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MISSION #22 OMURA "BUNCHBERRY 4"
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XX Bomber Command



Tactical Mission Report

No. 22

DATE 19 DECEMBER 1944

GENERAL H.H. ARNOLD

COPY No. 1

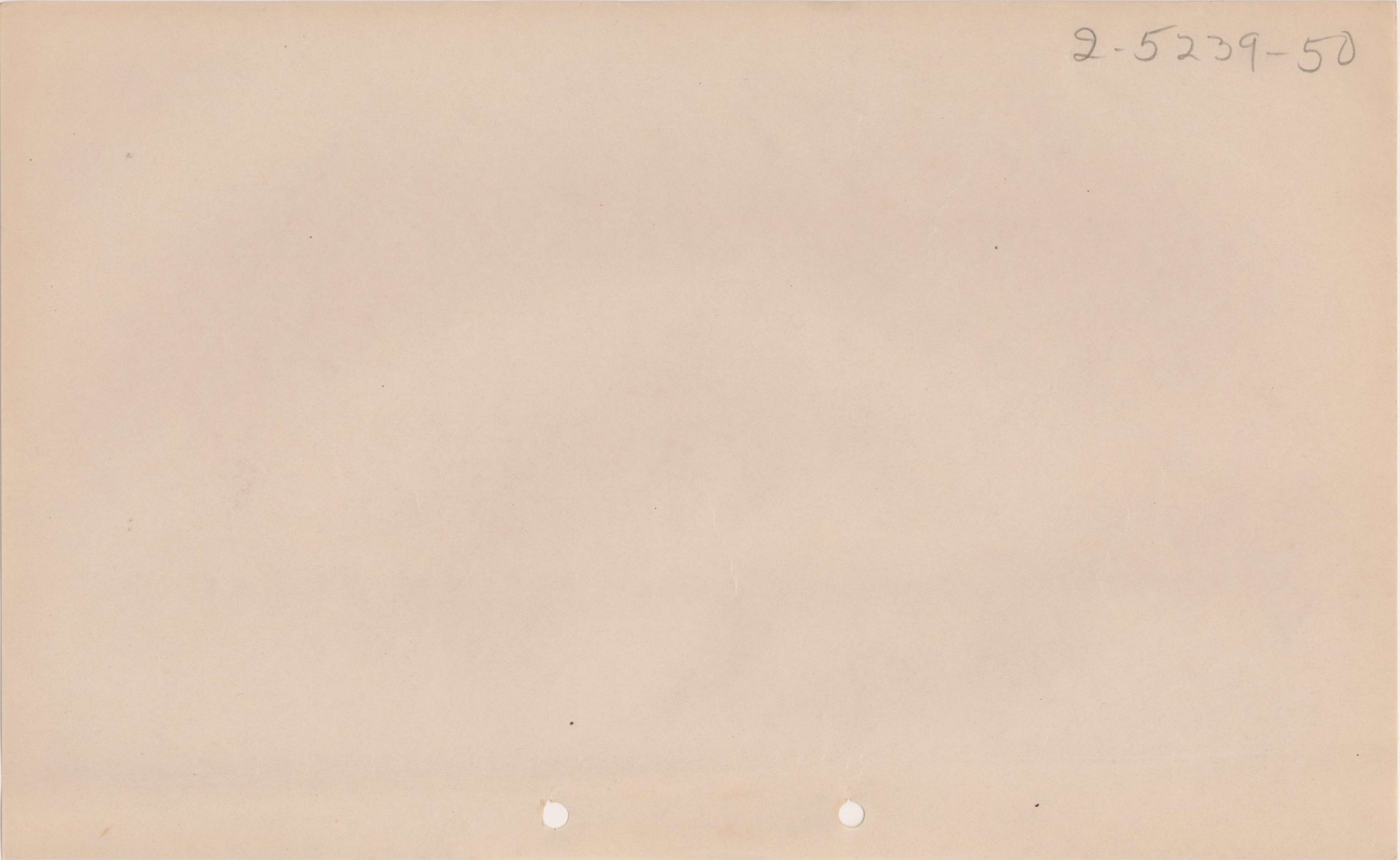
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* DEPCOM 20 A.F. *
* 9 Jan 44 *SH* *
* Date Initials *

TWENTIETH AIR FORCE
Office of The Deputy Commander, IB and C
APO 493

TACTICAL MISSION
REPORT

Field Orders No. 22

Mission No. 22

TARGET: OMURA AIRCRAFT PLANT

Omura, Japan

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Prepared by:

Intelligence Section
XX Bomber Command

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TWENTIETH AIR FORCE
Office of The Deputy Commander, IB and C
APO 495

9 January 1945

SUBJECT: Report of Operations, 19 December 1944.

TO : Commanding General, Twentieth Air Force, Washington 25, D.C.

1. UNITS PARTICIPATING: The four Bombardment Groups of the XX Bomber Command were directed by Field Orders Number 22 to attack The Omura Aircraft Plant, Omura, Japan. Groups, their locations, and their Commanding Officers were as follows:

<u>Group</u>	<u>Rear Base</u>	<u>Forward Base</u>	<u>Commanding Officer</u>
40th	Chakulia	Hsinching	Col. W.H. Blanchard
444th	Dudhkundi	Tsushikawa	Col. A.L. Harvey
462nd	Piardoba	Kiunglai	Col. A.F. Kalberer
468th	Kharagpur	Pengshan	Lt. Col. J.V. Edmundson

2. IDENTIFICATION OF MISSION:

a. Attack No. 22.

b. Targets Specified:

- (1) Primary Target: Omura Aircraft Plant, Omura, Japan (AAF Target No. 90.36-1627).
- (2) Secondary Target: Kiangnan Dock and Engineering Works, Shanghai, China (AAF Target No. 83.1-117).
- (3) Last Resort Target: Wharf Area, Nanking, China (AAF Target No. 83.1-129).

3. STRATEGY AND PLAN OF OPERATIONS:

a. Importance of Targets:

(1) Primary Target:

(a) The Omura Aircraft Plant is divided into three distinct parts; (a) The old area 2200 feet by 1800 feet extending diagonally back from the main wharfs, (b) The new south plant 2550 feet by 1010 feet extending south along the shore line, and (c) The new east plant which is a continuation of the old plant.

(b) The work involved in these three shop areas consists of repair to Zekes and Jakes, manufacture of the Pete type aircraft as well as the manufacture of the new carrier-borne attack plane Grace. Engines are likewise repaired and built at the Omura Plant.

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(2) Secondary Target:

(a) The Kiangnan Dock and Engineering Works is Shanghai's largest drydock and shipyards installation, and is one of the enemy's most important ship building and repair facilities outside of Japan. The 3 drydocks (650', 580', and 520') are active in repairing Japanese cargo vessels and can accommodate naval ships up to light cruisers. The 4 ship-building ways are at present turning out from 6 to 12 ships yearly, principally ore carriers of from 2000 to 3000 gross tons. In addition small wooden ships are being built. The shops, equipped with modern British machine tools, can make engines of 3000 horsepower or less.

(b) Destruction or damage suffered by this target would represent still another blow at Japan's weakening lifeline of ocean transportation.

(3) Last Resort Target:

(a) The city of Nanking, on the Yangtze River, is one of the enemy's military centers in Occupied China. The city contains a number of large barracks and storage areas. The movement of troops and supplies is accomplished by the excellent transportation facilities serving Nanking. The railroad line from Tientsin terminates at Pukow, across the river from Nanking with which it is connected by ferry. Another railroad line connects Nanking with Shanghai and continues on to Wuhu and the South. Ocean-going vessels are accommodated at the Nanking wharves.

(b) All these transportation services converge in the general target area, at the north of which is the Nanking R.R. Terminal and R.R. ferry wharves. The area contains numerous large warehouses, a power plant, and along the waterfront are large pontoon wharves. Over a period of months an average of 424 cars have been observed in the Nanking rail yards (700 at Pukow) and shipping at the Nanking and Pukow wharves generally amounts to between 20,000 and 30,000 tons, although shipping activity has possibly declined recently.

(c) Damage to this target area would hamper the flow of military traffic and destroy quantities of supplies stored there.

b. Details of Planning (See Annex N):

(1) Operational Planning:

(a) This mission was originally planned as part of a double strike to be run at the end of October, then in the middle of November, then in the first week of December. At that time the mission was postponed 4 times as a result of unfavorable weather and a strike against Mukden was substituted.

(b) Before the running of this mission, it was decided to use only aircraft with modified engines on combat missions. In view of the small force of modified aircraft available at that time, it appeared as if the strike would be ineffective and Twentieth Air Force Headquarters was asked for a decision. It was decided that this mission should be run on 15 December or as soon thereafter as possible using all available modified B-29's.

(c) The tactical plan for this mission was changed from previous strikes on the same target in several ways as indicated in the following paragraphs.

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(d) Assembly points farther to the east were selected in order to eliminate a portion of the formation factor in fuel consumption, to provide for a greater number of hours of darkness on the route out and therefore a greater number of daylight hours for aircraft landing late, and to give each Group its own assembly point.

(e) The axis of attack was increased in azimuth in order to prevent the route from the assembly points (which were considerably north of a direct course) to the initial point from varying too greatly from the axis of attack, thereby providing an easier turn for the formation as they passed the initial point.

(f) The route out was moved to the north of Saishu Island as a result of the northern position of the assembly points and to prevent the same fighters from intercepting on the route out and back.

(g) The route back was moved farther south of Saishu Island in order to discourage fighters from following formations on the route back and then landing on Saishu Island.

(h) An immediate climb to 13,000 feet after take off was established in order to enable the aircraft to climb quickly through a possible overcast over the Chengtu area and to reduce to a minimum the possibility of picking up ice.

(i) Breaking up the formations on the route home over friendly territory was allowed in order to give individual aircraft commanders a chance to practice instrument letdowns.

(j) Time over target (instead of take-off time) was specified so that Groups would arrive over the target at a specified interval.

(k) The bomb loading ratio of incendiaries to demolition bombs was lowered due to limitations of supply in the forward area.

(l) Some unmodified aircraft were to be scheduled due to the lack of sufficient modified aircraft to permit 12-plane formations over the target.

(m) A minimum attack formation of 3 aircraft over the primary target was specified because of strong fighter defenses.

(n) Train release of bombs was specified because of the danger of mid-air explosion of salvoed bombs.

() (2) Determination of Bomb Load: See Annex O, Supplemental Information.

(3) Bombing Data:

(a) The field order prescribed that each group would furnish a maximum number of fully modified aircraft and a sufficient number of the best unmodified aircraft to bring the total scheduled for each group to 13. Each aircraft was to load a combined minimum of 9 500-pound (TNT or Amatol filled) general purpose bombs and 500-pound incendiary bombs, mixed in the ratio of one to one in so far as existing supplies permitted, and with the incendiary bombs loaded to release last.

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(b) The method of bombing was to be by 12- plane formations from the following pressure altitudes: 40th - 22,000 feet, 444th - 23,000 feet, 462nd - 21,000 feet, and 468th - 21,000 feet. The intervalometer setting was prescribed as minimum train and bombardiers were instructed to use electrical and not salvo release.

(c) The assigned aiming point against which the attack was to be directed was the northwest corner of the large machine shop in the engine manufacturing component of the target. (Located at 065-031 in the Omura Mosaic. Building No. 5 in Component H as shown on Annex 1 of D.A. Report No. 17, dated 13 October 1944).

4. MOVEMENT TO THE FORWARD AREA:

As most combat operational aircraft remained in the forward area following Mission No. 21 there was no major movement to the forward area for this mission.

5. EXECUTION OF THE MISSION (See Annexes A and K):

a. Take-off (See Annex A, Part I):

(1) Times of take-off were not specified, but were to be calculated by the Groups so as to place their aircraft over the target at the following times: 40th - 0219Z, 444th - 0221Z, 462nd and 468th - 0217Z.

(2) Take-off was accomplished as follows:

<u>Group</u>	<u>A/C Scheduled</u>	<u>A/C Airborne</u>	<u>First A/C Off</u>	<u>Last A/C Off</u>
40th	13	12	1930Z	2019Z
444th	13	10	1943Z	2021Z
462nd	9	9	1915Z	1942Z
468th	9	5	1917Z	1926Z
Total	<u>44</u>	<u>36</u>	<u>1915Z</u>	<u>2021Z</u>

(3) Two aircraft (included in the foregoing) made delayed take-offs. Excluding these two, the last off for the 40th Group was at 2001Z and for the 444th Group 2004Z.

(4) Although the field orders required each group to schedule 13 aircraft, the 462nd Group was able to schedule only 9 due to an insufficient number of bomb bay tanks in the forward area. The 468th Group scheduled only 9 aircraft due to a lack of sufficient time to re-service some aircraft which had participated in Mission No. 21.

(5) Weather at 3 of the bases at time of take-off was clear with a layer of thin 3/10 altostratus at the fourth. Visibility ranged from 1 1/2 to 3 miles in light ground fog and haze, with the wind varying from calm to 3 mph.

b. Route Out (See Annex A, Parts II and III):

(1) Route out was from the forward area bases to Anhang Airfield, to the North end of Hungtze Lake, to assembly point Number 1 (separate for 2 groups, common for the other 2 groups), to a common assembly point number 2 at Reizui Island, to the initial point at Shiro Reef, to the target at Omura.

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(2) Deviations from the planned route to the primary target were proportionally numerous, 19 aircraft varying from the routes for the following reasons: 13 bombed the secondary target; 2 bombed the last resort target; 1 jettisoned its bombs; 1 brought its bombs back; and 2 crashed. These deviations were divided among the groups as follows: 40th - 4; 444th - 6, and 462nd - 9.

(3) Unfavorable weather was a major factor in many of the deviations from the planned routes.

c. Primary Target:

(1) Of the 36 aircraft airborne on the mission, 17 bombed the primary target at Omura. The first aircraft (a formation of 9 aircraft) released their bombs at 0130Z from 22,300 feet true on a heading of 119 degrees magnetic. This formation was followed by 5 aircraft at 0132Z and 3 aircraft at 0134Z. These 17 aircraft during an interval of 4 minutes dropped a total of 105 M-64 General Purpose and 99 M-76 Incendiary bombs, a weight of 104,927 pounds or 52.5 tons.

(2) Bombing altitudes varied from 21,000 to 23,000 feet indicated and headings ranged from 119 degrees to 123 degrees magnetic.

(3) Extensive layers of clouds with tops at 10,000 to 12,000 feet prevented visual bombing.

d. Secondary Target:

(1) Thirteen aircraft bombed the secondary target visually, 4 singly and 9 in formation. The first aircraft released its bombs at 0115Z and the last (a formation of 7, only 6 of which bombed) at 0426Z. During this interval of 3 hours and 11 minutes 76 M-64 General Purpose and 77 M-76 Incendiary bombs were released, a weight of 78,527 pounds or 39.3 tons.

(2) Bombing altitudes varied from 18,000 feet indicated to 23,200 feet true, with headings of attack ranging from 228 degrees to 288 degrees magnetic.

e.) Last Resort Target:

(1) The last resort target was bombed visually by 2 aircraft, the first at 0111Z from 20,000 feet true on a heading of 253° magnetic and the second at 0438Z from 18,000 feet indicated on a heading of 250° magnetic.

(2) A total of 12 M-64 General Purpose and 9 M-76 Incendiary bombs was released, a weight of 10,874 pounds or 5.4 tons.

f. Route Back:

(1) The four check points used on the return route were: 32°41'N - 130°09'E, 32°15'N - 128°45'E, Kayou Lake and Liangshan Airfield.

(2) There were no substantial deviations from the briefed return route for those aircraft bombing the primary target. Those aircraft bombing other targets in the majority of cases returned by a direct route.

(3) With the exception of the 2 aircraft that crashed all aircraft returned to XX Bomber Command bases.

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(4) The weather at the bases at time of return was favorable with a clear sky at one base and scattered altostratus at 10,000 feet at the other 3. Visibility ranged from 6 miles in haze to unlimited and the wind from calm to 8 mph.

6. ENEMY ANTI-AIRCRAFT (See Annex B):

a. In contrast to previous missions under comparable conditions at Omura only one aircraft encountered heavy anti-aircraft fire, which was meager and inaccurate and of a barrage type.

b. At Shanghai meager and inaccurate to accurate heavy anti-aircraft fire was reported by 10 out of 14 aircraft over the area. Altitudes of the aircraft varied from 18,500 to 23,000 feet and it is believed continuously pointed fire was used. RCM reports indicate the possible use of gun-laying radar.

c. Meager and inaccurate heavy anti-aircraft fire was encountered at Nanking by our aircraft flying at an altitude of 18,000 feet.

d. A white smokescreen was observed originating from the north-east corner of the city of Shanghai.

e. One possible high-altitude balloon flying at 22,000 feet was sighted in the vicinity of the southwestern tip of Korea.

f. There was no damage resulting from heavy anti-aircraft fire.

g. It is probable that the enemy had prior warning of the attack against Omura for the aircraft were tracked from 113°30'E to the China Coast and from the tip of Korea to Saishu Island.

7. ENEMY AIR OPPOSITION (See Annex C):

a. Considering the comparatively small force of B-29's employed, enemy air opposition was rated weak to moderate, with 21 of 36 B-29's reporting interception. No B-29's were lost or damaged due to enemy air action. Preliminary claims against enemy aircraft were 5 destroyed, 4 probably destroyed and 12 damaged.

b. Of a total of 93 individual encounters, 63 occurred in the primary target area, all after bombs away. There were 13 encounters in the secondary target area, most of which were before bombs away, and 17 spread out along the route home over China. There was no air opposition enroute to target areas.

c. For the second time since meeting major air opposition encounters from the right quarter were in the majority with 41 percent of the total. Of the remainder, 22 percent came from the rear quarter, 18 percent from the left quarter, and 19 percent from the frontal quarter. There was also a change in level of approach, with low approaches predominating - 53 percent of the total. High approaches were 39 percent and level approaches were 8 percent.

d. There were 13 coordinated attacks, accounting for 40 individual encounters, 43 percent of the total. Several of these were largely responsible for bringing about the changes in direction and level of approach as they employed the "Chow Line" attack with low approaches.

e. Japanese pilots opened fire in 64 percent of the encounters and B-29's in 95 percent, a higher than usual percentage for B-29's. Enemy pilots were not rated aggressive. Breakaways were at much greater

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distances than usual. Enemy pilot ability seemed under par in comparison to previous missions over the same target.

f. Aerial bombs were employed in 10 of the 93 encounters and were mostly of the phosphorous type. There were no rocket attacks.

g. There were no attempts to ram B-29's.

h. As for evasive action against enemy air attacks, one Group reported their wing airplanes uncovered guns to meet attacks by changing from high to low position when necessary. Others reported that their pilots occasionally nosed their airplanes down in short dives or increased the indicated air speed.

8. WEATHER (See Annex D): The weather was good for formation flying, but extensive cloud cover over the primary target prevented visual bombing. Conditions were good for visual bombing over the secondary target.

9. COMMUNICATIONS (See Annex E):

a. Communications on this mission were in general satisfactory. A substantial increase in traffic in relation to the relatively small number of aircraft participating in the mission may be attributed to the inclement weather which prevented complete rendezvous of formations.

b. As in the past few missions, a practice message was sent to the aircraft in flight in order to familiarize still further the communications personnel in the procedures involved in passing a message from the Command Post to aircraft in flight. A time study of the handling of this message is included as Annex 1 to Annex E.

c. Compliance with the communications provisions of the Tactical Doctrine and the handling of required traffic by both ground and combat crew personnel was highly satisfactory.

d. Air-to-air homing was attempted by 3 Groups.

e. There was no case of definite attempted jamming reported, but the usual amount of heavy atmospheric and man-made interference was encountered.

f. One violation of cryptographic security was reported.

10. RADAR (See Annex F):

a. The bombing of the primary target, Omura, was accomplished entirely by radar, while the secondary and last resort targets were bombed visually. Radar scope photographs were secured from 2 formations and preliminary results appear encouraging.

b. Scope photography was disappointing, for only 2 sets of usable negatives were returned. This low figure was due in many groups to the scheduling of aircraft without scope camera installations and also to the number of equipment malfunctions.

c. Serviceability of the radar equipment was about average.

11. RCM (See Annex G):

a. Two RCM search aircraft participated in this mission. One bombed the primary target at Omura and the other, because of weather

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conditions, turned back after reaching the eastern tip of Saishu Island and proceeded to and bombed the secondary target at Shanghai. Both searched for enemy early warning radar sites en route to and from the targets.

b. Normal enemy radar intercepts were made. The Army "CHI" early warning net in China was active with intercepts being made of stations at Shasi, Hankow, Nanking, Kaoshun, and a site near the China Coast.

c. As the aircraft approached the tip of the Korean peninsula, several Army "CHI" sites were intercepted. Furthermore, the enemy radar in the Saishu Island area was found to be active, as on previous missions. There were no radar intercepts in the primary target area, but Mark I Model 3 type radar sets (or a modification) were reported in the Shanghai area.

d. On the route from the target in the China area, a new 80-mc. signal (similar to the sites located at Amoy, Palembang, and Rangoon) was intercepted. The Mark I Model 1 type located in the Changsha area was also intercepted.

e. Possible gun-laying equipment was noted in the Shanghai area. (A detailed description of the signals and their coordination with anti-aircraft fire is given in Annex G, page 4, paragraph D).

f. Enemy countermeasures consisted of one attempt at jamming that has not been definitely established. Another possible attempt on the Navy distress and sighting frequency is believed not to have been intentional.

12. CENTRAL STATION FIRE CONTROL AND GUNNERY (See Annex H):

a. Gunnery and the CSFC system both are considered highly satisfactory for this mission. Four malfunctions out of 170 CSFC turrets on the mission were reported - a malfunction percentage of 2.35. In the case of 50-caliber machine guns, 10 malfunctions out of 340 guns were reported - a malfunction percentage of 2.94. (These statistics are based on aircraft for which a specialists interrogation form was submitted).

b. Rounds of ammunition expended totaled 18,282, of which 4410 rounds were expended in test firing and 13,872 in combat.

13. CAMERAS AND PHOTOGRAPHS (See Annex I):

Excluding those of the 40th Group 22 cameras of the K-18, K-20 and K-22 types were installed in the aircraft airborne. Of these 13 cameras obtained 76 usable photographs of the targets. There were no mechanical failures reported, but 7 cameras failed to photograph a target due to other reasons - primarily a cloud cover over Omura.

14. LOSSES AND DAMAGE (See Annexes J and M):

a. Known Battle Losses and Battle Damage: There was no known battle loss or battle damage.

b. Known Operational Losses and Damage:

(1) A/C 466 (40th) lost oil from the #1 engine approximately 2 hours after take-off. The propeller could not be feathered and the crew was forced to abandon the aircraft in the Ankang area. The entire crew is safe.

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(2) A/C 452 (462nd) lost the number 2 engine between the second assembly point and the initial point. The bombs were jettisoned and the aircraft headed for Liangshan. However, due to lack of fuel the crew was forced to bail out near Packang. All crew members have been returned to safety.

(3) One aircraft suffered minor damage to its front bomb bay doors by its own guns.

c. Missing Aircraft: None

15. FUNCTIONING OF EQUIPMENT (See Annexes K and M):

a. Of the 44 aircraft scheduled for the mission 5 failed to take-off due to mechanical difficulties and of the 36 aircraft to become airborne 5 failed to bomb the primary target for mechanical reasons.

b. There were 47 malfunctions of equipment in flight (excluding 7 that were related to failure to bomb the assigned primary target) as follows: power plant and accessory section - 8; propellers and governors - 7; oil system 9; fuel system - 2; electrical system - 7; instruments - 12; and miscellaneous - 2.

c. Over-all averages in fuel consumption were: average - 6370 gallons, maximum - 6700 gallons, and minimum 5400 gallons for an average of 1 1/4 hours and 37 minutes of flight. Averages by Groups were as follows: 40th - 6450 gallons (maximum - 6700, minimum - 6140); 444th - 6445 gallons (maximum - 6500, minimum - 6400); 462nd - 6500 gallons (maximum - 6500, minimum 6500); and 468th - 6200 gallons (maximum - 6650, minimum 5400).

16. TARGET DAMAGE ASSESSMENT (See Annex L):

a. Primary Target:

(1) No damage assessment of the primary target is possible at this time due to the lack of strike and post mission photographs.

b. Secondary Target:

(1) The assessment of damage is derived exclusively from strike photos and must be considered provisional. Bombing was accomplished by 4 individual aircraft and by 2 formations, one of 3 planes and one of 6 planes. Only the aircraft bombing in formations returned strike photos.

(2) The bombs from the 3 plane formation straddled the Engineering Works complex of buildings. Strike photos from the succeeding formation show results of the first over. A 325' River Passenger Steamer in No. 2 Dock (See Annex 1) was hit and was seen to be ablaze. This dock, empty at the start of the attack, was seen to be partly flooded indicating a breach of the lock. A 230' River Passenger Steamer in Dock No. 3 took a near miss as did a 200' Destroyer Escort and a 250' probable minelayer in Dock No. 1. Three storehouses east of the Engineering Works were destroyed and 3 more were heavily damaged. In addition a large fire was observed among shops between Docks 2 and 3 and the long storage house between Docks 1 and 2 was about half destroyed.

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(3) The 6 plane formation, last over, centered its pattern on No. 3 Dock with many hits observed on the large Engineering Works Complex of buildings just east, and on workshops adjoining the docks as well as on the large Machine Shop northwest of the No. 3 Dock. In addition hits appear to have been scored on the Steamer in Dock No. 3, on a large barge at the wharf and on a 220' River Steamer tied off Dock No. 3. Damage resulting is believed heavy.

c. Last Resort Target:

(1) No photographs are available for assessment of damage which may have been done by the 2 aircraft attacking the last resort target.

For the Deputy Commander:

Leo I. Herman
LEO I. HERMAN
Colonel, Air Corps
Acting Adjutant General

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ANNEX

A

EXECUTION OF THE MISSION

- I - Information on Take-offs
- II - Details of Routes
- III - Track and Vertical Flight Path *
- IV - Bombing Data **
- V - Bomb Loading
- VI - Disposition of Bombs
- VII - Formations Flown
- VIII - Navigation Report *
- IX - Information on Landings

* Prepared by Staff Navigator

** Page A-IV-1 prepared by Staff Bombardier

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I - INFORMATION ON TAKE-OFFS

Mission No. 22

19 December 1944

Group	First A/C Off	Last A/C Off	Elapsed Time	No. of A/C Taking Off	Average Take-off Interval
40th	1930Z	2001Z	31 min.	11*	186 sec.
44th	1943Z	2004Z	21 min.	9**	158 sec.
462nd	1915Z	1942Z	27 min.	9	203 sec.
468th	1917Z	1926Z	9 min.	5	135 sec.
Over-all	1915Z	2004Z	49 min.	34**	89 sec.

* Does not include A/C 752 that took off late at 2019Z.

** Does not include A/C 462 that took off late at 2021Z.

NOTE: Take-offs were on D-day minus 1, Z time.

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II - DETAILS OF ROUTES

Mission No. 22

19 December 1944

A. Planned Routes

	40th	444th	462nd	468th
Base	Hsinching	Kwanghan	Kiunglai	Pengshan
1st Check Point	Ankang Airfield (32°35'N - 109°14'E)			
2nd Check Point	North end of Hungtze Lake (33°42'N-118°32'E)			
Assembly Point No. 1	Largest of Santai Is. (34°23'N - 125°17'E)	South tip of Ko Is. (34°40'N-125°11'E)	Bansai Island (34°12'N - 125°28'E)	
Assembly Point No. 2	Reizui Island (33°58'N - 126°55'E)			
Initial Point	Shiro Reef (33°09'N - 128°54'E)			
Target	Omura Aircraft Plant (32°55'N - 129°56'30"W)			
1st Return Check Point	32° 41'N - 130° 09'E			
2nd Return Check Point	32°15'N - 128°45'E			
3rd Return Check Point	Kayou Lake (32°45'N - 119°20'E)			
4th Return Check Point	Liangshan A/F (30°42'N - 107°50'E)			
Base	Hsinching	Kwanghan	Kiunglai	Pengshan

B. Deviations from Planned Routes

1. 40th Group:

a. A/C 582 due to mechanical difficulty turned from the briefed course at 33°53'N - 120°30'E following the coast south to 21°50'N - 121°10'E. It then turned and proceeded to 32°28'N - 119°26'E and the last resort target. Return to Hsinching was by way of Liangshan.

b. A/C 233 flew the briefed route to the initial point, but because of undercast the formation leader (462nd) took the formation to the secondary target and returned to base as briefed.

c. A/C 752 due to mechanical difficulty made a late take-off and being unable to join a formation proceeded to the secondary target, bombed, and returned to Hsinching.

d. A/C 466 shortly after take-off had number 1 engine catch fire and lose oil. The propeller would not feather and ran away, forcing the crew to bail out approximately 25 miles northeast of Ankang.

2. 444th Group:

a. A/C 228, 451 and 732 flew the briefed route to the first and

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second assembly points, but being unable to join a formation returned directly to the secondary target and Kwanghan.

b. A/C 202 flew to the first and second assembly points as briefed, then to 32°00'N - 122°27'E, to 35°05'N - 120°40'E, to the last resort target, and back to Kwanghan by the briefed route from Nanking.

c. A/C 462 flew the briefed route to 34°10'N - 123°46'E, returned directly to the secondary target, and then back to Kwanghan on a course of 273 degrees.

d. A/C 226 flew the briefed route to the initial point, but being unable to join a formation, this aircraft flew directly to the secondary target and back to Kwanghan.

3. 462nd Group:

a. A/C 457, 393, 448, 472, 454, 232, and 484 flew the briefed course to the initial point, but due to cloud cover the formation leader took the formation to the secondary target and back to the base area. All aircraft bombed the secondary target with the exception of A/C 484 which was forced to jettison due to a bomb rack malfunction.

b. A/C 461 returned with its bombs after 5 hours and 30 minutes due to an inoperative fuel transfer system and a fire in the engineer's panel.

c. A/C 452 flew the briefed route until it lost the number 2 engine between the second assembly point and the initial point. The bombs were jettisoned and a course set for Kiunglai, but due to lack of fuel the crew was forced to abandon the aircraft in the Liangshan area.

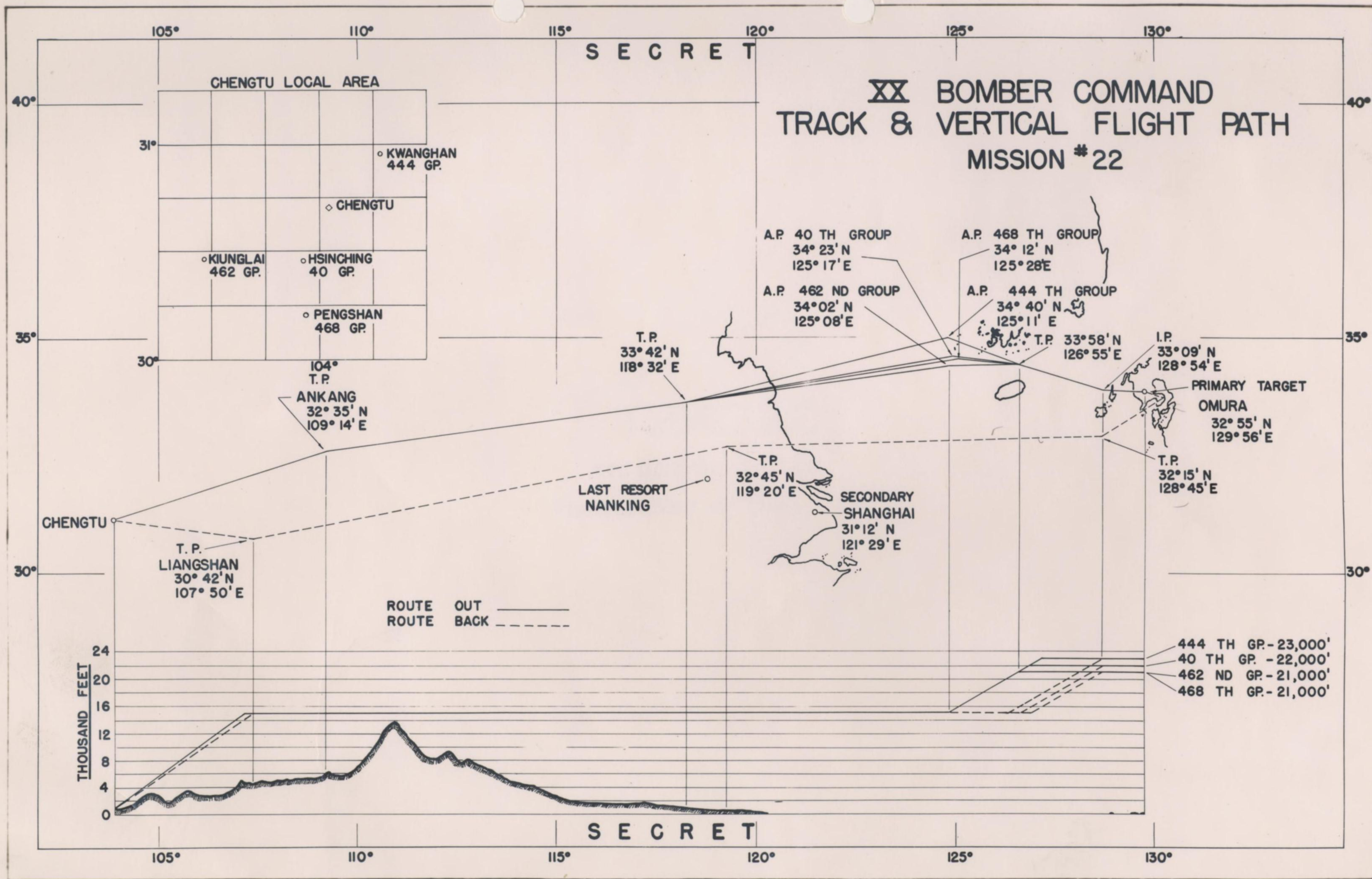
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By Auth: CG, XX BC
Date: 21 Dec 44
Initials: _____

HEADQUARTERS
XX BOMBER COMMAND
APO 493

CONSOLIDATED
SPECIALIST MISSION
REPORT OF
STAFF BOMBING OFFICER

Date Prepared: 27 December 1944

Field Order: No. 22
Date of Mission: 19 Dec 44

1. Weather conditions over the PT were ten-tenths undercast. Consequently all bombing of this target was accomplished using radar-bombsight procedure. CAVU conditions at the secondary target made possible visual bombing.
2. One accidental release of bombs was reported. This was caused by the bombardier's flak suit catching on the toggle switch and actuating it as the bombardier leaned forward.
3. One case was reported of the fin spinning off a bomb after the bomb bay doors were opened while the bomb was still hanging in the bomb bay. This constitutes a considerable safety hazard since the arming wire is pulled from the tail fuze during the rotation of the fin thus leaving the fuze free to arm in the bomb-bay. XX Bomber Command Ordnance Technical Letter No. 32 dated 21 December 1944, sets forth measures to be taken to prevent these occurrences.
4. Malfunctions of bombing equipment were as follows:
 - a. 40th Group.
 - (1) Six bombs failed to release from airplane #752 after repeated attempts to release electrically and by normal salvo. Cause - Unknown. System ground checked OK.
 - (2) Four bombs failed to release from airplane #233. Cause - Defective A-4 release.
 - b. 444th Group.
 - (1) Three bombs failed to release from airplane #202. Cause - Unknown. System ground checked OK.
 - (2) Four bombs failed to release in either train or salvo from airplane #228. Cause - Lead and cannon plug on racks broken.
 - c. 462nd Group.
 - (1) All bombs failed to release electrically from airplane #484. Bombs were salvoed later. Cause - Blown fuse.
 - (2) Three bombs were released early from airplane #472. Cause - Believed to be bombardier error.
 - (3) C-1 autopilot malfunction. Cause - Servo clutch slippage.

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IV - Bombing Data (continued)

A. Times of Bomb Release at Primary Target

Z Time	40th	44th	462nd	463th	Total
0130 - 0134	8	4	-	5	17

B. Bombing Altitudes at Primary Target

Altitude (feet)	40th-a	44th-b	462nd	463th-b	Total
21,000 - 21,499	-	-	-	5	5
21,500 - 21,999	3	-	-	-	3
22,000 - 22,499	4	1	-	-	5
22,500 - 22,999	1	-	-	-	1
23,000 - 23,499	-	3	-	-	3
Total	8	4	0	5	17
Briefed Altitudes - c	22,000'	23,000'	21,000'	21,000'	

- a - Reported as true altitude
 b - Reported as indicated altitude.
 c - Pressure altitude.

C. Axes of Attack at Primary Target

Degrees (magnetic)	40th	44th	463th	Total
112	-	1	-	1
115	-	-	1	1
119	1	-	-	1
120	1	-	-	1
122	-	2	-	2
123	2	-	2	4
124	1	-	1	2
125	2	1	1	4
126	1	-	-	1
Total	8	4	5	17

NOTE: Briefed axis of attack was 110° magnetic.

S E C R E T

D. Indicated Air Speeds at Primary Target

I.A.S. (mph)	40th	44th	468th	Total
190	-	-	1	1
192	-	-	1	1
195	2	4	3	9
196	1	-	-	1
198	1	-	-	1
200	3	-	-	3
205	1	-	-	1
Total	8	4	5	17

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S E C R E T

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By SG NARA Date 11/8/05

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E. Aircraft Bombing Targets other than Primary Target

Group	A/C	Target	Bombs Dropped G.P. Inc.	Type of Release	Time of Release	Altitude	Axis of Attack	I.A.S. (mph)
40th	233	S.T.	4 4	Visual	0406Z	20,700'F	262°M	202
40th	752	S.T.	3 3	Visual	0115Z	23,200'F	260°M	195
40th	582	L.R.T.	5 5	Visual	0111Z	20,000'F	253°M	195
444th	451	S.T.	7 7	Visual	0340Z	21,000'F	228°M	195
444th	732	S.T.	6 7	Visual	0352Z	20,000'F	240°M	195
444th	226	S.T.	6 8	Visual	0413Z	18,000'F	243°M	195
444th	228	S.T.	6 3	Visual	0352Z	20,000'F	240°M	195
444th	462	S.T.	7 7	Visual	0352Z	20,000'F	237°M	195
444th	202	L.R.T.	7 4	Visual	0438Z	18,000'F	250°M	200
462nd	457	S.T.	7 6	Visual	0426Z	20,000'F	288°M	195
462nd	393	S.T.	8 5	Visual	0426Z	20,000'F	288°M	195
462nd	448	S.T.	8 5	Visual	0426Z	19,700'F	288°M	195
462nd	472	S.T.	7 3	Visual	0426Z	20,000'F	288°M	195
462nd	454	S.T.	- 14	Visual	0426Z	20,500'F	288°M	195
462nd	232	S.T.	7 5	Visual	0426Z	20,000'F	288°M	200

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Mission No. 22

V - BOMB LOADING *

19 December 1944

Type of Bomb Load	40th			444th			462nd			468th			Totals			wt. in lbs. per A/C **
	A/C	G.P.	Inc.	A/C	G.P.	Inc.	A/C	G.P.	Inc.	A/C	G.P.	Inc.	A/C	G.P.	Inc.	
4 G.P. 6 Inc.	4	16	24										4	16	24	5074
5 G.P. 5 Inc.	2	10	10										2	10	10	5135
5 G.P. 7 Inc.				1	5	7							1	5	7	6101
6 G.P. 6 Inc.	6	36	36							1	6	6	7	42	42	6161
6 G.P. 7 Inc.				1	6	7							1	6	7	6644
6 G.P. 8 Inc.				1	6	8							1	6	8	7127
7 G.P. 6 Inc.				1	7	6	2	14	12	1	7	6	4	28	24	6705
7 G.P. 7 Inc.				6	42	42							6	42	42	7188
8 G.P. 4 Inc.							3	24	15	2	16	8	2	16	8	6283
8 G.P. 5 Inc.													5	24	15	6766
9 G.P. 4 Inc.										1	9	4	1	9	4	6827
10 G.P. 3 Inc.							1	10	3				1	10	3	6888
14 Inc.							2	-	28				2	-	28	6762
15 Inc.							1	-	15				1	-	15	7245
Total A/C	12			10			9			5			36			
Total G.P.		62			66			48			38			214		
Total Inc.			70			70			73			24			237	
Wt. in lbs. per A/C		5628			6971			6818			6452				6413	

* Based on aircraft airborne. "G.P." indicates a 500-pound general purpose (TNT or Amatol filled) bombs, fused .1 second nose and .025 second tail. "Inc." indicates M-76 incendiary bomb, fused instantaneous nose and non-delay tail.
 ** Based on M-64 G.P. bomb weighing 543.9 pounds and M-76 Inc. bomb weighing 483 pounds.

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Mission No. 22

VI - DISPOSITION OF BOMBS

19 December 1944

	40th			444th			462nd			468th			Totals			Weight * in pounds	Weight * in tons
	A/C	GP	Inc	A/C	GP	Inc	A/C	GP	Inc	A/C	GP	Inc	A/C	GP	Inc		
A/C bombing all targets and bombs dropped	11	53	59	10	65	64	6	37	38	5	38	24	32	193	185	194,328	97.1
A/C bombing P.T. and bombs dropped	8	41	47	4	26	28	-	-	-	5	38	24	17	105	99	104,927	52.5
A/C bombing S.T. and bombs dropped	2	7	7	5	32	32	6	37	38	-	-	-	13	76	77	78,527	39.3
A/C bombing L.R.T. and bombs dropped	1	5	5	1	7	4	-	-	-	-	-	-	2	12	9	10,874	5.4
A/C jettisoning bombs	-	5a	5	-	-	30	2	31	29	-	-	-	2	8	37	22,222	11.1
A/C returning with bombs	-	-	-	-	1c	3c	1	8	6e	-	-	-	1	9	9	9,242	4.6
Unknown	1	4	6	-	-	-	-	-	-	-	-	-	1	4	6	5,074	2.5
Total A/C and bombs airborne	12	62	70	10	66	70	9	48	73	5	38	24	36	214	237	230,866	115.4

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- a. Two G.P.'s jettisoned by A/C 233 and 3 G.P.'s jettisoned by A/C 75a, both of which also bombed the S.T.
- b. Three Inc's jettisoned by A/C 202 that also bombed the L.R.T.
- c. One G.P. and 3 Inc. brought back by A/C 228 that also bombed the S.T.
- d. Three G.P.'s jettisoned by A/C 472 that also bombed the S.T.
- e. Includes 1 Inc. brought back by A/C 232 that also bombed the S.T.
- * Based on the M - 64 G.P. bomb weighing 543.9 pounds and the M-76 Inc. bomb weighing 483 pounds.

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VII - FORMATIONS FLOWN

Mission No. 22

19 December 1944

A. Formation Required

Aircraft were to be flown individually to the respective Group assembly points where 12-plane formations were to be assembled. For location of assembly points, see this annex, Part II, Section A. The minimum formation for attacking the primary target was 3 aircraft.

B. Formations over the Primary Target

Formations are shown below as they were at the time of bomb release. Times, altitudes, and headings shown are those of the lead aircraft. These diagrams are intended to show relative position only. "W" represents an aircraft of the 40th Group, "X" the 44th, "Y" the 462nd, and "Z" the 468th.

1. Time - 0130Z

Altitude - 22,300 ft. T

Heading - 119° M

No. of A/C bombing - 9

Bombs dropped - 48 M-64; 54 M-76

W - 579

W - 729

W - 733

W - 420

W - 859

X - 524

W - 739

W - 541

W - 404

2. Time - 0132Z

Altitude - 21,000 ft. I

Heading - 123° M

No. of A/C bombing - 5

Bombs dropped - 38 M-64; 24 M-76

Z - 704

Z - 703

Z - 445

Z - 678

Z - 719

3. Time - 0134Z

Altitude - 23,000 ft. I

Heading - 122° M

No. of A/C bombing - 3

Bombs dropped - 19 M-64; 21 M-76

X - 464

X - 538

X - 584

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C. Formations over the Secondary Target

1. Time - 0115Z
Altitude - 23,200 ft. T
Heading - 260° M
No. of A/C bombing - 1
Bombs dropped - 3 M-64; 3 M-76

W - 752

2. Time - 0340Z
Altitude - 21,000 ft. I
Heading - 228° M
No. of A/C bombing - 1
Bombs dropped - 7 M-64; 7 M-76

X - 451

3. Time - 0352Z
Altitude - 20,000 ft. I
Heading - 240° M
No. of A/C bombing - 3
Bombs dropped - 19 M-64; 17 M-76

X - 732

X - 462

X - 228

4. Time - 0406Z
Altitude - 20,700 ft. T
Heading 262° M
No. of A/C bombing - 1
Bombs dropped - 4 M-64; 4 M-76

W - 233

5. Time - 0413Z
Altitude - 18,000 ft. I
Heading - 243° M
No. of A/C bombing - 1
Bombs dropped - 6 M-64; 8 M-76

X - 226

6. Time - 0426Z
Altitude - 20,000 ft. I
Heading - 288° M
No. of A/C bombing - 6
Bombs dropped - 57 M-64; 38 M-76

Y - 393

Y - 448

Y - 457

Y - 441*

Y - 454

Y - 232

Y - 472

* A/C 484 jettisoned its bombs due to a bomb rack malfunction.

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HEADQUARTERS
XX BOMBER COMMAND
APO 493

CONSOLIDATED
SPECIALIST MISSION REPORT
OF XX BOMBER COMMAND
NAVIGATION OFFICER

Date Prepared: 25 December 1944

Field Order No. 22
Date of Mission: 19 Dec

1. Navigation for this Mission was excellent. Several navigators doubted the feasibility of flying a "time over target" problem, inasmuch as valuable gasoline would be used in working controlled ground speeds. Forecast wind data did not prove too accurate for this mission.

a. Average navigation times out and back was as follows:

	<u>NAV. TIME OUT</u>	<u>NAV. TIME BACK</u>
40th	5h 47m	8h 21m
444th	6h 32m	7h 23m
462nd		(Bombed secondary)
468th	5h 58m	8h 37m

b. Computed average winds were as follows:

<u>ONE HALF WAY OUT</u>	<u>TARGET</u>	<u>ONE HALF WAY BACK</u>
15000'	21000'	15000'
279° 38k	272° 72K	273° 44k

c. The following statistics are furnished from sortie reports:

	<u>CML</u> <u>FLYES</u>	<u>CML</u> <u>LOP'S</u>	<u>RADIO</u> <u>LOP'S & FIRES</u>	<u>QDM'S</u>
40th	20	57	5	1
444th	16	30	6	0
462nd	6	25	8	0
468th	5	12	0	0

2. It was considered that the assembly point was too far from base. However, due to a smaller number of aircraft participating, no difficulty in assembly was encountered. It is felt that assigning "time over target" times to the groups, rather than take off times will work quite successful except that in the event there is poor forecast wind data, it necessitates working a controlled ground speed problem. Therefore, unless there is a specific reason for a definite time over the target, viz. coordinated attack by other friendly forces, wing commanders should be permitted to change the target time.

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By SG NARA Date 11/8/05

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IX - INFORMATION ON LANDINGS

Mission No. 22

19 December 1944

A. Landed at XX Bomber Command Bases

1. A/C bombing primary Target:

	<u>40th</u>	<u>44th</u>	<u>468th</u>	<u>Over-all</u>
First Down	0943Z	0940Z	1010Z	0940Z
Last Down	0958Z	0945Z	1013Z	1013Z

2. A/C failing to bomb primary Target:

a. 40th Group:

- (1) A/C 233 - 0926Z - bombed secondary target.
- (2) A/C 752 - 0644Z - bombed secondary target.
- (3) A/C 582 - 0532Z - bombed last resort target.

b. 44th Group:

- (1) A/C 451 - 0816Z - bombed secondary target.
- (2) A/C 732 - 0852Z - bombed secondary target.
- (3) A/C 226 - 0917Z - bombed secondary target.
- (4) A/C 228 - 0854Z - bombed secondary target.
- (5) A/C 462 - 0855Z - bombed secondary target.
- (6) A/C 202 - 0836Z - bombed last resort target.

c. 462nd Group:

- (1) A/C 457 - 0931Z - bombed secondary target.
- (2) A/C 393 - 0929Z - bombed secondary target.
- (3) A/C 448 - 0928Z - bombed secondary target.
- (4) A/C 472 - 0937Z - bombed secondary target.
- (5) A/C 454 - 0932Z - bombed secondary target.
- (6) A/C 232 - 0935Z - bombed secondary target.
- (7) A/C 461 - 0052Z - brought bombs back.
- (8) A/C 484 - 0929Z - jettisoned bombs.

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ANNEX

B

ENEMY ANTI-AIRCRAFT

* * * * *
* Prepared by: *
* Flak Officer *
* XX Bomber Command *
* * * * *

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* By Auth of the C.G. *
* XX Bomber Command *
* 31-12-44 *
* Date Initials *

HEADQUARTERS
XX BOMBER COMMAND
APO 493

31 December 1944

PRELIMINARY REPORT

ANTI-AIRCRAFT OPPOSITION

MISSION NUMBER 22, (DAYLIGHT), 19 DECEMBER 1944

Primary Target - OMURA, Secondary Target - SHANGHAI
Target of Last Resort - NANKING

A. ANTI-AIRCRAFT FIRE ENCOUNTERED

1. OMURA (32°54'N - 129°57'E)

In contrast to previous missions under comparable conditions, only one aircraft encountered heavy antiaircraft fire. Bombing was accomplished by three formations totaling seven aircraft as follows:

<u>Formation</u>	<u>Aircraft</u>	<u>BRT Time</u>	<u>Heading</u>	<u>Altitude</u>	<u>Undercast</u>
1	9	0130Z	119°M	22,000'	10/10
2	5	0132Z	123°M	21,000'	10/10
3	3	0134Z	122°M	23,000'	10/10

One aircraft of formation #2 reported meager and inaccurate black heavy antiaircraft fire at 0135Z, with bursts occurring behind and below. Barrage type fire was reported and no enemy aircraft were observed on the same course and altitude.

2. SHANGHAI (31°18'N - 121°28'E)

Meager and inaccurate to accurate black and some white heavy antiaircraft fire was reported by 10 out of 14 aircraft over the area from 0115Z to 0426Z at altitudes varying from 18,500 to 23,000 feet under CAWU conditions as follows:

<u>Formation</u>	<u>Heavy AA Fire Encountered</u>	<u>"Z" Time Encountered</u>	<u>Bomb Release Time</u>	<u>Altitude</u>	<u>Heading</u>
1 (1-0)*	None	-----	0115Z	23,000'	260°M
2 (1-0)	None	-----	0340Z	21,000'	228°M
3 (3-1)**	Meager - inaccurate	0348Z	0352Z	20,000'	240°M
4 (1-1)	Meager - inaccurate	0406Z	0406Z	21,000'	262°M
5 (1-1)	Meager - accurate	0410Z	0413Z	18,500'	243°M
6 (7-7)***	Meager - inaccurate	0426Z	0426Z	20,000'	288°M

* (1-0) indicates formation #1 consisting of 1 aircraft of which zero aircraft reported heavy antiaircraft fire.

** Fire was reported as originating from POINT Island.

*** One destroyer was observed in the drydock and one, possibly two others, was observed in the river near the target, apparently firing at the formation as flashes were seen over their decks.

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Deviations of bursts were either level or below, generally abreast and to the right. Continuously Pointed fire is believed to have been used and no enemy aircraft were observed on the same course and altitude.

There is a possibility of the use of gun-laying radar for fire control from R.C.M. Intercepts. The R.C.M. Observer in Formation #5 reports;

Two signals characteristic of gun-laying radar types (frequency 149.5mc) were intercepted while 23 to 35 miles from SHANGHAI. About one minute before "bombs away" both signals became quite strong and were received with equal intensity. Just after "bombs away", at least two bursts occurred level with and about 50 feet off the left wing. The pilot then began evasive action consisting of moderate turns and slight changes of altitude which resulted, peculiarly enough, of the loss of both radar signals. It required from 10 to 20 seconds for these signals to resume tracking of the aircraft.

As soon as both signals were again tracking the aircraft, the pilot initiated an evasive turn and a burst of flak was seen where the aircraft would have been. The two signals, however, were again lost after the turn and required from 10 to 20 seconds to resume tracking. After the radar signals had commenced tracking the second time, evasive action was again taken, with all subsequent bursts occurring behind and low, but directly on course.

Evidently the enemy did not have or did not utilize his prior warning of the attack against SHANGHAI as the first two aircraft over the area were not engaged by the antiaircraft defenses nor were any sightings made of enemy aircraft prior to 0353Z. It may be, however, that the Japanese were continuing a policy evident on some photo reconnaissance missions of not engaging lone aircraft.

3. NANKING (32°03'N - 118°47'E)

Meager and inaccurate black heavy antiaircraft fire was encountered by one aircraft at 0437Z at an altitude of 18,000 feet under CAVU conditions. Deviations were above and below, behind and to the right, and no enemy aircraft were reported on the same course and altitude. The type of fire could not be determined.

The first aircraft bombing the area at 0111Z from 20,000 feet encountered no antiaircraft opposition.

B. SMOKESCREENS

The first aircraft bombing the SHANGHAI area (#752 of the 40th Group) reported a smokescreen originating from the northeast corner of the city on the YANGTZE River. "White, billowy smoke" covered the river at this point with the surface wind from 135°. No other information is available as this area was not covered by strike photographs.

C. HIGH-ALTITUDE BALLOONS

A possible high-altitude balloon was sighted by the crew of aircraft #738 of the 40th Group at 0035Z in the vicinity of the southwestern tip of KOREA at 34°40'N - 126°00'E. "Only one balloon was seen which was

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tear-drop in shape and silver in color. The balloon was flying at an altitude of 22,000 feet."

D. BARRAGE BALLOONS AND GROUND-TO-AIR ROCKETS

None reported.

E. DAMAGE FROM HEAVY ANTI-AIRCRAFT FIRE

None

F. WARNING NETS

It is probable that the enemy had prior warning of the attack against Omura as aircraft were tracked from 113°30'E to the China Coast and from the tip of Korea to Saishu Island. It is also possible that Shanghai had prior warning because of EW intercepts in that area and the existence of the reported smokescreen. The lack of AA opposition and sightings of enemy aircraft prior to 0353Z, however, would tend to refute this.

Frank L. Scott, Jr.
FRANK L. SCOTT, JR.,
Lt. Col., Air Corps,
Chief, Intelligence Section

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Authority 760063

By SG NARA Date 11/8/05

S E C R E T

ANNEX

C

ENEMY AIR OPPOSITION

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*****  
* Prepared by: *  
* Operational Intelligence Unit *  
* XX Bomber Command *  
*****
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S E C R E T

S E C R E T

I. JAPANESE FIGHTER TACTICS - MISSION NO. 22

TARGET: Omura, Japan.

TIME: Day Mission.

DATE: 19 December 1944.

1. General

a. Enemy opposition was weak to moderate considering the comparatively small force of B-29's employed. Of the 36 B-29's airborne to targets, 21 were intercepted by an enemy force estimated at 22 TOJOS, 9 TONYs, 3 ZEKE 32's, 5 OSCARS, 3 NICKS, 4 ZEKES, 1 VAL, 2 unidentified single engine fighters, and 3 unidentified enemy aircraft. Ninety-three individual encounters developed from 53 single and 13 coordinated attacks. The latter attacks, employing 29 enemy aircraft, were responsible for 40 encounters, 43 per cent of the total. No B-29's were reported destroyed or damaged due to enemy air action. Preliminary claims against enemy aircraft were 5 destroyed, 4 probably destroyed and 12 damaged.

b. There were no encounters reported enroute to target areas.

c. Sixty-three encounters occurred in the Omura target area, all of which were after bombs away. Action continued throughout a period of 31 minutes, from 0130Z to 0201Z, and at altitudes from 18,000 to 23,000 feet. Thirteen encounters were reported in the Shanghai target area, 9 of which were before bombs away, 1 during bombs away, and 3 after bombs away. The attacks occurred between 0353Z and 0426Z, at altitudes from 20,000 to 21,000 feet. The remaining encounters, 17, occurred principally in the areas north, south and west of Nanking. These interceptions were made against B-29's returning from the Omura and Shanghai targets, and were spread over a period of 1 hour and fifty minutes from 0515Z to 0705Z at altitudes from 14,000 to 17,000 feet.

d. Details of encounters, including total individual encounters by each type enemy aircraft follows.

Table No. 1 - Details of Encounters

<u>Location</u>	<u>No. of Encounters</u>	<u>Type of E/A</u>	<u>Time</u>	<u>Altitude</u>
Primary Target (Omura)	63	34 by TOJO	0130Z	18,000
		6 by ZEKE 32	to	to
		6 by VAL	0201Z	23,000
		5 by TONY		
		4 by OSCAR		
		3 by ZEKE		
		2 by NICK		
		2 by S/E		
		1 by unidentified enemy aircraft		

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Authority 760063

By SG NARA Date 11/8/05

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Table No. 1 - Details of Encounters (continued)

<u>Location</u>	<u>No. of Encounters</u>	<u>Type of E/A</u>	<u>Time</u>	<u>Altitude</u>
Secondary Target (Shanghai)	13	3 by OSCAR 2 by TOJO 2 by TONY 2 by NICK 1 by ZEKE 3 by unidentified enemy aircraft	0353Z to 0426Z	20,000 to 21,000
35 miles S of Nanking	2	2 by TONY	0515Z	16,000
40 miles S of Nanking	1	1 by ZEKE	0520Z	17,000
32°30'N-118°19'E	1	1 by TONY	0535Z	15,000
32°20'N-118°00'E	1	1 by TOJO	0537Z	14,000
32°30'N-118°45'E	2	2 by TONY	0537Z	15,000
32°20'N-118°00'E	1	1 by TOJO	0540Z	14,000
32°25'N-118°25'E	1	1 by TONY	0542Z	14,600
32°30'N-118°45'E	1	1 by TONY	0600Z	15,000
Location unreported	5	5 by TOJO	0658Z to 0705Z	14,000
31°55'N-112°50'E	2	2 by TOJO	0725Z	14,000

2. Direction and Level of Approach

a. Encounters originating from the right quarter were in the majority, 41 per cent, for the second time since B-29's have been meeting major air opposition. The first occasion was on Mission No. 18 when encounters from the right quarter were 52 per cent of total encounters. Of the remainder on Mission No. 22, 22 per cent came from the rear quarter, 18 per cent from the left quarter, and 19 per cent from the frontal quarter. It is interesting to note that the frontal quarter which, except for Mission No. 18, has been consistently high in percentages over other quarters since Mission No. 7 dropped into third place on Mission No. 22. It is a decided change but does not necessarily denote a definite change in tactics inasmuch as 3 of the 13 coordinated attacks were largely responsible for the shift, accounting for 20 individual attacks (21 1/2% of the total encounters) from the 3 o'clock position.

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b. As to level of approach, another interesting change was noted in the predominance of low attacks - 53 per cent. High approaches were 39 per cent, and level approaches were 8 per cent. The coordinated attacks mentioned in the preceding paragraph were largely responsible for this change, too, as the level of approach for all 20 attacks was low.

c. A summary of direction and levels of approach for all encounters is shown in Tables No. 2 and No. 3, and in Exhibit A.

Table No. 2 - Direction and Level of Approach

Direction of Encounter	Front			Right Side			Rear			Left Side			Total
	11	12	1	2	3	4	5	6	7	8	9	10	
High	4	4	2	6	2	1	4	0	4	1	0	8	36(39%)
Level	0	2	1	0	0	0	3	0	0	0	2	0	8(8%)
Low	3	0	2	3	21	5	4	2	3	3	3	0	49(53%)
Total	7	6	5	9	23	6	11	2	7	4	5	8	93(100%)
	18(19%)			38(41%)			20(22%)			17(18%)			

Table No. 3 - Level of Approach

Level of Approach	Front	Right Side	Rear	Left Side
High	10 (55%)	9 (24%)	8 (40%)	9 (53%)
Level	3 (17%)	0	3 (15%)	2 (12%)
Low	5 (28%)	29 (76%)	9 (45%)	6 (35%)
Total	18 (100%)	38 (100%)	20 (100%)	17 (100%)

3. Exchange of Fire

a. Japanese pilots opened fire in 60 of the 93 encounters (64%), and in 38 of the 60 at ranges under 1000 yards (63%). B-29's opened fire in 88 of the 93 encounters (95%), a higher percentage of fire than on any recent mission. It may be noted that regardless of the high percentage of B-29 fire, the enemy percentages for fire were about normal in comparison with recent missions. A contributing factor may have been the tendency of B-29's on this mission to open fire at shorter ranges than usual. An examination of Table No. 4 indicates that B-29 fire at ranges of 1000 yards and over was only 30 per cent, compared to Missions No. 21 (34%), No. 19 (59%), and No. 18 (42%). The percentage of B-29 fire in the 500 to 799 yard bracket (34%) was higher than on Missions No. 21, 19 and 18.

C-I-3

S E C R E T

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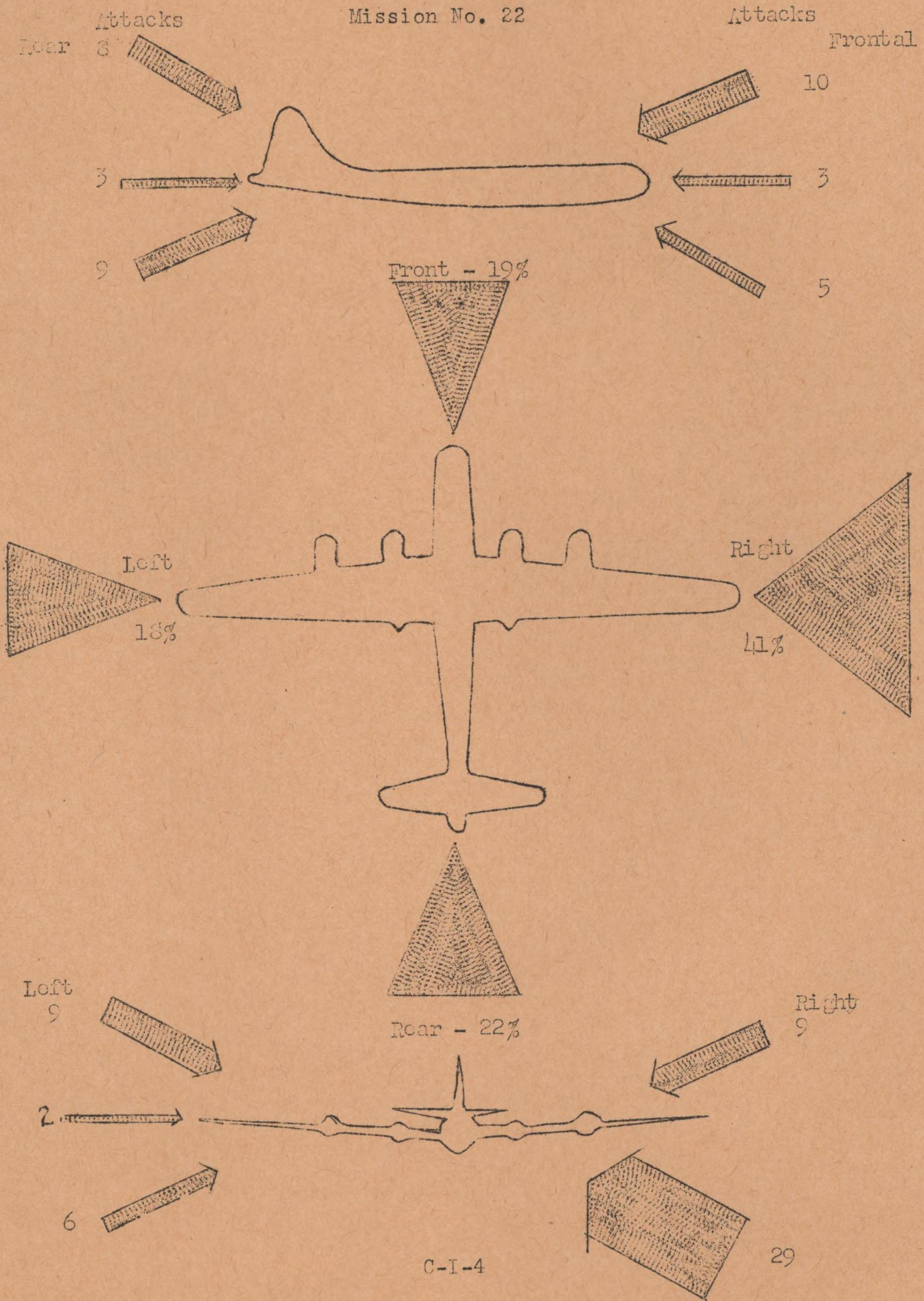
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Exhibit A

DIRECTION AND LEVEL OF APPROACH



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Table No. 4 shows comparative percentages at various ranges.

Table No. 4 - Distances Opened Fire

<u>Distance (yards)</u>	<u>Enemy Fire</u>		<u>B-29 Fire</u>	
	<u>No. of Attacks</u>	<u>Percent</u>	<u>No. of Attacks</u>	<u>Percent</u>
0 to 499	4	7	10	11
500 to 799	8	13	30	34
800 to 999	26	43	22	25
1000 & over	22	37	26	30
Total	60	100	88	100

4. Aggressiveness of Enemy Attacks and Pilot Ability

a. Japanese pilots exhibited a curious lack of aggressiveness on Mission No. 22, in comparison to previous missions, with only 17 of the 93 encounters (18%) pressed to distances under 250 yards. This compares to Missions No. 21 (45%), No. 19 (52%), No. 18 (53%), No. 17 (38%) and No. 16 (53%). Only one instance was reported of an enemy pilot flying through a formation. As to pilot ability, the reluctance on the part of the Japanese pilots to press their attacks closely, combined with the fact that no B-29's were reported damaged due to enemy air action, may be taken as an indication that the enemy pilots were not up to their usual standards for Omura.

b. Distances to which enemy attacks were pressed are shown in Table No. 5.

Table No. 5 - Distances To Which Attacks Were Pressed

<u>Distance(yards)</u>	<u>No. of Encounters</u>	<u>Percent</u>
1000 & over	10	11
800 to 999	10	11
500 to 799	34	36
250 to 499	22	24
0 to 249	17	18
Total	93	100

5. Aerial Bombs

a. Aerial bombs, principally of the phosphorous type, were reported employed in 10 encounters (11% of total encounters) but caused no damage to any B-29.

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No new or unusual tactics were reported although aerial bombing attacks were encountered in all areas where B-29's met air opposition.

b. An interesting coordinated attack in which aerial bombs were used was reported by a 3 plane formation of B-29's flying over Shanghai at 20,000 feet, with the sun at 6 o'clock. Three OSCARS were sighted at 2000 yards approaching in line astern from 12 o'clock, high. The lead B-29 opened fire at 1200 yards. The OSCARS returned the fire at 1000 yards and kept coming in.

Each OSCAR, as he cleared the top of the formation by about 100 feet, dropped a phosphorous bomb, then staying on course, headed directly into the sun. No B-29's were reported damaged nor were any claims made against the OSCARS.

c. One B-29 reported an attack with phosphorous type bombs in which 2 bombs exploded about 400 feet above a formation, with streamers spreading out to cover the B-29's. The crew of the airplane reporting the attack stated that its left wing was hit by the streamers but the embers slid off inflicting no damage.

d. An "incendiary cluster bomb" was dropped by an unidentified enemy aircraft about 1000 yards in front and 200 feet above a formation. The bomb exploded, scattering what was described as 6 inch squares of flat metal over a 200 foot area. The attack was made on a formation of 3 B-29's about 35 miles south of Nanking, as they were returning from Shanghai, the secondary target, at 16,000 feet.

6. Rockets: No rocket attacks were reported.

7. Coordinated Attacks

a. Thirteen coordinated attacks, employing 29 enemy aircraft, were reported. They accounted for 40 individual encounters, 43 per cent of the total. The majority of attacks were executed by teams of 2 enemy aircraft, but several were also reported in which 3 and 4 were employed. In one attack, in which 4 enemy aircraft came in from 10 o'clock high, out of the sun, it was thought that two additional enemy planes were used as decoys. These two stayed out of range at 7 and 8 o'clock while the others pressed their attack.

b. Five of the 13 coordinated attacks were executed with low approaches which is somewhat out of the ordinary for this type attack. Two typical examples follow.

(1) The B-29 was the leader of "D" flight, flying in a spread out 10 plane formation on its return flight from the target area, at 15,000 feet. Two TONYS were sighted at 2000 yards, low; one coming in from 11 o'clock and the other from 1 o'clock. It appeared like a well timed attack with the TONY at 11 o'clock just a few seconds ahead of the other. Each TONY in his pursuit curve opened fire at 1000 yards, closed to 500 yards, then broke away under the formation.

C-I-6

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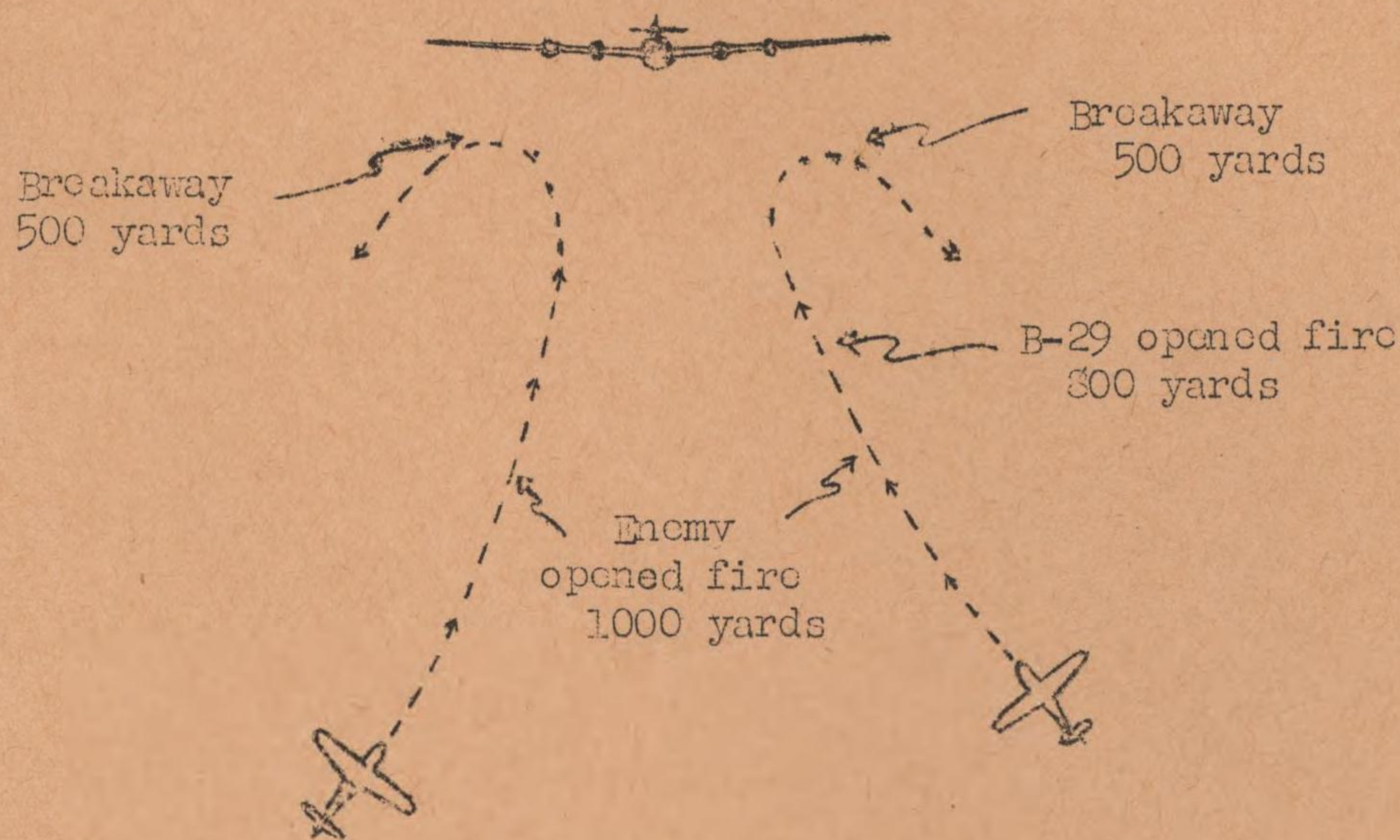
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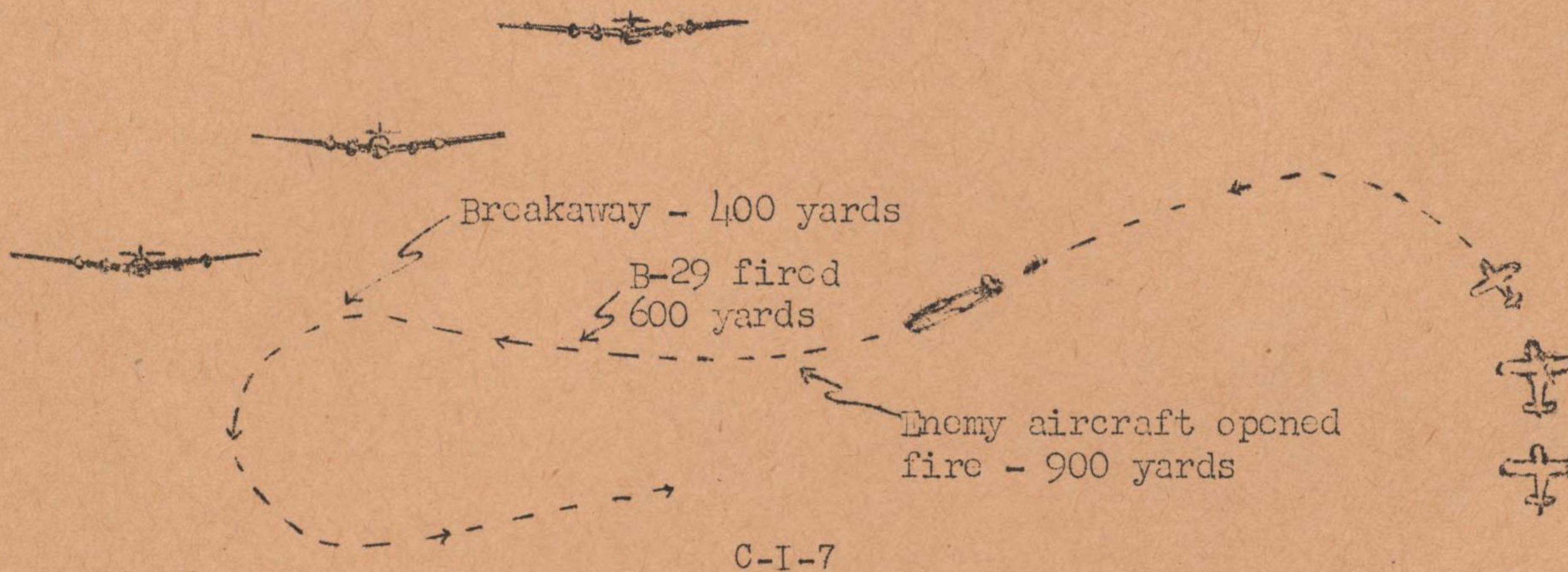
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The B-29 opened fire at 800 yards and claimed damage on the 11 o'clock TONY. The other was not hit. No damage was reported to the B-29. Diagram follows:



(2) Four TOJOS executed approximately 15 attacks in a Chow Line maneuver, but with a slight variation - a low approach instead of the usual high. The attacks were directed principally against a B-29 flying in No. 3 position of a 3 plane formation. Each TOJO made 3 to 4 individual passes in such rapid succession that it was impossible to keep an accurate count, and the total of 15 attacks was an estimate. All approaches were from 3 o'clock low, and the first enemy aircraft was sighted at 1200 yards. After each TONY banked in to attack the enemy pilot opened fire at 900 yards, continued on to 400 yards, then broke away to 530 o'clock. The B-29 fired at 600 yards, and claimed 1 destroyed and 1 probably destroyed. No damage was reported to the B-29. Diagram follows: (NOTE: On Mission No. 18 (Bangkok) a single TOJO attacked the low B-29 in a 12 plane formation, using a similar method of approach. Refer to Section 8, paragraph "b" of Enemy Tactics Report, Mission No. 18.)



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8. Collisions or Rammings: None; nor were any attempts reported.

9. Breakaways: Dives, as usual, predominated to a marked degree, with some preceded by fast half-rolls. A number of peel-offs were reported. Some instances were reported in which enemy aircraft climbed into the sun after completing their attacks.

10. Evasive Action: One Group reported their wing airplanes uncovered guns to meet attacks by changing from high to low position when necessary. Others reported that their pilots occasionally nosed their airplanes down in short dives or increased the indicated air speed.

11. Preliminary Claims Against Enemy Aircraft: Following are details of encounters on preliminary claims of 5 destroyed, 4 probably destroyed and 12 damaged.

Table No. 6 - Details of Combat - Preliminary Claims

Enemy Aircraft	Claim	No. of B-29's in Formation	Direction and Level of Approach	B-29's Opened Fire (yards)	Distance E/A Brokeaway or Disintegrated (yards)
OSCAR	Destroyed	3	3 low	450	400
TOJO	Destroyed	3	3 low	600	400
TONY	Destroyed	5	5 low	20	20
TOJO	Destroyed	5	3 high	500	300
TOJO	Destroyed	5	6 low	1000	300
NICK	Prob Dest	3	7 low	900	800
TOJO	Prob Dest	3	3 low	600	400
ZEKE 32	Prob Dest	5	7 low	1000	600
S/E	Prob Dest	5	4 low	1000	600
ZEKE 32	Damaged	9	1 level	1000	1000
TONY	Damaged	10	11 low	800	500
TONY	Damaged	2	8 low	1000	1000
TOJO	Damaged	9	10 high	500	50
TOJO	Damaged	3	7 low	900	800
TOJO	Damaged	3	8 low	1000	500
TOJO	Damaged	3	11 low	20	20
TOJO	Damaged	3	4 low	300	300
TONY	Damaged	5	5 low	800	20
ZEKE 32	Damaged	5	4 low	800	30
TOJO	Damaged	5	3 low	500	500
TOJO	Damaged	5	5 low	600	600

12. New Aircraft and Armament

a. No new aircraft were reported. The new Japanese Navy fighter, JACK 11, which had been previously encountered over Omura, was not reported on Mission No. 22.

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b. One B-29 reported that a TOJO seemed to have guns firing from the extreme wing tips.

13. Summary

- a. Air opposition rated weak to moderate with 21 of 36 B-29's attacked by enemy fighters. No B-29's were lost or damaged due to enemy air action. Preliminary claims against enemy aircraft were 5 destroyed, 4 probably destroyed and 12 damaged.
- b. The enemy made 53 single and 13 coordinated attacks for a total of 93 individual encounters. No attacks enroute to target areas. There were 63 encounters in the primary target area, 13 in the secondary target area, and 17 spread out on the route home over China.
- c. For the second time since meeting major air opposition, encounters from the right quarter were in the majority, 41 per cent of the total. Another change - 53 per cent of the encounters were low.
- d. Japanese pilots fired in 64 per cent of the encounters and B-29's in 95 per cent. B-29's showed tendency to fire at closer ranges than usual.
- e. Enemy pilots were not aggressive. Breakaways were at much greater distances than usual. Enemy attacks as a whole did not appear to be up to their usual standards for Omura.
- f. Aerial bombs were employed in 10 of the 93 encounters and were mostly of the phosphorous type.
- g. Thirteen coordinated attacks accounted for 40 individual encounters, 43 per cent of the total. Many executed with low approaches.
- h. No reports of attempts to ram. No rocket attacks.
- i. Dive was the most common breakaway maneuver.

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14. Enemy Aircraft Markings

<u>Color</u>	<u>Enemy Aircraft</u>	<u>Wing and Fuselage Markings</u>	<u>Tail Markings</u>
Silver	OSCAR	No markings observed.	
"	TONY	No markings observed.	
"	TOJO	Red roundels.	
"	ZEKE	Red roundels.	
Black	ZEKE 32	Red roundels.	
"	TOJOS	No markings observed.	
"	VAL	No markings observed.	
"	TONYS	Stripe around fuselage.	
Brownish-red	S/E	No markings observed.	
Dull grey	ZEKE 32	Red roundels.	
Camouflaged	TONY	No markings observed.	
" (yellowish brown)	TOJO	No markings observed.	
Grey-green	TONY	Red nose.	
Olive-drab	TOJO	-----	1 six inch white stripe horizontally on vertical stabilizer.

NOTE: One Group reported that most of the enemy aircraft encountered were camouflaged a dark mottled green. No silver enemy aircraft were observed.

C-I-10

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I - WEATHER INFORMATION

Mission No. 22

19 December 1944

	As Forecast	As Encountered
Base (Take-off)	6/10 thin altostratus, base 10,000', tops 11,000' MSL. Visibility 3 miles in haze and light ground fog. Icing level at surface. No ice in clouds	<p>KIUNGSAI: 3/10 thin altostratus at 11,000'. Visibility 3 miles in light ground fog and haze. Wind SW. 2 mph.</p> <p>HEINCHING: Ceiling unlimited. Visibility 3 miles in haze. Wind E. 1 mph.</p> <p>KWANGCHAN: Clear. Visibility 1 1/2 miles in light ground fog. Wind calm.</p> <p>PENGSAN: Clear. Visibility 3 miles in haze. Wind E. 3 mph.</p>
Route Out	<p>BASE TO MOUNTAINS: Altostratus in patches over mountains becoming solid at 109° east long. Stratus and stratocumulus forming in valleys after 0400 local time.</p> <p>MOUNTAINS TO COAST: Clear. Visibility 10 miles in haze aloft during early morning.</p> <p>OVER SEA: Scattered variable to broken stratus and stratocumulus, bases 3,000', tops 6,000' from 123°E. to Japanese coast. Visibility 15 miles in haze.</p>	<p>BASE TO MOUNTAINS: Occasional scattered stratocumulus in valleys and around mountains. Thick haze at surface.</p> <p>MOUNTAINS TO COAST: Occasional scattered altostratus at 15,000'. Light haze.</p> <p>OVER THE SEA: Clear at Coast. A deck of scattered altostratus or alto cumulus with tops estimated at 10 - 12,000' began just after the shoreline was passed and increased rapidly to 9/10 - 10/10 coverage. There was scattered cirrostratus above 20,000'.</p>
Target Area	4/10 stratocumulus, bases 3,000', tops 6,000'. Visibility 15 miles in haze. Surface Wind N. to NW. 3 - 5 mph. Pressure at Target: 30.48 in. Mean temperature Surface to 20,000' - 14°C.	<p>PRIMARY TARGET: Layers of clouds with tops at 10,000 - 12,000' producing overcast conditions.</p> <p>SECONDARY TARGET: Clear. Visibility 15 miles.</p>
Return Route	Stratus over water scattered. Fair weather cumulus and altocumulus forming over plains area with top of clouds 11,000'. Visibility 10 miles in haze. Over the mountains clouds become solid with tops at 13,000'	The cloudiness began to dissipate about half way back across the sea and dissipated entirely at the coast line. Clear from the coast to the bases except for a few scattered stratocumulus in the mountains. Haze extended from the surface to 15,000'.

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	As Forecast	As Encountered
Base on Return	Alto cumulus overcast, base 9,000', tops 11,500' MSL. 2-3/10 stratocumulus, bases 3,500', tops 6,000' MSL. Visibility 6 miles in haze altimeter setting at 1630 Qnt: 30.55 in.	KIUNGLAI: Scattered altostratus at 10,000'. Visibility 8 miles. Wind ESE. 8 mph. HSINCHING: Scattered alto cumulus 10,000'. Visibility unlimited. Wind N. 3 mph. KWANCHAN: Clear. Visibility 6 miles in haze. Wind calm. FENGSHAN: Scattered altostratus at 10,000'. Visibility 6 miles in haze. Wind calm.

A. Winds Aloft - Forecast

Altitude	Base	Midway	Target
5,000'	30 deg. - 18K	260 deg. - 35K	
10,000'	250 deg. - 30K	270 deg. - 55K	280 deg. - 40K
15,000'	270 deg. - 50K	270 deg. - 55K	270 deg. - 60K
20,000'	270 deg. - 70K	270 deg. - 75K	270 deg. - 80K
25,000'	280 deg. - 90K	270 deg. - 100K	270 deg. - 105K

B. Winds aloft - Encountered

Altitude	First Half	Last Half	Target
13,000'	260 deg. - 18K	280 deg. - 40K	
15,000'	280 deg. - 50K		
17,000'	290 deg. - 45K		
20,000'		285 deg. - 70K	275 deg. - 70K
21,000'			280 deg. - 60K
23,000'			270 deg. - 80 K

C. Target Temperatures

As Forecast

Altitude	Temperature
5,000'	-5 deg. C.
10,000'	-12 Deg. C.
15,000'	-8 deg. C.
20,000'	-26 deg. C.
25,000'	-32 deg. C.

As Encountered

Altitude	Temperature
20,000'	-20 deg. C.
21,000'	-22 deg. C.
23,000'	-27 deg. C.

D-I-2

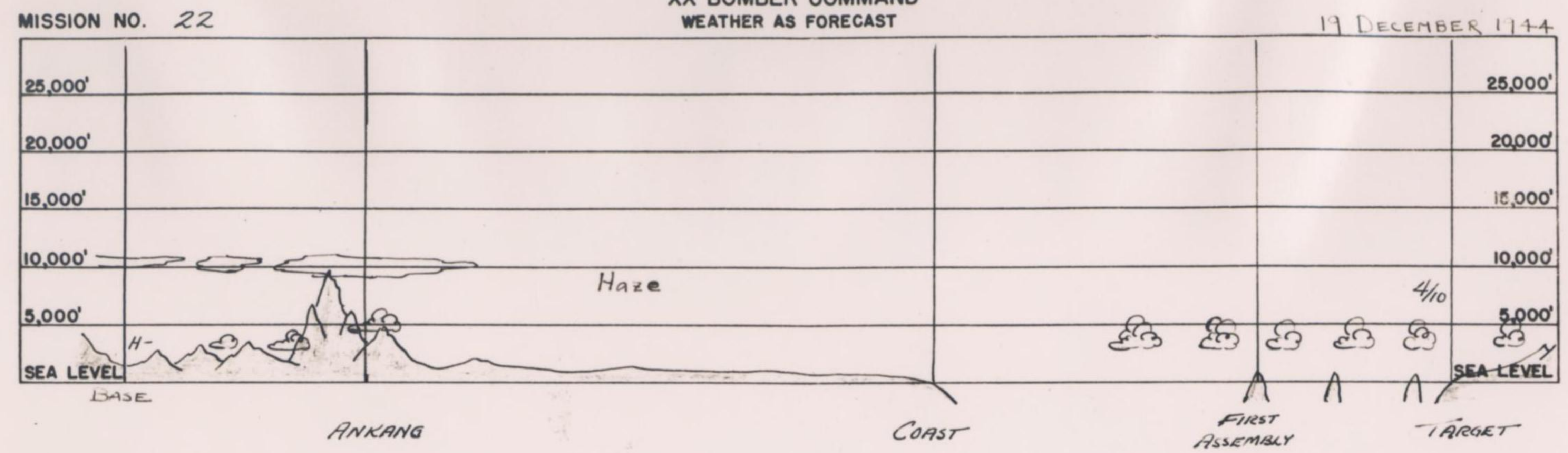
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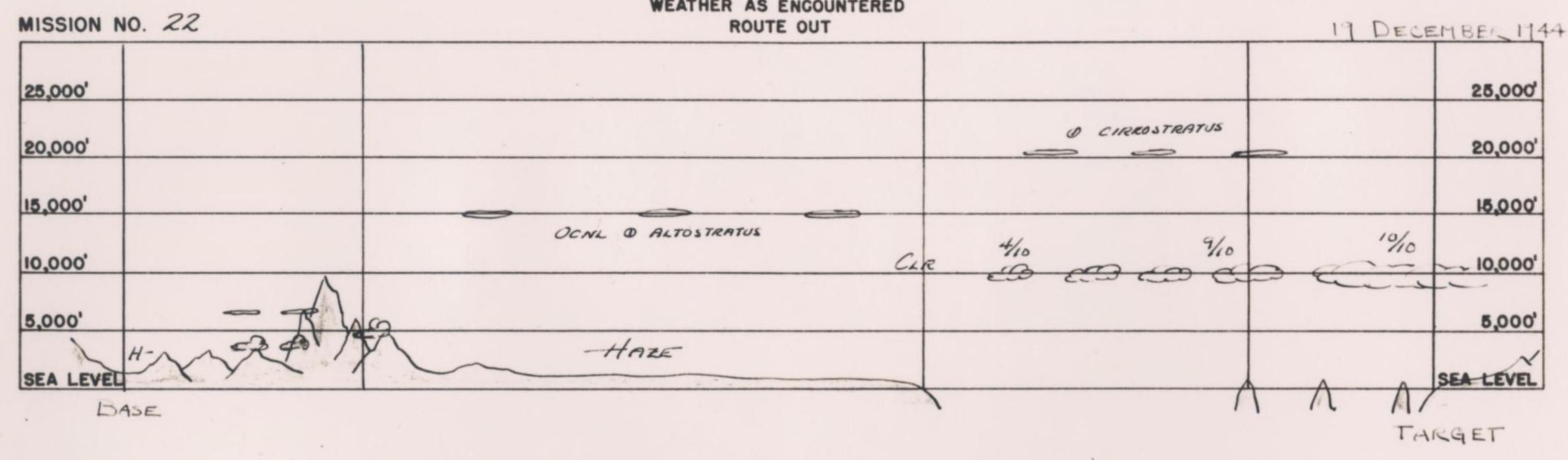
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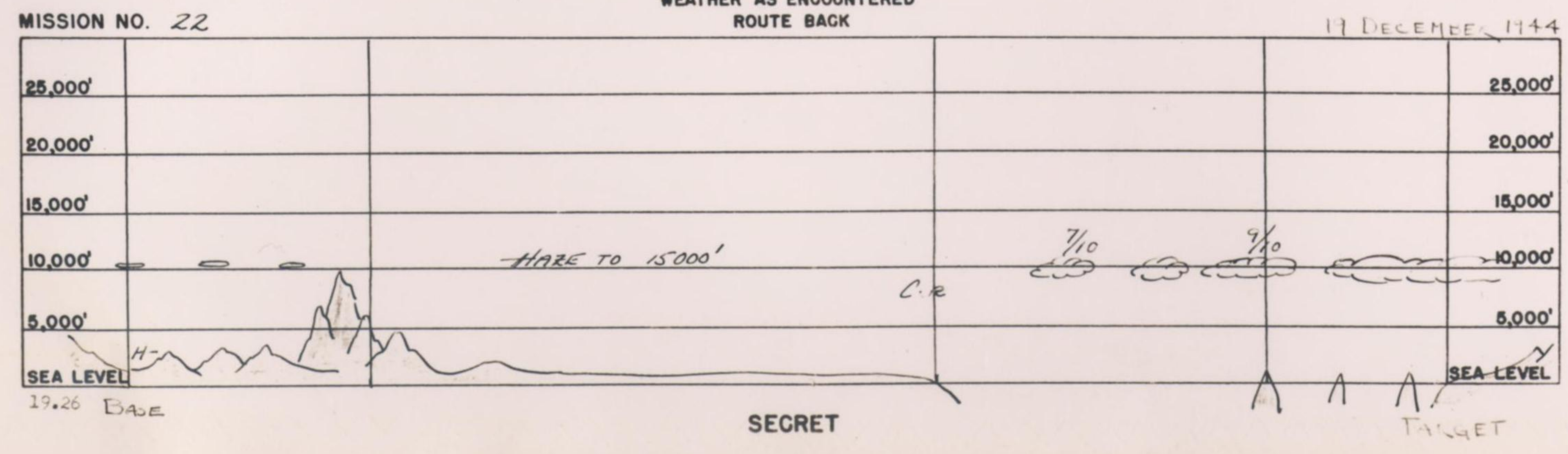
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 XX Bomber Command
 WEATHER AS FORECAST



WEATHER AS ENCOUNTERED
 ROUTE OUT

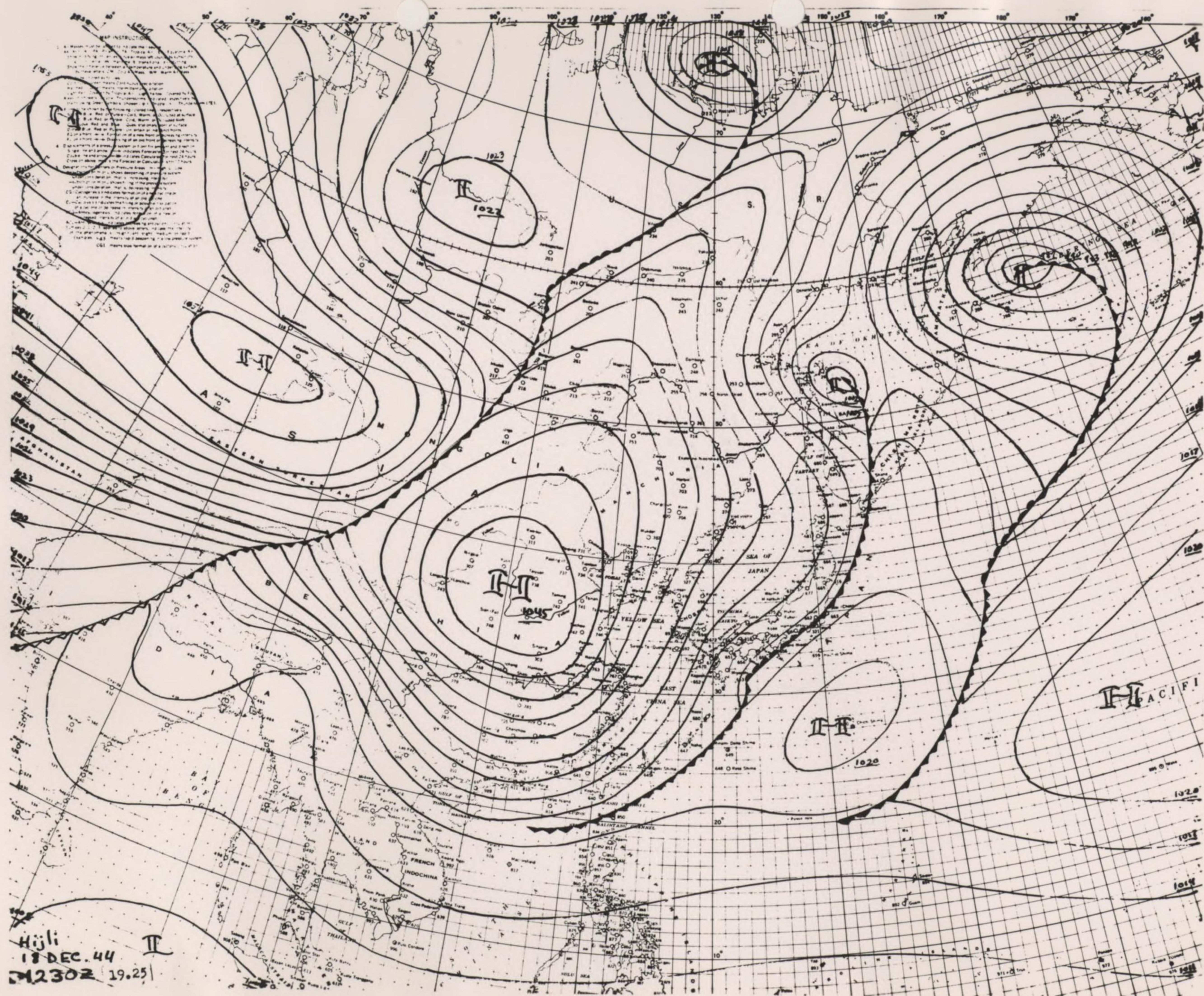


WEATHER AS ENCOUNTERED
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S E C R E T

ANNEX

E

COMMUNICATIONS INFORMATION

* * * * *
* Prepared by: *
* Communications Section *
* XX Bomber Command *
* * * * *

S E C R E T

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E.O. 11652, Sec. 3(E) and 5(D) of (E)
By NND 740120
By CD/rt NARS, Date OCT 21 1975

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: Auth: CG XX BC :
: Date: 28 Dec 44 :
: Initials: :
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HEADQUARTERS
XX BOMBER COMMAND
APO 493

CONSOLIDATED
SPECIALIST MISSION
REPORT OF

XX BOMBER COMMAND COMMUNICATIONS (RADIO) OFFICER

Date Prepared: 26 December 1944. Field Orders No: 22
Date of Mission: 19 December 1944.

1. Communications for mission number twenty-two were in general satisfactory. A considerable increase in traffic, in relation to the small number of A/C participating on this mission, can be attributed to the inclement weather encountered which prevented complete rendezvous of all formations.

2. A practice message was sent out for the purpose of further acquainting communication personnel with the procedures involved in passing a message from the Command Post to the aircraft. A time study of the handling of this message is contained in Annex Number one (1) to this report.

3. Compliance with the provisions of Tactical Doctrine and the handling of required traffic by both ground stations and aircraft was very satisfactory. A compilation of the number of messages handled is as follows:

	<u>40th Gp</u>	<u>444th Gp</u>	<u>462nd Gp</u>	<u>468th Gp</u>
a. Aborts:	0	0	1	0
b. Bombs away:	4	5	2	1
c. Attack:	2	2	0	1
d. Convoy sighting:	2	1	2	0
e. Position:	4	5	2	1

4. A comparative study of the readability, signal strength and noise level of the frequencies in use, divided into two (2) hour periods is as follows; time indicated is GMT:

AIRCRAFT TO GROUND STATION

<u>Frequency</u>	<u>1900-2100</u>	<u>2100-2300</u>	<u>2300-0100</u>	<u>0100-0300</u>
2055 kcs	S4 R4 W1	S3 R3 W2	S4 R4 W2	-- -- --
2955 kcs	S3 R3 W2	-- -- --	-- -- --	-- -- --
4785 kcs	S3 R3 W2	S3 R3 W2	S4 R4 W2	-- -- --
8260 kcs	-- -- --	S2 R2 W5	S2 R2 W4	S3 R3 W2
8310 kcs	-- -- --	S5 R5 W1	-- -- --	S2 R2 W3
8495 kcs	-- -- --	-- -- --	-- -- --	S2 R2 W3
8545 kcs	-- -- --	-- -- --	S2 R2 W3	S2 R2 W4
12285 kcs	-- -- --	-- -- --	S3 R3 W1	S4 R4 W2

SECRET

SECRET

<u>Frequency</u>	<u>0300-0500</u>	<u>0500-0700</u>	<u>0700-0900</u>
2055 kcs	--- --- ---	--- --- ---	--- --- ---
2955 kcs	--- --- ---	--- --- ---	--- --- ---
4785 kcs	--- --- ---	--- --- ---	--- --- ---
8260 kcs	S3 R3 W3	S3 R3 W2	S4 R5 W2
8310 kcs	S3 R5 W3	S4 R5 W3	S4 R5 W2
8545 kcs	S2 R2 W3	S5 R5 W1	S5 R5 W0
8495 kcs	--- --- ---	--- --- ---	--- --- ---
12285 kcs	S3 R4 W3	S5 R5 W2	--- --- ---

GROUND STATION TO AIRCRAFT

<u>Frequency</u>	<u>1900-2100</u>	<u>2100-2300</u>	<u>2300-0100</u>	<u>0100-0300</u>
2055 kcs	S4 R4 W1	S5 R5 W1	S4 R4 W2	--- --- ---
2900 kcs	S4 R4 W2	S3 R4 W3	S1 R2 W4	S1 R2 W4
2955 kcs	S4 R4 W1	S4 R4 W1	Off Air	---
4785 kcs	S5 R5 W0	S5 R5 W0	S5 R5 W1	--- --- ---
8260 kcs	S3 R2 W4	S2 R2 W3	S3 R3 W2	S1 R3 W2
8310 kcs	S5 R5 W0	S4 R4 W0	--- --- ---	S2 R4 W4
8495 kcs	S4 R4 W2	S3 R3 W2	S2 R2 W4	S2 R2 W4
12285 kcs	--- --- ---	--- --- ---	S3 R3 W2	S4 R4 W1
12335 kcs	S4 R5 W0	S3 R4 W0	--- --- ---	--- --- ---
8545 kcs	--- --- ---	--- --- ---	S3 R3 W2	S4 R4 W1
<u>Frequency</u>	<u>0300-0500</u>	<u>0500-0700</u>	<u>0700-0900</u>	
2055 kcs	--- --- ---	--- --- ---	--- --- ---	
2900 kcs	--- --- ---	--- --- ---	--- --- ---	
2955 kcs	Off Air			
4785 kcs	--- --- ---	--- --- ---	--- --- ---	
8260 kcs	S2 R3 W3	S4 R5 W3	S5 R5 W0	
8310 kcs	S3 R5 W3	S4 R5 W3	S5 R5 W2	
8495 kcs	--- --- ---	--- --- ---	--- --- ---	
8545 kcs	S4 R4 W2	S5 R5 W0	S5 R5 W0	
12285 kcs	S4 R4 W1	S5 R5 W1	--- --- ---	
12335 kcs	Not used			

5. The following statistical data was compiled regarding the use of aids to air-navigation, all distances in statute miles:

a. Radio Homing Beacons:

<u>Location</u>	<u>No. of A/C Reporting</u>	<u>Average Initial Contact</u>	<u>Extreme initial Contact</u>	<u>Average Track</u>
Liangshan (LM)	20	147	300	351
Ankang (PR)	19	146	300	---
Hsinching (CU)	20	176	300	267
Enshih (SH)	1	50	50	---
Suining (SI)	3	75	100	200
Lao Ho Kow (OG)	2	75	100	260
Kwanghan (LK)	3	75	100	272
Kiunglai (OD)	4	39	75	---
Pengshan (MV)	1	100	100	180
Peishiyi (PY)	1	350	350	---

b. Radio Ranges:

Hsinching (CU)	4	82	125	---
Kwanghan (LK)	4	150	170	268

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c. Requests for D/F aid by station and frequency are as follows:

<u>Station</u>	<u>Frequency</u>	<u>No. of Requests</u>	<u>Type Bearing</u>		
			<u>I</u>	<u>II</u>	<u>III</u>
50th Gp 7A3	8545 kcs	1			1
462nd Gp 7D3	8310 kcs	2			2

d. Air-to-air homing was attempted by three groups with results as listed below:

444th Group - A/C 451 transmitted his ETA and altitude at rendezvous point at 2330Z on 1280 kcs. Transmitted homing signals from 0007Z to 0025Z. These transmissions were successfully picked up at distances up to 100 miles; however rendezvous was not accomplished due to weather conditions.

462nd Group - A/C 3457 sent homing signals for approximately twenty minutes. Four A/C accomplished rendezvous by this method, picking up signals at an average distance of 30 miles. The remainder of the planes accomplished rendezvous visually.

468th Group - A/C 704 transmitted his ETA and altitude prior to reaching assembly point. Transmitted homing signals from 0004Z to 0047Z. The signals were picked up by three of the aircraft.

6. No reports of attempted jamming were logged, however the usual amount of heavy atmospherics and man made interference was encountered.

7. There was one report of a violation of Cryptographic security in that one A/C of the 444th Group heard another A/C transmitting on the air-to-air command frequency a message in clear text that had just been received by CW encoded in CSP 1270 ().

8. Malfunctions of equipment:

a. 40th Bomb Group:

- (1) A/C 859 radio compass sense antenna broke off.
- (2) A/C 579 low frequency unit liaison transmitter malfunctioned. Cause was not determined.

b. 444th Bomb Group:

- (1) A/C 464 compass indicator needle would not center.
- (2) A/C 228 radio compass sense antenna broke.

c. 462nd Bomb Group:

- (1) A/C 232 two inoperative jack-boxes (radar operator put-put position)
- (2) A/C 472 lead in from radio compass flat top antenna broke.

d. 468th Bomb Group: No malfunctions of equipment listed in Group Communication Specialist Report.

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9. Wire Facilities:

a. Two wire trunks between Hsinching and Kiunglai were cut at 181530Z eliminating all wire contact with Kiunglai. Service was restored on trunk number one at 181845Z and on trunk number two at 190230Z. Teletype communication was resumed with the restoration of telephone service on trunk number one.

b. Immediately after the detection of trouble on these circuits wire crews were dispatched from the Command Post. The trouble was located approximately fifteen miles west of Hsinching. The break is believed to be a direct act of sabotage as one span of wire (approximately 150 feet) had been torn down and removed.

c. During the inoperative period of wire service, communication was carried on via CW and the newly installed FM Link.

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:Auth: CG XX BC
:Date: 28 DEC 44
:Initials: *[Handwritten]*

HEADQUARTERS
XX BOMBER COMMAND
APO 493

ANNEX NO. 1

TO

CONSOLIDATED
SPECIALIST MISSION
REPORT OF

XX BOMBER COMMAND COMMUNICATIONS (RADIO) OFFICER

Date Prepared: 26 December 1944. Field Orders No: 22

Date of Mission: 19 December 1944.

1. The following is a time study involving message handling time of the practice message sent on mission number twenty two (22).

2. The message was filed for transmission at 190350Z and was transmitted via teletype and/or radio, being receipted for by the various groups as follows:

<u>40th Group</u>	<u>444th Group</u>	<u>462nd Group</u>	<u>468th Group</u>
0359Z	0411Z	0355Z	0355Z

a. The message was encoded at the Command Post and transmitted to the groups ready for transmittal to aircraft. A time study showing time of receipt, means by which message was received and number of aircraft receiving message is as follows:

(1) 40th Bomb Group:

<u>A/C Call Sign</u>	<u>How Received</u>	<u>Time of Receipt</u>	<u>Remarks</u>
753	Direct	0411Z	
730	"	0412Z	
859	"	0415Z	
541	"	0416Z	
738	"	0417Z	
407	"	0422Z	
582	"	0425Z	
404	"	0442Z	
233	"	0445Z	
729	"	0415Z	
579	"	0559Z	

Time of first transmission: 0409Z
 Time of receipt by first A/C: 0411Z
 Time of receipt by last A/C: 0459Z
 Total elapsed time: 50 minutes.
 Average transmission time: 16.36.

Repeated three times.

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(2) 444th Bomb Group:

<u>A/C Call Sign</u>	<u>How Received</u>	<u>Time of Receipt</u>	<u>Remarks</u>
451	Direct	0420Z	
226	"	0426Z	
462	"	0437Z	
228	"	0430Z	
732	"	0439Z	
538	"	0440Z	
524	"	0440Z	
202	"	0443Z	
464	"	0443Z	
584	Not received	----	No reason given

Time of first transmission: 0415Z
Time of receipt by first A/C: 0420Z
Time of receipt by last A/C: 0534Z
Total elapsed time: 79 minutes.
Average transmission time: 23.77 minutes.

(3) 462nd Bomb Group:

<u>A/C Call Sign</u>	<u>How Received</u>	<u>Time of Receipt</u>	<u>Remarks</u>
3457	Direct	0450Z	
472	"	0455Z	
448	"	0450Z	
454	"	0450Z	
232	Relay	0506Z	
484	Not received	----	
393	Direct	0450Z	

Time of first transmission: 0408Z
(Repeated again) at: 0449Z
Time of receipt by first A/C: 0450Z
Time of receipt by last A/C: 0506Z
Total elapsed time: 58 minutes.
Average transmission time: 45.5

NOTE: This large average time is due to the fact that no A/C received the message when first transmitted. A delay of 41 minutes was made between the time of first and second transmissions. The message was transmitted on one frequency only, it being 8310 kcs. No reason for the delay or failure to transmit the message on more than one frequency was given in group communication specialist report. To insure proper utilization of the existing facilities closer supervision of ground station operating personnel should be maintained during mission periods.

(4) 463th Bomb Group:

<u>A/C Call Sign</u>	<u>How received</u>	<u>Time of receipt</u>	<u>Remarks</u>
704	Direct	0410Z	
4719	"	0405Z	
703	"	0402Z	

The two remaining A/C in the five plane formation of this Group received the message at 0411Z from 704 who was formation leader.

Time of first transmission: 0356Z
Time of receipt by first A/C: 0402Z
Time of receipt by last A/C: 0411Z
Total elapsed time: 15 minutes.
Average transmission time: 11.8 minutes

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S E C R E T

ANNEX

F

RADAR

I - Radar Information

- Section A - Navigation and Bombing
- Section B - Scope Photography
- Section C - Serviceability

II - Radar Tables

- Table A - Bombing Data
- Table B - Photographic Results
- Table C - Navigational Ranges
- Table D - Serviceability
- Table E - Malfunctions

* Prepared by: *
* * * * *
* Radar Section *
* * * * *
* XX Bomber Command *
* * * * *

S E C R E T

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SECRET

Auth:CG-XX BC

Initials AB

Date 26 Dec 44

HEADQUARTERS
XX BOMBER COMMAND
APO 493

CONSOLIDATED
SPECIALIST MISSION
REPORT OF

XX BOMBER COMMAND RADAR OFFICER

Date Prepared 26 December 1944 Field Orders Number 22
Date of Mission 19 December 1944

R - Radar Information

A - Navigation and Bombing

1. Although the final evaluation of the radar bombing is incomplete, the preliminary results appear encouraging. One (1) formation of aircraft made an excellent bombing run on the primary target but dropped the bombs slightly late. Another formation began a good bomb run to the target; it ended, however, south of the target area. The cause of this error is undetermined, as the distinctive island, Miao Island, west of the coast line in the target area, is present. Omura provides an excellent radar target, and the approach of one hundred and ten (110°) degrees Magnetic to the target provides excellent use of check, assembly and initial points.

2. The secondary target, docks and engineering works, Shanghai, China, provided a fair radar target. A good signal return was reported from the city and bombing of the area could have been accomplished by radar.

3. Omura was bombed entirely by radar, while Shanghai was bombed visually.

4. Assembly and initial points, primary, secondary and last resort targets were all identifiable by radar. The average range of identification of most check points was improved on this mission over previous Omura missions.

B - Scope Photography

1. Radar Scope photography was disappointing on this mission. Only seven (7) cameras were installed and were airborne. This low figure was due in many groups to the scheduling of aircraft without scope camera installations. This did, however, provide a greater number of radar scope camera aircraft for the next mission.

2. Two (2) sets of negatives were returned and were useable. The bombing run was also identifiable. Malfunction of equipments in three (3) cases eliminated the possibility of procuring further useable sets of negatives.

C - Serviceability

1. A total of twenty-eight (28) APQ-13 systems or eighty-eight per cent (88%) of the equipment was operational over the target. This was an average operating condition.

2. Interference was again encountered by a number of planes. Only one (1) radar operator complained of the interference blanking the radar scope; however, this condition was reported to have lasted only for a short period of time.

- 1 -

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S E C R E T

II - RADAR TABLES

A - BOMBING DATA

TOTAL A/C BOMBING TARGETS	- 32
TOTAL A/C BOMBING OMURA (VISUALLY)	- 0
TOTAL A/C BOMBING OMURA (BY RADAR)	- 17
TOTAL A/C BOMBING SHANGHAI (VISUALLY)	- 13
TOTAL A/C BOMBING NANKING (VISUALLY)	- 2
TOTAL A/C RADAR BOMBING	- 17
PERCENTAGE RADAR BOMBING	- 53

B - PHOTOGRAPHIC RESULTS

DATA	40TH GP		444TH GP		462ND GP		468TH GP		TOTAL	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
NO. CAMERAS INSTALLED:										
K-35 CAMERAS	3	--	2	--	1	--	1	--	7	--
K-24 CAMERAS	2	--	0	--	0	--	0	--	2	--
K-24 CAMERAS	1	--	2	--	1	--	1	--	5	--
NO. CAMERAS IN ABORT, EARLY RETURN & MISSING A/C*	1	33	0	0	0	0	0	0	1	100
NO. CAMERAS COMPLETING MISSION*	2	67	2	100	1	100	1	100	6	86
NO. CAMERAS IN RADAR & CAMERA MALFUNCTION A/C #	0	0	1	50	1	100	1	100	3	50
SETS PICS RET. #	1	50	1	50	0	0	0	0	2	33
NO. NEGATIVES RET.	28	--	70	--	0	--	0	--	98	--
SETS PICS USEABLE**	1	100	1	100	0	0	0	0	2	100
SETS PICS TRACING BOMB RUN **	1	100	1	100	0	0	0	0	2	100

* PERCENTAGE BASED ON CAMERAS INSTALLED.
 # PERCENTAGE BASED ON CAMERAS COMPLETING MISSION.
 ** PERCENTAGE BASED ON SETS OF PICTURES RETURNED.

S E C R E T

C - NAVIGATIONAL RANGES

CHECK POINT	40TH GP		444TH GP		462ND GP		468TH GP		TOTAL	
	Number Reporting	Average Range	Number Reporting	Average Range	Number Reporting	Average Range	Number Reporting	Average Range	Total No. Reporting	Weighted Average Range
MAPPING	9	39	9	44	6	44	6	40	30	42
OMURA (P.T.)	4	28	2	39	0	0	4	30	10	31
SHANGHAI (S.T.)	2	40	7	43	2	40	0	0	11	42
NANKING (L.R.T.)	2	20	3	40	2	22	2	55	9	35
SHIRO REEF (I.P.)	6	22	2	29	3	30	4	30	15	27
SANTA IS. (A.P. #1)	3	22	0	0	0	0	0	0	3	22
KO ISLAND (A.P. #1)	0	0	4	30	0	0	0	0	4	30
BANSAI ISLAND (AP #1)	0	0	0	0	2	23	4	37	6	36
REIZUI IS. (A.P. # 2)	2	18	4	31	0	0	2	25	8	26
CHINA COAST	5	28	6	43	0	0	4	55	15	44
FANGCHENGCHEN	0	0	2	23	0	0	1	30	3	32
HAN RIVER	2	23	5	25	0	0	1	50	8	28
HUNGTZE LAKE	3	33	7	34	4	40	4	28	18	32
LIANGSHAN	0	0	3	24	0	0	0	0	3	24
LUCHOW	0	0	2	23	0	0	0	0	2	23
NAGASAKI	0	0	0	0	0	0	1	50	1	50
SAISHU ISLAND	1	45	3	39	2	50	0	0	6	44
TUNG LAKE	1	15	2	30	0	0	1	20	4	24
WUHU	1	15	0	0	0	0	0	0	1	15
CAPE NELSON	0	0	7	32	0	0	0	0	7	32

D - RADAR SERVICEABILITY

DATA	40TH GP		444TH GP		462ND GP		468TH GP		TOTAL	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
A/C AIRBORNE	12	--	10	--	9	--	5	--	36	--
A/C REPORTING	11	--	10	--	7	--	5	--	33	--
APQ-13 OPERATIVE AT TAKE-OFF *	11	100	9	90	7	100	5	100	32	97
A/C BOMBING	11	--	10	--	6	--	5	--	32	--
A/C REPORTING BOMBING*	11	100	10	100	6	86	5	100	32	97
APQ-13 OPERATIVE OVER TARGET #	9	82	9	90	6	100	4	80	28	88
APQ-13 UNREPAIRABLE FAILURES #										
COMPLETELY INOP.	2	18	1	10	0	0	1	20	4	12
PARTIALLY INOP.	2	18	4	40	0	0	1	20	7	22
TOTAL	4	36	5	50	0	0	2	40	11	34
APQ-13 REPAIRED IN FLIGHT *	0	0	0	0	3	43	0	0	3	91
NO FAILURES OF AUXILIARY EQUIPMENT	0	0	0	0	0	0	0	0	0	0

* PERCENTAGE BASED ON A/C REPORTING.
 # PERCENTAGE BASED ON A/C REPORTING BOMBING.

S E C R E T

E - MALFUNCTIONS

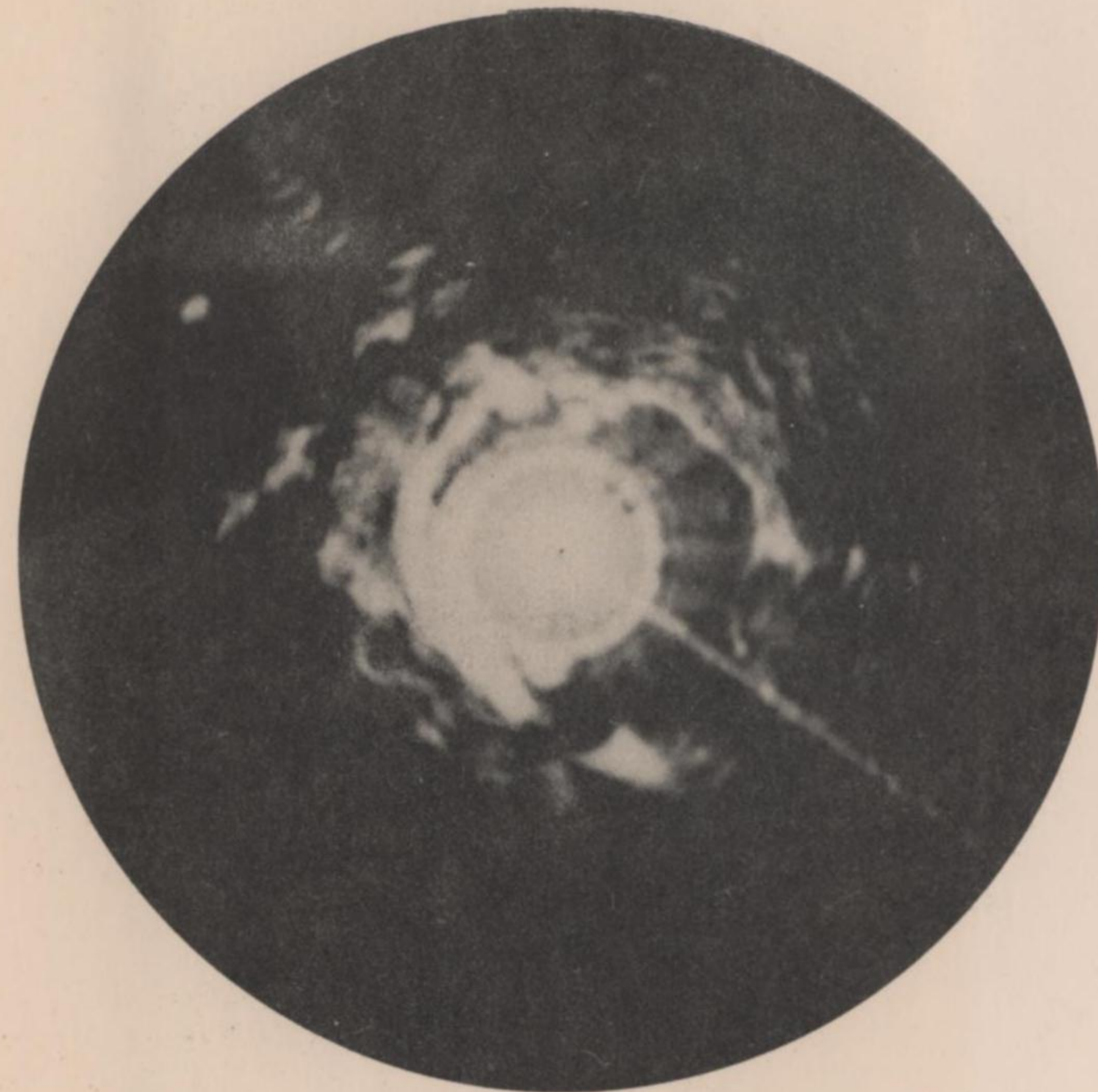
DATA	40TH GP	444TH GP	462ND GP	468TH GP	TOTAL
AT TAKE-OFF					
INVERTER	0	1	0	0	1
TOTAL	0	1	0	0	1
BETWEEN TAKE-OFF & TARGET					
<u>COMPLETE:</u>					
SPOKING F-1102 BLOWN	1	0	0	1	2
NO XMTTER CURRENT	1	0	0	0	1
TOTAL COMPLETE	2	0	0	1	3
<u>PARTIAL:</u>					
AFC	1	0	0	0	1
ANT. TILT STUCK	1	0	0	0	1
AZIMUTH STAB.	1	0	0	0	1
TUNING DRIFT	0	2	0	0	2
SPOKING	0	2	0	0	2
LOW GAIN	0	0	1	0	1
VIBRATION	0	0	0	1	1
TOTAL PARTIAL	3	4	1	1	9
TOTAL COMPLETE & PARTIAL	5	4	1	2	12
BETWEEN TARGET & LANDING					
NO FAILURES					
REPAIRED IN FLIGHT					
INVERTERS CHANGED	0	0	1	0	1
TRANSTAT ADJUSTED	0	0	2	0	2
TOTAL	0	0	3	0	3
AUXILIARY EQUIPMENT					
NO FAILURES					

NOTE: DIFFERENT FAILURES IN SAME SET ARE ALL LISTED.

RADAR PHOTOGRAPH ANALYSIS OMURA AREA-JAPAN

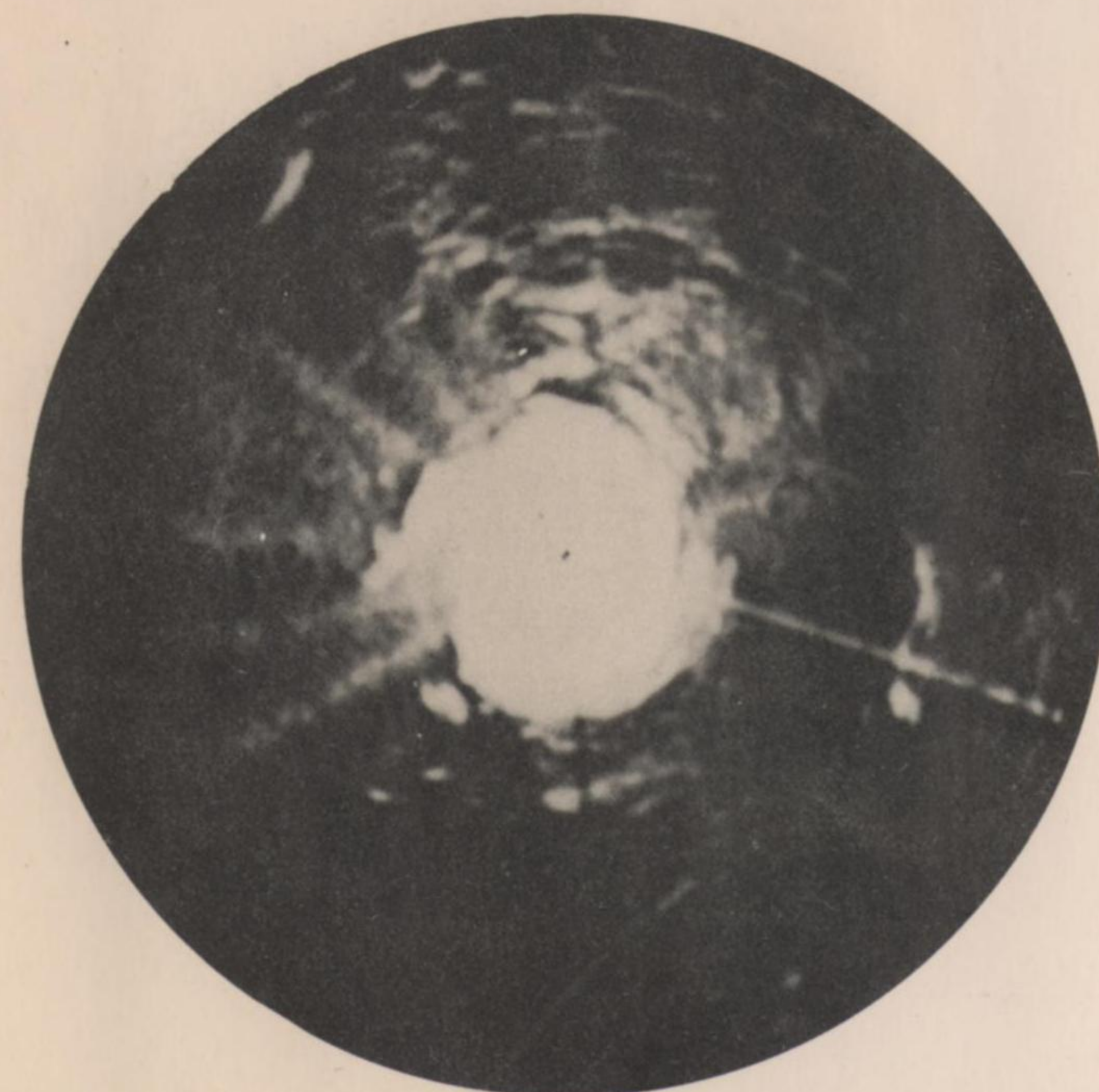
DECLASSIFIED
Authority 760063
By S/NARA Date 11/8/05

3



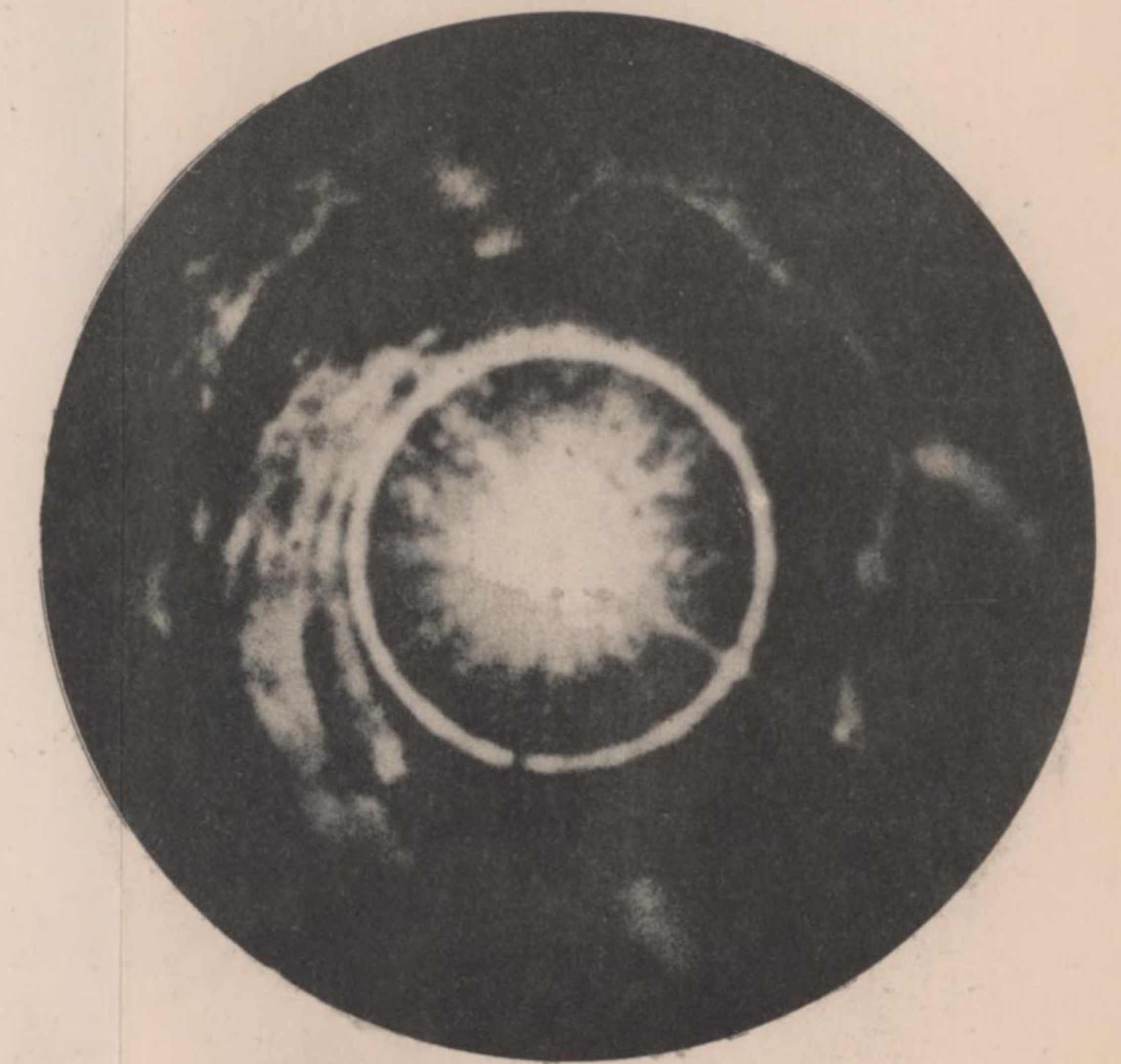
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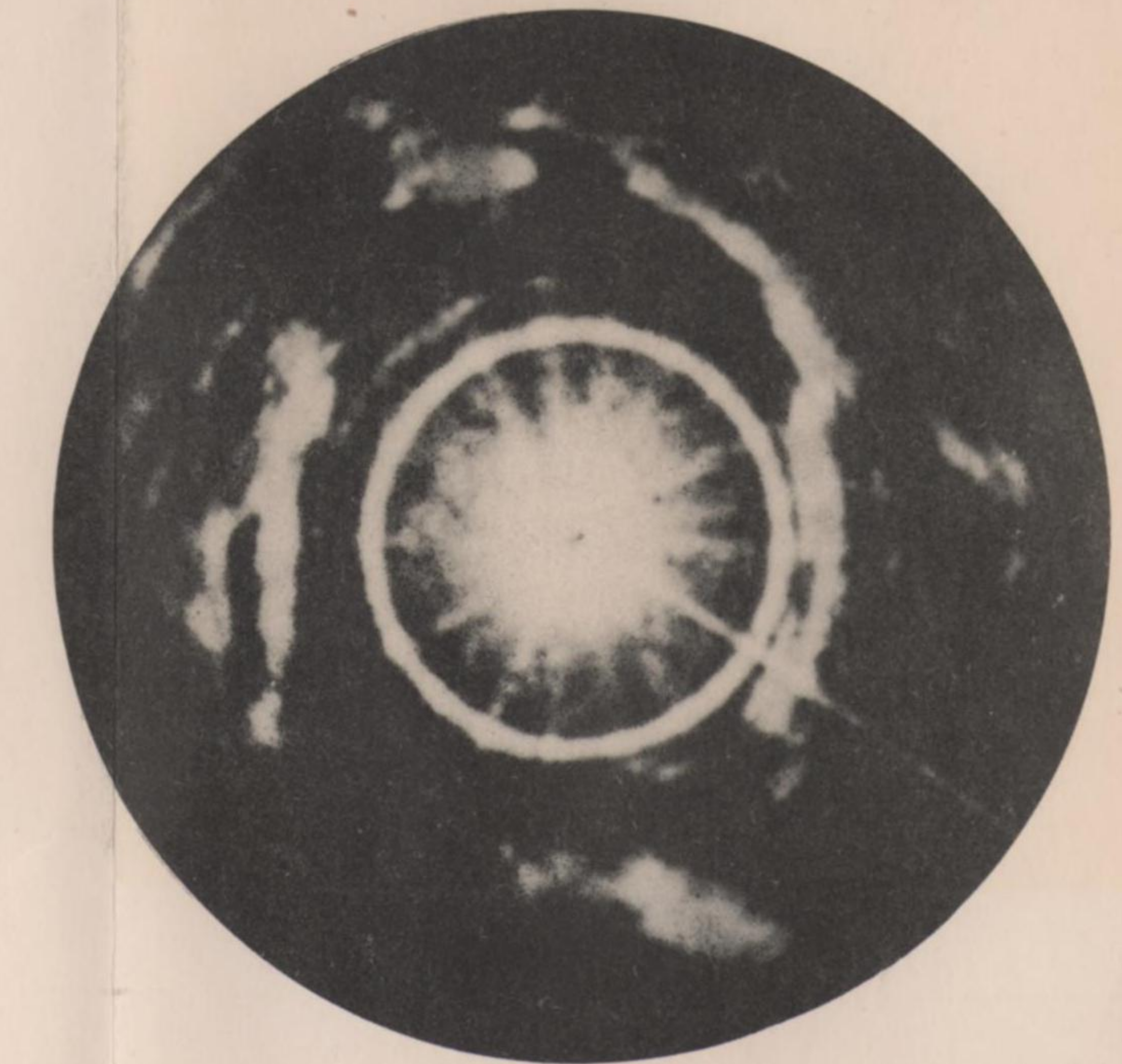
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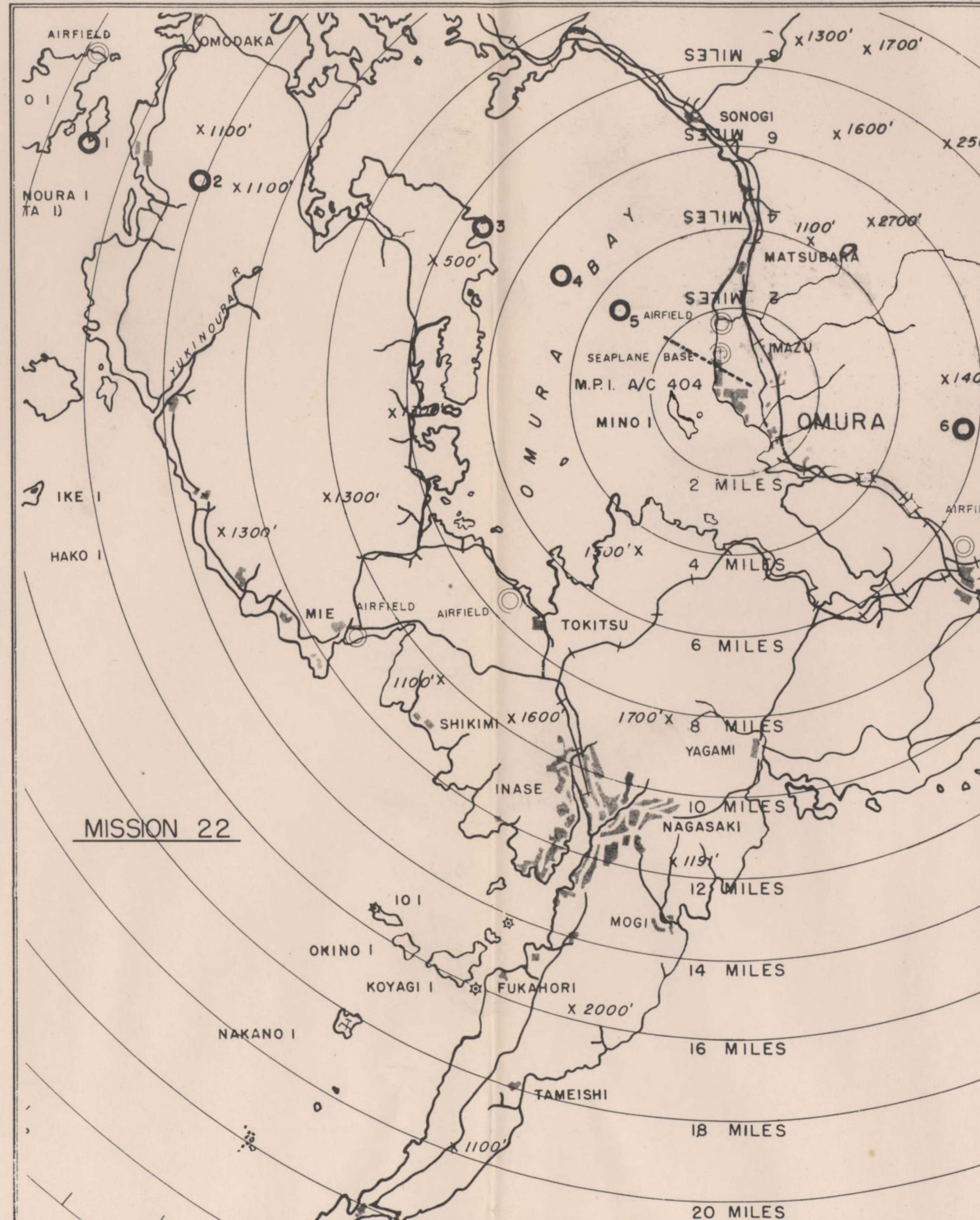


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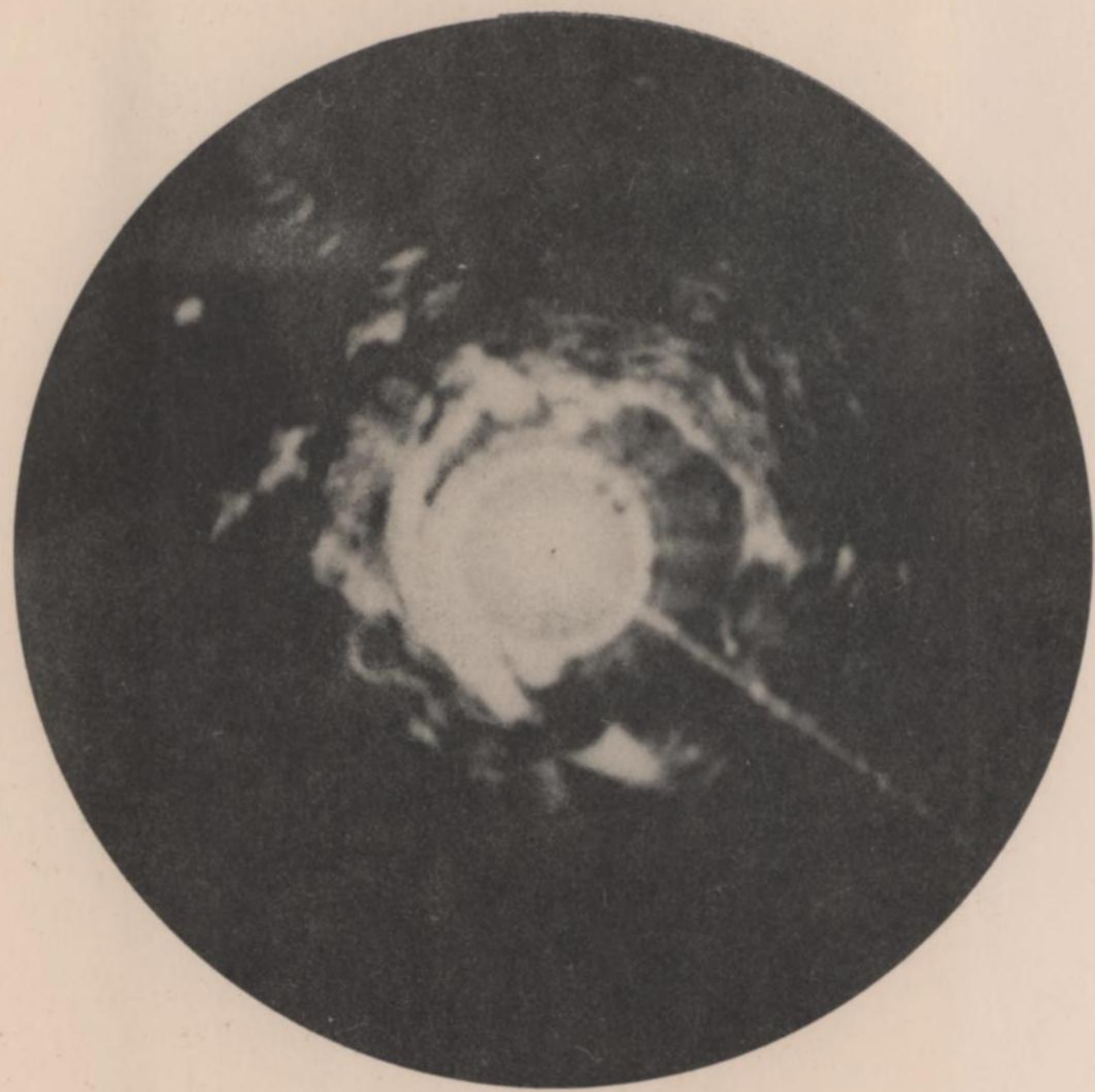
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RADAR PHOTOGRAPH ANALYSIS OMURA AREA-JAPAN

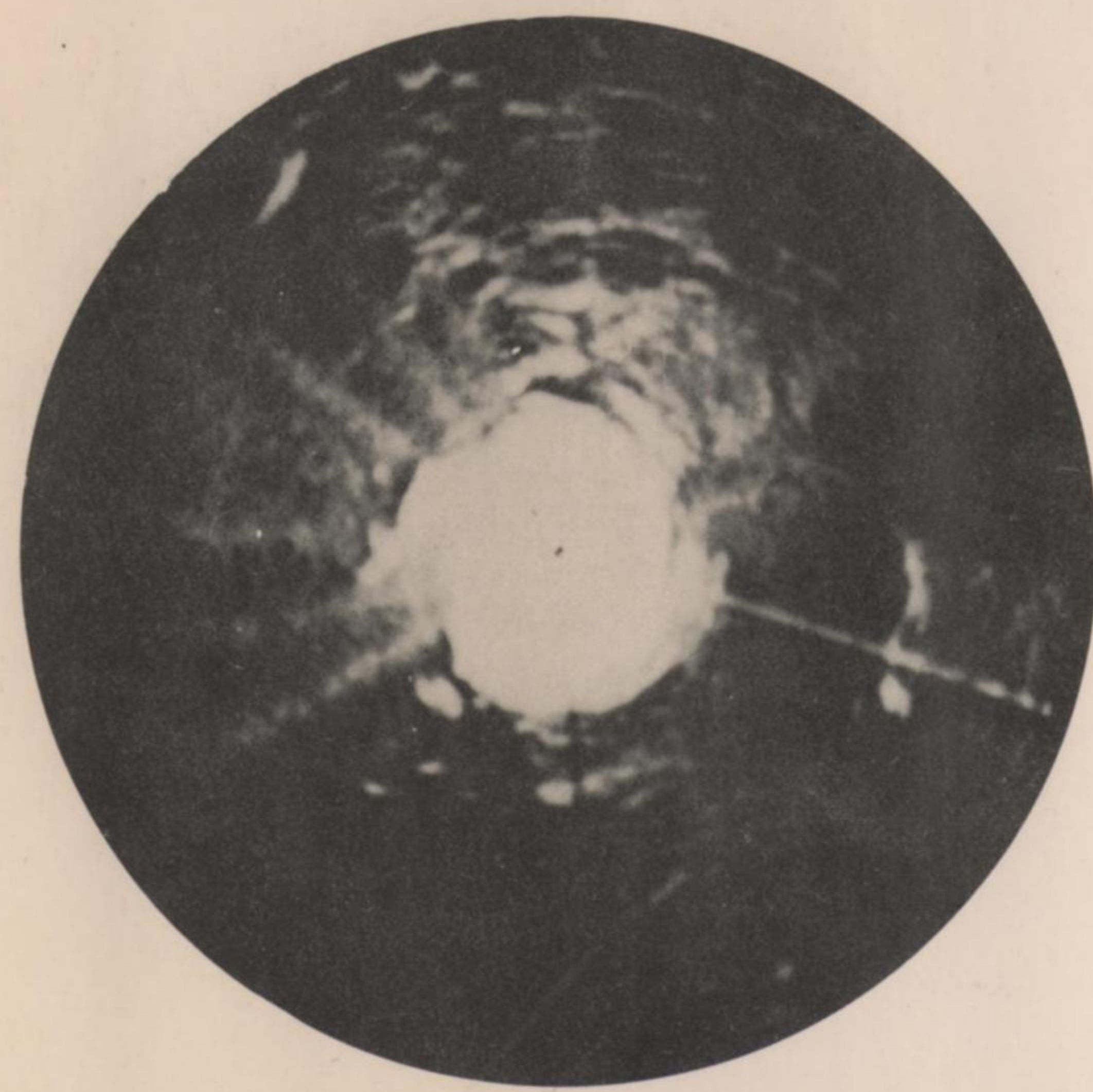
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Authority 760063
By SP-1 NARA Date 11/8/05

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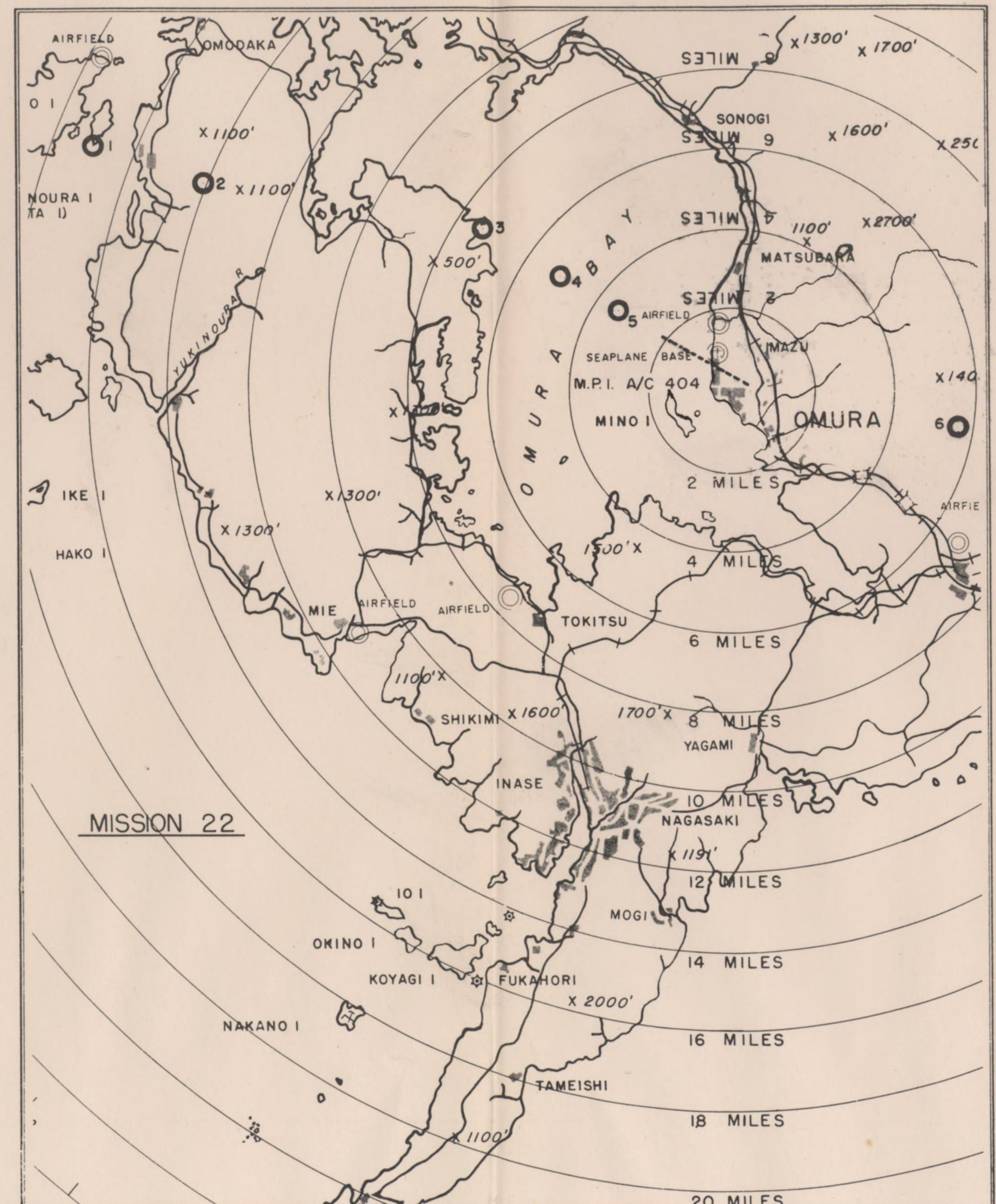


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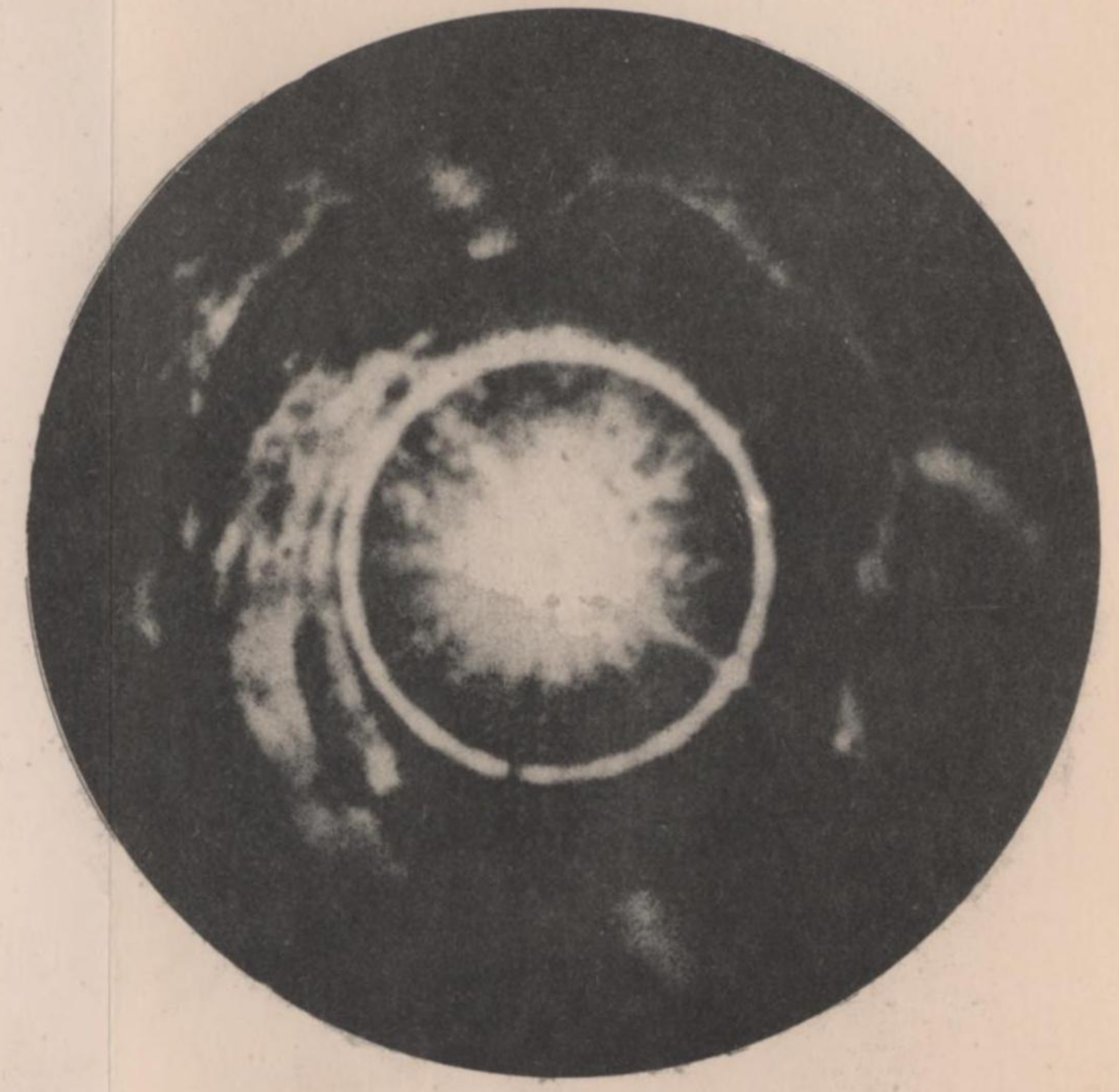
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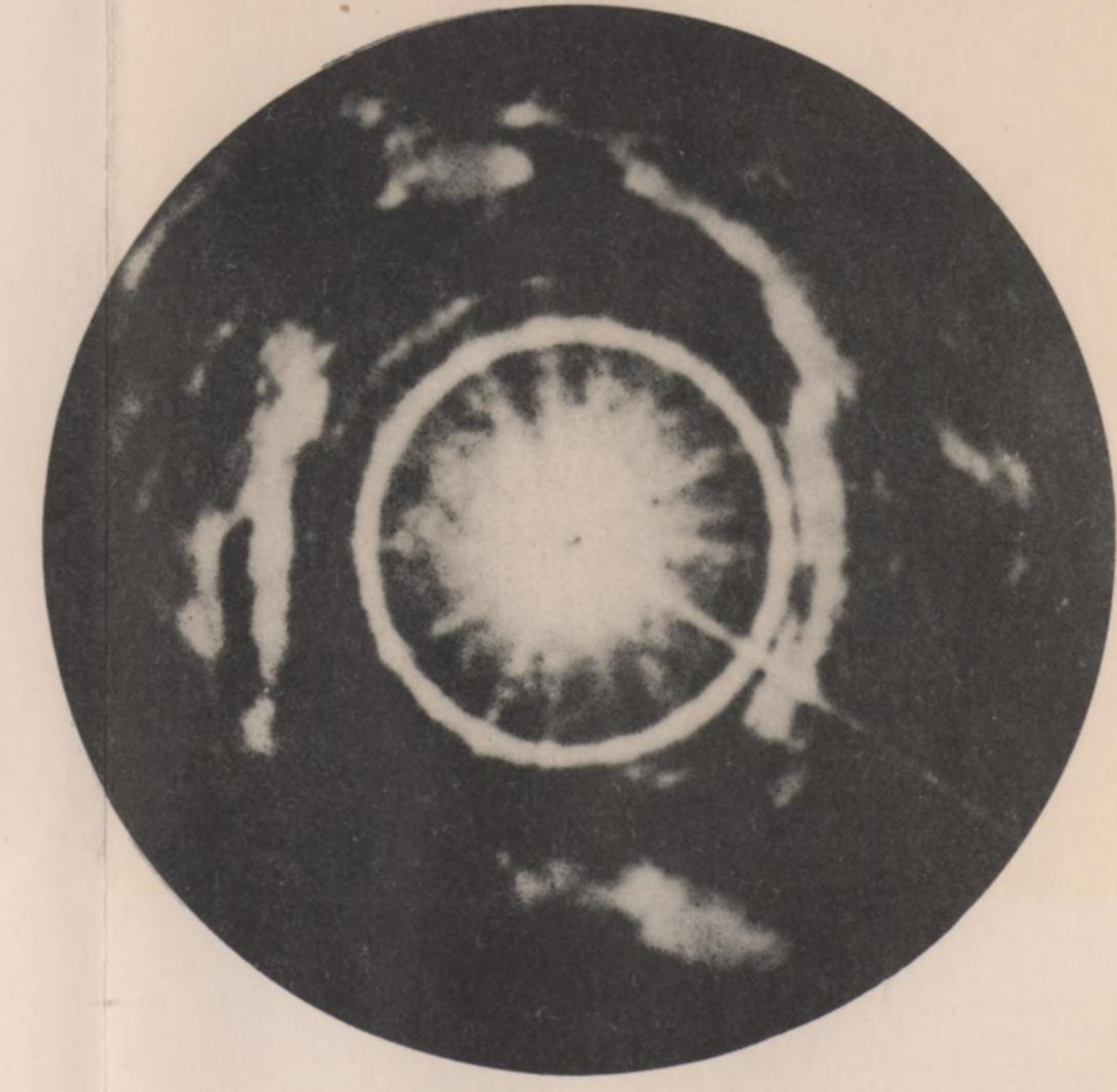


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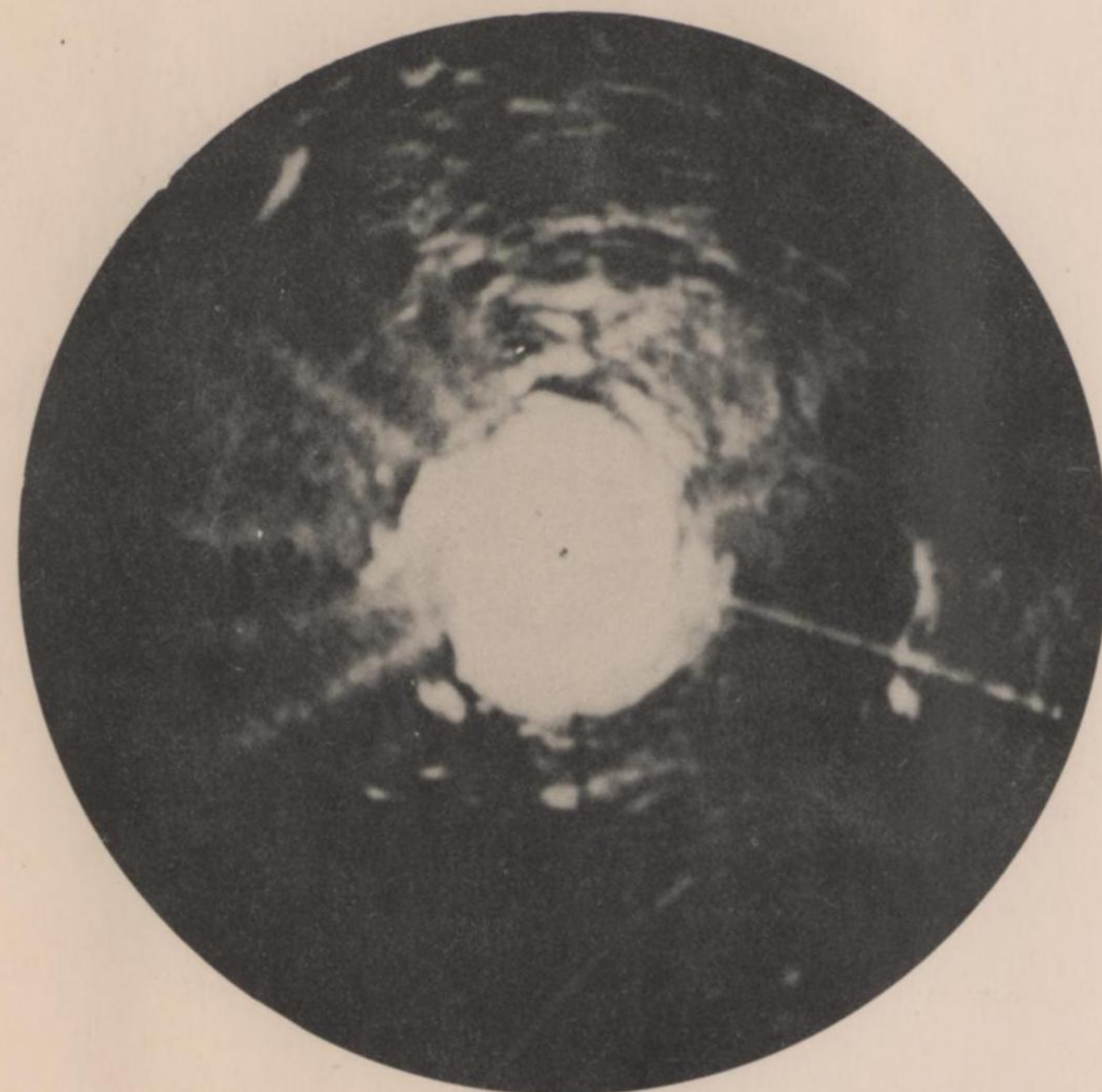
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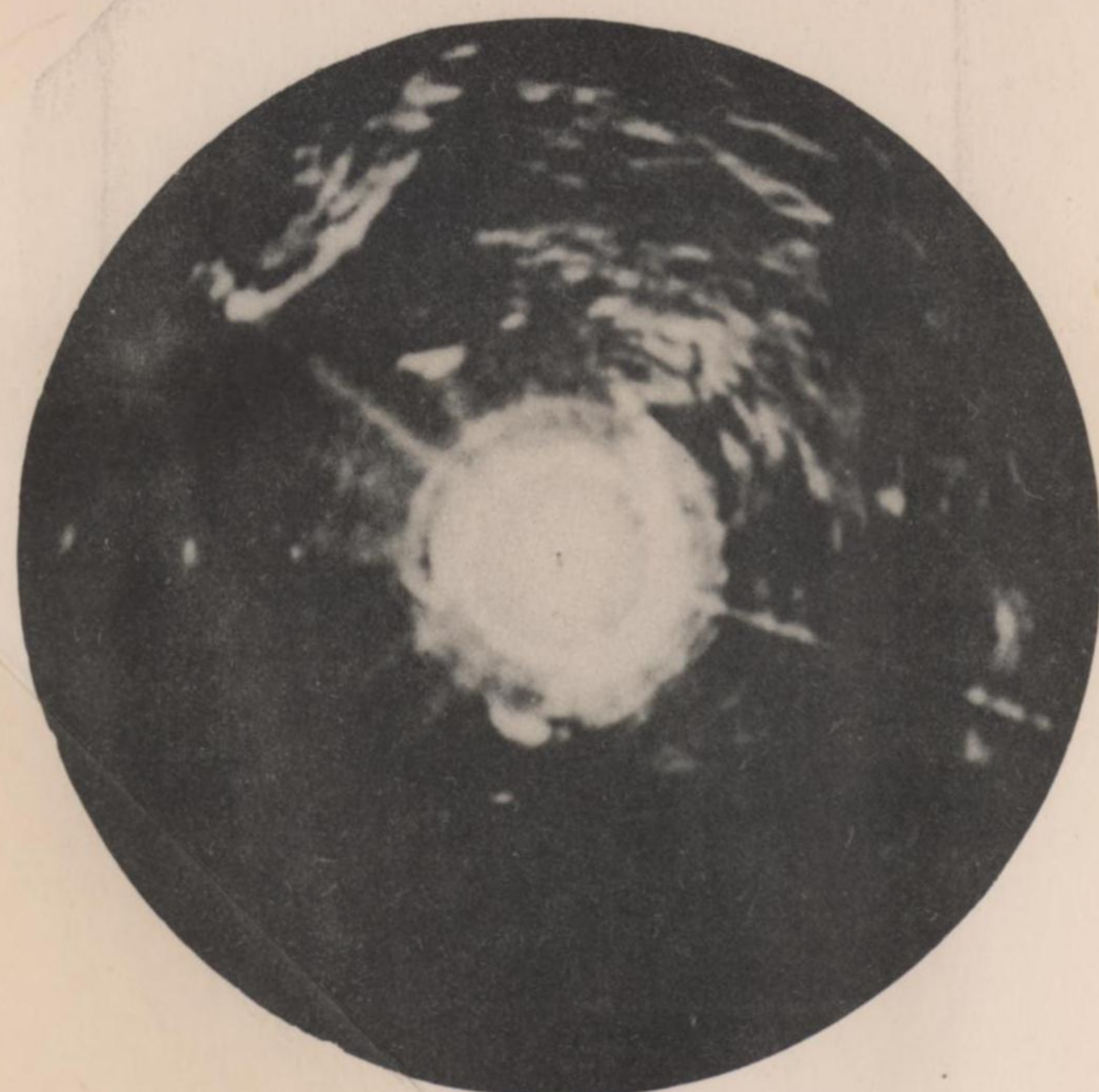
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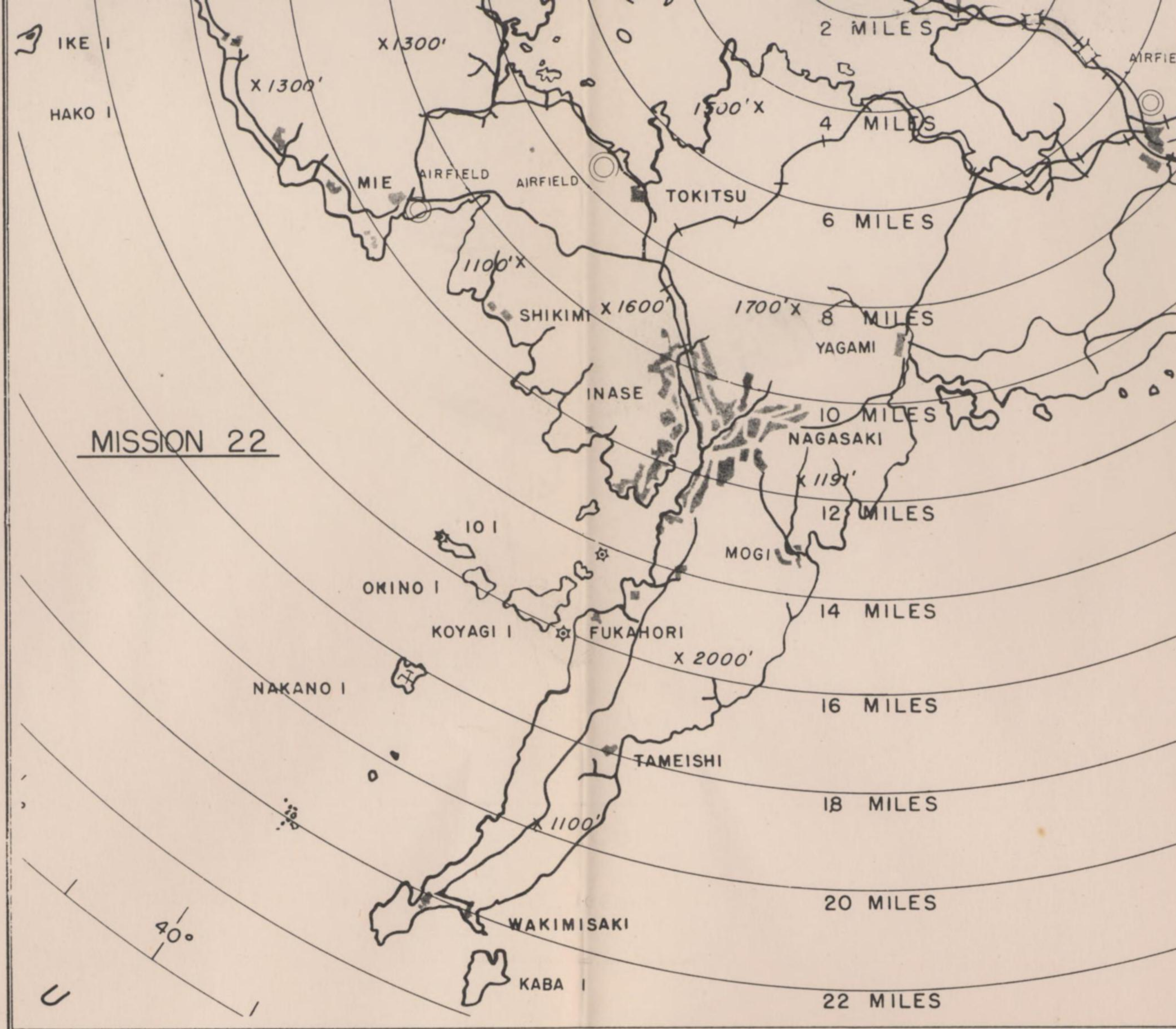


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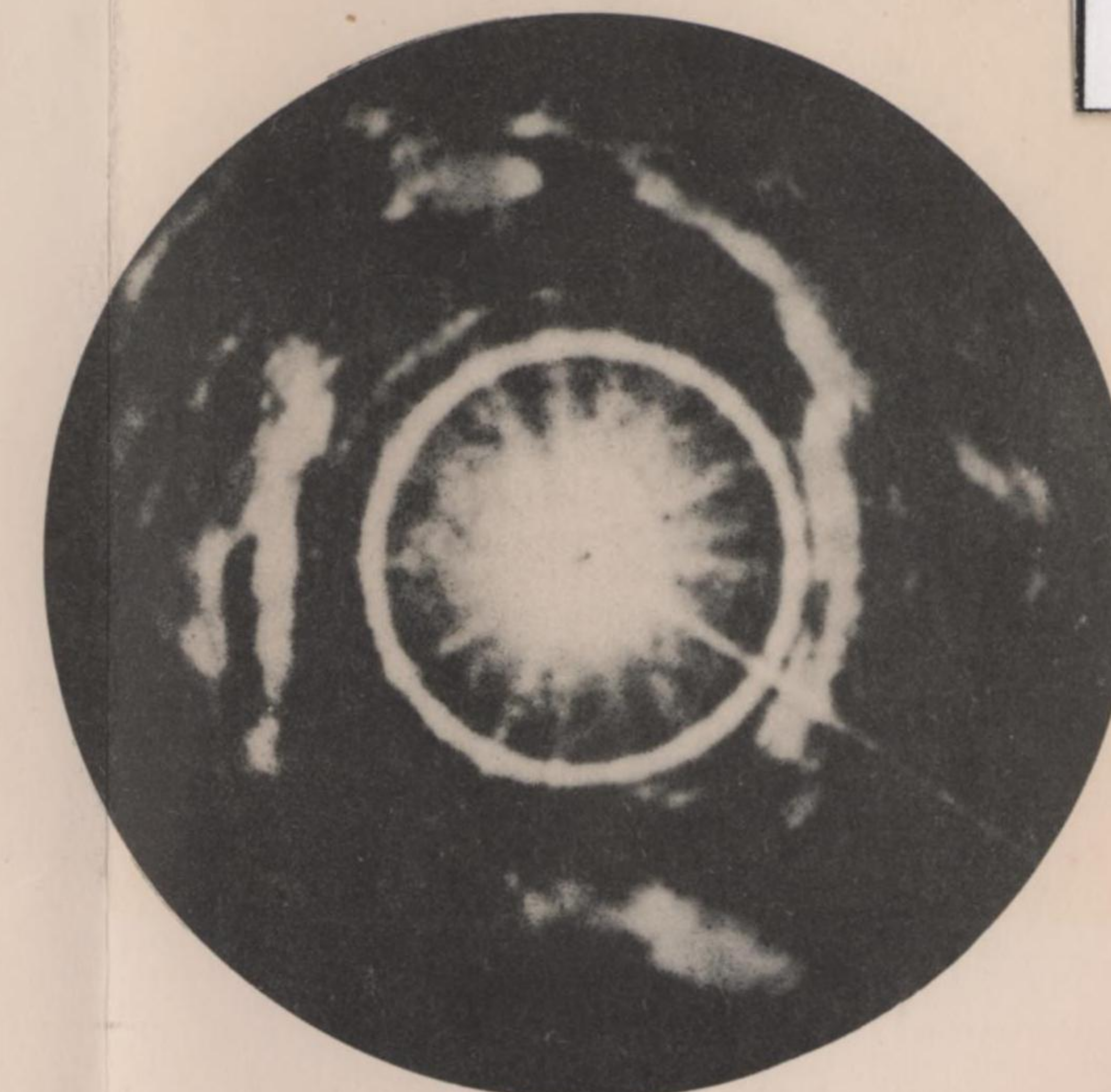


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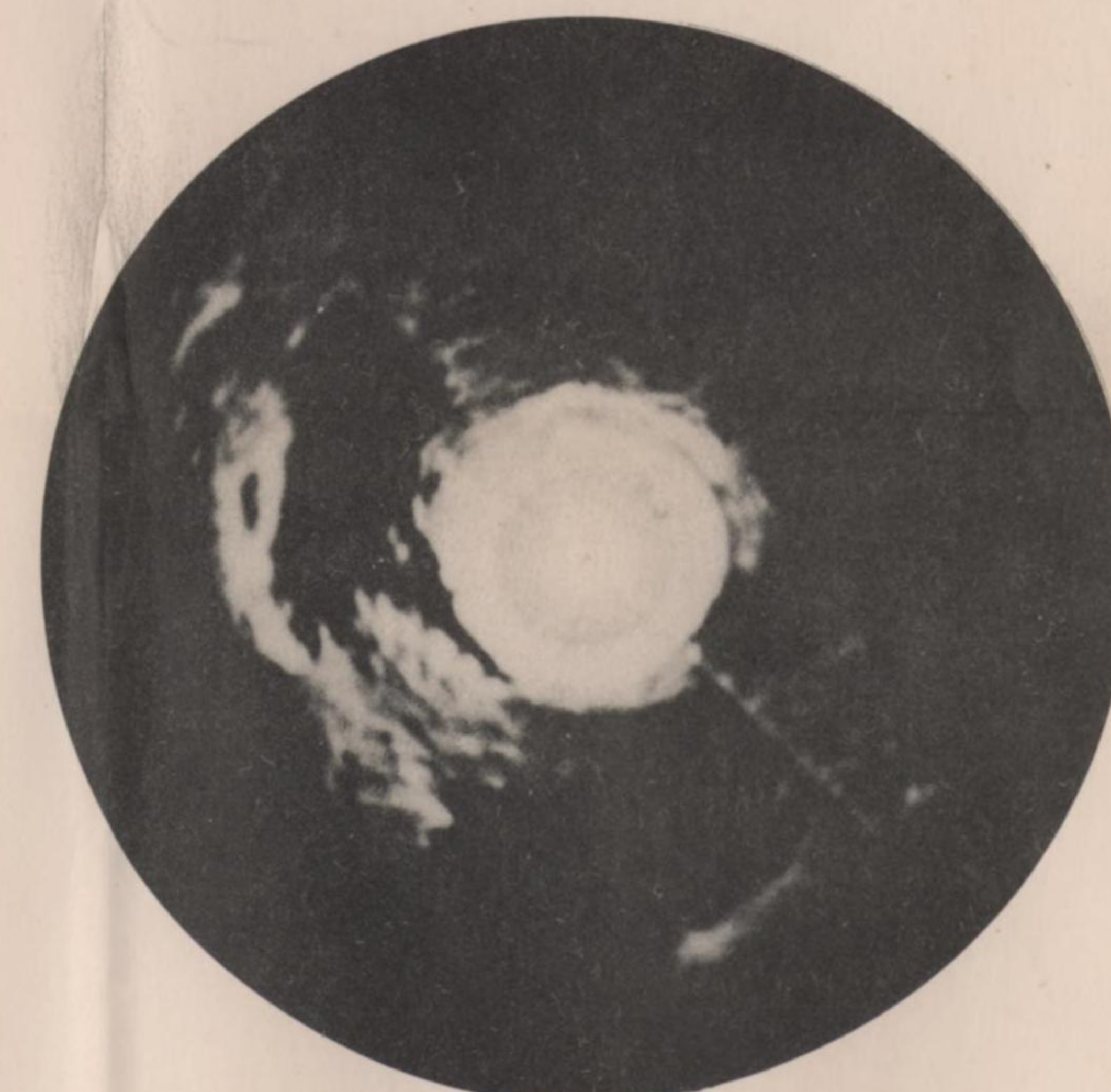
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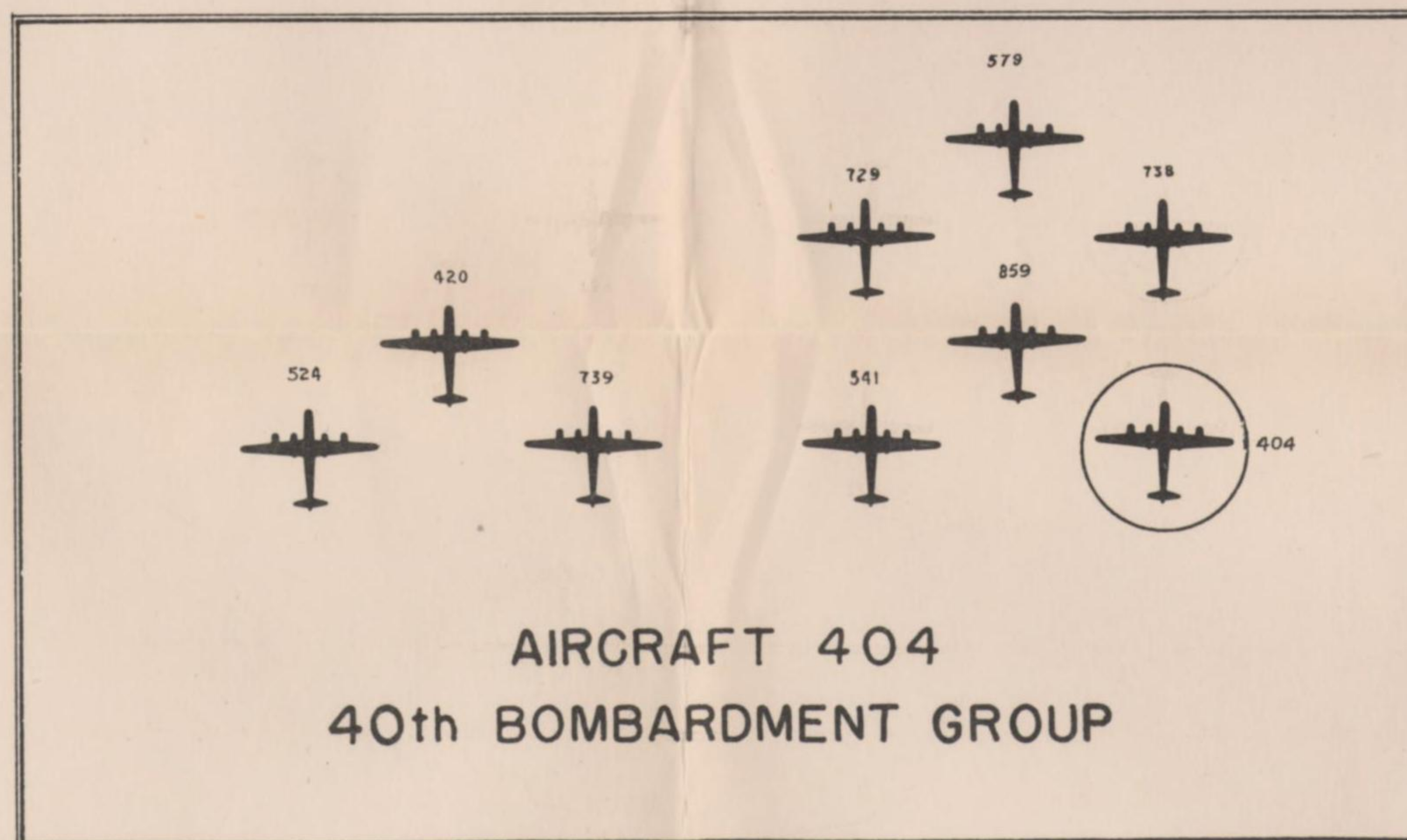


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 ALTITUDE 22,000' 129°53'15" E

6



HEADING 140°M
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 ALTITUDE 22,000' 130°03'15" E



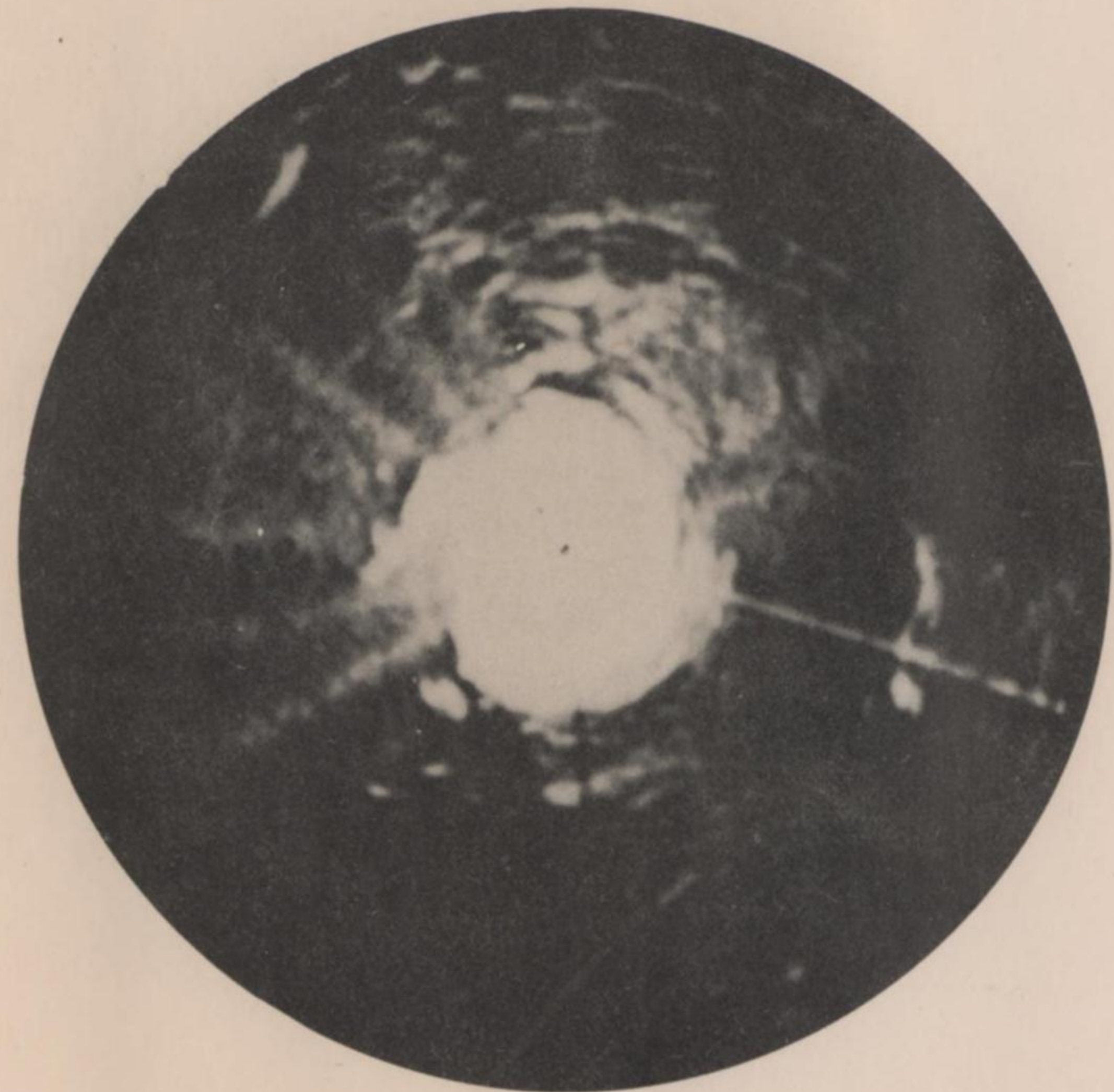
PREPARED BY TARGET UNIT INTELLIGENCE SECTION — XX BOMBER COMMAND

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DECLASSIFIED
 Authority 76063
 By SP-1 NARA Date 11/8/05

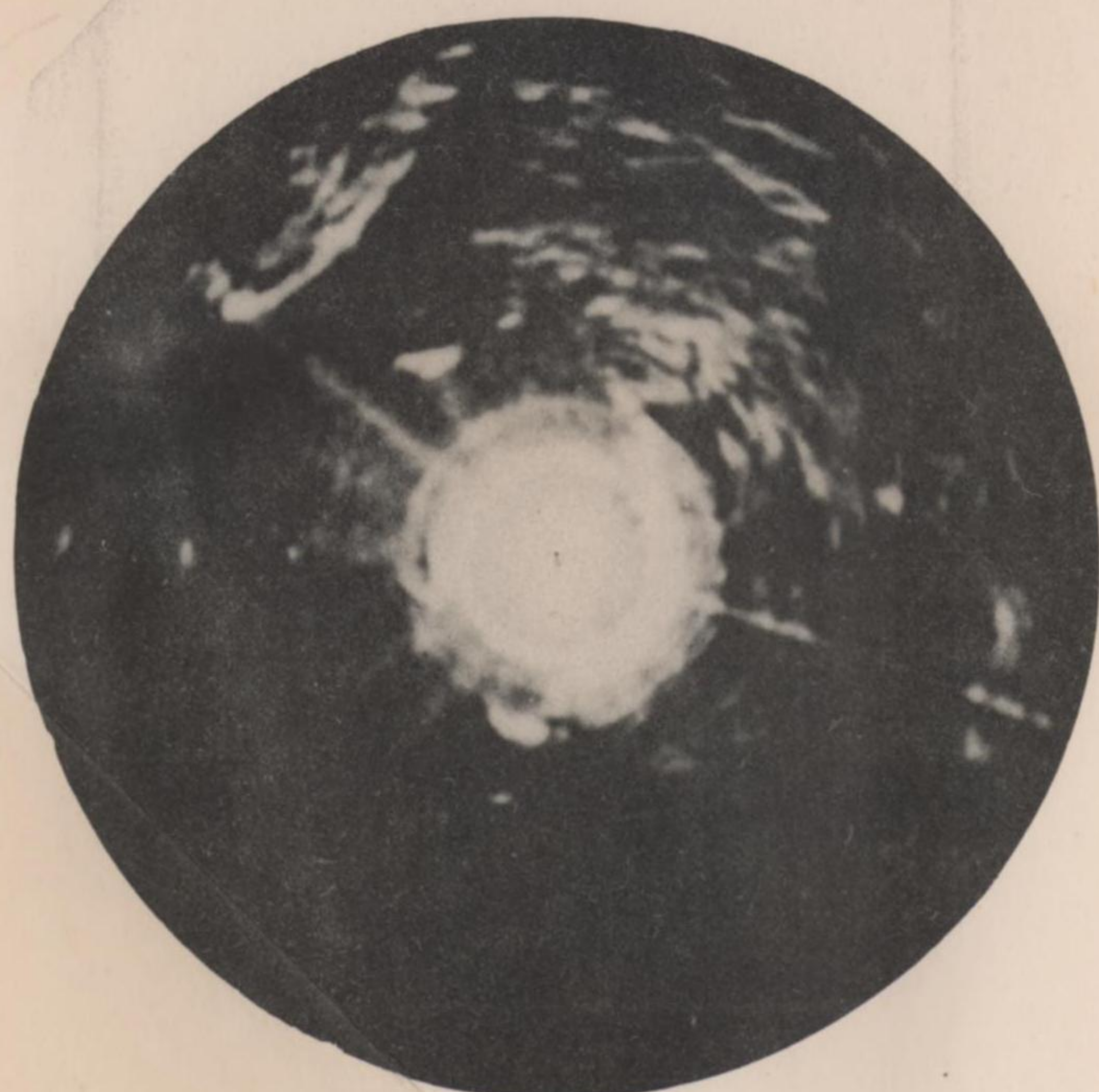
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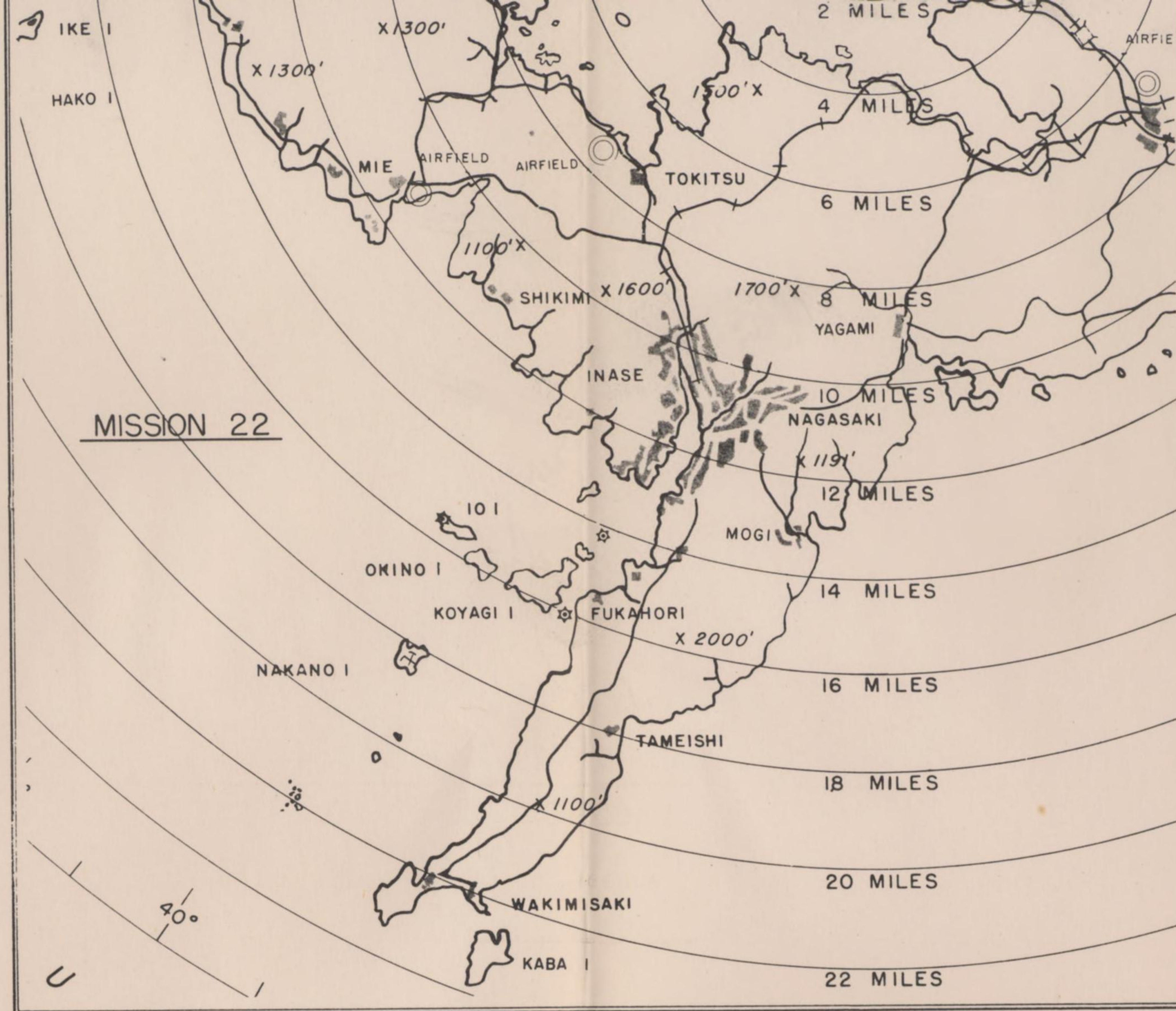


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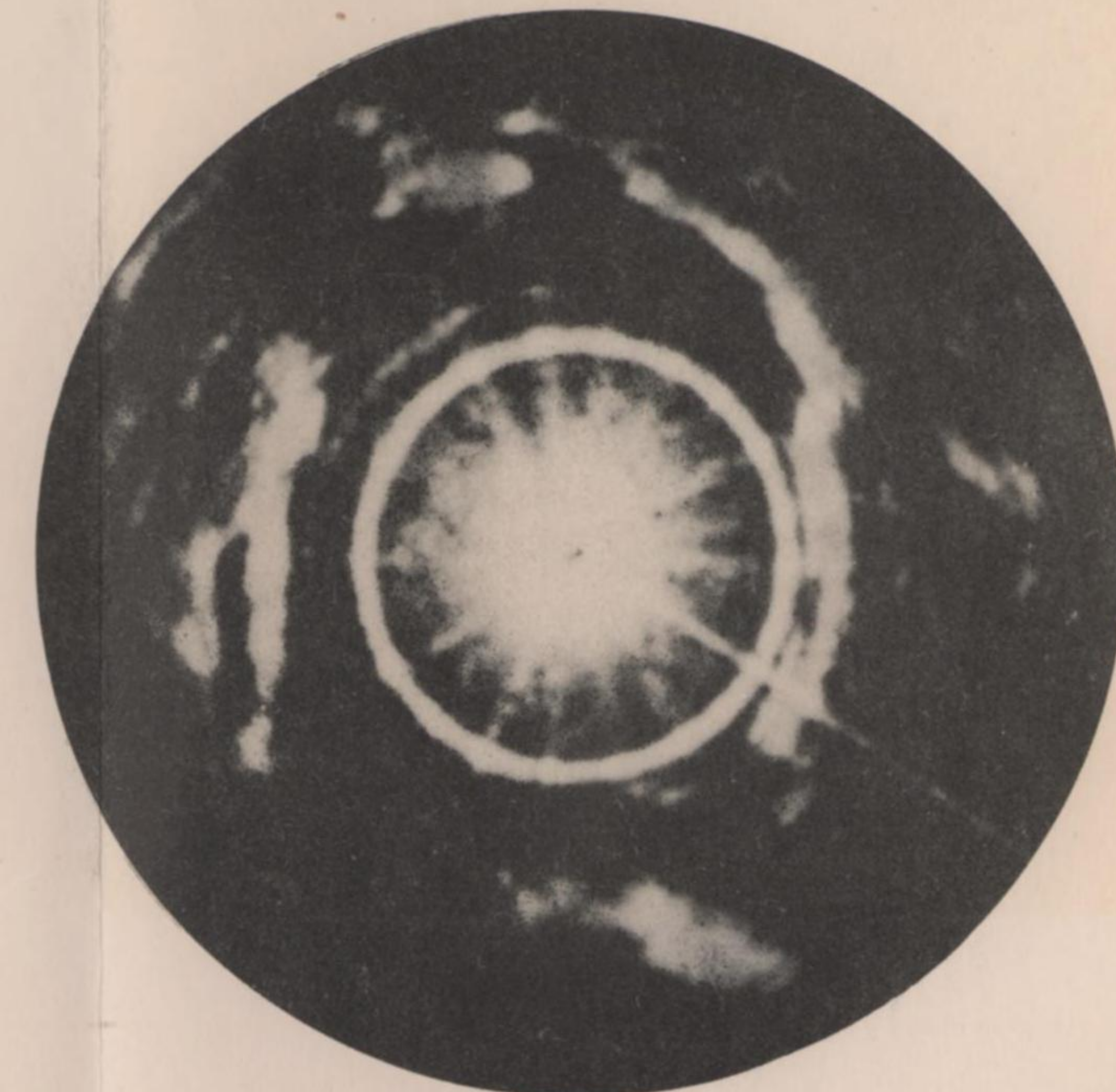


HEADING 115°M
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 ALTITUDE 22,000' 129°37'40" E



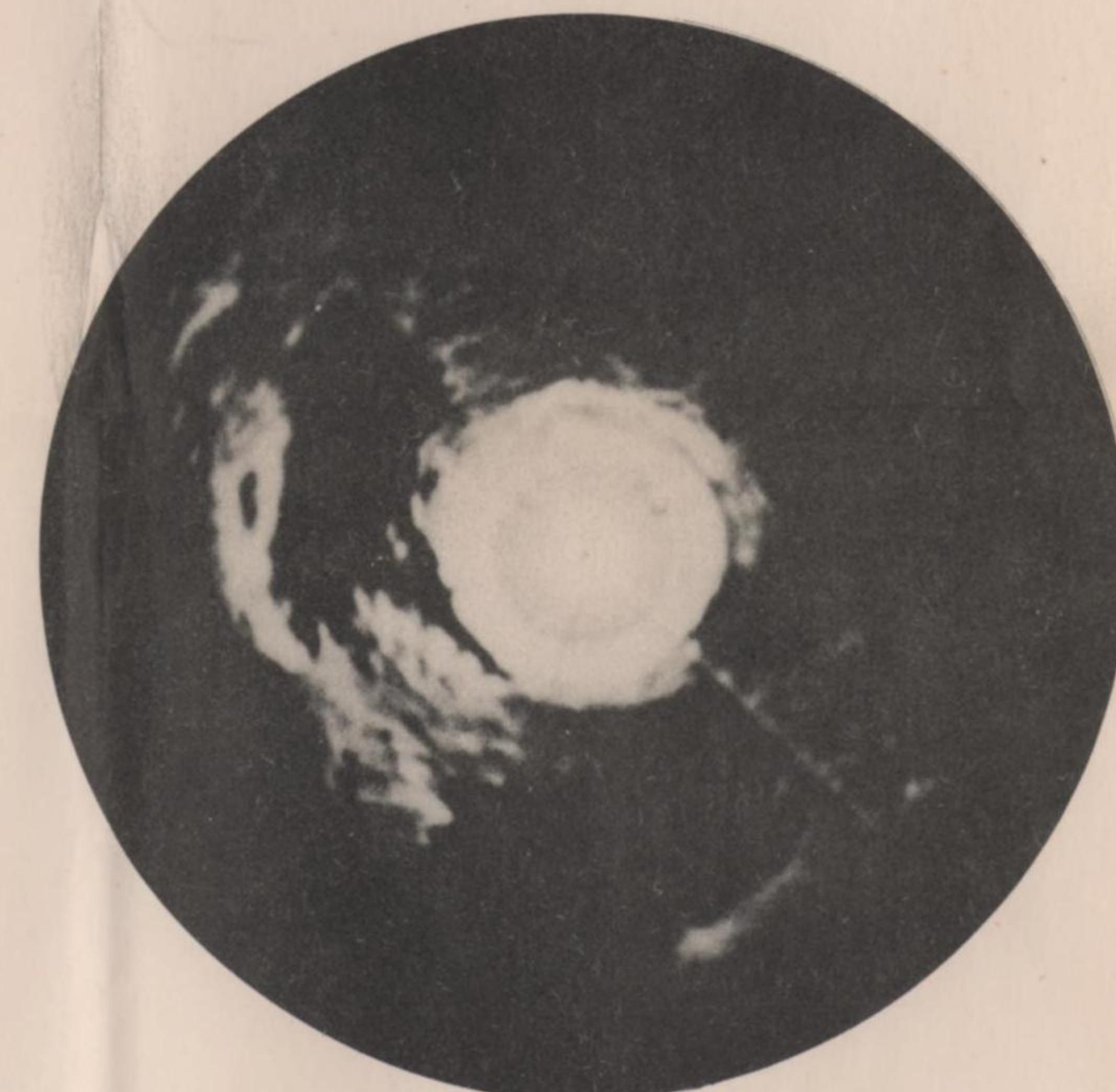
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 ALTITUDE 22,000' 129°51'30" E

5

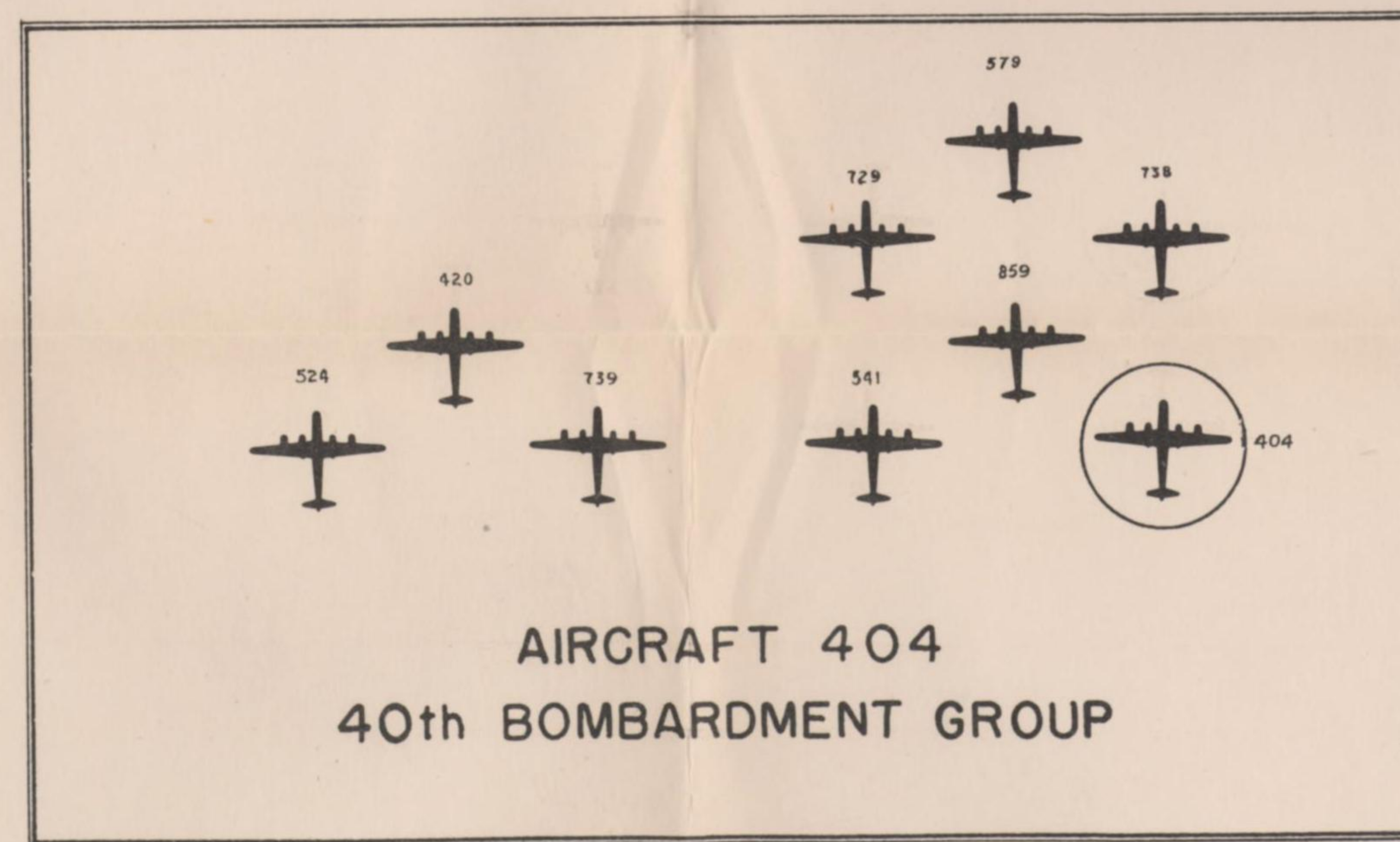


HEADING 129°M
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 ALTITUDE 22,000' 129°53'15" E

6



HEADING 140°M
 20 MILE SWEEP 32°54'20" N
 ALTITUDE 22,000' 130°03'15" E



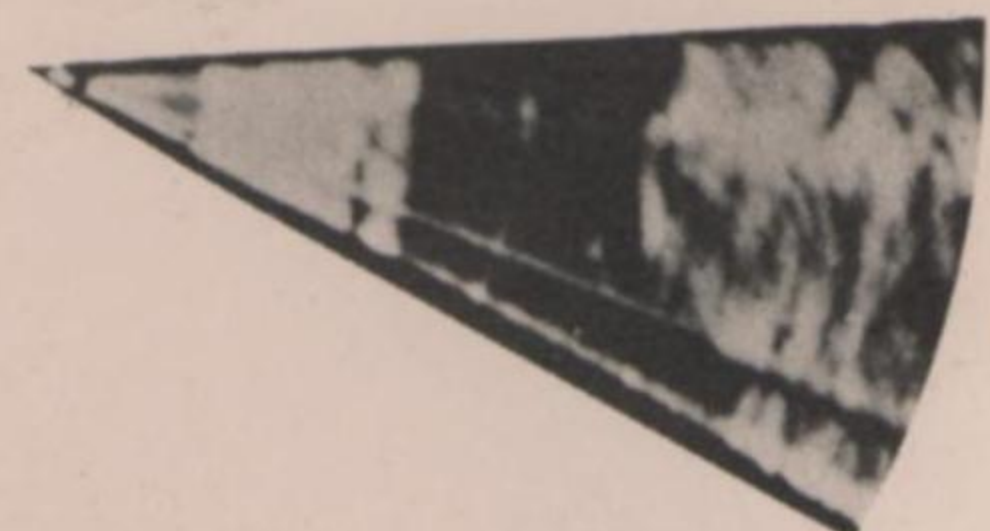
PREPARED BY TARGET UNIT INTELLIGENCE SECTION - XX BOMBER COMMAND

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RADAR PHOTOGRAPH ANALYSIS
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41

20 MILE SWEEP

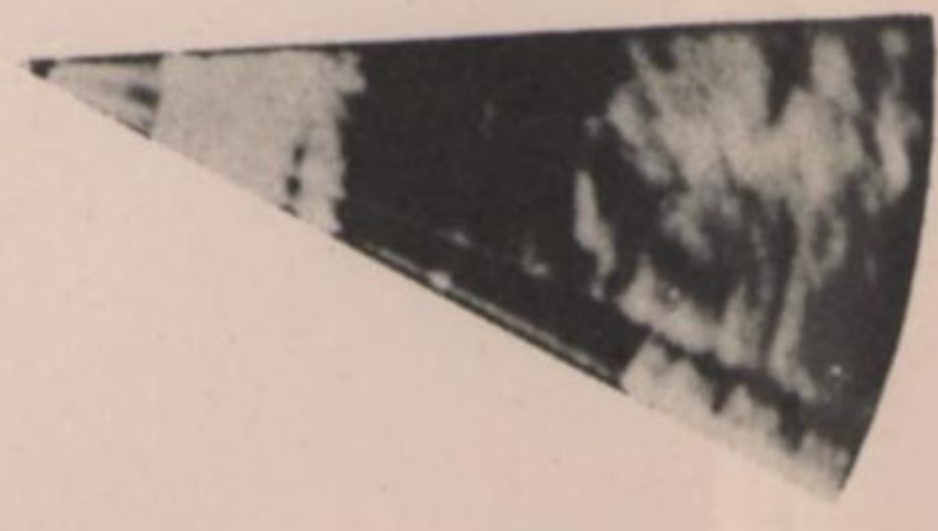
HEADING 113° MAG



42

20 MILE SWEEP

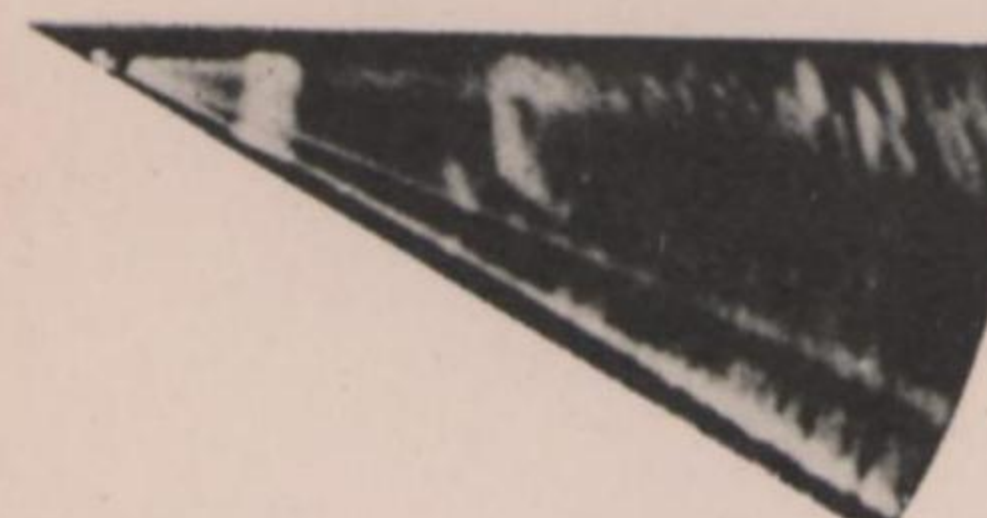
HEADING 113° MAG



43

20 MILE SWEEP

HEADING 113° MAG



44

20 MILE SWEEP

HEADING 113° MAG



45

10 MILE SWEEP

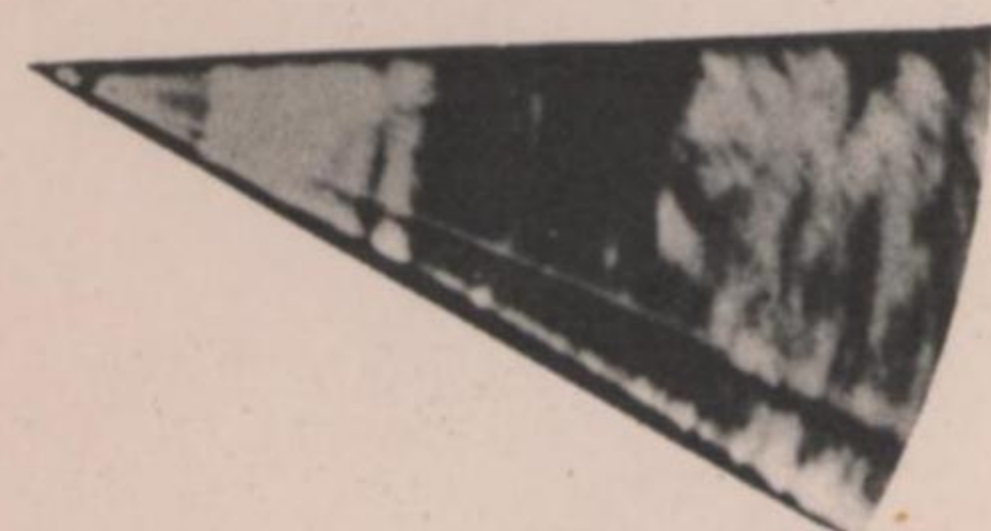
HEADING 112° MAG



47

10 MILE SWEEP

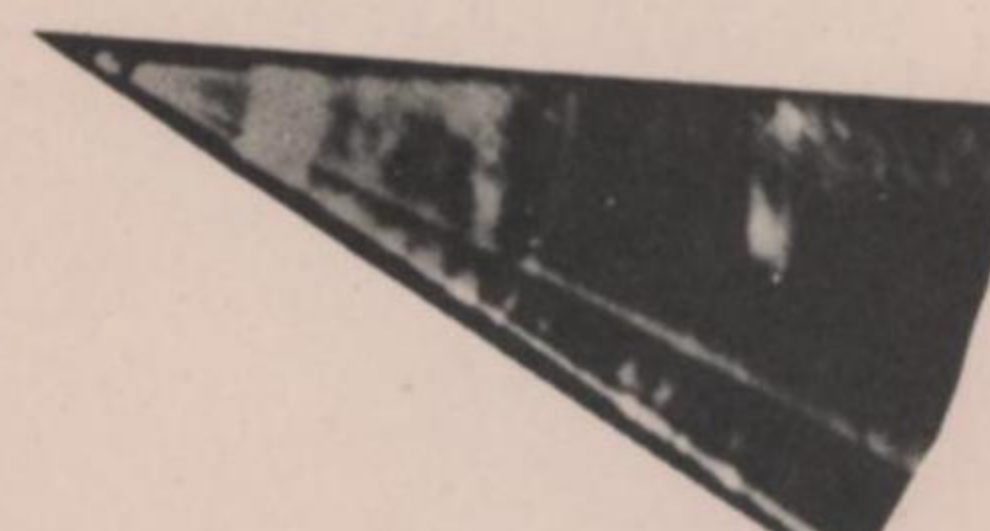
HEADING 112° MAG



40

20 MILE SWEEP

HEADING 113° MAG

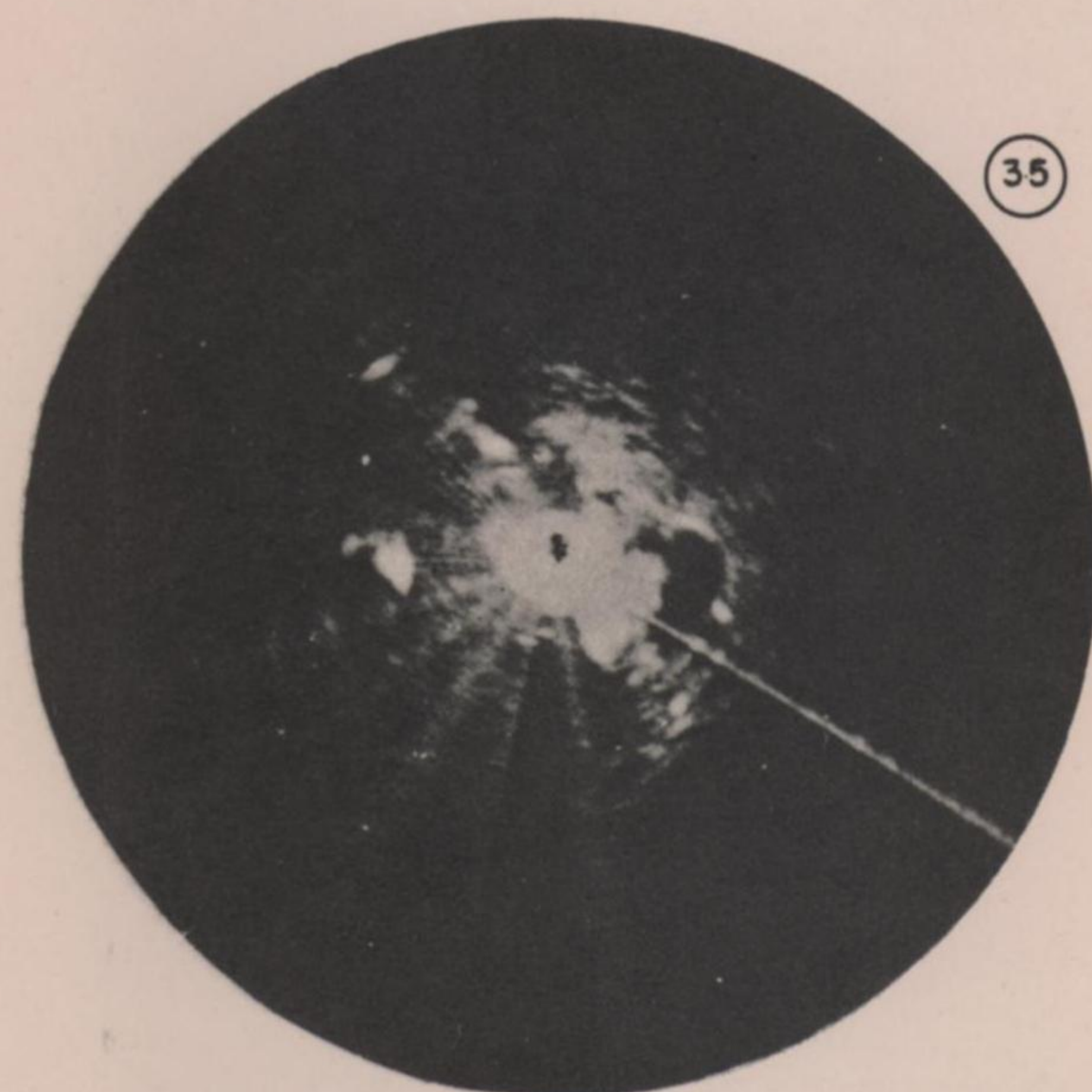


39

SECTOR SCAN

20 MILE SWEEP

HEADING 119° MAG



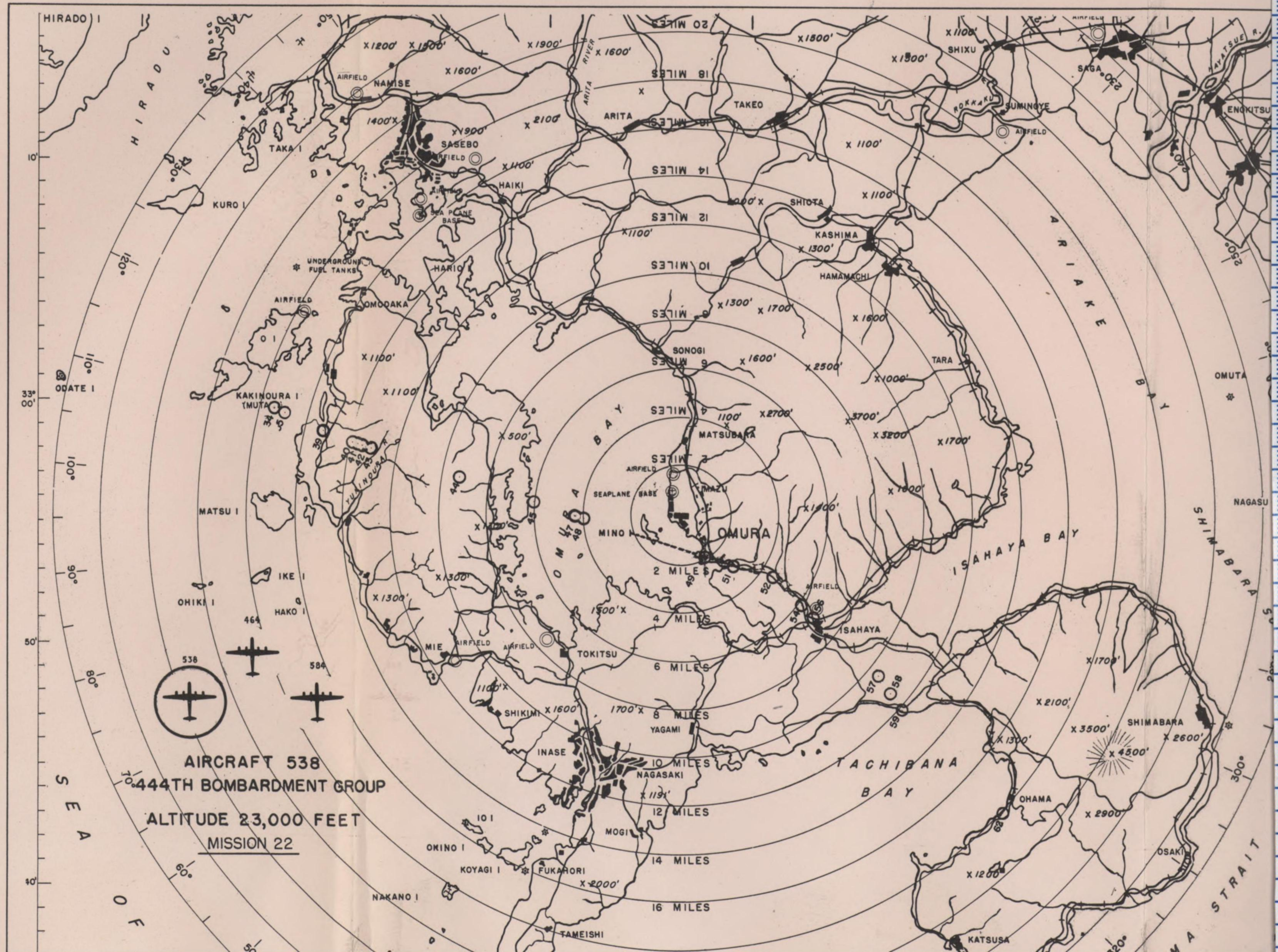
35

50 MILE SWEEP

HEADING 122° MAG



34

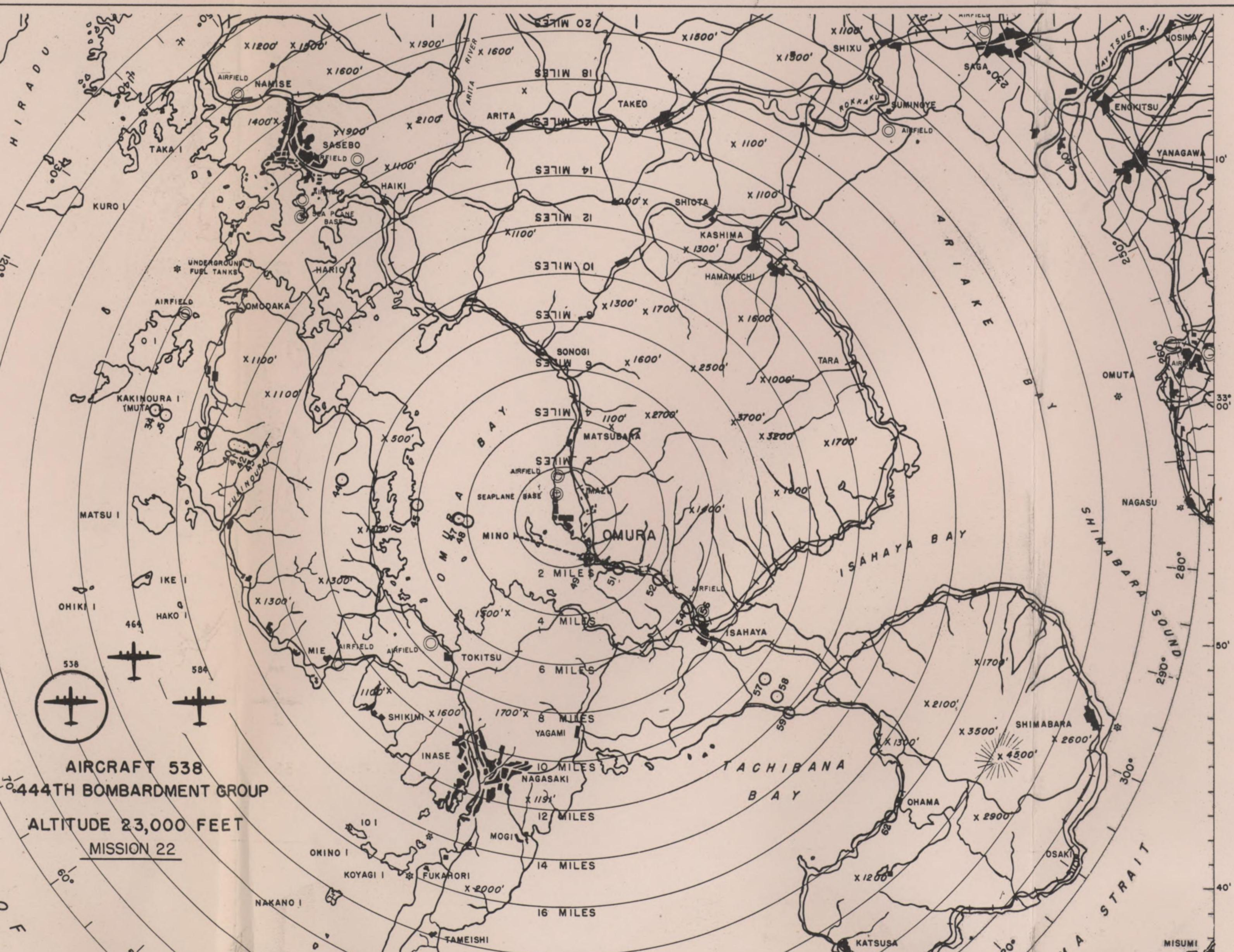


AIRCRAFT 538
444TH BOMBARDMENT GROUP
ALTITUDE 23,000 FEET
MISSION 22

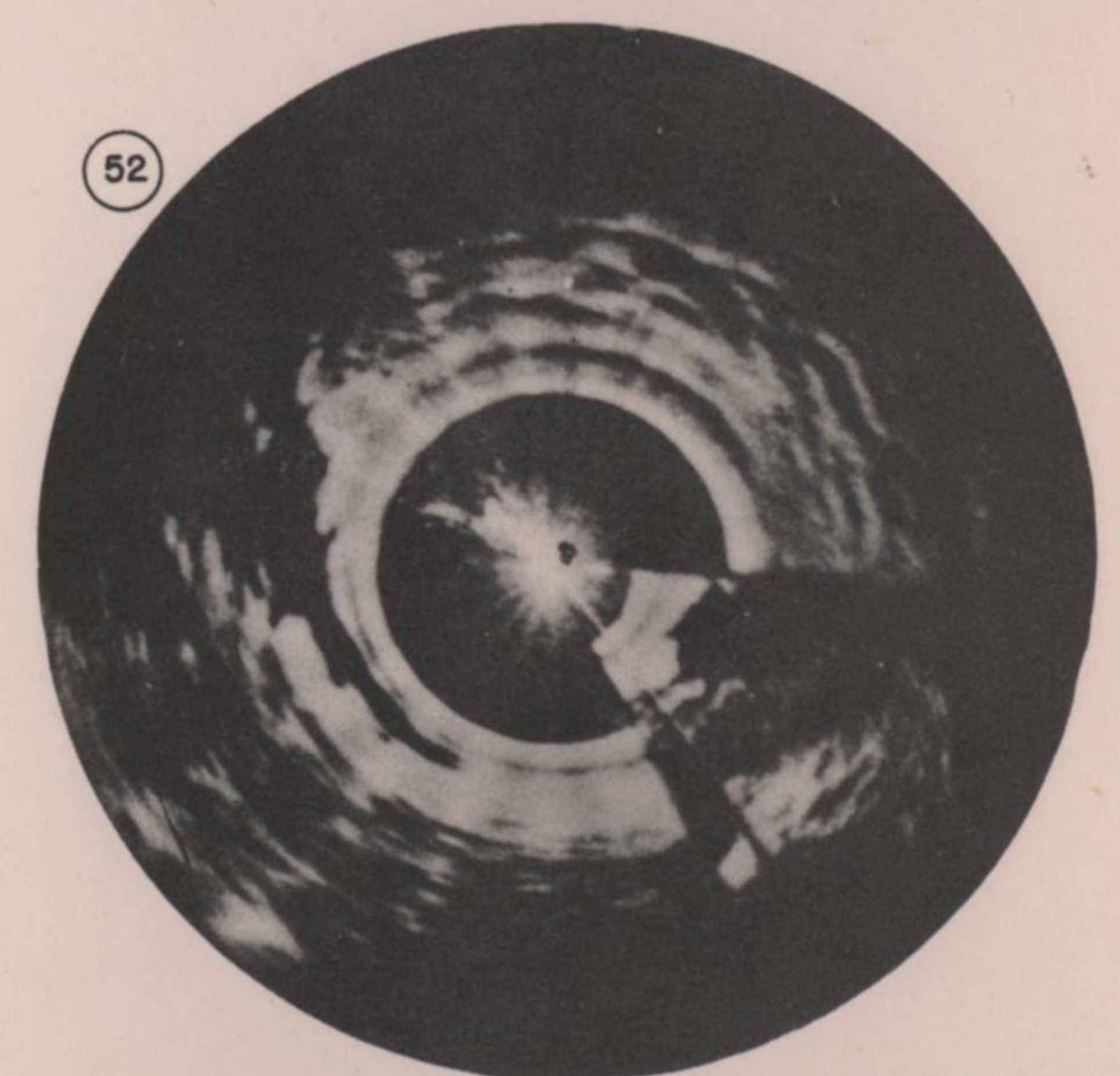
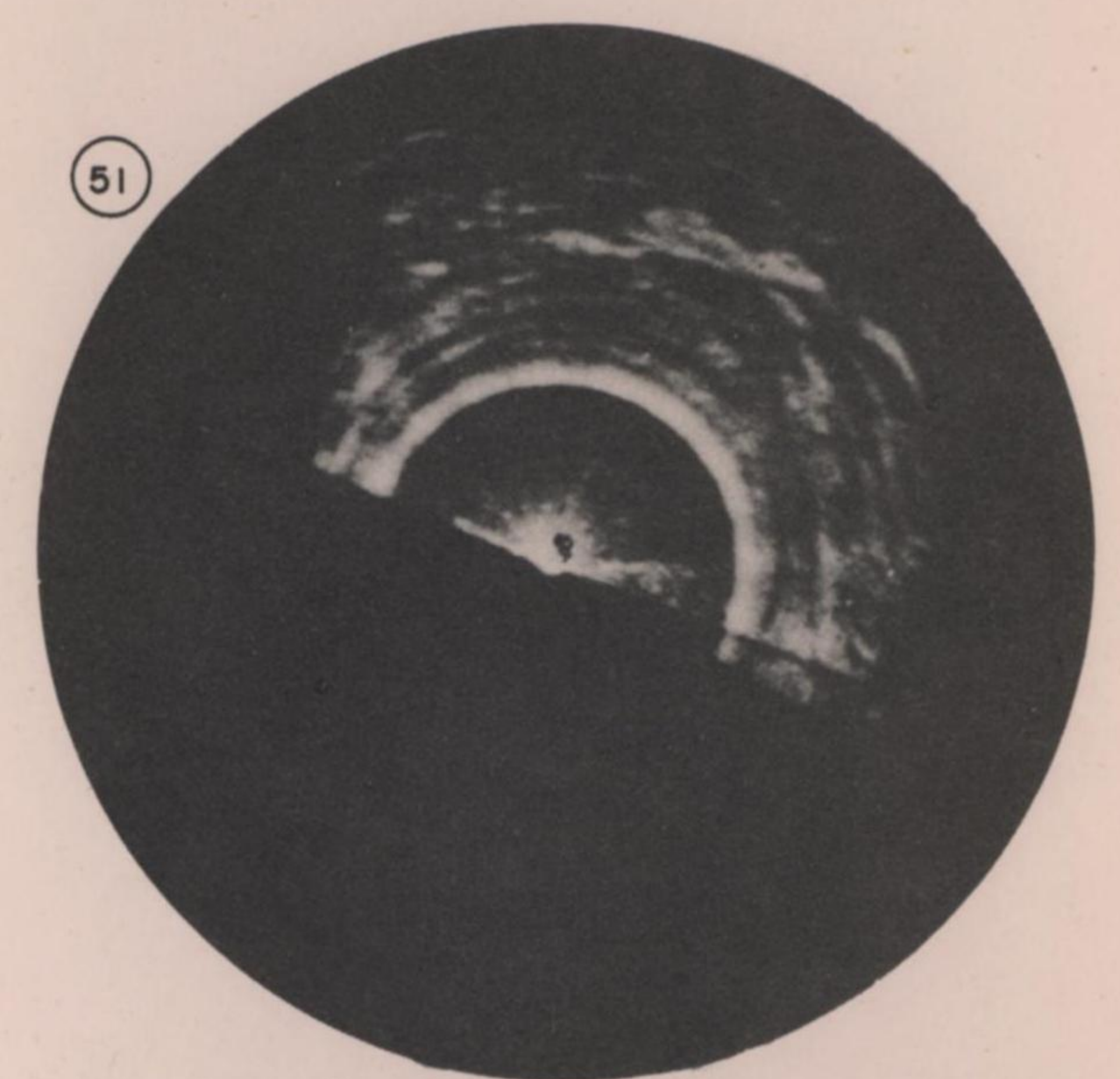
SECRET
RADAR PHOTOGRAPH ANALYSIS
OMURA AREA - JAPAN

R 90.36-1627 SHEET F

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 Authority **760063**
 By **SG NARA** Date **11/8/01**

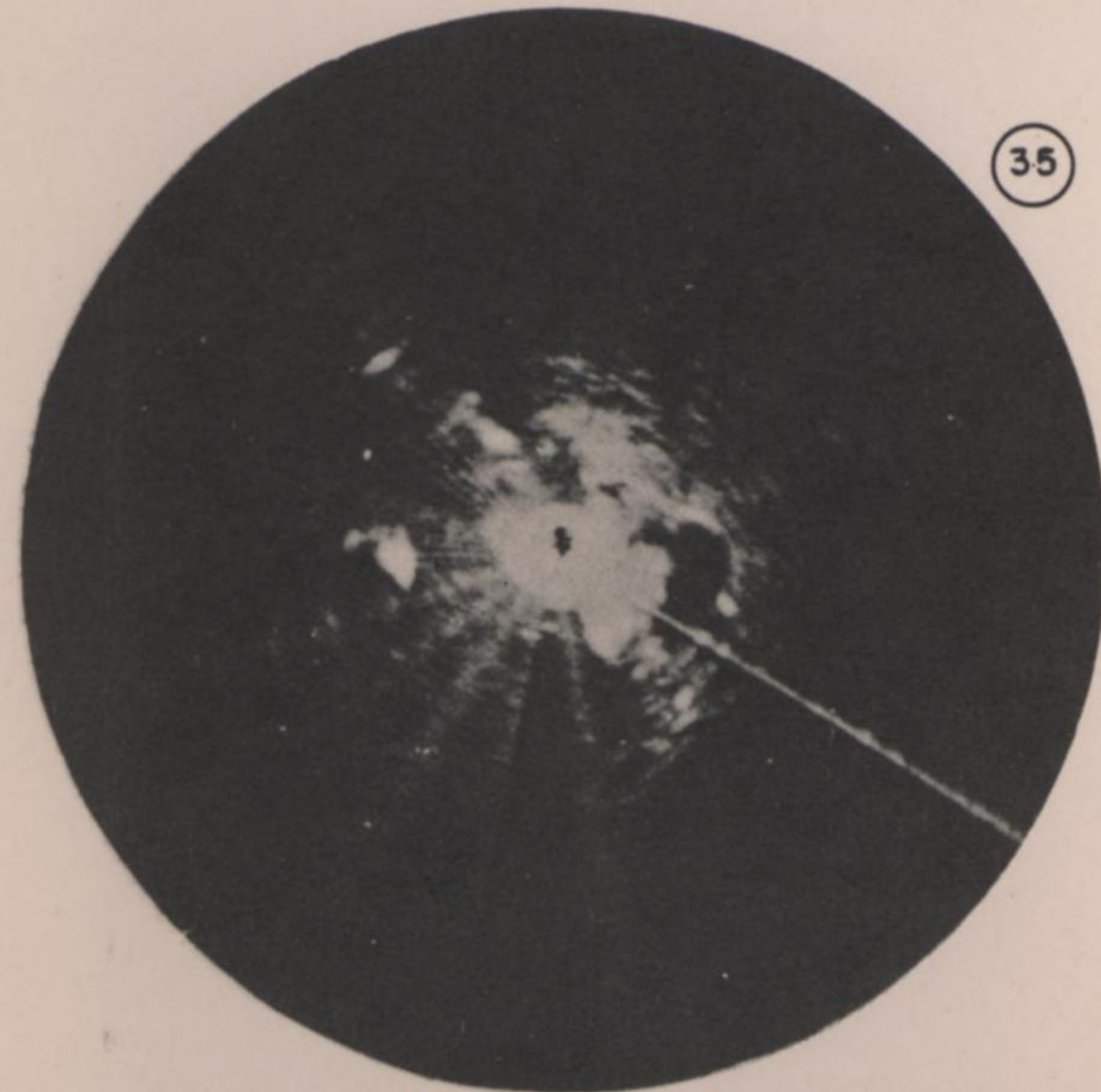


AIRCRAFT 538
 444TH BOMBARDMENT GROUP
 ALTITUDE 23,000 FEET
 MISSION 22



20 MILE SWEEP

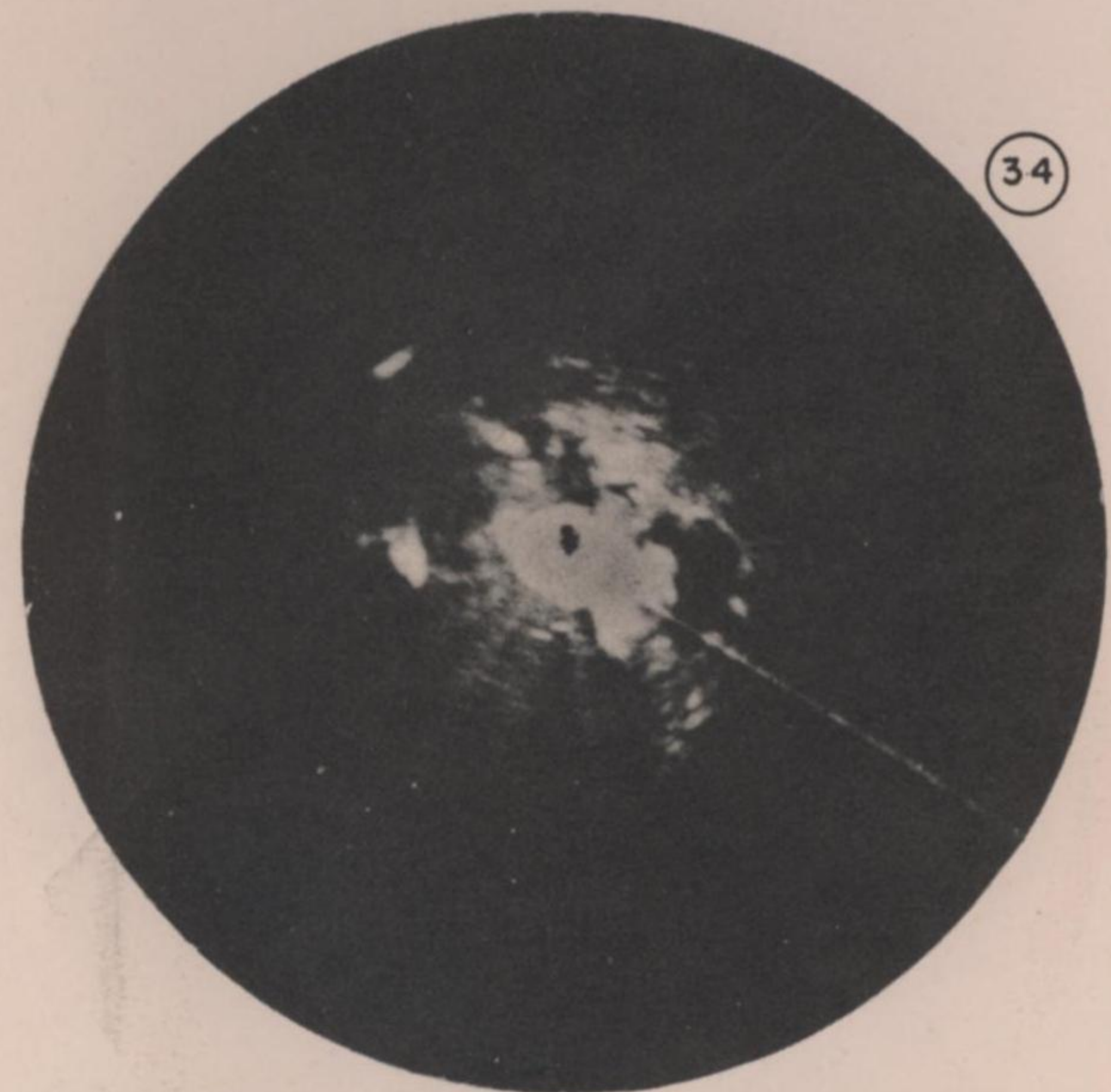
HEADING 119° MAG



35

50 MILE SWEEP

HEADING 122° MAG



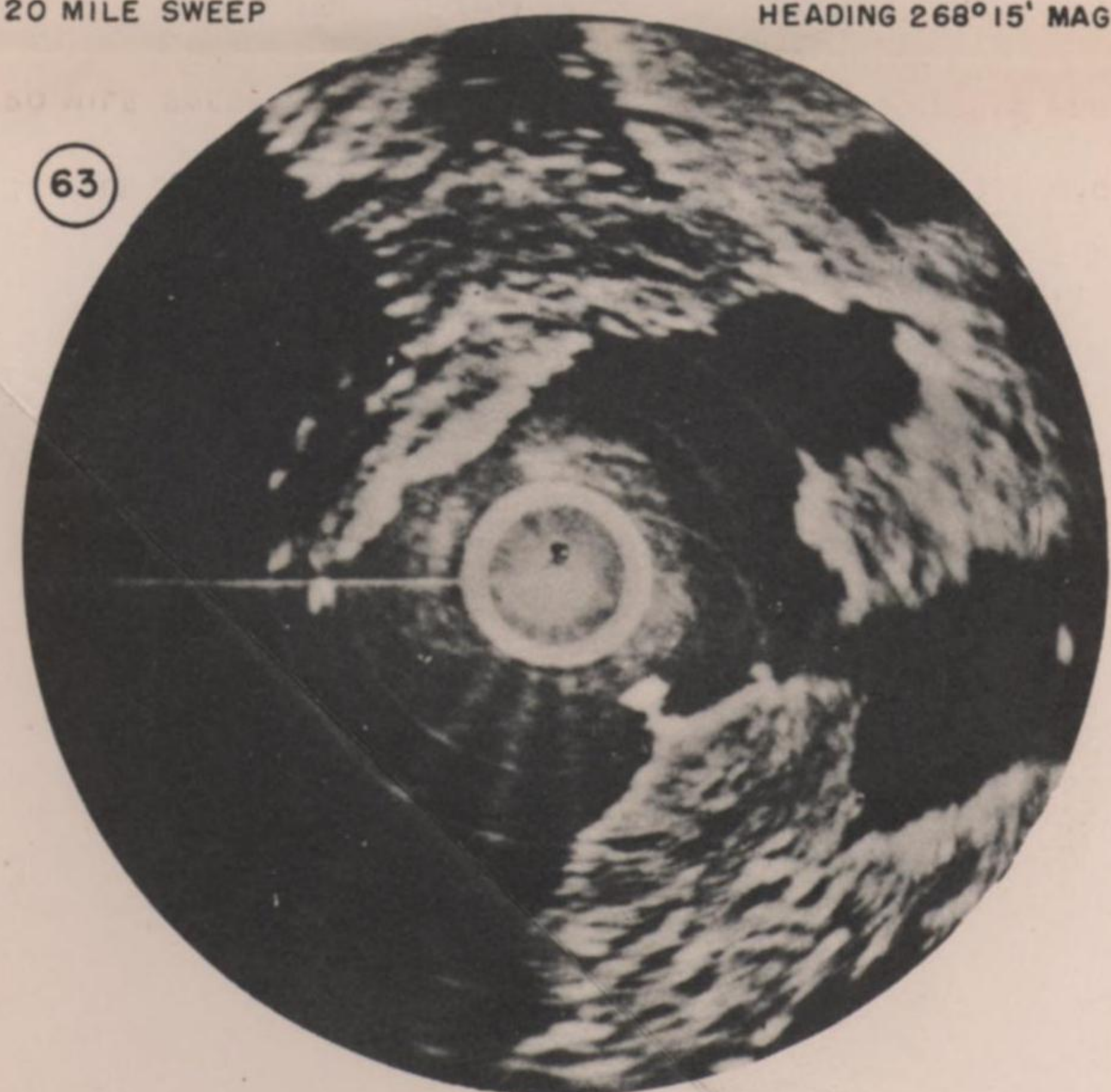
34

50 MILE SWEEP

HEADING 122° MAG

20 MILE SWEEP

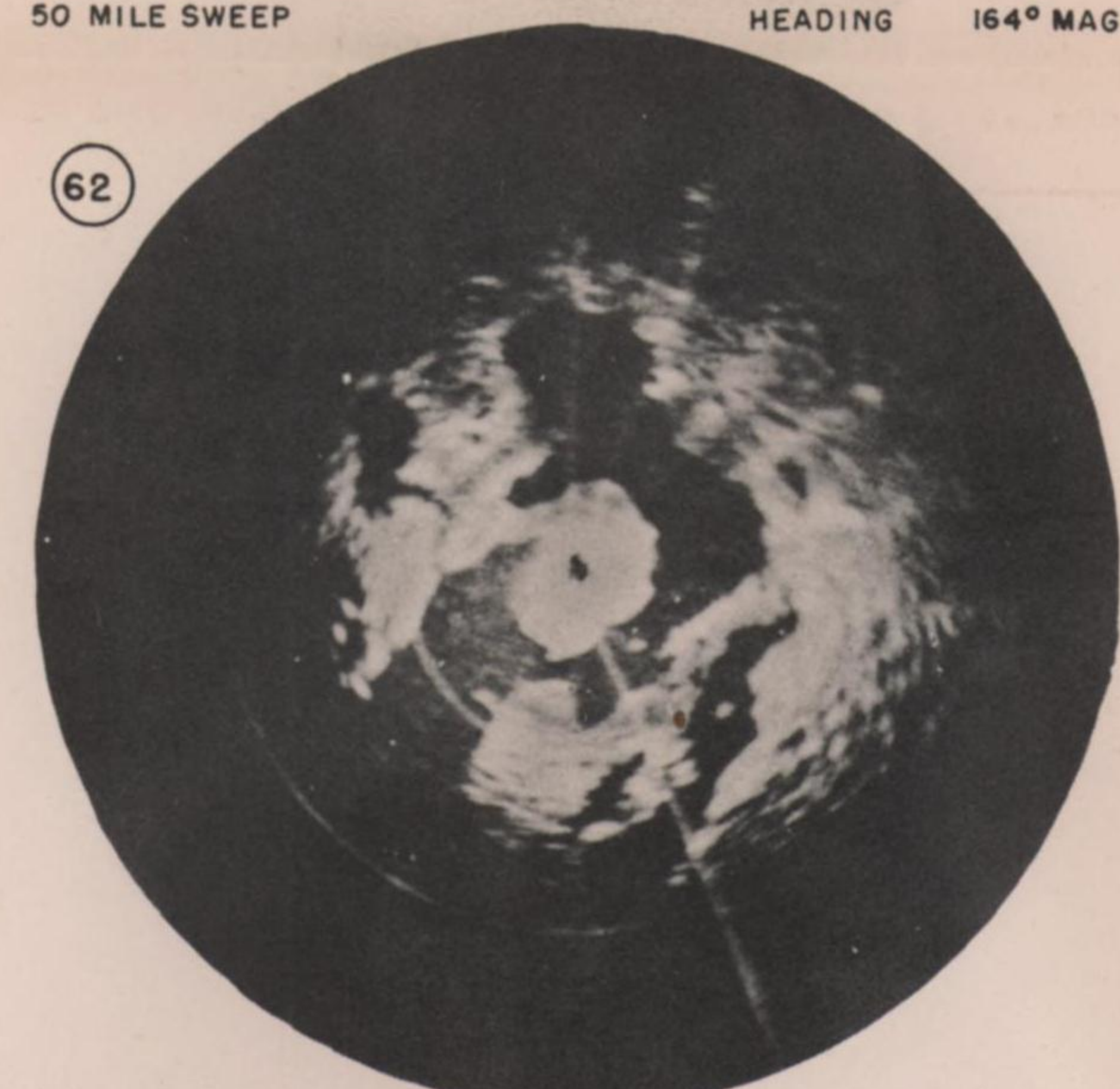
HEADING 268°15' MAG



63

50 MILE SWEEP

HEADING 164° MAG



62

50 MILE SWEEP

HEADING 155° MAG



59

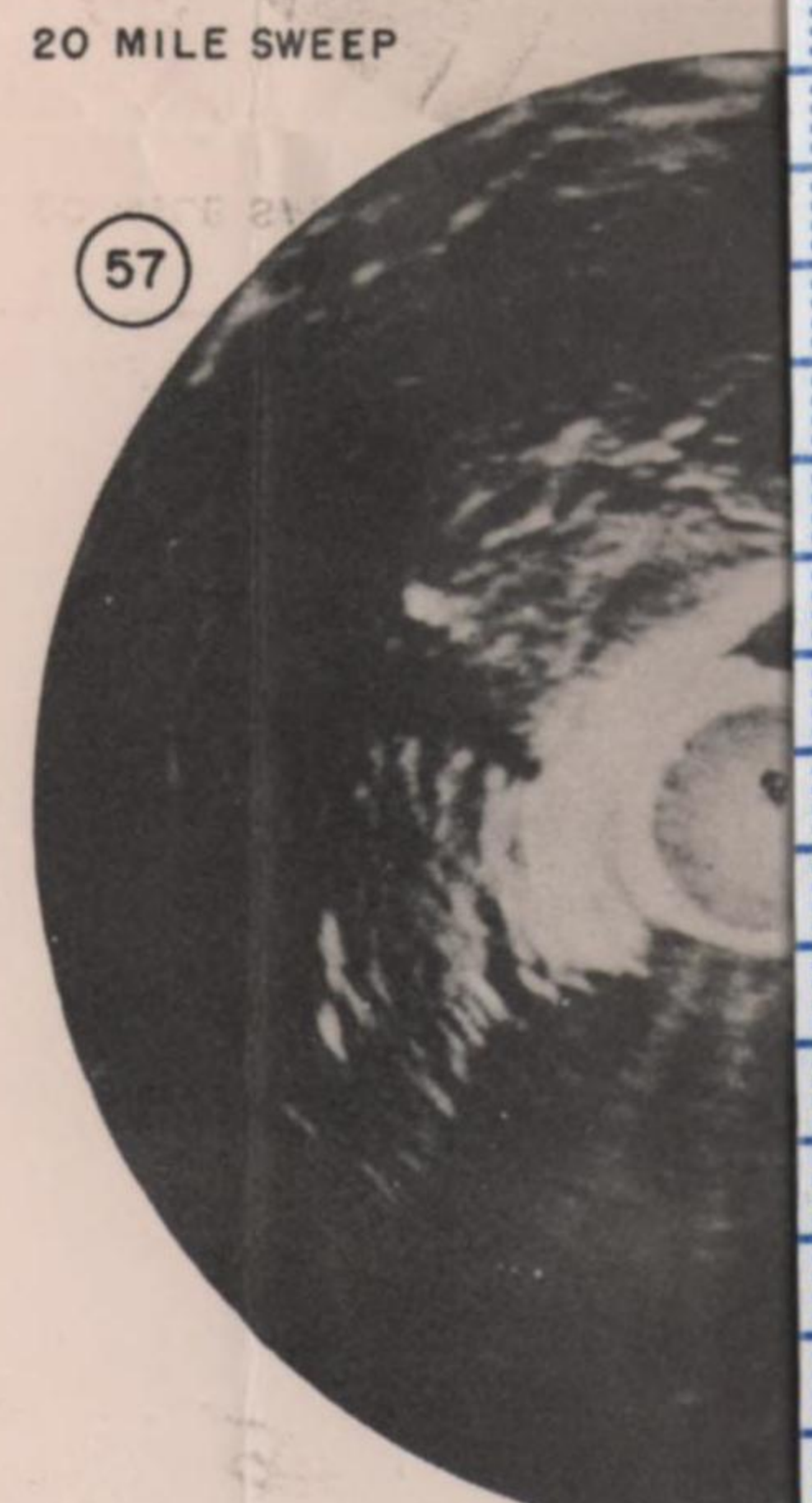
20 MILE SWEEP

HEADING 155° MAG

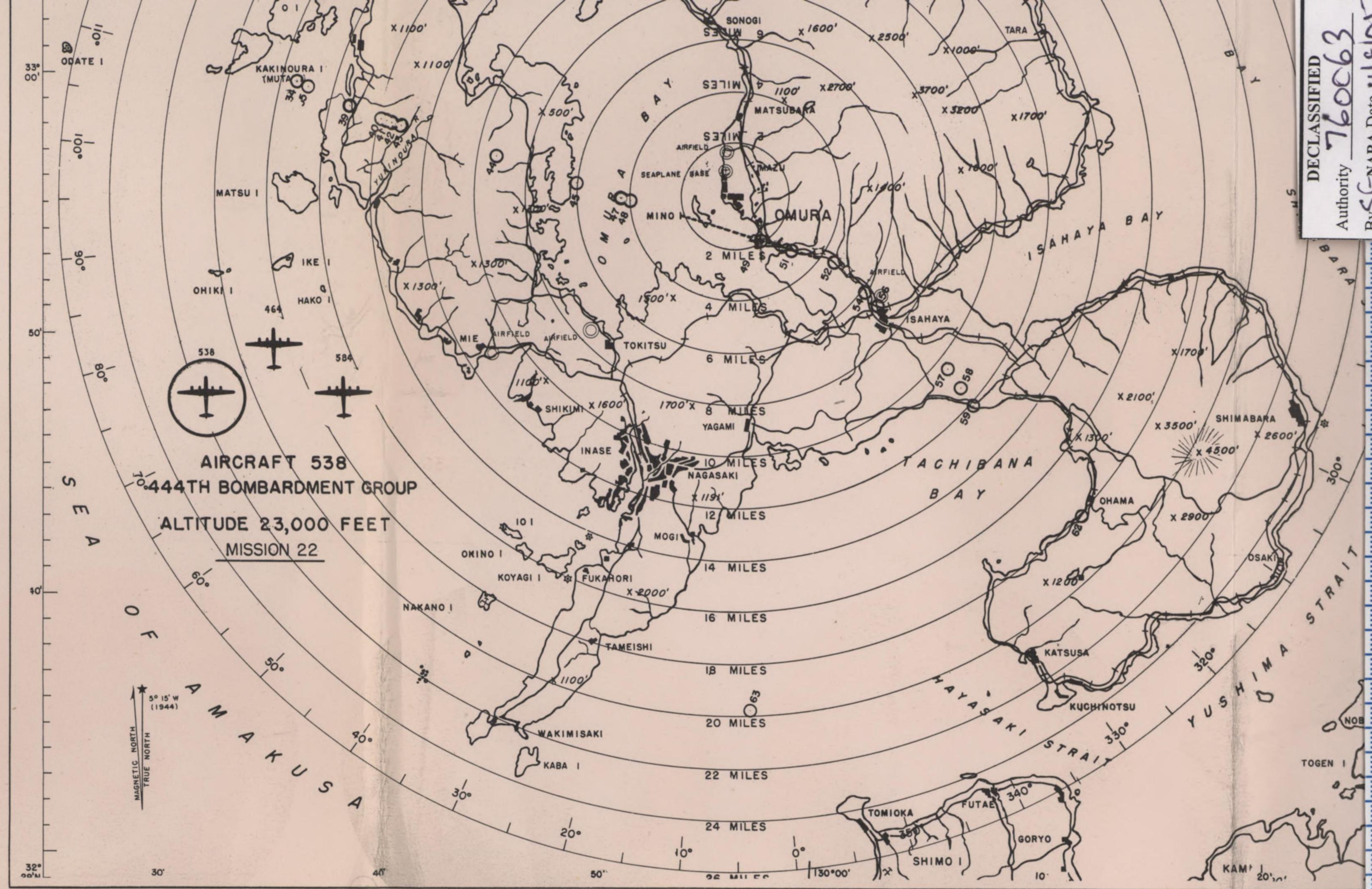


58

20 MILE SWEEP



57



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 Authority 76063
 By SG NARA Date 11/8/05

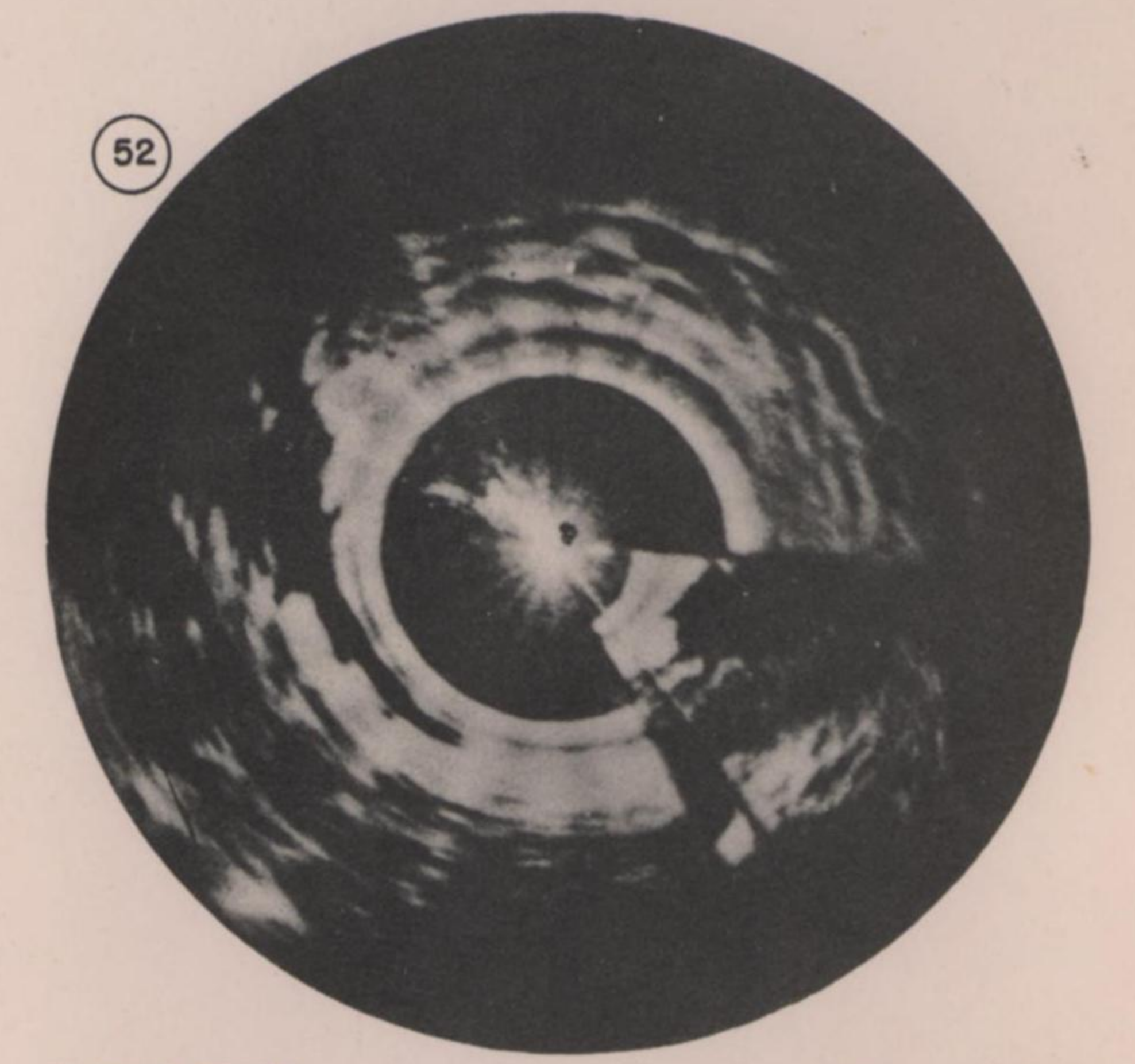
SECRET

PREPARED BY TARGET UNIT INTELLIGENCE SECTION — XX BOMBER COMMAND

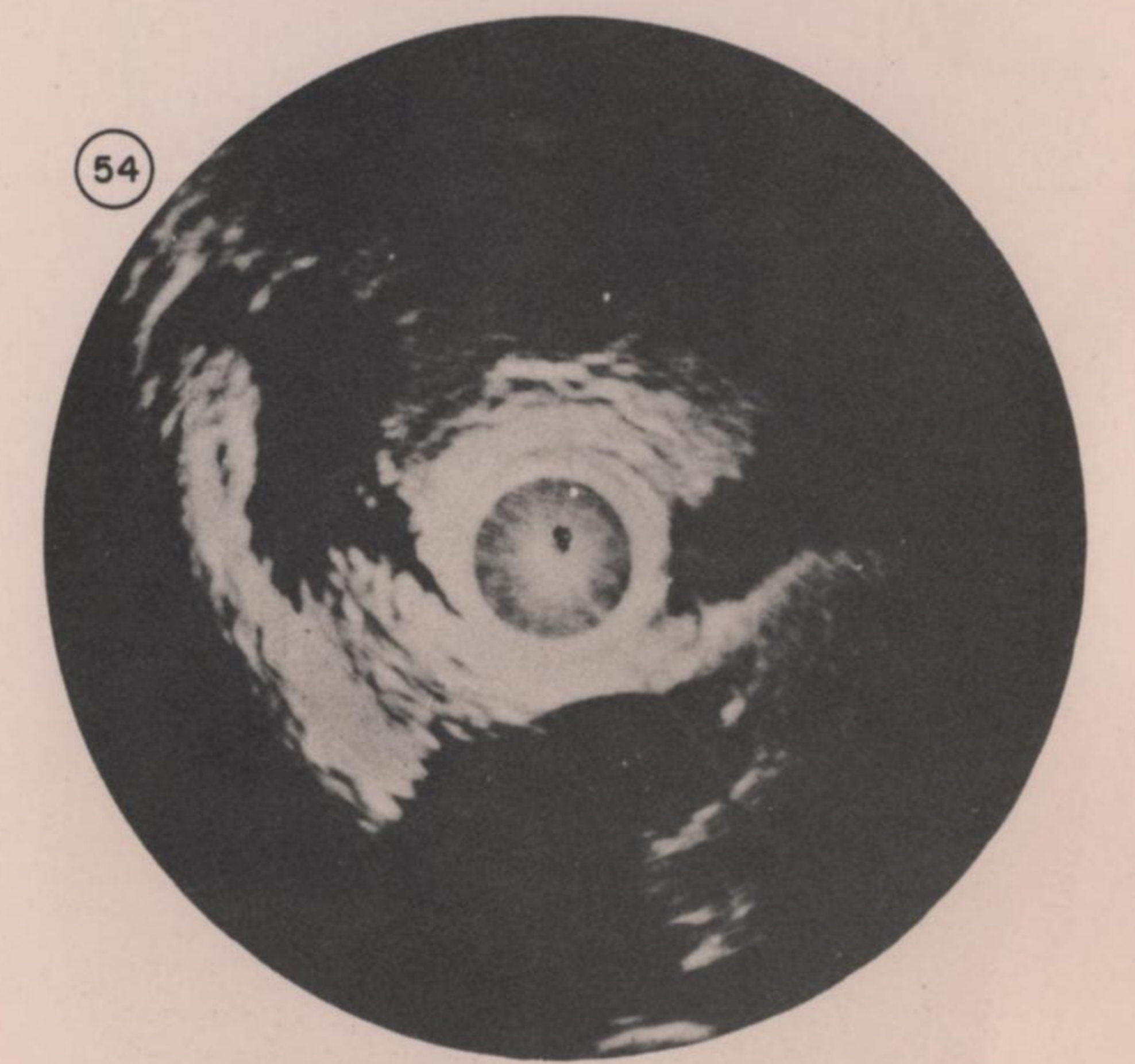


AIRCRAFT 538
 3444TH BOMBARDMENT GROUP
 ALTITUDE 23,000 FEET
 MISSION 22

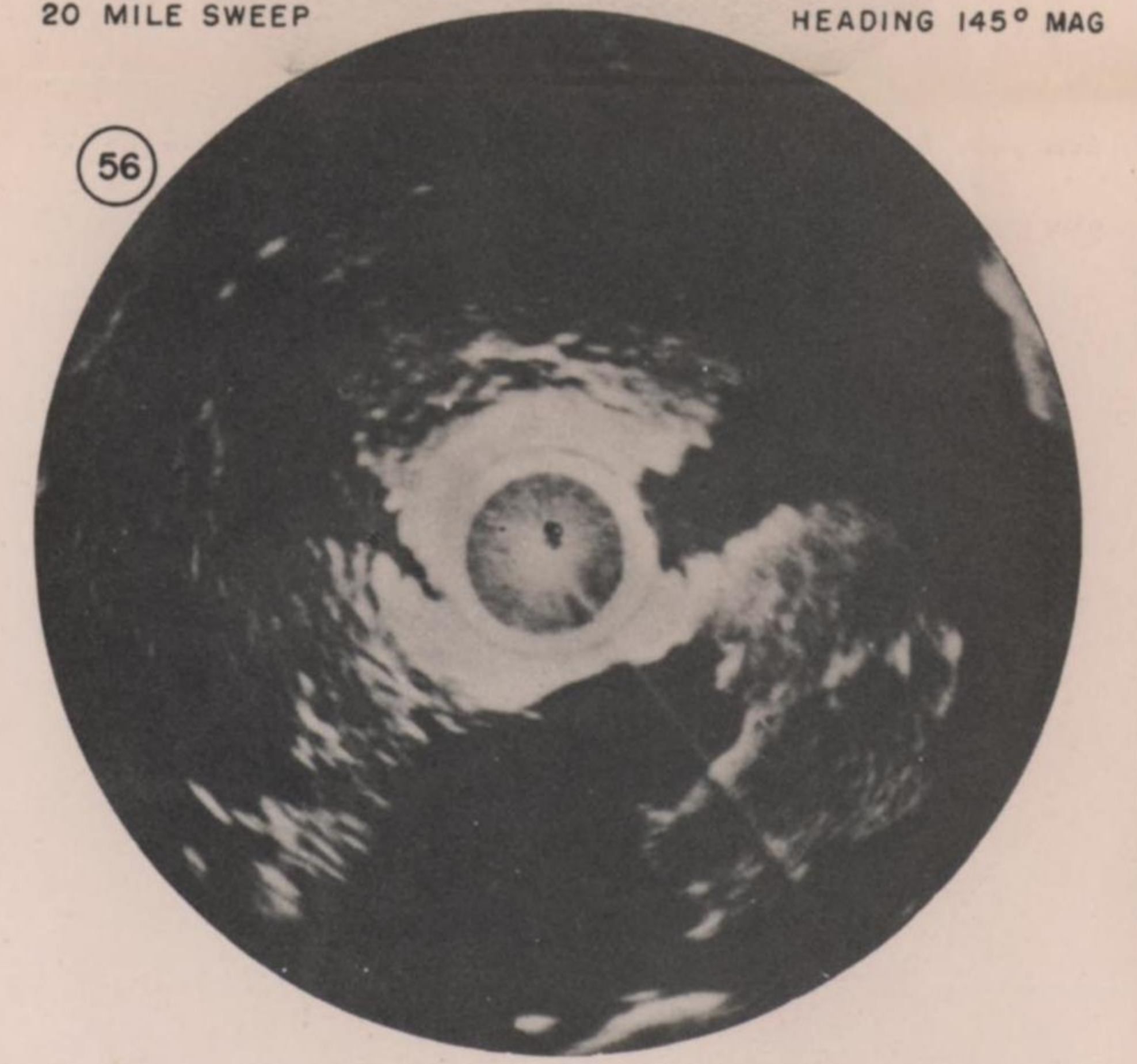
10 MILE SWEEP HEADING 112° MAG



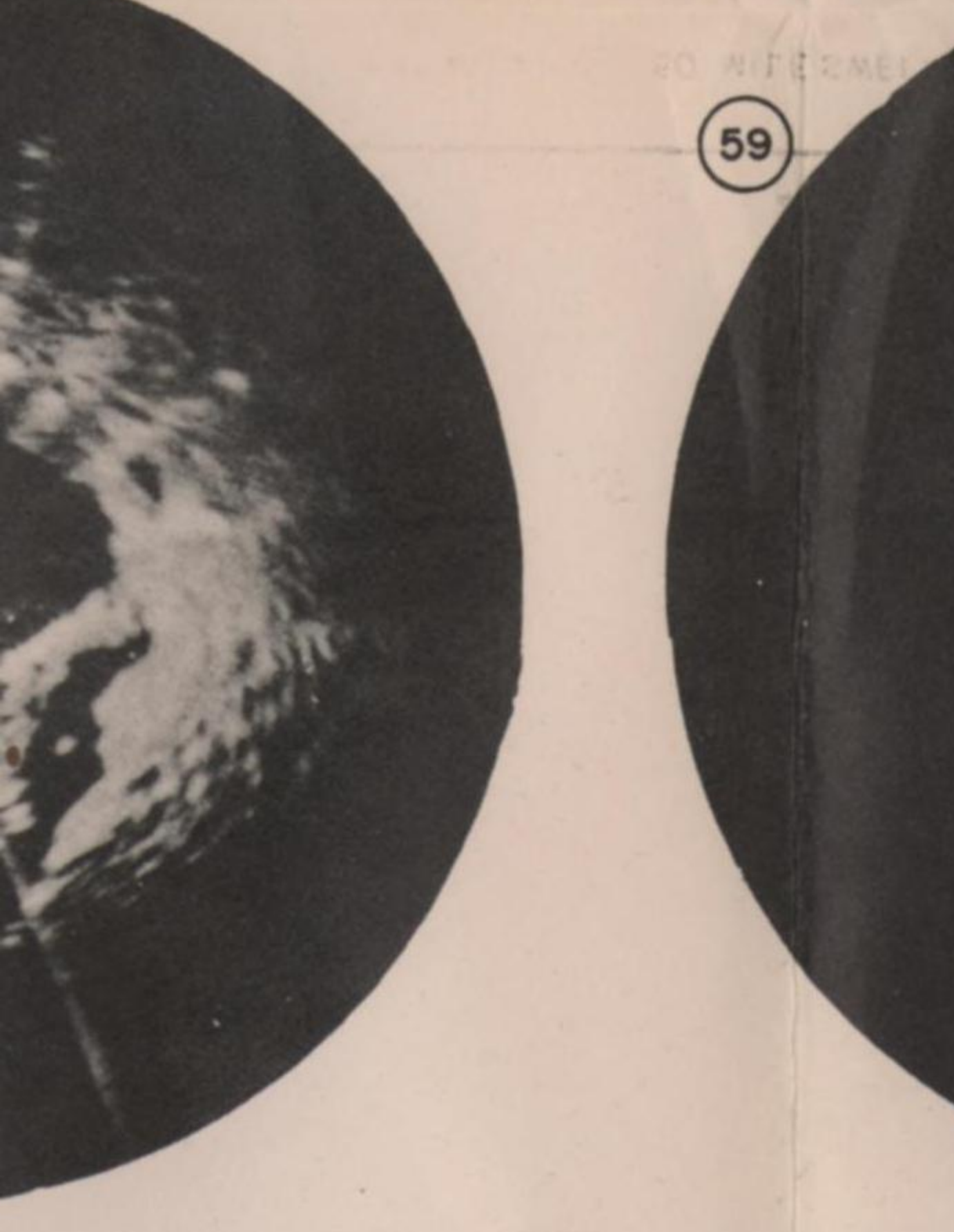
10 MILE SWEEP HEADING 145° MAG



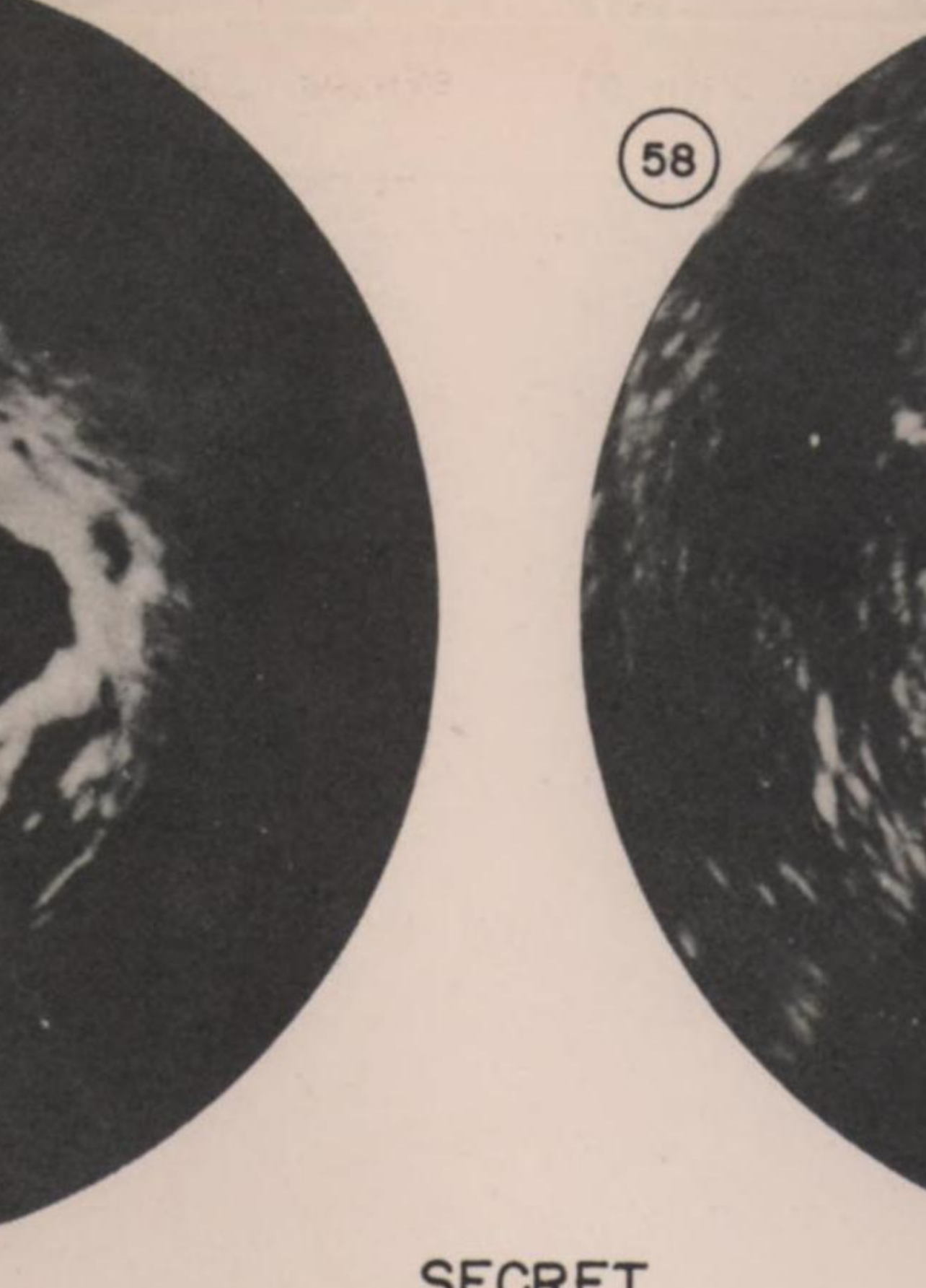
20 MILE SWEEP HEADING 145° MAG



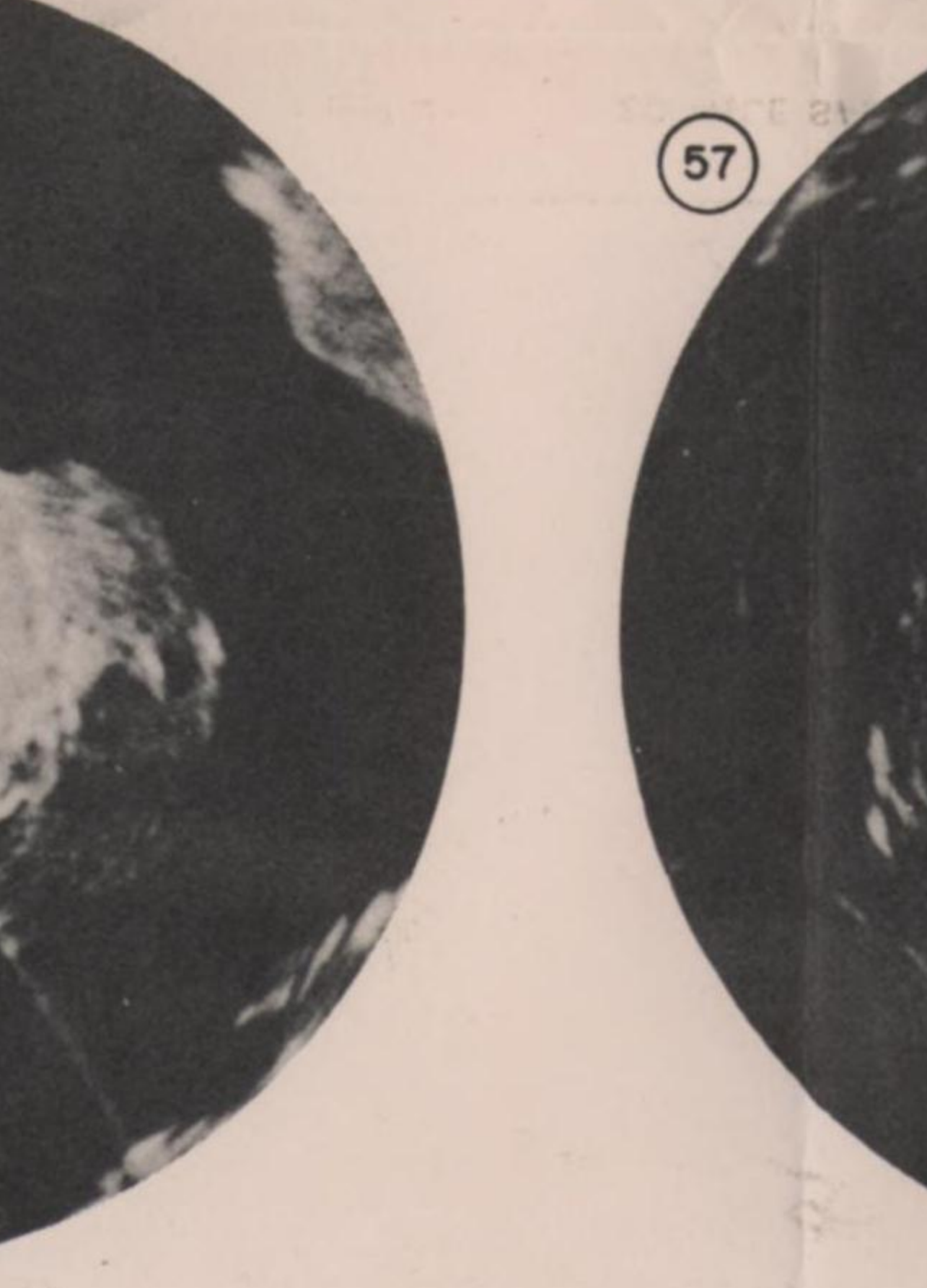
HEADING 164° MAG 50 MILE SWEEP



HEADING 155° MAG 20 MILE SWEEP



HEADING 155° MAG 20 MILE SWEEP



HEADING 155° MAG 20 MILE SWEEP



HEADING 145° MAG 20 MILE SWEEP



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PREPARED BY TARGET UNIT INTELLIGENCE SECTION — XX BOMBER COMMAND

DECLASSIFIED
 Authority 76063
 By SGNARA Date 11/8/05

S E C R E T

ANNEX

G

RCM INFORMATION

* * * * *
* Prepared by: *
* RCM Section *
* XX Bomber Command *
* * * * *

S E C R E T

S E C R E T

SECRET
Auth: CG, XX BC
Initials: *mop*
Date: 30 Dec. 44

HEADQUARTERS
XX BOMBER COMMAND
APO 493

30 December 1944

SUBJECT: RCM Report - Combat Mission No. 22, Omura, Japan,
19 December 44 - Daylight.

To : Commanding General, Twentieth Air Force,
Washington 25, D.C.

A. General

Two RCM search aircraft participated in this mission. One search aircraft bombed the primary target, Omura, while the other search aircraft, due to weather conditions at the primary target, turned back after reaching the eastern tip of Saishu Island, and bombed the secondary target, Shanghai. (Refer to Search Aircraft Track Attached). Both aircraft searched for enemy early warning radar sites enroute to and from the target. The aircraft bombing Omura searched the 1000-3200 Mc. band when in the target area while the aircraft bombing Shanghai searched the 70-300 Mc. Band when in the target area.

B. Results

1. Normal enemy radar intercepts were made on this mission. The Army "CHI" Early Warning net in China was active with the first intercept being the 66.5 Mc. radar site located at Shasi. The Pukow Radar site was rather weak, though in operation. It is possible that this radar site was tracking other formations while the search aircraft were within intercept range. The Nanking and Kaoshun radar sites were in operation and on occasions, the Nanking radar site would switch from one aircraft to another, as though it were determining the number of aircraft in the attack. A Mk 1 model 1, intercepted near the China coast, operated in the same manner.

2. Approaching the tip of the Korean Peninsula, several Army "CHI" sites were intercepted. One of these radar sites may have been located on the peninsula but the other is believed to be located on the North Coast of Saishu Island. The enemy radar in the Saishu Island area, as experienced on previous missions, was found to be very active. The Mk 1 Model 1 radar sites appeared to have the

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By SG NARA Date 11/8/05

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best coverage. Radar sites of this type tracked the formations from the assembly point, around the eastern tip of Saishu Island, to 124°47'E, 32°21'N, at which point the signal finally faded out.

3. There were no radar intercepts in the primary target area. The only search aircraft in this area was monitoring 1000-3300 Mc. and reported no intercepts within the assigned band.

4. Mk 1 Model 3 type radar sites, or a modification of the same, were again reported in the Shanghai area. Accurate flak, coincident with intercepts of two Mk 1 Model 3 radar signals, suggests the possibility of Radar Fire Control equipment.

5. Enroute home, in the China area, a new 80 Mc. signal, similar to the radar sites located at Amoy, Palembang and Rangoon, was intercepted. This signal was strong and steady and was monitored from 122°30'E 33°30'N to 117°15'E 32°20'N.

6. Due to the search aircraft being a little further south than usual, the Mk 1 Model 1 located in the Changsha area was intercepted. This station is constantly logged with a low PRF of 370 PPS.

7. All other intercepts in the China area enroute home coincided with the early warning sites logged enroute to the target.

C. Resume of Intercepts

- | | | |
|----|-------------|--|
| 1. | 66.5/510/35 | Shasi radar, from 115°35'E 33°05'N. |
| 2. | 77/510/35 | Hankow radar. Heard very weakly at 112°44'E 33°N. |
| 3. | 75.5/510/35 | Haoshun radar from 114°30'E 33°15'N to 121°E 34°N enroute to the target and from 119°E 32°50'N to 115°55'E 32°20'N enroute from the target. |
| 4. | 73/525/40 | Possible radar site located near Hanking from 115°E 33°20'N to 117°30'E 33°40'N. |
| 5. | 72/510/25 | Hanking radar from 117°45'E 33°45'N to 120°50'E 34°N enroute to the target and 119°30'E 32°50'N to 115°50'E 32°20'N enroute home. Often switched |
- 2- from one aircraft to another.

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6. 76.5/510/30 Intercept made over the China Sea, from 122°40'E 34°10'N to 124°E 34°25'N. A station with similar characteristics was d/f'ed to the north side of Saishu Island on a previous mission. Also intercepted enroute home.
7. 73.5/510/30 Intercept made over the China Sea. Intercepted from 123°10'E 34°10'N to 124°50'E 34°20'N.
8. 94/780/20 Saishu Island area. Strongest at 33°15'N 126°35'E. Tracked aircraft from the assembly point, around the eastern tip of Saishu Island, and finally lost at 32°21'N 124°47'E.
9. 93/745/17 Saishu Island area. Operation of this site similar to 94 Mc. radar.
10. 99/740/23 Saishu Island area operation of this site similar to 94 Mc. radar.
11. 103/770/30 Saishu Island Area. Reported on previous missions. Logged to 125°E 32°20'N enroute home.
12. 150.5/520/13 Saishu Island area. Strongest at 126°35'E 33°15'N occasional double pulse.
13. 148.5/520/5.5. Saishu Island area. Strongest at 126°35'E 33°15'. This signal would break away from the 150.5 Mc. signal, leaving only a single pulse.
14. 154/500/7 Intercepted in the China Sea area. Came in strong momentarily at 124°05'E 32°25'E.
15. 80/505/35 A good strong signal similar to the radar site at Amoy, Palembang, and Rangoon. Intercepted from 122°30'E 33°30'N 117°15'E 32°20'N.
16. 149.5/1070/2.2
149.5/536/6.5
149.5/1060/20 Thought to be three separate intercepts in the Shanghai area refer to possible gun laying equipment.

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17. 105/370/60 Strongest at 113°21'E 31°30'N.
Possibly located in Changsha area.
18. 151.5/470/5.5 Strongest at 111°42'E 31°30'N.
Doubtful intercept.

D. Possible Gun Laying Equipment - Shanghai

- A. 149.5/535/6.5
B. 149.5/1070/2.2
C. 149.5/1060/20

One search aircraft bombed the secondary target, Shanghai, rather than Onura. A radar station, possibly the Kaoshun radar site, was tracking the aircraft when it was approaching the Shanghai area. When about 35 miles from the target, signal "A" began searching. It was able to track the aircraft within a radius of 25 to 30 miles about the target. Signal "B" first appeared about 23 miles from the target and seemed to have a tracking radius of about 10 miles around the target. About a minute before "Bombs Away", signals "A" and "B" became very strong and appeared to have equal amplitude on the AP-6 Pulse Analyzer. Just after "Bombs Away", at least two flak shells burst level with the aircraft and about 50 ft. off the left wing. The pilot began evasive action consisting of moderate turns and slight changes of altitude. Both signals "A" and "B" were immediately lost. Signal "A" required about 10 seconds to resume tracking and signal "B" required from 15 to 20 seconds. As soon as both were again tracking, the pilot again initiated an evasive turn, and flak was seen where the aircraft would have been had it not changed course. Signals "A" and "B" were again lost and again required about 10 and 20 seconds respectively to resume tracking. The pilot again took evasive action. This time the flak was behind the aircraft so no more evasive actions were accomplished. Signals "A" and "B" continued to track for several minutes and more flak was seen low and behind but directly on course. Signal "C" is believed to be a different signal from "A" and "B". The pulse width was reported to be varying.

E. Enemy Countermeasures

1. The atmospheric interference was extremely heavy and was reported by many aircraft Radio Operators and Ground Station Radio Operators.
2. One aerial Radio Operator reported jamming on the 8 Mc. band. The signal had a low pitch and covered a wide band. The signals were unintelligible. This report is being investigated.

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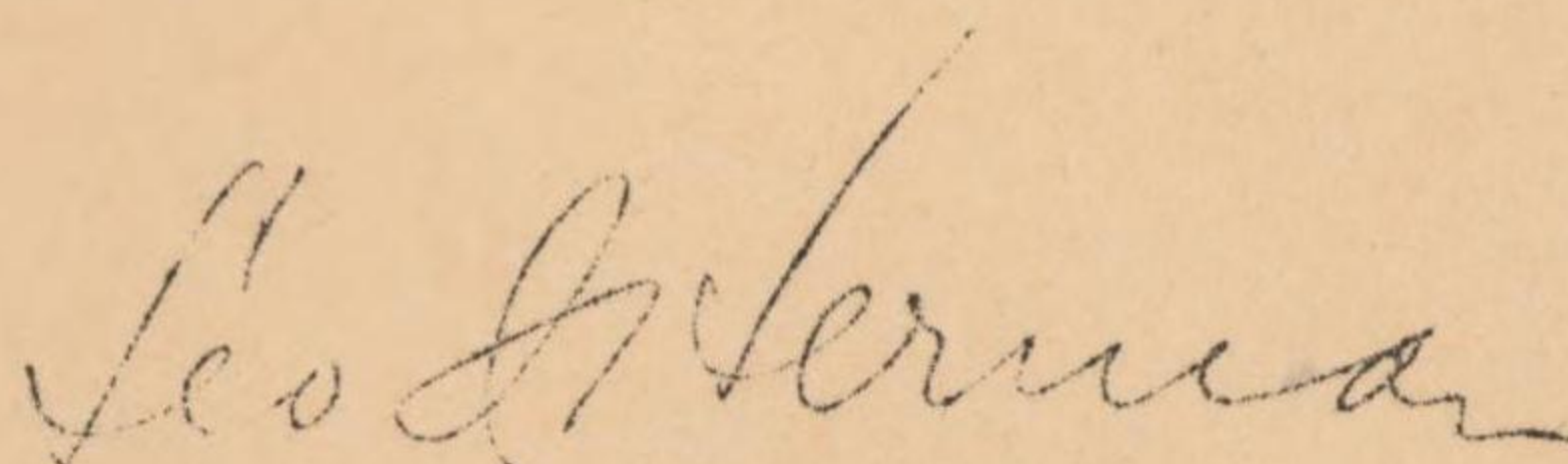
S E C R E T

3. One aircraft reported R-5, S-5, voice on the Navy distress and sighting frequency. The voice was believed to be Japanese and occasional names, such as Kyushu could be understood. It is possible that the interference was not intentional.

F. Equipment Malfunctions

There were no equipment malfunctions.

For the Commanding General:



LEO I. MERRILL
Colonel, Air Corps
Actg. Adjutant General

1 Incl: Search Aircraft Track, Mission No. 22.

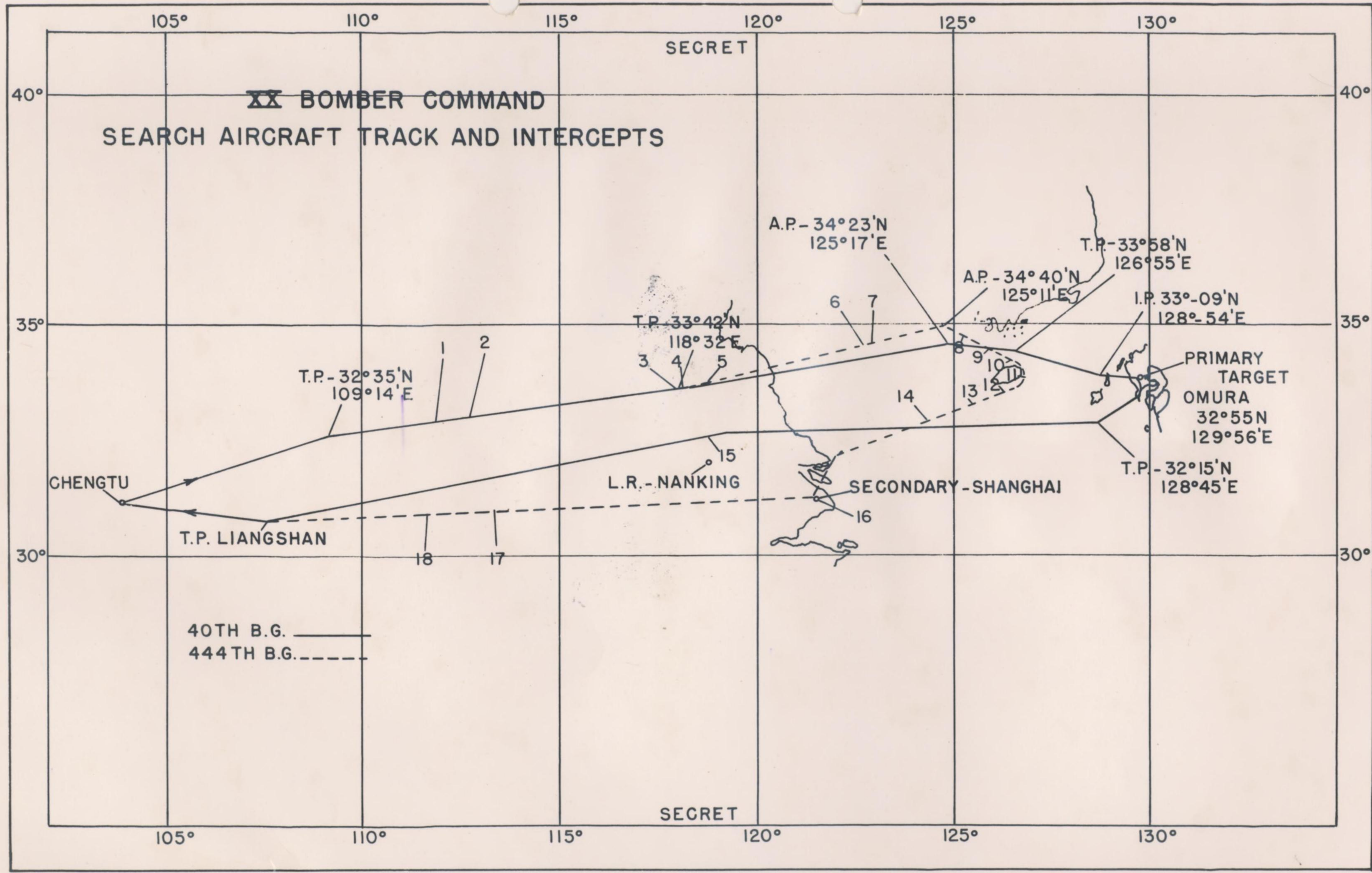
-5-

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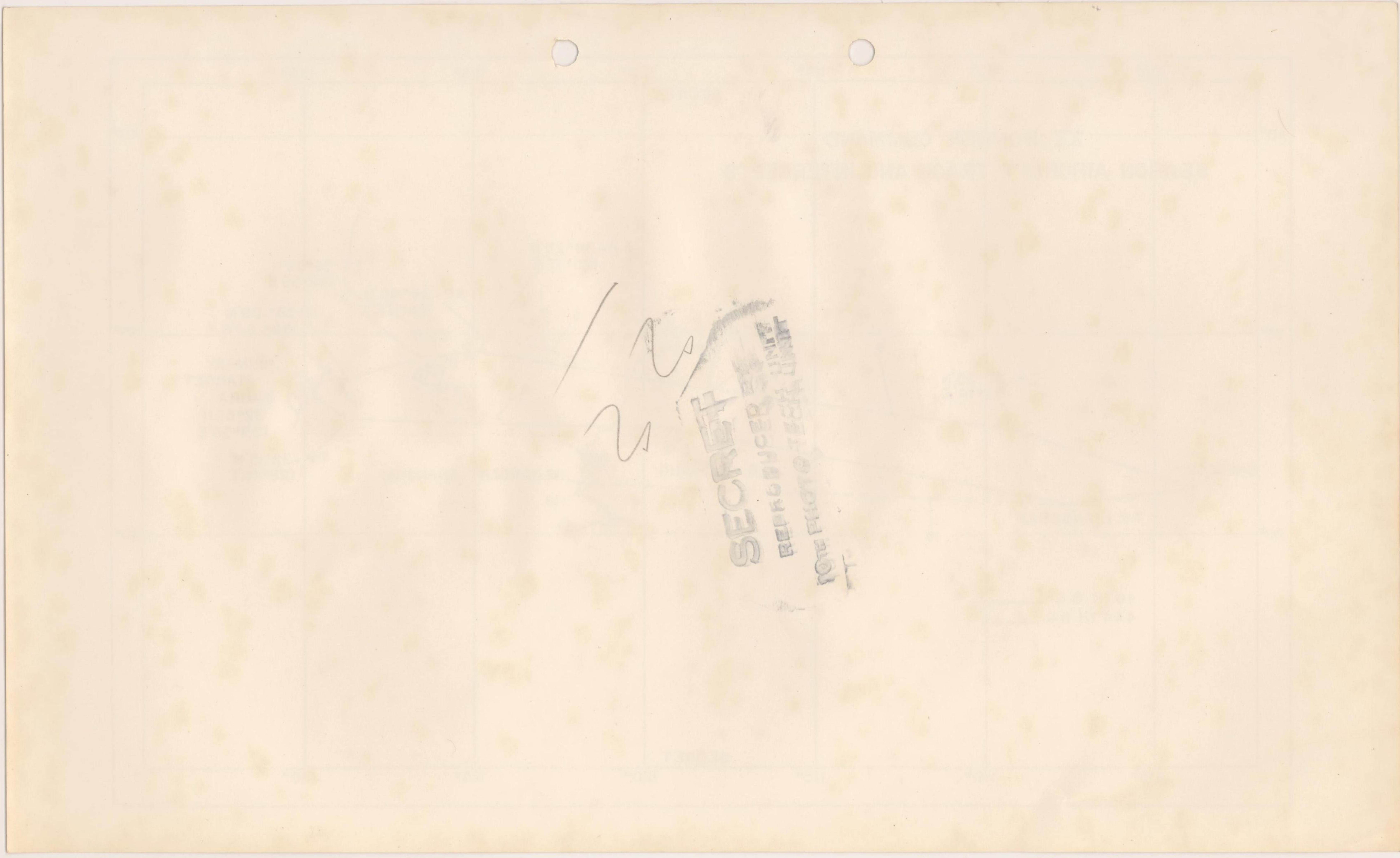
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REFUGEE/INTELLIGENCE UNIT
FOR PHOTO TECH UNIT
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S E C R E T

ANNEX

H

CENTRAL STATION FIRE CONTROL AND GUNNERY

* * * * *
* Prepared by: *
* Staff Gunnery Officer *
* XX Bomber Command *
* * * * *

S E C R E T

SECRET

SECRET

Auth: CG XX BC

Date: 27 Dec 44

Initials: JKL

HEADQUARTERS
XX BOMBER COMMAND
APO 493

CONSOLIDATED
SPECIALIST MISSION REPORT
OF STAFF GUNNERY OFFICER

Date Prepared: 27 December 1944

Field Order Number 22
Date of Mission: 19 Dec 44

1. On the mission directed by Field Order No. 22 clouds over the target area restricted visibility and was probably responsible for the absence of concentrated fighter attacks. On previous missions to this target area as many as fifty (50) fighters made attacks on our formations while on this mission, it is estimated that only ten (10) fighters made attacks and these were not pressed aggressively.

2. The mission is considered as very satisfactory in regards to gunnery and also the functioning of the Central Fire Control equipment. There was no losses attributed to enemy fighters or no battle damage to our B 29 airplanes.

3. The following statistical data is submitted:

	<u>40th</u>	<u>444th</u>	<u>462nd</u>	<u>468th</u>
Ammunition used test firing	1800	1030	1080	500
Ammunition used in combat	3200	5355	292	4235
Malfunctions of C.F.C. System	2	0	0	2
Total turrets on mission	55	50	40	25
Malfunctions of cal. 50 M.G.	3	2	1	4
Total cal. 50 M.G. on mission	110	100	80	50
Total airplanes (included in report)	11	10	8	5
Total percent malfunctions all groups	C.F.C. 2.3% cal. 50 M.G. 2.9%			

Claims by our gunners:

Destroyed	Probably Destroyed	Damaged
5	4	12

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By SG NARA Date 11/8/05

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ANNEX

I

CAMERAS AND PHOTOGRAPHS

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By SF NARA Date 11/8/05

S E C R E T

I - CAMERAS AND PHOTOGRAPHS

Mission No. 22

19 December 1944

A. 40th Group

One K-24 camera obtained 37 usable negatives. Information on other cameras which may have been installed is not available.

B. 444th Group

	K - 18	K - 20	K - 22	Total
No. of cameras airborne	3	3	3	9
No. in missing and non-reporting aircraft	0	0	0	0
No. completing mission	3	3	3	9
No. photographing targets	1	0	2	3
Failure to photograph - mechanical	0	0	0	0
Failure to photograph - other reasons	2-a	3-b	1-a	6
No. usable negatives	9	0	30	39

a - Ten-tenths cloud coverage over Omura.

b - Ten-tenths cloud coverage over Omura and one unspecified reason.

C. 462nd Group

	K - 18	K - 20	K - 22	Total
No. of cameras airborne	2	3	3	8
No. in missing and non-reporting A/C	0	1-a	0	1
No. completing mission	2	3	2	7
No. photographing targets	2	1	2	5
Failure to photograph - mechanical	0	0	0	0
Failure to photograph - other reasons	0	1-b	0	1
No. usable negatives	14	5	18	37

a - One A/C still in Forward Area and information not available.

b - Reason not specified.

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By SG NARA Date 11/8/05

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D. 468th Group

	K - 18	K - 20	K - 22	Total
No. of cameras airborne	2	0	3	5
No. in missing and non-reporting aircraft	0		0	0
No. completing mission	2		3	5
No. photographing targets	2		3	5
Failure to photograph - mechanical	0		0	0
Failure to photograph - other reasons	0		0	0
No. usable negatives	0-a		0-a	0

a - Failure due to 10/10 cloud coverage over Omura.

E. Totals

	K - 18	K - 20	K - 22	Total
No. of cameras airborne	7	6	9	22
No. in missing and non-reporting aircraft	0	1	0	1
No. completing mission	7	6	8	21
No. photographing targets	5	1	7	13
Failure to photograph - mechanical	0	0	0	0
Failure to photograph - other reasons	2	4	1	7
No. usable negatives	23	5	48	76

NOTE: For information concerning radar cameras, see Annex F, Radar Information.

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By SG NARA Date 11/8/05

S E C R E T

ANNEX

J

AIRCRAFT LOSSES AND DAMAGE

S E C R E T

S E C R E T

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Authority 760063

By SG NARA Date 11/8/05

S E C R E T

I - AIRCRAFT LOSSES AND DAMAGE

Mission No. 22

19 December 1944

A. Aircraft Losses

1. Known Battle Losses: None
2. Known Operational Losses (2):

a.) A/C 466 (40th) radioed at 182133Z that the number 1 engine had lost oil and the propeller could not be feathered. No definite position was received. It was later learned that A/C 466 had crashed approximately 25 miles northeast of Ankang. All crew members bailed out and safely reached the Ankang Air Base on the afternoon or evening of 19 December 1944.

b. A/C 452 (462nd) lost the number 2 engine between the second assembly point and the initial point. The pilot jettisoned the bombs into the China Sea and headed for Kiunglai. Several messages were received from this aircraft stating it was low on gas and headed for Liangshan. All crew members bailed out at 190755Z near Paokang (31°57'N - 111°19'E) and have been returned to safety. The Flight Engineer suffered 2 fractured legs and the Bombardier a possible torn ligament of the leg.

3. Missing Aircraft: None.

B. Aircraft Damage

For details of battle and operational damage by aircraft, see Annex M, Consolidated Mission Statistical Summary, Table V.

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By SG NARA Date 11/8/05

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ANNEX

K

FUNCTIONING OF EQUIPMENT

- I - Functioning of Equipment
- II - Performance Data*

* Prepared by Staff Flight Engineer.

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Authority 760063

By SG NARA Date 11/8/05

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I - FUNCTIONING OF EQUIPMENT

Mission No. 22

19 December 1944

A. Details by Aircraft

Total combat A/C required to be scheduled	52
<u>Less:</u> A/C not scheduled	8
a. A/C for which bomb bay tanks not available (3):	
(1) 462nd - 3.	
b. A/C reserved for photo mission (1):	
(1) 462nd - 1.	
c. A/C not serviced in time (4):	
(1) 468th - 4.	
 A/C scheduled for mission	<u>44</u>
<u>Less:</u> A/C failing to take off on mission	8
a. A/C 394 (40th) - engine instruments out.	
b. A/C 422 (444th) - no pitot heat, defective wiring.	
c. A/C 724 (444th) - faulty installation of bomb bay tank.	
d. A/C 731 (444th) - faulty installation of bomb bay tank.	
e. A/C 417 (468th) - not serviced in time.	
f. A/C 715 (468th) - not serviced in time.	
g. A/C 542 (468th) - not serviced in time.	
h. A/C 464 (468th) - propeller governor malfunction.	
 A/C airborne on mission	36
<u>Less:</u> A/C failing to bomb primary target - mechanical reasons.	5
a. Bombed last resort target (2):	
(1) A/C 582 (40th) - could get only 26" M.P. on #1 at altitude. High cyl. head temperature on #1.	
(2) A/C 202 (444th) - Turbo malfunctions #2 and #3.	
b. Brought bombs back (1):	
(1) A/C 461 (462nd) - fuel transfer system out.	
c. Crashed (2):	
(1) A/C 466 (40th) - #1 engine lost all oil, unable to feather propeller.	
(2) A/C 452 (462nd) - lost #2 engine and ran out of gas.	
 <u>Less:</u> A/C failing to bomb primary target - other reasons . . .	14
a. Bombed secondary target (14):	
(1) A/C 233 (40th) - weather.	
(2) A/C 752 (40th) - took-off one hour after lead ship and unable to join formation.	
(3) Five A/C (444th) - weather.	
(4) Seven A/C (462nd) - weather.	
 Total aircraft bombing Omuva	<u>17</u>

K-I-1

S E C R E T

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SECRET

BY Auth: CG, XX BC

Initials: _____

Date: 28 Dec 44

HEADQUARTERS
XX BOMBER COMMAND
APO 493

CONSOLIDATED
SPECIALIST MISSION REPORT OF
STAFF FLIGHT ENGINEER

Date Prepared: 28 December 1944

Field Order: No. 22

Date of Mission: 19 Dec 44

1. A summary of the performance of aircraft that bombed the primary target and returned to their home base is given in table I.
2. Table II contains a similar summary for those aircraft that bombed the secondary target and returned to the home base.
3. The overall performance was as anticipated.

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By SG NARA Date 11/8/05

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SUMMARY OF ALL GROUPS
F. O. #22

Table I

Group	Overall	40th	444th	462nd	468th
Target	Primary	Primary	Primary	Primary	Primary
*No. of Aircraft	18	8	4	1	5
Total time	14:37	14:17	14:08	14:35	15:34
Time to target	6:27	6:07	5:55	9:30	6:25
	Ave 865	875	1900	1900	1900
Aux. Fuel Carried	Max 1900	1900	1900	1900	1900
	Min 1700	1700	1900	1900	1900
	Ave 6370	6450	6445	6500	6200
Fuel Burned	Max 6700	6700	6500	6500	6650
	Min 5470	6140	6400	6500	5400
	Ave 27	857	855	800	1105
Burnable Reserve	Max 1900	1160	900	800	1900
	Min 670	600	800	800****	6500
**Air Miles	3567	3560	3670	3700	3510
Ground Miles	3.67	3.85	3.127	3.052	3.180
**Gas Air Miles	1.79	1.81	1.79	1.76	1.76
***Bombing Altit.	21,670	21,350	22,100	20,000	21,100
	Ave 132,435	131,470	132,957	135,000	133,065
Time Of Gr. Weight	Max 135,000	132,842	33,470	135,000	133,200
	Min 137,199	137,199	132,500	135,000	133,000
	Ave 5837	5767	6566	6300	6070
Weight of Bombs	Max 6937	5947	6930	6300	6130
	Min 4367	4860	5850	6300	5560
No. of Bombs	M-64, 5.7	5.1	6.5	0	7.6
	M-76 6.3	5.9	7	14	4.8

*For a c returning to their home base for which logs were available.

**Accuracy is doubtful due to methods of determination.

Pressure Altitude. *Returned from target on 3 engines.

SUMMARY OF ALL GROUPS
 F. O. #22
 Table II

Group		Overall	40th	444th	462nd	468th
Target		Secondary	Secondary	Secondary	Secondary	Secondary
*Number of Aircraft		12	2	4	6	0
Total Time		13:09	9:10	12:55	14:28	-
Time to Target		8:27	6:47	7:54	9:22	-
Fuel	Ave	6360	6235	6525	6630	-
Burned	Max	6800	6670	6650	6800	-
	Min	5800	5800	6295	6200	-
	Ave	1890	1850	1900	1900	-
Aux Fuel	Max	1900	1900	1900	1900	-
Carried	Min	1800	1800	1900	1900	-
	Ave	720	765	776	670	-
Burnable	Max	900	900	1005	1100	-
Reserve	Min	500	630	650	500	-
**Air Miles		3350	3400	3245	3413	-
Ground Miles		3110	3225	2940	3175	-
**G's Air Miles		1.9	1.83	2.01	1.94	-
***Bombing Altitude		19,000	19,250	19,600	19,900	-
	Ave	133,850	132,111	133,980	134,340	-
Take Off	Max	135,845	132,479	134,430	135,845	-
Gross Wt	Min	131,743	131,743	133,480	133,750	-
	Ave	6580	5940	6660	6740	-
Wt of	Max	6930	5940	6930	6840	-
Bombs	Min	5940	5940	6390	6480	-
No. of	M-64	6.3	6	6.5	6.3	-
Bombs	M-76	8.9	6	7	7.2	-

* That returned to home base for which logs are available.
 ** Accuracy is doubtful due to methods of determination.
 *** Pressure Altitude

SECRET

S E C R E T

ANNEX

L

TARGET DAMAGE ASSESSMENT

* * * * *
* Prepared by: *
* Target Intelligence Unit *
* XX Bomber Command *
* * * * *

S E C R E T

C O N F I D E N T I A L

HEADQUARTERS
XX BOMBER COMMAND
Intelligence Section
APO 493

10 January 1945

DAMAGE ASSESSMENT REPORT NO. 33 (PROVISIONAL)

TARGET: Kiangnan Dock and Engineering Works, Shanghai, China. (31°
16'N - 121° 32'E).

GENERAL STATEMENT:

This report relates to damage resulting from a daylight attack by XX Bomber Command on 19 December 1944. This was the designated secondary target of the main force directed against the Omura Aircraft Factory at Omura, Kyushu, Japan. A total of 13 aircraft attacked dropping 26.25 tons of GP and 17 tons of IB. Assessment of damage is derived exclusively from strike photos and must be considered provisional.

Bombing was accomplished by 4 individual aircraft and by 2 formations one of 3 planes and one of 6 planes. Only the aircraft bombing in formations returned strike photos.

The bombs from the 3 plane formation straddled the Engineering Works complex of buildings. Strike photos from the succeeding formation show results of the first over. A 325' River Passenger Steamer in No. 2 Dock (See Annex 1) was hit and was seen to be ablaze. This dock, empty at the start of the attack, was seen to be partly flooded indicating a breach of the lock. A 230' River Passenger Steamer in Dock No. 3 took a near miss as did a 200' Destroyer Escort and a 250' probable minelayer in Dock No. 1. Three storehouses east of the Engineering Works were destroyed and 3 more were heavily damaged. In addition a large fire was observed among shops between Docks 2 and 3 and the long storage house between Docks 1 and 2 was about half destroyed.

The 6 plane formation, last over, centered its pattern on No. 3 Dock with many hits observed on the large Engineering Works Complex of buildings just east, and on workshops adjoining the docks as well as on the large Machine Shop northwest of the No. 3 Dock. In addition hits appear to have been scored on the Steamer in Dock No. 3, on a large barge at the wharf and on a 220' River Steamer tied off Dock No. 3. Damage resulting is believed heavy.

REFERENCES: (1) Eighteenth P.I.D. Third Phase Report No. 119.

WEIGHT OF ATTACK: 13 Aircraft
26.25 tons GP (M-64)
17.0 tons IB (M-76)

PHOTOGRAPHY: (1) Strike Photos Mission 4MB22, 19 December 1944, quality and scale varied.

ANNEXES: (1) "Before" and "During" Photo.

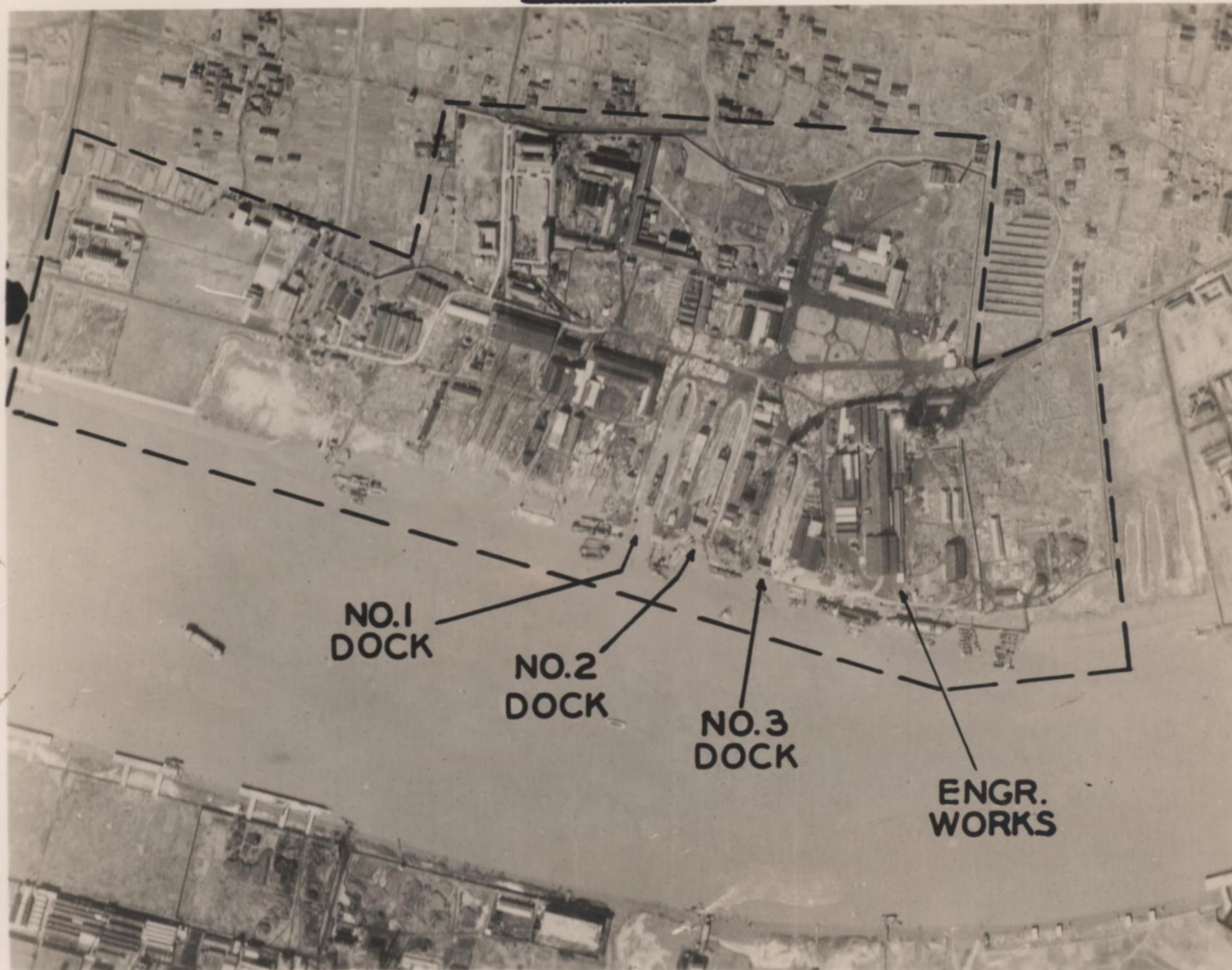
DETAILS OF DAMAGE: None.

PREPARED BY: TARGET UNIT
INTELLIGENCE SECTION

Frank L. Scott Jr
FRANK L. SCOTT, JR
Lt. Col., Air Corps
Chief, Intelligence Section

C O N F I D E N T I A L

ANNEX I
D.A. REPORT NO. 33 (PROV.)
KIANGNAN DOCKS
SHANGHAI, CHINA
TARGET UNIT ,XXB.C.
CONFIDENTIAL
BEFORE



DURING



DECLASSIFIED

Authority 760063

By SG NARA Date 11/8/05

CONFIDENTIAL

E. J. MEEY

10TH PHOTO TECH UNIT



S E C R E T

ANNEX

M.

CONSOLIDATED MISSION STATISTICAL SUMMARY

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* * * * *  
*  
* Prepared by: *  
* * * * *  
* Statistical Control Section *  
* * * * *  
* XX Bomber Command *  
* * * * *  
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S E C R E T

SECRET

XX BOMBER COMMAND
 CONSOLIDATED MISSION STATISTICAL SUMMARY
 Mission Number Twenty Two
 19 December 1944

SECRET
 By Authority of the
 Commanding General:
1-4-45 SR
 Date Initials

Table I and II - Aircraft Participating *

Group	** A/C in F.A. Scheduled For Mission	No. of A/C Taking Off	Airborne A/C Failing to Bomb Designated Primary Target							Time of First Takeoff	Time of Latest Return	Average Time of Flight ***		
			Total No.	Percent	Reason							A/C Bombing Primary	Airborne A/C Not Bombing Primary	
					Mech.	Pers.	Wea.	Not in Form	Misc.					Unknown
40th	13	12	4	33.3%	2		1		1		1930Z	0958Z	14:06	11:11
444th	13	10	6	60.0%	1		5				1943Z	0945Z	13:48	12:52
462nd	9	9	9	100.0%	2		7				1915Z	0937Z	-	13:02
468th	9	5	0	-							1917Z	1013Z	14:49	-
TOTAL	44	36	19	52.8	5		13		1		1915Z	1013Z	14:14	12:39

* Mission was run from Forward Area bases. A/C participating remained there after Mission #21.
 ** Field Order #22 required each group to furnish a maximum number of fully modified A/C and a sufficient number of the best unmodified A/C to bring total scheduled to 13. (See Table X)
 *** Excludes A/C which landed at other fields.

SECRET

S E C R E T

XX BOMBER COMMAND
 CONSOLIDATED MISSION STATISTICAL SUMMARY

Mission Number Twenty Two
 19 December 1944

S E C R E T
 By Authority of the
 Commanding General:

1-4-45 RK
 Date Initials

Table III - Bombing Runs

Group	No. of A/C Bomb- ing	Target Bombed	Time of Release		Altitude of Release		Visual Bombing		Radar Bombing		On the Leader	Aircraft Dropping On	
			Earliest	Latest	Highest	Lowest	A/C Sighting For R & D	Range	A/C Sighting For R & D	Range		AFCE	Manual
40th	8	Omura	0130Z	0130Z	22,900	21,500			1		7	1	7
	2	Shanghai	0115Z	0406Z	23,200	20,700	1				1	1	1
	1	Nanking	0111Z	0111Z	20,000	20,000	1					1	
444th	4	Omura	0130Z	0134Z	23,000	22,000			1		3	1	3
	5	Shanghai	0340Z	0413Z	21,000	18,000	3				2	3	2
	1	Nanking	0438Z	0438Z	18,000	18,000	1					1	
462nd	6	Shanghai	0426Z	0426Z	20,500	19,700	1				5	1	5
468th	5	Omura	0132Z	0132Z	21,000	21,000			1		4	1	4
TOTAL	17	Omura	0130Z	0134Z	23,000	21,000			3		14	3	14
	13	Shanghai	0115Z	0426Z	23,200	18,000	5				8	5	8
	2	Nanking	0111Z	0438Z	20,000	18,000	2					2	

Primary Target - Omura
 Secondary Target - Shanghai
 Last Resort Target - Nanking

S E C R E T