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AF FORM 112—PART I
APPROVED 1 JUNE 1948

COUNTRY: Japan
REPORT NO: IR-29-52
(LEAVE BLANK) 108

AIR INTELLIGENCE INFORMATION REPORT

SUBJECT: FLYOBRPT

AREA REPORTED: Japan/Korea Area

FROM (Agency): ATIL Office, D/I FEAF

DATE OF REPORT: 11 July 1952

DATE OF INFORMATION: 25 June 1952

EVALUATION: As noted on each report

PREPARED BY (Officer): Charles J. Malven, Captain, USAF (ATLO) Classified Reconnaissance Branch, D/I FEAF

REFERENCES (Control number, directive, previous report, etc., as applicable): AFL 200-5, 29 Apr 52 FEAF IR-20-52, IR-23-52, IR-25-52, IR-27-52

SUMMARY:

1. This is a compilation of various reports of unusual radar plots which have been observed in the Far East.

2. It is believed that all such reports have been forwarded to Headquarters, United States Air Force, or to the Office of Naval Intelligence. This report is therefore being made to insure that all observations on file at this headquarters are consolidated to insure against loss of any individual reports.

3. This information was extracted from a file, collected and evaluated by Mr. Wallace Bush, Electronics Engineer, Classified Reconnaissance Branch, Director of Intelligence, Headquarters, Far East Air Forces. Since the file consisted of information copies of reports, notes taken from briefings, and various sketches, much data is necessarily missing. The information herein reported is therefore, all that is available at this headquarters.

4. Evaluation is given to each report individually. Comments are included where deemed appropriate. Each report is given on a separate page for ease of collation and filing.

APPROVED:

[signature]

CHARLES Y. BANFILL
Brigadier General, USAF
Deputy for Intelligence

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1. Radar and visual contact with an unidentified high-speed object, by the USS Philippine Sea (Carrier CV-47) off the east coast of Korea, 2 February 1952.

a. Extracted from message from the Carrier "Philippine Sea", to ComNavFE, 3 February 1952:

Position 37 44 North, 130 30 East, course 180, speed 13, time 021935/I. Radar phenomena approached from 00 degrees bearing. True distance 25; closed to 20 commencing wide turn to the East, then opening to a heading 355. Measured speed 10 miles per minute (600 mph) for first minute, 15 miles per minute (900 mph) for second minute, 30 miles per minute (1800 mph) for third minute. Opened as 2 contacts 5 to 12 miles apart.

SPS 6B and SX functioning normally. Object picked up by SPS6B only. Three exhaust flames sighted visually and reported independently to the bridge by three signal bridge observers as aircraft exhaust bearing 000 to 060 true during time contact reversed course. Weather visibility 10 miles with 5/10 overcast. Visual sighting position angle 3 during time contact was held on scope at 17 miles. Estimated altitude 52000 ft. Contact opened on course 355 fading at 110 miles.

b. In answer to further query, the following was forwarded, 8 Feb 52:

Attempt to put SX on target with negative results. Radar operator's evaluation, normal target during contact's approach and reversal of course. As contact opened, evaluation doubtful. Radar contact maintained on scope through entire arc of visual observation from 000 to 060. In view of existing visibility and indicated range of contact on scope, accuracy of coincident visual sighting was dependent on either size or brilliance of object.

COMMENT: A thorough debriefing was made of the radar operator. Personnel stated that the operator was very intelligent, efficient and cooperative. Operator was cognizant of capabilities and limitations of the radar equipment and made careful plots, checking constantly. At time, contact was closing, he queried the aircraft controller and when it was determined that it was not a friendly aircraft, the general alarm was sounded. The three minutes of careful plotting were made after the object had turned and was heading away from thestation. Operator was sure of the accuracy of the plots for the three minutes, and was adamant that the speeds shown were approximately correct.

(EVALUATION: B-2)

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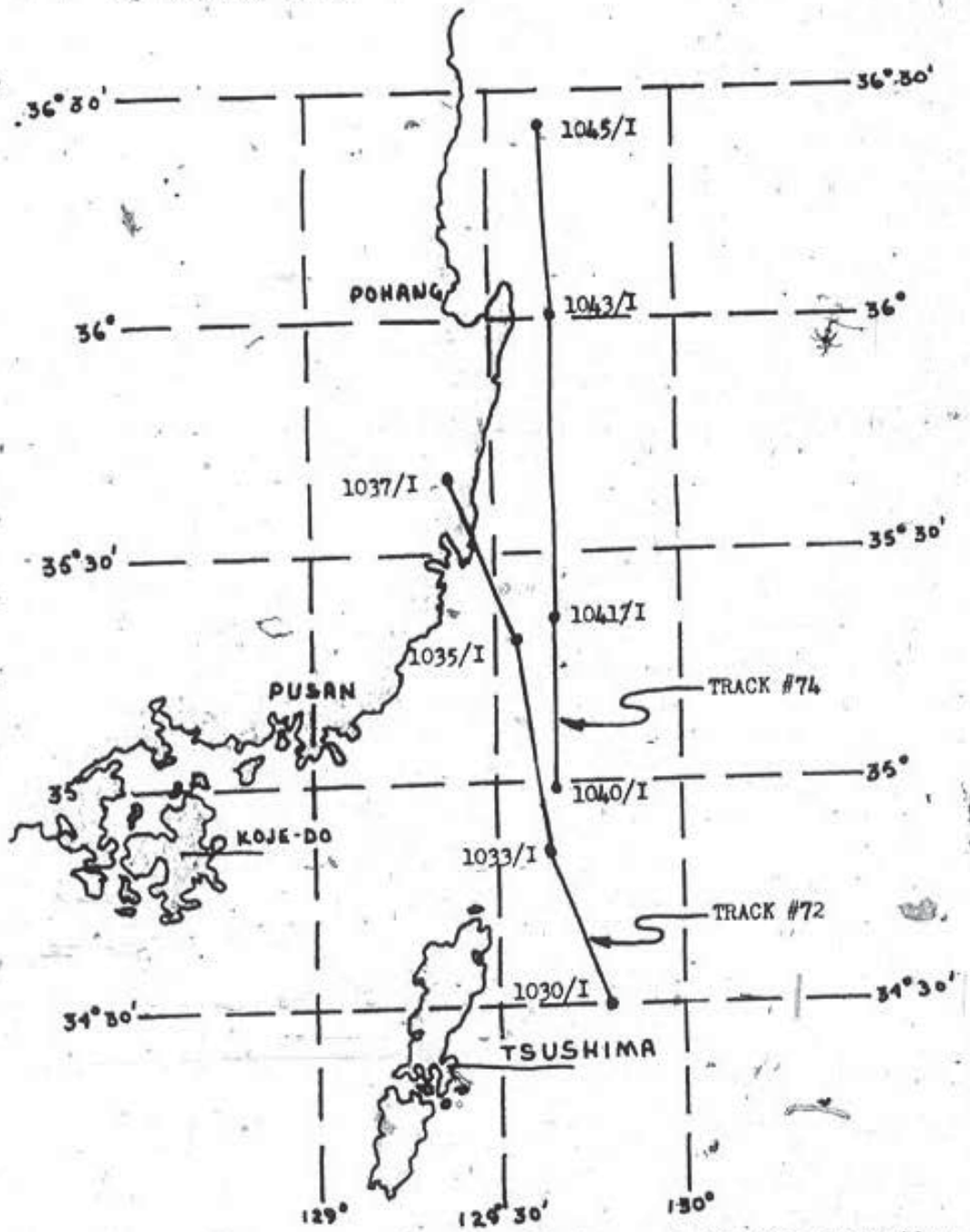
2. Two radar plots made by site 7B, 527th AC&W Gp, Japan Air Defense Force, 2 Feb 52.

A. CHART OF PLOTS:



b. The CPS-5 E checked normal before and after the observation. No further information is available.

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COMMENT: If true as reported, the speed of track #72 was 767mph, and the speed of track #74 was 1257mph. (Evaluation: B-2)

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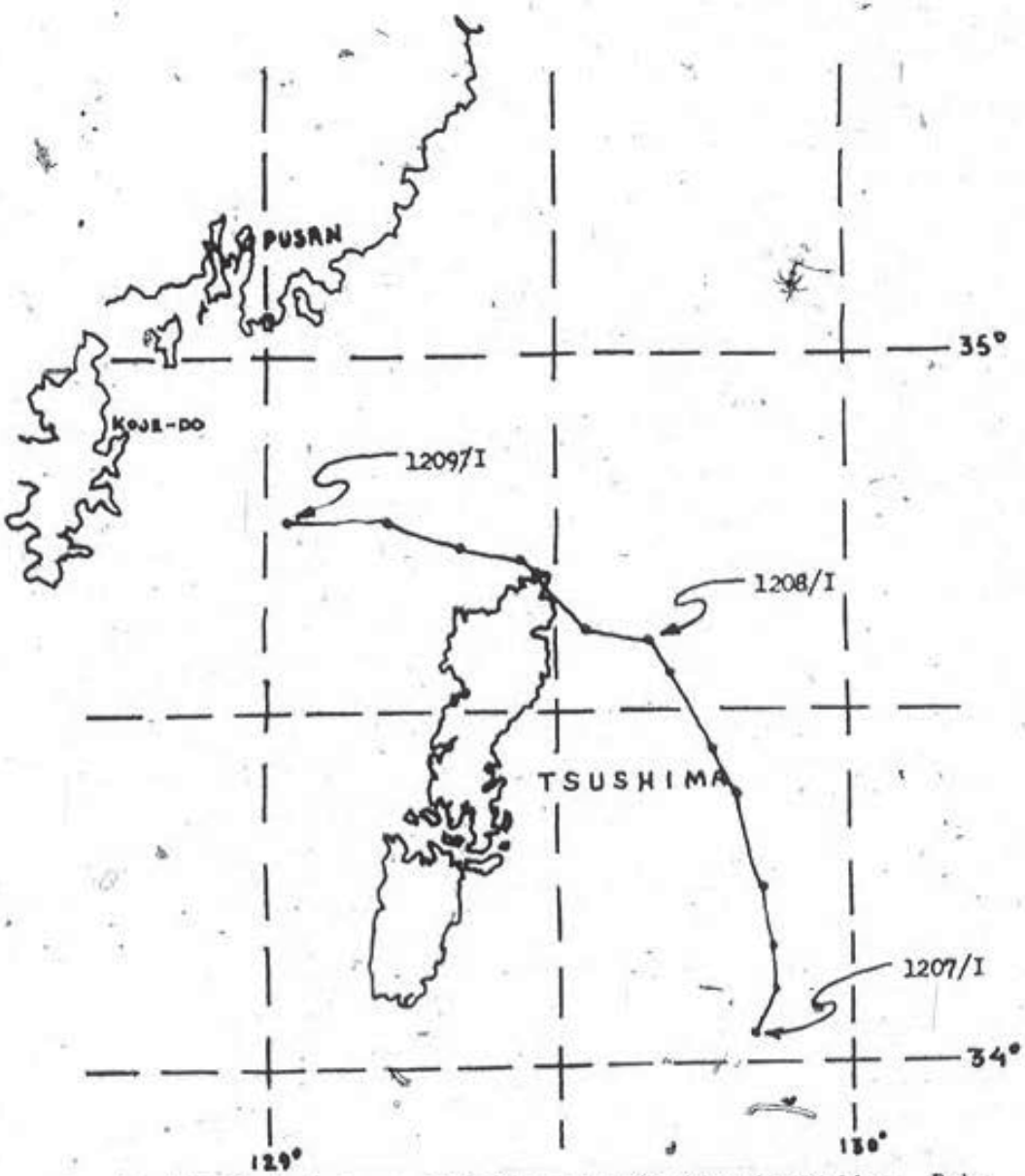
3. Radar plot made by site #21, 527th AC&W Gp, Japan Air Defense Force, 18 April 52.

a. CHART OF PLOTS:



b. The TPS-1B checked normal before and after the observation. Data on the scope presentation and settings was forwarded on FEAF 112 #IR-20-52.

COMMENT: If true as reported, the speed of the object (track #51) was 2100 mph. (Evaluation: B-2)

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4. High-speed target observed by USS Cony (Destroyer Escort - DDE-508) off Wonsan, Korea, 9 September 1951.

a. Extracted from report submitted to COMNAVFE from CO, USS Cony:

(1) Operating with Task Force 77 at 39°05'N-128°40'E, 1850/I, 9 Sept 1951. Formation speed was 15 knots on course 070° true.

(2) The object was tracked on course 225° true, with speed of about 900 knots. Movement was rapid in bearing at almost constant range and the echo appeared for a period of about 1 minute. The object appeared to be about 7 miles wide in range and 1 or 2 degrees in bearing. The operator's interpretation was "Many Bogies" on a line of bearing perpendicular to the course of the target. A good picture of the coastline of Korea was present, as well as some surface targets in Wonsan harbor. The subject echo was much larger than any other on the scope and was saturated as were most other echoes. The edges were not, however, as clearly defined as a surface target would normally be at this range.

(3) AN/SPS-6B air search radar was in use and was functioning normally before and after the incident. No change in the overall picture was noted during the incident and the ring time of the radar remained unchanged. The antenna used is not tiltable. Altitude was not able to be determined. Radar setting data was as follows:

Repeater	VK
Range scale	80 miles
Frequency	1280 mc
Pulse repetition frequency	1/6 cps
Pulse width	4ms
Antenna rate	8 rpm
S.T.C. control	On
Sea return	Negligible
Ring time and S.W.R.	Normal before and after incident
Maximum radar range at time of incident	120 miles

(4) Weather Data:

Wind Speed	6 knots
Wind Direction	220° true
Visibility	Good
Sea State	2
Barometer	29.36
Clouds	1/10 Cumulus
Dry Bulb Temperature	70
Wet Bulb Temperature	66

(5) Targets of similar configuration but of longer duration and slower speed had been noticed in the past and had not been affected by anti-jamming controls.

b. COMNAVFE comments to the report were as follows:

(1) Report differs from previous reports of high-speed targets in that this contact had an indistinct outline rather than sharp edges. The speed of 900 knots was also considerably lower than other reports.

(2) It is of interest that the Cony was operating with Task Force 77 at the time of this incident and that no other ship in the formation observed the reported contact.

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(EVALUATION: B-3)

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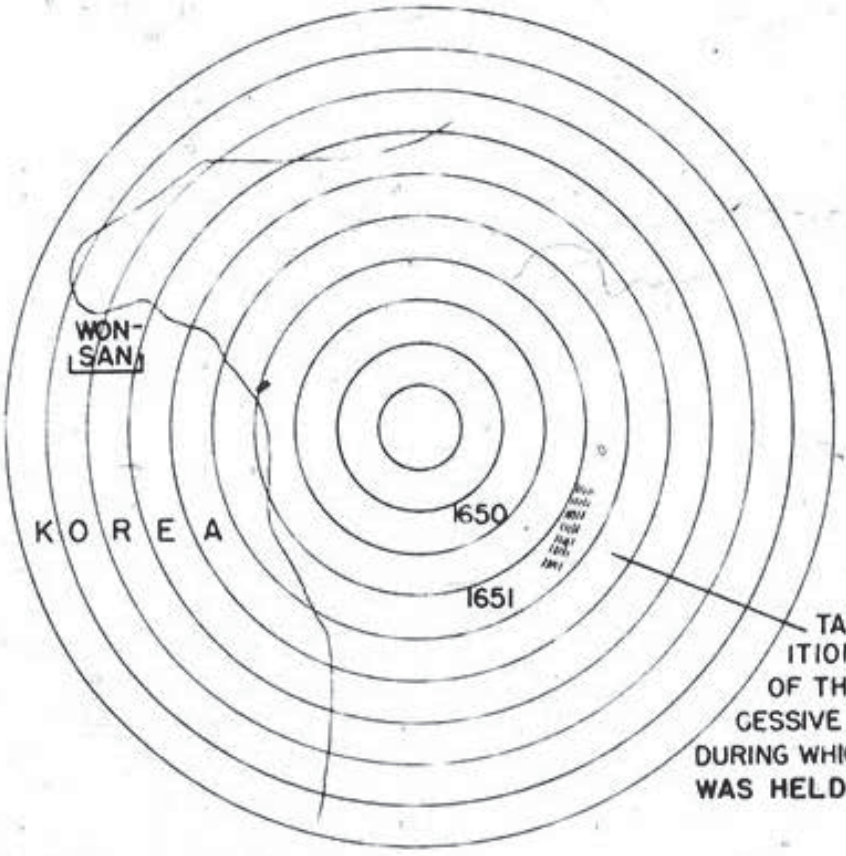
e. Sketch of the track on the scope of the VK radar repeater at the time of the incident. (USS Cony (DDE-508), 39°05'N-128°40'E, 9 Sept 51).

Range Scale Unit = 10 miles



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5. High-speed targets observed by Patrol Squadron 772 (PBMY-2) off Vladovostok area, 21 March 1951.

a. Extracted from letter from COMAVFE to Chief, Naval Operations:

Aircraft on normal patrol mission, flying over the northern part of the Japan Sea south of the maritime provinces of the USSR (Approximately 42°N-133°E), course 270° true. The pilot was LCDR Jenkins. The APS-15 radar was functioning properly. The radar operator, M.J. Loughran, had been instructed to occassionally elevate his radar to a maximum tilt for a short time. During one of these periods with the radar antenna at plus 20° tilt and range set on the 100 mile scale, the first contact appeared at about 90 miles from the starboard side of the plane. The return was tracked into the center of the scope using both the 100 and the 50 mile ranges, but it could not be found on the 30 mile range presentation of the radar when the contact was shown to be that close on the other two scales. Although no records were made of target speed, the closing rate was observed to be very fast, and the track was straight from the land towards the center of the scope. The successive positions of the contact by antenna sweeps are shown approximately on chart "A" (See next page). The operator, following previous instructions, decreased antenna tilt as the target approached the plane. The contact was lost before the antenna tilt was decreased to plus 15° and reappeared when the antenna was again elevated. When contact had closed to approximately 10 miles the return disappeared. Two or three sweeps later a new contact appeared to originate from the land to starboard and at a range of 90 miles at approximately the same position as the first intercept. The track of the second contact produced the same type of radar presentation as it approached the aircraft, as that of the previous contact.

A third return was observed shortly thereafter to come from the port (seaward) of the aircraft. The initial contact was observed again at 90 miles, but the track appeared to be semicircular as shown on the enclosed chart (page 7, figure "B"). This contact was also lost when it had closed to about 10 miles. The contact to port was not observed at the same time as either of the two contacts to starboard, but could be observed with the antenna tilted as low as plus 15 degrees.

The presentation of the contact on the radar scope was about 1/8 inch long and 1/16 inch wide and was bright in relation to the returns coming from land. The size and brightness of the contact did not change with a change in radar range. This phenomena of size and brightness is considered interesting as it is approximately the same as described in other reports covering similar incidents.

It is felt that the most significant part of this report is that the radar operator could make the contact disappear or reappear by changing the antenna tilt. It would thus indicate two major premises: One, that the source was probably not malfunctioning of the radar; and secondly, that the source of the contact was probably airborne at a very high altitude.

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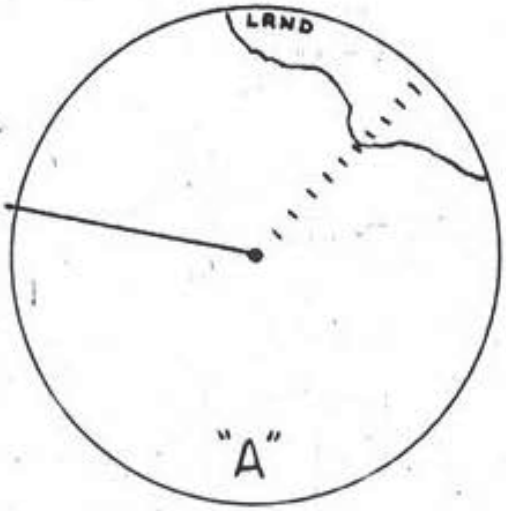
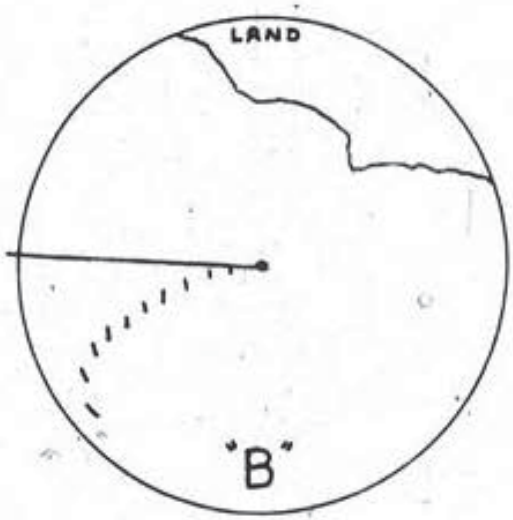
5., b. Plots of high-speed targets observed by Patrol Squadron 772 (PB4Y-2) off the Vladovostok area, 21 March 51: (Plots are memory sketches)



"Figure - A"

RANGE - 100 miles
Az. Stab. - ON
Antenna Tilt - plus 20 degrees
Heading - App. 270° True



"Figure - B"

RANGE - 100 miles
Az. Stab. - ON
Antenna Tilt - plus 15 degrees
Heading - App. 270° True

COMMENT: The bogies were evidently 10,000 to 20,000 ft above the Navy aircraft. They apparently passed over the friendly aircraft and then turned for a second run. The third intercept may then have been part of a cloverleaf surveillance pattern over the area.

No ECM returns were noted. No jamming equipment is known that might make such a pattern on the radar scope.

If the plots shown are reasonably accurate, and antenna rotation for the APS-15 is assumed to be 12 rpm, the speed of the objects would be over 5000mph. (Evaluation: B-6)

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6. Radar contacts with unidentified objects, by the USS Princeton (CV-37), and the USS Philippine Sea (CV-47) off the East coast of Korea, in April and May of 1951.

a. Extracted from letter to Chief of Naval Operations, from Commander Naval Forces, Far East, dated 11 September 1951:

The observation of rapidly moving targets on the PPI scope of the SX radar on the USS Princeton CV-37 has been reported by Lt. H.W. White, a CIC watch officer on the staff of Commander, Carrier Division 5. The targets were observed several times while operating with Task Force 77 during April and May of 1951. No definite dates or times are known, but the incidents occurred at least three times as much as a month apart between 0200 and 0500 local time. At each occurrence the presentation was exactly the same.

The ship was operating on various courses at a speed of 15 knots in the vicinity of 39°00'N-129°00'E. Each time the initial contact appeared at 180° true bearing at a range of approximately 20 miles. The target would appear to move 5 miles in toward the center of the scope with each sweep of the antenna. The actual speed is not known but it appeared to the radar operators to be much faster than that of jet aircraft. If maximum antenna rate (4 rpm) were being used, the speed would be approximately 1200 knots. As each contact would reach the center of the scope it would disappear, and a new contact would appear on the next sweep of the radar at 180°, 20 miles distance. On each occasion the phenomena lasted for seven to eight minutes.

On one occasion the targets were observed by two ships simultaneously. The same targets were held by both the USS Princeton and USS Philippine Sea on their SX radars. The ships were approximately 4000 yards apart at this time. The tracks made by the contact on the radar of the Philippine Sea were the same as those on the USS Princeton.

The targets were always 20° wide and sharply defined. The presentation was exceedingly bright in comparison with normal air and surface contacts. Appearance of the target never varied.

The SC radar was operating satisfactorily both before and after each incident. Very little sea return was observed.

Although previous observations of high-velocity targets had been reported by aircraft, this report was the first reported shipboard occurrence of this phenomena. This report is considered of particular interest in that the contacts were observed by two different radars at the same time, thereby reducing the probability that malfunctioning of the radar was the cause of the phenomena.

COMMENT: This report as submitted is not considered to be accurate. Further interrogation of the operators makes it appear that the target width was not exactly 20°, but was due to an unusually strong return made while the gain was turned very high, thus causing "blooming" of the blip beyond the normal beam width. Although the SX radars on two different ships picked up the target simultaneously, the constantly repeated pattern over an extended period of time strongly indicates possible synchronized jamming or a false signal. Since both radars are of the same type, with probable very similar settings, this type of jamming is believed to be possible. Instructions have since been passed out by navy personnel for the operators to vary the PRF rate whenever such a target is encountered. If the return is due to synchronized jamming, the variations in PRF will cause the target to jump to a different position on the scope.

It has been suggested that since submarines cannot camouflage themselves easily when surfacing, a thorough ECM spectrum search might enable them to initiate synchronized jamming, causing a strong return signal to be transmitted on the back lobes of the radar search antenna, and thus giving a false indication of the submarine's location.

The nature of this radar contact appears to be some type of jamming rather than a bona fide radar target. (EVALUATION: B-6)

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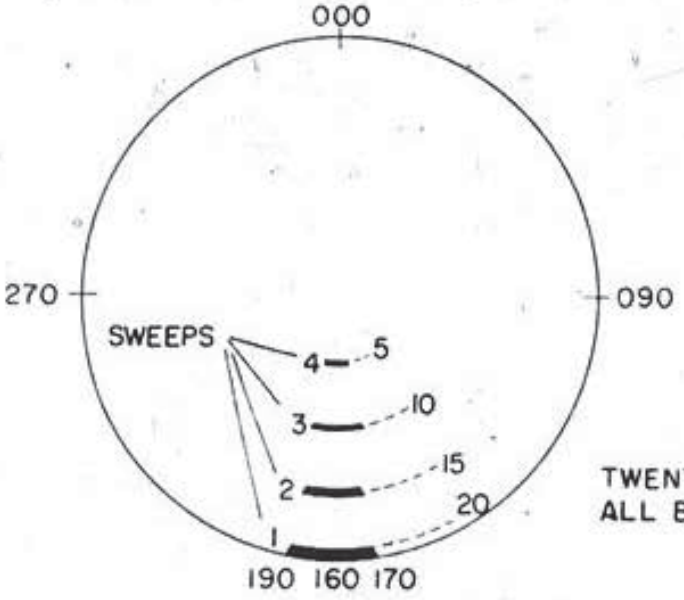
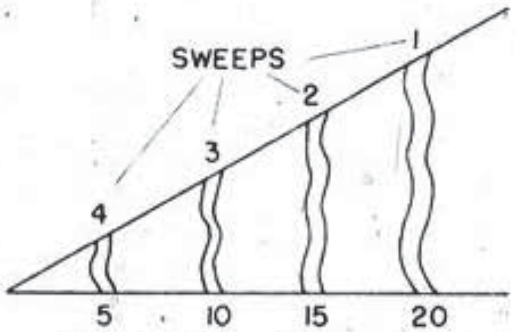
6., "b". Radar scope presentation on the SX radars, USS Princeton and USS Philippine SEA, off the east coast of Korea, April & May, 1951:



TWENTY MILE SCALE
ALL BEARINGS TRUE

PPI SCOPE



RHI PRESENTATION

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7. Unusual radar scope presentation observed by Site #6 621st AC&W Squadron, Niigata Air Base, Japan, on 7 October 1951.

a. At 1937 hours Item time, 7 October 1951, Site 6, 621st AC&W Squadron established radar contact with an unidentified object located at CH 1637 (37°37'N-137°15'E). Three consecutive sweeps were observed at that time. The target moved five to seven miles during each rotation of the antenna. The heading of this object was 260°. The next and last return was observed at 1943 I time, located at BH 3123 (37°25'N-136°32'E). The estimated ground speed from the radar scope was 1260 mph. The ground speed from the two plots is estimated at 420 mph. The four plots from 1937 to 2014 were attributed to electronic interference as these returns appeared as short weak radial flashes.

b. The first target return was slightly larger than a normal return for one B-29 type aircraft at that range and azimuth. The next two returns were normal in size at eighty per cent of normal target strength. These returns were well defined and did not have the indistinct outline generally observed around the edges of weather returns. This target was observed by the Duty Controller, Crew Chief and Scope Operator. All personnel observing this target were certain that the target was not weather and that it was a moving object.

c. Two aircraft were plotted during this period. Normal permanent echoes and nearby surface vessels were visible. At 2030 one F-94 type aircraft made a search of the area with negative results. The only objects in the vicinity were several small surface vessels. The pilot did not report the number and type of surface vessels to site #6. Radar contact with the F-94 was good throughout this area. Contact with the aircraft was lost at 8,000 feet when the aircraft descended to investigate the surface vessels. This would tend to place the altitude of the target at a minimum altitude of 8,000 feet. This target was beyond the range of height finding equipment installed at site #6.

d. This object was detected by a CPS-5 modified by AN/GPA-7. At the time of the sighting the following conditions existed:

(1) Range setting - Long range - 150 miles.
(2) Pulse width - 2 micro-seconds.
(3) Frequency - 1300 megacycles.
(4) Pulse repitition rate - 600 PPS.
(5) Antenna rotation speed - 3 RPM.
(6) Noise level - 20 per cent of saturation.
(7) Range markers - Steady.

e. The receiving and presentation circuits were checked for possible malfunction with negative results. Sea return was abnormal within a 20 mile radius of the station.

f. The weather in the area was as follows:

(1) Niigata - 3/10 sky coverage at 4000 feet, visibility 20 miles, wind calm, temperature 65 degrees, dew point 47 degrees, wind NW at 16 mph, altimeter setting 30.19.
(2) Aikawa - Sky clear, visibility 20 miles, temperature 58°, wind SW at 4 mph.
(3) Wajima - Sky clear, temperature 65°, wind calm.

g. Visual identification was not possible due to the distance from the station and lowered visibility because of darkness. Site #6 was the only site that had contact with the object.

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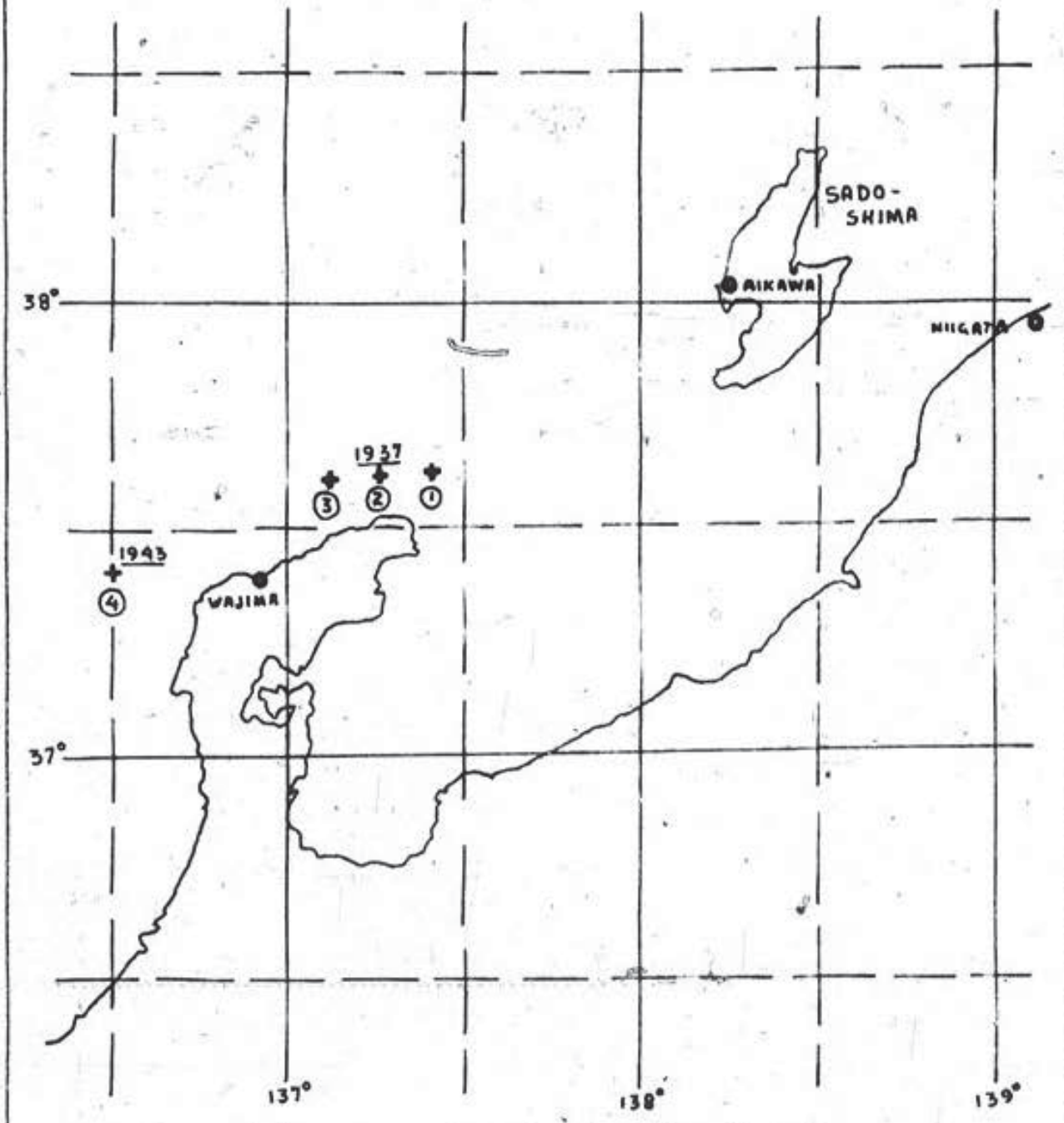
7., h. Overlay of unusual radar plots observed at Site #6, 621st AC&W Gp, Niigata Air Base, Japan, 7 October 1951:



(1). The first return plotted on the radar scope.
(2). The second return. This return was plotted and forwarded to ADCC as the first plot on this track.
(3). This was the third consecutive return on the radar scope.
(4). This was the fourth and last return observed on the radar scope. This was plotted and sent to ADCC as the second and last plot on this target.

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7.

CONTENT: With the exception of slight variations in size and strength of target presentation from that of a B-29, the contact appears to be a normal radar target. The speed indicates a possible jet type aircraft; however there were no friendly aircraft in the area at the time of initial sighting. The distance from enemy bases precludes chances of fighter type jet aircraft being in the area. Enemy jet reconnaissance aircraft could reach this area, but the close proximity to the Japanese mainland makes this appear extremely doubtful. The enemy might possibly chance sending an aircraft such as the TU-2 for close reconnaissance. This aircraft, with a maximum speed of approximately 320 mph could, in a dive approach the speed plotted by site #6. With a service ceiling of approximately 30,000 feet, it could conceivably enter the area of coverage without being contacted until it was diving on its return leg towards Korea.

Since sea return was reported as abnormal, the gain of the radar set was probably turned down, thus lowering its effective ceiling.

(EVALUATION: B-2)

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8. Radar contact with unidentified object, by Patrol Squadron #6, (P2V-3W) in the Northern Sea of Japan, 21 August 1951.

a. Extracted from letter from Commander Naval Forces Far East, to the Chief of Naval Operations, 29 September 1951:

Unusual radar targets were reported in the log of a P2V-3W of Patrol Squadron 6, 21 August 1951, while on a routine shipping surveillance flight in the Sea of Japan. The aircraft was at 41°55'N-133°52'E, at 1205 hours "K" time, 3000 feet altitude, when a target appeared astern of the plane on the radar scope.

In an attempt to make visual contact, the plane was turned sharply toward the target several times, but each time the course was reversed thetarget would either appear on the beam or remain astern. The target would remain on the scope for a few sweeps, then disappear and reappear on another portion of the scope but never forward of the beam. The range from the target to the aircraft varied between 3 and 7 miles throughout the period of contact. Although all flight crew attempted to make visual contact, none were able to do so. This might be accounted for by the fact that visibility was reported to be 3 to 5 miles due to haze. Qualified personnel, including squadron electronic officer, viewed the scope and identified the target as authentic and distinct from sea return. The target caused a strong presentation on the scope throughout the contact and was capable of being sector scanned by the operator. After 45 minutes the patrol was continued. Upon leaving the area the target was not seen again.

The aircraft radar equipment was an AN/APS-20 and the antenna had fixed tilt of plus 2°. Radar equipment was operating very satisfactorily before and after leaving the area.

When the target was observed, the radar camera was turned on and operated continuously. (The film quality was poor and revealed no additional information.) The target was viewed by the operator on the 0-10 mile range setting; however the camera operated on a different scope with a minimum range scale of 50 miles. The sea return on the 50 mile setting was sufficient to obliterate all targets within the 10 mile radius.

The cause of this phenomena cannot be evaluated from the information available. Possible explanations are malfunctioning of the equipment and enemy spoofing.

COMMENT: The fact that the aircraft tried unsuccessfully for 45 minutes to bring the target forward indicates possible enemy spoofing. The plots disappearing and reappearing could hardly be due to a normal aircraft or missile, despite the close interference due to the sea return.

(EVALUATION: B-6)

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9. Radar contact with unidentified high-speed object, by Patrol Squadron 28, (Navy PB4Y-2), in the Yellow Sea, 14 April 1951.

a. Extracted from letter from Patrol Squadron 28 to Commander Naval Forces Far East, dtd 18 April 1951:

On 14 April 51 at 0522/Z, Symons, AT3, radar operator of PB4Y-2 which was patrolling Sector Fox, at 37°09'N-123°20'E, reported an unusual radar target, which was viewed and verified by Captain Dyson Commander Fleet Air Wing Six and LCDR Windley of Patrol Squadron Twenty-eight. The aircraft was making a true track of 010° with a ground speed of 134 knots.

Radar type AN/APS-15 was used with a pulse repetition rate of 1347; frequency 9375/40 mcs; beam width 4° at half-power points in the horizontal phase; and intermediate receiver frequency of 30 mcs. The tilt of the radar antenna was +4° at the time of sighting. The radar gear was functioning normally prior to and after the reported target appeared and disappeared. (NOTE: Flash report of this sighting mentioned fuse burnout in radar set two hours prior to observation, and complete failure of equipment three hours after sighting).

b. Chronological narrative of events relative to the sighting:

0520/Z - Radar gear functioning normally on 5-30 mile range. No targets from scope center. +4° tilt being used with aircraft at 1000 foot altitude. Land targets in NW quadrant of scope.

0522/Z - A sharply defined, elongated target of approximately 1/8 inch in length appeared at 100° relative, distance 28 miles and remained on the scope while travelling down to 110° relative, distance 28 miles at which time the target disappeared.

0523/Z - Pilot was informed of target, at which time the target suddenly reappeared at 110° relative, distance 28 miles and moved upward to a position of 100° relative, distance 29 miles, where it again reversed direction and moved downward to 110° relative, distance 29 1/2 miles, where it disappeared. Target then reappeared at 120° relative, distance 30 miles traveling to 130° relative, 31 miles distance where it again disappeared.

0524/Z - Target reappeared at 128° relative, distance 31 miles. At this time LCDR Windley viewed the target for approximately 5 seconds during which time the target moved down to 130° relative, distance 30 miles.

0525/Z - Captain Dyson viewed the target for approximately 5 seconds at the vicinity of 130° relative, distance 30 miles; then both Captain Dyson and the radar operator plotted the move on the scope from a position of 130° relative, distance 30 miles, to a position of 170° relative, distance 31 miles, in approximately 20 seconds. The target then disappeared from the scope and did not reappear. The range was shifted to the 50 mile scale but target was not picked up again.

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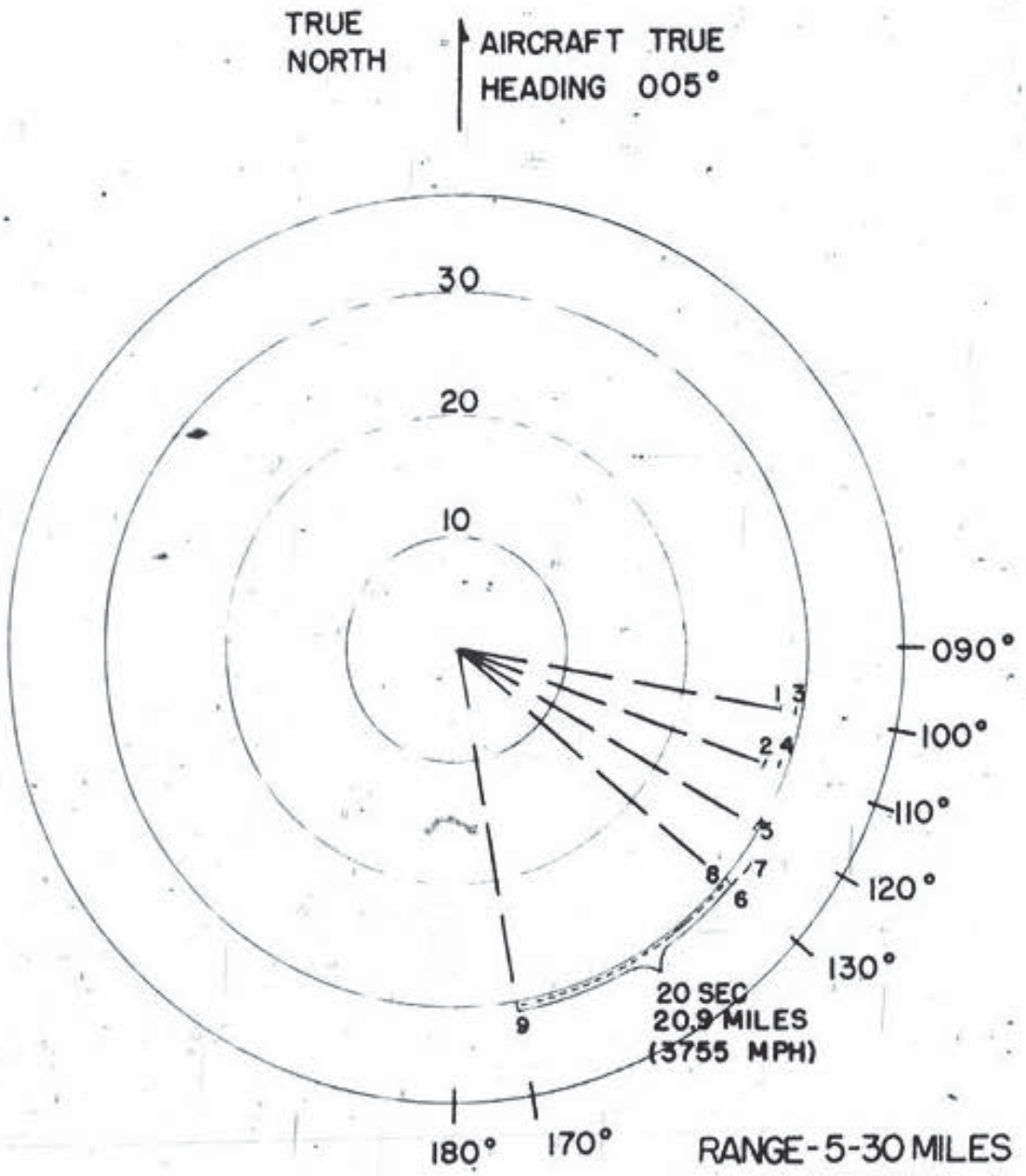
9., c. Radar scope presentation of unidentified high-speed object in the Yellow Sea, 14 April 51. Reported by Patrol Squadron 28, (Navy PB4Y-2):



COMMENT: The distance traveled during the last plot was approximately 20.9 miles. Speed as reported would be 3755 mph. The appearance and disappearance of the object and the apparent reversal of course is not indicative of a normal radar target. The earlier fuse burnout, and later failure of the equipment strongly indicates malfunction. (Evaluation: C-6)

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10. Radar contact with high-speed object, by Patrol Squadron 42, (PBM-Mariner), off Tsushima Island, Japan, 9 March 1951.

a. Extracted from message from Commander Fleet Air Wing 6, to Commander Naval Forces Far East, dated 9 March 1951:

R. W. Morey, Squadron Electronics Officer in Patrol Squadron 42 Mariner SA-four, enroute ASP mission for CTE 95.11 observed and tracked high speed air target at 090525/I, position 34°05'N-129°31'E. Target initially observed bearing 320° true, 15 to 17 miles range. Aircraft heading 270° true. Target tracked 55 miles in approximately 60 seconds before disappearing at 45 mile range and true bearing 075°. Target course appeared slightly curved and generally easterly. Calculated speed approximately 3350 mph. Signal elongated to about 3/8 inch. No targets emanated from scope center. Radar functioning normally. Plus three degrees antenna tilt. Other targets, small craft and land. Identical second target observed for approximately 10 seconds at 090530/I, bearing 065° true, at 25-30 mile range, same course. Weather overcast at 3000 feet. Targets verified by navigator. Patrol Squadron 42 submitting detailed report direct to Commander Naval Forces Far East.

Location of object was off the Southern tip of Tsushima island, between the Southern tip of Korea and the island of Kyushu, Japan.

COMMENT: Detailed report has not been received by this headquarters. No further information available.

(EVALUATION: C-6)

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11. Radar contact with unidentified high-speed object, by Patrol Squadron 42, (PBM Mariner), off the East coast of Korea, 26 January 1951.

a. Extracted from letter from Commanding Officer, Patrol Squadron 42, to Commander Fleet Air Wing Six, dated 28 January 1951:

During an ASP coverage flight on 26 January 1951 in Latitude 36°40'N Longitude 130°50'E, a target echo was observed on the aircraft's radar (APS-15) by the Squadron's Electronics Officer and a regularly assigned crew radar operator. During a fifteen minute period between 1405/I and 1420/I the object was observed to make what appeared to be a run over the tanker being escorted and seven runs over the observing aircraft at speeds, computed by radar tracking, of 3000 knots.

The observing aircraft was being flown beneath a broken overcast of an estimated 6/10 coverage at an altitude of 1000 feet. The cloud cover consisted of strato-cumulus clouds with bottoms at 2500 feet and tops estimated at from 4000 to 5000 feet. A circular pattern of radius fifteen miles was being flown as directed by the escorted tanker, USS Guadalupe. (NOTE: Later information showed the surface vessel involved was the USS Passumpsic in lieu of the USS Guadalupe.)

The unidentified object was first observed apparently moving (in full deflection for observer) over the target echo from the escorted ship fifteen miles distant. The echo from the object was evaluated by the Squadron Electronics Officer as an airborne target moving at very high speed in that the echo was elongated to approximately 3/8 inch. Seven additional observations were made of the target echo during which the target echoes first appeared at approximately three miles from the center of the scope on varying retiring headings and were tracked out to thirty miles by both Squadron Electronics Officer and the crew radar operator. Again the echo was evaluated as an airborne object moving at high speed, appearing to open the range two miles during each antenna sweep. (Antenna rotational speed 24 RPM). During these observations the echo again appeared elongated to approximately 1/8 inch, indicative of a high speed target. The navigator in conjunction with radar operators, timed the interval between successive passages of ten-mile range markers as twelve seconds for a radar speed of 3000 knots. (NOTE: Using the distance as two miles for each antenna sweep, the speed of the objects is determined as 2880 mph, or 2500 knots).

Based on the fact that the last seven observations originated at the center of the observer's scope and that the vertical beam width of the APS-15 radar is fifteen degrees, it is possible to conclude that the observed object could have been approaching from above the radar beam and entered it in the vicinity of the observer and then retired in the beam as might occur if an aircraft were to make a diving approach and a flat retirement.

The aircraft radar was operating satisfactorily at ranges less than fifty miles although it was not considered to be tuned for maximum performance. It was not operating satisfactorily above this range in that the target echoes were not observed at ranges exceeding fifty miles. Crystal current was normal. Rectifier and Modulator current showed slight deflection indicating minor mis-adjustment of the Klystron tube. All observations made on the object were made with the radar set on the thirty mile scale with ten-mile range markers, with small clutter at the center of the scope to a range of three miles. Other than the escorted tanker and this unidentified object, no other targets were known to be, nor observed to be in the area.

The Patrol Plane Commander, CDR G.F. Smale, USN, Originally evaluated the contact as being an interceptor aircraft which had been vectored out by carriers known to be operating to the North, although unobserved. However, reconciliation of the object's apparent speed and the known characteristics of current aircraft was not possible. It

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is considered very likely that the observation was a result of electronic, atmospheric, or some other natural phenomena, or possibly a guided missile or high-speed aircraft.

The Patrol Plane Commander did not request confirming information from the escorted tanker.

COMMENT: The report does not state whether the scope clutter and the escorted tanker were picked up on the 50 mile range scale. Although the radar was not functioning properly on the 50 mile scale, the nature of the echoes is not indicative of malfunction or of enemy spoofing. No jamming equipment is known that might make this type of patterns. The target appears to be the normal type that would be obtained if surveillance runs were being made with a diving approach and flat retirement, (except for the exceptionally high speeds noted).

The incident described in paragraph 5 of this report is somewhat similar. Paradoxically, the radar in that instance did not pick up the bogies on the 30 mile scale, although functioning normally on the larger ranges. In the incident (paragraph 5), the targets were closing on the observing aircraft, and would disappear as they reached the center of the scope whereas in this case the reverse was true.

(EVALUATION: B-6)

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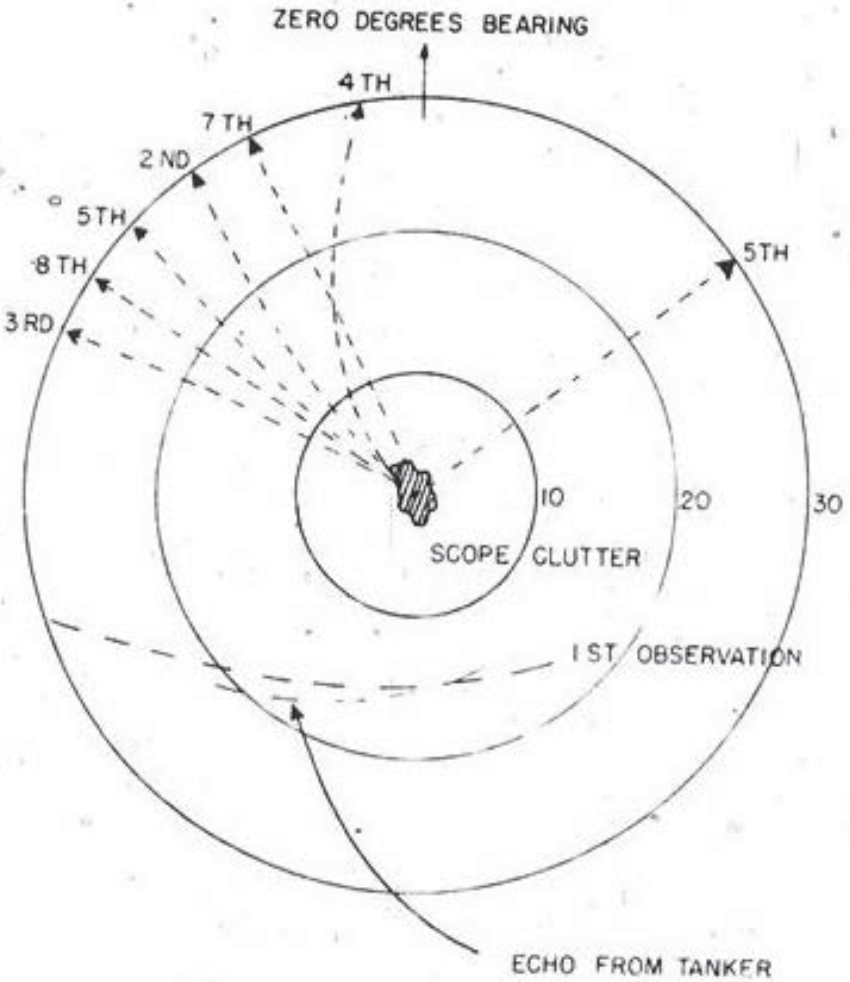
11., b. Plots of radar contact with unidentified high-speed object by Patrol Squadron 42 (PBM Mariner), off the East Coast of Korea, 26 January 1951.



NOTE: 1. (6TH TRACK NOT SHOWN ON THIS PLOT)
2 (AIRCRAFT WAS FLYING CIRCULAR PATTERN, THUS TRUE HEADING VARIED. PLOTS SHOWN ARE ON BEARING TO ACFT.)

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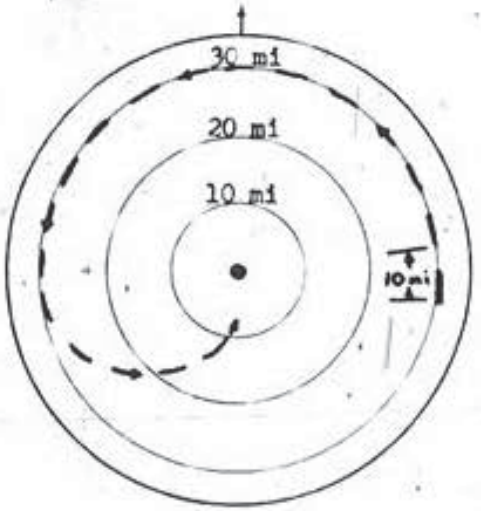
12. Radar contact with high-speed objects by Navy Patrol Plane, off the East Coast of Korea, 15 February 1951.

a. Information received from interrogation of crew:

Plane number	:	59641, Crew Number 9, Flying Sector Able.
Location	:	38°30'N-130°00'E, Heading 330° Magnetic.
Time	:	Early afternoon, 15 Feb 51.
Altitude	:	1500 feet, flying 500 feet under the overcast.
Speed	:	150 knots indicated.
Radar	:	AN/APS-15B with low altitude antenna, rotation rate on high speed - 24 RPM. 30 mile range with edge of scope at app. 35 mile radius. Antenna tilt 14° up. Oscillator set on Manual Tune. Operation of set was normal in every respect.

b. Chronology of events, (Approximately 3 to 4 minutes between sightings)

(1). First contact was noted by Chief E. H. Hopper, ATC, at 90° to starboard, range 30 miles, moving counterclockwise approximately 10 miles with each sweep of the trace. The target moved around to the port side, the traces being spread a little more than 10 miles apart as it swept around to the rear and disappeared about 9 miles directly astern of the aircraft. After this contact, Chief Hopper alerted the crew to watch for aircraft. The track of the targets was reported to the crew, but no visual contact was made at any time.



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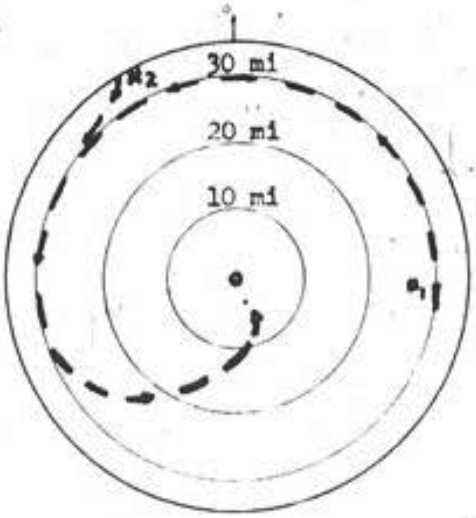
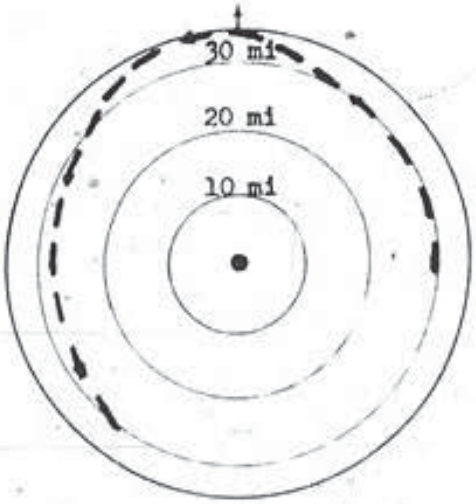
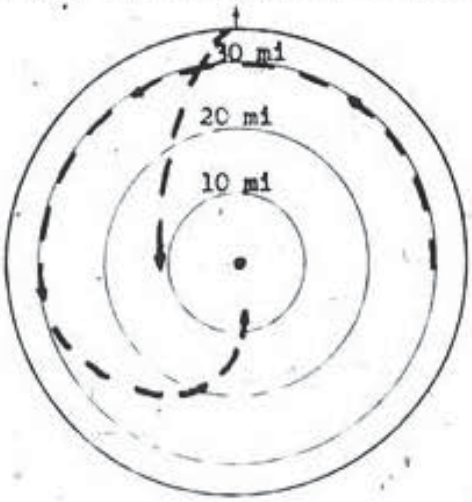
(2). Second contact was made at 90° to the starboard, range 30 mi., moving the same as the previous target. Slightly to the left of zero degrees bearing, the target was joined by a second target, and followed around to the stern, disappearing at about 8 miles range, slightly to the starboard of the aircraft.



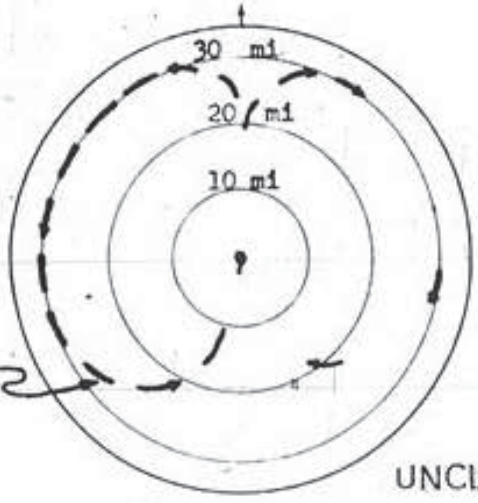
(3). Third contact was made at 90° to the starboard, range 30 miles, moving counterclockwise, but increasing the range to about 35 miles as it passed zero degrees bearing. It then made a sweep to the rear, but did not follow astern as before. Contact was lost at about 30 miles range.



(4). The fourth contact appeared at 90° starboard, range 30 miles, moving counterclockwise as before. As it passed in front of the aircraft, a second target crossed its trail. The first target followed around astern, being lost at about 10 miles directly astern. The second target disappeared from the screen at about 270° bearing. At this time LCDR Smith was called to watch the targets.



(5). LCDR H. L. Smith reports the pips on the fifth contact as being narrow lines, about 3/8 inch long and 1/4 of an inch apart, appearing near the top of the screen (zero degrees bearing). After a few seconds the pips separated, one turning to the right and one to the left. Watching the one turning counterclockwise he described it as making a wide sweep at a distance of approximately 25 miles, then passing astern and over the aircraft, joining the starboard sweep, and repeating this pattern three times. The target turning to the right was visible only on occassion. The pips were longer and brighter as they passed in front of the aircraft, growing smaller as they passed around to the sides. The pips were described as longer and thinner than normal aircraft returns, and without the usual misty tail. The distance from 25 miles range until the object crossed over the aircraft was covered in four sweeps of the trace.



Plots on starboard side visible only occassionally

Track from this point to aircraft covered in 4 sweeps of beam.

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12. (Cont'd)

COMMENT: The track timed by LCDR Smith would cover a distance of approximately 35 miles. At 24 RPM beam rotation, this would be equal to 12,600 mph. The 10 miles-per-sweep reported by Chief Hopper would be the equivalent of 14,400 mph. These excessively high speeds are difficult to reconcile with any type of missile or previously reported objects. The radar equipment appeared to be working normally; thus the unusual presentation seems most likely due to some type of enemy spoofing.

(EVALUATION: B-3)

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13. Radar contact with unidentified high-speed objects, by Marine Air Control Group 2, off the East Coast of Korea near Pohang, 16 February 1952.

a. Extracted from report submitted by Marine Air Control Group 2; 22 February 1952:

Marine Ground Control Intercept Squadron 3, (Code Name: DOODLEBUG), located on the Yongil Penninsula, ten miles northeast of Pohang, reported two unusual intercepts for 16 Feb 52. Each track was plotted on the Plan Position Indicator of the AN/CPS-5 radar which was functioning normally. Altitude data was not obtained, and no attempt was made to determine the minimum and maximum angle of antenna tilt through which the contact could be observed.

Operational characteristics of the AN/CPS-5 radar at the time of incidents were as follows:

Frequency	:	1298 megacycles
PRF Frequency	:	600 cycles
Pulse Width	:	2 micro-seconds
Range Scale	:	140 miles
MTI	:	Inoperative
Ground Return	:	Ten to Thirty miles, irregular
Antenna rotation	:	4 RPM

Visibility was 10 to 12 miles with high scattered clouds. Seas were running high. The first object could not be sighted; a single contrail was observed in the general area in which the second object was plotted.

The initial plot of track #1 was observed at 1440/I, 16 February 1952, at 37°03'N-130°42'E. The track followed a course of 186°, faded at 37°00'N-130°19'E, reappeared at 34°56'N-129°54'E for two additional plots and disappeared at 34°37'N-129°50'E. The calculated speed of the target was 4320 Knots. The appearance of the target response was similar to that received from a single jet type aircraft.

The initial plot of track #2 was observed at 1560/I, 16 February 1952, at 36°51'N-129°17'E. The track followed a course of 170°, faded momentarily at 36°19'N-129°24'E and proceeded on a course of 120° until contact was lost at 36°08'N-129°47'E. The calculated speed of this target was 1380 Knots. The appearance of the response was similar to that received from a flight of 6 or 8 jet type aircraft.

(EVALUATION: B-3)

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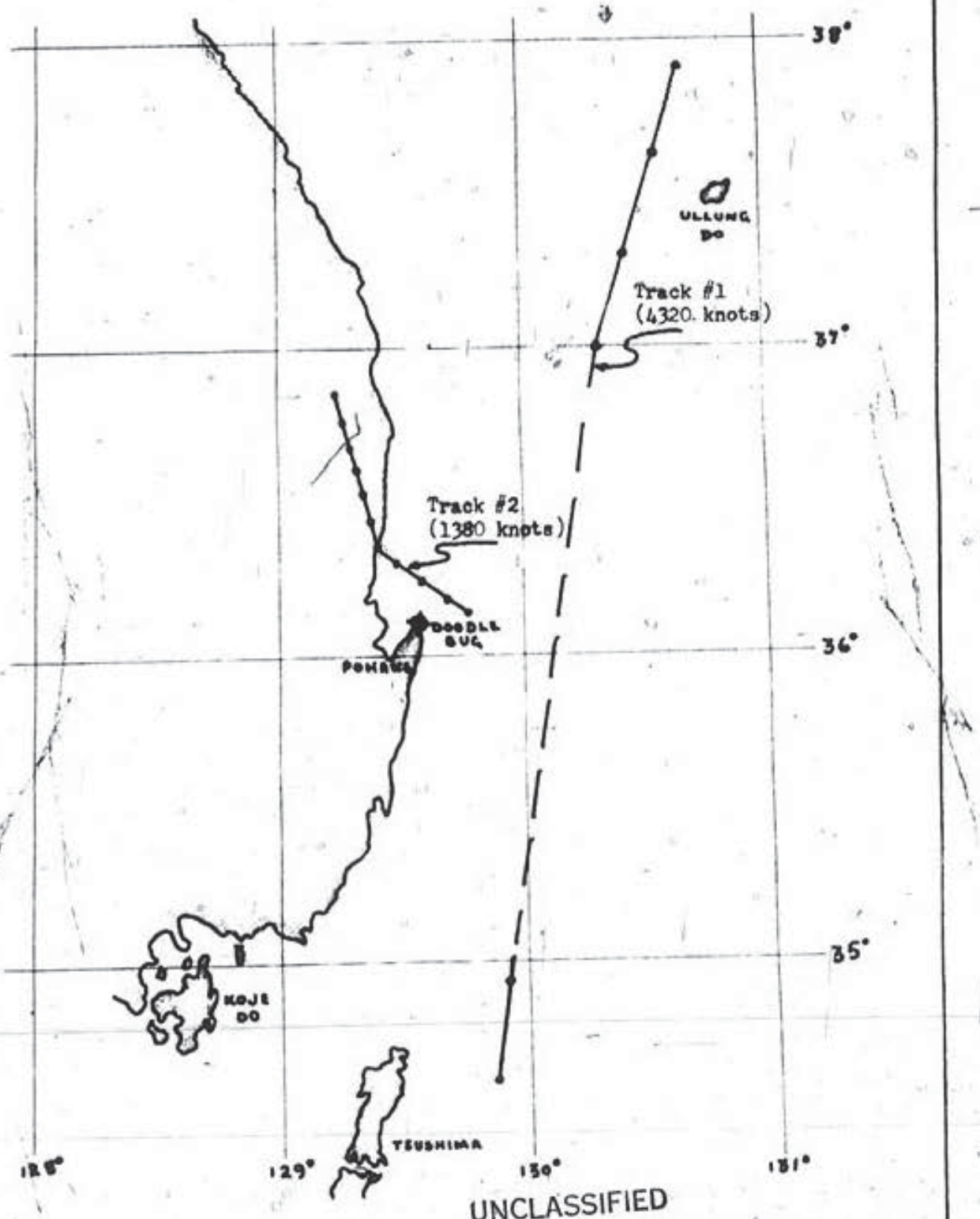
13., b. Plots of radar contacts with unidentified high-speed objects, by Marine Air Control Group 2, off the East Coast of Korea near Pohang, 16 Feb 52.



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COMMENTS BY PREPARING OFFICER:

1. A brief outline of this report follows:

Page	Date & Time of Obs.	Location	Speed
1	2 Feb 52, 1935/I	37°41'N-130°30'E	1800 mph
2	2 Feb 52, 1030/I	35°00'N-129°40'E	767 mph
2	2 Feb 52, 1040/I	35°30'N-129°40'E	1257 mph
3	18 Apr 52, 1207/I	34°30'N-129°30'E	2100 mph
4	9 Sept 51, 1850/I (Radar operator reported "Many Bogies")	39°05'N-128°40'E	900 mph
6	21 March 51	42°N-133°E	over 5000 mph
8	Apr & May 51,0209/I	39°N - 129°E	1200 Knots
10	7 October 1951, 1937/I	37°37'N - 137°15'E	420 mph
13	21 August 1951, 1205/K	41°56'N-133°52'E	---
14	14 April 1951, 0522/Z	37°09'N - 123°20'E	5755 mph
16	9 March 1951, 0525/I	34°05'N - 129°31'E	3350 mph
17	26 January 1951, 1409/I	36°40'N - 130°50'E	3000 knots
20	15 February 1951, Early Afternoon	38°30'N - 130°00'E	12000 to 14000 mph
24	16 February 1952, 1440/I	35°N - 130°E	4320 Knots
24	16 February 1952, 1550/I	36°30'N - 129°30'E	1380 Knots

2. As a possible explanation for most high-speed radar observations, a study was made of possible methods by which enemy spoofing equipment might radiate false signals. Synchronized jamming, which would place blips at odd places on the antenna lobes appear to be within the realm of enemy accomplishment. It is believed, however, that such type of jamming would reappear as similar signals for the different observations reported. Most of the observations herein reported have given widely differing radar presentations.

3. A jet aircraft circling above the station in the area of scope clutter, or above the maximum altitude of the antenna lobes could conceivably radiate signals which would give the appearance of a target located at some distance from the station (and thus give an indication of extremely high speeds); however it would be difficult for the aircraft to reach this position without being picked up at some time by the receiving radar. Other than to confuse friendly radar observers there are no known reasons for such types of spoofing tactics.

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4. The majority of the reports remain unexplained from the limited information available.

George J. Lamos, Jr. USAF
for CHARLES J. MALVEN
Captain USAF
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C - Fairly reliable	3 - Possibly true report
D - Not usually reliable	4 - Doubtfully true report
E - Unreliable	5 - Improbably true report
F - Reliability cannot be judged	6 - Truth cannot be judged

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