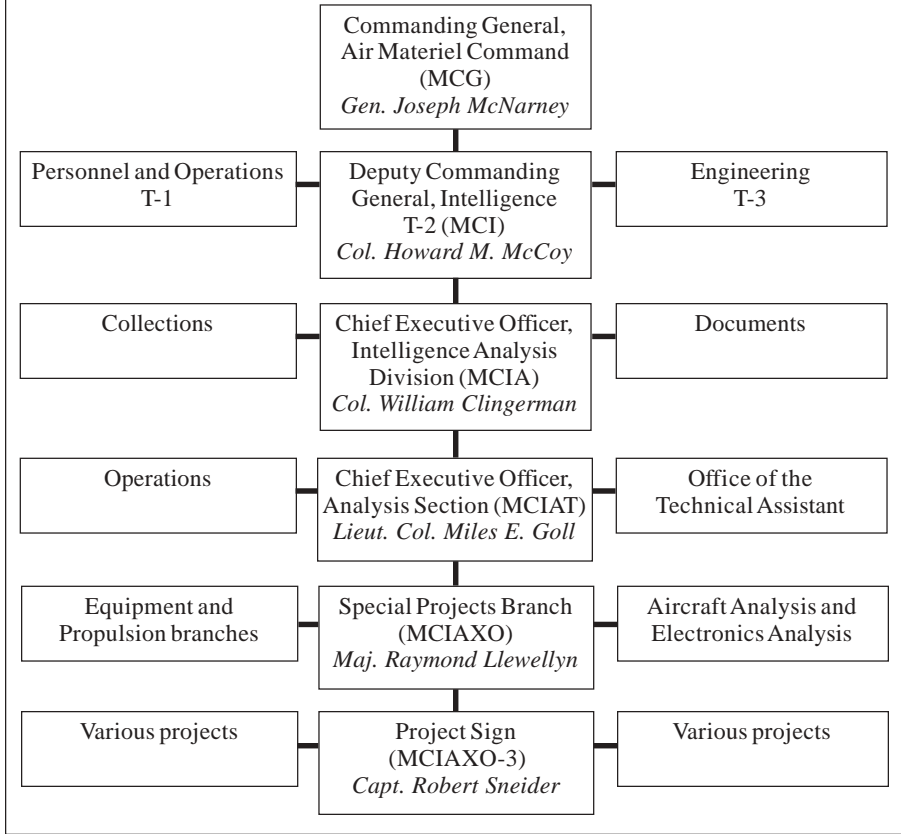


semination office (who as Maj. Dewey Fournet's boss in the Pentagon would become a strong proponent of the extraterrestrial hypothesis in 1952. (Fournet was the Pentagon's chief UFO officer in 1952.)

On the other side at the Pentagon was Air Intelligence. This was more an analysis division. From its Defensive Air branch (AFOAI-DA) and certain elements in the main office and Air Estimates (AFOAI-AE) came consistently negative views about the flying disks, particularly about the extraterrestrial hypothesis but to some degree even to their existence at all. AFOAI-DA seems to have been in part almost a spin-doctoring office, fixated on manipulating analyses and conclusions to have the proper effect and appropriate action. This was the realm of the saucer-killing Maj. Aaron J. (Jerry) Boggs and Col. E. H. Porter, a very supportive superior who became director of estimates. Boggs stayed in this position a long time and Porter was still there in

Organizational Chart, USAF Air Materiel Command, ca. 1948

Like the USAF Directorate of Intelligence, the Intelligence Division at AMC went through major restructuring in 1947–1952. The partial organizational chart below is generally accurate for 1948, the year that Project Sign formally existed.



1952. The Pentagon was a split house on UFOs from the beginning.

At Wright-Patterson AFB, the Commanding General of AMC Nathan Twining presided over the USAF’s technical research and development operation (called T-3, or AMC-Engineering), as well as the technical intelligence group MCIA, or T-2. These two functions were in separate parts of the base: T-3 engineering was on Wright Field, and T-2 intelligence was tucked away in an outer area of Patterson. T-2 could call upon T-3 labs and experts for help with analysis of reports.

The director of intelligence at AMC was Col. Howard M. McCoy. An excellent engineer (known as “Mr. Propeller” in his prewar days in the engineering division), McCoy was also an experienced intelligence man, having done fieldwork in Europe to bring back the remains of German aviation technology and some of their techni-

cal libraries. McCoy's intelligence division was set up to analyze reports of a potential or real enemy's air power. The main part of the operation was the intelligence-analysis division (MCIA: Material Command Intelligence Analysis). This group's executive officer was Col. William Clingerman, a fine engineer and intelligence officer who personally investigated what was perhaps the first instance where Wright-Patterson was ordered by the Pentagon to send personnel to the site of a UFO case, at Harmon Field, Newfoundland.

MCIA was broken into two sections: MCIAT (the technical analysis section) and MCIAO (the operations section). Under MCIAT were several branches (e.g., aircraft analysis, foreign liaison, guided missiles, special analysis, and special projects). The latter branch was a catchall office where ad hoc projects could arise. It would become the location of the flying-disk team, Project Sign. These offices were fairly fluid with regard to the actual work of their staff. Many officers signed off on documents as "acting chief" of MCIAT and for Clingerman as MCIA. Albert Deyarmond, a friend and war colleague of McCoy, worked out of Clingerman's office, was assigned to Project Sign, and could be seen writing letters and signing off for officers all up and down the T-2 structure.

But in the summer of 1947 the formal operation called Project Sign was not yet in existence. Reports of flying disks were coming from everywhere, but the investigation of these reports was disorganized. The Pentagon, through Schulgen, responded first as the natural focal point. AFOIR-CO was given the initial responsibility in the person of Lt. Colonel Garrett. He, Taylor, and Schulgen began to try to get their bases to investigate notable cases and forward the reports. They also enlisted the FBI, who assigned Special Agent S. W. Reynolds as the liaison. They began working furiously on this throughout July, involving Wright-Patterson now and then by direct communication with McCoy.

As July wore on into August, Garrett, Schulgen, and Reynolds became confused by a lack of interest and pressure emanating from the high echelons of the Pentagon. The previous year they had gone through an investigative furor about a subject that they considered to be similar to the flying discs, when hundreds of "ghost rocket" reports came out of Sweden and other European countries. In 1946, the top brass had exerted continuous pressure to find an answer, but now it had gone completely quiet. This puzzling void has been termed "the silence from topside." It was very peculiar to Garrett and the FBI. Their mutual suspicion was that the very highest officials knew what this phenomenon was already (Swords, 1991).

THE RESPONSE TO THE SILENCE

Agent Reynolds felt that it was a waste of personnel and resources to engage in a nationwide goose chase to find out what the Pentagon high brass already knew. Garrett agreed: It was no more useful for the USAF to waste its time. Garrett and Schulgen decided to place the issue squarely before the people who should know. They were certain that the response would be: "Yes, fellows, we believe that we do

understand precisely what these disk reports are all about, and you really don't need to pursue it any longer." Instead, the chain of communications would ultimately lead to the establishment of Project Sign.

Garrett decided to broach this question of the wild goose chase in concert with a preliminary intelligence Estimate on the nature of the disks that he would write. During late July 1947, Garrett had collected and sifted his flying-disk case reports and selected 16 (two more were added later) from which to make his Estimate. We can visualize him sitting at his desk in the Pentagon, the case reports spread out before him ordered by date, marking each front page with a large circled number, and beginning to extract the pattern that he saw. What Garrett concluded in this first informal USAF Estimate was as follows (see Appendix 1 for the full text):

From detailed study of reports selected for their impression of veracity and reliability, several conclusions have been formed:

- (a) This "flying saucer" situation is not all imaginary or seeing too much in some natural phenomenon. Something is really flying around.
- (b) Lack of topside inquiries, when compared to the prompt and demanding inquiries that have originated topside upon former events, give more than ordinary weight to the possibility that this is a domestic project, about which the President, etc. know.
- (c) Whatever the objects are, this much can be said of their physical appearance:
 1. The surface of these objects is metallic, indicating a metallic skin, at least.
 2. When a trail is observed, it is lightly colored, a Blue-Brown haze, that is similar to a rocket engine's exhaust. Contrary to a rocket of the solid type, one observation indicates that the fuel may be throttled which would indicate a liquid rocket engine.
 3. As to shape, all observations state that the object is circular or at least elliptical, flat on the bottom and slightly domed on the top. The size estimates place it somewhere near the size of a C-54 or a Constellation.
 4. Some reports describe two tabs, located at the rear and symmetrical about the axis of flight motion.
 5. Flights have been reported, from three to nine of them, flying good formation on each other, with speeds always above 300 knots.
 6. The discs oscillate laterally while flying along, which could be snaking. [Garrett, 1947]

Garrett's 16-case (later 18-case) study was reported to the FBI and to his superiors in Schulgen's office. They then began using the study to query the research and

development areas of the armed services: Are these devices our own technology? Are we flying them? Everyone, including USAF Chief of Research and Development Gen. Curtis LeMay, said no. Schulgen passed on LeMay's assessment. His exact words were:

A complete survey of research activities discloses that the Army Air Forces has no project with the characteristics similar to those which have been associated with the Flying Discs. [Schulgen, 1947a]

The FBI had contacted their sources in the Army and had received the same reply. We don't have similar documentation for the Navy, but the man who was to become the leading civilian UFO researcher of the 1950s and 1960s, retired Marine Major Donald E. Keyhoe, made his own inquiry of his personal friend, Adm. Calvin Bolster (naval chief of aeronautical research), and was also told that no such naval project existed (Keyhoe, 1950, p. 44).

This seemed peculiar—advanced technology flying in U.S. air space that none of the services was responsible for, and yet the very high brass not particularly nervous. Maybe there was something so new going on at Wright-Patterson that even LeMay hadn't yet been briefed. So, as a last resort, General Twining got the Garrett Estimate and the normal inquiry, probably in late August.

Twining passed the inquiry on to McCoy, Maj. Gen. Alden Crawford (chief of T-3), Gen. F. O. Carroll (director of research and development), Col. C. K. Moore (aircraft laboratory chief), Col. Russell Minty (power-plant laboratory chief), and Brig. Gen. Edgar Sorenson (Air Institute of Technology commander). They each studied Garrett's report, and held a conference on the disks sometime in mid-September. Twining reported the results to Schulgen (and thereby to Garrett and the FBI) on September 23, 1947 (Twining, 1947).

We don't have the polished Garrett report to compare with the Twining letter, but it appears that Twining's experts essentially agreed with Garrett's analysis. They added the observations that sound is rarely heard coming from the disks, and that their performance characteristics indicate that they are controlled objects. T-3 was of the opinion that something like this could be built with long-range but slow-speed capabilities, but it would be very expensive. AMC admitted ignorance of the nature of the disks, confirmed that they would continue to monitor reports, and suggested that an official project be formed to get to the bottom of the phenomenon. This was the last of the "we don't know" admissions. The Pentagon agreed that a formal project should be initiated.

WRIGHT-PATTERSON AND THE GERMAN/SOVIET THEORY

When the Pentagon first involved AMC intelligence in the flying-disk problem (probably about mid-July), T-2 chief McCoy began thinking about the possibility of German aeronautical technology. This is shown in the following sequence of events documented in the USAF's Project Blue Book files:

1. On July 10, civilian workers at the air base at Harmon Field, Newfoundland, watched a disk-shaped object cut its way through the cloud cover and leave behind a powerful-looking “exhaust trail.” Pictures were taken.

2. On July 16, a formal initial report was made by a base intelligence officer. This was followed by a more detailed report on July 21 that was sent to the Pentagon. (Note that Wright-Patterson was not yet considered any sort of focal point for disk reports.)

3. The Pentagon assessed the report and then got excited about it. Schulgen ordered McCoy (about July 28–29) to send a top-level assessment team to Harmon Field “immediately,” and for them to go directly to him at the Pentagon afterwards.

4. McCoy’s notes, possibly from a Pentagon phone call, indicate that his team had been asked earlier to do some assessment of these disk reports. He wrote, “What has Clingerman [his head of analysis at T-2] prepared?” and “What has Brentnall [chief of T-3 engineering] prepared?”

5. McCoy’s notes also indicate his concern with German technology. “Interview Hugo Eckener. Goodyear. What L/A [lighter-than-air capability] does Russia have? German-Russian Type. What plans & potentialities?”

Nothing would be more natural than for McCoy to be concerned with German technology. His main job in 1945 had been retrieving it from German sites, and he had also helped bring back a huge German air technical library to Wright Field. Although it is said that he had nothing to do with Operation Paperclip (the placement of Nazi scientists in hi-tech U.S. labs), he obviously knew where these people were. And right in his own organization’s library was the secret T-2 manual on the so-called Horten flying wings, the most radical of which had a distinct resemblance to the disks (USAF AMC, 1946).

Also working for McCoy in the T-2 analysis division was Alfred C. Loedding, a design engineer on loan from the T-3 engineering division. Loedding had long been interested in low-aspect and disk-shaped airplane designs, and had produced a couple himself (Loedding, 1948). He was intrigued with the disk reports, and was sure that such designs could be made to fly. He soon became McCoy and Clingerman’s liaison to the Pentagon on these matters. By late August, McCoy seems to have already gotten the hint that flying-disk investigations would be shifted to Wright-Patterson from the Pentagon and he asked for a meeting between Loedding, Garrett, and Dr. Charles Carroll (McCoy, 1947a). Carroll, a mathematics and missiles expert, had been making some kind of analysis of flying-disk activities. (One wonders, admittedly a bit idly, whether this was the beginning of the analysis mentioned by Project Sign a year later, correlating disks with near approaches of planetary bodies.) As Loedding became a strong supporter of the extraterrestrial hypothesis (ETH) for the disks, and Garrett already was a strong proponent of their reality and extreme unusualness, they could have formed the core of the ETH-friendly faction.

The meeting took place in the Pentagon on September 5, and Pentagon disk files were transferred to Wright-Patterson shortly thereafter. Therefore, even before Twining wrote his famous September 23 letter evaluating the disk problem and suggest-

ing a formal intelligence project at the Dayton base, the matter had been decided.

The Twining letter (“AMC Opinion Concerning Flying Discs”) was written by McCoy from his own and T-2’s perspective. Not knowing what he was dealing with, he offered two hypotheses: a very high security project that even he, Brentnall, or LeMay didn’t know about; or a project, maybe even nuclear, developed by “some foreign nation.” He was thinking mainly of German scientists working for the Soviets. He wanted all the top scientific guns in on this: the Atomic Energy Commission, NACA (NASA’s predecessor), the Rand think tank, the Nuclear Engine Propulsion Aircraft project, and others. He promised a detailed “Essential Elements of Information” (EEI intelligence requirements) to be formulated immediately, so that all agencies would have guidance on what to look for (Twining, 1947).

Exactly when this EEI was written is unknown, but in about a month it was distributed within the European Command by Lt. Col. Malcolm Seashore, former acting chief of MCIAT under McCoy and Clingerman (Schulgen, 1947b). The EEI covered all the expected bases of an intelligence operation concerned about the use of ex-Nazi technology and engineers by Soviet projects. It was especially concerned with the same things that had been worrying McCoy and Loedding in August: the German engineers Walter and Reimar Horten and their disk-like flying technologies. Its description of the disks in flight were, of course, the same as those in the Twining letter, which were mainly those originally determined by Garrett at the Pentagon. A few descriptors were added, which must have made the idea of a German-Soviet craft seem very unlikely: the ability to almost hover, quickly disappear, group together very quickly, and “suddenly appear without warning as if from an extremely high altitude.” All these new elements appeared in a December Pentagon estimation, rewritten from a similar Pentagon document of October 6. This indicates that radar detection of disks over Fukuoka, Japan, played a role in further concerning the Air Force about great maneuverability (McDonald, 1947).²

² As an important sidebar to this discussion, a very nefarious misuse of the October 6 EEI by McCoy has been uncovered (Todd, 1997). An unknown individual, apparently while investigating declassified Pentagon documents about the Horten brothers, seems to have taken this original EEI and constructed a fake version of it. The fake is dated the same as the October EEI, called a “draft” instead of the completed official document distributed by Seashore, and attributed to Schulgen instead of to McCoy and Wright Field. The contents are largely left intact, undoubtedly on the theory that a good lie is always shrouded in the truth, but several deletions and additions occur. This manufactured fake was then somehow slipped back into the files to be discovered later by trusting ufologists who don’t have such dishonest minds. When FOIA requests later included the fake alongside original accurate material, researchers naturally (including myself) were misled by the inclusions. This somewhat sick behavior points out yet another difficulty confronting scholars trying to piece together genuine historical accounts of what took place behind the mirror of secrecy in the military. The unfortunate part of this is that the faked edition alleged that the USAF was having doubts in the fall of 1947 about the German-Soviet hypothesis and that some personnel were seriously considering the ETH. The tragedy of this hoax, I believe, is that it helps scuttle what was in fact the true situation. The genuine October 6 memo (rewritten in December 1947, and also genuine) indicates that by December the USAF was in serious doubt about the German hypothesis, yet strongly believed in a real “puzzling problem.” They asserted that the objects were not ours and didn’t seem to be “theirs” either. Given what Loedding and

Since September the intelligence department at Wright-Patterson had taken the lead responsibility for flying-disk analysis without having an official project or the material support that a special task would bring. Now the time had come to quit handling this as an add-on job, and become truly organized. The ball began rolling in early December, when LeMay made a request for information on the status of flying-disk analysis. Pentagon Colonel J. F. Olive (chief of AFOAI) and Lt. Col. J. E. Thomas of the Offensive Air section (AFOAI-OA) got the job. By December 18, Olive and Thomas had completed their reanalysis of the earlier documents from the Pentagon and Wright-Patterson, rewritten a new Estimate indicating a potentially serious but puzzling phenomenon, and turned this over to Chief of Air Force Intelligence McDonald for his signature. Also signing off on this document were Garrett's chief at AFOIR-CO and the new chief of AFOIR, Gen. Charles Cabell, who was being groomed to succeed McDonald. Around Christmas, the official letter was actually passed to LeMay recommending that Wright-Patterson should get an official flying-disk project, and that LeMay should formally notify the commanding general there. As it turned out, LeMay had just been replaced by Gen. Laurence C. Craigie, who sent the formal word to Wright-Patterson to establish Project Sign on December 30, 1947 (Craigie, 1947).

PROJECT SIGN AND ITS WORK

Sign was immediately organized as a special project under the Technical Analysis section of T-2. The name seems to have caught on a lot quicker than the alphabet-soup technical designation, but whether it was Sign or MCIAXO-3, the cases began to appear in Dayton to be analyzed. They landed on the desks of the following people:

1. Capt. Robert R. Sneider, the project chief.
2. Loedding, the T-3 veteran engineer.
3. Lawrence Truettner, a civilian engineer working on missile analysis at T-2 in the same corridor.
4. Deyarmond, the civilian intelligence analyst in Clingerman's office who had been a WWII field buddy of McCoy in Germany.

These four people would be considered the core group of the project. Helping this core were:

5. Maj. Raymond Llewellyn, the chief of the special projects branch of MCIAT.
6. Lt. Howard W. Smith.
7. George W. Towles, a civilian.
8. Occasional others (e.g., Chief of Special Analysis Nicholas Post and John (Red) Honaker of McCoy's office) when needed. The project had the authority to ask any lab on the base for help, occasional field support (pilots or equipment), and contacts

Sign believed (the ETH) about one-half year later, is it not likely that the faked phrase of the hoax document ("it is the considered opinion of some elements that the object may in fact represent an interplanetary craft of some kind") is an accurate assessment? Sadly, due to the malfeasance of some scoundrel, it makes this case more difficult to defend.

with outside experts. We do not know how much direct interest McCoy took in the work.

Although the project did not officially begin until later in January, Sign did not have long to wait for its first big case. It took place on January 7, 1948, and possibly produced more consternation and the longest after-effect of any other: the crash and death of national-guard pilot Capt. Thomas Mantell. The consensus of the UFO community today is that Mantell died while pushing his plane and himself too hard in a chase of a then-secret balloon called a Skyhook. Though this is almost certainly true, it wasn't at all obvious in 1948. From the viewpoint of 1948 and Project Sign, here are what the relevant facts seemed to be:

1. Ground personnel from a variety of locations were seeing a disk-like object in the sky.
2. Four national-guard planes were directed to it, three closed, and Mantell was in hot pursuit.
3. Mantell believed that the target was moving as fast as his plane.
4. It seemed to shine as if made of a reflecting substance like glass or metal.
5. Mantell was quoted, "[it] looks metallic and of tremendous size."
6. After the crash and investigation, the USAF (not Project Sign) said that Mantell had been chasing the planet Venus. No one involved with the investigation at Sign believed that, and in November 1948 they were still puzzling over this. Deyarmond wrote that this clearly was *not* Venus, and the case was unexplained.

It is easy to see how the Mantell case would get the project off to an excited but erroneous start. This incident highlights two important characteristics of the era: reason to believe that the UFO phenomenon was extremely interesting (and unexplained), and reason to disbelieve things said publicly by the Pentagon about UFO explanations. One wonders whether the project team felt that the Mantell object could have been the result of a Soviet-German secret project. The thought of a huge metallic disk leaving a fighter plane behind at high altitude was indeed an unsettling vision.

During the early months of the project another puzzling element added itself to the mystery: The UFOs appeared to be a truly worldwide phenomenon. Although there had been non-U.S. cases previously (and there had been a major wave of aerial anomalies in Europe, especially Scandinavia) in 1946, these were few in number and conveniently placed geographically so that the Soviet-German theory could be rationalized. Now reports seemed to be trickling in from everywhere. Cases in Finland, Denmark, Germany could be rationalized; but what about the Philippines, Paraguay, and the mid-Pacific? Of course, any report that didn't fit in could be wrong.

A second case that interested Sign occurred on February 18, 1948. Like Mantell's Skyhook balloon, this was not a UFO, but it is worth describing for other reasons. The case was of a spectacular exploding bolide over Norcatour, Kansas.

Concussion from the blast broke windows, rocked buildings and terrified residents over a wide section of Kansas, Nebraska, and Oklahoma.

. . . The smoke trail started over Nebraska to the north and ran southward, twisting over upon itself in “jelly-rolls” like the vapor trail of a plane out of control. . . .

Many people believed that a jet airplane had exploded instead of a meteor. Scientists, army officers and other officials said that was impossible because of the extreme altitude of the explosion. Some people blamed the explosion on “flying saucers.”

Two Army B-29 bombers circled over the area until nightfall, but the army did not issue a statement. [United Press, 1948]

One could see how a USAF intelligence project that did not view “extreme altitude” as some sort of impossible criterion and who were considering air technologies with unusually powerful engines might be interested. Maybe it was because the project was new or that the Army was already involved or just that our records of the case are incomplete, but the investigation by Sign seems incompetent. The investigation seems to have consisted of:

1. An interview and correspondence with Oscar E. Monnig, a knowledgeable amateur meteorite buff who was not directly involved with either the event itself or the meteorite-fragment hunt at all. This was the only direct interview by T-2, and occurred due to an accidental coincidence of Maj. Melvin W. Faulk (of Clingerman’s office) just happening to have a training flight in the vicinity (Faulk, 1948).

2. Photographs of smoke trails of known meteorites were collected to compare to the Norcatat smoke trail.

3. USAF Scientific Advisory Board personnel associated with research and development were apparently contacted for help. Someone, possibly geophysicist Helmut Landsberg, contacted meteoriticist Lincoln LaPaz for an assessment.

4. Suggestions from a citizen, Norman G. Markham, were passed from the Army to USAF and LaPaz, as if they should be taken seriously, and some local interviews were also provided.

5. LaPaz wrote a brief report in April, and the Monnig wrote a letter in May. This completed the investigation.

It was poor judgment not to send a project investigator to the site or work with LaPaz (or whatever experts were available) to interview witnesses and look for debris. No one from Wright-Patterson seems to have gone to Norcatat, talked personally with LaPaz (or with H. H. Nininger, who finally discovered fragments of the largest stony meteorite found up to that time), or got any direct evidence at all. Moreover, it was not at all certain that they were dealing with a bolide.

For example, the letter from LaPaz in April 1948 contained the following facts:

1. LaPaz believed that the “flying lenses” were 99% hoax and imagination but 1% real.
2. He believed the Norcatat object was a bolide, but he could not be certain: “not a trace of meteoritic material has so far been found.”

3. An unusual number of such experiences had produced no meteorite finds and he wondered what was going on. Could it be that “many of the fireballs are not meteorites at all?”

4. “The situation cries aloud for thorough investigation” (LaPaz, 1948).

LaPaz was also puzzled by the testimony of witnesses who reported artificial objects in association with the case. One witness believed that a battery-like thing fell from the sky “too hot to handle” just after the explosion; another witness backed him up. Five individuals, including three in the tower at McCook Field in Nebraska, reported a dark object like a missile with a jet coming out the back. All specifically denied that the object was like a meteor. And finally, a prominent farmer of good character who lived near Stockton, Kansas, gave amazing testimony of what we would today call a close encounter of the first kind: a close-range observation showing clear structural details. Because this material is so rarely seen by ufologists, it might be of interest to recount farmer Leland Sammons’s description in full:

On February 18 at about 5 P.M., I was standing near my hog-pen about 100’ east of my house, when I heard the pheasants raising a disturbance and the chickens all rushed to the chicken-house. I looked around toward the house to see what was causing it and saw something hovering just above the house. I ran toward the house, and it then lowered over the north end of the house and settled toward the ground. I was then very near it, approximately 6’ when it stopped about level with my face, and just wobbled around for an instant, fire belching out of it and sucking back in. The thing was about 4’ long, shaped something like a funnel. There was a pipe sticking out the back of it, and once as it wobbled around, the pipe was sticking right at my belly. Suddenly there was a lot of sparks showered from it, and the fire increased as if a fuse might have lighted, and it took off in a north-westerly direction very fast, gaining altitude as it went. My wife heard it leave and ran out where I stood, and we watched it go, leaving a trail of smoke all the way. Suddenly there was a great cloud of smoke in the sky, not more than 40 seconds after it left my yard, and in a few seconds or more, we heard an explosion. I then stepped off from my house to where it had been, and it was five steps. Yes, it was hot, I could feel the heat from it. Had I not been washing my car prior to the occurrence, wetting the ground, there would have been a bare spot in the yard where the thing started up because there was a great rush of fire from it when it left. It must have been quite high when it exploded. [Cox, 1948]

One of LaPaz’s colleagues had interviewed Sammons, and believed him to “be sincere and very badly scared.” One can almost feel LaPaz scratching his head between the lines of his letter as he asks: How could a bolide create such a report in a mature and sincere person such as Sammons?

In addition to all this was extensive correspondence by Norman G. Markham, the first piece of which was sent to the Army Chief of Staff on February 20 (Markham, 1948). Markham was a lover of anomalies, a Fortean, and he felt that he had calculated a connection between the Norcatur event and the position of the moon. Markham

suggested that perhaps the moon was inhabited and that flying objects visiting earth come from there. Several other past events were cited to buttress his views. This correspondence was not discarded as obviously crackpot. It went from the Army to the Air Force to Sign to the Scientific Board to LaPaz. Although LaPaz believed Markham's views to be fantastic, he noted that Markham was correct to call attention to certain unexplained incidents, possibly of real flying disks. One wonders whether Project Sign's statements six months later—that they had been plotting disk reports in relation to the positions of planetary bodies (and finding correlations)—stem from Markham's letters in this case file.

Whatever we have here in the Norcatour case, the investigation seems poorly performed. There were no direct interviews or other fieldwork, and the meteorite explanation was accepted on a letter from the uninvolved amateur, not a direct report from Nininger or LaPaz. No crater was ever found or photographed and placed in the file. And (this is the most telling aspect) the pattern of ignoring inconvenient contrary witness testimony was quietly condoned. What of the five "rocket" witnesses or Leland Sammons? It seemed that no one cared. But why this attitude, given the alleged concern at the times?

The next case activity worth citing was April 5, 1948, at Holloman AFB in New Mexico. Three highly trained balloon observers, including the project leader, J. W. Peoples, were working on a secret project for the Air Force's Watson Laboratories. They saw two objects. One observer followed one object, and the others followed the second object as they diverged. All were certain that the objects weren't balloons. They were large, whitish, roundish, very high, faster than any aircraft, and performing rapid, erratic motion. One object was lost low. The other went up quickly and seemed to just disappear. This case was deemed important enough to send Loedding and one of Clingerman's assistants, Lt. Col. J. C. Beam, to New Mexico to interview Peoples and the others. Unfortunately, the witnesses were gone when Sign arrived. (They were later interviewed at Watson Labs in New Jersey.) The witnesses were very sure of themselves and the case was classed as "Unidentified."

While at Holloman, Loedding and Beam talked with a Lieutenant Markley who had worked with the Watson team. Markley remembered one of them speaking of unusual radar returns from their equipment, but later the Watson personnel said that these were probably just "angels" (spurious echoe due to atmospheric microstructures, insects, equipment malfunction, or other stimuli). Markley did report that UFOs had been seen around Holloman often. He himself had seen a disk in August 1947 and flat, round aeroforms on at least two further occasions. Beam and Loedding took a side trip to Phoenix, Arizona, to check up on an old sighting that especially interested Loedding: the July 4, 1947, case of a scooped-disk aeroform photographed by William A. Rhodes. Loedding's own views of a low-aspect, disk-like lifting body undoubtedly resonated with the object depicted in the Rhodes photos, and the report of their interview is very respectful. One might see this investigation as merely Loedding's interest, but it was generally true that Sign was interested in all the evidence, not just the cases which occurred "yesterday." At the end of their trips Beam

and Loedding suggested that it was premature to place a permanent observing team at Holloman, despite the amount of activity that seemed to have occurred there.

The Memphis, Tennessee, case of May 7, 1948, is worth a brief mention. Two adult witnesses saw 50–60 unusual objects, apparently moving very high and fast, traveling in straight lines with slight zigzagging. They seemed shiny, like bright aluminum, with silvery trails. Beam also went out on this one. Three things are noteworthy about this case:

1. Astronomer Paul Herget of the Cincinnati Observatory said that he doubted that these objects were meteors.
2. This case was the first to mention J. Allen Hynek, then an astronomer at Ohio State University, whom Herget recommended they talk to.
3. A year later, the military Research and Development Board was viewing such observations of luminous, “definitely or possibly non-meteoritic,” objects as important and requiring immediate action—including requesting this particular case file.

In the official Blue Book records, the Air Force unaccountably classed this case as a “meteor.” Perhaps it was, but the experts appear on record as not thinking so. The assessment was probably not the original thinking of the Sign office. It is more likely the late-1948 thinking of Allen Hynek, once he was formally asked to make astronomical determinations, when possible, for UFO reports. His study, which was more an embarrassment to him in later years, would appear as an appendix to the reports of projects Sign and Grudge, Sign’s new designation in 1949 (Hynek, 1949). Hynek viewed his job in these first case assessments as debunking. He was to get rid of UFOs as any sort of exceptional anomaly even when the so-called explanation he came up with was a huge stretch. He said that he originally enjoyed his job as a debunker (Hynek, 1973: 171–172; 1977: 34–38). Unfortunately this was a completely wrong-headed attitude, and it took him a long time to shake it thoroughly and return to a properly objective analysis of cases as they came in. But in May and June of 1948, Hynek was not yet around to throw water and rocks at mysteries, so Sign personnel probably viewed this and the next three cases to be real puzzles rather than foolishness, ignorance, or misperception.

The next case occurred between Plevna and Miles City, Montana, on May 17. There was one witness, a professional man named William A. Bonneville who believed that reporting this air intruder was a patriotic duty. A bright white ball, brilliantly illuminated (three times as bright as a locomotive’s headlight would be), sailed over the hills from the northwest, and then to the south and back to the west, and repeated these meanderings for 20 minutes until sailing away into a dark cloud. No sounds could be heard. Along, bright light shot out from beneath. Somewhat stunned by this performance, the witness stated (with the charming naivete of the 1940s):

. . . anything of this nature which we are not familiar with we are duty bound to report to our Defense Forces who may be better equipped to understand the unfamiliar than we are.

Sign was probably as boggled by this experience as Bonneville was. But later,

someone was up to the task: The case was explained away as “refraction of the planet Mars.” This explanation is of interest not only because of its apparent ridiculousness, but because it is precisely the sort of idea continually used by Donald Menzel (Harvard astronomer and arch-enemy of UFOs in the 1950s and 1960s) in his later books and articles (Menzel, 1953). This refraction or mirage hypothesis was Menzel’s siege gun. Almost any UFO case became a game to find some bright astronomical object in the general direction of the witness’ line of sight, and then invoke misperception, ignorance, confusion, or rare atmospheric phenomena to account for the report. But as far as we know Menzel was not consulting on any of these 1948 cases. So where did this explanation come from?

INTERLUDE: J. ALLEN HYNEK AND SIGN

J. Allen Hynek formally became an astronomical consultant to Sign in 1948. The Plevna, Montana, explanation is one that probably came from an astronomer. This is a good place to try to understand Hynek’s role, though it will not be possible to do so with any great certainty because of the lack of documentation concerning his earliest relations with the project. But it does offer an important glimpse of the Air Force’s approach to UFO analysis.

We know that Hynek was officially tasked with studying UFO cases for astronomical explanations on December 16, 1948. This was Air Materiel Command contract W33-038-1118, the final report of which became the appendix for the Project Grudge report that largely debunked UFOs in 1949 (Hynek, 1949; USAF AMC, 1949b). We also know that Herget suggested him as a consultant to the project around late May 1948. Sometime between these two dates, Hynek was signed on as a regular consultant and made “interim reports.” It sounds as if the idea of a larger formal report (the Grudge appendix) was already in both Hynek’s and Wright-Patterson’s mind in the summer or fall of 1948. Still, Hynek said that he sent interim reports earlier than his formal study period. These reports were largely debunking in nature (Hynek, 1977: 15–17). Could Hynek himself have been the source of the “refraction of Mars” pseudoexplanation for the Plevna case? What an irony it would be if Hynek himself initiated the pseudoscientific mirage hypothesis that he would so vehemently criticize when touted by Menzel.

Let us first examine the key characteristics of the Plevna report. The object was an extremely bright ball of light (brighter than the moon, and three times brighter than a locomotive headlight) that flew through many viewing angles (north or northwest through “south of the road”). Whoever was doing the analysis must have had a hard time dealing with both the wide angular travel north to south and the extreme brightness. How any refraction would allow Mars to pick up that much extra luminosity should have given any astronomer pause. Hynek should have known better.

In his final report to Grudge he stated: “If this report is to be taken on face value, then no astronomical explanation of this incident is possible.” Unfortunately, he continued:

However, in seeking even a remote logical explanation for the incident, the present investigator is impressed with the fact that on this very night, May 17, Venus was at its greatest brilliancy, with a magnitude of -4.2 , or about 100 times brighter than a first magnitude star. It would have appeared that night as an intensely bright light in the northwest. [Hynek, 1949: 151]

This statement is of interest in several ways: Mars doesn't enter into it; the language is very subdued, though it stretches for a debunking answer; and there is a subtle hint of Hynek's (and the military's?) fundamental mind-set. Let's comment on each of these characteristics.

This is a Venus answer, not Mars. Hynek was quite ready to relegate many UFOs to Venus (e.g., the Mantell case, even though Sign refused to buy that). Hynek's Venus proposition tried to deal with the brightness while ignoring the traveling excursion. Refraction is never mentioned. Where then does the refraction of Mars come from? It is my opinion that Hynek was blameless. Refraction and mirage explanations were not his style. Of the 200-plus analyses in the Grudge appendix, only two—case number 33 (Mantell) and 229—even hint of such a phenomenon, and the word "refraction" appears in neither place. In case number 148, with a Venus explanation crying out for him to tie up its loose ends with refractions, he never resorts to it. Hynek believed refractions of any spectacular kind to be *very* rare, and even then limited in what they could do (e.g., move erratically about two or three lunar diameters as in case 33). So where did this Menzelian answer come from? Herget? The University of Dayton? A chance interaction with Menzel? We'll probably never know. It does demonstrate a sad, early willingness on an unknown scientist's part to grasp for a debunking explanation wherever one could be found.

Unfortunately, Hynek's tentatively worded guess demonstrated the same thing. He was just being more polite about it. He saw his job as explaining away UFO reports. His typical Grudge style was to make a simple and honestly defensible statement, then (if the first statement didn't explain the case) launch into some low-key speculation. The latter often went well beyond the official descriptions and well outside his charge of providing astronomical analyses. He regularly speculated on balloons, aircraft, subjectivity, and you-name-it. His motives appear to lie in sociology.

Hynek's memory of the Air Force consensus was that there were two contrary schools of thought (Hynek, 1977: 13–14). One school, mostly at Wright-Patterson, felt that UFOs were real, technological, and, probably interplanetary. The second school, a majority in the Pentagon and a minority at Wright-Patterson, felt that the UFOs were nonsense. The Air Force's elite Scientific Advisory Board lined up on the side of nonsense; and these were the Elders of the Tribe of Science to which Allen Hynek belonged.

It may be that my interim reports helped the transformation of Project Sign into the extremely negative Project Grudge, which took as its

premise that UFOs simply *could not be*. I tried hard to find astronomical explanations for as many cases as I could, and in those that I couldn't I reached to draw out as many natural explanations as possible. Sometimes, I stretched too far.

Clearly, I, too, thought at the time that UFOs were just a lot of nonsense. I enjoyed the role of debunker. . . . [Hynek, 1977: 17]

Hynek's mea culpa would have done much to relieve the sting of his early unscientific behavior in this matter if no one had paid any attention to him. Some did not, but others did. The core team at Project Sign apparently paid little or no mind to Hynek's negative analyses or interim reports: They were well on their way to their famous Estimate of the Situation and its interplanetary conclusion. If Hynek influenced bigger movers and shakers, like Clingerman and McCoy, there is no evidence of it. Who then did he affect? Possibly he influenced the negative school in the Pentagon, though there is no direct evidence of this. The Pentagon-created anti-UFO report of December 10, 1948 (USAF AID & USN ONI, 1948) shows nothing that could be attributed to Hynek. He may well have spoken to his tribesmen on the Scientific Advisory Board though, and in doing so reinforced their stance.

Those who were clearly influenced by Hynek were the people who read the Grudge report and who took over the UFO project after the sympathetic Sign team was broken up and dispersed. The evidence is abundant: It consists of the case evaluations written on the lower right-hand corners of the project's cards that led off the files of each individual report. There, scrawled in the corners, one can get the digested version of what the Grudge project was concluding about the cases: balloons, Venus, meteors, aircraft. Usually these were stolen directly from Hynek's report. Most regretfully, they were lifted from the speculation or stretch sections of each case, even when it was obvious that Hynek didn't think much of the explanation himself. Hynek had been very helpful.

One last thing before getting back to Sign's history. Note this phrase in the Plevna analysis: "in seeking even a remote logical explanation." A *logical* explanation. This was a telling phraseology. These cases *couldn't* be what they seemed; this would not be "logical." Such objects were irrational, unscientific; they could not make sense. This was probably not only Hynek's restricted mind-set, but the Scientific Advisory Board's *in toto*. It was something that we do not understand enough about scientists and do not like to admit about them. Their curiosity is great; *and* it is restricted within broad but nearly ironclad limits. Outside of those limits is the realm of illogic and ridicule. Even in 1977, as he reminisced about his early sins, Hynek had still not made the complete transformation. He still spoke of "rationally" and "astronomically" as if one somehow defined the other (Hynek, 1973; 1977). His Grudge report, with its astronomical and often irrational comments, stood as a rich source of explanations for things not explained, and doubtless he and his tribesmen felt good about it. What an odd and dangerous way to come to conclusions on a matter of possible national security interest.

SIGN ROLLS ON

Ignoring the negative attitudes of consultants and the Pentagon, the Sign team was moving toward the watershed moment for the Project: the Chiles-Whitted case. We'll take two brief stops before arriving there. First, east of Monroe, Michigan, May 25, 1948. Two Air Force officers were flying as passengers in an Air Force plane; one saw three objects come down from above and level off, approximately even with the plane and ahead of them. They were fuzzy-edged disks, and flying "astern" (one in line behind the other) and "stepped up" (those behind slightly elevated in step fashion). The objects were in sight about 10–15 seconds, flew opposite the plane's direction, took a sharp right turn, and were lost to sight. The viewer was fascinated by this and didn't call it to the other's attention until too late. Fortunately, moments later, a similar performance was put on by two disks instead of three. Both officers saw the action the second time.

The officers made wildly different size estimates (showing the dangers of this well-known subjective error when there are no clear referents), but the rest of the descriptions matched. Later for Grudge, Hynek followed his pattern: He said that there was no astronomical explanation. Then he speculated freely about holes in clouds, allowing a pattern of isolated shafts of sunlight to bounce off lower clouds and cause perfect echelon reflections moving opposite aircraft motion. The Grudge debunker was happy to write "Probable reflection" on the case record card, despite the fact that when Sign specifically asked for an opinion of the witness about reflections, they received a flat "no." Sign almost certainly felt that this was a UFO case. Grudge later "explained" it. Who knows what Hynek thought?

Next, Hecla, South Dakota, June 30, 1948. A husband and wife were driving and saw an unusual "star" high in the sky. The husband, an amateur astronomer and engineer, stopped the car and they got out to look for a while. The star, which they were pretty sure was *not* a star but a much larger (in angular aspect) mass, was not moving at all. They drove on, stopped again, and got others to look. More driving and another stop. This time, something seemed to be happening. The mass, still visually small, seemed to be larger and changing shape. A piece "fell off," moved away, and appeared like a round ball. Two more pieces now did the same, and moved to positions off the central body, which formed a perfect equilateral triangle. All the balls and the central object looked like polished aluminum. The central object now appeared like an aggregation of much smaller objects that dispersed and faded away. The three equilateral balls kept moving outward, always keeping their perfect geometry. Then they seemed to get smaller and fainter, as if rising to great height, and vanished. The astronomer-engineer said: "my convictions at this point were that it could not be anything terrestrial."

Sign probably agreed. Hynek again did his thing: This was nothing astronomical; on the other hand, "in all probability the object was a cluster of balloons, carrying, perhaps, cosmic ray apparatus." The explanation was within the normal pattern of Air Force explanations for the next 20 years: Find something sort of like what's

described, ignore some awkward elements, say “maybe,” and count it explained. The ignored awkward element here was the perfect equilateral triangle allegedly formed by the unintelligent, motorless balloon parts. Hynek’s “maybe” became “fact” when the Grudge record card was labeled “BALLOON JAH,” in honor of J. Allen Hynek.

And then came the Chiles-Whitted case. Capt. Edward Ruppelt, chief of the UFO Project in 1951–1953, said:

According to the old timers at ATIC [Wright-Patterson T-2 Intelligence division was then named Air Technical Intelligence Center], this report shook them worse than the Mantell Incident. This was the first time two reliable sources had been really close enough to anything resembling a UFO to get a good look and live to tell about it. [Ruppelt, 1956: 40–41]

Between this event and the ultimate demise of Project Sign, many other interesting cases and activities occurred; but because of the overriding significance of this experience for the project’s history, the other cases will be (mostly) ignored. From this point forward, the history of Project Sign primarily reflects the Chiles-Whitted case and those thoughts, beliefs, and actions that became closely related to it.

The observation occurred in the early morning hours of July 24, 1948. An Eastern Airlines flight was near Montgomery, Alabama, flying at 5,000 feet and soon to land. The night was mainly clear. Pilot Clarence Chiles and copilot John Whitted were at the controls. Most of the passengers were asleep. Ahead of the plane and slightly above (the pilots estimated about 5,500 feet), a flying object came into view. Chiles said to Whitted: “Look, there comes one of those new jet jobs.” As the device came nearer, they became more amazed. It was shaped like a DC-6, but with neither wings nor tail: a “flying fuselage.” It seemed to be about 100 feet long with a barrel diameter about three times that of a B-29. At an estimated 500 miles per hour it took about 10 seconds to pass their plane and pull up sharply through the broken clouds overhead. They estimated its closest approach to be about half a mile. The device was dark at the front with a blue glow underneath. Red-orange jet exhausts spewed out 30 feet behind. The most spectacular aspect of its design was two double-decked rows of brightly lit, large, rectangular windows along the sides. Chiles thought he saw a more dimly lit front-cockpit area. Whitted did not. The whole display seemed a lot brighter and more vivid to Chiles than it did to Whitted. Still, in general estimates and configuration, the two pilots concurred.

The Eastern flight landed shortly afterwards and the pilots reported everything to their managers. Eastern released the reported details to the newspapers that day. The case immediately made national news: “Buck Rogers-like Plane Passes 2 Airline Pilots!” Everyone was reading the story the evening of July 24. It caught the attention of the Pentagon as well. The next day, Chief of Air Force Intelligence Gen. Cabell phoned McCoy’s office at Wright-Patterson. Sign was ordered to get into the field immediately and investigate. By that afternoon, Loedding, Deyarmond, and

Llewellyn were being flown by Capt. Clarence Groseclose to Atlanta. They met Chiles and Whitted in the Henry Grady Hotel the next day.

The interviewers (Loedding and Deyarmond) were impressed. The pilots told their stories, as recounted above, and were consistent. Both pilots had been military veterans and had good commercial reputations. Chiles particularly was considered by his bosses to be outstanding. Loedding, an excellent aeroengineer who leaned towards the extraterrestrial hypothesis, must have been stunned. Deyarmond seemed a more grounded military engineer, but he too had to be enthusiastic. This seemed to be the case Sign was looking for. Later, Llewellyn was able to locate and interview the lone passenger who had awakened and noticed something. He only saw the bright red-orange exhaust of the retreating object and no details. Still, it was a small corroboration. Presumably, as Cabell himself had ordered this, they made some preliminary report to the Pentagon and began their analysis back at Wright-Patterson.

The pieces of Sign's thinking coalesced around this case during August and September of 1948. In the first week of August they received word of an independent ground witness (an experienced observer on a military base) to the Chiles-Whitted object. They immediately requested details from the base. Although official forms took about a month to arrive, this was another corroboration. Cross-checking anomalous cases, they noted that an apparently identical object had been sighted over The Hague, Netherlands, on July 20. They also recalled the wave of so-called "ghost rocket" sightings over Scandinavia in 1946 and early 1947—more jet-propelled, flying fuselages. They requested special interviews for more information on August 19. It looked like the Chiles-Whitted object was the real thing.

But how could it fly? It was the exploration of this question that, I believe, finally tipped the balance. The object was a wingless, tailless fuselage. It was not simply a missile; it had windows, ergo, presumably, pilots and passengers. It must be able to take off, maneuver, and land. But how? This is exactly the sort of problem that air-intelligence engineers love. When they dove into it and (in their minds) came up with the solution, it placed the last powerful overlay of reality on the investigation. They found their aerodynamic answers in the advanced theories of the German aerodesign geniuses. Ludwig Prandtl's theory of lift provided not only the rationale of how such an object could fly, but also a guesstimate of the required power plant (USAFAMC, 1949a). The latter then took them the final step into the Land of Oz. Conventional power plants were nowhere near sufficient. It would take something much more powerful to fly the Chiles-Whitted object . . . perhaps something nuclear.

This investigative odyssey must have been as exciting as it was astounding. Nuclear-powered aircraft, or something even more unsuspected. We couldn't do it. The Soviets couldn't do it. Sometime during all of this the project personnel must have wondered about the correlations that they felt they were finding between UFO events and close approaches of the inner solar-system planets. Based on these correlations and their new conviction about Chiles-Whitted, Sign later sent notice to the Pentagon to alert all operatives, bases, and the other services to the potential for new UFOs reports in mid-October (Earle, 1948).

THE ESTIMATE OF THE SITUATION

In September 1948, Sign heard the details of the Chiles-Whitted ground-witness corroboration. The third qualified observer had seen a cylindrical object jetting red-orange exhaust over Robins AFB in Georgia, one hour earlier. It was heading in the direction of Montgomery. Project officer Capt. Robert Sneider had decided that the time had come to climax the project's task and write the required "Estimate of the Situation." Every intelligence operation's task was ultimately to present such a best-guess summary, strongly backed with as much fact ("proof") as possible. Using Chiles-Whitted as the core, and collecting around it many cases from the summer of 1947 to September 1948, Sneider composed the fateful document. The latest case known to have been utilized in the document took place on September 23, at Los Alamos National Laboratory.

We know that two prominent Air Force intelligence officers (Ruppelt and Fournet) saw the document in 1952. Ruppelt described it:

It was a rather thick document with a black cover and it was printed on legal-sized paper. Stamped across the front were the words TOP SECRET. [Ruppelt, 1956: 41]

As project officer, Sneider would have been the primary author. Throughout this era, several other staff members typically got involved in approvals and sign-offs on drafts and reports. Deyarmond, Loedding, and Truettner almost certainly were part of the writing. Llewellyn certainly looked in. All these people, as well as higher-ups in Clingerman's and McCoy's offices, had to approve, at least in some sense. And an Estimate of UFOs as extraterrestrial would have been no small thing to assent to.

No one can give a detailed description of the contents of this famous yet mysterious document, as it has not been available for modern analysts to read. Yet the following cryptic description by Ruppelt, only the last paragraph of which made it into his book, offers some hints:

As documented proof, many unexplained sightings were quoted. The original UFO sighting by Kenneth Arnold; the series of sightings from the secret Air Force Test Center, Muroc AFB; the F-51 pilot's observation of a formation of spheres near Lake Meade; the report of an F-80 pilot who saw two round objects diving toward the ground near the Grand Canyon; and a report by the pilot of an Idaho National Guard T-6 trainer, who saw a violently maneuvering black object.

As further documentation, the report quoted an interview with an Air Force Major from the Rapid City AFB (now Ellsworth AFB) who saw twelve UFO's flying a tight diamond formation. When he first saw them they were high but soon they went into a fantastically high speed dive, leveled out, made a perfect formation turn, and climbed at a 30 to 40 degree angle, accelerating all the time. The UFO's were oval-shaped and brilliant yellowish-white.

Also included was one of the reports from the AEC's Los Alamos Laboratory. The incident occurred at 9:40 AM on September 23, 1948. A group of people were waiting for an airplane at the landing strip in Los Alamos when one of them noticed something glint in the sun. It was a flat, circular object, high in the northern sky. The appearance and relative size was the same as a dime held edgewise and slightly tipped, about 50 feet away.

The document pointed out that the reports hadn't actually started with the Arnold Incident. Belated reports from a weather observer in Richmond, Virginia, who observed a "silver disk" through his theodolite telescope; an F-47 pilot, and three pilots in his formation, who saw a "silver flying wing"; and the English "ghost airplanes" that had been picked up on radar early in 1947, proved this point. Although not received until after the Arnold sighting, they all had taken place earlier. [Unedited MS of *The Report on Unidentified Flying Objects* in Ruppelt files]

The Estimate would have been addressed to Chief of Staff Gen. Hoyt Vandenberg, but it really was meant for Director of Intelligence Gen. Charles Cabell. It was probably sent near the end of September, just prior to the next stunning UFO case: the George Gorman "UFO Dogfight" in Fargo, North Dakota, on October 1 (Ruppelt, 1956: 41–43). It would have landed in Garrett's Collections office and been hand-carried to Cabell. Cabell may or may not have been shocked. It is my guess that he and his operatives knew what was coming. Very few real surprises are good strategy in military circles. Still, with a pro-ETH Wright-Patterson intelligence group on one side, an anti-ETH Pentagon Intelligence Requirements Office on the other, and open-minded collections officers and the powerful Research and Development chief (Gen. Donald Putt) in between, Cabell didn't want to decide this on his own. He handed the Estimate further upstairs to Vandenberg himself (Ruppelt, 1956: 45).

Upon reflection, this seems a bit extraordinary. Cabell's job was to deal with these Estimates and not burden Vandenberg with them. And Cabell almost certainly had to know that this was coming. But he still ducked. This situation, UFOs and extraterrestrials, was too big for anyone but the chief of staff himself to rule on. Cabell must have been in doubt about this, not just about the reality of UFOs but their extraterrestrial nature. It was Cabell who reinitiated the Wright-Patterson UFO project in 1951 as a serious investigation and cleaned the anti-ETH elements out of Wright-Patterson and the Pentagon (Ruppelt, n.d.). And much later, in the 1960s, Cabell told UFO and ETH-friendly CIA photo analyst Art Lundahl that he still felt the UFO matter deserved serious investigation (McDonald, n.d.).

But Vandenberg didn't have any doubts—not about action anyway. In what was apparently a very short time period for contemplation, the chief sent the Estimate cascading back down channels to Sign as unacceptable. We don't know who Vandenberg consulted or why he did this, but he was quick and decisive. He did *not* want an extraterrestrial assessment. He was saying clearly and loudly to Sign and

everyone in between that he was not happy with this.

The timetable is uncertain, but a few facts are known. An October 7 document from Sign to Garrett and Cabell is an upbeat Sneider report on the initial investigation of the Gorman dogfight, making the object sound extremely unusual and intelligent in behavior. This was almost like a supplement to the Estimate (Sneider, 1948a). However, on the same day a separate set of letters, composed not by Sneider but by S. Z. Hunnicutt, a member of T-2 and the Sign team, and approved by MCI heavy-weights McCoy, Clingerman, and Leland Money, went out to the CIA, U.S. Army Intelligence, and the Office of Naval Intelligence. The query: What domestic (U.S.) technological developments do you know of that might explain UFOs and help us differentiate them from inimical (Soviet) foreign developments? McCoy writes in Hunnicutt's letter:

To date, no concrete evidence as to the exact identity of any of the reported objects has been received. Similarly, the origin of the so-called "flying disks" remains obscure. [McCoy, 1948a]

This certainly was not the conclusion of the Estimate. McCoy may have already gotten the word. None of the primary Sign personnel signed off on the draft.

The intelligence roil over this extraterrestrial conclusion for UFOs must have been fierce in October. Headquarters had expressed dissatisfaction over Sign's views but, fueled by the enthusiasm over the Gorman case investigation, Sign was undaunted at first. McCoy was caught in the middle. The fact that Sign proceeded with their ETH opinions in the face of high-level Pentagon opposition is a source of some wonder. Either Vandenberg's slap down was very mildly delivered, or there was much support, albeit in the minority, for the respectability of the ETH in the Pentagon. Otherwise, McCoy would have reined in his staff at Sign. My guess is that both conditions were true.

In October, Sign personnel met with Garrett in the Pentagon to make reports, especially those from foreign sources, more efficiently transferrable to the project. Word was spread about the impending new wave of reports due soon (which apparently actually happened). Internal memos referred to the Gorman case as possibly nuclear-powered and interplanetary. A request was made for the Rand Corporation to assess the feasibility of interplanetary spaceships (Clingerman, 1948a). Meanwhile, opposing elements in the Pentagon were marshalling their forces for a counterstrike. The most hostile area, the Defensive Air branch of Air Intelligence, had been pursuing a study of "flying saucer tactics" since early August, when the first assessment of the Chiles-Whitted object had reached them. Now AFOAI-DA brought the Office of Naval Intelligence seriously into this game. ONI had been mildly involved with USAF concerns about UFOs since it had requested to be included in January 1948 (USN Chief of Naval Intelligence, 1948). Out of this liaison would come a counter-ETH report in December. More immediately, AFOAI-DA and ONI would begin to change the atmosphere in the Pentagon to a more hostile, overt position. Ultimately these efforts swayed Cabell into writing a firm letter to

Wright-Patterson on November 3 (Cabell, 1948a; see Appendix 2).

It would be interesting to know who composed this letter for Cabell to sign. Two prime candidates are AFOAI-DA, the office of the consistently anti-ETH saucer-killer, Maj. Aaron J. Boggs; or the Office of Director of Estimates, wherein resided Boggs's main anti-ETH confederate, Col. E. H. Porter, who was its deputy director. Essentially, the letter asked Sign for another Estimate. While admitting that the objects seemed real, it also cautioned that they were *not* identified. (Read: You may *not* identify them as extraterrestrial craft.) Efforts at identification must be serious and increased, since national security was concerned. Countermeasures must be considered. All of these comments were in line with Boggs's and Porter's concern (as well as many others) that some objects could be Soviet- or Nazi-inspired weaponry. While Sign had been immersed in a world of investigating essentially local cases, the darker Pentagon corridors had been fixated on the Soviets and German scientific geniuses. Two different realities had been created.

Wright-Patterson's response was timely. By November 8, a Sign viewpoint was sent over McCoy's signature to Cabell and presumably Boggs, Porter, and ONI (McCoy, 1948b; see Appendix 3). The letter, written by Sign operative Deyarmond, was overtly submissive but covertly rebellious. It contained several comments agreeing with Cabell that the phenomenon was not identifiable and that no concrete physical proof existed to identify it. At the same time it dropped all sorts of hints, doubtless the same arguments used in the original Estimate, that the objects really were extraterrestrial whether the Pentagon thought so or not: It mentioned the ETH; it mentioned plotting waves against planetary approaches and finding a correlation; it mentioned the books of Charles Fort as indicating that this has been going on for at least a century (Fort, 1941); it mentioned that odd shapes (like Chiles-Whitted) can fly but require more advanced power plants than we have. It is interesting that the letter was written by Al Deyarmond, who was McCoy's old WWII buddy. One can imagine the two conferring personally on exactly what tactic Sign could take that would still be consistent with what McCoy was willing to say. The letter seems very strategically worded. McCoy was sympathetic to UFOs and remained so his whole life. In the late 1950s, stationed in Washington, he was a frequent and interested visitor at the major civilian UFO organization in the world, the National Investigations Committee on Aerial Phenomena (Swords, 1997).

SHOWDOWN AND AFTERMATH

The Pentagon surely recognized the letter for what it was: a diplomatic refusal to give up. Either it or Sign initiated a confrontational meeting on this scheduled for November 12. Meanwhile, on the 10th, Deyarmond completed his reassessment of the Mantell crash from the beginning of the year. The object could *not* have been Venus, he concluded, and therefore was a true unidentified. With this added ammunition, some Sign personnel trekked to Washington to attempt to convince Cabell and Vandenberg of the ETH (Ruppelt, 1956: 45). Other than Sneider, we don't know

who attended from the pro-ET side. Deyarmond, Loedding, and perhaps even McCoy are good candidates. Ruppelt wrote that a “group from ATIC” went. The meeting was held at the National Bureau of Standards. Again, we don’t know who attended on the D.C. side. Boggs *is* known to have been there. Ruppelt hints that Vandenberg himself was there. Some representative of the Air Force’s Scientific Advisory Board came (probably Col. Ted Walkowicz). NBS personnel attended. As Edward Condon was then director, he may have had a stiff introduction to ufology at that time. Others, including Cabell, were certainly present.

I suspect that this was the final watershed moment for the project. Boggs, Porter, and ONI essentially won the war. Suddenly all the big scientific guns and overseers were required to peek over Sign’s shoulders and assess their work. The Scientific Advisory Board and George Valley of MIT were to be made aware of all cases. So too Boggs’ office, ONI, and maybe even the NBS (USAF DI, 1948; McCoy, 1948c; Clingerman, 1948b; McCoy, 1948d). Hynek was to be formally commissioned for an assessment, as well as Irving Langmuir and Rand. Going back home to Dayton, Deyarmond and Truettner went about the labor of writing the sanitized final Project Sign report of November 30 (USAF AMC, 1949a). Loedding met with Langmuir and had his views rebuffed. He said that he learned that “his stock was at an all-time low” in Washington (*Trenton Times-Advertiser*, 1954). Sneider continued to believe that the Chiles-Whitted case was undeniable evidence, but it was a battle lost for almost everyone else.

On December 10 the victorious powers in the Pentagon published their own version of an Estimate—Air Intelligence Report number 100-203-72, *Analysis of Flying Object Incidents in the U.S.* (USAF AID & USN ONI, 1948). This was the culmination of AFOAI-DD’s work since early August, augmented by ONI collaboration over the past two months. UFOs are not extraterrestrial (the idea was hardly noticed). UFOs are probably real, but if so there is a small chance that they are Soviet and therefore dangerous. All in all, the word “Soviet” dominates the commentary. This estimate, like that of Sign, was classified top secret. Sign’s Estimate was ordered destroyed. Six days later, the director of research and development ordered that the code word Sign be changed to Grudge. Ruppelt said that the choice of words was not random (Ruppelt, 1956: 59–60). The Air Force bore a grudge against UFO reports. One would guess that quite a few grudges remained among the contending intelligence elements. Ruppelt said that by the end of 1948 the morale on the project was very low and no one wanted to do the work any more. Sneider persisted with his analysis of the Chiles-Whitted object, and his five-page summary, Air Intelligence Report number 102-122-79, was forwarded to Cabell on December 20 (Sneider, 1948b). It has been called, probably insightfully, “The Ghost of the Estimate” by some UFO researchers. Report no. 100-203-72 has also been given this nickname, much less insightfully. It might more properly be labeled “The Assassin of the Estimate.”

By the beginning of 1949, Sign personnel had begun to evaporate. Loedding disappeared from project records. Deyarmond’s attention went elsewhere. Truettner

made one last serious attempt at interviewing about nuclear propulsion (at Oak Ridge), and was given a negative opinion on UFOs by Col. Wassell. He, too, disappeared from the project. The civilian members were relieved of their duties and reassigned to other intelligence tasks within T-2. For Loedding in particular, his role and prestige were never the same. After a few further years of intelligence work, both he and Truettner left AMC. For the higher military ranks (Llewelyn and Sneider), all we know is that they were soon no longer involved, perhaps not even assigned to the same base. Even Clingerman and McCoy became less involved, perhaps because they had also heard that their tenures would soon be up and they would be sent to school and then transferred. The only persons left active on the project were two of the lower ranks: Lieut. Howard Smith and civilian George Towles. Their job was reduced basically to collection and filing. In this condition, or worse, would remain the Air Force commitment to a UFO investigation project until the summer of 1951: two years of neglect (Ruppelt, 1956: 59–95).

The Estimate and Sign had their revenge, however, in an unintended way. For whatever reason, the public and the media had become more interested in UFOs at the turn of the year. Perhaps the Mantell, Chiles-Whitted, and Gorman cases were having an effect on popular opinion, as well as behind the doors of secrecy. Or perhaps the doors of secrecy were leaky. Either way, the media was becoming proactively interested (Shalett, 1949). Sidney Shalett's push into the Pentagon to get Defense chief Forrestal's permission for a *Saturday Evening Post* article was the most spectacular example of this, but other magazines such as *Argosy* and *True* were snooping around as well (Moorehouse, 1949; Keyhoe, 1950a). Shalett visited the Pentagon and Wright-Patterson in early 1949, and got case information and quotes for his two-part article that would appear in April 1949 (Clingerman, 1949a). While he was collecting information, two things happened directly related to our story. The first was that the Pentagon really didn't like the idea of a civilian press person messing around a classified subject and then writing a "Lord knows what" rendition of what he'd found with apparent government approval (Cabell, 1948b). Therefore, the Pentagon determined to produce its own more elaborate report to be released simultaneously with the *Post* article (Boggs, 1949).

The second awkward moment occurred when Walter Winchell apparently was given a "Pentagon rumor" that the UFOs were Soviet missiles, and announced as much on his national radio program (Clingerman, 1949b). The rumor was pretty much what some Pentagon loose cannons would have said if they had been privy to the information and attitude of Air Intelligence Report number 100-203-79, the so-called "Assassin of the Estimate." By killing the Estimate, the Pentagon had produced an awkward and unhelpful rumor that they hurried to deny, but which stuck in many citizens' minds.

The Pentagon was clear in its intent to create and release a countering UFO report, but it blundered in executing the task. Whoever was responsible did not use the AIR information or perspective, or a strong debunking attitude of any kind. Instead, the report—called Project Saucer to match the nickname given Shalett to use in his

article—was written in the mildest agnostic tradition of the post-Vandenberg Project Sign (USNME, 1949). It read like a sanitized Estimate.

How this UFO-friendly report was released is itself a mystery. Someone at AMC in the Public Relations Office had written something called “Flying Saucer Story,” which was aimed at public release in order to give the official story. This was described as an article, whereas the Project Saucer press release was 22 pages long. Still, they may have been one and the same.

This article was shipped to the Pentagon’s director of public relations, and from there to the Intelligence Department. There some disagreement occurred between Boggs, Brig. Gen. Moore, and Cabell (Boggs, 1949). Apparently Cabell himself approved the friendlier Project Saucer release, coming down squarely between the attitude of the Estimate and the attitude of his antipathetic underlings Boggs and Moore. A line from Boggs’s memorandum cited above reads like a comment from Cabell:

AFOIN [Cabell] found no grounds for denying information to the press on incidents and investigative accomplishments such as were furnished Mr. Shalett.

Whether the busy general had time to think through all the aspects of this decision can be debated.

So the Pentagon’s poor communications and blundering had produced the exact opposite effect from what they had seemingly intended: Shalett’s article was the mainly debunking publication and the Pentagon’s release looked like a corrective in the pro-UFO, amazing-unidentified-technology direction.

The individual most confused by all this was a freelance writer brought in by *True* magazine in the hopes of getting more information on the flying disks. The Project Saucer release convinced him to make a serious investigation, which got more and more fascinating. This, of course, was Donald E. Keyhoe: the Ultimate “Revenge of the Estimate,” and an ongoing nightmare for the Air Force for the next 20 years (Keyhoe, 1950b, 1953; Swords, 1996; Jacobs, 1975).

REFERENCES

- Boggs, Aaron J. (1949). USAF report to be released simultaneously with Sidney Shalett’s article. Memorandum. April 25.
- Cabell, Charles P. (1948a). Flying object incidents in the United States. Memorandum to Commanding General, Air Materiel Command. November 3. (Reprinted as Appendix 2.)
- Cabell, Charles P. (1948b). Publicity surrounding flying saucers. Memorandum. November 30.
- Clingerman, William R. (1948a). Letter to Chief of Staff, U.S. Air Force. October 22.
- Clingerman, William R. (1948b). Letter to George Valley. December 2.
- Clingerman, William R. (1949a). Letter to Chief of Staff, U.S. Air Force. February 9.

- Clingerman, William R. (1949b). Letter to Directorate of Intelligence, U.S. Air Force. April 5.
- Cox, Roy W. (1948). Notes taken at Norcatur, Kansas, night of February 18.
- Craigie, Laurence C. (1947). Flying discs. Memorandum to Commanding General, Air Materiel Command, establishing Project Sign. December 30.
- Earle, Wilton. (1948). Letter to Chief, Office of Naval Intelligence. October 14.
- Faulk, Melvin W. (1948). Interview with Mr. Oscar E. Monnig, Secretary, National Meteorological Society. March 18.
- Fitch, E. G. (1947). Flying disks. Memorandum to D. M. Ladd. July 10.
- Fort, Charles. (1941). *The books of Charles Fort*. New York: Henry Holt.
- [Garrett, George D.] (1947). Flying discs. Summary of 16 UFO cases. July 30. (Reprinted as Appendix 1.)
- Hynek, J. Allen. (1949). *Report on unidentified aerial and celestial objects*. Ohio State University Research Foundation project no. 364, for USAF Air Materiel Command. April 30.
- Hynek, J. Allen. (1973). *The UFO experience: A scientific inquiry*. Chicago: Henry Regnery.
- Hynek, J. Allen. (1977). *The Hynek UFO report*. New York: Dell.
- Jacobs, David M. (1975). *The UFO controversy in America*. Bloomington: Indiana University Press.
- Keyhoe, Donald E. (1950a). Flying saucers are real. *True*, January, pp. 11–13, 83–87.
- Keyhoe, Donald E. (1950b). *The flying saucers are real*. New York: Fawcett.
- Keyhoe, Donald E. (1953). *Flying saucers from outer space*. New York: Henry Holt.
- LaPaz, Lincoln. (1948). Letter to Deputy Executive Director, Committee on Geophysical Sciences, Research and Development Board. April 11.
- Loedding, Alfred C. (1948). Low aspect ratio aircraft. U.S. Patent Office no. 2,619,302. Filed Nov. 25.
- Markham, Norman Garrett. (1948). Explosion in the sky near Norcatur, Kansas. Letter to U.S. Army Chief of Staff. February 20.
- McCoy, Howard M. (1947a). Letters to Col. George Garrett. August–September.
- McCoy, Howard M. (1947b). Letter to Commanding General, Army Air Forces. September 24.
- McCoy, Howard M. (1948a). Letter to Central Intelligence Agency, Office of Naval Intelligence, and U.S. Army Intelligence. October 7.
- McCoy, Howard M. (1948b). Letter to Chief of Staff, U.S. Air Force. November 8. (Reprinted as Appendix 3.)
- McCoy, Howard M. (1948c). Letter to Chief of Staff, U.S. Air Force. December 2.
- McCoy, Howard M. (1948d). Letter to Chief of Staff, U.S. Air Force. December 7.
- McCoy, (Mrs.) Howard M. (n.d.) Personal communication.
- McDonald, George C. (1947). Letter to Director, USAF Research and Development. December 22.
- McDonald, James E. (n.d.) Annotation in his copy of Edward Ruppelt's *The Report on Unidentified Flying Objects* at page 92.
- Menzel, Donald H. (1953). *Flying saucers*. Cambridge, Massachusetts: Harvard University.
- Moorehouse, Frederick G. (1949). The case of the flying saucers. *Argosy*, July, pp. 22–24, 92.

- Ruppelt, Edward J. (1956). *The report on unidentified flying objects*. Garden City: Doubleday.
- Ruppelt, Edward J. (n.d.) Edward Ruppelt manuscript archives. Held for CUFOs by the author in Kalamazoo, Michigan.
- Schulgen, George F. (1947a). Memorandum to FBI Liaison Section. September 5.
- Schulgen, George F. (1947b). Intelligence requirements on flying saucer type aircraft. Draft of collection memorandum. October 6.
- Shalett, Sidney. (1949). What you can believe about flying saucers. *Saturday Evening Post*, April 30, pp. 20–21, 136–39; and May 7, pp. 36, 184–86.
- Sneider, Robert R. (1948a). Letter to Chief of Staff, U.S. Air Force. October 7.
- Sneider, Robert R. (1948b). Report to Directorate of Intelligence, U.S. Air Force. Air Intelligence Report no. 102-222-79. December 20.
- Swords, Michael D. (1991). The summer of 1947: UFOs and the U.S. government at the beginning. In George M. Eberhart (Ed.), *The Roswell report*. (pp. 9–38). Chicago: Center for UFO Studies.
- Swords, Michael D. (1996). Donald E. Keyhoe and the Pentagon: The rise of interest in the UFO phenomenon and what the government really knew. *Journal of UFO Studies*, new ser., **6**, 195–211.
- Swords, Michael D. (1997). The McCoy letter. *International UFO Reporter*, **22** (1), Spring, 12–17, 27.
- Todd, Robert. (1997). Bill Moore and the Roswell incident: The true believers deceived. *The Spot Report*, **7**, March 7, pp. 1–8.
- Trenton (N.J.) *Times-Advertiser*. (1954). Princeton engineer believes flying saucers the real thing. October 10.
- Twining, Nathan F. (1947). AMC opinion concerning “flying discs.” Letter to Commanding General, Army Air Forces. September 23.
- United Press. (1948). Meteor blast alarms thousands in Midwest. Unattributed news clip in Project Blue Book file. February 19.
- U.S. Air Force. Air Intelligence Division, & U.S. Navy. Office of Naval Intelligence. (1948). *Analysis of flying object incidents in the United States*. Air Intelligence Report no. 100-203-79. December 10.
- U.S. Air Force. Air Materiel Command. (1946). *German flying wings designed by Horten Brothers*. Technical Intelligence summary report no. F-SU-1110-ND. Dayton: Headquarters, Air Materiel Command. January 10.
- U.S. Air Force. Air Materiel Command. (1949a). *Unidentified aerial objects: Project “Sign.”* Technical Report no. F-TR-2274-IA. Signed by Albert B. Deyarmond and Lawrence Truettner. Dayton: Headquarters, Air Materiel Command. February.
- U.S. Air Force. Air Materiel Command. (1949b). *Unidentified flying objects: Project “Grudge.”* Technical Report no. 102-AC 49/15-100. Dayton: Headquarters, Air Materiel Command. August.
- U.S. Air Force. Directorate of Intelligence. (1948). Information for Dr. George Valley. November 22.
- U.S. Air Force. Project Blue Book (1947–1969). Microfilm records, 92 reels. Available at the National Archives. Specific case files used in this article include: Harmon Field, Newfoundland (1947); Mantell case, Godman Air Field, Kentucky (1948); Norcatur, Kansas (1948); Holloman AFB, New Mexico (1948); Memphis, Tennessee (1948); Plevna and Miles City, Montana (1948); Monroe, Michigan (1948); Hecla, South Dakota (1948);

Chiles-Whitted case, Montgomery, Alabama, and associated Chamblee, Georgia, case (1948); Gorman case, Fargo, North Dakota (1948); as well as information on personnel and activities gained *en passant*, 1947–1949.

U.S. National Military Establishment (1949). Project “Saucer.” Memorandum to the press, no. M 26-49. April 27.

U.S. Navy. Chief of Naval Intelligence. (1948). Letter to Directorate of Intelligence, U.S. Air Force. November 4.

APPENDIX 1 GEORGE GARRETT’S FIRST ESTIMATE

FLYING DISCS

30 July 1947

For purposes of analysis by AFBIR-CO, eighteen reported sightings of “Flying Discs” were selected for breakdown into detailed particulars. Each report was assigned a number and each number appears in the left-hand column of the data on the following pages.

One report, Number 7, has not yet been received and therefore no information is included other than Date, Name of Observer, and Location. The Fourth Air Force is attempting to secure a statement from this observer.

Four reports, Numbers 2, 4, 17, and 18, have not yet been analyzed.

The subject headings on which the breakdown has been made are:

Date
 Hour (Local standard Time)
 Location
 Observer’s Name
 Observer’s Occupation
 Observed from Ground or Air
 Number of Objects Sighted
 Altitude
 Direction of Flight
 Speed
 Distance Covered
 Length of Time in Sight
 Deviation from Straight Flight
 Color
 Size
 Shape
 Sound
 Trail
 Weather
 Manner of Disappearance
 Remarks

Report	Date	*Hour	Location
1	19 May	1215	Manitou Springs, Colorado
2	22 May		Oklahoma City, Oklahoma
3	22 June	1130	Greenfield, Massachusetts
4	24 June		Mt. Rainier, Washington
5	28 June	2120	Maxwell Field, Alabama
6	29 June	1330	Near White Sands, New Mexico
7	1 July		Bakersfield, California
8	4 July	2015	Emmett, Idaho
9	6 July	1345	Clay Center, Kansas
10	6 July		Fairfield-Suisun, California
11	7 July	1145	Koshkonong, Wisconsin
12	7 July	1430	East Troy, Wisconsin
13	8 July	1550	Mt. Baldy, California
14	9 July	2330	Grand Falls, Newfoundland
15	10 July	1600	Harmon Field, Newfoundland
16	12 July	1830	Elmendorf Field, Alaska

* Local Standard Time

Report	Observer's Name	Occupation	Observed From
1		Railroad Employee	Ground
		" "	"
		" "	"
2		Businessman-Pilot	Ground
3		*Not stated	Ground
4		Businessman-Pilot	Air
5		Captain, AAF	Ground
		" "	"
		" "	"
		1st Lieut., AAF	"
6		Employee, NRL	Ground
		" "	"
		" "	"
		Wife of _____	"
7		Civilian Pilot	Ground
8		United Air Lines Pilot	Air
		" " " Co-Pilot	"
9		Major, AAF	Air
10		Captain, AAF	Ground
11		CAP Instructor	Air
		CAP Student	"
12		CAP Pilot	Air
		CAP Passenger	"
13		1st Lieut., ACCNG	Air
14		Constable, Newfoundland	Ground
		Constabulary	
15		TWA Representative	Ground
		PAA "	"
16		Major, AAF	Ground

*From letter received, observer is obviously well educated.

Report	Deviation from Straight Flight	Color	Size
1	Climbed, dove, hovered overhead, resumed original course	Silver	Apparently small
2			
3	None reported	Silver, very bright	Small
4			
5	Zig zag course "much like a water-bug"	Brilliance slightly greater than a star	Not stated
6	None reported	Some solar specular reflection	Not stated
7			
8	None reported	Almost dusk; could not distinguish	Impossible to determine
9	None reported	Very bright and silvery colored	30-50' in diameter
10	None reported	Reflection from sun	Comparable to a C-54 at 10,000'
11	Descended edgewise, stopped at 4,000' and assumed horizontal position. Proceeded in horizontal flight for 15 seconds, stopped again, then disappeared	Not stated	Not stated
12	None reported	Not stated	Not stated
13	None reported	Of light-reflecting nature	Apparent depth of a P-51
14	None reported	Phosphorous color	Not stated
15	None reported	Silvery	Same span as a C-54 at 10,000'
16	Followed contours of mountains five miles away from observers	Resembled a grayish balloon	Approx. 10' in diameter

Report	Shape	Sound	Trail	Weather
1	No definite shape could be determined	None	None	CAVU
2				
3	Irregular; round, Did not appear particularly disc-shaped	None	None	Not stated
4				
5	None stated; seemed like a bright light	None	None	Clear moonlight
6	No details other than that shape was uniform with no protuberances	None	Possible vapor trails	CAVU
7				

Report	Shape	Sound	Trail	Weather
8	None definite, but seemed flat on base with the top slightly rough in contour	None	None	CAVU
9	Round, disc-shaped	None	None	CAVU
10	No shape could be distinguished	None	None	Sunny
11	Not stated, but report refers to "saucer" several times	None	None	CAVU
12	Same as Report No. 11	None	None	CAVU
13	Flat object, of light-reflecting nature which appeared to be without vertical fin or any visible wings	None	None	Not stated
14	Egg-shaped, or like barrel head	None	None	CAVU
15	Circular in shape, like wagon wheel	None	Bluish black trail approx. 15 mi. long	Clear with scattered cumulus at 8 to 10,000'
16	Resembled balloon	None	None	Not stated

Report	Manner of Disappearance	Remarks
1	Climbed very fast and out of sight	No definite shape could be determined and even with the aid of 4 to 6 power binoculars object could not be brought into focus
2		
3	Obscured by a cloud bank	From letter this observer wrote, it is obvious he is a well-educated person. Seeks no publicity.
4		
5	Lost in brilliancy of the moon	Observers (2 rated, 2 air intell.) phoned Field Ops to ascertain no scheduled experimental a/c were in vicinity. Sky chart attached to re[port?]
6	Cannot explain, except that reflection angle may have changed abruptly	Observer is Admin. Asst. in the Rocket Sonde Sect. of NRL. Two other "scientists", and wife of one, were in party and made same observation
7		
8	Don't know whether they put on a tremendous burst of speed, or disintegrated. However, they did disappear into sunset	Observers were Pilot, Co-Pilot, of scheduled UAL DC-3. Stewardess also saw objects. Suggest reading of very detailed statements.
9	Unexplained	When first sighting object near horizon, observer looked at chart in his lap to check position. When he looked out window again, object was off his left wing at 11 o'clock

Report	Manner of Disappearance	Remarks
10	Disappeared at an angle of about 30° above the earth's surface	Rolled from side to side 3 times in its path across the sky. Sun reflected from top side, but never from underside, even when turning
11	Unexplained	None
12	Unexplained	None
13	Pilot (at 300 MPH) attempted to keep object in sight, but unable to do so	Observer contacted bases in area w[hich?] reported no a/c in air at time
14	Unexplained	First 4 discs flying line-a-trail
15	Unexplained	Seemed to cut clouds open as it passed thru. Trail was like beam seen after a high-powered landing light is switched off.
16	Not stated	Object was observed paralleling the course of a C-47 then landing.

From detailed study of reports selected for their impression of veracity and reliability, several conclusions have been formed:

(a) This “flying saucer” situation is not all imaginary or seeing too much in some natural phenomenon. Something is really flying around.

(b) Lack of topside inquiries, when compared to the prompt and demanding inquiries that have originated topside upon former events, give more than ordinary weight to the possibility that this is a domestic project, about which the President, etc. know.

(c) Whatever the objects are, this much can be said of their physical appearance:

1. The surface of these objects is metallic, indicating a metallic skin, at least.
2. When a trail is observed, it is lightly colored, a Blue-Brown haze, that is similar to a rocket engine's exhaust. Contrary to a rocket of the solid type, one observation indicates that the fuel may be throttled which would indicate a liquid rocket engine.
3. As to shape, all observations state that the object is circular or at least elliptical, flat on the bottom and slightly domed on the top. The size estimates place it somewhere near the size of a C-54 or a Constellation.
4. Some reports describe two tabs, located at the rear and symmetrical about the axis of flight motion.
5. Flights have been reported, from three to nine of them, flying good formation on each other, with speeds always above 300 knots.
6. The discs oscillate laterally while flying along, which could be snaking.

APPENDIX 2
MAJ. GEN. CABELL PRESSURES PROJECT SIGN

Department of the Air Force
Headquarters United States Air Force
Washington

3 Nov 1948

SUBJECT: Flying Object Incidents in the United States
TO: Commanding General, Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

1. By letter dated 30 December 1947 from the Director of Research and Development, Headquarters USAF, your Headquarters was required to establish Project "SIGN".

2. The conclusion appears inescapable that some type of flying object has been observed. Identification and the origin of these objects is not discernible to this Headquarters. It is imperative, therefore, that efforts to determine whether these objects are of domestic or foreign origin must be increased until conclusive evidence is obtained. The needs of national defense require such evidence in order that appropriate countermeasures may be taken.

3. In addition to the imperative need for evidence to permit countermeasures, is the necessity of informing the public as to the status of the problem. To date there has been too little data to present to the public. The press, however, is about to take it into its own hands and demand to be told what we do or do not know about the situation. Silence on our part will not long be acceptable.

4. Request immediate information as to your conclusions to date and your recommendations as to the information to be given to the press. Your recommendation is requested also as to whether that information should be offered to the press or withheld until it is actively sought by the press.

BY COMMAND OF THE CHIEF OF STAFF:

/sig/

C. P. CABELL
Major General, USAF
Director of Intelligence, Office of
Deputy Chief of Staff, Operations

APPENDIX 3
COL. MCCOY REPLIES

Basic ltr fr Hq USAF, 3 Nov 48 to CG, AMC, "Flying Object Incidents in the United States"

1st Ind

MCIAT/ABD/amb

Hq AMC, Wright-Patterson Air Force Base, Dayton, Ohio. 8 Nov 48

TO: Chief of Staff, United States Air Force, Washington 25, D. C., ATTN: AFOIR

1. In attempting to arrive at conclusions as to the nature of unidentified flying object incidents in the United States, this Command has made a study of approximately 180 such incidents. Data derived from initial reports have been supplemented by further information obtained from check lists submitted by mail, from interrogations of other field agencies, and by personal investigation by personnel of this Command in the case of incidents that seem to indicate the possibility of obtaining particularly significant information.

2. The objects described fall into the following general classification groups, according to shape or physical configuration:

- a. Flat disc of circular or approximately circular shape.
- b. Torpedo or cigar shaped aircraft, with no wings or fins visible in flight.
- c. Spherical or balloon shaped objects.
- d. Balls of light with no apparent form attached.

3. Some of the objects sighted have definitely been identified, upon further investigation, as weather or upper air scientific balloons of some type. A great many of the round or balloon shaped objects indicated in paragraph 2c above are probably of the same nature, although in most cases, definite confirmation of that fact has been impossible to obtain.

4. Some of the objects have been identified as being astro-physical in nature. For example, in daylight sightings, the planet Venus has been reported as a round, silvery object at extremely high altitude. Action is being taken to obtain the services of a prominent astro-physicist as a consultant, to study all of the incidents to determine whether some can be identified as meteors, planets or other manifestations of astral bodies.

5. Arrangements for accomplishing a study of the psychological problems involved in this project are being made in coordination with the Aero-Medical Laboratory at this Headquarters. The possibility that some of the sightings are hallucinations, optical illusions or even deliberate hoaxes has been considered.

6. Although explanation of many of the incidents can be obtained from the investigations described above, there remains a certain number of reports for which no reasonable everyday explanation is available. So far, no physical evidence of the existence of the unidentified sightings has been obtained. Prominent scientists, including Dr. Irving Langmuir of the General Electric Company, have been interviewed to determine whether they could advance any reasonable explanation for character-

istics exhibited by the objects sighted. In an early interview, Dr. Langmuir indicated that these incidents could be explained, but insufficient data were available at that time on which to base definite conclusions. It is planned to have another interview with Dr. Langmuir in the near future to review all the data now available, and it is hoped that he will be able to present some opinion as to the nature of many of the unidentified objects, particularly those described as "balls of light."

7. All information that has been made available to this Headquarters indicates that the discs, the cigar shaped objects, and the "balls of light" are not of domestic origin. Engineering investigation indicates that disc or wingless aircraft could support themselves in flight by aerodynamic means. It is probable that the problems of stability and control could also be solved for such aircraft. However, according to current aerodynamic theory in this country, aircraft with such configurations would have relatively poor climb, altitude and range characteristics with power plants now in use.

8. The possibility that the reported objects are vehicles from another planet has not been ignored. However, tangible evidence to support conclusions about such a possibility are completely lacking. The occurrence of incidents in relation to the approach of the earth of the planets Mercury, Venus and Mars have been plotted. A periodic variation in the frequency of incidents, which appears to have some relation to the planet approach curves, is noted, but it may be purely a coincidence.

9. Reference is made to "The Books of Charles Fort" with an introduction by Tiffany Thayer, published 1941, by Henry Holt & Co., New York, N. Y. It appears that similar phenomena have been noted and reported for the past century or more.

10. In view of the above, the following conclusions are drawn:

- a. In the majority of cases reported, observers have actually sighted some type of flying object which they cannot classify as an aircraft within the limits of their personal experience.
- b. There is as yet no conclusive proof that unidentified flying objects, other than those which are known to be balloons, are real aircraft.
- c. Although it is obvious that some types of flying objects have been sighted, the exact nature of those objects cannot be established until physical evidence, such as that which would result from a crash, has been obtained.

11. It is not considered advisable to present to the press information on those objects which we cannot yet identify or about which we cannot present any reasonable conclusions. In the event that they insist on some kind of a statement, it is suggested that they be informed that many of the objects sighted have been identified as weather balloons or astral bodies, and that investigation is being pursued to determine reasonable explanations for the others.

12. A report, summarizing the results obtained from analysis of the data and a technical investigation of the engineering aspects of the objects described, is nearly complete, and a copy will be forwarded to your Headquarters in the near future.

FOR THE COMMANDING GENERAL

H. M. McCOY, Colonel, USAF
Chief, Intelligence Department