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Tactical Mission **REPORT**

Lt. General

NATHAN F. TWINING

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MISSION NO. 321-323

FLOWN 8, 9, and 10 AUG. '45

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TWENTIETH AIR FORCE
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TWENTIETH AIR FORCE
APO 234

TACTICAL MISSION REPORT

Field Orders No. 18 and 19

Missions No. 321, 322 and 323

Targets: Fukuyama Urban Area (90.29), Nippon Oil Refinery, Amagasaki
(90.25-1203), and the Nakajima Aircraft Company (90.17-356)

8, 9 and 10 August 1945

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Prepared By:

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By Auth. of the C.G.:
Twentieth Air Force
10 Aug 45 J.C.K.
Date Initials

HEADQUARTERS
TWENTIETH AIR FORCE
APO 234

SUBJECT: Report of Attacks on the Fukuyama Urban Area, Nippon Oil Refinery and the Nakajima Aircraft Company on 8, 9 and 10 August 1945

TO: Commanding General, U. S. Army Strategic Air Force, APO 234, San Francisco, California

1. IDENTIFICATION OF REPORT:

a. Targets Attacked:

(1) Primary Visual Targets:

<u>Mission Number</u>	<u>Wing</u>	<u>Target</u>
321	58th	Fukuyama Urban Area, Honshu
322	315th	Nippon Oil Refinery, Amagasaki (90.25-1203), Honshu
323	314th	Nakajima Aircraft Company, Ogikubu (90.12-356), Honshu

(2) Secondary Visual and Primary Radar Target:

<u>Mission Number</u>	<u>Wing</u>	<u>Target</u>
323	314th	Tokyo Arsenal Complex (90.17-3600) at Tokyo, Honshu

(3) Primary Radar Targets: Same as primary visual targets for Missions Number 321 and 322.

b. Force Attacking:

<u>Mission Number</u>	<u>Wing</u>	<u>Effort</u>
321	58th	93 aircraft
322	315th	Normal Effort
323	314th	2 Groups-- Maximum

c. Directive: Field Orders Numbers 18 and 19, Headquarters Twentieth Air Force, dated 8 and 9 August 1945, respectively, directed the 58th Wing to attack the Fukuyama Urban Area, the 315th Wing to attack the Nippon Oil Refinery at Amagasaki, and the 314th Wing to attack the Nakajima Aircraft Company at Ogikubu in Missions Number 321, 322 and 323.

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2. MISSION PLANNING:

a. Selection of Targets:

(1) Mission Number 321 was scheduled to be a day precision attack, but due to crashes on take-off that blocked the runways, it was changed to a night incendiary attack.

(2) Mission Number 322 was planned as an attack against the Nippon Oil Refinery and planning was essentially the same as that for Mission Number 281, the previous attack against this target.

(3) Mission Number 323 had weather as the determining factor in the final selection between the primary visual and the secondary visual and primary radar target, as previously listed.

b. Importance of Targets:

(1) Fukuyama is located 42 miles northeast of Kure, on the south coast of Honshu and approximately 33 miles southwest of Okayama. The Ashida Gawa points up to the city from Kasaoka Wan. Fukuyama has a population of 56,653, is the site of the new branch of the Kawanishi Aircraft Company Sub-Assembly Plant and has a built-up area of approximately 1 to 1.5 square miles. The 41st Infantry Replacement Regiment is located here and Fukuyama's industries consist of the Imperial Dye Works, one of the 5 major dye works in Japan, and of many small factories.

(2) As set out in Mission 281, the Nippon Oil Refinery is considered as one of Japan's most important refineries with a capacity of nearly 2,000,000 barrels and a storage capacity of about 1,000,000 barrels. The synthetic plant is estimated to produce 200,000 barrels annually. The refinery is located in the Amagasaki water-front area, at the mouth of the Huku River and stretches over an area of 3000 by 3000 feet. The main part of the plant covers 1200 by 2000 feet with a tank farm of 12 large tanks being about 600 feet from the main target area.

(3) The Nakajima Aircraft Company is located in the Tokyo area about 8.5 miles west by north from the Imperial Palace. The Mushashino-Tama Engine Plant (Target 90.17-357) is about 2.2 miles west of the aiming point. The target is on the north fringe of a built-up area extending out from Tokyo and is between 2 main railroad lines running west from Tokyo, with the Ogikubo railroad station about 1 mile southeast of the target. The target area extends about 1100 feet north to south and 1100 feet east to west. Besides the research and experimental work being conducted within the target area, oil filters, fuel valves, pressure valves and carburetors are just a few of the industrial products.

(a) The above described target, in accordance with planning, was scheduled as the primary visual target with weather to be the determining factor as to whether the Nakajima Aircraft Company or the Tokyo Arsenal Complex, the secondary visual and primary radar target, was to be attacked.

c. Time Factors:

(1) Selection of D-Day: Weather over the Empire was the primary factor in planning for date of attack. (In the case of Mission Number 321, operational failures changed it from a daylight precision to a night incendiary attack.)

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(2) Selection of Target Time: Time was selected to enable as many bombers as possible to take-off and land during daylight hours.

d. Munitions and Fuel Loading:

(1) Selection of Bombs and Fuzes:

(a) Mission Number 321 - Fukuyama Urban Area:

Thirty-five aircraft of the 58th Wing were airborne on a strike against Yawata on 8 August when crashes on both runways cancelled the remainder of the Wing. The remaining force of approximately 3 Groups was then scheduled against Fukuyama with the first 12 aircraft to be pathfinders. It was planned to have 1 Group carry M47 incendiary bombs and 2 Groups carry M17 incendiary clusters. The M47 incendiary bombs were expected to start appliance fires at impact to allow the smaller M50 type bombs to have a better chance to create conflagrations throughout the mixed industrial and residential structures within the target area. The force required to destroy the target was based on the following considerations: the density on the target was 225 tons per square mile; bombing accuracy of 40 to 50 per cent within the probable circular error; 90 per cent of airborne aircraft were to bomb the primary target, and the average bomb load per aircraft was to be 6 tons. M47 incendiary bombs were to have instantaneous noses with intervalometer settings of 75 feet, and M17 incendiary clusters were to open 5000 feet above the target, having an intervalometer setting of 35 feet. Fuzing and intervalometer settings specified were selected to give maximum uniform density on the target, with highest efficiency of release and functioning, and also to permit efficient use of available bombing tables.

(b) Mission Number 322 - Nippon Oil Refinery:

Building installations are single story and small in plan area, thus the 500-pound general purpose bomb was selected to give the multiple number of direct hits necessary to attain complete destruction. The target is made up of refinery units and tank storage units. The bombs were to have .1 second delay nose and .025 second delay tail fuzes. In the event of a shortage of 500 pound bombs, 250 pound bombs, fuzed the same, will be used to supplement loads. Shorter delay nose fuzes were not available and for that reason the .1 second delay was selected as an assurance fuze only. The .025 second delay tail fuzing was selected to be most effective to secure maximum damage against the tanks and buildings.

(c) Mission Number 323 - Nakajima Aircraft Company:

The aircraft to be employed on this mission were loaded for an attack on a target in the Nagoya area, which required the use of 2000-pound bombs. This target was the alternate target selected to be attacked on the basis of the weather forecast. The bomb load which was to be supplemented by 500-pound General Purpose bombs, was considered an excellent alternate for use. The major buildings of this target, were of 2 types, long and short span, and with saw-tooth roof construction. It was believed that the 500 and 2000-pound bombs would have the best chance of destroying effectively both the long and short span structures. All bombs were to be fuzed with instantaneous noses and non-delay tails. The fuzing was selected so that the detonation of the large charge would take place just above the main structural members. The crushing effect should destroy all of the installations in the target area.

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(2) Bomb Loading: Bomb load estimates were:

<u>Wing</u>	<u>Potential Capacity (pounds)</u>	<u>Expected Average (pounds)</u>
58th	17,000	17,000
314th	14,000	14,000
315th	20,000	20,000

(a) Potential capacities for bomb loads were primarily governed by the total distance to be travelled.

(3) Ammunition Loading: Left to the discretion of the Wing Commanders.

(4) Gasoline Loading: Fuel reserve data indicated the following fuel loads would be required: 58th Wing, 6500 gallons; 314th Wing, 6700 gallons; and 315th Wing, 6600 gallons.

c. Flight Planning:

(1) Routes:

(a) Mission Number 321, Fukuyama Urban Area:

Base to Iwo Jima to	Tactical Doctrine.
3331N - 13417E to	Landfall was to be Matsushitaga-hana Point on lower Shikoku and easily identified.
341530N - 13334E (IP) to	Initial point was to be on the peninsula on the northern tip on Shikoku, west of Marugame and easily identified.
Target to	Fukuyama
3430N - 13300E to	This point was designated to avoid flak areas.
Iwo Jima to Base	Tactical Doctrine.

(b) Mission Number 322, Nippon Oil Refinery at

Amagasaki:

Base to Iwo Jima to	Tactical Doctrine.
3350N - 13445E to	Landfall was to be this prominent point on the peninsula on the east coast of Shikoku, which was easy to recognize on the APQ-7.
341530N - 13504E (IP) to	The initial point was to be on the tip of Nada Peninsula, 2 miles south of Koda. Good approach to target.
Target to	Nippon Oil Refinery
3453N - 13526E to	This point was to avoid flak, a right turn was specified.
3407N - 13618E to	This was designated as land's end.
Iwo Jima to Base	Tactical Doctrine.

(c) Mission Number 323, Nakajima Aircraft Company:

Base to Assembly No. 1 (Iwo Jima)	Tactical Doctrine.
to	

3437N - 13805E
to
3528N - 13835E (IP)
to
Target
to
3558N - 13950E
to
3558N - 14000E
to
3535N - 14030E
to
Iwo Jima to Base

Landfall was to be on the coast between Hamamatsu and Amao-saki and easily identified. The initial point was at Motosu-ko Lake, north of Fuji and easily identified by radar, making the best approach to target. A left turn was specified to avoid flak.

This was designated as land's end.
Tactical Doctrine.

(2) Navigation and Radar Factors:

(a) Mission Number 321: Fukuyama is considered a good radar target for direct radar synchronous bombing. The course from landfall to target is on a straight line, giving operators ample time to check ground speed and kill drift. The hill south of the city casts a fair shadow, but it was not expected to interfere with the target identification. The river mouth is very wide, breaking open at close range. The tidal coast should give no difficulty since the city has a good radar return.

(b) Mission Number 322: The Nippon Oil Refinery at Amagasaki is excellent from a radar standpoint, since it is located on a prominent projection of land which extends into Osaka Bay. Bounded by water on 3 sides, a distinctive radar return should result. The only radar check point en route to landfall was Iwo Jima. The best point for making the radar wind run is the small island of Benton-Jima, which gives a bright stable radar run. Direct radar synchronous bombing should be excellent.

(c) Mission Number 323: The only check points en route to the Nakajima Aircraft Company at Ogikubu are Iwo, Kita, and Minami Iwo. The radar operators can position the aircraft in assigned areas, if cloud cover exists. Assembly Number 2, to be used if weather is poor at Iwo, utilizes very prominent islands which are easily identified. Radar operators can accomplish the original wind run on Amao-saki Point. The initial point is a dead reckoning point, using Mount Fuji to make a reference radar precision turn. The primary visual target was not to be the radar target. For the primary radar target, the large Tokyo Arsenal Complex, in north Tokyo was assigned. The area is saturated with targets and can be identified by radar. The course is the same for both targets and direct radar synchronous bombing can be used.

(3) RCM Factors:

(a) All strike aircraft, except those of the 315th Wing, were to be equipped with electronic jammers and all aircraft were to carry 50 units of rope. Search in the 20 to 3000 megacycle region was to be continued.

(b) Two special jamming aircraft were recommended for the 315th Wing target, the Nippon Oil Refinery at Amagasaki, because of the flak defenses in the Osaka area. The 314th Wing was to furnish the 2 aircraft since the 315th Wing did not have the necessary installations. These special jamming planes were to be equipped to barrage the 72 to 84 and 190 to 210 megacycle regions and to spot jam any radar signals with gun-laying and searchlight characteristics. Additional rope, to infest area, was to be carried.

(4) Flak Factors:

(a) Mission Number 321: At Fukuyama there were the following antiaircraft defenses: 21 heavy antiaircraft guns, 15 medium antiaircraft weapons and an estimated 2 to 6 searchlights. Only meager and inaccurate flak was expected against night attacks. Medium weapons were not expected to be effective at the planned altitude of 12,000 feet. The approach and breakaway were planned to avoid other flak areas.

(b) Mission Number 322, Nippon Oil Refinery at Amagasaki: In the Kobe area there were estimated to be 47 heavy guns and in the adjacent defense area of Osaka another 289 heavy guns. Aircraft would be within effective range of 95 to 100 guns and 70 searchlights on the planned approach to the target. Only moderate flak was expected at the planned altitude of 15,000 feet. Most of the bomb run would be over water and the breakaway was to be to the north between the Kyoto and Osaka defenses.

(c) Mission Number 323, Nakajima Aircraft Company of Ogikubo: In the north Tokyo sector it was estimated that there was a total of 370 heavy antiaircraft guns, and at Tachikawa, immediately west of the target area, it was believed that there were 42 heavy antiaircraft guns. Southwest of the plant there would be 18 heavy guns at Zama. The attack was to be from the southwest (Mount Fuji area) for the following reasons: it was downwind, it avoided most of the guns at Tachikawa and all of those at Zama, and it made possible a sharp breakaway to the north and out of the Tokyo defense area. Aircraft would be within range of approximately 150 guns and, in view of the heavy defenses in the target area, an altitude of 21,000 feet was specified.

- (5) Assembly Points: See Routes, (1) of this section.
- (6) Departure Points: See Routes, (1) of this section.
- (7) Initial Points: See Routes, (1) of this section.
- (8) Rally Points: See Routes, (1) of this section.
- (9) Routes Back: See Routes, (1) of this section.

f. Bombing Factors:

(1) Altitudes were designated as follows: Fukuyama, 12,000 to 12,800 feet; Nippon Oil Refinery, 15,000 to 15,800 feet and Nakajima Aircraft Company, 21,000 feet.

(2) Axes of Attack: Designated at the following degrees (true); Fukuyama, 54; Nippon Oil Refinery, 33; and Nakajima Aircraft Company, 72.

(3) Mean Points of Impact: These were to vary with each target, as follows:

(a) Fukuyama: A mean point of impact was selected in the center of the city. A probable circular error of 4000 feet would include most of the urban area.

(b) Nippon Oil Refinery: A mean point of impact was selected in the vicinity of the refining units, with a probable circular error of 1000 feet to include all installations except the large storage area.

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(c) Nakajima Aircraft Company: A mean point of impact was selected, with a probable circular error of 700 feet including all target installations.

(4) Compressibility Factors: Maximum compressibility was to be effected according to Tactical Doctrine.

(5) Other Bombing Factors:

(a) Fukuyama:

Length of Run: 27 miles
Time of Run: 5 minutes, 45 seconds
Drift: $3\frac{1}{2}$ degrees right

(b) Nippon Oil Refinery:

Length of Run: 37 miles
Time of Run: 8 minutes
Drift: $3\frac{1}{2}$ degrees right

(c) Nakajima Aircraft Company:

Length of Run: 59 miles
Time of Run: 11 minutes, 30 seconds
Drift: 2 degrees right

(d) Bomb Load:

1. Mission Number 321, Fukuyama: Ninety-three aircraft carrying an average bomb load of 11,600 pounds were scheduled for this attack. This average load was low for a night incendiary but these aircraft were loaded for a daylight attack against Yawata and the same load was to be utilized for the Fukuyama strike. A take-off accident diverted these aircraft from the Yawata strike to this night incendiary attack against Fukuyama. A gross tonnage of 540 tons was expected with 90 per cent or 486 tons of bombs to be released at the primary target. It was expected that 40 per cent of the tonnage released at the primary target would fall within the target area.

2. Mission Number 323, Nakajima Aircraft Company: Approximately 70 aircraft of the 314th Wing were assigned to participate in this attack, with an expected average bomb load of 10,500 pounds per aircraft. A gross tonnage of 365 tons would be airborne with 90 per cent or 321 tons of bombs expected to be released on the primary target. This figure took into consideration aborts, malfunctions and aircraft bombing targets of opportunity. If visual bombing conditions prevailed, it was expected that 40 per cent of bombs released on the primary target would strike within 1000 feet of the mean point of impact. Winds at the scheduled altitude were predicted to be approximately 265 degrees at 35 knots thus the drift was expected to cause no difficulty.

G. Defensive Tactics:

(1) Enemy Fighter Reaction:

(a) Mission Number 321, Fukuyama: Fighter reaction to this strike was expected to be nil or negligible. Approximately 5 to 15 fighters might be encountered in the target area. These fighters may be part of the Inland Sea Patrol and therefore may offer no opposition.

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(b) Mission Number 322: The contemplated strike on the Nippon Oil Refinery at Amagasaki, was expected to meet little, if any, opposition. Fifteen to 20 fighters have been the maximum in this target area on any night in the past 6 to 8 weeks. The fighters that have been seen were thought to be stationed at Itami Field and they included Franks, Zekes, Tonys, Irvings, and Judys. On this particular mission, not over 10 to 20 fighters were expected to be airborne.

(c) Mission Number 323: Since this was to be the third attack this week in this particular part of the Tokyo area, the Japanese might be goaded into sending up 20 to 30 interceptors. However, they might remain unwilling to effect interception. It was recommended that 1 Group of P-51's be used to give the B-29's cover on this mission.

(2) Fighter Escort: Fighter escort was to be provided by the VII Fighter Command.

(3) RCM: (See (3) under e. Flight Planning.)

(4) Against Enemy Aircraft:

(a) Gunnery: As per Tactical Doctrine.

h. Air-Sea Rescue:

(1) Naval: The Navy was furnished the details of the missions and provided the air-sea rescue facilities indicated on the chart in Annex A, Part VI.

(2) Army Air Forces: The Twentieth Air Force was to provide Super Dumbos as indicated on the chart in Annex A, Part VI.

3. EXECUTION OF MISSION: (For special reports on these missions, see various Annexes that follow this narrative.)

a. Take-off: Take-off was accomplished as follows:

<u>Mission Number</u>	<u>Wing</u>	<u>Pathfinders Airborne</u>	<u>Main Force Airborne</u>	<u>First Take-off</u>	<u>Last Take-off</u>
321	58th	12	86	080633Z	080746Z
322	315th		107	090830Z	090932Z
323	314th	—	78	091645Z	091726Z
Twentieth Air Force		12	271*		

* Four wind run and 3 Super Dumbos are not included in this total.

b. Route Out: Routes were flown as briefed. On the Fukuyama Mission, Number 321, and on the Nippon Oil Refinery Mission, Number 322, the aircraft accomplished individual navigation to the target areas. On Mission Number 323, aircraft accomplished individual navigation to the assembly areas. No navigational deficiencies were reported.

c. Assemblies: Assemblies were effected only by the 314th Wing on Mission Number 323. Iwo Jima was to be used unless weather made the use of Assembly Zone II necessary. Assemblies were actually effected off the coast of Japan and bombing was accomplished by squadrons.

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c. Targets: Radar was used for wind determination, navigation and bombing by the 58th and 315th Wings and was used as an aid to navigation and for wind determination by the 314th Wing, which was forced to bomb the primary radar target. (For details on individual missions, see Annex E, Consolidated Statistical Summary.)

(1) Primary Visual Targets: On Missions Number 321 and 322 a total of 191 aircraft (including 3 that also bombed targets of opportunity) dropped 1457.7 tons of bombs on primary visual targets between 081325Z and 091711Z at altitudes ranging from 13,100 feet to 17,300 feet, with 53 bombing visually, 1 by radar with visual corrections, and 137 by radar.

(2) Primary Radar Target: On Mission Number 323 a total of 70 aircraft dropped 320 tons of bombs between 100050Z and 100059Z at altitudes ranging from 22,200 to 26,200 feet, with 1 bombing visually, 3 by radar with visual corrections, 29 visually dropping on the leader, 4 by direct radar and 33 dropping on the leader by radar.

(3) Targets of Opportunity: Eight aircraft (including 3 that bombed primary targets) dropped 37 tons of bombs on targets of opportunity from 081430Z to 100109Z at altitudes ranging from 10,000 to 22,200 feet, with 5 bombing visually and 3 by radar.

(4) Remainder of Force: Twenty-two aircraft were non-effective.

e. Routes Back: Aircraft returned to base as briefed, with the exception of 26 aircraft which landed at Iwo Jima.

f. Landing: Aircraft landed at bases as follows:

<u>Mission Number</u>	<u>Wing</u>	<u>First Landing</u>	<u>Last Landing</u>
321	58th	082024Z	082205Z
322	315th	092210Z	100003Z
323	314th	100657Z	100836Z
Twentieth Air Force		082024Z	100836Z

g. Loss and Damage to Aircraft:

(1) To Enemy Aircraft: There was no loss or damage due to enemy aircraft.

(2) To Enemy Antiaircraft: Thirty aircraft were damaged because of enemy antiaircraft, 19 receiving minor and 11 major damage.

(3) Other Reasons: One aircraft received minor damage due to other causes.

h. Execution Versus Planning: There were no essential differences between the execution and the original planning. In accordance with previous planning, since weather was adverse a change was made from the primary visual target to the secondary visual and primary radar target on Mission Number 323. In all instances, missions were considered well planned.

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4. RESULTS OF THE MISSIONS: (For details on damage assessment, see Annex D, Part IV.)

a. Mission Number 321, Fukuyama: Of the 1.2 square miles of built-up area, .88 square miles (or 73.3 per cent) was destroyed. Of 15 small unidentified industries outside of the built-up area, 2 were destroyed.

b. Mission Number 322, Nippon Oil Refinery, Amagasaki: The target was believed to be inoperative and almost completely destroyed as a result of this and the 20th Air Force Mission Number 281 of 19/20 July 1945. Damage from Mission 322 was particularly heavy in the refinery, tank storage, and warehouse areas and also in the north-east section of the target and in the synthetic oil plant area. Of the original oil storage capacity of 1,496,700 barrels, 78 per cent or 1,175,400 barrels were damaged or removed, of which 453,200 barrels, (or 30 per cent) was the damage from Mission Number 322.

c. Mission Number 323, Tokyo Arsenal Complex: At the time this report was completed, no photo reconnaissance had been made, and no damage assessment report was available.

N. F. Twining
N. F. TWINING
Lieutenant General, U.S.A.
Commanding

ANNEX

A

OPERATIONS

- Part I - Navigation Track Chart and Report
- Part II - Mean Points of Impact
- Part III - Radar Approach Chart
- Part IV - Bombing
- Part V - Flight Engineering Chart and Report
- Part VI - Air-Sea Rescue Chart
- Part VII - Gunnery
- Part VIII - Radar
- Part IX - Seventh Fighter Command Consolidated
Mission Report

Missions No. 321, 322 and 323

8, 9 and 10 August 1945

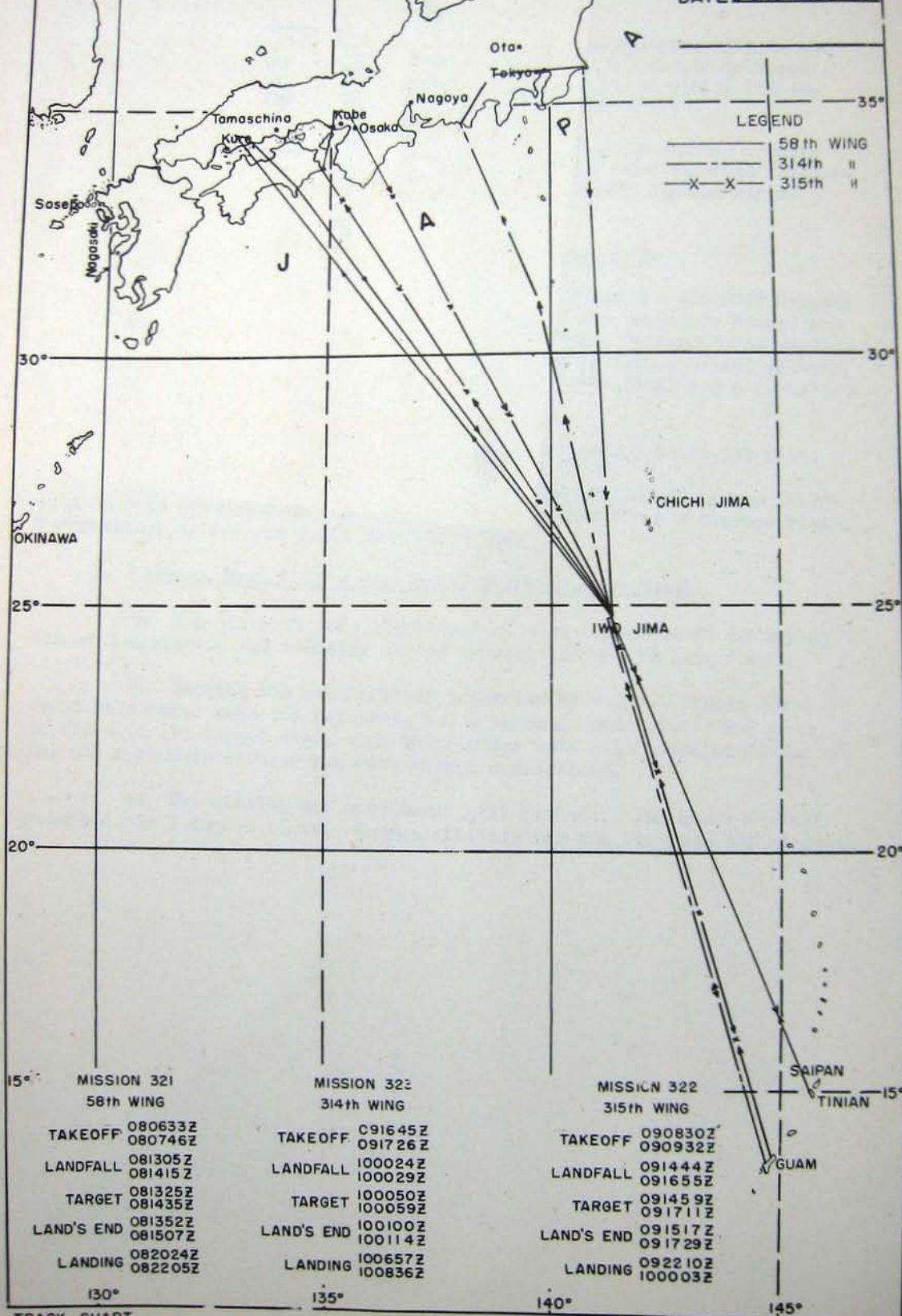
PART I - NAVIGATION

1. Night missions were flown to the Fukuyama urban area (58th Wing) and the Nippon Oil Refinery (315th Wing). Aircraft accomplished individual navigation to the target areas. The 314th Wing attacked the Tokyo Arsenal Complex and aircraft accomplished individual navigation to the assembly areas. No navigational deficiencies were reported.
2. Radar was used for wind determination, navigation, and bombing by the 58th and 315th Wings. It was used as an aid to navigation and for wind determination by the 314th Wing.
3. Time compression was excellent by the wings flying the night missions.
4. Aircraft returned to base, as briefed, with the exception of 26 aircraft landing at Iwo Jima.
5. Loran work was performed as Follows: (Air Force totals)
 - a. Number Loran LOP's 7578
 - b. Number Loran Fixes 4514
 - c. Number equipment Malfunctions 23
 - d. Average Maximum range (Sky Wave 58th & 315th Wings)
 - (1) Trailing Wire: 1450 Nautical miles
 - (2) Fixed Antenna: 1425 Nautical miles
 - e. Average Maximum range (Ground Wave 314th Wing)
 - (1) Trailing Wire: 600 Nautical miles
 - (2) Fixed Antenna: 600 Nautical miles
 - f. No interference or evidence of possible jamming was reported.

APRIL 1945

PART I NAVIGATION TRACK CHART

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MISSION NO 321-323
DATE 8-9-10 AUG 45

TRACK CHART

SECRET

B-108-64 REPRODUCED 35th P.T.U.

MISSION NO. 323
TOKYO APPROACH "H"
314 TH. WING



MISSION NO. 322
AMAGASAKI—OSAKA AREA
315 TH. WING

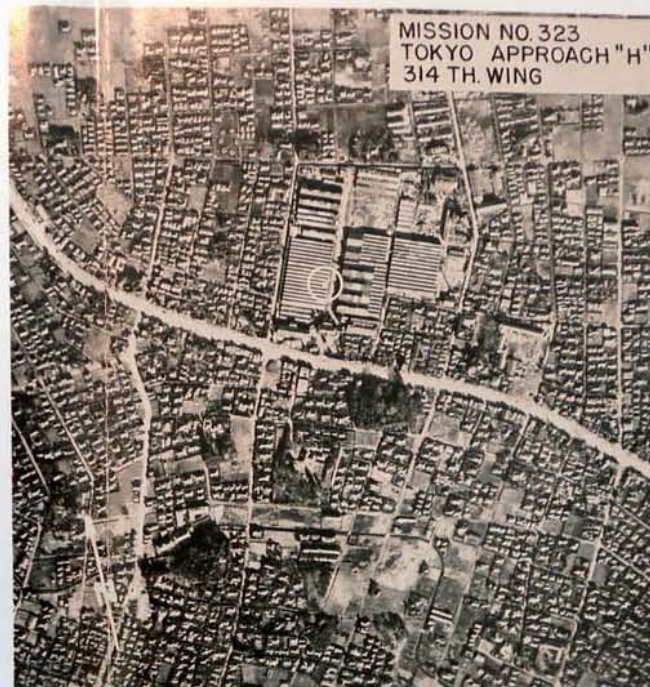


TOKYO

SECRET

MEAN POINTS OF IMPACT
MISSION NO. 321-322-323

MISSION NO. 321
FUKUYAMA AREA
58TH. WING



MISSION NO. 323
TOKYO APPROACH "H"
314 TH. WING



MISSION NO. 322
AMAGASAKI-OSAKA AREA
315 TH. WING



S E C R E T

PART IV - BOMBING

1. Mission Number 321, Fukuyama:

a. Forty-nine aircraft of the 91 bombed the primary target, bombed visually as weather was clear and visibility afforded by fires easily identified the mean point of impact.

b. The mission planning was considered excellent from both the radar and visual view points. Radar reported that the target produced a good signal and bombardiers reported the target could be easily identified in reference to the 2 canals in the city area.

c. There were no difficulties encountered and bombing results were considered excellent as general conflagrations were reported throughout the target area. The average drift reported was 3 degrees right. Compressibility for the force was 70 minutes.

2. Mission Number 323 - Tokyo Arsenal Complex (FR):

a. The primary visual target area, the Nakagima Aircraft Company was ten tenths undercast, and the force attacked the secondary visual and primary radar target. The Tokyo Arsenal Complex was designated as secondary visual and primary radar target. One formation made a visual release, 3 formations made radar approaches with visual corrections and 4 formations made radar approaches and releases.

b. The altitudes of attack varied from 22,200 to 26,200 feet.

c. The mission was considered excellently planned and no difficulties were encountered. The average drift reported was 3 degrees right. Compressibility for the force was 9 minutes.

3. Mission Number 322 - Nippon Oil Refinery, Amagasaki:

a. Two aircraft were dispatched as wind run aircraft to obtain the wind direction and velocity and to transmit it to the main force.

b. Bombing was accomplished primarily by radar. Ninety aircraft made radar runs and releases, and 4 aircraft made visual releases on fires in the target area, when their radar sets became inoperative. One aircraft made a radar run with visual corrections.

c. The mission was considered well planned. The average drift reported was 1 degree right. Compressibility for the Wing was 102 minutes.

S E C R E T

PART V - FLIGHT ENGINEERING

1. Narrative of Missions as Flown:

a. Route Out: Climbs were made immediately after take-off to cruising altitudes between 5,000 and 9,000 feet. Climbs to bombing altitudes were made just off the coast of Japan. Aircraft of the 314th Wing assembled off the coast of Japan and bombed by squadrons. Other aircraft bombed individually.

b. Bombing Run: Bombing was conducted at an average altitude of 21,000 feet for the 314th Wing and at 13,000 feet for the 58th and 315th Wings.

c. Return to Base: Returns to base consisted of descending to an average of 8,000 feet and cruising there until a gradual descent to base could be made.

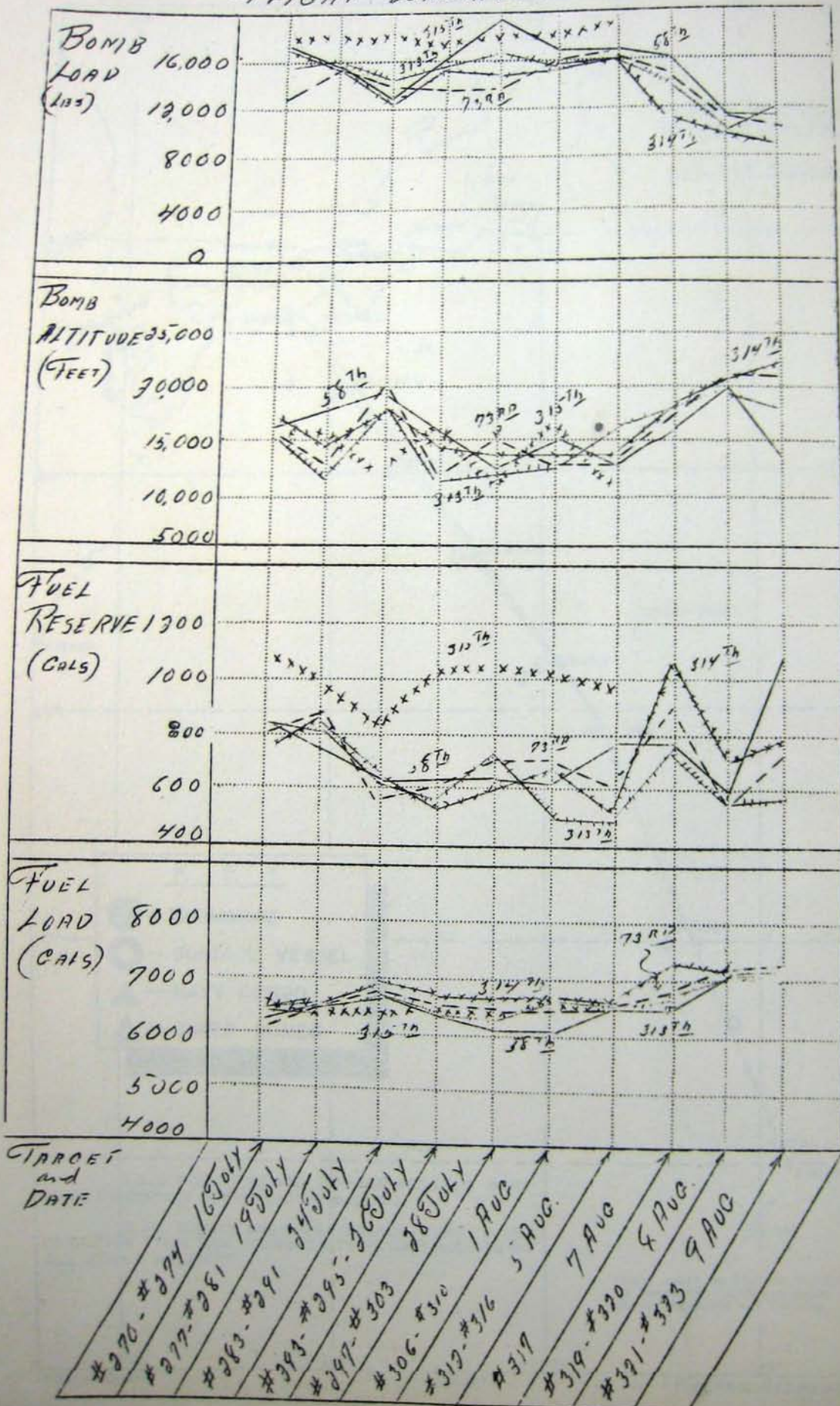
2. Comments on the Missions: Nine per cent of all airborne aircraft landed at Iwo Jima. Part of the 58th Wing and all of the 314th Wing loaded bomb bay tanks.

3. Exhibits:

a. For historical record see Chart that follows this page.

b. For load and consumption data see Annex E, Consolidated Statistical Summary.

FLIGHT ENGINEERING



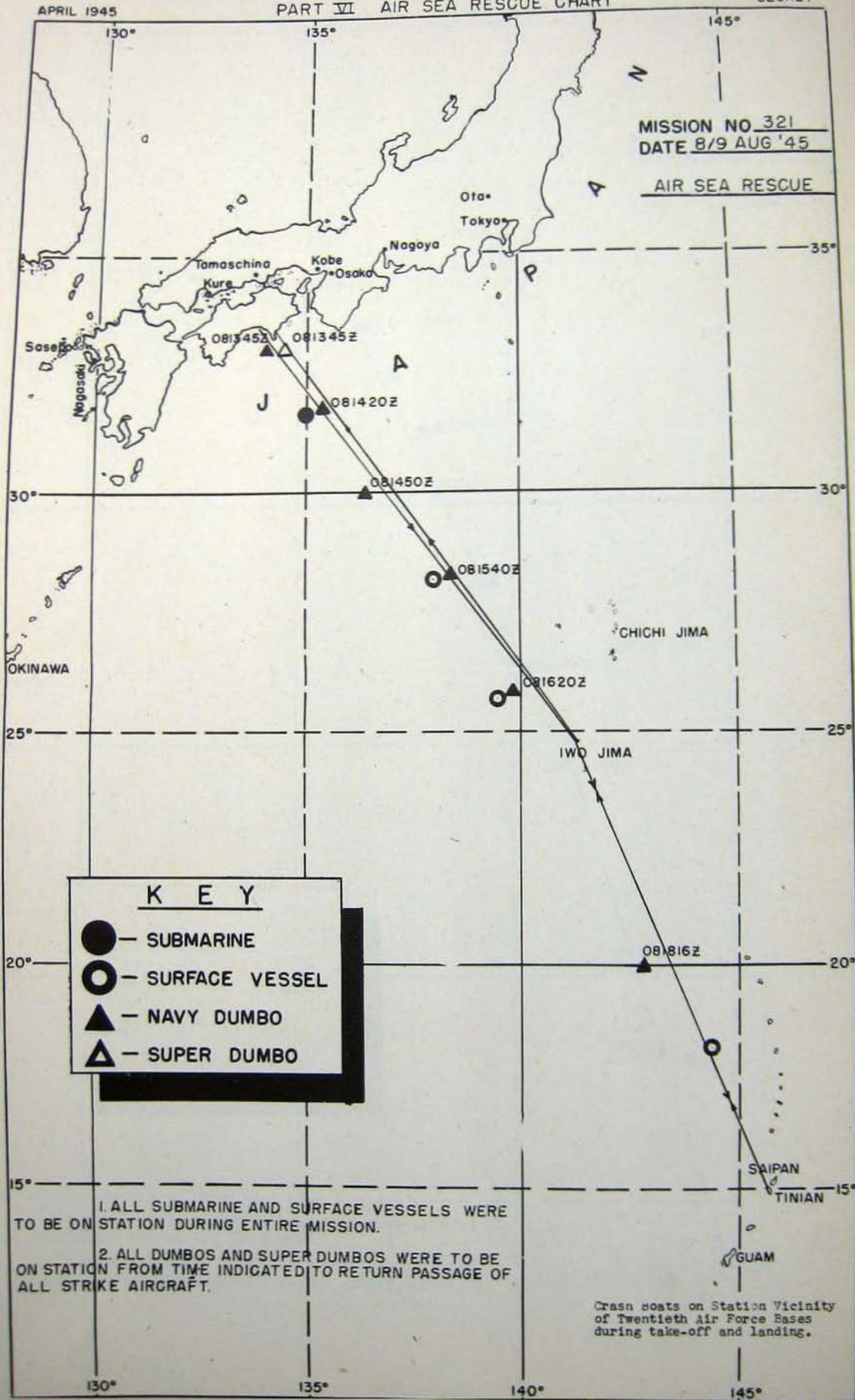
APRIL 1945

PART VI AIR SEA RESCUE CHART

SECRET

MISSION NO. 321
DATE 8/9 AUG '45

AIR SEA RESCUE



TRACK CHART

SECRET

B-100-64 REPRODUCED 35th P.T.U.

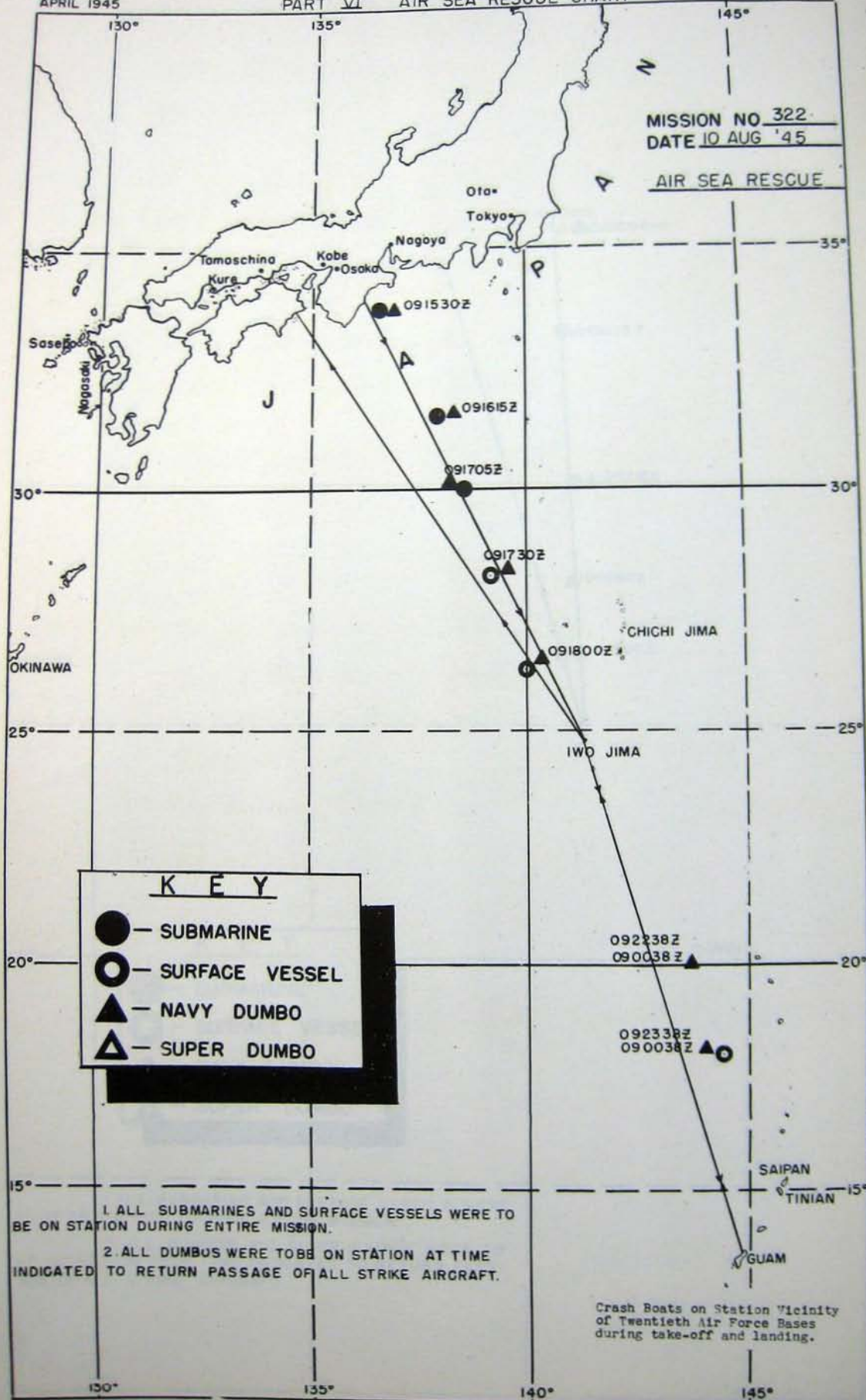
APRIL 1945

PART VI AIR SEA RESCUE CHART

SECRET

MISSION NO 322
DATE 10 AUG '45

AIR SEA RESCUE



TRACK CHART

SECRET

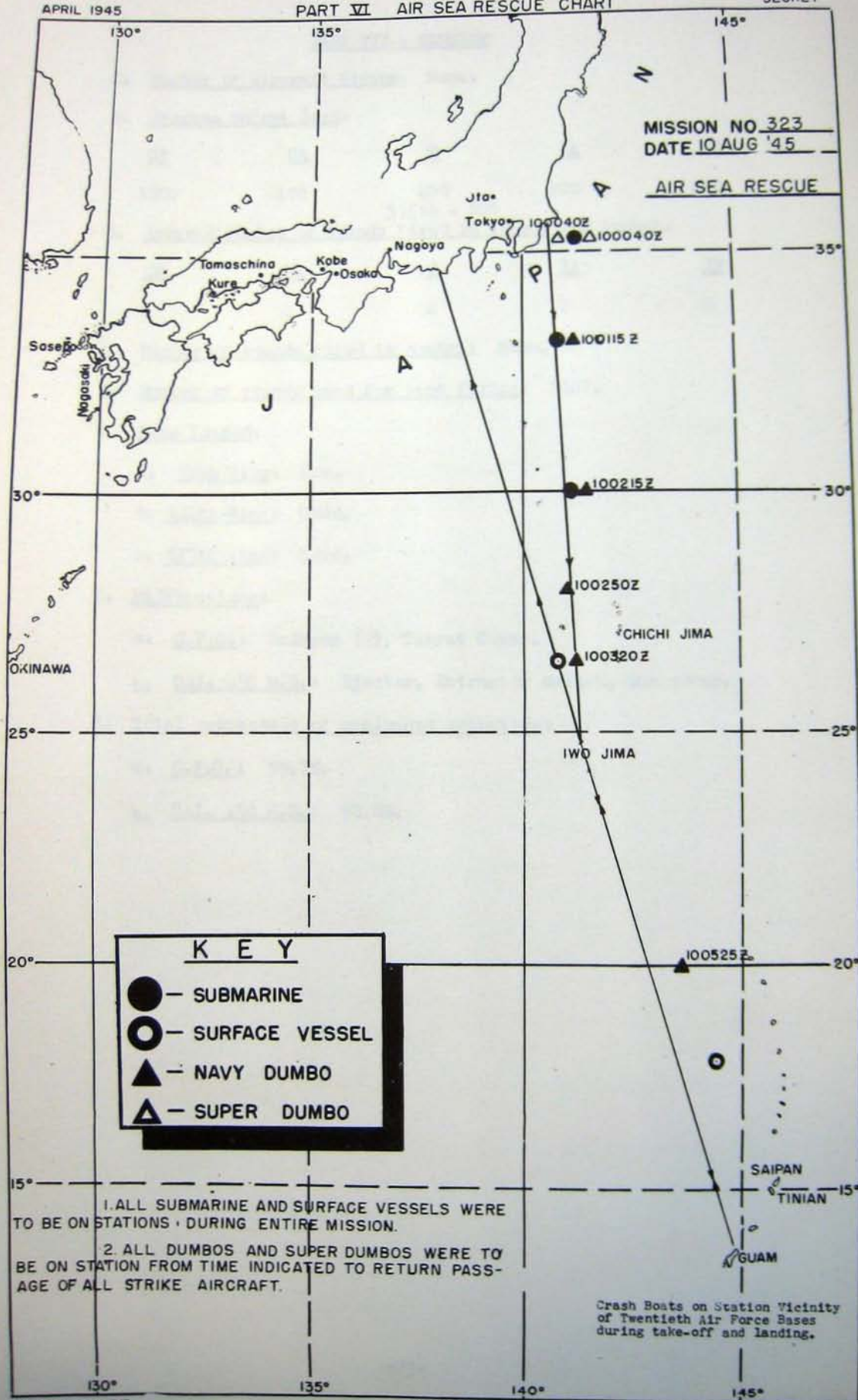
8-108-64

REPRODUCED 35m.P.T.U.

APRIL 1945

PART VI AIR SEA RESCUE CHART

SECRET



TRACK CHART

SECRET

8-108-64 REPRODUCED 35m.P.T.U.

S E C R E T

PART VII - GUNNERY

1. Number of aircraft firing: None.

2. Average turret load:

<u>UF</u>	<u>UA</u>	<u>T</u>	<u>LA</u>	<u>IF</u>
1600	400	400	400	400
		315th - 600		

3. Average number of rounds fired in combat per turret:

<u>UF</u>	<u>UA</u>	<u>T</u>	<u>LA</u>	<u>IF</u>
0	0	0	0	0

4. Number of rounds fired in combat: None.

5. Number of rounds used for test firing: 8107.

6. Guns Loaded:

a. 58th Wing: Hot.

b. 314th Wing: Cold.

c. 315th Wing: Cold.

7. Malfunctions:

a. C.F.C.: Selsyns (2), Turret Cover.

b. CAL. .50 M.G.: Ejector, Extractor switch, Gun cover.

8. Total percentage of equipment operative:

a. C.F.C.: 99.7%.

b. CAL. .50 M.G.: 98.8%.

S E C R E T

PART VIII - RADAR

1. Radar Bombing - AN/APQ-13:

- a. Number of sets operative on take-off: 173
- b. Number of sets operative over target: 163
- c. Number of sets operative on landing: 164
- d. Number of planes using azimuth stabilization: 162
- e. Number of set failures in lead aircraft: None
- f. Average maximum range in nautical miles, of targets:
 - (1) 174 - 5,000 - 10,000 feet.
 - (2) 174 - 10,000 - 15,000 feet.
- g. Average maximum range in nautical miles, of beacons:
 - (1) 121 - 5,000 - 10,000 feet.
 - (2) 143 - 10,000 - 15,000 feet.
- h. No interference was encountered.
- i. Average range of Japanese Coast: 39 Nautical miles.
- j. No recurring trouble was reported.
- k. Comments:
 - (1) Briefing material was reported as good.
 - (2) Aiming points were fair. The 53th Wing found it necessary to use reference points to identify aiming point.
 - (3) Landfall was identified at maximum distance.
 - (4) Radar release was of direct synchronous method.

2. Radar Bombing - AN/APQ-7:

- a. Sets operative on take-off: 96
- b. Sets operative over target: 91
- c. Sets operative on landing: 90
- d. Average maximum range in nautical miles, of targets: 65 at 15,000 feet.
- e. Average maximum range in nautical miles, of beacons: 140 at 6,000 feet.
- f. Interference: None
- g. Japanese coast line picked up at 65 nautical miles.
- h. Equipment failures: 6

SECRET

i. Recurring failures, AFC, Timer Adjustment, and No Beacon.

j. Comments:

- (1) Landfall and IP were easily identified.
- (2) Briefing material was very satisfactory.
- (3) Aiming point was easily identified.

3. IFF - SCR-695:

- a. Location turned on and off as per SOP.
- b. Average number of times checked: 35 times.
- c. Number of sets with malfunctions: 1

4. Absolute Altimeter - SCR-718:

- a. Number of sets operative: 120
- b. Number of set malfunctions: 2

S E C R E T

PART IX - CONSOLIDATED MISSION REPORT VII FIGHTER COMMAND

HEADQUARTERS VII FIGHTER COMMAND AAF
Office of the Commanding General
Iwo Jima

12 August 1945

CONSOLIDATED MISSION REPORT

1. a. Units and Targets: 15th Fighter Group - Escort Tokyo Area.
506th Fighter Group - Escort Tokyo Area.
2. a. Type of Mission: Escort of B-29's over Tokyo area.
b. Date of Mission: 10 August 1945.
c. Field Order No. 164.
d. VII Fighter Command Mission No. 259, VLR Mission No. 50

3. a. Group	15th Ftr Gp	506th Ftr Gp	Totals
b. A/C scheduled	52	52	104
c. A/C returned early	3	0	3
d. A/C over target area	49	53	102*
e. A/C lost	0	0	0
f. A/C completing mission	49	53	102
g. T/O last a/c off	0704	0717**	---
h. Time RV w/nav bombers	0732	0732	---
i. Time over DP	1030	1030	---
j. Time of landfall	1030	1030	---
k. Time over target	1030-1120	1030-1110	---
l. Time at RP	1130	1115	---
m. Time landed last a/c	1455	1440	---

* Includes one spare which accompanied strike force over target.

** Sub cover flight took off at 0636.

4. a. Friendly Aircraft Losses: None
b. Friendly Aircraft Damaged - Total: 2
One P-51 was damaged in release of wing tanks and the other was hit by E/A. Neither pilot was injured.

5. a. Enemy Aircraft Sighted - Air: 28.
- Ground: 14.

b. Enemy Aircraft Losses: Total destroyed, probably destroyed and damaged 18.

UNITS	AIR			GROUND				TOTAL			
	Dest	Prob	Dest Dam	Dest	Prob	Dest	Dam	Dest	Prob	Dest	Dam
15th Ftr Gp	2	0	5	0	0	0	0	2	0	5	5
506th Ftr Gp	4	1	6	0	0	0	0	4	1	6	6
TOTAL	6	1	11	0	0	0	0	6	1	11	11

TYPES: Destroyed - Air: 4 Zekes, 2 Tojos.
- Ground: None.

Probably Destroyed - Air: 1 Zeko.
- Ground: None.

Damaged - Air: 6 Zekes, 3 Tojos, 1 Hamp and 1 Oscar.
- Ground: None.

6. Narrative: Both groups made rendezvous with the navigator B-29s on time and experienced no difficulty on course.

S E C R E T

Since the navigator B-29s reported that the fighter force was five minutes ahead of schedule the climb to DP altitude, 22,000 feet, was postponed, but the force of strike bombers was also ahead of schedule, and so the P-51s were 2000 to 3000 feet below the B-29s as they started for the IP. Higher power settings were necessary to make up the altitude difference. Fighters arranged themselves above and on each side of the bomber stream in line astern of flights. About 50% of the enemy fighters were seen between the IP and target. Enemy pilots ranged from aggressive to unaggressive with two enemy reported as merely following the bomber stream without making any attempt to attack. One of these, a radial engine Tojo carrying a bomb, may have been pacing the formation prior to attacking it. Both of these planes were driven off, and the Tojo jettisoned its bomb when it was attacked. No unusual enemy tactics were noted, and our planes maintained mutual support tactics with good results, and in some instances followed enemy aircraft down to low altitudes in pressing attacks. Retirement to the RP was made by way of Choshi point, and all fighters returned safely to base.

7. Flak:

Moderate inaccurate predicted concentrations of heavy flak were observed between Hachioji and Tokyo. From Mtugi to Chofu, moderate inaccurate continuously pointed heavy flak was encountered. Meager, inaccurate heavy flak was received in the Naruto and North Tokyo area.

Some of the flak bursts threw out shredded metallic looking material resembling Christmas tree tinsel.

In two instances there appeared to be deliberate attempts by enemy aircraft to draw a/c over airfield flak defenses.

8. Communications:

Loud and clear.

9. Weather as it affected the mission:

Iwo to Empire - variable 4/10 to 6/10 cumulus and stratocumulus based at 2000 feet with tops at 6000 feet. Visibility 20 miles.

Target Area - 6/10 cumulus and stratocumulus based at 2000 feet with tops at 4000 feet. Visibility 8 to 10 miles in haze.

10. a. Ammunition expended:

UNITS	ROUNDS CALIBER .50
15th Fighter Group	4,313
506th Fighter Group	5,116
TOTAL	9,429

b. Gasoline remaining in planes completing mission (gallons):

UNITS	AV PER A/C	A/C WITH MAX RES	A/C WITH MIN RES
15th Fighter Group			
45th Ftr Sq.	70	90	55
47th Ftr Sq.	95	137	46
78th Ftr Sq.	140	216	82
506th Fighter Group			
457th Ftr Sq.	74	93	57
458th Ftr Sq.	95	110	60
*462nd Ftr Sq.	132	177	66

* 165 gallon tanks.

11. Observations:

a. Airfields:

Tokorozawa - Seven to eight Nicks reported around the edges of the field.

S E C R E T

Shimushizu - Seven T/E U/I seen around the edges of the field.
Imba - Three S/E U/I which may have been dummies observed near the center of the field.

b. Ground installations: A large scale earth grading operation was observed a short distance NW of Omae Saki.

c. Others: The sub cover flight observed the submarine at the RP pick up a downed Navy pilot.

12. Remarks: Of the 28 Jap fighters sighted on this mission, only 3 were showing aggressiveness toward the bombers. These were intercepted as they approached the rear of the bomber stream at 23,000 feet. Most of the interceptions were made by 2 flights of P-51s which were detached from the escort formation to give chase to enemy aircraft. More than half of the enemy destroyed and damaged were claimed by these 2 flights. The majority of the enemy were encountered NW and NE of Tokyo at altitudes varying from 500 to 15,000 feet. Most of the enemy pilots were un-aggressive and broke formation when attacked. In two or three instances lone enemy fighters were encountered.

This was the 50th VLR Fighter Mission for this Command. The first was completed 7 April 1945. It took 85 days to run the first 25 missions; less than half that time, 41 days, were required for the next 25 missions. Seven of the latter were completed during the first 10 days of August.

t/s/ E. MOORE,
Brigadier General, USA,
Commanding.

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

ANNEX

B

WEATHER

Part I - Weather Summary, Mission No. 321

Part II - Final Weather Summary, Mission No. 322

Part III - Weather Summary, Mission No. 323

Part IV - Weather Charts

Missions No. 321, 322 and 323

8, 9 and 10 August 1945

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

PART I - WEATHER SUMMARY

Mission No. 321

8/9 August 1945

PLANNING FORECAST

Bases: 4-5/10 low cloud base 1800 ft, tops 8000 ft; 2/10 middle cloud and 6-8/10 high cloud and scattered showers.

Route: To 18°N: Same as bases.
To 23°N: Two zones about 100 miles wide evenly spaced along the area having 6/10 low cloud base 1200 ft, tops 8-15,000 ft. with occasional moderate showers, and broken layers of middle and high clouds. Away from these zones, 4-6/10 low cloud.
To Coast: 5/10 low cloud base 2300 ft, tops 7000 ft. with scattered middle and high clouds.

Targets: All: Very light wind flow over all Empire with no fronts so that cloud will be diurnal, having 5-7/10 in hill areas breaking to 4-6/10 in coastal areas and less in Inland Sea and Shinonoseki areas.

OPERATIONAL FORECAST

Base at Take-Off:

Scattered low and middle clouds and broken high clouds.

Route:

Scattered low and middle clouds with broken overcast clouds to 19°N. From 19°N to 27°N there will be broken low, middle and high clouds, with light to moderate showers. From 27°N to target there will be scattered low and high clouds.

Target:

Fukuyama: 3/10 cumulus, base 2000 feet, top 5000 ft; 2/10 altostratus, base 15,000 ft, top 17,000 ft. Winds at 12,000 ft will be 140° at 15 knots.

Base on Return:

Scattered low and broken middle and high clouds.

OBSERVED WEATHER

Base at Take-Off:

Broken low clouds and scattered middle clouds.

Route:

There were scattered low clouds, broken to overcast middle clouds and scattered high clouds with light rain showers to 19°N. From 19°N to 25°N there were scattered broken low clouds and scattered cirrus. From 25°N to 30°N there were broken low clouds with scattered middle clouds. From 30°N to target there were scattered low clouds becoming overcast over Shikoku.

Target:

Fukuyama: 3/10 stratocumulus, top 4000 ft; 1/10 altostratus at 17,000 ft. Winds at 13,000 ft were 206° at 17 knots.

Base on Return:

Broken low clouds and scattered middle clouds with scattered light showers in the area.

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

PART II - FINAL WEATHER SUMMARY

Mission No. 322

9/10 August 1945

Base at Take-Off:

Scattered low clouds and overcast middle clouds.

Route:

There were scattered low and overcast middle clouds to 17°N. From 17°N to 21°N there were broken low clouds, overcast middle clouds and scattered cumulonimbus with light to moderate rain. From 21°N to Iwo Jima there were scattered low and middle clouds. From Iwo Jima to target area there were scattered low clouds.

Target: Aragasaki: 3/10 (average) stratocumulus, top 5000 ft. Winds at 15,000 ft were 240° at 9 knots.

Base on Return:

Scattered low and broken high clouds.

Remarks: Weather was as forecast.

PART III - WEATHER SUMMARY

Mission No. 323

10 August 1945

PLANNING FORECAST

Bases: 6/10 low cloud base 1600 ft. tops 8000 ft; 5/10 thin layers middle and high cloud and occasional moderate showers.

Route:

To 16°N: Same as bases.
To 25°N: Storm area (west edge) with 5-7/10 low cloud base 1200 ft, tops 7-15,000 ft and a few to 20,000 ft. Overcast layers of middle and high cloud to 30,000 ft.
To Coast: Cloud rapidly decreasing to 4-6/10 low clouds, base 2000 ft, tops 7-10,000 ft. and further decreasing by coast. Scattered thin middle and high cloud.

Targets: Weak high cell over West Japan, giving light gradient of variable direction. All areas to have patchy low cloud amounting to 5-7/10 in hill areas and 2-4/10 on coasts.

OPERATIONAL FORECAST

Base at Take-Off:

Scattered low, broken middle and high clouds.

Route:

There will be broken low and middle clouds and overcast high clouds with moderate showers to 17°N. From 17°N to Iwo Jima there will be broken low and scattered middle and high clouds with light showers. From Iwo Jima to target area there will be scattered low, and high clouds.

Target: Tachichawa: 7/10 stratocumulus, base 1000 feet, top 5000 ft. Winds at 20000 ft will be 340° at 15 knots.

Bases on Return:

Scattered low and high clouds and broken middle clouds with light showers.

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

OBSERVED WEATHER

Base at Take-Off:

Scattered low clouds becoming broken and overcast middle clouds.

Route:

Scattered to broken low clouds with towering cumulus and overcast middle clouds becoming scattered to 24 N. From 24 N to target there were scattered low clouds becoming broken after landfall.

Target:

7/10 cumulus, top 5000 ft; some cirrus to northwest. Winds at 21,000 ft were 330° at 18 knots.

Base on Return:

Broken low and high clouds with scattered showers in the area.

FORECAST WEATHER

8-9 AUGUST 1945

30,000	6/10	8/10	9/10	3/10
25,000				
20,000				
15,000	Freezing Level	8/10	9/10	2/10
10,000				
5,000	4/10	7/10	7/10	4/10
SURFACE				3/10
	MARIANAS	20°N	25°N	30°N
				TARGET

OBSERVED WEATHER

30,000				
25,000				
20,000		2/10		1/10
15,000	4/10			
10,000	9-10/10		2/10	
5,000	5/10	3-6/10	5-9/10	2/10
SURFACE				3/10

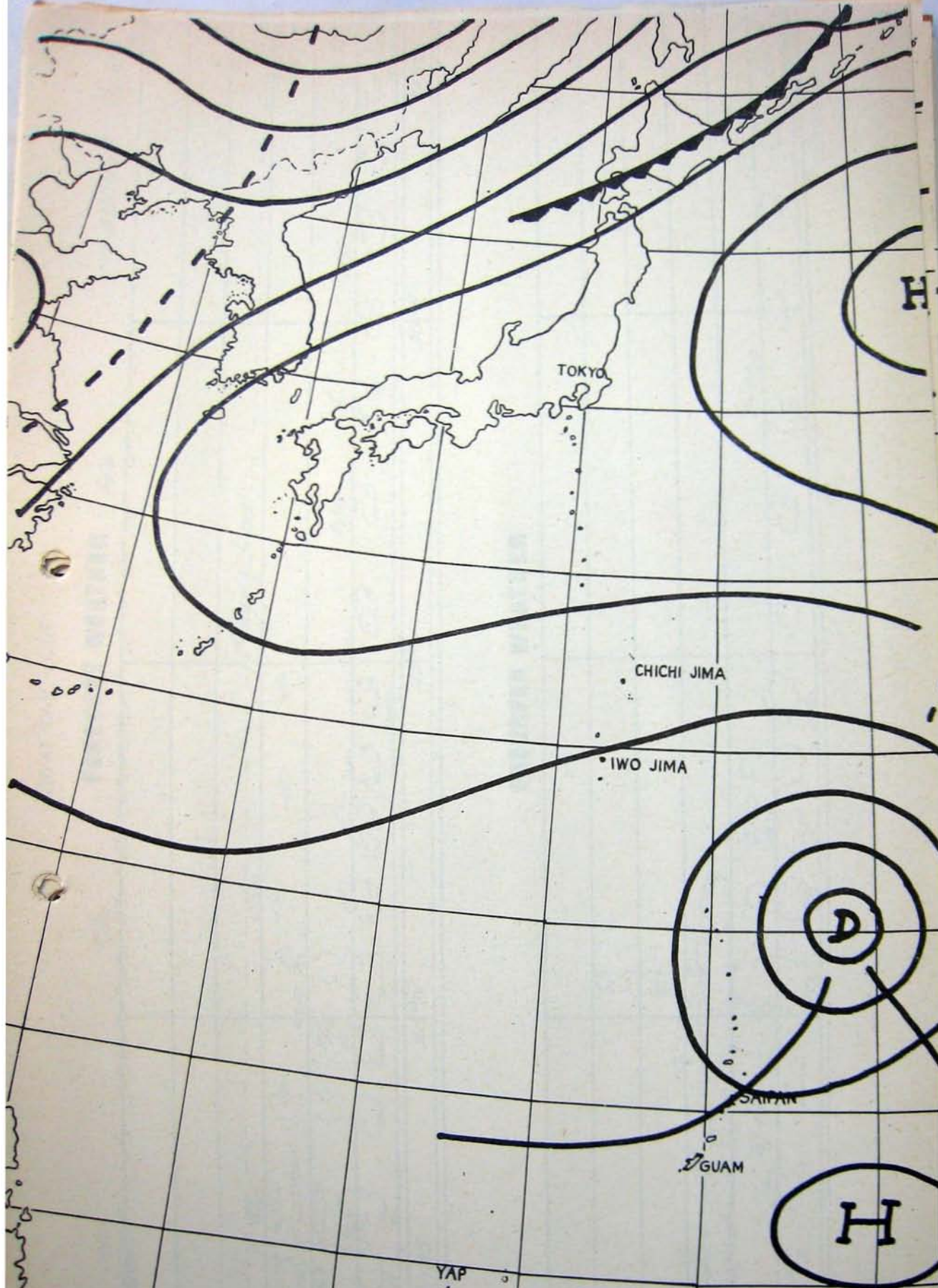
35PTU 8-96-64



PROGNOSTIC MAP
1200Z
8 AUGUST 1945
MISSION 321

8-96-64

0-36-64



SYNOPTIC MAP
1200Z
8 AUGUST 1945
MISSION 321

8-96-64
0-96-64

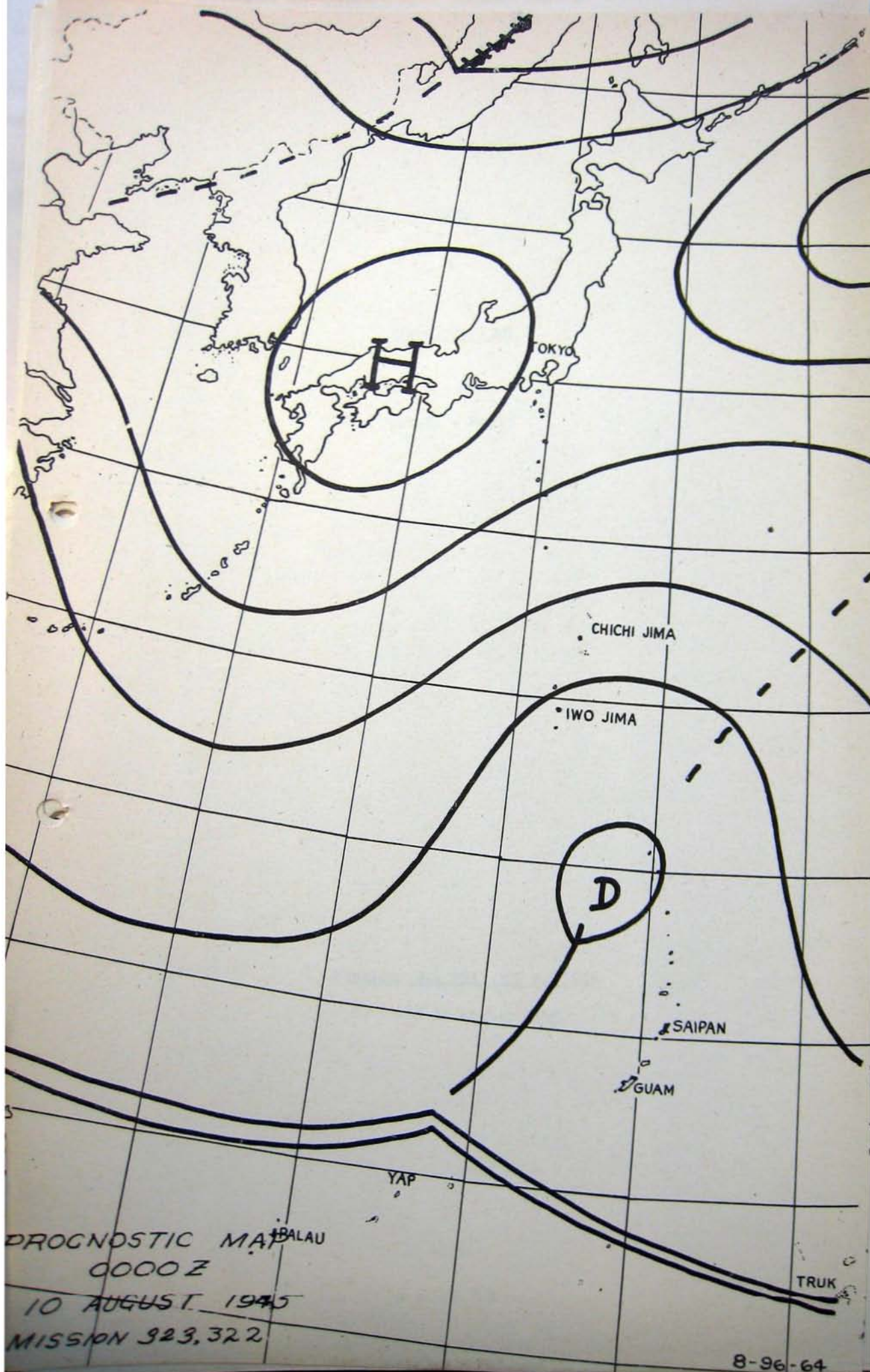
10 AUGUST 1945

FORECAST WEATHER		7/10	8/10	10 AUGUST 1945
30,000		7/10	10/10	
25,000				
20,000				
15,000		5/10	8/10	Freezing level --- 6/10
10,000		5/10	3/10	
5,000		4/10	5/10	7/10
SURFACE		4/10	6/10	6/10
	MARIANAS	20°N	25°N	30°N
				TARGET

OBSERVED WEATHER

OBSERVED WEATHER			
30,000			
25,000			
20,000			
15,000			
10,000	10/10	10/10	7/10
5,000	2.3-7/10	3/10	3-9/10
SURFACE			

8-96-64



PROGNOSTIC MAP
0000 Z
10 AUGUST 1945
MISSION 923,322

SECRET

ANNEX

C

COMMUNICATIONS

Part I - RCM

Part II - Radio

Missions No. 321, 322 and 323

8, 9 and 10 August 1945

SECRET

S E C R E T

PART I - RCM

1. Purpose:

- a. To D/F enemy radars.
- b. To conduct a general search in the 20-3000 megacycle region.
- c. To barrage jam the enemy gun-laying and searchlight radars in the 72-84 megacycle and 190-210 megacycle regions and to spot jam any enemy gun-laying or searchlight radars that appear outside the barrage.
- d. To confuse enemy radars by the use of rope.

2. Method:

a. Fifteen RCM Observers participated and used the following equipment to accomplish the search and jamming: 127 - APT-1, 64 - APQ-2, 8 - ARQ-8, 15 - APR-4, 15 - APA-11, 2 - APA-24, 1 - ARR-7 and 24 - APT-3 Modified.

b. Two special jamming airplanes were furnished by the 314th Wing to cover the strike of the 315th Wing. These special jamming airplanes were equipped to barrage and spot jam gun-laying and searchlight radars and to infest the area with rope. One airplane of the 315th Wing equipped with 8 electronic jammers and search equipment employed electronic countermeasures for the first time by this Wing.

c. For the daylight strike of the 314th Wing, each flight squadron was equipped to barrage and spot jam the gun-laying radar bands.

3. Results:

a. Fifty-eight intercepts were recorded and are listed at the end of this section.

b. The barrage produced by the special jamming airplanes and flight squadrons was reported as adequate except for small gaps which were filled by spot jammers.

c. Rope continued to confuse enemy searchlights.

4. Remarks:

a. The following unusual signals were intercepted: 154/1833/4, 310/250/?.

S E C R E T

LIST OF INTERCEPTS

00067	0500	32	3042N	13658E	080945	0115	21	121	S	EW	CHI
00068	0485	38	3448N	14045E	091045	1129	21	121	S	EW	CHI
00068	0920	18	3403N	14045E	081045	1137	21	121	S	EW	CHI
00069	0500	32	3042N	13600E	080945	0115	21	121	S	EW	CHI
00071	0475	40	3150N	14042E	081045	1211	21	121	S	EW	CHI
00076	0500	32	3042N	13600E	080945	0115	21	121	S	EW	CHI
00076	1000	26	3325N	13555E	080945	0204	21	121	S	EW	CHI
00076	2000	00	3347N	13520E	080945	0222	21	121	S	GL	OTAO3
00076	1843	08	3440N	13810E	081045	1037	21	121	S	GL	OTAO3
00076	0480	34	2942N	13740E	080945	0049	21	121	S	EW	CHI
00076	0500	25	2945N	13738E	080945	0051	21	121	S	EW	CHI
00078	0485	36	3302N	14045E	081045	1155	21	121	S	EW	CHI
00080	0480	17	3247N	13523E	080945	0150	21	121	S	EW	001010202
00080	0290	25	2425N	13812E	081045	1025	21	121	S	EW	CHI
00081	0506	32	3042N	13600E	080945	0115	21	121	S	EW	CHI
00083	0481	20	3510N	14045E	081045	1121	21	121	S	EW	CHI
00084	0500	32	3042N	13600E	080945	0115	21	121	S	EW	CHI
00085	0480	40	2938N	13745E	080945	0048	21	121	S	EW	001010202
00087	0500	24	2954N	13732E	080945	0053	21	121	S	EW	001010202
00090	0920	16	3317N	14040E	081045	1146	21	121	S	EW	001010202
00091	0363	15	3436N	13808E	081045	1031	21	121	S	EW	001010202
00091	0485	04	3542N	14042E	081045	1103	21	121	S	EW	001010202
00091	0901	08	3230N	14040E	081045	1159	21	121	S	EW	001020002
00093	0728	16	3520N	14020E	081045	1016	21	121	S	EW	001020002
00095	0000	02	3215N	13605E	080945	2300	21	121	S		
00095	0390	40	3238N	13529E	080945	0150	21	121	S	EW	001010202
00096	0400	40	3142N	13610E	080945	0132	21	121	S	EW	001030003
00096	0360	40	3300N	13500E	080945	0200	21	121	S	EW	001010202
00097	0400	08	3030N	13707E	080945	0107	21	121	S	EW	001010202
00098	0370	38	3312N	13506E	080945	0200	21	121	S	EW	001010202
00100	0725	09	3335N	13555E	080945	0110	21	122	P	EW	CHI
00101	0515	15	3024N	13712E	080945	0105	21	121	S	EW	001010202
00105	0380	36	3226N	13537E	080945	0136	21	121	S	EW	001010202
00105	0490	21	3510N	13815E	081045	1038	21	121	S	EW	001010202
00108	0000	10	3220N	13600E	080945	2305	21	121	S		
00108	0400	42	3240N	13530E	080945	2326	21	121	S	EW	001010202
00108	0330	40	2930N	13505E	080945	0135	21	122	P	EW	001010202
00108	0390	56	2959N	13728E	080945	0055	21	121	S	EW	001010202
00108	0250	00	3317N	13502E	081045	0104	21	121	S	EW	001010202
00109	0370	50	3226N	13537E	080945	0136	21	121	S	EW	001010202
00110	0340	28	3325N	13407E	080945	0055	21	121	P	EW	001010202
00110	0400	34	3018N	13718E	080945	0100	21	121	S	EW	001010202
00110	0370	52	3226N	13537E	080945	0136	21	121	S	EW	001010202
00140	0400	00	3315N	13505E	081045	1303	21	121	S	EW	001030003
00148	0500	00	3300N	13520E	081045	1300	21	121	S	EW	001030003
00148	0483	10	3300N	13435E	080845	2338	21	121	S	EW	001030003
00150	0485	09	3018N	14008E	081045	0913	21	121	S	EW	001030003
00150	0500	09	3135N	13612E	080945	0132	21	121	S	EW	001030003
00150	0500	08	3135N	13612E	080945	0132	21	121	S	EW	001030003
00151	0490	95	3535N	140 30E	081045	1113	21	121	S	EW	001030003
00154	0490	08	3210N	13440E	080845	2343	21	121	S	EW	001030003
00154	1833	04	3558N	13950E	081045	1102	21	121	S		
00155	0500	05	3135N	13612E	080945	0132	21	121	S	EW	001030003
00155	0000	04	3320N	13415E	080845	2346	21	121	S	EW	001030003
00158	0488	10	3200N	13440E	080945	0117	21	121	S	EW	001030003
00158	0492	23	3412N	13808E	081045	1025	21	121	S	EW	001030003
00190	0000	03	3546N	13944E	081045	1058	31	121	S		
00310	0250	00	3332N	13448E	081045	1308	21	121	S		

S E C R E T

PART II - RADIO

1. Strike Reports: A total of 21 Strike Reports were received by the Wing Ground Stations.
2. Fox Transmissions: Eighty-one per cent of all radio operators successfully received "F" type "Dummy" messages, during this series of missions. Each Wing Ground Station transmitted at least 2 of this type of messages. Regularly scheduled broadcasts included Time Signals and Weather transmissions.
3. Frequencies: Signal strengths, of all wing strike frequencies, averaged S-4, R-4 for the entire mission. Following is a percentage breakdown of traffic per frequency: 21 per cent on 3 megacycles; 37 per cent on 7 megacycles; and 42 per cent on 11 megacycles.
4. Navigational Aids: There were no requests for fixes or bearings during these missions. Most of the aircraft utilized radio ranges, homers and broadcast stations for navigational aid.
5. Net Discipline and Security: No violations of security or breaches in net discipline were recorded.
6. Enemy Transmissions: The following incidents of jamming, enemy interference and transmissions were recorded during these missions:
 - a. 3020 kcs: Negligible.
 - b. 6615 kcs:
 - (1) Two instances of tone jamming were ineffective.
 - (2) Four instances of CW jamming were ineffective.
 - c. 10305 kcs: Negligible.
 - d. 3990 kcs: Keyed CW at 1900Z was very effective.
 - e. 7415 kcs: Keyed CW at 1930Z and 0115Z was very effective.
 - f. 10820 kcs: Negligible.
 - g. 3810 kcs: Steady CW between 1019Z and 1915Z was effective.
 - h. 6640 kcs: CW and voice from 1030Z to 2200Z were ineffective.
 - i. 10965 kcs: CW and voice between 1120Z to 2200Z were ineffective.
7. Distress: The 58th Wing reported several warning transmissions from aircraft in trouble; however, these planes reached base safely.
8. Equipment Malfunctions: AN/ART-13: 2 inoperative; 2 dynamotors burned out; 2 no side tone; BC-348: 2 inoperative; 1 dynamotor, inoperative; 1 volume control and beat frequency oscillator, inoperative; 1 crystal phasing, inoperative; AN/ARN-7: 1 loop antenna, inoperative; 2 inoperative sets; SCR-522: 1 receiver, inoperative; 1 dynamotor reset relay, inoperative; Interphone: 2 inoperative; RL-42: 3 inoperative; 1 weight lost.

ANNEX

D

INTELLIGENCE

Part I - Enemy Air Opposition

Part II - Enemy Antiaircraft

Part III - Damage Assessment

Missions No. 321, 322 and 323

8, 9 and 10 August 1945

S E C R E T

PART I - ENEMY AIR OPPOSITION

1. Summary:

- a. Approximately 41 enemy fighters were seen during the 2 night strikes and 1 daylight strike at Fukuyama, Nippon Oil Refinery and Tokyo Arsenal Complex, respectively, on 8, 9 and 10 August 1945. There were no attacks, no losses nor damages, and no claims.
- b. A total of 5 enemy fighters were seen during the Fukuyama strike.
- c. During the night strike at Nippon Oil Refinery, on breaking away from the target, 1 B-29 almost collided with a stubbily-constructed twin-engine fighter which was described as having wings tapered on both leading and trailing edges. Shortly after bombs away, 1 B-29 crew sighted 8 unidentified enemy aircraft simultaneously. Running lights on each were observed and the lights from 1 of the enemy aircraft were reported to be "searching the sky". These particular enemy aircraft crossed from left to right in front of and above the reporting B-29. It was observed by 1 B-29 crew that "on a green light signal from the ground, an enemy aircraft made a pass at a bomber which was within the beam of a searchlight; instantly, AA gunfire ceased; and, upon completion of the pass, another green light from the ground was noticed and AA batteries resumed firing."
- d. During the daylight strike at Tokyo Arsenal Complex an estimated 6 single-engine and 3 twin-engine aircraft were encountered but there were no attacks. Approximately 40 P-51s of the escort were observed. The fighter escort was very active and no enemy fighter made a close approach.

PART II - ENEMY ANTI-AIRCRAFT

1. Mission No. 321 - Fukuyama Urban Area:

- a. The primary target was bombed by 91 aircraft of the 58th Wing between 1325Z - 1435Z from 13,100 - 13,800 feet. Axis of attack varied from 212° - 327°. Weather was reported as C.VU-4/10 undercast.
- b. En route to the target flak was nil.
- c. Over the target flak was described as meager, inaccurate and heavy by only 3 aircraft. About 20 aircraft reported medium flak as meager and inaccurate. The remaining aircraft found flak to be nil. No searchlights were reported.
- d. On withdrawal flak was nil.
- e. No aircraft were lost or damaged as a result of flak on this mission.
- f. Miscellaneous AA Observations:
 - (1) One aircraft bombed Usa through a 10/10 undercast and received no flak.
 - (2) Five parachute flares were observed descending over the target area.
 - (3) Blackout conditions on route to, over the target, and on withdrawal were described as poor.

2. Mission No. 322 - Nippon Oil Refinery, Amagasaki:

a. The primary target was bombed by 97 aircraft of the 315th Wing between 1459Z - 1711Z from 15,200 - 17,300 feet. Axis of attack was 32°. Secondary targets were Kushimoto (33 27 N - 135 47 E) bombed by one aircraft, Miagi (33 40 N - 134 25 E) bombed by 1 aircraft, Shimotsu (34 06 N - 135 08 E) bombed by 2 aircraft. Weather at the primary target was reported as CAVU to 5/10 undercast with winds of 9 knots from 240°.

b. En route to the target gun flashes were observed on the ground at 34 16 N - 135 05 E. Meager, inaccurate, heavy gun fire was reported from Sano (35 25 N - 135 20 E).

c. Over the target area flak was described as meager to moderate inaccurate to accurate, heavy and medium. The type of fire was generally barrage with scattered reports, of continuously pointed and predicted concentration.

d. On withdrawal, meager and inaccurate, heavy flak was reported south of Kyoto at 34 52 N - 135 45 E.

e. No aircraft were lost to flak on this mission, and of 95 bombing, only 1 or 1.05%, sustained flak damage.

f. Searchlights were observed as tabulated below. They were generally ineffective. The use of rope and black painted bottoms were reported as effective countermeasures.

<u>LOCATION</u>	<u>COORDINATES</u>	<u>REMARKS</u>
Sano	34 25 N - 135 20 E	7
Ma-ga-saki	34 43 N - 135 24 E	10
Kobo	34 41 N - 135 12 E	20-30 (3 blue)
Osaka	34 40 N - 135 30 E	30-41 (3 blue)
Takatsuka	34 51 N - 135 37 E	5
Uji	34 53 N - 135 48 E	12
Ki-no-moto	33 53 N - 136 06 E	2

g. Five to 6 green flares were observed in the target area, and 2 to 3 blue-green parachute flares were observed at 12,000 to 14,000 feet over the target. There were 2 salvos of 6 rockets which were fired from the north boundary of the target area. These rockets produced a white trail during ascent and disappeared at about 6000 feet.

h. Blackout was effective.

3. Mission No. 323 - Tokyo Arsenal Complex:

a. The primary radar target was bombed by 70 aircraft of the 314th Wing between 0050Z - 0059Z from 22,200 - 26,200 feet. Axis of attack varied from 65° - 86°. Weather was reported as 5/10 - 7/10 undercast.

b. En route to the target flak was nil.

c. Flak was first encountered at Tachikawa and was described as intense, accurate and heavy, mostly predicted concentrations. Over the target flak was described as moderate to intense, inaccurate to

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accurate and heavy. The scattered cloud undercast apparently rendered this defense less effective than on Mission No. 320 flown over the same area.

d. The time over target-damage relationship is presented below:

<u>Time</u>	<u>No. A/C in Formation</u>	<u>No. A/C Damaged</u>
0049½Z	6	6
0050Z	9	4
0050½Z	10	4
0051Z	8	1
0055Z	9	5
0056Z	10	0
0057Z	10	5
0059Z	9	2

e. As in the case of Mission No. 320, these figures again indicate only a small degree of saturation of the defenses. Again a 4-minute break occurred between groups, giving the defenses a chance to get set for the second group.

f. On withdrawal meager, inaccurate and heavy flak was encountered near Kasumigaura Lake, Narita (35 46 N - 140 20 E), Mobera Airfield and Choshi Point.

g. No aircraft were lost to flak on this mission, and of 73 aircraft bombing (all targets), 27 or 36.9%, sustained flak damage. It was noted that these same defenses inflicted 56.6% damage on Mission No. 320 under identical conditions with the exception of clear weather in the case of Mission No. 320 and a 5-7/10 undercast on this mission.

PART III - SECTION A - FUKUYAMA-90.29-URBAN - DAMAGE-ASSESSMENT*

1. Summary of Damage:

Built-up area: Sq. Mi. total - 1.2: Sq. Mi. destroyed - .88

Per cent destroyed - 73.3

Planned target area: 1.0 Per cent destroyed: 88

Total damage to date: .88 Per cent of built-up area: 73.3

Targets damaged by current strike: 2 numbered; 26 other.

2. Damage within limits of built-up area:

a. <u>Area damage from current strike:</u>	<u>Sq. Mi.</u>	<u>Destroyed</u>	
		<u>Sq. Mi.</u>	<u>Per cent</u>
Built-up area (Urban)	1.08	.80	74.0
Built-up area (Industrial)	.12	.08	66.6
Built-up area (Total)	1.20	.88	73.3

b. Damage to targets:

Damage

90.29-1931 Imperial Dye Works	20% cloud covered - about 60% of visible portion destroyed
Unidentified Industry	20% destroyed
" "	Gutted
" "	Gutted
" "	Gutted

Of at least 23 additional unidentified industries in the built-up area, 20 were destroyed.

3. Damage outside built-up area: (within 5 mile radius of center of city)

a. Area Damage: None

b. Damage to Targets:

Damage

90.29-XXI 6282 Barracks Area	15% destroyed
Of 15 small unidentified industries outside the built-up area, 2 were destroyed.	

Inclosure: Annotated mosaic showing damage

* Based on 20th A.F. CIU D.A. Report No. 182

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KEY

- Built Up Area
- Industrial Area
- Damage

Damage Assessment Rpt 182
Fukuyama 90.29 - Urban
20 AF - Mission 321 - 8 Aug 1945
C.I.U. - 20 AF



XXI 6282

0 1000' 2000' 3000'
Approx. Scale - Feet

2887 C 35PTU 18 AUG 45

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

PART III - SECTION B - NIPPON OIL REFINERY & TANK FARM - AMAGASKI
DAMAGE ASSESSMENT*
 90.25 - 1203

1. Summary:

a. Good 40" photos (no stereo) reveal the target to be in-operative, almost completely destroyed as a result of the above mission and 20 AF Mission 281, 19/20 July 1945.

b. While damage from the earlier mission was concentrated in the tank farm (Area C) and the synthetic oil plant (Area A), damage from mission 322 was particularly heavy in the refinery (Area B), tank storage (Area D), the warehouse area in the northeast section of the target, with additional heavy damage to the synthetic oil plant (see Inclosure)

c. Of the original total oil storage capacity of 1,496,700 bbls. (42 USG), 1,175,400 bbls. or 78% have been damaged or removed, of which 453,200 bbls. or 30% is new damage from mission 322.

d. Owing to lack of stereo pairs, it is impossible to ascertain the damage to the refinery (21, 22, 35, 36 - Area B). It appears that the damage ranges from only slight in the northeast portion to almost complete destruction in the southwest portion.

e. There is no new damage in the tank farm area (Area C) where previous damage and removal amounted to 555,300 bbls., or 75% of the original total storage capacity (738,200 bbls.).

f. Heavy damage was inflicted on Target 90.25-540B, Section No. 2 of the Kansai Kyodo Steam Power Plant, the largest generating station in Japan. This damage to the reinforced concrete generating plant and adjoining structures may have been the result of the current strike or of mission 281, when clouds restricted photo coverage to Target 1203 only. Target 540B is about 1300' east of Target 1203.

2. Summary of Damage to Tankage: (1 bbls. 42 USG.)

	CRUDE	TYPE OF STORAGE		REFINED PRODUCTS	TOTAL
		INTER- MEDIATE	UN- KNOWN		
Orig Capacity - bbls.	738,200	141,300	330,000	287,200	1,496,700
New Damage - bbls.	0	106,600	3295,100	51,500	453,200
- %		75%	90%	18%	30%
Old Damage - bbls.	431,900	5,000	21,100	129,300	587,300
- %	58%	4%	6%	45%	39%
Removal - bbls.	123,400	None	None	11,500	134,900
- %	17%			4%	9%
Total damage and removal - bbls.	555,300	111,600	316,200	192,300	1,175,400
- %	75%	79%	96%	67%	78%

Inclosure: Annotated enlargement showing damage follows this section.

* Based on 20th A.F. CIU D.A. Report No. 191

ITEMIZATION OF DAMAGE

ANNO. NO.	IDENTIFICATION	DESCRIPTION OF DAMAGE
1	Unidentified Bldg.	Destroyed
2	" "	60% Destroyed
3	Storage	Destroyed
4	"	"
5	"	"
7	"	"
8	"	"
10	"	"
11	Unidentified Bldg.	
13	Storage	20% destroyed, 80% minor damage
14	"	Destroyed
15	"	Gutted
16	"	Destroyed
17	"	"
18	"	Gutted
19	Still	"
20	Unidentified Bldg.	60% destroyed, 40% gutted
21	Cracking plant	Appears approx 50% destroyed 50% damaged.
22	Cracking plant	Direct hit on principal bldg. probably destroyed.
23	8 Rundown tanks 2000bbls ea.	6 destroyed, 12000 bbls cap.
24	" " " "	" 8 destroyed, 16000 bbls cap.
25	4 " " "	" 4 destroyed, 8000 bbls cap.
26	6 Interwred tanks 5000 bbls ea	4 destroyed 20000 bbls cap.
27	6 Interwred tanks 5000 bbls ea	3 destroyed, 15000 bbls cap.
28	4 Interwred tanks 5000 bbls ea	3 destroyed, 15000 bbls cap
29	Possible Office	Destroyed
30	" "	Destroyed
31	12 storage tanks (refined) 9500 bbls ea	3 destroyed, 23500 bbls cap
33	4 tanks (Unknown)	4 destroyed, 13200 bbls cap
34	1 tank	Destroyed, 7400 bbls cap
35	5 horiz pressure tanks	Destroyed
36	Lube Oil Plant	Destroyed
38	4 Storage tanks	2 destroyed, 2300 bbls cap 1 removed, 11500 bbls cap
39	5 storage tanks	Destroyed, 21,200 bbls cap
40	Storage shed	
43	Storage tanks	Destroyed 100,000 bbls cap
44	" "	" " "
45	" "	" 40,000 bbl cap
52	3 small tanks	" 19700 bbl cap
53	Poss pump house	Destroyed
54	Unidentified bldg	30% destroyed 70% minor roof damage
59	Associated with 58	Twisted on foundation, probably destroyed
63	Gas converters & bldg	Area appears heavily damaged
66		
67	Sulphur removal system	Entire installation appears heavily damaged or destroyed (68)
68		Gantry Crane - one end destroyed
69		Gutted
70	Prob pump house	
71	Associated with 70	50% destroyed 50% damaged
72	Compressor house	Destroyed
73	Contact oven house	Many large holes in roof, large hole in NE wall 43,000 sq.ft. roof area
76	2 storage tanks	1 destroyed, 3600 bbl cap
79	Storage bldg	Destroyed
80	" "	"
81	Unidentified	"
82	"	"
83	Removal of Oil plant	"
84	8 Storage tanks	Destroyed, 10,400 bbl cap.

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Damage Assessment Rpt 191
 Target - Nippon Oil Refinery &
 Tank Farm - Amagasaki
 90.25-1203
 Mission 322
 C.I.U. - 20 A.F.

KEY

- | | |
|--------------------------------|-----------------------|
| Minor Roof Damage | Gutted |
| Destroyed or Structural Damage | Old Damage or Removal |

S E C R E T

ANNEX

E

CONSOLIDATED STATISTICAL SUMMARY

Missions No. 321, 322 and 323

8, 9, 10 August 1945

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TWENTIETH



AIR FORCE

CONSOLIDATED STATISTICAL SUMMARY OF COMBAT OPERATIONS

FORM 3421 - 323

MISSION NO.

8, 9, 10 August 1945

Field Orders #18 & #19

Mission #321 - 58th Wing - Fukuyama Urban Area - 93 Aircraft
Mission #322 - 315th Wing - Nippon Oil Refinery - Normal Effort
Mission #323 - 314th Wing - Tokyo Arsenal Complex (PR) - Maximum Effort - 2 Groups

EFFECTIVENESS OF MISSIONS

Aircraft Airborne 290
Percent Of Aircraft Scheduled 98.3%

Aircraft Bombing Primary Target . . . 256
Percent Of Bombing Aircraft Airborne. 94.5%

Bombs Dropped On Primary Targets. 1794 Tons

Bombs Dropped On Other Targets. 37 Tons

Bombing Results - Preliminary reports show the following damage:

#321 - .88 sq miles or 73.3% of built-up area.

#322 - Almost entirely destroyed.

#323 - No damage assessment available at this date.

COST OF MISSIONS

Aircraft Lost None

Aircraft Damaged. 31
Percent Of Aircraft Airborne. 10.7%

Crew Member Casualties. None

Aircraft Landing At Iwo Jima. 26

18 August 1945

DATE OF ISSUE

-SECRET-

33RD STATISTICAL CONTROL UNIT

35PTU 7-11-55

S E C R E T

MISSION 321 - 323

DATE 8, 9, 10 August 1945

A I R C R A F T P A R T I C I P A T I N G

UNIT	NUMBER OF AIRCRAFT				TIME OF TAKE OFF			TIME OF RETURN			NUMBER OF AIRCRAFT						
	ON HAND	SCHED-ULED	FAILING TO TAKEOFF	AIR-BORNE	DATE	FIRST	LAST	DATE	FIRST	LAST	BOMBING PRIMARY TARGET	BOMBING SECONDARY TARGET	BOMBING OTHER TARGETS	COMPLETING AUXILIARY MISSIONS	EFFECTIVE	NON-EFFECTIVE	LANDING AT IWO JIMA
58WG	137	86 12 <u>a</u> 3 <u>b</u>	- - -	86 12 3	8 Aug.	0633 Z	0746 Z	8 Aug.	Mission #321 2024 Z	2205 Z	81 10 -	- - -	- - -	- - 3	81 10 3	5 2 -	4 - -
315WG	170	110 2 <u>c</u>	7 -	107 <u>d</u> 2	9 Aug.	0830 Z	0932 Z	9 - 10 August	Mission #322 2210 Z	0003 Z	95 -	- -	2 -	- 2	97 2	10 -	14 -
314WG	94	80 2 <u>e</u>	2 -	78 2	9 Aug.	1645 Z	1726 Z	10 Aug	Mission #323 0657 Z	0836 Z	70 -	- -	3 -	- 2	73 2	5 -	8 -
TOTAL	401	276 12 <u>a</u> 7	9 - -	271 12 7							246 10 -	- - -	5 - -	- - 7	251 10 7	20 2 -	26 - -

35 PM 7-13-45

a Pathfinder aircraft.
b 2 wind run aircraft and 1 super dumbo aircraft.
c Wind run aircraft.
d Includes 4 spare aircraft.
e Super dumbo aircraft.

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BREAKDOWN OF ALL AIRCRAFT FAILING TO BOMB PRIMARY TARGET

MISSION ~~321 - 323~~
DATE ~~8, 9, 10 August 1945~~

UNIT	MECHANICAL FAILURE			PERSONNEL ERROR			FLIGHT CONDITIONS			ENEMY ACTION			OTHER		
	NON-EFFECT-IVE	BOMBED SECONDARY	BOMBED OTHER	NON-EFFECT-IVE	BOMBED SECONDARY	BOMBED OTHER	NON-EFFECT-IVE	BOMBED SECONDARY	BOMBED OTHER	NON-EFFECT-IVE	BOMBED SECONDARY	BOMBED OTHER	NON-EFFECT-IVE	BOMBED SECONDARY	BOMBED OTHER
58WG	5	-	-	2 <u>a</u>	-	-	Mission #321	-	-	-	-	-	-	-	-
315WG	7	-	2	3 <u>b</u>	-	-	Mission #322	-	-	-	-	-	-	-	-
314WG	4	-	3	1 <u>a</u>	-	-	Mission #323	-	-	-	-	-	-	-	-
TOTAL	16	-	5	6	-	-		-	-	-	-	-	-	-	-

a Maintenance errors.

b 2 maintenance errors and 1 air crew error.

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MISSION 321 - 323
DATE 8, 9, 10 August

BOMBING RUN

UNIT	TARGET BOMBED		AIRCRAFT DROPPING BOMBS	TIME OF RELEASE		ALT. OF RELEASE		VISUAL SIGHTING				RADAR SIGHTING		
	NAME OF TARGET	TYPE		EARLIEST	LATEST	LOWEST	HIGHEST	STANDARD	ON REFER- ENCE OR OFFSET PT.	RADAR RUN WITH VIS. CORRECT'NS	DROPPING ON LEADER	DIRECT	OFFSET	DROPPING ON LEADER
	58WG Fukuyama Urban Area			P	81	1337 Z	1435 Z	Mission #321 13100	13800	43	-	-	-	38
	Fukuyama Urban Area			P	10 <u>a</u>	1325 Z	1346 Z	13400	13800	6	-	-	-	4
	Usa			TO	1 <u>b</u>	1430 Z	-	16000	-	-	-	-	-	1
	315WG Nippon Oil Refinery,			P	95	1529 Z	1711 Z	Mission #322 15200	17300	4	-	-	-	90
	Amagasaki													
	Shimotsu Refinery,			P <u>c</u>	2	1459 Z	1509 Z	16300	16400	-	-	-	-	2
	Wakayama													
	Katsuura			TO	1 <u>b</u>	Unknown	Unknown	Unknown	Unknown	-	-	-	-	1
	Mugi			TO	1	1549 Z	-	15400	-	1	-	-	-	-
	Kushimoto			TO	1	1537 Z	-	10600	-	1	-	-	-	-
	Kimoto			TO	1 <u>b</u>	1601 Z	-	15900	-	-	-	-	-	1
	314WG Tokyo Arsenal Complex			FR	70	0050 Z	0059 Z	Mission #323 22200	20200	1	-	3	29	4
	Kanaya Airfield			TO	1	0035 Z	-	16850	-	1	-	-	-	-
	Yokaichiba Airfield			TO	1	0109 Z	-	22200	-	1	-	-	-	-
	Hachijo Jima			TO	1	2335 Z	-	14500	-	1	-	-	-	-
	TOTAL Primary Targets			P	243					43	-	4	29	134
	Primary Targets			P	10 <u>a</u>					6	-	-	-	4
	<u>a</u> Pathfinder aircraft. <u>b</u> Also bombed primary target. <u>c</u> Primary target for Wind Run aircraft.													

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SECRET

MISSION ~~321 - 323~~

DATE ~~8, 9, 10 August 1945~~

DISPOSITION OF BOMBS

UNIT	TYPE OF BOMB	FUZE SETTING		LOADED ON AIR- BORNE AIRCRAFT		RELEASED ON TARGETS						JETTISONED		RETURNED		OTHER	
						PRIMARY *		PRIMARY **		TARGETS OF OPP.							
		Nose	Tail	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons
58WG	AN-M17A1 500# I.C.	Open	5000'	1807	451.8	1666	416.5	-	-	-	-	139	34.8	2	.5	-	-
	AN-M17A2 100# I.B.	Inst.	-	4332	149.4	4035	139.2	-	-	35	1.2	262	9.0	-	-	-	-
	T-3 Pamphlets	-	-	8	-	-	-	-	-	-	-	-	-	-	-	8 a	-
315WG	AN-M64 500# G.P.	.1	N.D.	4191	1047.8	3608	902.0	64	16.0	89	22.3	430b	107.5	-	-	-	-
							Mission #322										
							Mission #323										
314WG	AN-M66 2000# G.P.	Inst.	N.D.	312	312.0	273	273.0	-	-	12	12.0	27c	27.0	-	-	-	-
	AN-M64 500# G.P.	Inst.	N.D.	208	52.0	188	47.0	-	-	6	1.5	14	3.5	-	-	-	-
TOTAL	AN-M17A1 500# I.C.			1807	451.8	1666	416.5	-	-	-	-	139	34.8	2	.5	-	-
	AN-M17A2 100# I.B.			4332	149.4	4035	139.2	-	-	35	1.2	262	9.0	-	-	-	-
	AN-M64 500# G.P.			4399	1099.8	3796	949.0	64	16.0	95	23.8	444	111.0	-	-	-	-
	AN-M66 2000# G.P.			312	312.0	273	273.0	-	-	12	12.0	27	27.0	-	-	-	-
	T-3 Pamphlets			8	-	-	-	-	-	-	-	-	-	-	-	8	-
	TOTAL			10858	2013.0	9770	1777.7	64	16.0	142	37.0	872	181.8	2	.5	8	-
* Main force.																	
** Wind Run.																	
a Disposition - 2 each on Onomichi, Mikara, Takahara and Mitsu.																	
b Includes 162 bombs dropped safe with complete arming wires.																	
c Includes 7 bombs dropped safe with complete arming wires.																	

SECRET

S E C R E T

MISSION ~~321 - 323~~
DATE ~~8, 9, 10 August 1945~~

AIRCRAFT LOST AND DAMAGED - PERSONNEL CASUALTIES

UNIT	AIRCRAFT LOST							AIRCRAFT DAMAGED								PERSONNEL CASUALTIES					
	ENEMY A/C	ENEMY A/A	ENEMY A/C & A/A	ACC. & MECH	OTHER	UN- KNOWN	TOTAL	ENEMY A/C	ENEMY A/A	ENEMY A/C & A/A	ACC. & MECH	OWN GUNS	OTHER	UN- KNOWN	TOTAL		TOTAL PARTICI- PATING	KILLED	MISS- ING	WOUNDED & INJURED	TOTAL CASUALTIES
															MAJOR	MINOR					
58WG							None	-	-	-	-	-	1	-	-	1	1175				None
315WG							None	-	1	-	-	-	-	-	-	1	1111				None
314WG							None	-	29	-	-	-	-	-	11	18	905				None
TOTAL							None	-	30	-	-	-	1	-	11	20	3191				None

S E C R E T

S E C R E T

MISSION 321 - 323

DATE 8, 9, 10 August 1945

ENEMY OPPOSITION AND AMMUNITION EXPENDITURE

UNIT	ENEMY A/C SIGHTED	ATTACKS BY E/A	ENEMY A/C DESTROYED & DAMAGED			50 CALIBER AMMUNITION EXPENDITURE				
			DESTROYED	PROBABLY DESTROYED	DAMAGED	FIRE IN COMBAT	TEST FIRED	JETTISONED	ON LOST A/C	TOTAL
58WG	5	-	-	-	Mission #321 -	-	-	700	-	700
315WG	27	-	-	-	Mission #322 -	-	2547	-	-	2547
314WG	9	-	-	-	Mission #323 -	-	5560	1200	-	6760
TOTAL	41	-	-	-	-	-	8107	1900	-	10007

S E C R E T

S E C R E T

MISSION 321 - 323
DATE 8, 9, 10 August 1945

FLIGHT DATA & FUEL CONSUMPTION

MISSION NUMBER	#321	#322	#323
UNIT	58TH WG	315TH WG	314TH WG
AIRCRAFT CONSIDERED	87	88	66
AVERAGE FLYING TIME	14:11	14:22	14:41
FUEL CONSUMED:			
Average	5863	5387	6442
Maximum	6300	5815	7020
Minimum	5400	5135	5880
FUEL REMAINING:			
Average	1051	941	845
Maximum	1650	1333	1288
Minimum	500	470	226
AVG. GALS. USED PER HOUR	413.5	374.9	438.8
TOTAL USED ON AIRBORNE A/C	567493	548843	509556

WEIGHT DATA

NO. AIRCRAFT AIRBORNE	98	109	78
AVG. BASIC WT. OF AIRCRAFT	74968	71205	75578
AVERAGE USEFUL LOAD	59750	63322	60505
AVG. NO. OF BOMBS LOADED	Mixed	38.45	Mixed
	Load	M-64	Load
AVG. WT. OF BOMBS LOADED	11669	20648	9646
AVERAGE FUEL LOADED	6907	6324	7291
AVG. WT. OF FUEL LOADED	41442	37944	43746
AVERAGE MISC. WEIGHT	6639	4730	7113
AVG. GROSS WT. AT TAKE OFF	134738	134527	136083

Bomb Weights: M-17A1 - 465 lbs.
M-47A2 - 70 lbs.
M-64 (TNT) - 535 lbs.
M-66 - 2055 lbs.
M-64 (Comp B) - 550 lbs.

S E C R E T

S E C R E T

ANNEX

F

TWENTIETH AIR FORCE FIELD ORDER

Missions No. 321, 322 and 323

8, 9, and 10 August 1945

S E C R E T

SECRET

SECRET

Auth: CG, Twentieth Air Force

Initials: RSP

Date: 8 August 1945

FIELD ORDERS)

NUMBER 18)

TWENTIETH AIR FORCE

GUAM

8 August 1945 - 0800K

Map: JAPAN Aviation Chart 1:218,880.

MPI Reference: Twentieth Air Force Litho-Mosaic FUKUYAMA AREA 90.29 - Urban.

1. Omitted.

2. Twentieth Air Force attacks FUKUYAMA URBAN AREA on 8 August 1945.

3. a. 53th Wing:

(1) MPI: 094097.

Force Required: 93 A/C

(2) Route:

Base

IWO JIMA

3331N - 13417E

341530N - 13334E (IP)

Target (3428N - 13322E)

3430N - 13300E

Left Turn

IWO JIMA

Base.

(3) Altitudes:

(a) Enroute to target: 3,000 - 3,800 ft. and 6,000 - 6,800 ft.

(b) Attack: 12,000 - 12,800 ft.

(c) Enroute from target: Minimum 15,000 ft.

(4) Bomb Load: 1 group M-47 IBs fused instantaneous nose, intervalometer setting 75 ft.; 2 groups M-17 ICs fused to open 5,000 ft. above the target, intervalometer setting 35 ft.

(5) Bombing Airspeed: CIAS 205 MPH.

(6) Method of Attack: By individual A/C with main force preceded by 12 pathfinder A/C. Maximum compressibility of striking force over target required.

(7) Pathfinders: First 12 A/C scheduled to strike target first will be designated pathfinders and will be flown by the best radar bombing crews.

(8) Takeoff: 081630K.

b. Omitted.

c. Omitted.

d. Omitted.

e. Omitted.

f. Omitted.

SECRET

SECRET

F.O. #18

g. Omitted.

x. Omitted.

4. Tactical Mission Number: 321.

5. a. (1) Twentieth Air Force SOI and SOP for strike reports, contact reports and IFF procedures.
- (2) Each flight squadron will be equipped to barrage jam the region 190-210 megacycles.
- (3) Observations of the extent and reliability of the barrage will be made while over the target.
- (4) Spot jamming will be conducted over the frequency ranges 180-190 and 210-220 megacycles, as desired by the Wing Commander and as governed by the capacity of the wing.
- (5) Jammers will be kept in operation at all times when closer than 50 miles to the mainland and will be turned off at all other times, except for preflight and postflight frequency checks, which are to be made on the ground while the jammers are installed in the airplanes.

b. Command Post: Hq., Twentieth Air Force, GUAM.

BY COMMAND OF LIEUTENANT GENERAL TWINING:

R K TAYLOR
Colonel, Air Corps
Chief of Staff

OFFICIAL:

J B Montgomery
J B MONTGOMERY
Colonel, G.S.C.
D C/S, Operations

DISTRIBUTION:

- 2 - CG, 58th Bomb Wing
- 2 - CG, 73rd Bomb Wing
- 2 - CG, 313th Bomb Wing
- 2 - CG, 314th Bomb Wing
- 2 - CG, 315th Bomb Wing
- 1 - CG, VII Fighter Comd
- 1 - CO, 3rd Photo Recon Sq
- 6 - A-3 Tactics, Twentieth Air Force
- 2 - 33rd SCU, Twentieth Air Force
- 1 - RCM Office, Twentieth Air Force
- 1 - Communications, Twentieth Air Force
- 1 - OAS, Twentieth Air Force
- 2 - CIU, Twentieth Air Force
- 1 - A-2 Reporting, Twentieth Air Force
- 4 - A-2, Twentieth Air Force

SECRET

SECRET

SECRET

Auth: CG, Twentieth Air Force

Initials: / / /

Date: 9 August 1945

FIELD ORDERS)
:
NUMBER 19)

TWENTIETH AIR FORCE
GUAM
9 August 1945 - 0500K

Map: JAPAN Aviation Chart 1:218,880.

1. Omitted.
2. Twentieth Air Force attacks targets 90.25 - 1203 and 90.17 - 356 on 10 August 1945.
3. a. VII Fighter Command:
 - (1) VII Fighter Command will furnish two groups of fighters to escort 314th Wing bombers into target area.
 - b. Omitted.
 - c. Omitted.
 - d. Omitted.
 - e. 314th Wing:
 - (1) Primary visual target: 90.17 - 356, NAKAJIMA AIRCRAFT CO.

<u>MPI</u>	<u>FORCE REQUIRED</u>
143091	2 Groups - Maximum

MPI Reference: XXI Bomber Command Litho-Mosaic TOKYO AREA
90.17 - 356.
 - (2) Secondary visual and primary radar target: 90.17 - 3600, TOKYO ARSENAL COMPLEX.
 - (3) Route:

Base
ITO JIMA (Assembly)
3437N - 13805E
3528N - 13835E (IP)
Target
3558N - 13950E
3558N - 14000E
3535N - 14030E
ITO JIMA
Base.
 - (4) Altitudes:
 - (a) Enroute to target: Not specified.
 - (b) Attack: 21,000 feet base.
 - (c) Enroute from target: To be at or below 20,000 feet passing ITO JIMA.
 - (5) Bomb Load: Maximum number of 2,000 pound GPs fused 1/10 nose and 1/40 tail, supplemented with 500 pound GPs, fused 1/10 nose and non-delay tail, to desired tonnage.

SECRET

SECRET

F.O. #19

- (6) Method of Attack: By column of squadrons with minimum time interval between squadrons.
- (7) 314th Wing will furnish two special R.C.M. jamming aircraft to 315th Wing to orbit point near target 1203 on night of 9/10 August 1945.
- (8) Takeoff: 100300K.

f. 315th Wing:

- (1) Primary visual and radar target: 90.25 - 1203

MPI

FORCE REQUIRED

055066

Normal Effort

MPI Reference: XXI Bomber Command Litho-Mosaic AMAGASAKI-
OSAKA AREA 90.25 - Urban.

- (2) Route:

Base
TWO JIMA
3350N - 13445E
341530N - 13504E (IP)
Target
3453N - 13526E
Right Turn
3407N - 13618E
TWO JIMA
Base.

- (3) Altitudes:

- (a) Enroute to target: Not specified.
- (b) Attack: 15,000 - 15,800 feet.
- (c) Enroute from target: 15,000 feet or above on withdrawal;
at or below 18,000 feet passing TWO JIMA.
- (4) Bomb Load: 500 pound GPs fused 1/40 nose and non-delay tail
to extent available, completing desired tonnage with 250
pound GPs, fused same.
- (5) Method of Attack: By individual aircraft employing direct
synchronous radar bombing, compressing attack into shortest
practical strike time.
- (6) The 315th Wing will notify the two special R.C.M. aircraft
of the 314th Wing as to their time of arrival and departure
at the target.
- (7) Takeoff: 091830K.

g. Omitted.

h. Omitted.

4. Tactical Mission Numbers:

1203	-	No. 322
356	-	No. 323

SECRET

SECRET

F.O. #19

5. a. (1) The special jamming aircraft of the 314th Wing will be equipped to barrage jam the regions 190-210 and 72-84 megacycles. Spot jamming will be conducted over the frequency ranges 180-190 and 210-220 megacycles as desired by the wing commander and as governed by the capacity of the wing. In addition, all strike aircraft will be equipped with one jammer within the barrage band listed above providing sufficient equipment is available.
- (2) All wings will be equipped to barrage jam the region 190-210 megacycles.
- (3) Observations of the extent and reliability of the barrage will be made while over the target.
- (4) Jammers will be kept in operation at all times when closer than 50 miles to the mainland and will be turned off at all other times, except for preflight and postflight frequency checks, which are to be made on the ground while the jammers are installed in the airplanes.

b. Command Post: Hq., Twentieth Air Force, GUAM.

BY COMMAND OF LIEUTENANT GENERAL TWINING:

R K TAYLOR
Colonel, Air Corps
Chief of Staff

OFFICIAL:

J B MONTGOMERY
Colonel, G.S.C.
D C/S, Operations

DISTRIBUTION:

- 2 - CG, 58th Bomb Wing
- 2 - CG, 73rd Bomb Wing
- 2 - CG, 313th Bomb Wing
- 2 - CG, 314th Bomb Wing
- 2 - CG, 315th Bomb Wing
- 1 - CG, VII Fighter Command
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- 2 - 33rd SCU, Twentieth Air Force
- 1 - RCM Office, Twentieth Air Force
- 1 - Communications, Twentieth Air Force
- 1 - OAS, Twentieth Air Force
- 2 - CIU, Twentieth Air Force
- 1 - A-2 Reporting, Twentieth Air Force
- 4 - A-2, Twentieth Air Force

SECRET

R E S T R I C T E D

ANNEX

G

DISTRIBUTION LIST

Missions No. 321, 322 and 323

8, 9 and 10 August 1945

-67-

R E S T R I C T E D

R E S T R I C T E D

DISTRIBUTION TACTICAL MISSION REPORT

Copy No.

1	Commanding General, Army Air Forces
2	Commanding General, U.S. Army Strategic Air Forces (Rear)
3	Commanding General, U.S. Army Strategic Air Forces (Guam)
4 - 5	Chief of Staff, U.S. Army Strategic Air Forces (Guam)
6	Commanding General, Twentieth Air Force
7	Commanding General, Eighth Air Force (Okinawa)
8	Commander in Chief, U.S. Army Forces, Pacific
9	Chief of Naval Operations, OP-16-V
10	Commander in Chief, Pacific Fleet (Adv Hq)
11	Commander in Chief, Pacific Fleet (Rear Hq)
12	Commander Air Force, Pacific Fleet
13	Commander, Third Fleet
14	Commander, Fifth Fleet
15	Commander, First Carrier Task Force
16	Commander, Marianas
17	Commanding General, U.S. Army Forces, Middle Pacific
18	Commanding General, Allied Air Forces, SWPA
19	Commanding General, Far East Air Forces
20	Commanding General, U.S. Strategic Air Forces in Europe
21	Commanding General, Mediterranean Allied Air Forces
22	Commanding General, Fifteenth Air Force
23 - 24	Commanding General, Seventh Air Force
25	Commanding General, VII Bomber Command
26 - 27	Commanding General, VII Fighter Command
28	Commanding General, Eleventh Air Force
29 - 33	Commanding General, 301st Fighter Wing
34	Command Hq, Allied Air Forces, SWPA ATTN: Senior Intelligence Officer, R.A.A.F.
35	Commander in Chief, U.S. Army Forces, Pacific ATTN: G-2 (For Section 22, ROM)
36	Officer in Charge, Joint Intelligence Center Pacific Ocean Areas
37	Commanding General, Army Air Forces ATTN: AC/AS Intelligence
38 - 67	Commanding General, Army Air Forces ATTN: AC/AS Intelligence, Collection Division
68 - 69	Commanding General, U.S. Army Strategic Air Forces (Guam) ATTN: Intelligence
70	Commanding General, U.S. Army Strategic Air Forces (Guam) ATTN: Communications FCR: Counter Measures Air Analysis Center
71	Commanding Officer, Twentieth Air Force Lead Crew School
72	Brigadier General H.S. Mansell, Jr.
73	Chief of Staff, Twentieth Air Force
74	Deputy C/S, Opns, Twentieth Air Force
75	AC of S, A-2, Twentieth Air Force
76	Chemical Warfare Officer, Twentieth Air Force
77	Ordnance Officer, Twentieth Air Force
78	Director of Tactics, A-3, Twentieth Air Force
79 - 80	Historical Officer, Twentieth Air Force

R E S T R I C T E D

R E S T R I C T E D

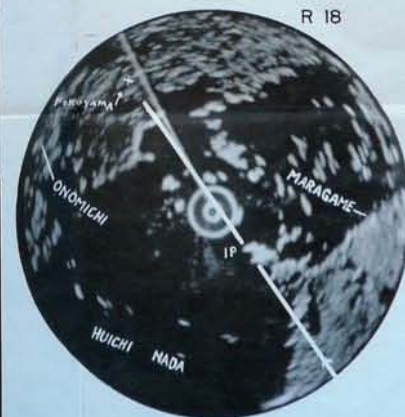
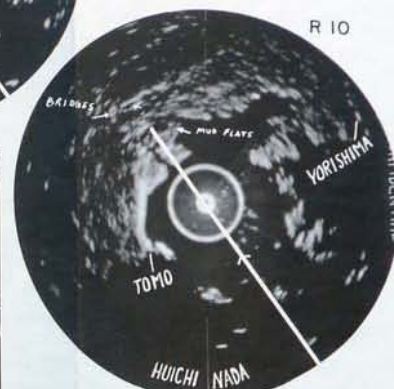
81	Commanding General; 58th Bombardment Wing
82	Commanding General; 73rd Bombardment Wing
83	Commanding General; 313th Bombardment Wing
84	Commanding General; 314th Bombardment Wing
85	Commanding General; 315th Bombardment Wing
86	Commanding Officer; 3rd Photo Reconnaissance Sq
87	Commanding Officer; 41st Photo Reconnaissance Sq
88	Commanding Officer; 55th Reconnaissance Sq, Long Range Weather
89	Commanding Officer, Twentieth Air Force Combat Staging Center (Provisional)
90	Commanding Officer; 33rd Statistical Control Unit
91	Commanding Officer; 6th Bomb Group (VH)
92	Commanding Officer; 9th Bomb Group (VH)
93	Commanding Officer; 16th Bomb Group (VH)
94	Commanding Officer; 19th Bomb Group (VH)
95	Commanding Officer; 29th Bomb Group (VH)
96	Commanding Officer; 39th Bomb Group (VH)
97	Commanding Officer; 40th Bomb Group (VH)
98	Commanding Officer; 330th Bomb Group (VH)
99	Commanding Officer; 331st Bomb Group (VH)
100	Commanding Officer; 444th Bomb Group (VH)
101	Commanding Officer; 462nd Bomb Group (VH)
102	Commanding Officer; 468th Bomb Group (VH)
103	Commanding Officer; 497th Bomb Group (VH)
104	Commanding Officer; 498th Bomb Group (VH)
105	Commanding Officer; 499th Bomb Group (VH)
106	Commanding Officer; 500th Bomb Group (VH)
107	Commanding Officer; 501st Bomb Group (VH)
108	Commanding Officer; 502nd Bomb Group (VH)
109	Commanding Officer; 504th Bomb Group (VH)
110	Commanding Officer; 505th Bomb Group (VH)
111	Commanding Officer; 509th Composite Group
112	Commanding Officer; 15th Fighter Group (VLR)
113	Commanding Officer; 21st Fighter Group (VLR)
114	Commanding Officer; 414th Fighter Group (VLR)
115	Commanding Officer; 506th Fighter Group (VLR)
116	Reporting Unit, A-2 Twentieth Air Force (File Copy)
117 - 130	Reporting Unit, A-2 Twentieth Air Force

R E S T R I C T E D

CONFIDENTIAL

AUGUST 1945

SHEET RM-116



APPROACHES TO FUKUYAMA
ACTUAL SCOPE PHOTOS
ALTITUDE 10,000 FEET

A-2 SECTION TWENTIETH AIR FORCE

REPRODUCED BY 949TH ENGR AVN TOPO CO