

# THE LUKE AIR FORCE BASE

## UFO SIGHTING

*Barry J. Greenwood*

ON July 12, 1976, the records of the U.S. Air Force's Project Bluebook were made public for the first time. After 29 years, researchers could examine in detail the case histories of UFO sightings that have been long buried under secrecy stamps and red tape. The National Archives in Washington, D.C., which is responsible for the safekeeping of the Bluebook files have produced a series of microfilm copies of the entire file amounting to about 94 reels or some 140,000 pages of data. Also included in the collection are numerous photographs, slides, movie films and sound recordings from Bluebook's past investigations.

I have acquired many of these microfilm reels (at considerable expense) to satisfy my curiosity about the history of Bluebook and to examine first hand reports from the tremendously voluminous case files. In going through the reels for 1953, one incident in particular stood out and it is upon this case that I will focus attention in this report. It is certainly one of the most interesting photographic sequences in the Air Force's study.

The Luke AFB sighting is not totally unknown to students of the UFO subject. Captain Edward Ruppelt related some of the details in his book *The Report on Unidentified Flying Objects*, page 229. A summary of the case also appeared in Project Bluebook's "Status Report No. 11" published May 31, 1953. Both accounts were lacking on many points, including the availability of the photographic evidence for the past 24 years. Although the file on this case is not as comprehensive as we would like it to be, it contains considerably more than the average Bluebook case file, with telegrams, letters and evaluations. It is unfortunate that it has been withheld so long since much more study could have been performed than is on hand.

### The sighting

On March 3, 1953 at about 13.25 Mountain Standard Time (20.25 GMT), Captain Roderick D. Thompson, 3600th Fighter Training Group, Luke Air Force Base, Glendale, Arizona, led a flight of three F-84 type aircraft on a simulated combat strike. With him were student pilots Lt. Jack E. Brasher and Lt. Thomas W. Nale 3rd.

The following statement is the signed testimony of Captain Thompson dated March 5, 1953:

"On 3 March, 1953 while leading a flight of three F-84 aircraft on a simulated combat strike to Nellis AFB convoy No. 8, I observed a high altitude condensation pattern of an aircraft or object of peculiar and unfamiliar shape and size.

"At the time of observation we were cruising at

An interesting look back at an early US Air Force photo case taken from the Bluebook files. This case is particularly fascinating when one compares it with, for example, the ATV camera crew's film taken in 1971.  
EDITOR

25,000 feet altitude at 500 mph true air speed and on heading of 305° magnetic course. My position was approximately EJGE 4525 on the GEOEF grid and the pattern first appeared at 10 o'clock high and was estimated to be approximately over EJFE 5520 at 35,000-45,000 feet.

"My first view was at about 3/4 plan view and I estimated it to be about 300 feet in diameter. However, size and distance were difficult to determine since there were no known dimensions or references. I called the object to the attention of my flight but no one was able to identify it. The main peculiarity, other than size, was that the object making the pattern remained invisible, but the pattern began with a smooth knife-like leading edge and developed back into a 3/4 perfect crescent shape, very thin in depth and with an irregular trailing edge. At this time there was no condensation trail of the familiar type often made by jet or conventional aircraft when flying at altitude, but rather it appeared as if an entire wing surface or high sweep-back or circular design was producing a thin condensation from the leading edge back.

"I turned toward the object and began a climbing chase at full power. The object made a slight dipping turn toward the NW and began climbing at about 20 degrees of climb. At this time I was at about right angles and the pattern appeared as a sharp-nosed and very thin object with an irregular, wispy trailing edge, and about 300-500 feet long. Immediately thereafter a heavy condensation trail began to form behind it and extended for perhaps a thousand feet or so back, at which point it separated and a double trail extended for perhaps another thousand feet and then ended abruptly. The contrail stayed with the object and did not extend back across the sky as exhaust contrails generally do.

"I attained 30,000 feet and about 560 mph true air speed and chased him for about 50-60 miles. I was carrying a full armament and fuel load, however, I was closing fairly well. I estimated his speed at about 400 mph true. I fired about 30 feet of gun camera film and at this time was over the river just north of Parker Dam. I figured it would take quite a long chase to catch him and that it was probably some craft out of Murco AFB, so I broke off the chase and continued to Nellis AFB.

"The object was first observed at about 13.25 (MST) hours and I chased him for about seven minutes before breaking off. I was unable to get into position for a picture of the plan view, but did get some excellent pictures of the side view.

"Neither I nor any member of the flight was able to identify or to actually see the object itself. This statement is submitted only as an incident report of aerial phenomena observed in flight."

Signed  
Roderick D. Thompson  
Captain, Instructor Pilot

The two student pilots did not accompany Capt. Thompson on his chase but they did view the object when it first appeared and confirmed the basic details.

Weather data at the time of the sighting was as follows:

—Clear visibility — 45 miles, Temperature — 48 degrees F, Dew point — 26, Winds aloft — 30,000 ft. from 300 degrees at 35 knots, 45,000 ft. from 270 degrees at 50 knots.

When Capt. Thompson landed, the film was immediately taken for examination by Air Force Intelligence.

### Investigation

Air Force Intelligence at Luke sent a report on March 6 to ATIC in Dayton, Ohio giving all available information for Project Bluebook's use. Bluebook sent a list of questions eleven days later as a follow-up to Luke's report and a response was received from Major William D. Barnes, Intelligence Officer at Luke. The exchange went as follows:

**Bluebook:** Although the object on the film does not appear to be a vapour trail, is the pilot of the F-84 completely convinced that it was not a vapour trail?

**Barnes:** Pilot stated in original statement that it was a vapour pattern. He is positive it was not a vapour condensation formed behind a conventional or jet engine. The vapour pattern covered the entire surface of the object. The three pilots or the camera never saw the actual object.

**Bluebook:** To the pilot, was the object as dark as it appears on the film?

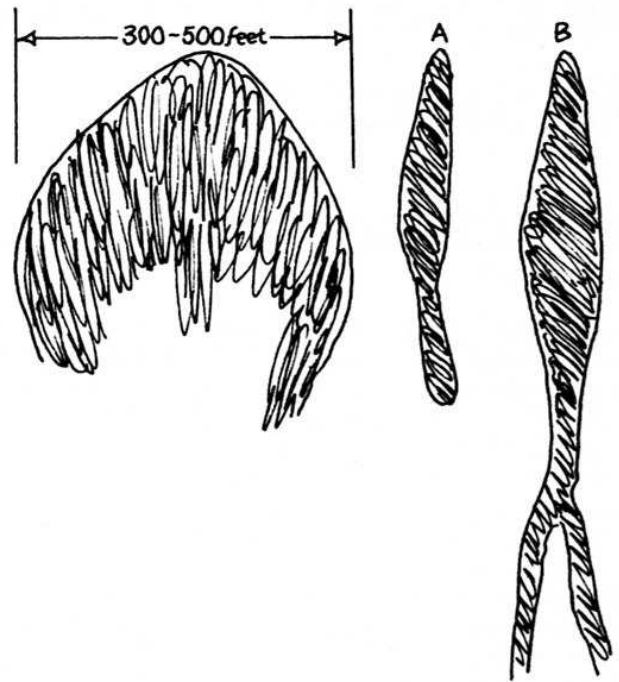
**Barnes:** Film is negative. If film were reversed to positive print, it would show as it actually was, i.e. a white vapour trail or condensation pattern.

**Bluebook:** How close did the pilot estimate he got to the object?

**Barnes:** Without one known dimension, size and distance is extremely difficult to estimate. Rough estimate would be 5-10 miles.

**Bluebook:** Check local air traffic to determine if possible vapour trail could be cause of the sighting.

**Barnes:** Local flying training was being conducted during time sighting was made. However, sighting was made outside of local flying area and above local flying altitude. The pilot who made the observation



Left: Front of object as seen and drawn by Capt. Thompson

A: Capt. Thompson's first view and,  
B: Subsequent close-up view

states that it could not have been any of the jet models in general use but that it might have been an experimental model from Muroc Lake.

**Bluebook:** ATIC feels that a long thin cloud may have caused the sighting. Were there any cirrus cloud formations in the area? What altitude was the cloud deck below the aircraft?

**Barnes:** Sky was absolutely clear at time of sighting at all altitudes in the visible area. Approximately 100 miles SE of area, broken fog bank layer had tops at 6000-7000 feet. There were no higher clouds in the area. Pilot states it positively was not a cloud. The pattern he photographed was forming at the time of observation. It had direction and motion at the rate of approximately 400 mph true air speed.

A check for other aircraft in the area was made by ATIC with only one possibility. An inquiry to Edwards AFB in California brought this reply:

"Only poss. AC was B-36 CMA (9464) took off 0800 hrs 3 Mar. 53 for 8 hr. flight. No way to establish if AC was in that area."

Examination of the film by ATIC analysts dismissed this possibility as the contrail was not at all like that of a B-36 aircraft's vapour condensation.

In a memo dated June 24, 1953, it was stated that Bluebook personnel discussed the possibility that a guided missile could have been the cause of the sighting. Members of the Guided Missiles Section of ATIC stated that chances are slim for a missile being in the vicinity of Luke. It was standard practice for planes

standing by to shoot down any missile that got away from the testing grounds. It was also agreed that a missile would not make the contrail shown at the reported altitude. The analysts expressed the opinion that the contrail was formed by two aircraft at high altitude and then the discussion ended.

ATIC finally determined that the object shown on the film was not identifiable and the film was to be forwarded to its Photo Reconnaissance Laboratory. A report on the film is given here:

#### **Analysis of 16 millimetre motion picture film of unidentifiable object producing unusual vapour trail:\***

**Summary.** The 16 millimetre negative motion picture film of an unknown flying object was submitted by the ATIC for examination by the Photo Reconnaissance Laboratory, Directorate of Laboratories, WADC. It was found that the film contains several motion picture sequences of a dark streak in the sky, which would appear as a white cloud or vapour trail in a positive print. The photography is clearly discontinuous or in sequences, as indicated by breaks in the trails' position and altitude. In the final sequence the streak shows a division or fork, but it is not apparent during motion projection whether the streak changes size or shows other evidence of being a vapour trail from a moving object.

Paper prints from this film clarify the nature of the trail, but fail to show any object at the point where the trail is being generated. In the final sequence, the point of generation is definitely receding from the point of division of the trail, supporting the belief that the trail is indeed a vapour trail from a rapidly moving object. It was found from trail that no measurements of velocity or distance from the camera position can be made with any reliability because of insufficient reference information in the frames.

The trail itself appears to be a combination of two effects. One is a long dual trail, as though from a twin exhaust propulsion unit. The fork in the trail would then appear to be the result of a steep banking turn, with respect to the camera position, followed by a quick return to nearly level flight. The other trail effect is of shorter duration, a broader trail apparently generated by broad lifting surfaces. As this short trail component dissipates, a dark streak can be seen between it and the exhaust trail, suggesting that the lifting surface is inclined slightly with respect to the camera position.

Near the end of the film, both the length and thickness of the broad trail component increase to roughly twice their size in the earlier frames of the film, suggesting that the photographic plane may have come closer to the object. However, this assumption holds only if the object has not accelerated and is not generating a heavier trail in the later frames. The pilot's report indicates some acceleration, making this assumption somewhat doubtful.

**Analytical Procedures** — Motion Picture Projection of the Negative Film. This was tried first, using a Bell & Howell D-1B projector to see what overall impress-

ion could be gained from the sequences. At no time was an object visible that could be located at the source of the trail. Appreciable changes of direction in the approach path taken by the plane are indicated by rotation in the attitude of the trail. However, no motions within the trail itself can be observed during projection. In the last sequence, the division in the trail appears as the complete trail projects outside the picture frame. At no time in the sequence is the end of this trail visible, so that its durability and rate of vanishing are not shown.

**Description of Camera Used** — The F-84 aircraft is equipped with the type N-9 general purpose 16 millimetre gun camera which can be set to operate at 16, 32, or 64 frames per second, with corresponding shutter speeds of 1/40, 1/60, and 1/160 seconds. It is also provided with an overrun system, which continues to take pictures for 1, 2, or 3 seconds after the trigger switch is released. This provides for photography of strikes made by the guns.

When the trigger switch is released, a black bar appears in the upper left corner of the picture as the camera continues to operate, indicating the point in the sequence where the gunfire ceased. At the end of the overrun period, the camera shows one or more overexposed frames and the bar is not visible when the next sequence is triggered. However, the next sequence may be triggered before the overrun period has elapsed, in which case the bar disappears and the camera continues to operate without interruption.

**Information from 10 Diameter Paper Enlargements** — Five enlargements to 10 diameters were made at points along the film to see if further information could be obtained. The white vapour trail is clearly outlined in these photographs, but the object producing the trail remains invisible. The start of the trail is sharp, however, confirming the pilot's impression of a leading knife edge.

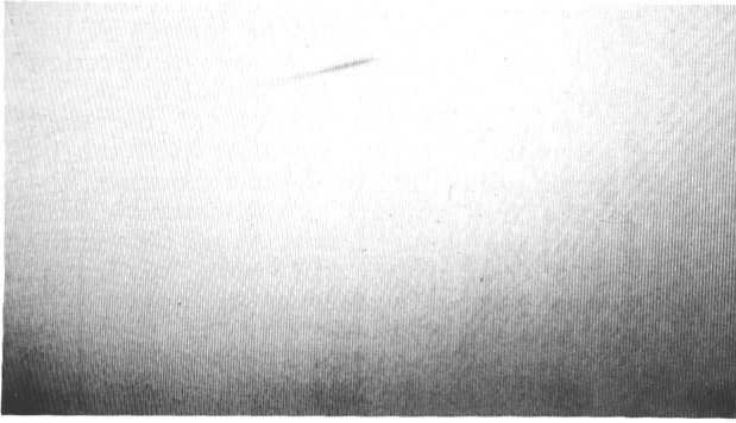
These enlargements definitely show a two component structure in the vapour trail. The long part of the trail appears sharp, and is itself a double trail, as from a dual exhaust propulsion unit of some sort. At several points along its length, faint dark traces of clear sky can be seen between the two trails, in addition to the clear division in the trails near the edge of the field of view. This double trail impression is weak, however, because of the grainy structure of the photography at this enlargement.

The other component of the trail is shorter and also broader, as though from a wing or similar lifting surface. This component dissipates rapidly and is separated from the exhaust component by a perceptible black streak on one side. The short trail appears to be centrally located with respect to the exhaust trail, roughly the same amount being visible both above and below the exhaust trail.

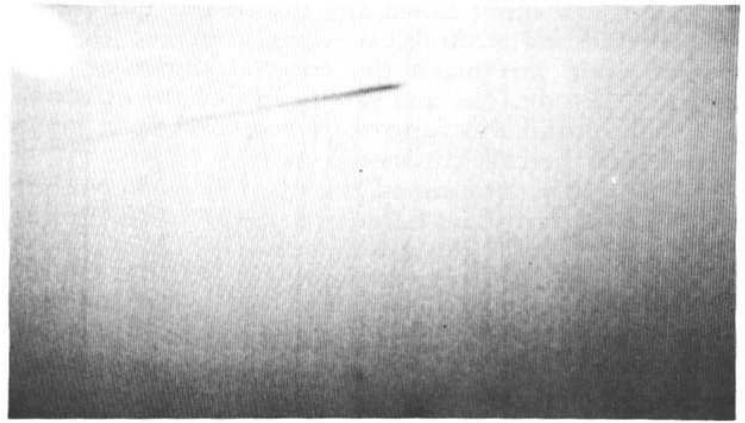
Measurements on the successive photographs show perceptible motion of the object position away from the fork in the exhaust trail. This seems to verify that the streak is indeed a trail issuing from a rapidly moving object. The dimensions of the broad trail cannot be measured with any precision, but there is an indication that the photographic plane was able to approach the object. It is estimated that the

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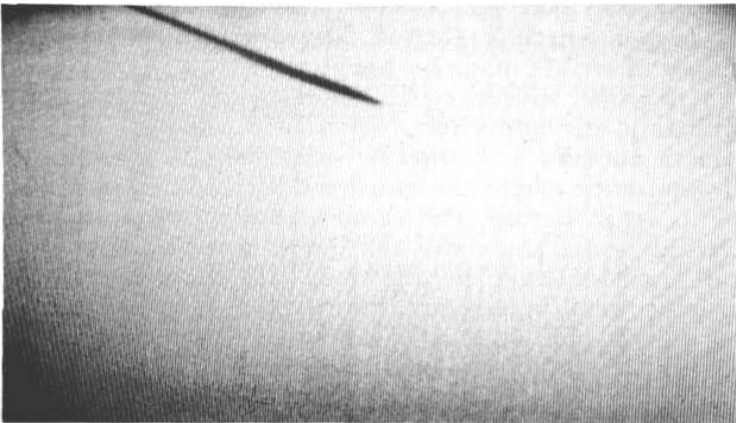
\* (Analysis report slightly edited for clarity—BJG).



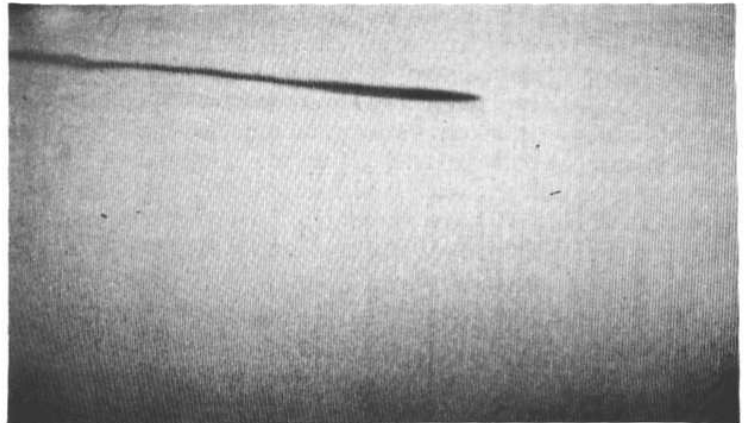
**No. 1: Object when first filmed**



**No. 2: Pilot draws closer. White bar of gun camera mechanism visible in upper left**



**No. 3: Object now much closer. The plane's banking turn changes apparent angle of object**



**No. 4: Object now at its closest. Fork in trail is now evident - just**

broad trail in the final pictures is almost twice its size in the single print, No. 1, taken near the start of the film. This may (probably) indicate that the photographic plane approached to (about) half the original distance from the object, but the angle between flight paths is not known, and relative velocities cannot be determined with any useful precision.

An attempt was made to determine the range of a portion of the vapour trail and the fork. Detailed examination of the film showed an apparent pattern of puffs and variations that repeated from one frame to the next. It was proposed to measure the change in apparent dimension of part of this trail that could be identified and from this to calculate the range, knowing the approximate time elapsed and the speed of the photographic plane. However, the error that had to be allowed in these measurements exceeded 100 percent in the final range estimation. This amount of uncertainty, coupled with the unknown flight path angles, prevents any useful estimate of the object's speed.

The following camera cycling intervals were observed on the film during the last sequence:

- a) 19 frames triggered.
- b) 45 frames of overrun.
- c) 41 frames triggered.
- d) 46 frames of overrun to end of film.

#### **Conclusions**

- 1) The white streak photographed is probably a

vapour trail from a rapidly moving object of unknown velocity. The object itself is invisible in the photographs.

2) The exhaust vapour trail, apparently from a twin propulsion unit, is more pronounced at the end of the film than at the start, as though the object were accelerating in response to pursuit. The configurations in the trail appear to be due to manoeuvres performed by the object.

3) An additional vapour trail, thought to be due to lifting surfaces, is also in evidence, but it dissipates rapidly. This additional vapour trail appears to be centered around the exhaust trail.

4) Within the period of time represented by the film, the photographic plane may be reduced the distance between the object and itself. However, the flight paths are not parallel by a considerable angle so that the object's distance and velocity with respect to the plane cannot be determined with useful precision.

#### **Recommendations**

It is recommended that the Aircraft Laboratory be consulted for further analysis of vapour trail shown in the film.

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The Aircraft Laboratory was consulted and a final statement was issued on June 11. It said that the negative gun camera film and the positive prints from

the film strips were examined and the A.C. Laboratory concluded that they were unable to identify the object forming the traces shown in the photographs. They made the suggestion that two aircraft rather than one may have formed the traces and that the distance may have been sufficiently great to prevent visual detection or to register on the film.

### Discussion

Relatively few movie films have been taken of unusual aerial phenomena and only a fraction of these have been made available in their entirety for detailed examination. Since I am not an expert on photography, I will not pretend to render any authoritative commentary on the technical aspects of the film. This has already been done by the Air Force as stated in this article. The National Archives holds the original film and copies may be obtained from them. I would like to make a number of observations which I feel place this sighting in an "unidentified" category.

First let us summarize the sighting in brief with additional data from Ruppelt's book to help clarify technical data regarding the location of the incident.

Capt. Thompson's position was about 130 miles west of Luke. At 23,000 feet he saw the vapour trail but no aircraft. Climbing to 35,000 feet, Capt. Thompson still could not see what caused the trail even though he had closed to within three miles of it. Thompson shot about thirty feet of gun camera film and then broke off pursuit 70 miles north of where he had first seen the trail.

A number of possible explanations come to mind when reading the report. The meteor theory was considered by Bluebook for a short time during the investigation. Indeed, a cursory glance at the object may look like the image of a streaking meteor but we must return to the testimony of Capt. Thompson. Seven minutes had elapsed between the first sighting of the trail and the final break-off. The pilot chased and was able to close ground on the unidentified object which he estimated had travelled at 400 mph. This is completely verified as the object appears a good deal larger near the end of the film than at the beginning. There is simply no way we can suspect a meteor as being the culprit. Meteoric velocities lie anywhere between 25,000 and 160,000 mph, wholly too fast for Capt. Thompson's observation.

A lenticular cloud was rejected absolutely by

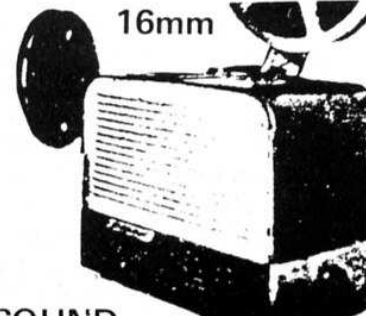

Thompson and the Air Force analysts. The object had motion and direction and weather conditions on that day were clear and cloudless.

There is no reason to suspect a hoax. The sighting was confirmed by the witnesses, all of them U.S. Air Force pilots who had nothing to gain by falsifying the report. As is well known, cinematic evidence is very difficult to fake without sophisticated equipment and observation of this film would leave no doubt as to its authenticity.

The only other explanation left is that which the Air Force settled upon in its final conclusion: "Pattern was formed by vapour trail of 'two unknown aircraft' (my emphasis) at high altitude." The Air Force's evaluation of "two unknown aircraft" is a good example of the post-Robertson Panel explanatory techniques. A double vapour trail was seen — therefore: two aircraft! No detailed proof to support this appears in the file and it seems to be merely an opinion by an unnamed Air Force officer. There is no other evidence on the film to suggest two aircraft except a form well back of the head of the trail. How may two aircraft present an image of a single, sharp, leading edge through continuous changes in perspective as Capt. Thompson's plane approached? Additionally, in the clear air of the upper troposphere-lower stratosphere an aircraft should have been easily visible from the distance of three miles — yet there is no sign of wings, tail section, or anything else. Radar detected nothing. No airbase had any planes in the air that could be identified with the object and the only planes that could have flown at the reported altitude were experimental models which were all accounted for during the investigation. Of course such things were ignored when it came down to a final conclusion. The Luke case was probably among the first group of UFO reports to be subjected to the official debunking policy as recommended by the Robertson Committee, i.e. "to strip the Unidentified Flying Objects of the special status they have been given."

Perhaps foreign aircraft? It is quite unlikely that another nation would be willing to test advanced aircraft over the United States at the risk of being shot down or of being involved in an accident. The political and military consequences are simply too great.

It is evident, based on the information in the Bluebook files, that the object seen over Arizona on March 3, 1953 must be regarded as a genuine UFO pending any further data to the contrary.

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