

# UFOs OVER LAKENHEATH IN 1956

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This is the second of four illustrative reports referred to by Dr. McDonald in the talk\* he gave to the Symposium on UFOs at the 134th Meeting, AAAS, Boston, Mass., on December 27, 1969. Nothing was known publicly of these events until they were discussed in the Condon Report. In a letter dated January 8, 1970, Dr. McDonald suggested that readers of FSR might like to know what happened over East Anglia on the night of August 13-14, 1956. We are sure they *would* like to know, and we are pleased to be able to present this remarkable account. Dr. McDonald, whose other cases will be published in subsequent issues of FSR, is Professor of Atmospheric Sciences at the University of Arizona, Tucson.

THIS case is a specific illustration of what I regard as serious shortcomings of case-investigations in the Condon Report and in the 1947-69 Air Force UFO programme. Scientific inadequacies in past years of UFO investigations by Air Force Project Bluebook have *not* been remedied through publication of the Condon Report, and there remain scientifically very important unsolved problems with respect to UFOs. The investigative and evaluative deficiencies illustrated in this, and other cases examined in detail, are paralleled by equally serious shortcomings in many other cases in the sample of about 90 UFO cases treated in the Condon Report. Endorsement of the conclusions of the Condon Report by the American National Academy of Sciences appears to have been based on entirely superficial examination of the Report and the cases treated therein. Further study, conducted on a much more sound level, is needed.

## Introduction of the case

One of many scientifically intriguing UFO reports that have lain in USAF/Bluebook files for years without knowledge thereof by the scientific community, the Lakenheath case was conceded to be unexplainable in the Condon Report.

My discussion will be based upon the 30-page Bluebook case-file, plus certain other information presented on it in the Condon Report. None of the names of military personnel involved are given in the Condon Report. (Witness names, dates, and locales are deleted from all of the main group of cases in that report, seriously impeding independent scientific check of case materials.) I secured copies of the case-file from Bluebook, but all names of military personnel involved in the incident were cut out of the Xerox copies prior to releasing the material to me. Hence I have been unable to interview personally the key witnesses. However,

there is no indication that anyone on the Colorado Project did any personal interviews either, so it would appear I have had access to the same basic data used in the Condon Report's treatment of this extremely interesting case.

For no justified reason, the Condon Report not only deletes witness names, but also names of localities of the UFO incidents in its main sample of 59 cases. In this Lakenheath case, deletion of locality names creates much confusion for the reader, since three distinct RAF stations figure in the incident and since the discharged non-commissioned officer, from whom the Committee received first word of this UFO episode, confused the names of two of those stations in his own account that appears in the Condon Report. That, plus other reportorial deficiencies in the presentation of the Lakenheath case in the Condon Report, will almost certainly have concealed its real significance from most readers of the Report.

Unfortunately, the basic Bluebook file is itself about as confusing as most Bluebook files on UFO cases. I shall attempt to mitigate as many of those difficulties as I can in the following, by putting the account into better over-all order than one finds in the Condon Report treatment.

## General Circumstances

The entire episode extended from about 2130Z, August 13, to 0330Z, August 14, 1956, so this is a night-time case. The events occurred in east-central England, chiefly in Suffolk.

The initial reports centred around **Bentwaters RAF Station**, located about six miles east of Ipswich, near the coast, while much of the subsequent action centres around **Lakenheath RAF Station**, located some 20 miles northeast of Cambridge. **Sculthorpe RAF Station** also figures in the account, but only to a minor extent; it is near Fakenham, in the vicinity of The Wash.

GCA (Ground Controlled Approach) radars at two of those three stations were involved in the ground

\* The talk was entitled: "Science in Default: 22 Years of Inadequate UFO Investigations."

radar sightings, as was an RTCC (Radar Traffic Control Centre) radar unit at Lakenheath.

The USAF non-com who wrote to the Colorado Project about this incident was a Watch Supervisor on duty at Lakenheath RTCC unit that night. His detailed account is reproduced in the Condon Report (pp 248-251). The Report comments on "the remarkable accuracy of the account of the witness as given in (his reproduced letter), which was apparently written from memory 12 years after the incident." I would concur but would note that, had the Colorado Project only investigated more such striking cases of past years, it would have found many other witnesses in UFO cases whose vivid recollections often match surprising well checkable contemporary accounts. My experience thereon has been that, in multiple-witness cases where one can evaluate consistency of recollections, the more unusual and inexplicable the original UFO episode, the more it impressed upon the several witnesses' memories a meaningful and still-useful pattern of relevant recollections. Doubtless another important factor operates: the UFO incidents that are the most striking and most puzzling probably have been discussed by the key witnesses enough times that their recollections have been thereby reinforced in a useful way.

The only map given in the Condon Report is based on a sketch-map made by the non-com who alerted them to the case. It is misleading, for Sculthorpe is shown 50 miles east of Lakenheath, whereas it actually lies 30 miles north-northeast. The map does not show Bentwaters at all; it is actually some 40 miles east-southeast of Lakenheath. Even basic items as those locations do not appear to have been ascertained by those who prepared the discussion of this case in the Condon Report, which is most unfortunate, yet not atypical.

That this incident was subsequently discussed by many Lakenheath personnel was indicated to me by a chance event. In the course of my investigations of another radar UFO case from the Condon Report, that of 11/9/67 at Kincheloe AFB, I found that the radar operator involved therein had previously been stationed with the USAF detachment at Lakenheath and knew of the events at second-hand because they were still being discussed there by radar personnel when he arrived many months later.

#### **Initial Events at Bentwaters, 2130Z to 2200Z**

One of the *many* unsatisfactory aspects of the Condon Report is its frequent failure to put before the reader a complete account of the UFO cases it purports to analyse scientifically. In the present instance, the Report omits all details of *three* quite significant radar-sightings made by Bentwaters GCA personnel prior to their alerting the Lakenheath GCA and RTCC groups at 2255 LST. This omission is certainly not because of correspondingly slight mention in the original Bluebook case-file; rather, the Bentwaters sightings actually receive *more* Bluebook attention than the subsequent Lakenheath events. Hence, I do not see how such omissions in the Condon Report can be justified.

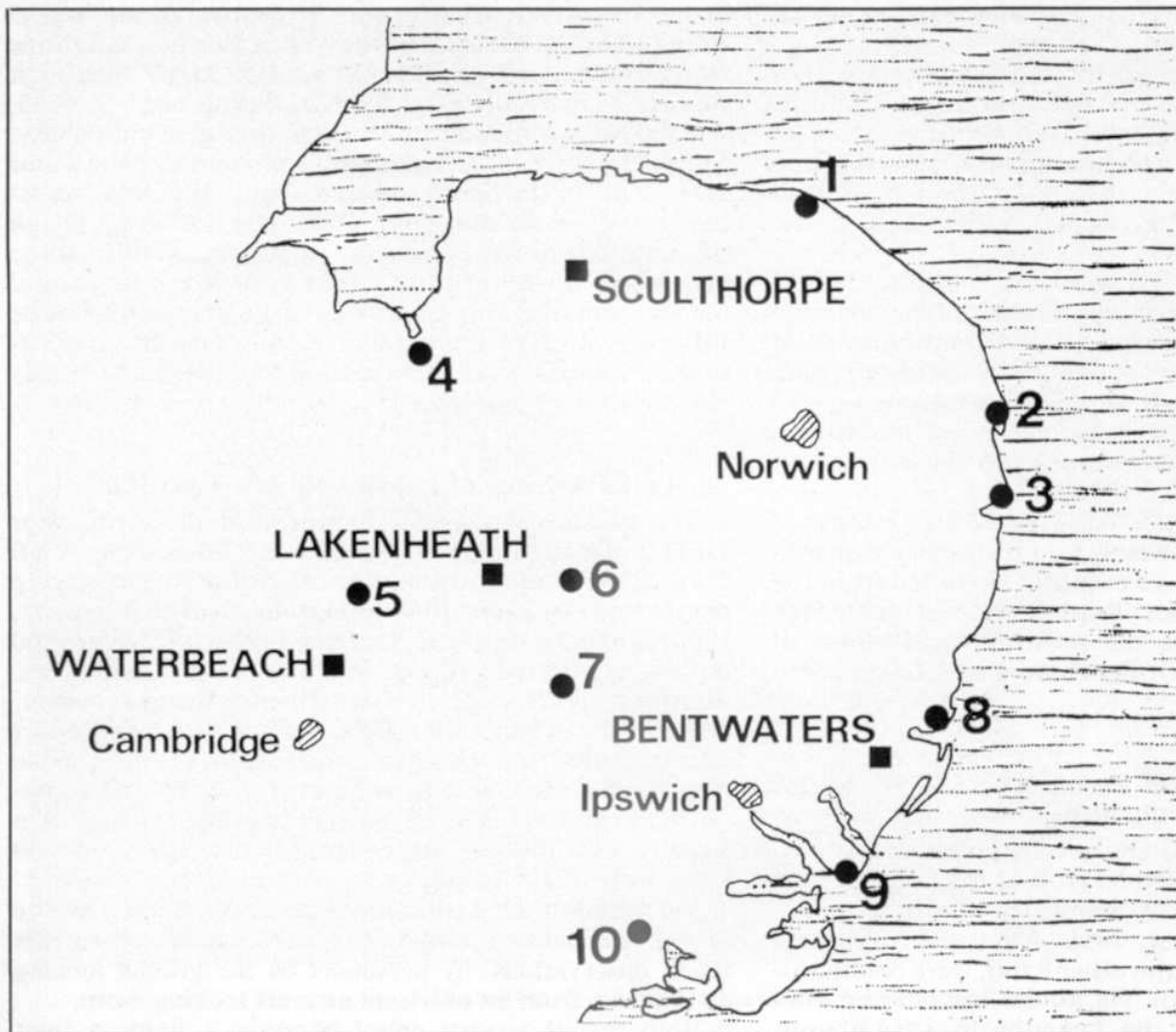
**a. First radar sighting, 2130Z** Bentwaters GCA operator, A/2c — (I shall use a blank to indicate the names razor-bladed out of my copies of the case-file

prior to release of the file items to me), reported picking up a target 25-30 miles ESE, which moved at very high speed on constant 295° heading across his scope until he lost it 15-20 miles to the NW of Bentwaters. In the Bluebook file, A/2c — is reported as describing it as a strong radar echo, comparable to that of a typical aircraft, until it weakened near the end of its path across his scope. He is quoted as estimating a speed of the order of 4000 mph, but two other cited quantities suggest even higher speeds. A transit time of 30 seconds is given, and if one combines that with the reported range of distance traversed, 40-50 miles, a speed of about 5000-6000 mph results. Finally, A/2c — stated that it covered about 5-6 miles per sweep of the AN/MPN-11A GCA radar he was using. The sweep-period for that set is given as 2 seconds (30 rpm), so this yields an even higher speed-estimate of about 9000 mph. (Internal discrepancies of this sort are quite typical of Bluebook case-files, I regret to say. My study of many such files during the past three years leaves me no conclusion but that Bluebook work has never represented high-calibre scientific work, but rather has operated as a perfunctory bookkeeping and filing operation during most of its life. Of the three speed figures just mentioned, the latter derives from the type of observation most likely to be reasonably accurate, in my opinion. The displacement of a series of successive radar-blips on a surveillance radar such as the MPN-11A, can be estimated to perhaps a mile or so with little difficulty, when the operator has as large a number of successive blips to work with as is here involved. Nevertheless, it is necessary to regard the speed as quite uncertain here, though presumably in the range of several thousand miles per hour and hence not associable with any conventional aircraft, nor with still higher-speed meteors either.)

**b. Second radar sighting, 2130-2155Z** A few minutes after the preceding event, T/Sgt — picked up on the same MPN-11A a group of 12-15 objects about 8 miles SW of Bentwaters. In the report to Bluebook, he pointed out that "these objects appeared as normal targets on the GCA scope and that normal checks made to determine possible malfunctions of the GCA radar failed to indicate anything was technically wrong." The dozen or so objects were moving together towards the NE at varying speeds, ranging between 80 and 125 mph, and "the 12 to 15 unidentified objects were preceded by 3 objects which were in a triangular formation with an estimated 1000 feet separating each object in this formation." The dozen objects to the rear "were scattered behind the lead formation of 3 at irregular intervals with the whole group simultaneously covering a 6 to 7 mile area," the official report notes.

Consistent radar returns came from this group during their 25-minute movement from the point at which they were first picked up, 8 miles SW, to a point about 40 miles NE of Bentwaters, their echoes decreasing in intensity as they moved off to the NE. When the group reached a point some 40 miles NE, they all appeared to converge to form a single radar echo whose intensity is described as several times larger than a B-36 return under comparable conditions. Then motion ceased, while this single strong echo remained *stationary* for 10-15 minutes. It then resumed motion





**KEY:**

1. Cromer
2. Great Yarmouth
3. Lowestoft
4. Kings Lynn
5. Ely
6. Thetford
7. Bury St. Edmunds
8. Aldeburgh
9. Felixstowe
10. Colchester

to the NE for 5-6 miles, stopped again for 3-5 minutes, and finally moved northward and off the scope.

c. **Third radar sighting, 2200Z** Five minutes after the foregoing formation moved off-scope, T/Sgt — detected an unidentified target about 30 miles E of the Bentwaters GCA station, and tracked it in a rapid westward motion to a point about 25 miles W of the station, where the object “suddenly disappeared off the radar screen by rapidly moving out of the GCA radiation pattern,” according to his interpretation of the event. Here again, we get discordant speed information, for T/Sgt — gave the speed only as being “in excess of 4000 mph,” whereas the time-duration of the tracking, given as 16 seconds, implies a speed of 12,000 mph, for the roughly 55 miles track-length reported. Nothing in the Bluebook files indicates that this discrepancy was investigated further or even noticed, so one can say only that the apparent speed lay far above that of conventional aircraft.

d. **Other observations at Bentwaters** A control tower sergeant, aware of the concurrent radar-tracking, noted a light “the size of a pin-head at arm’s length,” at about 10° elevation to the SSE. It remained there for about one hour, intermittently appearing and disappearing. Since Mars was in that part of the sky at that time, a reasonable interpretation is that the observer was looking at that planet.

A T-33 of the 512th Fighter Interceptor Squadron, returning to Bentwaters from a routine flight at about 2130Z, was vectored to the NE to search for the group of objects being tracked in that sector. Their search, unaided by airborne radar, led to no airborne sighting of any aircraft or other objects in that area, and after about 45 minutes they terminated search, having seen only a bright star in the east and a coastal beacon as anything worth noting. The Bluebook case-file contains 1956 USAF discussions of the case that make a big point of the inconclusiveness of the tower operator’s sighting and the negative results of the T-33 search, but say nothing about the much more puzzling radar-tracking incidents than to stress that they were of “divergent” directions, intimating that this somehow put them in the category of anomalous propagation, which scarcely follows.

Indeed, none of the three cited radar sightings exhibits any feature typical of AP echoes. The winds over the Bentwaters area are given in the file. They jump from the surface level (winds from 230° at 5-10 kts) to the 6000 ft. level (260°, 30 kts), and then hold at a steady 260° up to 50,000 ft, with speeds rising to a maximum of 90 kts near 30,000 ft. Even if one sought to invoke the highly dubious Borden-Vickers hypothesis (moving waves on an inversion surface), not even the slowest of the tracked echoes (80-125 mph) could be accounted

for, nor is it even clear that the direction would be explainable.

Furthermore, the strength of the individual echoes (stated as comparable to normal aircraft returns), the merging of the 15 or so into a single echo, the two intervals of stationarity, and final motion off-scope at a direction about 45° from the initial motion, are all wholly unexplained in terms of AP in these 2130-2155Z incidents.

The extremely high-speed westward motion of single targets is even further from any known radar-anomaly associated with disturbed propagation conditions. Blips that move across scopes from one sector to the opposite, in steady heading at steady apparent speed, correspond neither to AP nor to internal electronic disturbances. Nor could interference phenomena fit such observed echo behaviour.

Thus, this 30-minute period, 2130-2200Z, embraced three distinct events for which no satisfactory explanation exists. That these three events are omitted from the discussions in the Condon Report is unfortunate, for they serve to underscore the scientific significance of subsequent events at both Bentwaters and Lakenheath stations.

#### **Comments on Reporting of Events After 2255Z August 13, 1956**

The events summarised above were communicated to Bluebook by Capt. Edward L. Holt of the 81st Fighter-Bomber Wing stationed at Bentwaters, as Report No. IR-1-56, dated 31 August, 1956. All events occurring subsequent to 2200Z, on the other hand, were communicated to Project Bluebook via an earlier, lengthy teletype transmission from the Lakenheath USAF unit, sent out in the standard format of the report-form specified by regulation AFR200-2. Two teletype transmissions, dated August 17, 1956 and August 21, 1956, identical in basic content, were sent from Lakenheath to Bluebook. The Condon Report presents the content of that teletype report on pp. 252-254, in full, except for deletion of all names and localities and omission of one important item to be noted later here. However, most readers will be entirely lost because what is presented actually constitutes a set of answers to questions that are not stated! The Condon Report does not offer the reader the hint that the version of AFR200-2 appearing in the Report's Appendix, pp. 819-826 (there identified by its current designation, AFR80-17) would provide the reader with the standardised questions needed to translate much of the otherwise extremely confusing array of answers on pp. 252-254. For that reason, plus others, many readers will almost certainly be greatly (and entirely unnecessarily) confused on reading this important part of the Lakenheath report in the Condon Report.

That confusion, unfortunately, does not wholly disappear upon laboriously matching questions with answers, for it has long been one of the salient deficiencies of the USAF programme of UFO report-collection that the format of AFR200-2 (or its sequel AFR80-17) is usually only barely adequate and (especially for complex episodes such as that involved here) often entirely incapable of affording the reporting office enough

scope to set out clearly and in proper chronological order all of the events that may be of potential scientific significance. Anyone who has studied many Bluebook reports in the AFR200-2 format, dating back to 1953, will be uncomfortably aware of this gross difficulty. Failure to carry out even modest followup investigations and incorporate findings thereof into Bluebook case-files leaves most intriguing Bluebook UFO cases full of unsatisfactorily answered questions. But those deficiencies do not, in my opinion, prevent the careful reader from discerning that very large numbers of those UFO cases carry highly significant scientific implications, implications of an intriguing problem going largely unexamined in past years.

#### **Initial Alerting of Lakenheath GCA and RTCC**

The official files give no indication of any further UFO radar sightings by Bentwaters GCA from 2200 until 2255Z. But, at the latter time, another fast-moving target was picked up 30 miles East of Bentwaters, heading almost due west at a speed given as "2000-4000 mph". It passed almost directly over Bentwaters, disappearing from their GCA scope for the usual beam-angle reason when within 2-3 miles (the Condon Report intimates that this close-in disappearance is diagnostic of AP, which seems to be some sort of tacit over-acceptance of the 1952 Borden-Vickers hypothesis), and then moving on until it disappeared from the scope 30 miles west of Bentwaters.

**Very significantly, this radar-tracking of the passage of the unidentified target was matched by concurrent visual observations, by personnel on the ground looking up and also from an overhead aircraft looking down.**

Both visual reports involved only a light, a light described as blurred out by its high speed; but since the aircraft (identified as a C-47 by the Lakenheath non-com whose letter called this case to the attention of the Colorado Project) was flying only at 4000 ft, the altitude of the unknown object is bracketed within rather narrow bounds.

No mention of any sonic boom appears; but the total number of seemingly quite credible reports of UFOs moving at speeds far above sonic values and yet not emitting booms is so large that one must count this as just one more instance of many currently inexplicable phenomena associated with the UFO problem.

The reported speed is not fast enough for a meteor, nor does the low-altitude flat trajectory and absence of a conclusive shock wave match any meteoric hypothesis. That there was visual confirmation from observation points both above and below this fast-moving radar-tracked object must be viewed as adding still further credence to, and scientific interest in, the prior three Bentwaters radar sightings of the previous hour.

Apparently immediately after the 2255Z events, Bentwaters GCA alerted GCA Lakenheath, which lay off to its WNW. The answers to Questions 2(A) and 2(B) of the AFR200-2 format (on p. 253 of the Condon Report) seem to imply that Lakenheath ground observers were alerted in time to see a luminous object come in, at an estimated altitude of 2000-2500 ft, and on a heading towards SW. The lower estimated altitude and the altered heading do not match the Bentwaters





The prototype of the De Havilland Venom night fighter

Courtesy Hawker-Siddeley Aircraft Ltd.

sighting, and the ambiguity so inherent in the AFR200-2 format simply cannot be eliminated here, so the precise timing is not certain. All that seems certain here is that, at or subsequent to the Bentwaters alert-message, Lakenheath ground observers saw a luminous object come in out of the NE at low altitude, then *stop*, and take up an easterly heading and resume motion eastward out of sight.

The precise time-sequence of the subsequent observations is not clearly deducible from the Lakenheath TWX sent in compliance with AFR200-2. But that many very interesting events, scientifically very baffling events, soon took place is clear from the report. No followup, from Bluebook or other USAF sources, was undertaken, and so this potentially very important case, like hundreds of others, simply went into the Bluebook files unclarified.

I am forced to stress that nothing reveals so clearly the past years of scientifically inadequate UFO investigation as a few days' visit to Wright-Patterson AFB and a diligent reading of Bluebook case reports. No one with any genuine scientific interest in solving the UFO problem would have let accumulate so many years of reports like this one without seeing to it that the UFO reporting and followup investigations were brought into entirely different status from that in which they have lain for over 20 years.

Deficiencies having been noted, I next catalogue,

without benefit of the exact time-ordering that is so crucial to full assessment of any UFO event, the intriguing observations and events at or near Lakenheath subsequent to the 2255Z alert from Bentwaters.

#### Non-chronological Summary of Lakenheath Sightings

##### a. Visual observations from ground

As noted two paragraphs above, following the 2255Z alert from GCA Bentwaters, USAF ground observers at the Lakenheath RAF Station observed a luminous object come in on a southwesterly heading, stop, and then move off out of sight to the east. Subsequently, at an unspecified time, two moving white lights were seen, and "grounded observers stated one white light joined up with another and both disappeared in formation together" (recall earlier radar observations of merging of targets seen by Bentwaters GCA). No discernible features of these luminous sources were noted by ground observers, but both the observers and radar operators concurred in their report-description that "the objects (were) travelling at terrific speeds and then stopping and changing course immediately."

In a passage of the original Bluebook report which was for some reason not included in the version presented in the Condon Report, this concordance of radar and visual observations is underscored: "Thus two radar sets (*i.e.*, Lakenheath GCA and RATCC

radars) and three ground observers report substantially the same." Later in the original Lakenheath report, this same concordance is reiterated: "... the fact that radar and ground visual observations were made on its rapid acceleration and abrupt stops certainly lend credulance (*sic*) to the report."

Since the date of this incident coincides with the date of peak frequency of the Perseid meteors, one might ask whether any part of the visual observations could have been due to Perseids. The basic Lakenheath report to Bluebook notes that the ground observers reported "unusual amount of shooting stars in sky", indicating that the erratically moving light(s) were readily distinguishable from meteors. The report further remarks thereon that "the objects seen were definitely not shooting stars as there were no trails as are usual with such sightings." Furthermore, the stopping and course reversals are incompatible with any such hypothesis in the first place.

AFR200-2 stipulates that the observer be asked to compare the UFO to the size of various familiar objects when held at arm's length (Item 1-B in the format). In answer to that item, the report states: "One observer from ground stated on first observation object was about the size of golf ball. As object continued in flight it became a 'pin point'." Even allowing for the usual inaccuracies in such estimates, this further rules out Perseids, since that shower yields only meteors of quite low luminosity.

In summary of the ground-visual observations, it appears that three ground observers at Lakenheath saw at least two luminous objects, saw these over an extended though indefinite time period, saw them execute sharp course-changes, saw them remain motionless at least once, saw two objects merge into a single luminous object at one juncture, and reported motions in general accord with concurrent radar observations. These ground-visual observations, in themselves, constitute scientifically interesting UFO report-material. Neither astronomical nor aeronautical explanations, nor any meteorological-optical explanations, match well those reported phenomena.

One could certainly wish for a far more complete and time-fixed report on these visual observations, but even the above information suffices to suggest some unusual events. The unusualness will be seen to be even greater on next examining the ground-radar observations from Lakenheath. And even stronger interest emerges as we then turn, last of all, to the airborne-visual and airborne-radar observations made near Lakenheath.

#### **b. Ground-radar observations at Lakenheath**

The GCA surveillance radar at Lakenheath is identified as a CPN-4, while the RATCC search radar was a CPS-5 (as the non-com correctly recalled in his letter). Because the report makes clear that these two sets were concurrently following the unknown targets, it is relevant to note that they have different wavelengths, pulse repetition frequencies, and scan-rates, which (for reasons that need not be elaborated here) tends to rule out several radar-anomaly hypotheses (*e.g.*, interference echoes from a distant radar, second-time-around effects, AP). However, the reported manoeuvres are so unlike

any of those spurious effects that it seems almost unnecessary to confront those possibilities here.

As with the ground-visual observations, so also with these radar-report items, the AFR200-2 format limitations plus the other typical deficiencies of reporting of UFO events preclude reconstruction in detail, and in time-order, of all the relevant events. I get the impression that the first object seen visually by ground observers was not radar-tracked, although this is unclear from the report to Bluebook.

One target whose motions were jointly followed both on the CPS-5 at the Radar Air Traffic Control Centre and on the shorter range, faster-scanning CPN-4 at the Lakenheath GCA unit was tracked "from 6 miles west to about 20 miles SW where target stopped and assumed a stationary position for five minutes. Target then assumed a heading northwesterly (I presume this was intended to read 'northeasterly', and the non-com so indicates in his recollective account of what appears to be the same manoeuvres) into the Station and stopped two miles NW of Station. Lakenheath GCA reports three to four additional targets were doing the same manoeuvres in the vicinity of the Station. Thus two radar sets and three ground observers report substantially the same."

Note that the quoted item includes the full passage omitted from the Condon Report version, and note that it *seems* to imply that this devious path with two periods of stationary hovering was also reported by the visual observers. However, the latter is not entirely certain because of ambiguities in the structure of the basic report as forced into the AFR200-2 format.

At some time, which context seems to imply as rather later in the night (the radar sightings went on until about 0330Z), "Lakenheath Radar Air Traffic Control Centre observed an object 17 miles east of the Station making sharp rectangular course of flight. This manoeuvre was not conducted by circular path but on right angles at speeds of 600-800 mph. Object would stop and start with amazing rapidity."

The report remarks that "... the controllers are experienced and technical skills were used in attempts to determine just what the objects were. When the target would stop on the scope, the MTI was used. However, the target would still appear on the scope."

MTI, Moving Target Indication, is a standard feature on search or surveillance radars that eliminates ground returns and returns from large buildings and other motionless objects. This very curious feature of display of stationary modes while the MTI was on, adds further strong argument to the negation of any hypothesis of anomalous propagation of ground-returns. It was as if the unidentified target, while seeming to hover motionless, was actually undergoing small-amplitude but high-speed jittering motion to yield a scope-displayed return despite the MTI. Since just such jittery motion has been reported in *visual* UFO sightings on many occasions, and since the coarse resolution of a PPI displayed would not permit radar-detection of such motion if its amplitude were below, say, one or two hundred metres, this could conceivably account for the persistence of the displayed return



during the episodes of "stationary" hovering, despite use of MTI.

The portion of the radar sightings just described seems to have been vividly recollected by the retired non-com who first called this case to the attention of the Colorado group. Some time after the initial Bentwaters alert, he had his men at the RATCC scanning all available scopes, various scopes set at various ranges. He wrote that "... one controller noticed a stationary target on the scopes about 20 to 25 miles southwest. This was unusual, as a stationary target should have been eliminated unless it was moving at a speed of at least 40 to 45 knots. And yet we could detect no movement at all. We watched this target on all the different scopes for several minutes and I called the GCA Unit at (Lakenheath) to see if they had this target on their scope in the same geographical location. As we watched, the stationary target started moving at a speed of 400 to 600 mph in a north-northeast direction until it reached a point about 20 miles north-northwest of (Lakenheath). There was no slow start or build-up to this speed—it was constant from the second it started to move until it stopped."

This description, written 11 years after the event, matches the 1956 intelligence report from the Lakenheath USAF unit so well, even seeming to avoid the typographical direction-error that the Lakenheath TWX contained, that one can only assume that the writer was deeply impressed by this whole incident. That, of course, is further indicated by the very fact that he wrote to the Colorado group about it in the first place. His letter (Condon Report, p. 249) adds that "the target made several changes in location, always in a straight line, always at about 600 mph and always from a standing or stationary point to his next stop at constant speed — no build-up in speed at all — these changes in location varied from 8 miles to 20 miles in length — no set pattern at any time. Time spent stationary between movements also varied from 3 or 4 minutes to 5 or 6 minutes . . ."

Because his account fits so well with the basic Bluebook file report in the several particulars in which it can be checked, the foregoing quotation from the letter as reproduced in the Condon Report stands as meaningful indication of the highly unconventional behaviour of the unknown aerial target. Even allowing for some recollective uncertainties, the non-com's description of the behaviour of the unidentified radar target lies so far beyond any meteorological, astronomical, or electronic explanation as to stand as one challenge to any suggestions that UFO reports are of negligible scientific interest.

The non-com's account indicates that they plotted the discontinuous stop-and-go movements of the target for some tens of minutes before it was decided to scramble RAF interceptors to investigate. That third major aspect of the Lakenheath events must now be considered. (The delay in scrambling interceptors is noteworthy in many Air Force-related UFO incidents of the past 20 years. I believe this reluctance stems from unwillingness to take action lest the decision-maker be accused of taking seriously a phenomenon which the Air Force officially treats as non-existent.)

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### c. Airborne radar and visual sightings by *Venom* interceptor

An RAF jet interceptor, a *Venom* single-seat subsonic aircraft equipped with an air-intercept (AI) nose radar, was scrambled, according to the basic Bluebook report, from Waterbeach RAF Station, which is located about 6 miles north of Cambridge, and some 20 miles SW of Lakenheath. Precise time of the scramble does not appear in the report to Bluebook, but if we were to try to infer the time from the non-com's recollective account, it would seem to have been somewhere near midnight.

Both the non-com's letter and the contemporary intelligence report make clear that Lakenheath radar had one of their unidentified targets on-scope as the *Venom* came in over the Station from Waterbeach. The TWX to Bluebook states: "The aircraft flew over RAF Station Lakenheath and was vectored towards a target on radar 6 miles east of the field. Pilot advised he had a bright white light in sight and would investigate. At thirteen miles west (east?) he reported loss of target and white light."

It deserves emphasis that the foregoing quote clearly indicates that the UFO that the *Venom* first tried to intercept was being monitored via three distinct physical "sensing channels." It was being recorded by **ground radar**, by **airborne radar**, and **visually**. Many scientists are entirely unaware that Air Force files contain such UFO cases, for this very interesting

category has never been stressed in USAF discussions of its UFO records. Note, in fact, the similarity to the 1957 RB-47 case (to be published) in the evidently simultaneous loss of visual and airborne-radar signal here. One wonders if ground radar also lost it simultaneously with the *Venom* pilot's losing it, but, as is so typical of AFR200-2 reports, incomplete reporting precludes clarification.

Nothing in the Bluebook case-file on this incident suggests that anyone at Bluebook took any trouble to run down that point or the many other residual questions that are so painfully evident here. The file does, however, include a lengthy dispatch from the then-current Bluebook officer, Capt. G. T. Gregory, a dispatch that proposes a series of what I must term wholly irrelevant hypotheses about Perseid meteors with "ironized gases in their wake which may be traced on radarscopes", and inversions that "may cause interference between two radar stations some distance apart." Such basically irrelevant remarks are all too typical of Bluebook critique over the years.

The file also includes a case-discussion by Dr. J. A. Hynek, Bluebook consultant, who also toys with the idea of possible radar returns from meteor wake-ionization. Not only are the radar frequencies here about two orders of magnitude too high to afford even marginal likelihood of meteor-wake returns, but there is absolutely no kinematic similarity between the reported UFO movements and the essentially straight-line hypersonic movement of a meteor, to cite just a few of the strong objections to any serious consideration of meteor hypotheses for the present UFO case.

Hynek's memorandum on the case makes some suggestions about the need for upgrading Bluebook operations, and then closes with the remarks: "The Lakenheath report could constitute a source of embarrassment to the Air Force; and should the facts, as so far reported, get into the public domain, it is not necessary to point out what excellent use the several dozen UFO societies and other 'publicity artists' would make of such an incident. It is, therefore, of great importance that further information on the technical aspect of the original observations be obtained, without loss of time from the original observers."

That memo of October 17, 1956, is followed in the case-file by Capt. Gregory's November 26, 1956 reply, in which he concludes that "our original analyses of anomalous propagation and astronomical is (*sic*) more or less correct"; and there the case investigation seemed to end, at the same casually closed level at which hundreds of past UFO cases have been closed out at Bluebook with essentially no real scientific critique. I would say that it is exceedingly unfortunate that "the facts, as so far reported" did not get into the public domain, along with the facts on innumerable other Bluebook case-files that should have long ago startled the scientific community just as much as they startled me when I took the trouble to go to Bluebook and spend a number of days studying those astonishing files.

Returning to the scientifically fascinating account of the *Venom* pilot's attempt to make an air-intercept on the Lakenheath unidentified object, the original report goes on to note that, after the pilot lost both visual and

radar signals, "*RATCC vectored him to a target 10 miles east of Lakenheath and pilot advised target was on radar and he was locking 'on'.*" Although here we are given no further information on the important point of whether he also saw a luminous object as he got a radar lock-on, we definitely have another instance of at least two-channel detection. The concurrent detection of a single radar target by a ground radar and an airborne radar under conditions such as these, where the target proves to be a highly manoeuvrable object, categorically rules out any conventional explanations involving, say, large ground structures and propagation anomalies. That MTI was being used on the ground radar also excludes that, of course.

The next thing that happened was that the *Venom* suddenly lost the radar lock-on as it neared the unknown target. RATCC reported that "*as the *Venom* passed the target on radar, the target began a tail chase of the friendly fighter.*" RATCC asked the *Venom* pilot to acknowledge this turn of events and he did, saying "*he would try to circle and get behind the target.*" His attempts were unsuccessful, which the report to Bluebook describes only in the terse comment, "Pilot advised he was unable to 'shake' the target off his tail and requested assistance."

The non-com's letter is more detailed and much more emphatic. He first remarks that the UFO's sudden evasive movement into tail position was so swift that he missed it on his own scope, "but it was seen by the other controllers." His letter then goes on to note that the *Venom* pilot "*tried everything—he climbed, dived, circled, etc., but the UFO acted like it was glued right behind him, always the same distance, very close, but we always had two distinct targets.*" Here again, note how the basic report is annoyingly incomplete. One is not told whether the pilot knew the UFO was pursuing his *Venom* by virtue of some tail-radar warning device of type often used on fighters (none is alluded to), or because he could see a luminous object in pursuit. In order for him to "acknowledge" the chase seems to require one or the other detection-mode, yet the report fails to clarify this important point. However, the available information does make quite clear that the pursuit was being observed on ground radar, and the non-com's recollection puts the duration of the pursuit at perhaps 10 minutes before the pilot elected to return to his base.

Very significantly, the intelligence report from Lakenheath to Bluebook quotes this first pilot as saying "*clearest target I have ever seen on radar*", which again eliminates a number of hypotheses, and argues most cogently the scientific significance of the whole episode.

The non-com recalled that, as the first *Venom* returned to Waterbeach aerodrome when fuel ran low, the UFO followed him a short distance and then stopped; that important detail is, however, not in the Bluebook report. A second *Venom* was then scrambled, but, in the short time before a malfunction forced it to return to Waterbeach, no interceptions were accomplished by that second pilot.

## Discussion

The Bluebook report material indicates that other radar unknowns were being observed at Lakenheath



until about 0330Z. Since the first radar unknowns appeared near Bentwaters at about 2130Z on 13/8/56, while the Lakenheath events terminated near 0330Z on 14/8/56, the total duration of this UFO episode was about six hours. The case includes an impressive number of scientifically provocative features:

1. At least three separate instances occurred in which one ground-radar unit, GCA Bentwaters, tracked some unidentified target for a number of tens of miles across its scope at speeds in excess of Mach 3. Since even today, 12 years later, no nation has disclosed military aircraft capable of flight at such speeds (we may exclude the X-15), and since that speed is much too low to fit any meteoric hypothesis, this first feature (entirely omitted from discussion in the Condon Report) is quite puzzling. However, Air Force UFO files and other sources contain many such instances of nearly hypersonic speeds of radar-tracked UFOs.

2. In one instance, about a dozen low-speed (order of 100 mph) targets moved in loose formation led by three closely-spaced targets, the assemblage yielding consistent returns over a path of about 50 miles, after which they merged into a single large target, remained motionless for some 10-15 minutes, and then moved off-scope. Under the reported wind conditions, not even a highly contrived meteorological explanation invoking anomalous propagation and inversion-layer waves would account for this sequence observed at Bentwaters. The Condon Report omits all discussion of items 1 and 2, for reasons that I find difficult to understand.

3. One of the fast-track radar sightings at Bentwaters, at 2255Z, coincided with visual observations of some very-high-speed luminous source seen by both a tower operator on the ground and by a pilot aloft who saw the light moving in a blur below his aircraft at 4000 ft. altitude. The radar-derived speed was given as 2000-4000 mph. Again, meteors won't fit such speeds and altitudes, and we may exclude aircraft for several evident reasons, including absence of any thundering sonic boom that would surely have been reported if any near hypothetical secret 1956-vintage hypersonic device were flying over Bentwaters at less than 4000 ft. that night.

4. Several ground observers at Lakenheath saw luminous objects exhibiting non-ballistic motions, including dead stops and sharp course reversals.

5. In one instance, two luminous white objects merged, as seen from the ground at Lakenheath. This wholly unmeteoric and unaeronautical phenomenon is actually a not-uncommon feature of UFO reports during the last two decades. For example, radar-tracked merging of two targets that veered together sharply before joining up was reported over Kincheloe AFB, Michigan, in a UFO report that also appears in the Condon Report (p. 164), quite unreasonably attributed therein to "anomalous propagation."

6. Two separate ground radars at Lakenheath, having rather different radar parameters, were concurrently observing movements of one or more unknown targets over an extended period of time. Seemingly stationary hovering modes were repeatedly observed, and this despite use of MTI. Seemingly "instantaneous" accelerations from rest to speeds of order of Mach 1 were repeatedly observed. Such motions cannot readily be

explained in terms of any known aircraft flying then or now, and also fail to fit known electronic or propagation anomalies. The Bluebook report gives the impression (somewhat ambiguously, however) that some of these two-radar observations were coincident with ground-visual observations.

7. In *at least* one instance, the Bluebook report makes clear that an unidentified luminous target was seen visually from the air by the pilot of an interceptor while getting simultaneous radar returns from the unknown with his nose radar concurrent with ground-radar detection of the same unknown. This is scientifically highly significant, for it entails *three* separate detection-channels all recording the unknown object.

8. In *at least* one instance, there was simultaneous radar disappearance and visual disappearance of the UFO. This is akin to similar events in other known UFO cases, yet is not easily explained in terms of conventional phenomena.

9. Attempts of the interceptor to close on one target seen both on ground radar and on the interceptor's nose radar, led to a puzzling rapid interchange of roles as the unknown object moved into tail-position behind the interceptor. While under continuing radar observation from the ground, with both aircraft and unidentified object clearly displayed on the Lakenheath ground radars, the pilot of the interceptor tried unsuccessfully to break the tail chase over a time of some minutes. No ghost-return or multiple-scatter hypothesis can explain such an event.

I believe that the cited sequence of extremely baffling events, involving so many observers and so many distinct observing channels, and exhibiting such unconventional features, should have led to the most intensive Air Force inquiries. But I would have to say precisely the same about *dozens* of other inexplicable Air Force-related UFO incidents reported to Bluebook since 1947.

What the above illustrative case shows all too well is that highly unusual events have been occurring under circumstances where any organisation with even passing scientific curiosity should have responded vigorously, yet the Air Force UFO programme has repeatedly exhibited just as little response as I have noted in the above 1956 Lakenheath incident. The Air Force UFO programme, contrary to the impression held by most scientists here and abroad, has been an *exceedingly superficial and generally quite incompetent programme*.

The Condon Report, although disposed to suspicion that perhaps some sort of anomalous radar propagation might be involved (I record here my objection that the Condon Report exhibits repeated instances of misunderstanding of the limits of anomalous propagation effects), does concede that Lakenheath is an *unexplained* case. Indeed, the Report ends its discussion with the quite curious admission that, in the Lakenheath episode, "... the probability that at least one genuine UFO was involved appears to be fairly high."

One could easily become enmeshed in a semantic dispute over the meaning of the phrase, "one genuine UFO", so I shall simply assert that my own position is that the Lakenheath case exemplifies a disturbingly large group of UFO reports in which the apparent

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