

COMMERCIAL JET CREW SIGHTS UNIDENTIFIED OBJECT — Part 1

Richard F. Haines

CASE SUMMARY: Flight XXX of a major United States air carrier was flying from San Francisco to John F. Kennedy airport in New York. At 4.45 p.m. local time the wide body L1011 aircraft was at 37,000 feet altitude under autopilot control. Its indicated airspeed was 275 knots, the true airspeed was 490 knots and its actual (calculated) ground speed was 540 knots which indicates the presence of a 50 knot tail wind.

Upon reaching a point about 80 n. miles from a radio navigation beacon named "Badger" (BAE) which is near Milwaukee, on airway J-34, the sky ahead and above was clear, calm, and blue. Below the aircraft was a fairly continuous cloud deck which obscured part of the lake's surface. The shore line of Michigan was clearly visible except for some haze. The flight crew was relaxing while also keeping watch outside the aircraft. Figure 1 shows the captain sitting almost as he said he sat when he first caught sight of the smooth, silvery disc ahead and to the upper side of his aircraft's flightpath. (See pages 4/5 for Figs. 1-4).

Captain P.S. noticed the apparently round metallic-appearing object suddenly, very near where he was looking. He remarked that it "...splashed into view full size." It was like it "...tore through the atmosphere ... like the atmosphere opened up."

The shiny disc seemed to shift toward the lower right slightly as the pilot sat forward about 12 inches in his seat to get a better look. A photograph taken from the first officer's eye position of the captain in this second viewing position is shown in Figure 2. As the object continued to move more rapidly to the left downward along a smooth arcing path, he leaned farther forward yet until his chin was within about eight inches from the glare shield (shown in Figure 3) with his hands touching the glare shield. When in this viewing position he saw the object roll (relative to its path of motion) so that it could be seen from the side. It appeared to be about ten times wider than thick. Six evenly spaced, jet black, round "portholes" were

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seen along its edge. Then as it continued to pass the aircraft to the left, the captain leaned so far forward that his right cheek touched the top of the glare shield; he was looking 90° to the left from straight ahead at this point. Then an extremely bright reflection of sunlight seemed to come from the top left-hand end of the flattened disc. It lasted only a fraction of a second as the object slid out of sight behind the window post.

Quickly the captain leaned back in his seat again moving his head through an approximate distance of 20 inches and turning farther to his left to see the object almost centered in his left quarter window. Figure 4 shows the captain's head and body position at this point in the sighting. He is seen pointing to the approximate location where the object disappeared from view, apparently travelling radially away from the aircraft (perhaps) in a shallow climb.

As soon as the object disappeared the captain turned toward the first officer, who was already turned to his extreme left to talk with the flight engineer, and said, "Did you just see anything?" The first officer replied, "Yes, a very bright light flash." The flight engineer did not see the object.

Additional Facts

The flight leg on which the aircraft was flying during this sighting was between BAE (Milwaukee, Wisconsin) and SVM "Salem" near Detroit, Michigan. A copy of the computerized flight plan for this flight is

A NASA scientist, Dr. Haines has contributed several articles to the pages of *Flying Saucer Review*, and we are pleased to add to the list this excellent report of a recent observation from a commercial aircraft over the United States. Dr. Haines, who is a member of the Center for UFO Studies founded by Dr. J. Allen Hynek, writes that he has recently concluded spectral analyses of the Valentich (Australian pilot missing with his aircraft after UFO encounter) voice-ATC tape. A paper on this is due to appear in *The Journal of UFO Studies*. His published works include his book *Observing UFOs*, and an anthology, edited by him, entitled *UFO Phenomena and the Behavioral Scientist*.

EDITOR



Figure 1: Captain P.S. in the cockpit of the L1011 jet airliner as he sat during the first second of the sighting. (t = 0 sec.)



Figure 2: The captain leans part-way forward to get a better view of the object. (t = 1.3 sec.)

included as Appendix A* with an explanation of the abbreviations. The author also obtained from the captain a U.S. High Altitude Chart (US/HI) 1 of the region, the relevant portion of which is included as Appendix B.‡ Referring to this chart it may be noted that check points Adale and Haste are not listed on the flight plan while check point Alpha is. The estimated time of arrival (ETA) at BAE was 20.33 GMT and the aircraft actually arrived there at 20.36 GMT.

Captain P.S. said that the sighting took place almost exactly nine minutes past the BAE check point at 20.45 GMT. Flying at 540 knots ground speed the aircraft would have been 80 n. miles from BAE on a heading of 096° or approaching the Michigan state coastline near Holland, Michigan.

Weather details were obtained from three sources as described below. The captain remembered flying well above a heavy undercast in the Evanston, Illinois area to approximately half-way across Lake Michigan where the clouds thinned to permit him to see the lake's surface. When the sighting occurred he could see the Michigan coastline clearly except for some haze in all directions. There was no turbulence noted.

* Too complicated to be set up in a box in our pages. We understand from Dr. Haines that, if required, details may be obtained from him at 325 Langton Avenue, Los Altos, California 94022, U.S.A. [International Reply coupons should be sent — EDITOR.]

‡ Too large for our pages. We have extracted the relative details for our sketch map, but understand that a Xerox copy of the relative section may be obtained from the author at the address as in the previous footnote.

**Route J-34, beacons and airfields Southern Lake Michigan area (from original Appendix B of manuscript).
Extracted from TWA U.S. High Altitude Chart. The cross and circle mark area where sighting was made.**

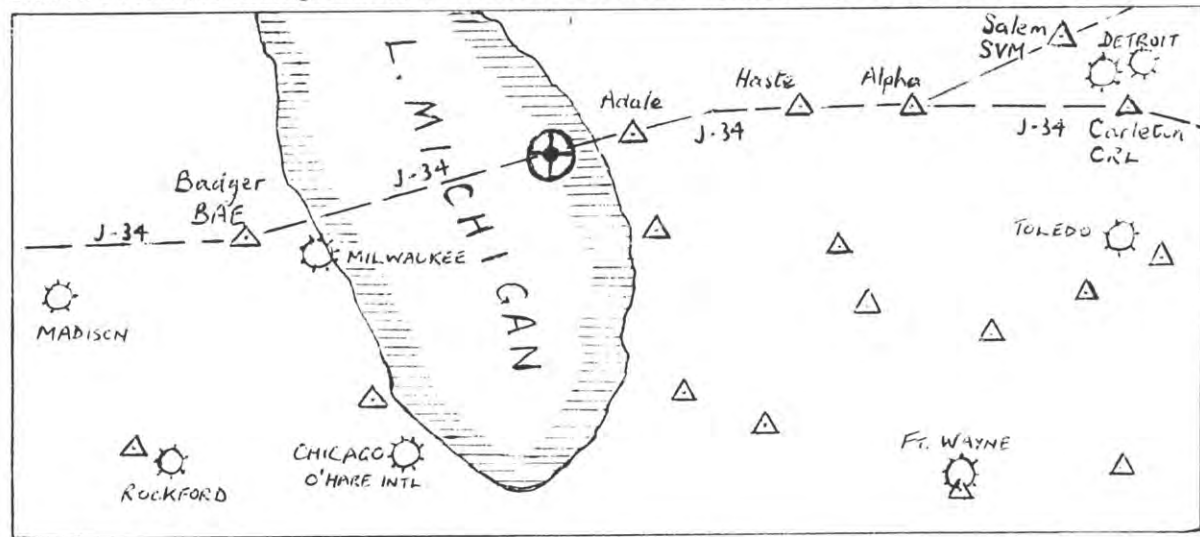




Figure 3: The captain leans far forward, with object at position 3 shown in Figure 7 — in part 2 of this article. (t = 2.2 sec.)

The second source of basic weather information comes from the airline's flight plan in the 14th column labelled TP/W for temperature [degrees below zero (F)] and winds (knots). It indicates -51°F air temperature at 37,000 feet altitude and a tail wind of about 50 knots. The third source of weather information was obtained from CUFOS.³ Because of its completeness, this report is included as Appendix C. (See end of this article).

The flight plan showed that the Tropopause Height (TH) in column 5 showed a 4,000 foot altitude gradient within the 173 miles separating BAE from Alpha. Pilots try to stay above or well below this height because of the possible presence of clear air turbulence at TH. One other significance the TH has is that clouds normally do not form above it. The amount of water vapour that air can contain decreases exponentially with falling temperature. Thus, cooling (at high altitudes) condenses out water vapour and prevents the formation of clouds. While the aircraft was flying only 1,000 feet below TH no turbulence was encountered nor did the autopilot disconnect at any time between BAE and SVM, according to the captain.

[Part 2 of this report will appear in the next issue of Flying Saucer Review — ED].

Notes

1. This description was made on July 30, 1981, in the Sunnysvale, California office of Al Reed, the professional artist and MUFON field investigator who did an outstanding job reconstructing the basic shape and details of the object.
2. The first officer had been sitting facing the captain with his head turned to the rear of the cockpit talking with the flight engineer during about the first two seconds of the sighting. When the captain exclaimed, "What's that?" the first officer turned to the right in time to see the bright flash of light from the object. Apparently, he did not see



Figure 4: The captain sitting part-way back with the object at position 6 shown in Figure 7. (t = 5 sec.)

the object after this time because the captain's head was in the way.

3. This weather analysis was performed by Steven Toci for the Center for UFO Studies, Evanston, Illinois.

Appendix A: See footnote under *.

Appendix B: See footnote under ‡.

Appendix C: A description of the weather over Southern Lake Michigan, July 4, 1981

Surface conditions at 4.00 p.m.; The temperatures around Southern Lake Michigan ranged from the low 70s to the low 80s Fahrenheit. Milwaukee reported 76, O'Hare 83, South Bend 70, Benton Harbor 74 and Muskegon 80.

Cloud cover extended across the southern part of the lake. Overcast skies were reported at Benton harbor, South Bend, and Kalamazoo, with cloud deck bases of 3,000 ft., 10,000 ft. and 8,000 ft. respectively. South Bend reported scattered clouds at 1,900 ft. in addition. Although the thickest clouds were reported in Indiana and Michigan, scattered clouds at 10,000 ft and 12,000 ft. and also some high thin cirrus were reported at Milwaukee, Ohio and Muskegon. So the cloud picture seems to be of a high, thin layer and a scattering of middle clouds (10,000 ft.) covering all of Southern Lake Michigan, with an overcast layer below that near Indiana and far south western Michigan. The boundary of the more significant clouds can be seen over the lake in the satellite view. Judging from the satellite shot, the boundary appears to be close to the co-ordinates of the sighting.

Winds around Southern Lake Michigan were generally from the east on the western shore and westerly on the eastern shore.

An inversion layer could have been set up over the lake due partly to the cooling of the air at the surface by the lake water, and partly to warming further up. The warming aloft would have been caused by air sinking out over the lake in response to the divergent winds at the shoreline.

Surface visibilities at shoreline station were good on the western shore, but poorer on the eastern shore south of Muskegon. South Bend, Benton Harbor, and Kalamazoo reported haze and visibilities of 2½ to 3 miles. The National Weather Service at Chicago, forecast light and variable winds over the lake (6-12 kt) and widespread fog for the afternoon and night of July 4th and also July 5th. And fog was reported by a ship with 2½ mile visibility near 42 N. and 86 W. at 7.00 p.m.

Some water temperatures: at 12 noon, Chicago reported 62°F, and Muskegon 57. At 7.00 p.m., St. Joseph, Mi. reported 49 and Michigan City reported 58 (and both of the latter reported calm seas). A Marseilles radar summary for (close to) the time of the sighting indicated thunderstorm activity in southern Wisconsin and north western Indiana, but nothing over southern Lake Michigan.

A look at the upper atmosphere shows a trough extending approximately northeast to northwest right over southern Lake Michigan (at 7.00 p.m.). The atmosphere was in general, relatively warm and moist, and wind speeds were low. Some figures estimated from upper air charts for the area: at 850 millibars (1486m) the temperature was 16°C, dew point 14°C winds SW or W 5-10kt. — at 700mb (3108m) the temperature was 6°C, dew point 2°C, winds W at 5-10kt.

— at 500mb (5800m) the temperature was -7°C, dew point -27°C, winds NW at 15-20kt. — at 300mb (9590m) the temperature was -34°C, with little or no moisture, winds W-NW at 45-50kt.

Finally, a sounding for 7.00 a.m. from Green Bay is enclosed — some features over Green Bay could have been advected south-eastward to the southern lake area by late afternoon behind the trough mentioned earlier. There is quite a bit of moisture and numerous alternating wetter and drier layers, also three small temperature inversion layers (720mb, 625mb, 560mb). Winds are light.

I don't feel that the 7.00 a.m. sounding from Green Bay will exactly represent the profile over southern Lake Michigan at 4.20 p.m. However, due to advection from that direction and due to the fact that the same air mass covers both areas, it seems that some of the features *maybe* similar (at least above the lower layer where lake cooling and subsidence warming are taking place).

I may point out that the fact that moisture should mainly be under 500mb (5800m). The satellite picture indicates relatively warm (and low) cloud tops for the heavier clouds over southern Lake Michigan, at least low compared to the storms and high cloud tops obvious on the satellite picture to the south.

Steven Toci

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going to Lord Clancarty by the former Chief of the Defence Staff, Lord Hill-Norton, or of his implication that he didn't know what happened to UFO reports after they arrived at the Ministry of Defence. Now surely, if there are — for example — UFO reports made by service officers or men, then a Chief of the Defence Staff should know of their existence, and that in some of them there could well be “more than met the eye,” but that someone — before the Admiral's time as Chief of Staff — had decided they were “of no interest.” (Some readers will recall BBC's *Man Alive* programme in February 1972 when, after a summary of the puzzling, indeed astounding, events at Lakenheath in 1956 had been related, the Ministry of Defence spokesman who was taking part, was pressed about the official reports of the extremely important affair. His blustered reply was that the “. . . reports had been destroyed.” At the time that sounded very convenient for someone intent on hiding the facts from the public gaze.)

So we may assume that that authoritative newspaper, *The Times*, under a cloak of mild frivolity, did a little bit of covering-up of its own by not letting slip a mention that a former Chief of Defence Staff, who was

puzzled by what happened to UFO reports once they reached the Ministry of Defence, had chosen to support Lord Clancarty. We are well aware that most of the 2,250 reports over four years are reports of mundane things, or of celestial bodies. But some of them are not, and whispers that emerge from the Ministry of Defence have it that some of them are very strange indeed, which is why Lord Hill-Norton's “someone”, and perhaps *The Times* as well, considered the public should in no way be encouraged to think on these matters.

Postscript:

On March 10, 1982, five days after the House of Lords question the BBC2 *Out of Court* programme featured Lord Clancarty, Lord Kimberley (whose latest airship was on view) and other peers, at Cardington. There was also a separate interview with Lord Hill-Norton who stated that the evidence was enough to show that there was a cover-up, and that things had even been kept from him when he was Chief of Defence Staff. He pointed out that he would not be speaking in front of the TV cameras if he had been made party to them!

COMMERCIAL JET CREW SIGHTS UNIDENTIFIED OBJECT — Part 2

Richard F. Haines

IN the first part of this article it was related, in detail, how the captain (Captain “P.S.”) of a wide-body L1011 jet airliner which was flying over Lake Michigan on airway J-34, saw an apparently round metallic-appearing object suddenly “. . . splash into view, full size,” and swing close by on the aircraft's port side. The sighting lasted about five seconds: the first officer also saw something . . . a “very bright light flash” during the last second or so of the encounter.

Details of the investigation

The author was first called by the captain on July 10, 1981, about his sighting. The brief telephone conversation established the basic facts.

A pilot report form was filled out by the captain and received on July 11th. A personal in-depth interview was held on July 30th in the presence of Al Reed, a professional graphic artist as well as a MUFON field investigator. Together we worked to help the witness first recognise and then reconstruct the shape, surface details, and orientation of the object he had reported. After several hours, a colour air-brush rendition of the basic object was achieved by Reed. This illustration is

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presented as Figure 5; it represents the appearance of the disc when it was at position 5 in the next illustration (Figure 6).

The intense flash of light is depicted and is thought to have come from a reflection of sunlight since the geometry of the sun, aircraft, and object was correct to produce such a reflection. Captain P.S. was also loaned a colour chart to take along on a flight following the same flight path. He was to try to visually match the sky colours if possible. This was accomplished during the week of August 3rd. The appearance of the sky seen in the upper half of the aircraft's forward window was most nearly matched by a medium blue (Pantone 292-A) shade⁴ while the next

Figure 5:
The artist, Al Reed, shows the witness one version of a colour impression of the object.



horizontal band of sky about 1/4th of the full window's height just below the top half was most nearly colour-matched by the same (blue) tone but about two shades lighter (Pantone 291-A). The hazy sky seen in the bottom 1/4th of the forward window was most nearly colour-matched to an off-white (Pantone Cool Gray 1-M).

The author and the captain met at San Francisco International Airport on August 7, 1981 and spent several hours in the cockpit of an L1011 aircraft. Many black and white photographs were obtained as well as tape recordings; the captain made hand sketches of the object's outline at various window projection positions. These sketches were made on clear acetate sheets taped to the windshield's surface. Figure 6 is an approximate reduced copy of these two sheets and surrounding window posts/frames. It should be remembered that: (1) each outline (of the UFO) was drawn as it appeared to the captain with his eyes located in the (approximately) same location as they were during the sighting. Therefore, both the general path of apparent object motion relative to the windows is represented as is the approximate apparent size of the object. (2) all sketches are estimated to be

within ± 0.5 inch of the original window projection position for the UFO, (3) outline 1 corresponds with the captain's head as located in Figure 1; outline 2 — Figure 2; outline 3 and 4 — Figure 3; for outline 5 the captain indicated that his right cheek was pressed against the top-front of the glare shield; and outline 6 — Figure 4, and (4) a number of carefully repeated reconstructions of the sighting showed that the entire event lasted about five seconds. The approximate duration separating each observation period corresponding to these six sketches is given in Figure 7.

In order to try to derive the apparent size of the object at each of these six (sketched) positions, the linear distance from the bridge of the captain's nose to the centre of each sketch was measured to ± 5 mm. accuracy. These values permitted trigonometry calculations to be made. A plot of the object's apparent change in length is given in Figure 7. It also shows the approximate elapsed time between each observation.

It is seen that the apparent size of the object changed by a factor of four to one, i.e., from about five to twenty degrees arc during the sighting. These windshield sketches (and subsequent calculations) support the general finding of a rapidly enlarging and

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EDITOR

COPY OF ROUGH SKETCHES MADE BY THE WITNESS IN THE AIRCRAFT COCKPIT WITH HIS HEAD LOCATED AS IT WAS DURING THE SIGHTING FOR EACH DRAW-IN SEPARATELY.

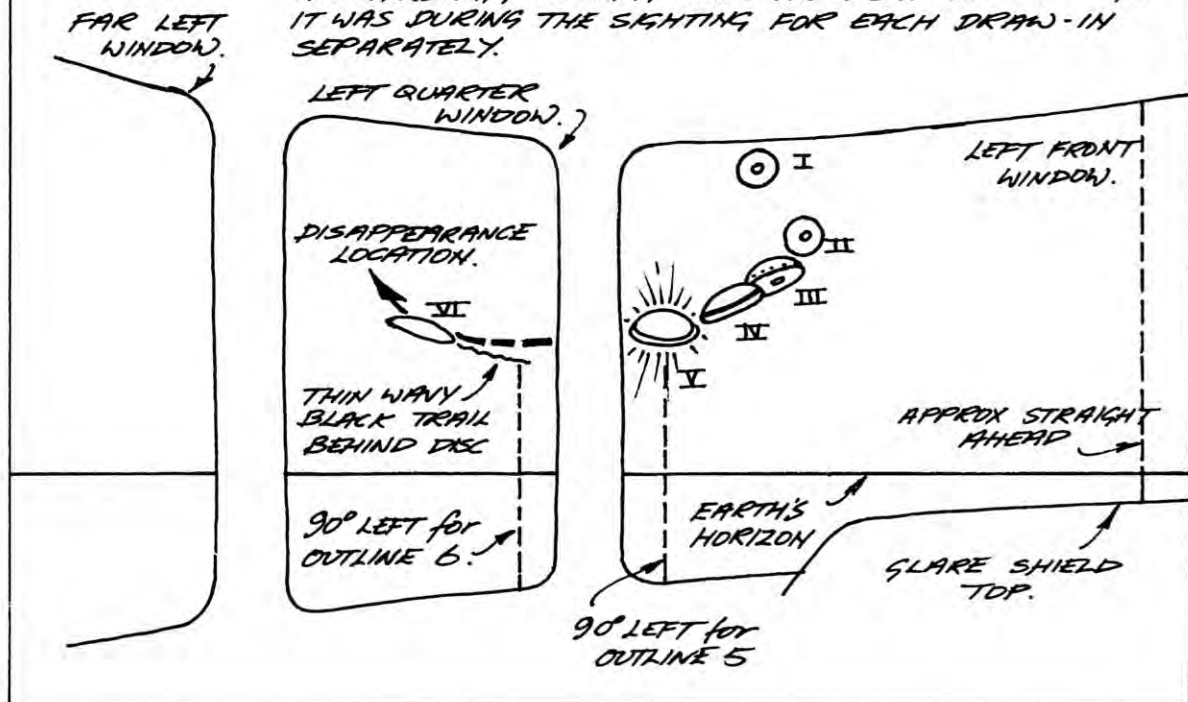


Figure 6.

then diminishing aerial object with the largest apparent dimension occurring about mid-way through the sighting.

According to his report form, the captain did not see the object change acceleration or give off smoke or vapour; it did not flicker, throb, pulse, change colour, nor break into parts. It did not appear on any radar units to his knowledge either.⁵

Specific Visual Impressions of the Object: The captain remarked on several occasions about the appearance of the object and the sky around it when it was in position 5 (see Figure 6). He said that he saw a fan-shaped region extending out from the rear side of the object, i.e., back in the direction it had just come which was of a much darker blue than the rest of the sky. He had the distinct impression of being able to see "... way out into space" inside this area. He did not remember seeing any such effect in the other locations. He also recalled seeing six jet black, round "portholes" spaced along its edge (see position 3) as it rolled into an edge-on attitude. About one-half second later it had rolled further so as to be seen directly from the side. He was quite certain that the black port-holes were no longer visible as separate, sharply defined circles but now seemed blurred together into one long, dark smear. It was about one second later

when the object had continued its roll even further that the captain remembers seeing an extremely interesting phenomenon. At this point he could see the top surface of the object which was shaped like a shallow cone.

With his right cheek pressed up against the glare shield, his head craning 90 degrees to the left, and his

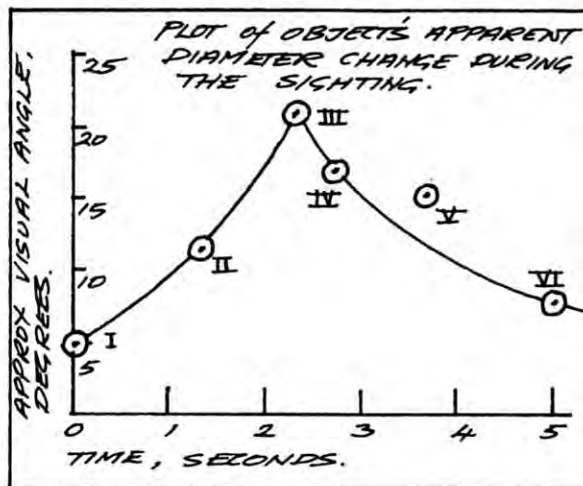


Figure 7.

line of sight just passing the right side of the left window post, he recalled seeing a very intense flash of white light emanating from the top left side of the object. This flash was brief and may have been due to a reflection of sunlight off the smooth reflecting (top) surface. Yet he recalled another visual experience either before, during, or just after this flash. He called it a "cobweb-like effect." Despite over an hour's attempt with the artist to find an acceptably similar example of this irregular pattern of semi-transparent radiating and crossing lines, our efforts proved unsuccessful. The closest visual effect found was produced by the artist air brushing many straight-line segments to represent the edges of transparent glass panes, some of which intersected (and even passed through) each other. Curiously, none of these "cobweb" phenomena entered into the fan-shaped area which trailed behind the object (i.e., back toward the direction from which the object had just come). What could have accounted for this unusual visual effect?

One suggestion was that, because of the very intense and brief flash of light from the object, the captain had seen the rather well known "entoptic" retinal blood vessel pattern reflection. In other words, the light flash had made it possible for him to see a temporary image of his own retinal blood vessels which originate from the "blind spot" and radiate along tortuous paths, becoming smaller and smaller in diameter, until they are no longer visible at some angular distance from the point where the observer is looking. An ophthalmic fundus photograph of a typical retinal blood vessel pattern was shown to the captain to see if it was at all similar to what he recalls seeing. It was not.

Another suggestion made to the author by a colleague at the Boeing Airplane Company in Seattle was that the captain may have witnessed an atmospheric effect that is well known to many pilots of certain high performance aircraft. The effect is that of sheets of vapour that originate over a wing during high speed flight. The effect occurs for the B747 wing among other type of aircraft and is produced by air pressure rarefaction which creates sheets or panes of water vapour which become visible in the sunlight.⁶ If this suggestion is the correct one it suggests that the object was in the process of making an accelerating turn, one condition required to produce the rarefaction effect. That the object very likely was turning very rapidly is supported by other calculations presented below.

Referring to sketch number six in Figure 6, the captain also recalls seeing a "... thin, wavy black trail" extending behind the object as the object grew smaller and smaller in the left quarter window. He was so impressed with the appearance of the silvery object and its behaviour that he did not recall very much other detail of the surrounding sky or conditions within the cockpit. This is to be expected under the circumstances.

When he was asked about how large the object was, the captain simply said that there was no way of knowing for sure. Nevertheless, when pressed, he offered the statement that it "... could have been as large as a major league baseball stadium." He was very impressed with the smoothness with which the object moved through the atmosphere

The object was not produced as a result of a light polarisation effect. First, the captain was not wearing eyeglasses of any kind. Secondly, a check of the L1011 front (left-hand side) and left quarter windows had virtually no visible striations or other regions normally associated with polarisation of sunlight (due to stress patterns within glass). This was checked with a special polarising filter in the cockpit on August 7, 1981. In addition, since the sun was located above and to the right-hand side of the aircraft,⁷ sunlight did not strike these glass panes at all during the sighting.

The object was very likely not a result of sunlight reflected off the inside surfaces of the cockpit windows for the following reasons. First, a careful geometric reconstruction of the sun's position relative to the cockpit windows on the right-hand side showed that only a small area of sunlight entered these windows. Inspection of the cockpit structure in this region showed no highly reflective surfaces that could have caused such a complex image that moved from right to left. To illustrate this, Figure 8 is a wide angle photograph of the entire L1011 cockpit showing this right window region. Secondly, even if some internal structure could have caused this visual image, the air was calm, the aircraft remained on autopilot control in both heading and pitch, and yet the captain indicated that the object passed through an arc of at least 70 degrees during the sighting. Additionally, the left front windshield is a curved surface while the left quarter window is almost flat. This combination of (reflecting) surfaces makes it unlikely that the object's motion, as described, could have been caused by a moving bright light inside the cockpit.

The third reason why the object was probably not an internal reflection off the windows is that the percentage of light that is reflected from this window glass is at most 6 per cent (more likely 4-5 per cent) with the majority passing through the glass to the outside. Any light source within the cockpit would have had to be very bright indeed to be seen as a flash as bright as sunlight. No such interior lights could be identified in this aircraft.

Finally, both witnesses remarked to the author independently that they thought the object was outside the cockpit. Part of this belief for the captain is based upon his firm knowledge that the object disappeared behind the window post momentarily as it travelled in a smooth and continuous manner from his right to left.

How did the Object Disappear? Significantly, the captain was certain that the object did not simply pass



Figure 8: Panorama view of the cockpit of the L1011 on the aircraft centreline.

Photo: R. F. Haines.

out of sight behind his aircraft as would occur if a free floating balloon had been passed in flight. Instead, he was sure that he last saw the object almost centered in his left quarter window, becoming smaller and smaller while in a "shallow climb." The simple geometry of these details points assuredly away from a simple balloon explanation. Yet there is another observational detail that supports this interpretation, namely, the fact that the object appeared to descend to the approximate altitude of the aircraft and then level off. Because the aircraft remained on autopilot control, the pitch or roll attitude of the aircraft did not change to cause such an appearance (of external object relative motion). Whether or not there is some connection between the appearance of the short, wavy black line behind the object as it was departing, is not known.

Object Flight Path reconstruction⁸

When the relative bearing of the object is plotted, the ground track and speed of the aircraft are included, and the head position of the captain is taken into account, it is possible to reconstruct the approximate flight path of the object through the atmosphere. Since the actual dimensions of the object are not

known, this value is arbitrarily chosen (at 250 feet width). Also, the variation in the temporal intervals between each of the six windshield sketches adds to the plotting error. The results of this reconstruction are given in Figure 9; the aircraft's flight path is shown by the long dashed line and the object's by the short dashed line. It can be seen that the object approached the aircraft on an interception course at a high velocity, slowed down at its closest approach of perhaps 650 feet (dependant upon actual size of the object) and then accelerated away as shown. While the object seemed to leave travelling to the left, relative to the windows, it actually departed in the same direction as the aircraft was travelling. This visual effect was caused simply by the fact that the aircraft had a higher forward velocity than did the object, thus causing the object to appear to fall behind.

It is extremely challenging to try to find a terrestrial aircraft explanation for this sighting, in light of all of the above facts. The captain was a Navy fighter pilot who was familiar with all types of interceptor aircraft. He was certain it was not any kind of aircraft he had seen before, not did he think he saw a balloon. Did he impute an extraterrestrial explanation actually to having seen a conventional aircraft (perhaps due to

some psychological, stress-related, or other reason)? This possibility deserves further comment.

A Brief Psychological Profile for the Witness

The fact that captain P.S. had logged more than 21,000 hours over his 31 flying career indicates several things of importance. He was a careful planner who had an aviation career in mind for a long time. He had flown the SNJ, F4U, F9F-2, and F2H aircraft in the Navy and had logged hundreds of flight hours in each of these aircraft types: DC-3, DC-4, B707, B747, and the L-1011. One does not get to be the captain of a commercial wide-body jet aircraft without demonstrating such traits as intelligence, command decision-making, successful stress-coping behaviour, and social ability. This author found all of these traits in the witness. In addition, captain P.S. was precise in his details, had excellent uncorrected vision (as determined by numerous vision exams), and was not prone to make unwarranted conclusions about what he had experienced.

During an interview, the captain was asked what books and movies he had read and seen about UFOs, he replied, "Well, I'm not interested in such things. I did look at a UFO paperback my son had (before the sighting) and I did see Star Wars I, Star Wars II, and Close Encounters of a Strange Kind . . . or something like that." The witness had never seen anything prior to this sighting that would qualify as a UFO sighting and certainly was not looking for some sort of flying disc-like object.

Nevertheless, when the author asked him what he thought the object was he replied that it must have been some sort of "space ship." He also referred to the jet black circles along the edge of the object as "port-holes," indicating that he interpreted it to be a material craft of some kind. To him, these were not unwarranted conclusions but, rather, were entirely consistent with what he had seen. He made this interpretation without any apology or discomfort; he was comfortable with his statement. Captain P.S. believes that some form of life "probably exists" in outer space. He has no difficulty in accepting the possibility that our planet is being visited by such life forms.

Auxiliary Investigations

The Center for UFO Studies in Evanston, Illinois and the Phenomena Research Organisation in Seattle, Washington were contacted during the week of July 20th to see if anyone else had reported a UFO in the southwest corner of Michigan. In addition, a check was made with the Aviation Safety Reporting Office at Ames Research Center about the possibility that a pilot report had been made. All three efforts proved unsuccessful. The Center for UFO Studies was called a second time on September 1, 1981, with negative re-

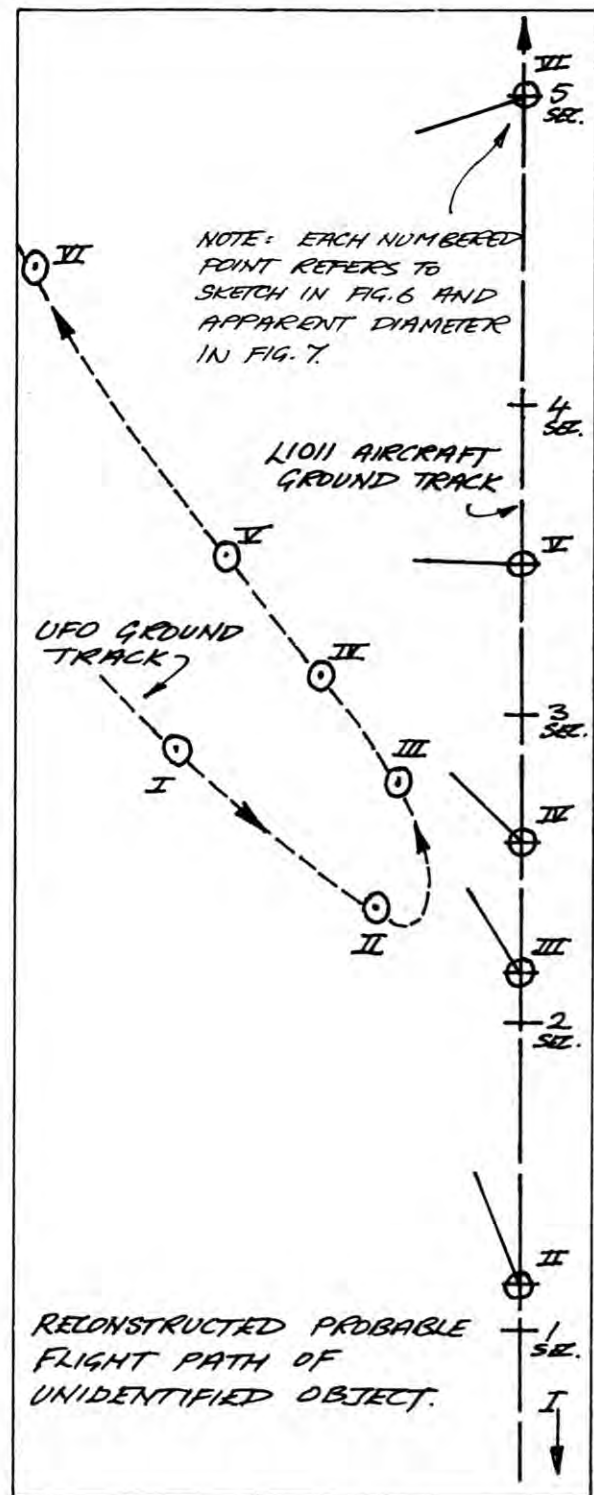


Figure 9.

sults. Apparently, no-one else reported sighting this aerial object.

Summary Observations

This UFO sighting qualifies as being a truly outstanding case on a number of grounds, not least of which is the observational power and credibility of the primary witness, a 54-year-old senior captain. Yet the case is also outstanding because of the nature of the preliminary conclusions one can draw from the evidence. One such conclusion is that the disc-like object travelled under its own power along an apparently parabolic (or circular) trajectory that first approached the jumbo jet and then departed along a different flight path. Another conclusion, based upon the reported occurrence of a vapour condensation-like effect during its high speed directional change, is that the object seemed to obey the same physical laws which are known to govern terrestrial aircraft. Of course if the strange "cobweb-like" effect was not a condensation effect, this conclusion may be invalid. The large angular size, the bizarre outline shape, the intriguing jet black "portholes" along the edge and the jet black, round spot in the middle of the bottom of the object, all point elsewhere than toward a conventional aircraft. Its apparent trajectory would seem

to rule out a free-floating weather or research balloon. Other possible explanations such as birds, meteorites, or high altitude optical phenomena also are unlikely.

In the final analysis, this sighting is merely that of an unidentified aerial object making a pass on a commercial jet airliner on a clear sunny day in July.

Notes

4. Chart number 298-80 was used. This chart is manufactured by the American firm "Letraset."
5. The captain indicated that Chicago Center radar had a range of about 150 miles minimum. Air traffic flying at 37,000 feet altitude over Traverse City, Michigan are spotted on their radar. Too much time had elapsed to obtain radar tapes from Chicago Center.
6. This visible vapour effect is actually condensation produced by the interaction of very moist air (typically greater than 75% humidity) and a rapid reduction in local air pressure as occurs over wings. These sheets of vapour actually delineate.
7. The author is grateful to Tom Gates for providing the following solar position values: 41° above horizon; 250.3° magnetic bearing. The magnetic variation was 1° W which was too small to be included in the bearing calculation.
8. The author thanks Jim McCampbell for providing the initial suggestion and subsequent preliminary calculations for this flight path reconstruction

* * * * *

Supplementary Information on Jetliner sighting

Dr. R. F. Haines writes: The April 1979 issue of the bulletin of the Aerial Phenomena Research Organisation (pp. 4-5) contains a brief article by Dave Kenney entitled "1952 Catalina Sighting." The article concerns a sighting by several hundred Boy Scouts and adult staff members in August of 1952 at about 10.30 am at Camp Fox on Catalina Island, just off the coast of southern California. There are interesting similarities between the aerial phenomenon reported in this article and the object described by the pilot of the L1011 aircraft on July 4, 1981 over Lake Michigan. Briefly, the Boy Scouts saw "... a circular (object) with a double-convex contour ... the sky around the object was much darker than the sky itself."

The article goes on to say the cigar-shaped object was first in a vertical orientation but "... was slowly roll-

ing to a horizontal position ... (it) had a bright metallic appearance, similar to a spun aluminium pan. There were no protuberances or markings visible, except for what I assumed to be windows evenly spaced around its periphery ... the sky around the object appeared to be dark blue or purple — much darker than the sky itself. This "halo of darkness" extended out a relatively short distance and moved along with the object." This object cast a ground shadow that was (subsequently) found to be about 150 feet across. It disappeared in an accelerating climb, remaining in a horizontal orientation.

The apparent similarities between these two sighting reports are striking, indeed. If you should know of other similar reports please write to the author. His mailing address is: 325 Langton Avenue, Los Altos, Calif. USA 94022.

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