

## PROJECT 10073 RECORD

|                                                                                                |                                                                                                                                                                                                                                                                    |
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| 1. DATE - TIME GROUP<br>26 Feb 53                                                              | 2. LOCATION<br>Greenland                                                                                                                                                                                                                                           |
| 3. SOURCE<br>military                                                                          | 10. CONCLUSION OTHER: WEATHER PHENOMENA<br>Comments:<br>Upon the interrogation of the GCA operators, several discrepancies were found. It is believed that the radar target was caused by meteorological conditions or weather effects on radar.                   |
| 4. NUMBER OF OBJECTS<br>one                                                                    | 11. BRIEF SUMMARY AND ANALYSIS<br>Prominent blip emerged from normal clutter area of scope 4 miles SW from the station. Tracked for a distance of 3 miles before it faded from the scope at a distance of 7 miles. Remained at constant altitude under 6,000 feet. |
| 5. LENGTH OF OBSERVATION<br>3 mins                                                             |                                                                                                                                                                                                                                                                    |
| 6. TYPE OF OBSERVATION<br>ground radar                                                         |                                                                                                                                                                                                                                                                    |
| 7. COURSE<br>SW                                                                                |                                                                                                                                                                                                                                                                    |
| 8. PHOTOS<br><input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No            |                                                                                                                                                                                                                                                                    |
| 9. PHYSICAL EVIDENCE<br><input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No |                                                                                                                                                                                                                                                                    |



|                                                                              |                                                                                             |                         |                           |
|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------|---------------------------|
| COUNTRY<br>USA-MATS                                                          | UNCLASSIFIED                                                                                | REPORT NO.<br>IR-255-53 | (LEAVE BLANK)<br>01542654 |
| AIR INTELLIGENCE INFORMATION REPORT                                          |                                                                                             |                         |                           |
| SUBJECT<br>(Restricted) Unidentified Radar Sightings In Greenland            |                                                                                             |                         |                           |
| AREA REPORTED ON<br>Greenland                                                | FROM (Agency)<br>Air Intelligence Division<br>No Air Rescue Service<br>Washington 25, D. C. | EVALUATION<br>B-2       |                           |
| DATE OF REPORT<br>27 March 1953                                              | DATE OF INFORMATION<br>26 February 1953                                                     | SOURCE<br>As Indicated  |                           |
| PREPARED BY (Officer)<br>J. A. Meisinger, M/Sgt                              |                                                                                             |                         |                           |
| REFERENCES (Control number, directive, previous report, etc., as applicable) |                                                                                             |                         |                           |

SUMMARY: (Enter concise summary of report. Give significance in final one-sentence paragraph. List inclosures at lower left. Begin text of report on AF Form 112-Part II.)

Information in Part II was extracted from INTREP NO. 6/55/5/53 dated 15 March 1953, copies of which were submitted to 6612th ABG and 5th CSI, Det. Reporting Officer is Capt. Kenneth E. Olson, 55th ARS.

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8. On the upper air observations it was noted that a temperature inversion existed at an altitude of 3500 feet and possible also at the 7000 feet level. The following upper air temperatures indicate the intensity of the inversion:

- |                       |   |                            |
|-----------------------|---|----------------------------|
| a. Ground temperature | - | -37 degrees C (Centigrade) |
| b. At 1000 feet       | - | -33 degrees C              |
| c. At 3500 feet       | - | -38 degrees C              |
| d. At 4000 feet       | - | -41 degrees C              |
| e. At 5000 feet       | - | -40 degrees C              |
| f. Above 5000 feet    | - | Constant -40 degrees C     |

9. Both preliminary and the final evaluation of the sightings after all interrogations had been made indicate sighting to be a phenomena type.

10. The Group Intelligence Officer was advised of the sighting 15 minutes after its occurrence, all GCA personnel were contacted and AC&W were contacted. Interrogations were made that day of S/Sgt Smith, GCA Team Chief, and S/Sgt Lucas, the duty operator, Captain Nelson, the MATS C-124 pilot as well as his navigator. Weather personnel were consulted in detail. In the individual interrogation of the GCA personnel it was noted that some discrepancies were made in the interpretation of the PPI scope. First, the time of the sighting was given by one man as about three minutes. At the same time, he stated its speed as slightly faster than that of the C-124. (Estimated at 180 Knots or more). The distance the object was tracked was three miles. This fact is positive as the scope is marked for accurate distance measurements. However, if its speed was as rapid as indicated, the longest time it could be tracked would be in the vicinity of one minute or less. On the other hand, if it was tracked for three minutes its speed could not have been much over 60 Knots. Other discrepancies of the GCA interrogation were the scopes altitude limitation. One man indicated it as 5000 feet, the other 6000 feet. The distance between the C-124 blip and the unidentified blip was approximately ten miles. There was a 60 degree angle difference in their respective headings.

11. That AC&W did not pick up the unidentified pretty well substantiates the fact that it did not exist. Had the object approached the base from any direction above 3000 feet it would have been detected. It certainly would have been picked up outbound as it passed beyond the 6000 foot limitation level of GCA.

12. The weather analysis lends a factor which can probably account for the phenomena. When an aircraft passes through an inversion layer as are peculiar for far northern arctic areas, the aircraft striking the super cooled moisture creates ice crystals condensations (or vapor trails). It should be noted that the C-124 approached from the south over Cape York and passed over the base while letting down. At the particular time the C-124 came over the base, it was passing through the inversion level at 4000 feet. The crystallization thus created would drift in a SW (true bearing). When the drifting crystallization reached the outer radius of the GCA clutter area, it would be then picked up on the GCA scope as a moving target, and would be about the same size as the aircraft which caused the ice crystallizations.

13. Similar phenomena could account for the indication on the scope. It should be noted that weather at this base has some rather unusual characteristics not typical of bases further south. Such items as temperature inversions, ice crystals, ice fog



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1. At 0550Z, 26 February 1953, an unidentified radar sighting on the GCA Planned Position Indicator (PPI) Scope was reported to this office and the Group Intelligence Officer. As soon as the observing personnel could be contacted, the interrogations were made. The information obtained is related below.

2. During the above time, S/Sgt George Smith, Team Chief, and S/Sgt E. T. Lucas, a GCA Operator, and A/20 Clarkson, Mechanic were the GCA duty team on this installation. At that time, they were monitoring a MATS C-124 that was on the downwind leg of the traffic pattern preparing to land at Thule Air Base. The aircraft had aborted from a return flight to Westover due to mechanical trouble and was returning to Thule.

3. S/Sgt Lucas while tracking the C-124 on his scope at a position approximately five miles NE of the base, noted a prominent blip emerge from the normal clutter area of the scope (the clutter area is within a 3 1/2 mile radius of the GCA installation) outbound on a grid heading of 270 degrees, four miles SW (true bearing) from the station.

4. The unidentified sighting was tracked for a distance of three miles before it faded from the scope at a distance of seven miles. Its speed was estimated at approximately 180 knots or better by the GCA controllers. Altitude of the unidentified could not be determined although in order to pass in view of the scope, it would have to be above 700 feet and under 6000 feet, the scope's operating limitations.

5. In the interrogation, it was determined that if the object had remained at a constant altitude under 6000 feet, it would have been in view of the scope for approximately 14 miles, the maximum radius of the equipment. The fact that the unidentified passed out of the scope at seven miles indicated that it was in a climbing attitude and passed out of the object scope due to the scope's altitude limitation only. If the object had passed directly over the base, its track would not have been indicated on the PPI scope due to normal ground clutter. Its track if it approached from the NE was not indicated on the PPI scope.

6. The MATS C-124 which was on the downwind leg of the traffic at the time of the sighting had approached the field on a grid heading of 025 degrees while letting down. The aircraft passed over the center of the field at an altitude of 4000 feet on the above heading and upon reaching the north side of Thule Air Base turned into the downwind leg of the traffic pattern on a grid heading of 330 degrees. The C-124 had been on the downwind leg for approximately six miles when the sighting was picked up on the scope. The intensity of the blip of the C-124 and the object was approximately the same (the C-124 due to its large size gives a large and very prominent radar reflection). The speed of the unidentified as reported by GCA personnel was slightly faster than that of the C-124. (C-124 traffic pattern speed approximately 150 knots). The crew of the C-124 were advised of the tracking of the unidentified object but did not see anything. AC&W did not paint the unidentified sighting nor did they pick up any inbound or outbound unknowns on their scopes at any time during the night.

7. Ground weather observations for 0527Z and the 0625Z were as follows: Clouds: 15000 Feet, scattered; Visibility: 15 miles; Temperature: -55 degrees Fahrenheit; Dew Point: -60 degrees F.; Surface Wind: From east at 10 Knots, Upper level winds were as follows:

a. 3500 feet - from NE at 15 Knots.

b. 7000 feet - from N at 30 Knots.



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and others could give unusual indications on radar scopes in rather strange patterns.

14. The above weather conditions coupled with the facts that AC&W had no indication of the sighting, discrepancies noted in the interrogations of GCA personnel, the fact that the C-124 crew did not notice any indication of the phenomena, leaves this office to believe that the sighting was attributed to a reflection of a meteorological phenomena on the PPI scope of the GCA unit.

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