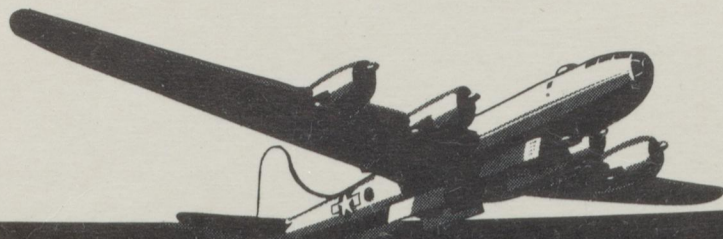


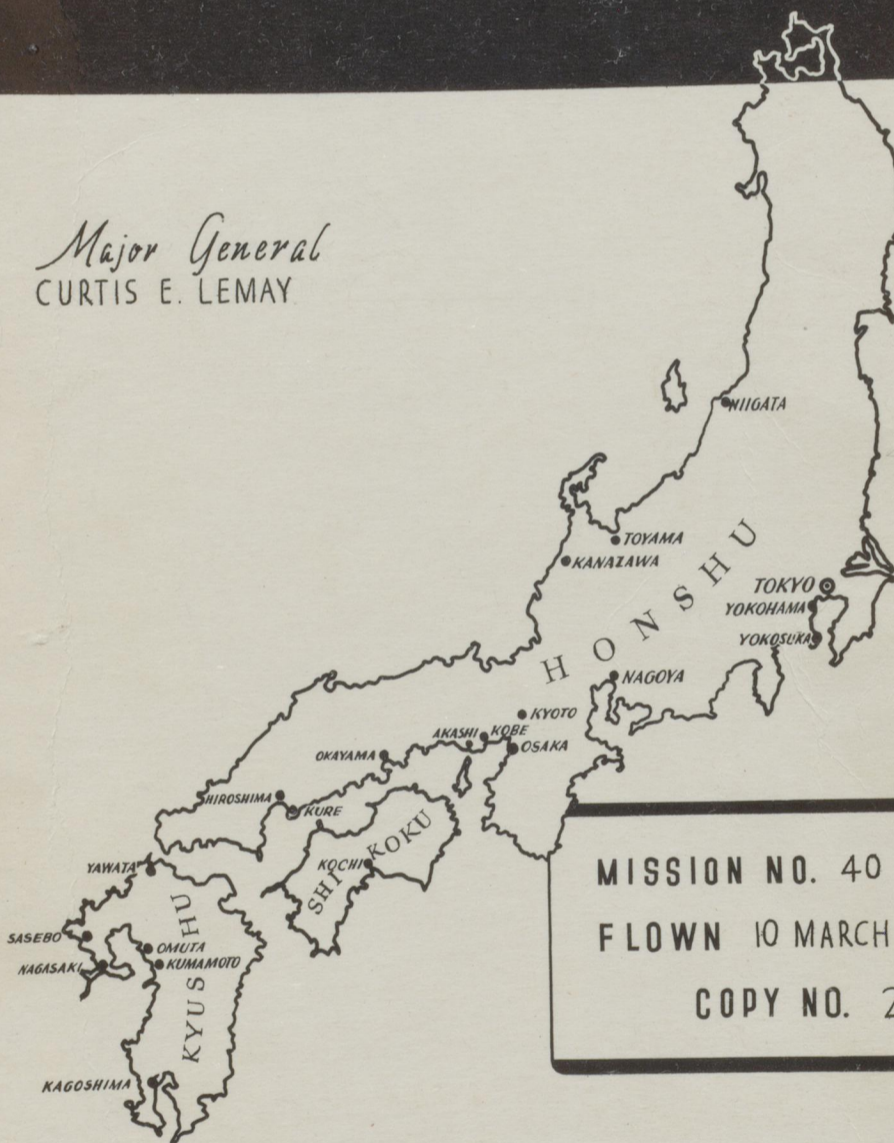
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Tactical Mission REPORT

Major General
CURTIS E. LEMAY



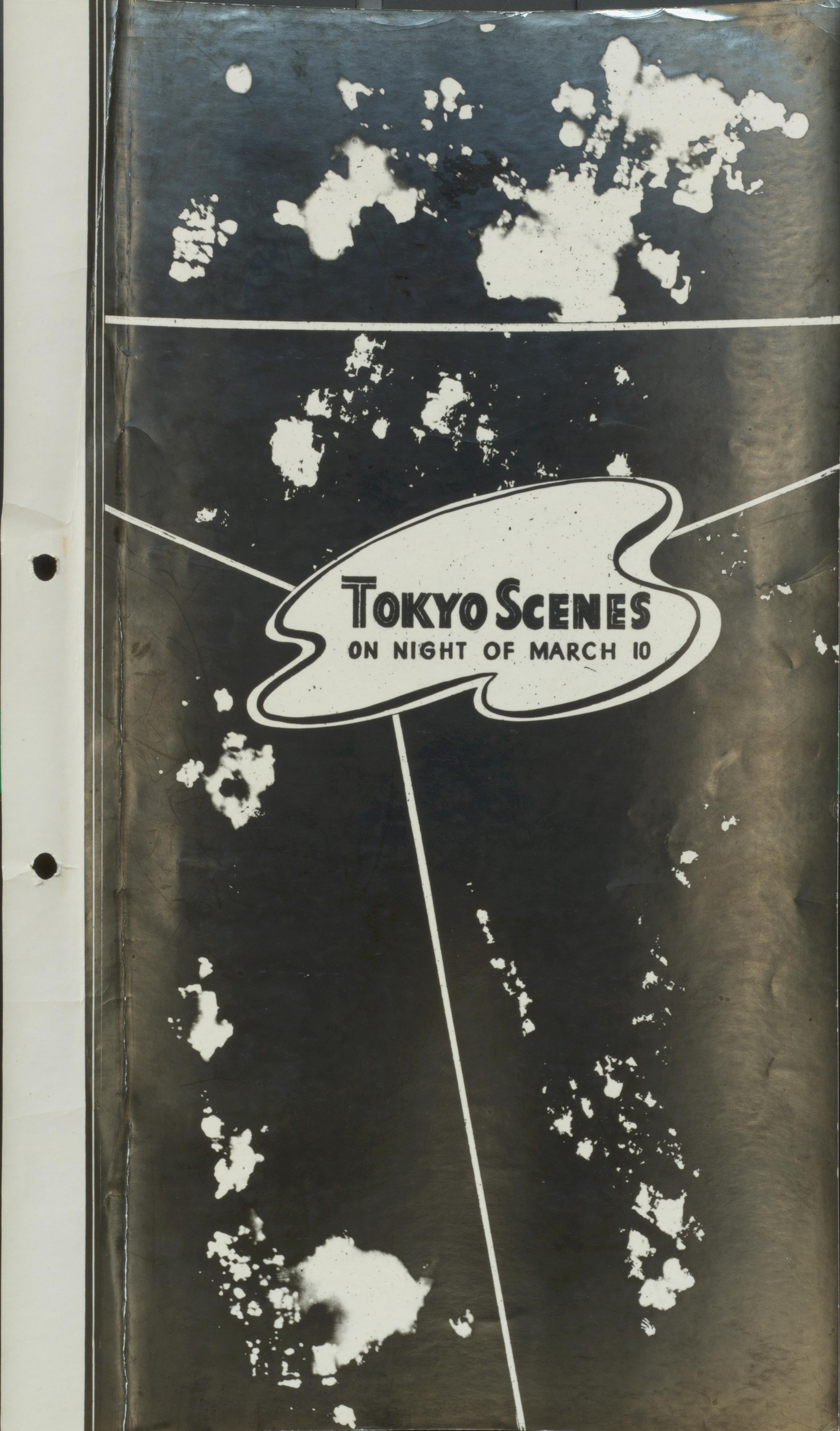
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HEADQUARTERS
XXI BOMBER COMMAND
APO 234

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TOKYO SCENES
ON NIGHT OF MARCH 10

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FOREWORD

The incendiary night attack of 10 March 1945 on Tokyo, the report of which follows, embodied a complete change of tactics for the XXI Bomber Command.

Prior to this attack, all strikes had been planned as high-level, precision efforts. The desired results had not been obtained, however, since in a great many instances adverse weather conditions had prevented visual bombing. A study of radically different tactics was made, resulting in a plan for low-level, incendiary attacks. It was believed that the following advantages would result:

1. Better Weather Conditions: At lower altitudes, winds of 25 to 35 knots, as compared with 120 to 180 knots at 25,000 to 30,000 feet, would ordinarily be encountered, thus making it unnecessary to counteract excessive drift by limiting bombing approaches to east-west runs. Cloud conditions would also tend to be more favorable at lower altitudes.
2. Better Use of Radar Equipment: Scope definition would ordinarily be better at lower altitudes.
3. Greater Bomb Loads: Elimination of the climb to high levels plus the fact that formations would not be flown at night would result in decreased fuel consumption and therefore larger bomb loads. In addition, it was believed that night bombing would permit dispensing with all ammunition except that for the tail guns. The elimination of this weight would also increase the potential bomb load.
4. Simpler and Improved Maintenance: Low-level flying was expected to put less strain on the engines and to facilitate the problem of maintenance.
5. Greater Bombing Accuracy: Errors in bombing were expected to decrease as a result of the lowering of the bombing altitudes. Although low-altitude attacks would ordinarily increase the probability of losses as a result of enemy action, the missions would be planned to reach Japan at a time when its defenses were least effective. The fact that the enemy had not as yet developed an efficient night fighter was an important consideration.

Although night bombing would be new for a great many B-29 crews, all crews had had experience in night navigation on previous missions.

To take advantage of the surprise element in the planning, four separate targets were selected for attacks every second night in order to prevent, as far as possible, the enemy from setting up effective low-level defenses. Targets selected were the urban areas of Tokyo, Nagoya, Osaka and Kobe. Nagoya was later made the target for a second attack, the fifth and last of this series.

The first mission against Tokyo was planned at an attack altitude of 5000 to 8000 feet so that maximum effect of enemy automatic weapons and barrage balloons could be avoided. Picked crews, designated as pathfinder crews, were to mark the aiming points. Bombing was to be by individual aircraft, with each plane using radar approaches and making visual corrections, if possible.

It is noteworthy that the object of these attacks was not to bomb indiscriminately civilian populations. The object was to destroy the industrial and strategic targets concentrated in the urban areas of these four major Japanese cities.

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HEADQUARTERS
XXI BOMBER COMMAND
APO 234

TACTICAL MISSION REPORT

Field Order No. 43

Mission No. 40

Target: Urban Area of

TOKYO, JAPAN

10 March 1945

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Prepared By:

A-2 Section
XXI Bomber Command

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By auth. of the C. G.
XXI Bomber Command

15 April 45

Date

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Initials:

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DOD DIRECTIVE No. 5200.9, effective 28 Nov. 58

HEADQUARTERS
XXI BOMBER COMMAND
APO 234

15 April 1945

SUBJECT: Report of Operations, 10 March 1945

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

1. IDENTIFICATION OF MISSION:

a. Field Order No. 43, Headquarters XXI Bomber Command, dated 7 March 1945, directed the 73rd, 313th and 314th Bombardment Wings to take part in the Command's first incendiary attack on 9/10 March 1945.

b. Targets Specified:

(1) Primary Target: Urban area of Tokyo as outlined on attached XXI Bomber Command Target Chart No. 7.

(2) Because the type of mission planned extended over such a large urban area, no secondary or last resort targets were specified.

2. STRATEGY AND PLAN OF OPERATIONS:

a. Selection of D-Day: The weather forecast presented to the Commanding General for 9 March predicted good bombing conditions at the target as well as good base and route conditions. Firm decision was then made to inaugurate the planned low altitude night offensive against targets on Honshu with this mission on Tokyo.

b. Importance of Target: Tokyo, one of the world's three largest cities with a population of 7,000,000 (1940 population figure), is the hub of Japanese industry and commerce. With the exception of heavy industry, the city has substantial portions of almost every Japanese business enterprise. Concentrations of such key war industries as machines and machine tools, electronics, precision instruments, petroleum, and aircraft and aircraft parts are within the city limits. Tokyo is also a vital transportation and communications center and the terminus of a majority of the main railroads on the island of Honshu. In addition, it is the administrative seat of government and of the great industrial concerns which comprise Japan's war machine.

c. Details of Planning - Operational:

(1) Selection of Aiming Points: The following four aiming points were selected:

Number 1 (354254N - 1394745E), near the center of one of the most inflammable parts of the zone, had virtually no fire-breaks.

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Numbers 2 and 3 (354205N - 1394830E) and 354054N - 1394832E) were east of the Sumida River and would insure an equal density bombs on the central three-quarters of the zone.

Number 4 (354057N - 1394653E) was bounded on the west by the Tokyo station; on the east by the Sumida River; by the Ginza (commercial) district on the south; and by the Imperial Palace on the north. Equal force assigned to each point to make certain that the average density of bombs would be greater than the minimum requirement of 60 tons of incendiaries per square mile for the entire zone. (Aiming points and assignment of forces are shown on XXI Bomber Command Radar Navigation Chart following the Tactical Narrative.)

(2) Bombing Plans:

(a) Bombardier's Planning:

1. Although this mission was directed against a large area, precision bombing was required in order to start conflagrations of a size that would overcome Tokyo fire defenses. Since predicted wind was from 280 degrees, the bombing sequence planned was from east to west to prevent smoke from obscuring aiming points previously bombed. Bombardiers were instructed to drop bombs on points adjacent to fires previously started.

(b) Determination of Bomb Load:

1. Selection of bombs and fuses for this mission was influenced by the availability of incendiary bombs and clusters and the suitability of munitions insofar as penetration, fire setting properties and stowage were concerned.

2. The first squadron of each wing was to carry AN-M47A2 bombs, multiple suspended six per 500-pound station with instantaneous nose fuzing for use as pathfinder munitions. This type of bomb would set up immediate appliance fires which would mark recommended aiming point for succeeding aircraft. Multiple suspension allowed maximum loads to be carried to insure placing the maximum amount of incendiary material on the target in minimum time. The M47 was chosen to assure good penetration and initial fire spread of sufficient size to tie up the enemy's fire fighting equipment and increase the potential effectiveness of smaller bombs to be dropped by later planes.

3. All other squadrons were to carry 500-pound clusters containing M-69 bombs. This type, chosen because of penetrating power and fire-raising abilities, coupled with the large number of expected hits, was considered superior to other available bombs. The 73rd Wing was to carry E-23 clusters fuzed to open 2000 feet above the target, while the 313th and 314th Wings were to be loaded with E-46 clusters fuzed to open at 2500 feet. The 2000 and 2500 feet fuzing altitudes were selected because density from individual plane patterns was expected to be greater than from higher openings and the striking velocity obtained would be sufficient for penetration of target. These opening altitudes also made possible the use of existing bombing tables.

4. Intervalometer settings planned were 100 feet for the M-47 bombs and 50 feet for the clusters. The M-47 setting was based on the fact 6 bombs were to be released on each station and the individual plane density would be sufficient to start appliance fires in an area approximately 3000 to 4000 feet in length. The M-69

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setting was planned so that an expected density from each plane would set appliance fires over an area 300 feet by 1500 to 2000 feet and would assure dropping a minimum of 25 tons of actual M69 bombs per square mile.

(3) Navigation Planning: All aircraft were to fly individually, requiring no assembly points.

<u>Route</u>	<u>Reason for Choice</u>
Base to	
25/00N - 143/00E to 27/15N - 140/53E to	This route was planned to avoid Iwo Jima operations by 75 miles. Nishino-Shima was used as a radar navigation aid. The route was close to Nanpo Shoto Islands to permit use of AN/APQ-13 as a navigation aid.
34/50N - 140/00E to	This point was chosen west of landfall to allow navigators to make proper orientation before making landfall in order to avoid the possibility of flying beyond Chosi Point.
35/19N - 140/25E to	Landfall point designated was distinguishable on the radar scope and made a common course with briefed axis of attack.
35/36N - 140/08E (IP) to	Chiba was used as the initial point because its location on Tokyo Bay provided good land-water contrast for both radar and visual identification.
Target to	Tokyo urban area.
35/50N - 139/53E to	This sharp right hand turn off the target was planned to avoid heavy Tokyo defenses.
35/37N - 140/33E to	To avoid flak areas on the return route, land's end was picked south of Chosi Point.
Base	To allow navigators to utilize Bonins and Northern Marianas as radar and visual check points, route to base was to be as desired.

The 73rd and 313th Wings were both instructed to dispatch 2 radio-homing aircraft to take off prior to the main force and to transmit homing signals for a period of 1 hour and 30 minutes to the later aircraft. The 4 aircraft were to fly between the following points: 35/02N - 140/00E and 34/50N - 140/00E.

(4) Flight Engineering Planning:

(a) Planes of the 73rd and 313th Wings were not to carry bomb bay tanks. Wing and center wing tanks were to be filled to capacity for a total fuel load of approximately 6800 gallons for each aircraft.

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(b) The 314th Wing was to carry, in addition to the gasoline load listed above, 1 full bomb bay tank for a total fuel load per plane of approximately 7300 gallons.

(c) No maximum or minimum bomb loads were specified.

(d) It was estimated the average bomb load per aircraft of the 73rd and 313th Wings (14,000 pounds) would assure a safe fuel reserve.

(e) Because of the greater distance to be flown by the 314th Wing, the average bomb load was estimated as 10,000 pounds.

(f) No ammunition was to be carried by any aircraft.

(5) Radar Planning:

(a) Radar landfall (34/50N - 140/00E) was the same for all planes because of the good land-water contrast check point.

(b) From landfall, the 314th Wing's course paralleled the Tokyo Bay coastline to the initial point, a peninsula easily identified by its land-water contrast. The offset aiming point, Susaki airport, was also selected for its easily distinguishable radar features.

(c) From landfall, the 73rd and 313th Wings used a different route, easily identified for radar navigation purposes. They were given another peninsula on Tokyo Bay, however, as an initial point. The offset aiming point for these Wings, the mouth of the Edo River, could be identified by radar from any direction.

(See Radar Navigation Chart and Radar Scope Chart following this section for further details on radar route and approach planning).

(6) Radar Counter Measures: Routine search was to be made for every radar signal on frequencies between 100 mc and 3000 mc by 2 Radar Observers.

(7) Air-Sea Rescue Planning:

(a) The Navy was furnished with the details of the mission and requested to furnish available facilities for air-sea rescue purposes.

1. Four submarines assigned to lifeguard duties were stationed as follows: 34/50N - 140/40E, 34/00N - 141/00E, 33/00N - 141/20E and 32/00N - 141/40E.

2. Three surface vessels were directed to be at the following positions: 25/00N - 143/00E, 20/00N - 144/30E and 18/00N - 145/15E. They were to remain on station from 091000Z until the end of the mission.

3. Two Dumbo airplanes were assigned the following stations: 23/00N - 144/00E from 091000Z until end of mission and one at a point 10 miles east of Agrigan Island from 091000Z to 091500Z.

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4. Picket boats and crash boats were assigned to carry out air-sea rescue work during the critical periods of take-off and landing until relieved by the Control Tower.

(b) This command assigned 4 Super-Dumbo airplanes (B-29's) to orbit the following positions: 33/OON - 141/20E, 32/OON - 141/40E, 34/OON - 141/00E and 23/OON - 144/00E. They were to assist in spotting, receive distress signals, drop emergency equipment, and direct submarines in event air-sea rescue facilities were required.

d. Details of Planning - Intelligence:

(1) Enemy Air Opposition:

(a) Enemy Order of Battle estimates indicated that there was a force of 312 single-engine and 105 twin-engine fighter-type aircraft in the Tokyo area.

(b) Applying a 70 percent operational factor to these figures, it was then estimated that Japanese Air Force capabilities were 292 fighter-type aircraft.

(c) However, study of Japanese capabilities in night-fighter interception, radar, and fighter-searchlight teams, coupled with the surprise element of this type of mission, did not indicate that effective opposition would be met, or that the plan as heretofore discussed would need to be altered.

(2) Enemy Antiaircraft:

(a) It was recommended that aircraft attack from altitudes between 5000 and 7000 feet, an optimum altitude for reducing effectiveness of both the 331 heavy guns and approximately 307 automatic weapons in the Tokyo defenses.

(b) Searchlight and barrage balloon considerations did not enter into the planning for this mission. Although the Tokyo area has approximately 150 searchlights, 80 of which are believed to be radar controlled, they are not of the effective "spread beam" type for tracking low flying targets. Only a few barrage balloons have been observed in this area.

(c) Routes recommended for attack were on courses north to northwest, i.e., across Chika Peninsula, Tokyo Bay to Tokyo, to place aircraft within the heavily defended areas for the shortest possible time.

3. EXECUTION OF THE MISSION:

a. Take-off: Take-off was scheduled for 0815Z for the 73rd and 313th Wings and for 0735Z for the 314th Wing. Actual take-off was accomplished as follows:

<u>Wing</u>	<u>Aircraft Airborne</u>	<u>First Aircraft Take-off</u>	<u>Last Aircraft Take-off</u>
73rd	161	0815Z	0929Z
313th	110	0815Z	1010Z
314th	<u>54</u>	<u>0736Z</u>	<u>1010Z</u>
XXI B.C.	325	0736Z	1010Z

No take-off difficulties were experienced.

b. Route Out: Because of excessive turbulence and excessive cloud cover at altitudes flown (from 1000 to 5000 feet), navigators had considerable difficulty in obtaining celestial readings. Winds were stronger than predicted. Landfall, coast initial point, and off-set aiming point were all easily identified, as predicted. Several aircraft made landfall at Chosi Point and made no attempt to turn west to Tokyo, but instead bombed Chosi Point and turned southward to base.

c. Over Target:

(1) Primary Target: Clouds encountered were 3/10 strato-cumulus, between 3000 and 5000 feet with the top of the haze layer at 7000 feet. Visibility at the target was initially 10 miles, but for later planes this was reduced to zero due to smoke. Of the 279 aircraft that bombed the primary target, 5 dropped on lead airplanes, 125 bombed visually, and 149 bombed by radar. A total of 1665 tons of incendiary bombs was dropped from altitudes of 4900 to 9200 feet from 1507Z to 1800Z. (See Annex, E, Consolidated Statistical Summary, for details.)

(2) Last Resort Target: Fifteen B-29's dropped 87.54 tons of incendiaries on the following last resort targets:

<u>No. of Aircraft</u>	<u>Group</u>	<u>Target</u>	<u>Tons</u>
2	498	Mito, Nikko	14.00
1	498	Unknown	6.00
1	499	Chosi	6.60
5	500	Tateyama-Hato, Chosi Point, Sendai	32.70
2	504	Chosi, Katsura	11.80
1	19	Unknown	4.80
3	9	Unknown	11.64

(For details see Annex E, Consolidated Statistical Summary.)

(3) Targets of Opportunity: Five aircraft dropped 12.66 tons of bombs on two targets of opportunity as follows:

<u>No. of Aircraft</u>	<u>Group</u>	<u>Target</u>	<u>Tons</u>
1	9	Chosi	7.76
4	505	ChichiJima, Haha Jima, Agrigan, and Auguan	4.90

(For details see Annex E, Consolidated Statistical Summary.)

d. Route Back: After bombing, aircraft returned by most direct route, as briefed. Weather for the return trip was similar to that encountered on the route out.

e. Landing:

(1) Aircraft landed at bases with 5/10 cumulus cover between 1800 and 6000 feet. Visibility was 15 miles. Landings were made as follows:

<u>Wing</u>	<u>No. A/C</u>	<u>First Landing</u>	<u>Last Landing</u>
73rd	160	2157Z	0227Z
313th	107	2110Z	0212Z
314th	<u>46</u>	<u>2245Z</u>	<u>0050Z</u>
TOTAL	313	2110Z	0227Z

(2) Losses: Losses were 14 in total and were due to the following reasons:

- (a) Enemy Aircraft: None.
- (b) Enemy Anti-aircraft: 2.
- (c) Accidents and Mechanical: 1. (lost to survey)
- (d) Ditched: 4.
- (e) Other and Unknown: 7. (1 lost to survey)

(See Annex E, Consolidated Statistical Summary, for detailed reasons, except for ditchings, which can be found in detail in Annex A, Part VI.)

f. Operations Summary:

(1) Navigation: (See Annex A, Part I, for details)
 Despite the cloud cover and turbulences encountered, landfall, coast initial point and offset aiming point were easily identified on the AN-APQ-13. Pathfinder aircraft were generally non-effective, with signals ranging from good to completely jammed.

(2) Bombing: (See Annex A, Part II, for detail)
 Bombing results were considered superior. The first aircraft easily located their aiming points and those that followed were able to see fires despite dense smoke. Heat from fires created turbulences that hampered later aircraft. It was found that B-10 shackles caused many release failures of the M-47 clusters and in the future it is planned only to use B-7 shackles with this type cluster.

(3) Flight Engineering: (See Annex A, Part III for details)
 The cruise over the target was accomplished at planned air speed without difficulty. Average fuel used to return from the target at 7000 to 8000 feet, compared to former returns at 25,000 feet and above, was approximately 125 gallons more per aircraft. Average fuel reserves per plane were greater than anticipated, indicating greater bomb loads could have been carried. A marked improvement in engine operations was noted, probably due to cool outside night air temperature and the low power settings required by a low-altitude mission.

(4) Radar: (See Annex A, Part IV, for details). Wind determination was difficult due to inexperience of radar operators in low level work. A maximum range of 230 nautical miles on the newly installed X band Loran was reported.

(5) Gunnery: (See Annex A, Part V, for details) No gunnery was employed against the enemy on this mission with the exception of approximately 500 rounds fired at some searchlights.

(6) Air-Sea Rescue: (See Annex A, Part VI, for details). Four B-29's ditched, with a total of 40 survivors being picked up.

g. Weather: (See Annex B, for Details). Although the forecast was good, weather between 30 degrees north and 34 degrees north was much more severe from forecast. Winds were higher than forecast. Weather conditions at bases were good for both take-off and landing.

h. Communications:

(1) Radar Counter Measures: (See Annex C, Part I, for details). No offensive counter measures were employed. The search indicated that the Japanese have 10-cm equipment and are using it to fair advantage.

(2) Communications: (See Annex C, Part II, for details). Jamming was reported on all strike frequencies. Discipline was good by the 73rd and 314th Wings. The 313th Wing reported security unsatisfactory and that corrective action is being taken.

i. Intelligence Summary:

(1) Enemy Air Opposition: (See Annex D, Part I, for details) Enemy air opposition was weak, 74 enemy fighters making 40 attacks. No B-29's were lost or damaged due to enemy aircraft action. Nick was reported as firing what appeared to be 37-mm tracer or incendiary ammunition. No claims against enemy aircraft were made.

(2) Enemy Anti-aircraft: (See Annex D, Part II, for details) Two B-29's were lost and 42 were damaged by anti-aircraft. Based on RCM intercepts, it is believed that the enemy had early warning of the attack. Intense and accurate flak was reported in the target area and from ships in Tokyo Bay. However, anti-aircraft fire, diminished in fire power and accuracy as each succeeding plane came in over the target. Searchlights were reported effective at the start of raid, but became less effective. Those on ships in the Bay were reported as very accurate. Some colored beams were reported.

(3) Bombing Results and Damage Assessment: (See Annex D, Part III, for details). Interpretation of photographs obtained on 11 March 1945 assessed visible damage at 440,146,000 square feet, or 15.8 square miles of city area destroyed. Eighteen per cent of the industrial and 63 per cent of the commercial districts were destroyed, along with the heart of the residential district. In Incendiary Zone No. 1 destruction totaled 82 per cent. Twenty-two industrial target numbers and many other unidentified industries were destroyed or damaged.

Curtis E. LeMay
CURTIS E. LeMAY
Major General, U.S.A.
Commanding

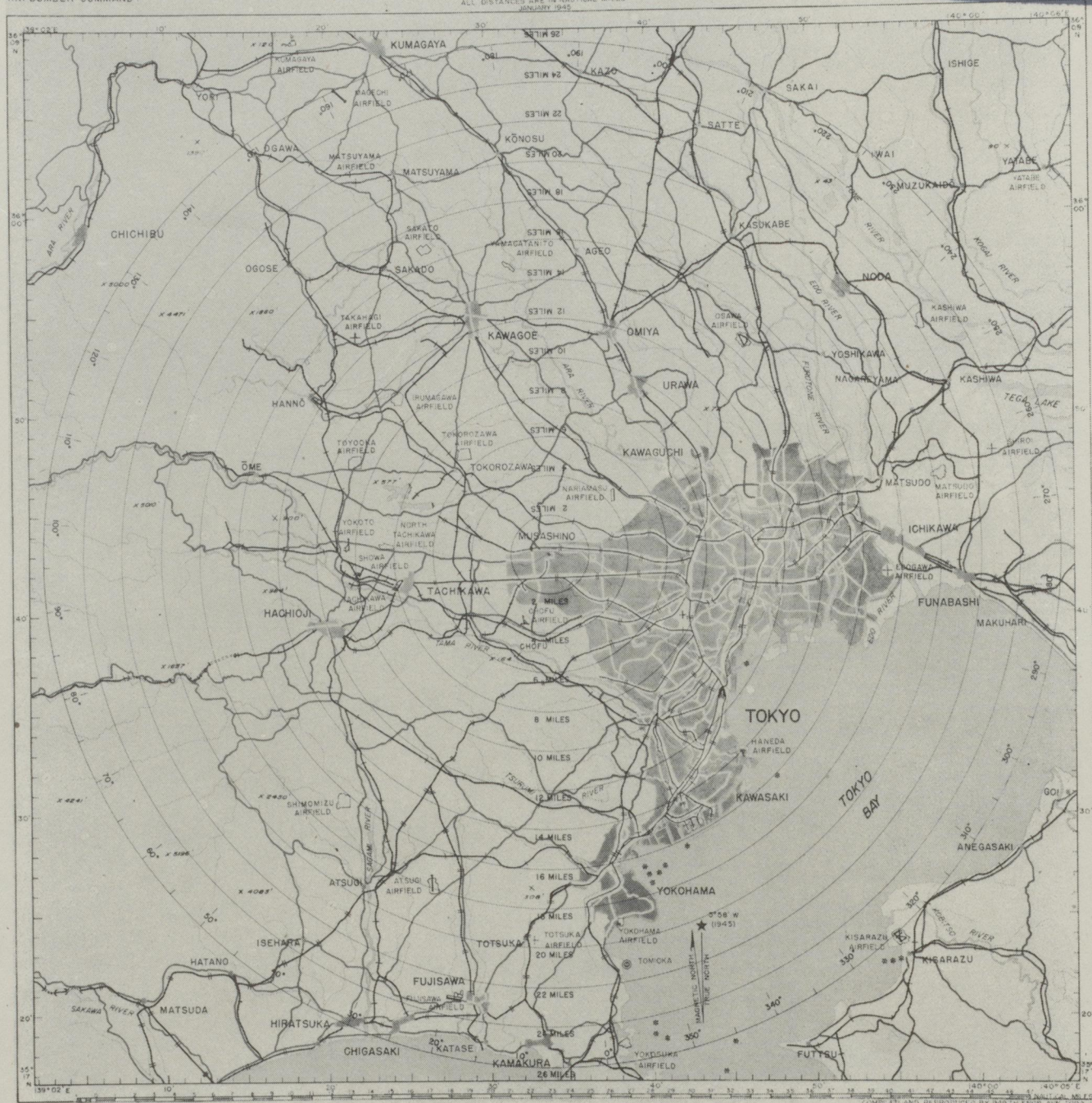
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A-2 SECTION
XXI Bomber Command

TOKYO AREA

NAKAJIMA AIRCRAFT, MUSASHINO PLANT (35° 43' N-139° 34' E) ELEV. APPROX. 50 FEET
ALL DISTANCES ARE IN NAUTICAL MILES
JANUARY 1945



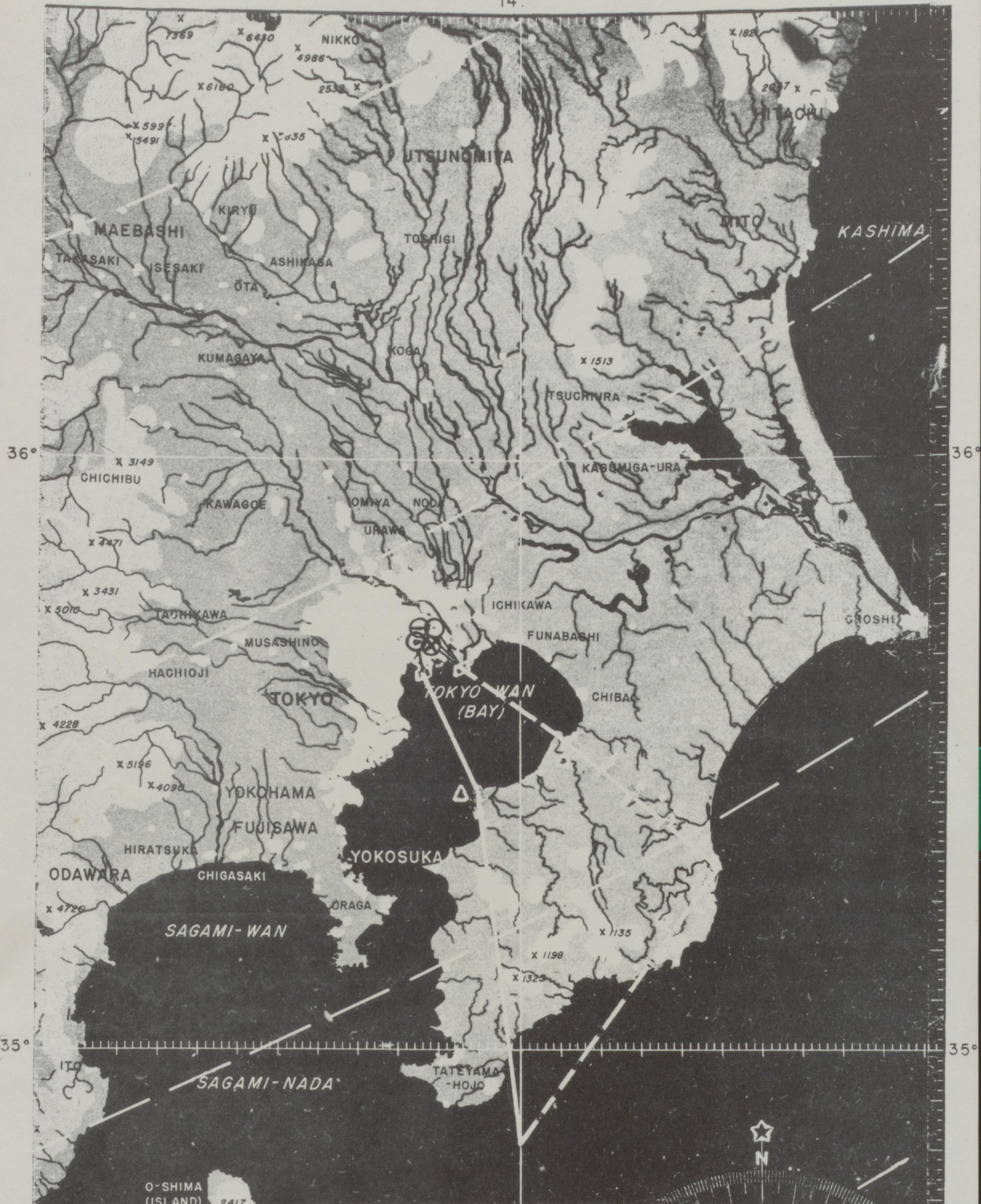
COMPILED AND REPRODUCED BY MAP ENGINE AND TOPOCO

RADAR NAVIGATION CHART - JAPAN

TOKYO AREA
SCALE 1:1,000,000

139°

14.



LEGEND

--- 73rd. & 313th. | Δ - Initial Point
 — 314th. | □ - Offset Aiming Point

Code	Aiming Point No.	Wing A/C Assigned
⊖	1	2/3 of 73rd.
⊙	2	1/3 of 73rd. & 1/3 of 313th.
⊗	3	2/3 of 313th.
⊙	4	All of 314th.

APPROACHES TO TOKYO

ACTUAL SCOPE PHOTOS

LOW ALTITUDE (ABOUT 7000 FT.)

10 MILE SWEEP
OVER TOKYO
URBAN AREA

IMPERIAL
PALACE

ARA RIVER
(AND BRIDGES)

SUMIDA RIVER
(MOUTH)

TOKYO

20 MILE SWEEP

KAWASAKI

TOKYO BAY

YOKOHAMA

20 MILE SWEEP

YOKOSUKA

SAGAMI BAY

A-2 SECTION

XXI BOMBER COMMAND

MARCH, 1945

PREPARED AND REPRODUCED BY 949TH ENGR AVN TOPO CO

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ANNEX

A

OPERATIONS

Exhibit - Track Chart

Part I - Navigation

Part II - Bombing

Part III - Flight Engineering

Part IV - Radar

Part V - Gunnery

Part VI - Air-Sea Rescue

Exhibit - Air-Sea Rescue Map

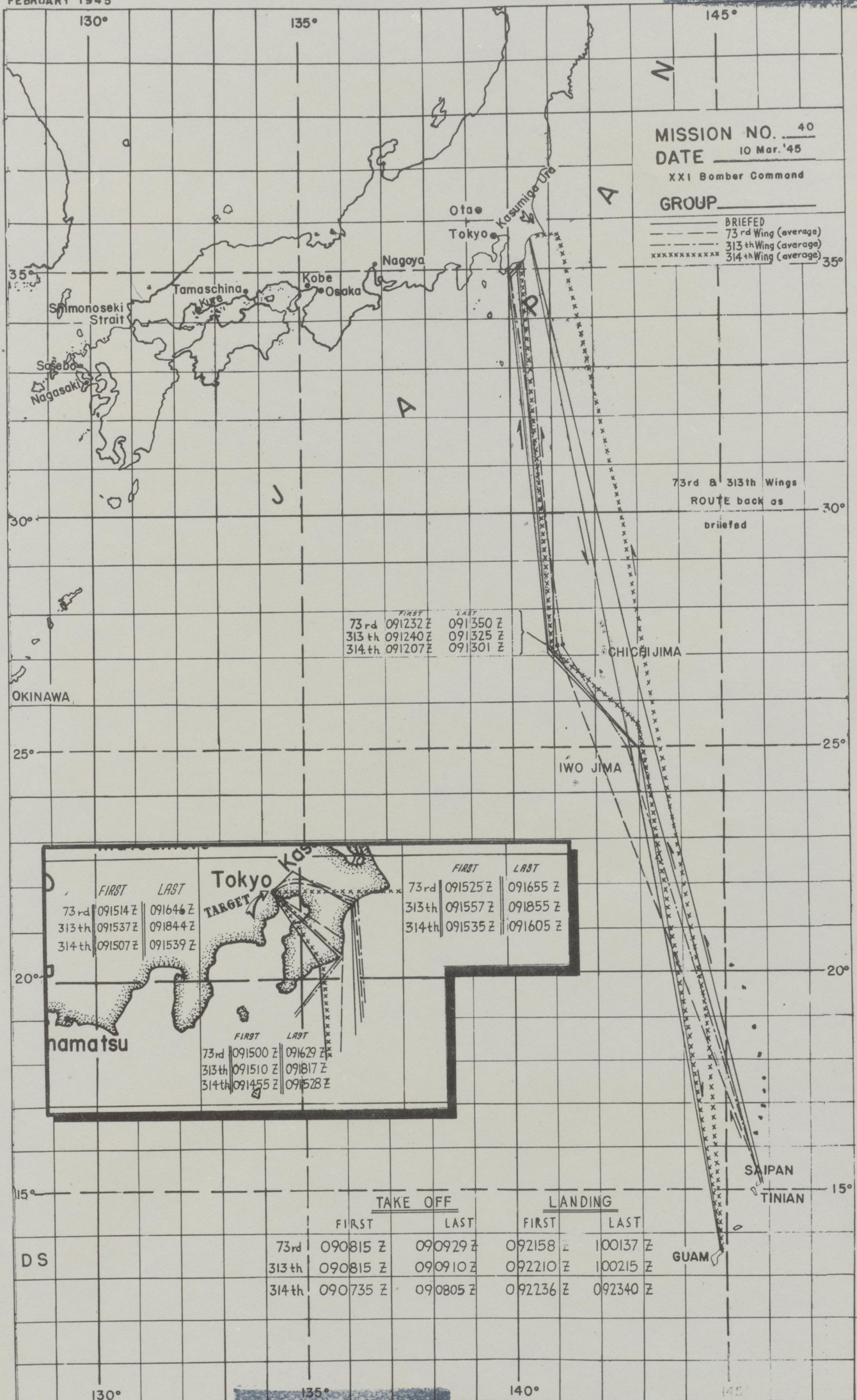
Mission No 40

10 March 1945

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FEBRUARY 1945

CONFIDENTIAL



MISSION NO. 40
 DATE 10 Mar. '45
 XXI Bomber Command
 GROUP _____

BRIEFED
 - - - - - 73rd Wing (average)
 - - - - - 313th Wing (average)
 xxxxxxxxxxxx 314th Wing (average)

	FIRST	LAST
73rd	091232 Z	091350 Z
313th	091240 Z	091325 Z
314th	091207 Z	091301 Z

Tokyo Kas

	FIRST	LAST
73rd	091514 Z	091646 Z
313th	091537 Z	091844 Z
314th	091507 Z	091539 Z

TARGET

	FIRST	LAST
73rd	091500 Z	091629 Z
313th	091510 Z	091817 Z
314th	091455 Z	091528 Z

DS	TAKE OFF		LANDING		
	FIRST	LAST	FIRST	LAST	
	73rd	090815 Z	090929 Z	092158 Z	100137 Z
	313th	090815 Z	090910 Z	092210 Z	100215 Z
	314th	090735 Z	090805 Z	092236 Z	092340 Z

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PART I - NAVIGATION

1. The flight to Honshu was made at altitudes ranging from 1000 to 5000 feet, as a result of which navigators had considerable difficulty in obtaining celestial readings because of excessive cloud cover and turbulence encountered.

2. Navigators were forced to rely on Loran and metro winds as a basis for their dead reckoning. Loran range was exceptionally good, with many fixes being obtained on the coast of Honshu. The route was planned within 30-50 miles of the Nanpo Shoto Islands and several fixes were obtained with the AN/APQ-13. Winds to the target area were stronger than briefed and navigators who were unable to obtain celestial, radar, or Loran fixes were blown 10 to 30 miles east of course. Winds were briefed at 280° at 15 knots and computed at 260° at 40 knots.

3. The landfall, coast initial point, and offset aiming point were easily identified on the AN/APQ-13. Bomb runs were started with radar, with visual correction being made in many cases.

4. Several of the aircraft which made landfall at Choshi Point made no attempt to turn west to Tokyo, but bombed Choshi Point and turned southward to base.

5. The homing aircraft were generally non-effective, with signals ranging from good to completely jammed. Navigators hesitated to use such aids over enemy territory when their reliability was doubtful at best.

6. Aircraft generally followed a track 10-30 miles east of the briefed route to base, indicating failure to correct for the strong west winds experienced on the route to the target.

7. Times to the target averaged 7 hours and 15 minutes, with total time being 14 hours and 10 minutes. Because of the greater distance from Guam to the target, time for the 314th Wing aircraft averaged an additional 25 minutes to the target and 50 minutes to base.

(For details of the navigation on this mission see chart preceding this report.)

PART II - BOMBING

1. Weather was clear over target. The first aircraft over the target had no trouble in locating the aiming points and their bombs started fires by means of which later aircraft were able to locate the aiming points, even though they flew through heavy smoke. The 73rd and 913th Wings' bombs completely burned out the aiming points, and large areas around them, while those of the 314th Wing hit their aiming point, but many untouched areas were left around it.

2. The primary difficulties encountered on this mission resulted from the severe turbulence encountered by the later aircraft over the target. This was due to heat from the fires already started. Several fires started outside of target area (Incendiary Zone #1)

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also caused trouble since a number of aircraft released their bombs, believing they were doing so on their aiming point.

3. Three bombing altitudes were used, the lowest being 5000 to 5800 feet. The 313th Wing which bombed at this altitude reported the greatest amount of flak damage to their aircraft yet sustained on any mission.

4. It was found that the B-10 shackle caused many release failures of M47-A2 clusters. In future missions only B-7 shackles will be used with this type cluster.

PART III - FLIGHT ENGINEERING

1. Narrative of Mission as Flown:

a. Low Altitude Cruise:

(1) The initial cruise was flown as individual aircraft by the three wings who participated in this mission.

(2) No attempt was made to assemble elements of groups during entire mission.

b. Climb to Bombing Altitude: The time required to climb to a bombing altitude of 7000 to 8000 feet was very short, the average for all aircraft being only 11 minutes.

c. Cruise to Target:

(1) The cruise over the target was accomplished at 230 mph calibrated air speed as planned without difficulty.

(2) A wide variation in power settings was used, but 2300 RPM and 39" Manifold Pressure was the average power setting used over the target area.

d. Return to Base: In nearly all cases the returns to base were made at 7000 to 8000 feet until approximately one hour from the base where letdowns at approximately 100 feet per minute were made. In comparison to previous missions, where returns were made from 25,000 feet and above, the average fuel used to return from the target on this mission at 7000 to 8000 feet was only approximately 125 gallons more.

2. Comments on Results of Mission:

a. The 73rd Wing carried the greatest average bomb load: 13,880 pounds. All aircraft of this wing carried the maximum capacity bomb load of 184 each of the M-47 incendiary or 40 each of E-28 incendiary bombs.

b. The average fuel used to the target was as planned for all Wings.

c. The average fuel reserves for all Wings were in excess of 1000 gallons. This was somewhat higher than anticipated, indicating that on subsequent missions of this type greater bomb loads may be carried.

d. A marked improvement in engine operation was noticed by flight engineers on this mission. This was in all probability due to the cool outside air temperatures at night and the low power settings that were required by this type of mission.

3. Exhibits:

a. For vertical plot, fuel consumption, and bomb load, see Chart "A".

b. For comparison of past 5 missions with this one, see Chart "B".

PART IV -- RADAR

1. AN/APQ-13:

a. Approximately 2/3 of the striking force dropped exclusively by radar.

b. All navigation over enemy territory was by radar. Wind determination was difficult, largely because of the inexperience of radar operators in low level work. The effect of errors in wind determination was small, however, because of the low altitude.

c. Approximately 9/10 of APQ equipment was operative for bombing over the target.

d. Maximum ranges for all targets averaged 45 nautical miles.

e. A maximum range of 230 nautical miles on the newly installed X band Loran was reported.

2. SCR-718: Employment was normal.

3. SCR-695: One case of inoperative IPF was reported.

PART V - GUNNERY

1. No gunnery against enemy aircraft was used. The 314th Wing, however, expended approximately 500 rounds of ammunition at searchlights and 2 were thought to have been shot out.

2. Equipment operation was as follows:

- | | |
|---------------------------|-----------------|
| a. C.F.C. | 100% operative |
| b. 50 calibre machine gun | 99.7% operative |

Chart "A"

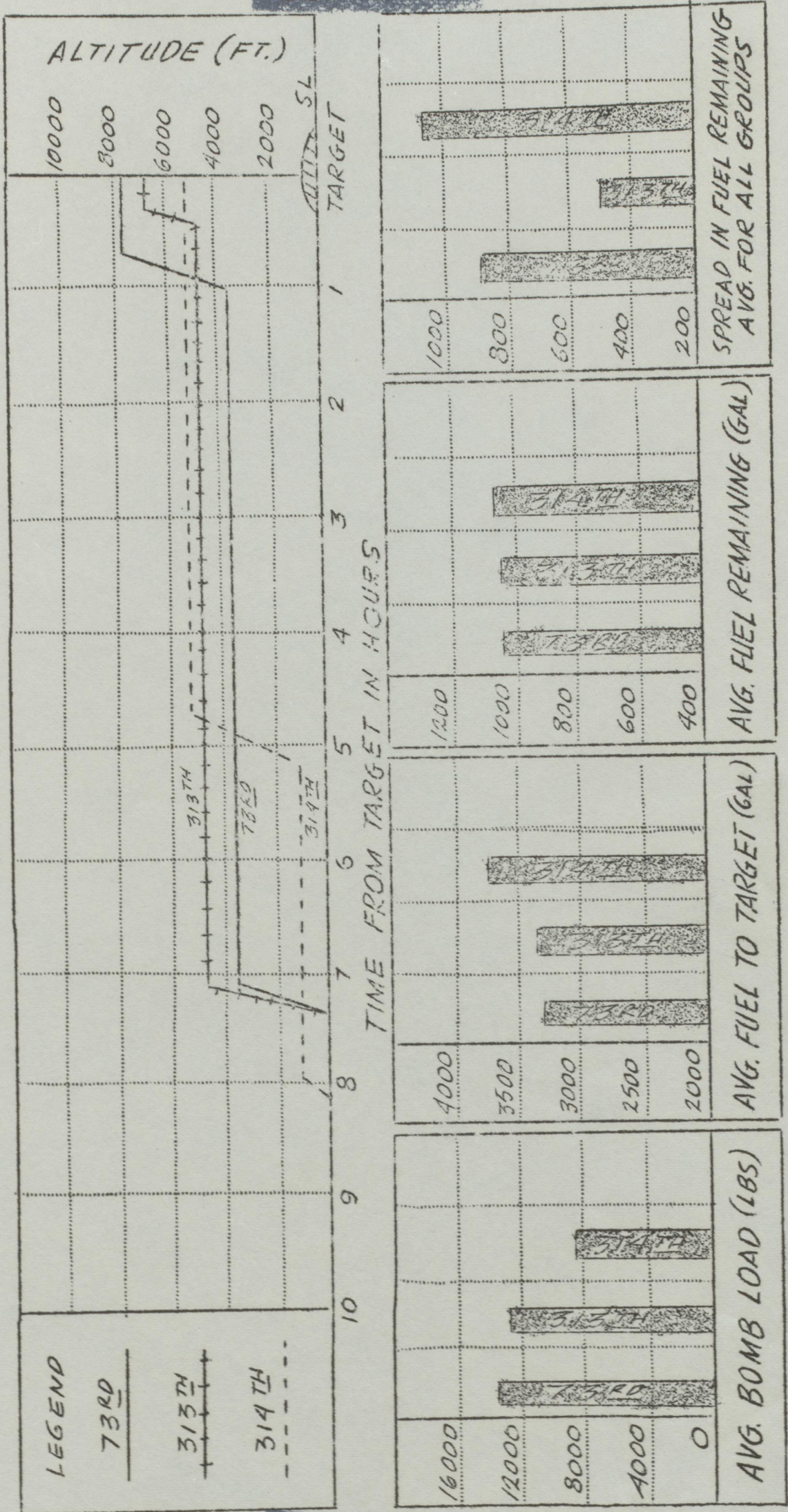
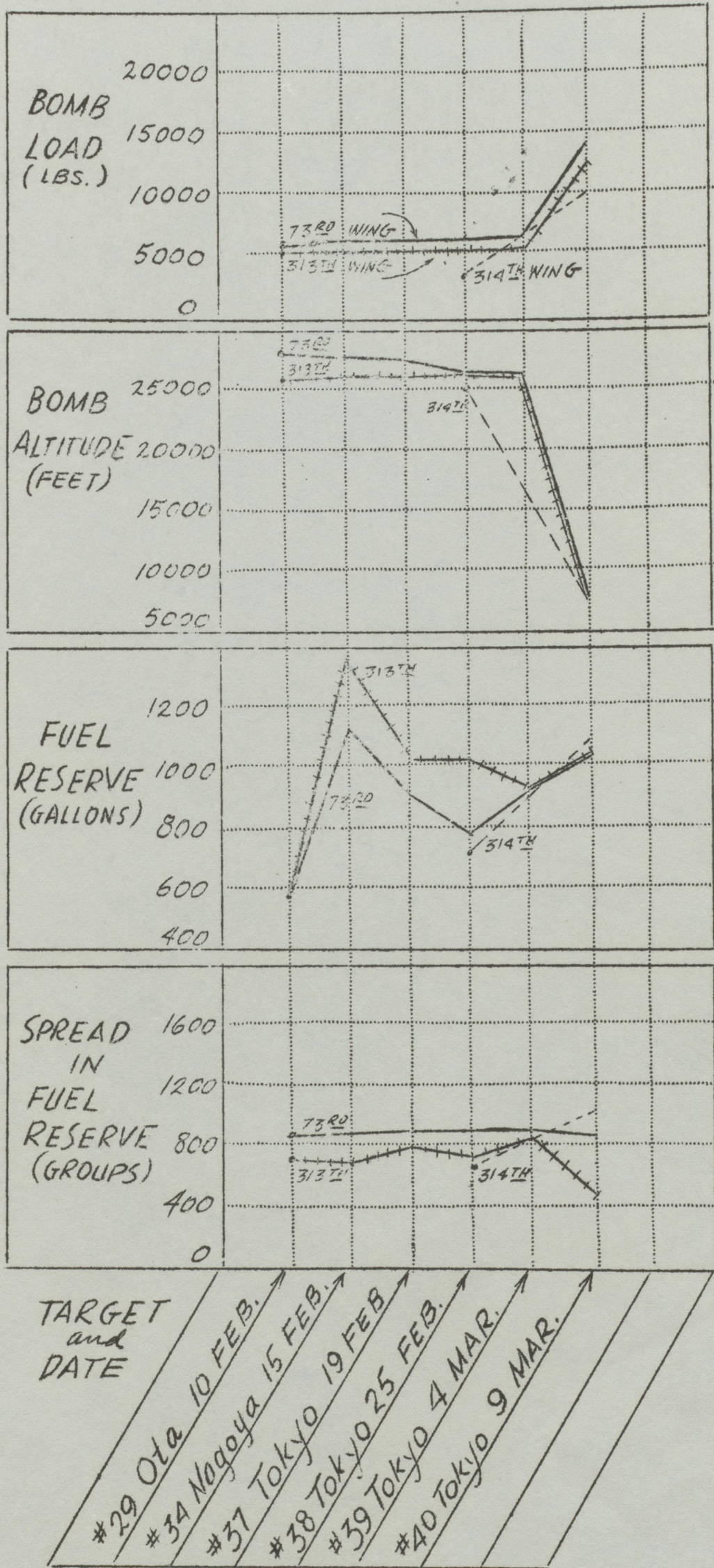


Chart "B"



PART VI - AIR-SEA RESCUE

1. The following is a summary of ditching incidents occurring on this mission: (See Air-Sea Rescue Map following this report.)

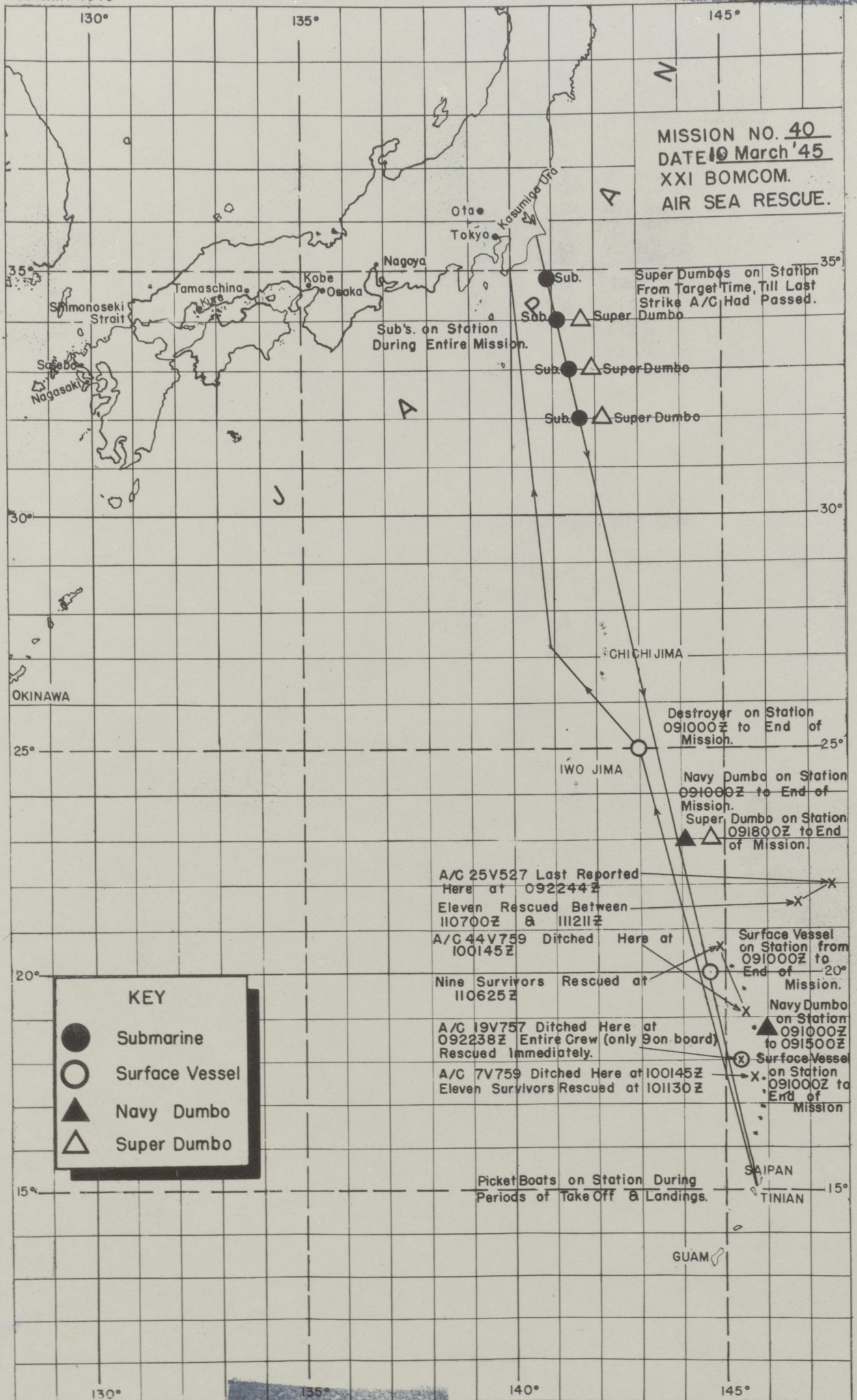
a. Aircraft No. 7V759: 313th Wing--This aircraft ditched at 17/40N - 145/38E at 100145Z. The crew of 11 was sighted by a Dumbo at 100725Z and all were rescued at 101130Z by the tender Bering Strait.

b. Aircraft No. 19V757: 313th Wing--This ditching occurred at 18/00N - 145/15E at 092238Z alongside the tender Bering Strait and the entire crew of 8, in addition to one passenger, was rescued in 18 minutes.

c. Aircraft No. 25V527: 314th Wing--This plane was last reported at 22/00N - 147/30E at 092244Z. Eleven survivors were sighted at 22/24N - 146/19E at 102233Z. The DMS-18 (mine sweeper) was notified of this and sent back, estimated arrival time at that position at 110700Z. Rescue of the 11 survivors was made by the mine sweeper between 110700Z and 111211Z.

d. Aircraft No. 44V759: 313th Wing--This ditching was reported at 19/10N - 145/30E at 100145Z. Three men did not survive the ditching. The nine survivors reached the beach of Pajaris Island, made contact with a search plane, and were notified that a ship would pick them up in one hour. Rescue was effected at 110800Z by the tender Cook's Inlet.

2. On this mission there were 7 other planes from which no word was received. For that reason no search could be instituted.



MISSION NO. 40
 DATE 19 March '45
 XXI BOMCOM.
 AIR SEA RESCUE.

Super Dumbos on Station From Target Time, Till Last Strike A/C Had Passed.

Sub's. on Station During Entire Mission.

Destroyer on Station 091000Z to End of Mission.

Navy Dumbo on Station 091000Z to End of Mission.

Super Dumbo on Station 091800Z to End of Mission.

A/C 25V527 Last Reported Here at 092244Z

Eleven Rescued Between 110700Z & 111211Z

A/C 44V759 Ditched Here at 100145Z

Nine Survivors Rescued at 110625Z

A/C 19V757 Ditched Here at 092238Z Entire Crew (only 9 on board) Rescued Immediately.

A/C 7V759 Ditched Here at 100145Z Eleven Survivors Rescued at 101130Z

Surface Vessel on Station from 091000Z to End of Mission.

Navy Dumbo on Station 091000Z to 091500Z

Surface Vessel on Station 091000Z to End of Mission

Picket Boats on Station During Periods of Take Off & Landings.

KEY

- Submarine
- Surface Vessel
- ▲ Navy Dumbo
- △ Super Dumbo

S E C R E T

ANNEX

B

WEATHER

I - Weather

II - Chart - Forecast vs - Observed Weather

III - Prognostic Map

IV - Synoptic Map

Mission No. 40

10 March 1945

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S E C R E T

SECRET

I - WEATHER

1. Bases at Take-Off: 4/10 cumulus, bases 1500 feet, tops 4000 feet. Visibility was 15 miles.

2. Route Outgoing: Between bases and 30 degrees north: 4-5/10 cumulus and stratocumulus, bases 1500 feet, tops 5-6000 feet, with widely scattered light showers. Between 24 and 27 degrees north the cloud cover increased to 8/10 with an increase in shower activity. Visibility was 15 miles dropping to 1 mile in rain.

b. Between 31 and 34 degrees north: There were 10/10 cumulus and stratocumulus with 2-3/10 cumulonimbus. Scattered thunderstorms and moderate icing and turbulence were reported. Visibility was zero in moderate to heavy rain. There were numerous reports of St. Elmo's fire.

3. Target: 3/10 stratocumulus, base 3000 feet, tops 5000 feet, was reported. The top of the haze layer over the target was at 7000 feet. Visibility was 10 miles being reduced as low as zero in smoke. Smoke was observed billowing up over the target area to 23,000 feet. Severe turbulence was reported over the fires with planes being bounced upward 2-3000 feet, over the bombed areas. Winds at 7000 feet were reported as 260 degrees at 40 knots.

4. Route Returning: The same weather was encountered as on the route outgoing.

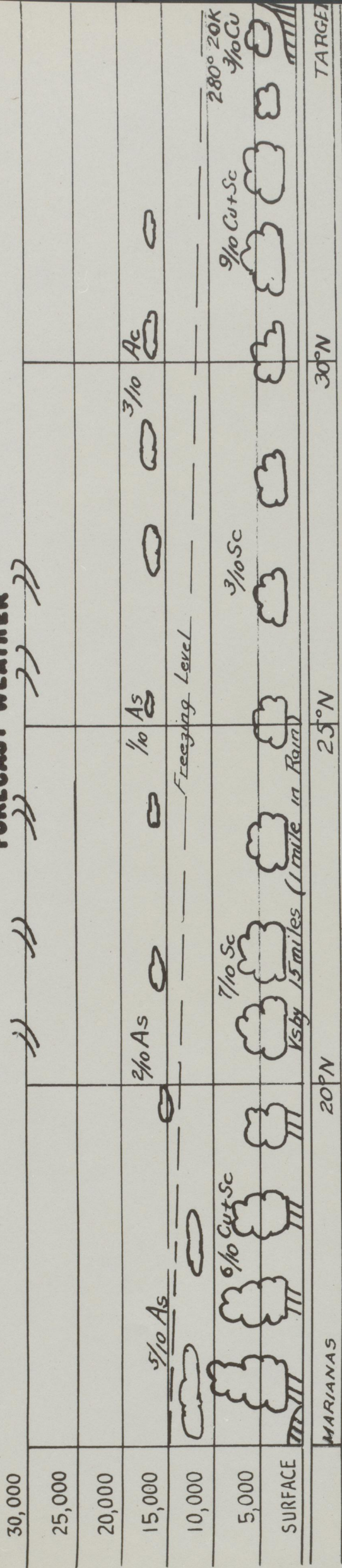
5. Bases on Return: 5/10 cumulus, bases 1800 feet, tops 6000 feet. Visibility was 15 miles.

6. Forecast was considered good except that weather between 30 degrees north and 34 degrees north was considerably more severe than forecast, and winds were higher than those forecast.

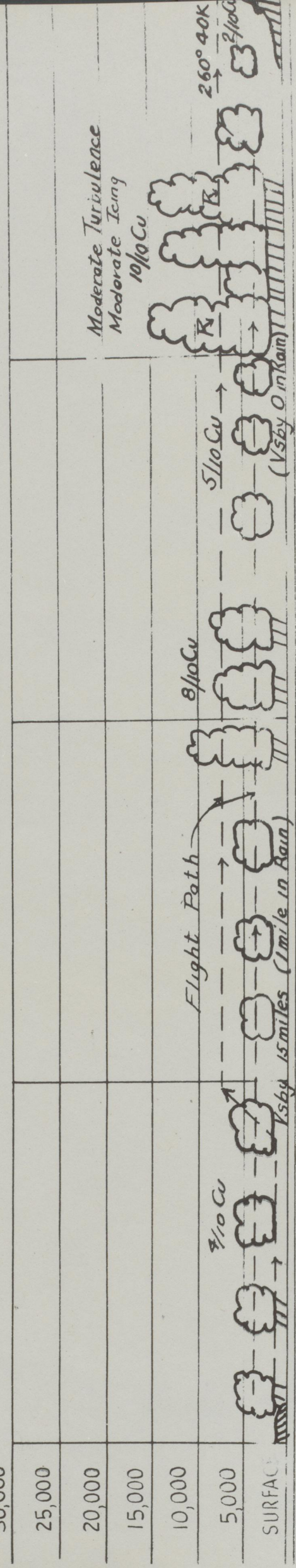
SECRET

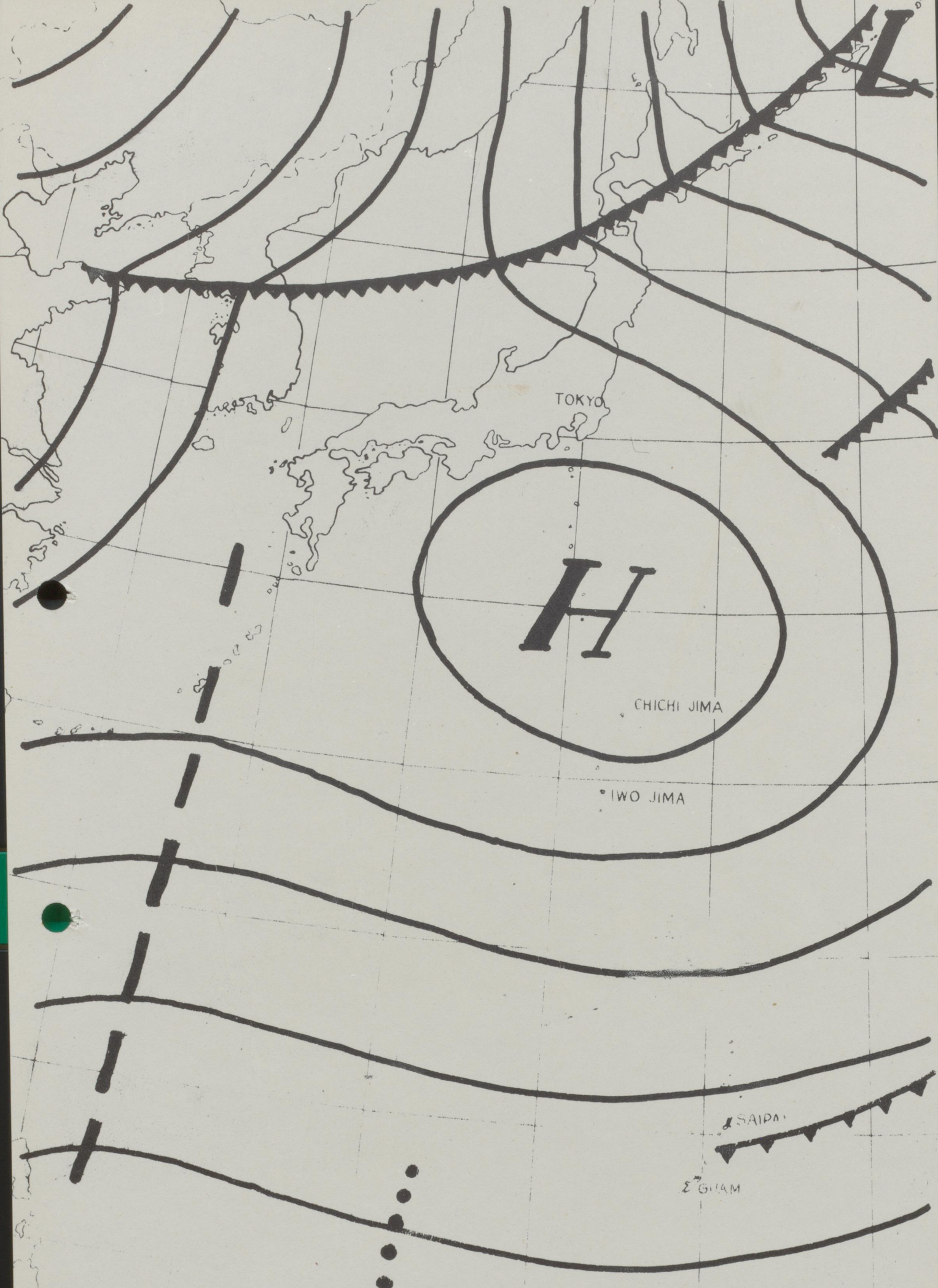
9-10 MARCH 1945

FORECAST WEATHER

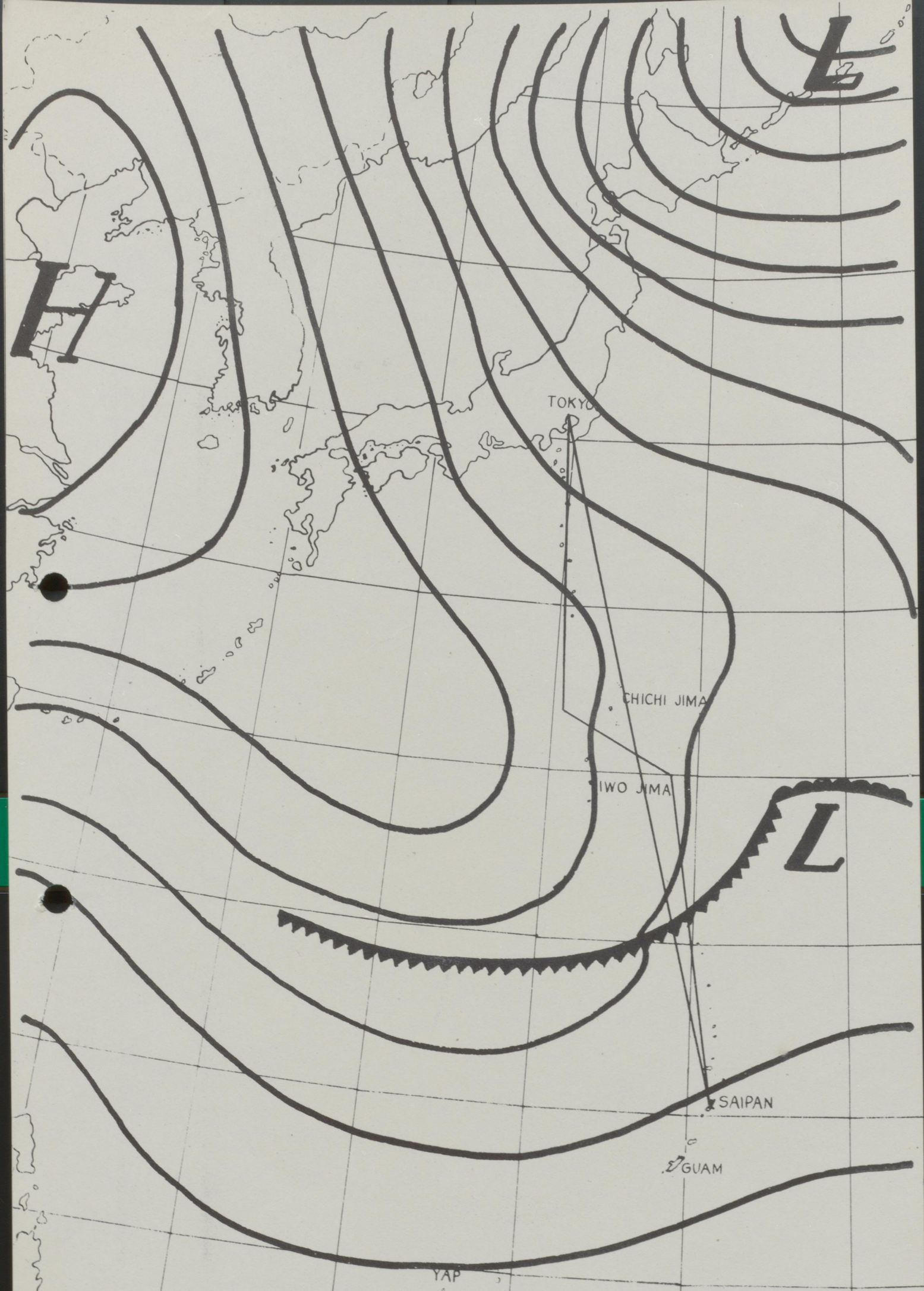


OBSERVED WEATHER





PROGNOSTIC MAP
0000 Z
10 MARCH 1945



SYNOPTIC MAP
0000Z
10 MARCH 1945.

TRUK

S E C R E T

ANNEX

C

COMMUNICATIONS

Part I - Radar Counter Measures

Part II - Communications (Radio)

Mission No. 40
10 March 1945

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S E C R E T

PART I - RADAR COUNTER MEASURES1. General:

a. Two RCM search aircraft participated in and completed this mission. Search was performed for enemy transmissions in the frequency bands 70-90 mc, 90-120 mc, 120-170 mc, 170-300 mc, 300-1000 mc, and 1000-3000 mc. While over the target, the search was concentrated on logging radar signals with high PRF and short pulse length characteristics.

b. A total of 51 signals was logged, but after analysis for repetition and ambiguity, this number was resolved into 30 different signals. The analysis included coincidence of the signals with enemy action, their possible transmission from particular enemy equipments, and previous intercepts.

c. No offensive counter measures were employed.

2. Results of Search:

a. The signals of particular interest intercepted were as follows:

(1) 75/1600-2500/8: Nojima Zaki

(2) 77/2450/5: O Shima.

(3) 78/3000/6: Katsura.

These Mark TA Model III signals were present throughout the raid over the target. The signals tracked the aircraft at close range, but searched when the aircraft departed. Flak was moderate in this area, but was associated with 10 cm GL radar located in this area rather than these signals.

(4) 196/3000/3-4: Since flak and searchlights had little evidence of being radar controlled at point of this intercept, it is difficult to distinguish whether this signal came from the Mark 41-42 searchlight control or the Mark TA Model 4 AAFC equipment. Flak was moderate and inaccurate and predicted concentration which tends to indicate that the signal was from the searchlight control equipment. There were about 100 searchlights in the target area. Some lights were pointed directly at planes when first turned on, 1 light first picking up a plane, then 6 to 8 coning on it. This would indicate some use of radar for locating azimuth.

(5) 200/1200/6: This signal in the target area indicated possible Mark 21 operation, although flak was accurate to inaccurate, meager to intense, and continuously pointed.

(6) 198/2500/4: This is believed to have been a shipborne radar of the Mark 44 searchlight control type. The signal was intercepted south of Chosi Point. The antenna was sweeping at 2 rpm.

(7) 3000/2000/6: This signal has much importance in that it is one of few 10 cm radar signals received from the Japanese Empire. The characteristics indicate a probable Mark 51, 52 surface search with a power of 2kw. No other information is available. This signal was intercepted in the Katsura area. Image was at 2950 mc and harmonics at 1460 and 1490 mc.

(8) 3010/high/1.2: This signal, logged in the Nojima Zaki area, had a sweep rate of 6 rpm. The signal was weak and had a narrow beam width.

(9) 3025/2500/.6-.8: This 10 cm signal was associated with accurate AA between Katsura and Nojima Zaki.

b. Other signals logged in the target area were as follows:

73/500/46	Tracking
74.5/1000/34	Tracking
79/1400/23	Tracking
80/1000/34	Tracking

These signals presumably originated from the Mark "CHI" portable search equipment located on the approach to Tokyo over Nojima Zaki.

c. Signals logged en route to target:

<u>Characteristics</u>	<u>Intercept Location</u>	<u>Remarks</u>
104/---/22	Mikura Jima	Early Warning
186/800-900/5	To Shima	Early Warning
195/800-900/12-14	O Shima	Mark 12
79/300-400/36	Sofu Gan	Mark "CHI"
98/200-400/20-30	Mikura Jima	Mark 1 Model 1 Modif. 2
100/600/13	Bonins	Mark 1 Model 1 Modif. 1
104/800-900/14-16	Tori Shima	Mark 1 Model 1 Modif. 1
109/300-500/42	Hachijo Jima	Mark II Air Search
148/500/11	Hachijo Jima	Mark 34, 35; 2 rpm
153/260/14	Hachijo Jima	Mark 34, 35; 2 rpm
156/300-400/4	Tori Shima	Early Warning
156/1800/9	Aoga Shima	Mark II K
160/250/10	Hachijo Jima	Possibly airborne Mark VI, Model 4TY4

d. Other signals logged on return from target:

90/1400/18	South of Chosi	3rpm Swp, Mark II
152/200-300/4	South of Chosi	Possibly Mark 34,35
115/50-70/6	35/00N - 140/50E	Navy Air Search
103/800/16	Bayonaise Rocks	Mark II Air Search

3. Analysis and Conclusions:

a. No D/F'ing of any signal was possible due to lack of suitable equipment. The intercept locations listed are the positions of the aircraft when the signals were intercepted.

b. By breakdown of the total number of signals intercepted on this mission to estimated type of enemy equipment, the following characteristics may be evolved:

<u>Type Equipment</u>	<u>Frequency</u>	<u>PRF</u>	<u>Pulse Width</u>
Mark TA Model 3	75-78	1600-3000	5-8
Mark 41, 42	196-200	1000	4-5
Mark 21	197-200	1000-2500	4-6
Mark 12	186-200	800-1000	5
Mark "CHI"	73-79	500-1400	23-46
Mark 34, 35	148-156	300-500	4-12

c. A search will be maintained to further identify and locate additional data on the 10 cm band. The three 10 cm signals discussed in 2a above are the first intercepts in this area with pulse width and PRF obtained. In August 1944 a 10 cm signal was intercepted at Inubi Saki and Ino Saki. In September 1944 a 10 cm signal was intercepted at Katsum. These previous intercepts are very close to the location of those made on this mission. This gives concrete evidence that the Japanese have 10 cm equipment and use it to fair advantage.

PART II - COMMUNICATIONS (RADIO)

1. Strike Reports: A total of 21 strike reports was transmitted. All were received by ground stations. All wings reported using the new Bombs Away report for incendiary type missions.
2. Fox Transmissions: The usual weather and time ticks were transmitted on the hour and half hour. Some Fox messages were delayed because the ground stations was working aircraft at the specified time. However, the reports were transmitted immediately following the termination of that traffic.
3. Frequencies: All Wings reported jamming on all strike frequencies, with light to moderate effectiveness. Atmospheric interference was slight. The following is a percentage breakdown of traffic per frequency: 22 per cent on 3 megacycles; 54 per cent on 7 megacycles, and 24 per cent on 11 megacycles.
4. Navigational Aids: Out of 201 requests for HF/DF bearings, 166 were obtained. The remaining 35 were not obtained because of weak signals, both aircraft and ground station, priority of urgent requests over normal check requests, interference, aircraft operators being unable to follow the ground station's instructions, and hunting of the D/F indicator. All Wings reported using air-to-air homing with good results and made use of range and island homing devices. The 314th Wing also reported using homing facilities offered by a destroyer near Iwo Jima with excellent results.
5. Net Discipline and Security: Improvement was noted by the 73rd and 314th Wings. The 313th said that discipline and security were unsatisfactory and that corrective action was being taken. The 73rd reported 2 incidents of aircraft operators interfering with another transmission.
6. Enemy Transmissions: The following incidents of interference and jamming were noted on this mission:
 - a. 3145 kcs:
 - (1) At 1630Z, on leaving the target area, odd characters, prosigns, followed by five-letter groups were received and remained on the air for one hour.
 - (2) At 0930Z and 1530Z Jap voice was moderately effective.
 - (3) At 1630Z, steady signal received during ground station's weather transmission was ineffective.
 - (4) Unknown station sending during ground station transmissions at 1658Z, 1730Z, 1758Z and 1903Z.

b. 6055 kcs:

(1) Aircraft operators said bagpipe jamming was received intermittently throughout the mission. Use of "Crysta Filter" overcame the majority of its effectiveness.

(2) Intentional CW interference between 1500Z and 1700Z.

c. 11080 kcs: CW jamming between 1500Z and 1600Z partially effective.

d. 3410, 7310, 11160, 3990, 7415, and 10820 kcs: Negligible.

7. Distress: Super-Dumbos sent a ditching report of a 313th Wing aircraft and this report was immediately forwarded to that headquarters. One 314th Wing aircraft was unable to get an urgent bearing until frequency was changed. This aircraft requested two urgent bearings which were not received. After changing frequency, however, the bearing was received.

8. Equipment Malfunctions: AN/ART-13: 1 no side tone; 1 calibration control loose; 1 inoperative, power tube blew out twice; 1 fixed antenna off; trailing wire, 21 inoperative; 10 sticking; 2 weights lost. SCR-522: 2 dynamotor burned out; 2 sets inoperative; 1 Channel "B" and "C" inoperative; 1 set burned out during electrical storm. AN/ARN-7: 2 inoperative; 3 sense antenna broken. RC-36: 1 jackbox inoperative; 6 microphone buttons inoperative, 3 microphone switches intermittent, 1 interphone inoperative, 1 resistor burned out in amplifier.

S E C R E T

ANNEX

D

INTELLIGENCE

Part I - Enemy Air Opposition

Part II - Enemy Antiaircraft and Air-to-Air
Bombing

Part III - Bombing Results - Damage Assessment

Mission No 40

10 March 1945

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S E C R E T

PART I - ENEMY AIR OPPOSITION1. General:

a. Enemy air opposition was weak. Seventy-four enemy fighters made 40 attacks. No B-29's were damaged or lost due to enemy aircraft. B-29 gunners made no claims.

b. Surprise was apparently achieved. There was little evidence of air-ground coordination. The enemy pilots intercepting appeared to have little or no knowledge of night fighting.

2. Type of Enemy Aircraft Attacking:

a. B-29 crews were able to identify positively only 3 of the 40 attackers. Excluding the 7 enemy aircraft that could not be identified either by type (T/E or S/E) or name, 15 of the remaining 33 attacks were made, possibly, by twin-engine aircraft.

b. The breakdown:

<u>E/A</u>	<u>No. of Attacks</u>
S/E U/I	13
T/E U/I	9
Unidentified	7
Possibly Irving	4
Tojo	2
Nick	1
Zeko	1
Possibly Jack	1
Possibly Tony	1
Twin Boom E/A	<u>1</u>
TOTAL	40

3. Enemy Aircraft Sighted, But Not Attacking:

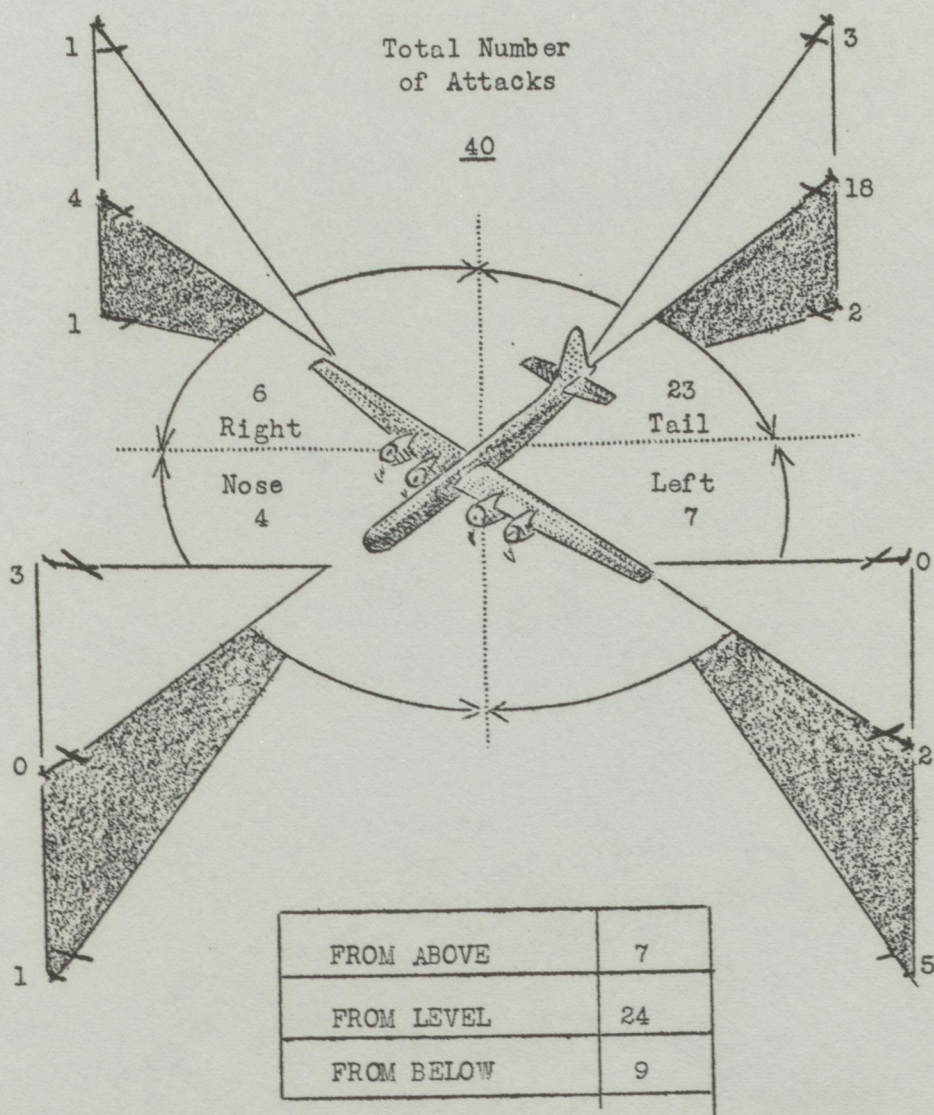
a. Six single-engine unidentified aircraft in target area, 6000 to 7000 feet.

b. Eleven single-engine unidentified aircraft and 1 twin-engine aircraft at 5000 feet in vicinity of Chosi on withdrawal.

4. Direction and Level of Attacks: Because of the small number of attacks no attempt has been made to analyze attacks on a percentage basis. Twenty-three of the 40 attacks were made from the tail quarter. Twenty-four of the 40 attacks were made from level. Distribution of attacks on direction and level basis appears on the chart on the following page.

5. Accuracy of Enemy Fire: No B-29 was damaged and/or destroyed by enemy aircraft, as compared to 0%, 0%, 16.5%, 4.7%, 22.8%, 13.1% and 53.9%, respectively, of B-29's damaged and/or destroyed by enemy aircraft on 7 previous missions.

Direction and Level of Approach of Enemy Aircraft



6. Type of Projectile: The Nick fired "what looked like 37-mm tracer or incendiary ammunition". The aircraft which attacked 50 miles past land's end was using only machine guns. One of the unidentified twin-engine aircraft fired 4 fixed guns; the other unidentified twin-engine fighter fired 6 fixed guns. A possible Jack was reported as firing 6 fixed guns.

7. Enemy Tactics:

a. Because of darkness during the strike, there is little to report on the general employment of Japanese aircraft.

b. It appears that either radar-equipped night fighters were not extensively used or, if used, were not effective. The attacks occurred while the B-29's were illuminated by fire or searchlights or shortly after. St. Elmo's fire from the propellers was a means of distinguishing between aircraft with different number of engines. Some crews believed fighters were limited to visual searching and "stumbled" on our aircraft.

c. A coordinated attack was made by 2 single-engine fighters against a B-29 caught by searchlights in the target area. These aircraft, in trail, attacked from 9 o'clock low. Breakaways could not be observed.

d. Another aircraft was attacked by 3 single-engine fighters and 1 twin-engine fighter, of which 2 attacked from high at 12 o'clock, one from 3 o'clock, and one from a low position from 12 o'clock.

8. Our Tactics vs. Enemy Aircraft: Evasive action was taken in some cases by turning and in one instance by climbing 2500 feet at 300 mph indicated into a heavy cloud bank. Evasive action taken by some aircraft consisted of sharp S turns and diving to lower altitudes.

9. Enemy Aircraft Markings:

1 Nick	- Silver colored.
1 Possible Jack	- Olive drab.
1 Zeke	- Silver colored.

10. Results of Hits on Enemy Aircraft - None.

11. Claims - None

* * * * *

PART II - ANTI-AIRCRAFT AND AIR-TO-AIR BOMBING

1. Enemy Antiaircraft Fire:

a. Based on RCM intercepts, it is apparent that the enemy had an early warning of this attack.

b. First A/A was encountered en route at Haha, Chichi, and Miyoke Jima. Heavy flak was generally meager, inaccurate, predicted concentration.

c. Before landfall (35/00N - 141/30E), medium flak was encountered from ships by the A/C of the 313th Wing. It was reported as generally inaccurate automatic weapons fire. Tracers were observed long before A/C were in range. One ship fired a flare just before opening fire.

d. From landfall to IP, flak was mostly from medium A/A, with some heavy A/A reported. It was meager to moderate, and generally inaccurate.

e. The 73rd Wing crews reported intense and accurate, continuously pointed heavy flak from ships in Tokyo Bay. One A/C was damaged by this fire at 7000 ft.

f. The 73rd Wing bombed the Target Area between 1514-1758Z from 6620-8950 ft. through 2/10-10/10 undercast. Axes of attack were 290°-309°. Flak encountered was medium and heavy, intense and accurate. Twenty-three A/C were damaged. One A/C was lost due to unknown reasons.

g. The 313th Wing bombed the Target Area between 1526-1800Z from 5850-8000 ft. through 1/10-2/10 undercast. Axis of attack was approximately 305°. The initial elements over Tokyo met generally accurate barrages of moderate intensity. With each succeeding element, the flak was less accurate and diminished in intensity until the last planes over the area bombing through the smoke of the fires below were unable to observe any A/A fire. Nine A/C suffered minor flak damage.

h. The 314th Wing bombed Tokyo between 1507-1759Z from 4900-9200 ft. through 2/10 undercast. Axes of attack were 210°-340°. Flak encountered was medium and heavy, meager to intense, and accurate to inaccurate. Ten A/C were damaged by flak, 1 of which was later lost to survey. Two A/C were lost to flak, and 6 A/C were lost to unknown causes. Crews reported observations of 7 A/C being shot down over the target, presumably by flak (One of these appears to be a duplication).

i. The wind over the target was variously reported as from 220°-310° at 15-60K.

j. En route back, all A/C reported heavy and medium flak as generally meager and inaccurate. Flak was reported near Kasumiga Lake. At Chosi Point some intense, inaccurate predicted concentrations of heavy flak were reported. The crew of A/C 484 (504th Group) flying approximately 7 miles west of Haha Jima saw an unknown plane bracketed by 4 searchlights and then shot down.

k. The searchlights were reported effective at the beginning of the raid. They picked up targets and passed them from light to light. Gun fire was reported as accurate on A/C tracked by searchlights. A/C not illuminated by searchlights were not fired upon. Some colored beams were reported. As the raid progressed, the searchlights became progressively less and less effective, "searching the sky wildly and erratically". Searchlights aboard ships in Tokyo Bay were reported as very accurate.

l. An estimate of the number and location of searchlights is as follows:

	<u>Location</u>	<u>Number</u>
(1) <u>Chiba Peninsula:</u>		
(a)	Kisaruzw (35/24N - 139/55E)	12
(b)	Anegasaki (35/28N - 140/02E)	6
(c)	Goi (35/31N - 140/05E)	14
(d)	Mohara (35/25N - 140/15E)	8
(e)	(35/15N - 140/10E)	10
(2) <u>South Tokyo:</u>		
(a)	Haneda (35/33N - 139/45E)	6
(3) <u>Tokyo:</u>		
(a)	West shore of Tokyo Bay, around the Emperor's Palace, and the Northwestern part of city	50-100
(b)	Ring around outer edge of city	100

(4) East of Tokyo:

(a) Funabashi (35/42N - 140/00E)	20
(b) 35/40N - 140/30E	12
(c) 35/45N - 140/15E	10
(d) 35/55N - 140/06E	5

(5) Chosi Point: 15

(6) Chichi Jima: 4

m. RCM observers reported interceptions of typical A/A and S/L radar frequencies. In particular they reported moderate A/A in the Nojimazaki area associated with a 10 centimeter GL radar, and probable radar control of flak in Chosi Point Area.

2. Our Tactics vs A/A: Evasive action varied all the way from violent efforts to lose searchlights to no evasive action. Some A/C were able to get out of searchlight beams; others reported evasive action ineffective.

3. Air-to-Air Bombs and Rockets: None reported. A 314th Wing A/C reported "flare bombs" over the target area. Three or four of these were observed.

* * * * *

PART III - DAMAGE ASSESSMENT REPORT

TOKYO CITY

Mission No.: 3 PR5M 77

Date Flown: 11 March 1945

Reference: AAF Air Objective Folder 90.17.

SUMMARY

Damage to Tokyo City resulting from XXI Bomber Command Mission 40, 10 March 1945, totals 440,146,000 sq. ft., 10,120 acres or 15.8 sq. mi. of city area destroyed.

Eighteen per cent of the industrial and 63 per cent of the commercial district were destroyed along with the heart of the residential district. Eighty-two per cent of incendiary zone No. 1 was destroyed.

Total damage resulting from XXI Bomber Command Missions 38 and 40, 25 February 1945 and 9 March 1945 respectively, is 469,146,000 sq. ft., 10,800 acres or 16.8 sq. mi.

Twenty-two industries assigned target numbers and many other unidentified industries were destroyed or damaged.

DETAILS OF DAMAGE

(All references to buildings, targets and areas are keyed to the annotated picture which follows this report).

TARGET 334 - Nisso Stool Mfg. Co. - Destroyed.

TARGET 335 - Army Provisions Depot - 60% destroyed, 1 main building and 4 warehouses still standing.

TARGET 365 - Shiodome Freight Yards - Buildings 60% destroyed.

TARGET 366 - Steam Engineering and Rolling Stock Mfg. Co. - 19 minor buildings destroyed; 5 main buildings still standing.

TARGET 826 - Fujikura Electric Cable Works. 70% destroyed; administration building, reported cable factory and 2 miscellaneous buildings still standing.

TARGET 904 - Sakurada Engineering Works 30 small buildings destroyed; 3 main buildings still standing.

TARGET 907 - Tokyo Gas Co., Sunamachi Works Destroyed; 2 gasometers still standing.

TARGET 910 - Rising Sun Petroleum Terminal Destroyed.

TARGET 1397- Japan Refining Works Moderate damage - about 15% destroyed

TARGET 911 - Ogura Oil Co. Destroyed.

TARGET 912 - Nisshin Spinning Mill. Destroyed.

TARGET 913 - Hattori Company (Precision Instruments) Destroyed.

TARGET 914 - Oriental Weaving Co. Destroyed.

TARGET 915 - Oriental Weaving Co. Destroyed.

TARGET 1342- Japan Machine Industry Destroyed

TARGET 1350 -Tokyo Kazai Co. All small buildings destroyed; 4 large buildings still standing.

TARGET 1370 -Sumida River RR Yard, Joban Line 3 warehouses destroyed
3 warehouses damaged.

TARGET 1430 -Nippon Electric Wire & Cable Co. Reported location is in a destroyed area.

TARGET 1448 -Tsukiji Market & Wholesale Warehouse 13 small buildings destroyed.

TARGET 1449 -Kanda Market Destroyed.

TARGET 1450 -Koto Market Destroyed.

SECRET

Unidentified ship yard, possibly
Target 1459, as reported in AAF
Air Objective Folder 90.17

11 small buildings destroyed.

Unidentified industry adjacent
to above target

65 small and medium-sized build-
ings destroyed; entire roof of
1 large building superficially
damaged.

AREAS OF DAMAGE

Note: See annotations on attached enlarged photograph.

<u>Area</u>	<u>Sq. ft. of damage</u>
1	373,060,000
2	13,350,000
3	400,000
4	800,000
5	225,000
6	6,847,000
7	2,990,000
8	861,000
9	1,440,000
10	780,000
11	6,500,000
12	3,439,000
13	19,470,000
14	1,749,000
15	8,225,000

STATISTICS OF DAMAGE

INDUSTRIAL AREA - (62 1/4 sq. mi.):

11.3 sq. mi., or 18% of total area destroyed.

COMMERCIAL AREA - (8 3/4 sq. mi.):

5.5 sq. mi., or 62.8% of total area destroyed.

INCENDIARY ZONE NO. 1 - (See annotated print) - 10 sq. mi. of which
6.2 sq. mi. or 62% was destroyed. (Reference M-9)

Print 1V:31 and enlarged print annotated and attached.

SECRET

CONFIDENTIAL



KEY

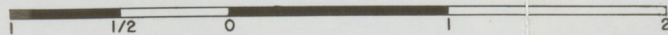
▨ OLD DAMAGE

▧ NEW DAMAGE

— INCENDIARY ZONE NO.1.

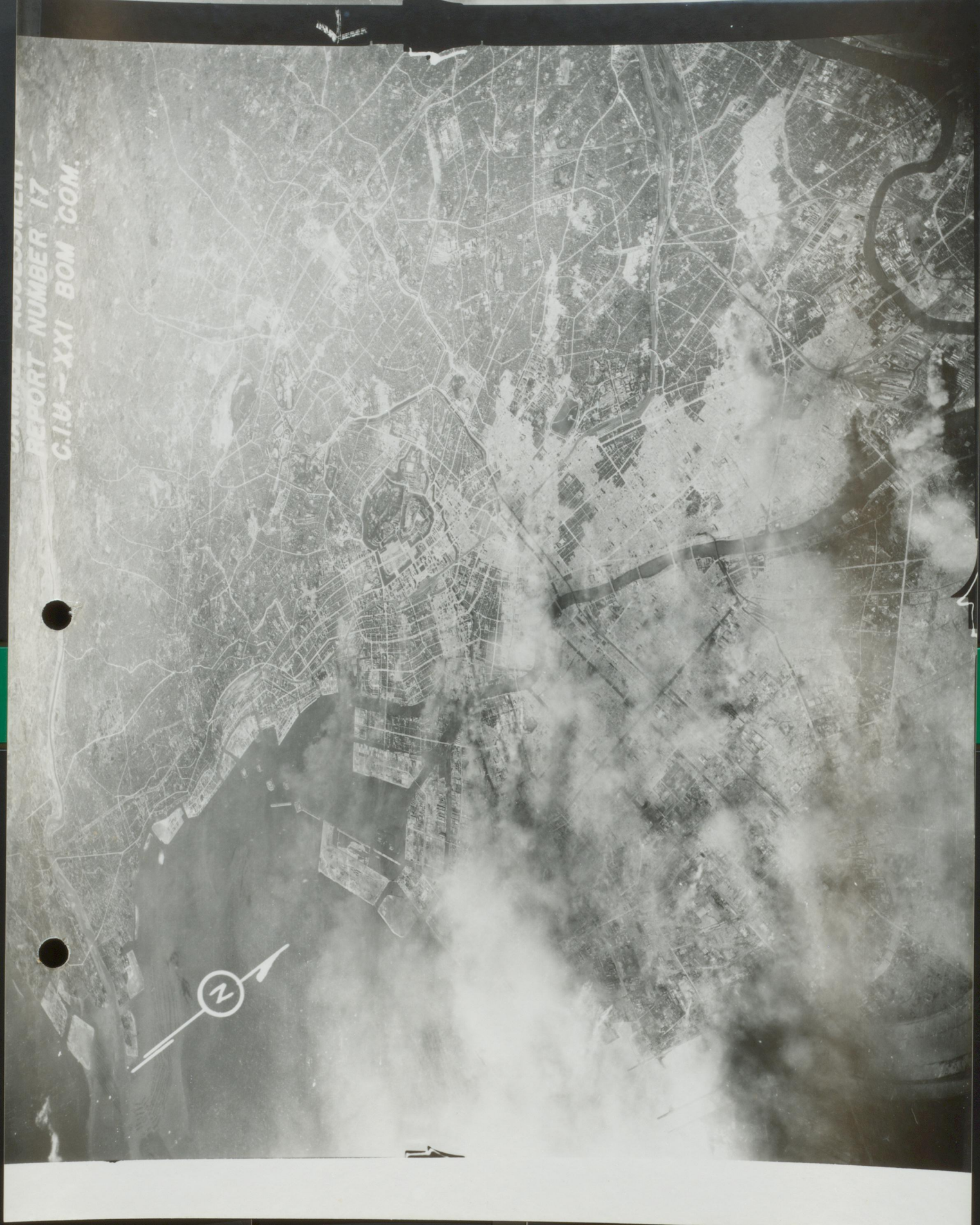
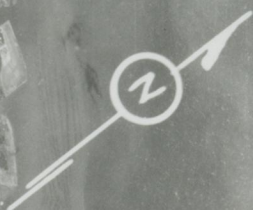
TOKYO CITY

DAMAGE ASSESSMENT REPORT NO.20
C.I.U. XXI BOM. COM.



SCALE IN MILES

REPORT NUMBER 17
C.I.B. - XXI BOM COM.



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ANNEX

E

CONSOLIDATED STATISTICAL SUMMARY

Mission No. 40

10 March 1945

-41-

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XXI BOMBER COMMAND

CONSOLIDATED STATISTICAL SUMMARY OF COMBAT OPERATIONS

FORM 34

MISSION NO. ⁴⁰

9 March 1945

Primary Target - Urban Area, Tokyo

EFFECTIVENESS OF MISSION

Aircraft Airborne 325
Percent of Aircraft On Hand. 84%

Aircraft Bombing Primary. 279
Percent of Aircraft Airborne 86%

Aircraft Bombing All Targets. 298
Percent of Aircraft Airborne 92%

Bombs Dropped On Primary Target 1665 Tons

Bombs Dropped On Other Targets. 118 Tons

Enemy Aircraft Destroyed. None

Bombing Results - Damage Assessment Photos Show About 16.7 Sq. Miles Of City Area Destroyed.

COST OF MISSION

Aircraft Lost 14
Percent of Aircraft Airborne 4.3%

Aircraft Damaged. 42
Percent of Aircraft Airborne 13%

Crew Member Casualties. 102
Percent of Total Participating 3.1%

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33RD STATISTICAL CONTROL UNIT

SECRET

AIRCRAFT PARTICIPATING

MISSION 40

DATE 9 March 1945

UNIT	A/C ON HAND	A/C SCHEDULED	A/C FAILING TO TAKE OFF	A/C AIRBORNE	TIME OF TAKE OFF			TIME OF RETURN			A/C BOMBING PRIMARY TARGET	A/C BOMBING SECONDARY TARGET	A/C BOMBING L.R. AND T.O.	A/C ON OBSERVATION	TOTAL A/C EFFECTIVE	TOTAL A/C NON-EFFECTIVE
					DATE	FIRST	LAST	DATE	FIRST	LAST						
497	45	36	-	37	9 Mar.	0815 Z	0911 Z	9-10 Mar	2158 Z	0121 Z	34	-	-		34	3
498	43	42	-	42	"	0818 Z	0929 Z	"	2300 Z	0227 Z	34	-	3		37	5
499	46	42	1 <u>a</u>	41	"	0815 Z	0902 Z	"	2157 Z	0056 Z	38	-	1		39	2
500	46	42	1 <u>b</u>	41	"	0817 Z	0853 Z	"	2239 Z	0137 Z	31	-	5		36	5
73 WG	180	162	2	161 <u>x</u>	"	0815 Z	0929 Z	"	2157 Z	0227 Z	137	-	9		146	15
6	40	36	4 <u>c</u>	32	"	0853 Z	0947 Z	"	2341 Z	0125 Z	32	-	-		32	-
9	39	33	1 <u>d</u>	32	"	0815 Z	0848 Z	"	2110 Z	<u>e</u> 0212 Z	26	-	3		29	3
504	27	21	1 <u>f</u>	20	"	0853 Z	1010 Z	"	2340 Z	0109 Z	15	-	2		17	3
505	40	31	5 <u>g</u>	26	"	0845 Z	0920 Z	"	2242 Z	0210 Z	20	-	4		24	2
313 WG	146	121	11	110 <u>y</u>	"	0815 Z	1010 Z	"	2110 Z	0212 Z	93	-	9		102	8
19	30	29	1 <u>h</u>	28	"	0803 Z	0830 Z	"	2253 Z	<u>e</u> 0049 Z	25	-	1		26	2
29	29	27	1 <u>i</u>	26	"	0736 Z	0802 Z	"	2245 Z	0050 Z	24	-	-	1 <u>j</u>	25	1
314 WG	59	56	2	54	"	0736 Z	0830 Z	"	2245 Z	0050 Z	49	-	1	1	51	3
21 BC	385	339	15	325	"	0736 Z	1010 Z	"	2110 Z	0227 Z	279	-	19	1	299	26

a Engine backfired.b Operations personnel error.c 1 A/C carburetor out #2 engine.

1 A/C mag drop #2 engine.

1 A/C bomb bay doors out.

1 A/C #4 turbo out.

d Leak in oil scavenger line #2 engine.e Excludes A/C landing at Iwo and returning late.f Unable to secure sufficient bombs to load all A/C in time for mission.g 3 A/C not in commission for takeoff.

1 A/C engine backfired.

1 A/C brakes failed.

h #3 engine cutting out.i Bomb bay doors inoperative.j A/C assigned for observation and photographic purposes.x Excludes 3 super dumbos, two of which aborted, and 2 homing A/C.y Excludes 1 super dumbo - 2 homing A/C.

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CORRECTED COPY

BREAKDOWN OF ALL AIRCRAFT FAILING TO BOMB PRIMARY TARGET

UNIT	MECHANICAL FAILURE			PERSONNEL ERROR			FLIGHT CONDITIONS			ENEMY ACTION			OTHER		
	Non-Effective	Bombed Secondary	Bombed Other	Non-Effective	Bombed Secondary	Bombed Other	Non-effective	Bombed Secondary	Bombed Other	Non-Effective	Bombed Secondary	Bombed Other	Non-Effective	Bombed Secondary	Bombed Other
497	2	-	-	1	-	-	-								-
498	4	-	2	-	-	-	1								1
499	-	-	1	2	-	-	-								-
500	5	-	1	-	-	4	-								-
73 WG	11	-	4	3	-	4	1								1
6	-	-	-	-	-	-	-								-
9	3	-	1	-	-	-	-								2
504	3	-	1	-	-	-	-								1
505	2	-	3	-	-	-	-								1
813 WG	8	-	5	-	-	-	-								4
19	1	-	-	1	-	1	-								-
29	1	-	-	-	-	-	-								-
814 WG	2	-	-	1	-	1	-								-
21 BC	21	-	9	4	-	5	1								5

SECRET

MISSION _____

DATE _____

BOMBING RUN

UNIT	TARGET BOMBED		A/C DROPPING BOMBS	TIME OF RELEASE		ALTITUDE OF RELEASE		VISUAL BOMBING			RADAR BOMBING		A/C OPERATED BY:	
	NAME OF TARGET	TYPE		Earliest	Latest	Lowest	Highest	A/C Sighting For:		A/C Dropping on Lead A/C	A/C Bombing by Radar	A/C Dropping on Lead A/C	C-1	Manual
								R & D	Range					
497	Tokyo Urban Area	P	34	1514 Z	1758 Z	7000	7800	2	-	-	32	-	17	17
498	Tokyo Urban Area	P	34	1549 Z	1750 Z	7000	8000	15	-	-	19	-	34	-
	Mito, Nikko	LR	2	1735 Z	1742 Z	7600	7800	2	-	-	-	-	2	-
	Unknown	TO	1	Unknown		Unknown		1	-	-	-	-	-	1
499	Tokyo Urban Area	P	38	1520 Z	1657 Z	6800	7600	-	-	-	38	-	20	18
	Chosi	LR	1	1455 Z	-	7000	-	1 a	-	-	-	-	-	1
500	Tokyo Urban Area	P	31	1534 Z	1651 Z	6620	8950	10	-	-	21	-	31	-
	Tateyama-Hato, Chosi Point, Sendai	LR	5	1558 Z	1700 Z	6800	7800	4	-	-	1	-	5	-
73 WG	Tokyo Urban Area	P	137	1514 Z	1758 Z	6620	8950	27	-	-	110 b	-	102	35
6	Tokyo Urban Area	P	32	1601 Z	1713 Z	5850	8000	17	-	5	10	-	22	10
9	Tokyo Urban Area	P	26	1526 Z	1800 Z	6400	7800	17	-	-	9	-	19	7
	Chosi, Maug	TO	2 c	1630 Z	2130 Z	7000	-	-	-	-	2	-	2	-
	Unknown	LR	3	1634 Z	-	6400	-	3	-	-	-	-	1	2
504	Tokyo Urban Area	P	15	1615 Z	1725 Z	6400	7000	4	-	-	11	-	10	5
	Chosi, Katsura	LR	2	1705 Z	1718 Z	6300	6500	2	-	-	-	-	1	1
505	Tokyo Urban Area	P	20	1552 Z	1732 Z	6300	8000	18	-	-	2	-	20	-
	Kasumigaura, Haha Jima, Chichi Jima, Grigan, Guguan	TO	4	1640 Z	2350 Z	6400	10000	4	-	-	-	-	-	4
313 WG	Tokyo Urban Area	P	93	1526 Z	1800 Z	5850	8000	56	-	5	22	-	71	22
19	Tokyo Urban Area	P	25	1536 Z	1759 Z	5000	5000	22	-	-	3 d	-	14	11
	Unknown	LR	1	1608 Z	-	5000	-	1	-	-	-	-	-	1
29	Tokyo Urban Area	P	24	1507 Z	1636 Z	4900	9200	20 e	-	-	4	-	19 e	5
314 WG	Tokyo Urban Area	P	49	1507 Z	1759 Z	4900	9200	42	-	-	7	-	33	16
21 BC	Tokyo Urban Area	P	279	1507 Z	1800 Z	4900	9200	125	-	5	149	-	206	73

a Did not use bomb sight. b Includes 25 A/C which made visual corrections. c Also bombed primary, included in total bombing primary.

d 1 A/C bombed by navigation.

e Includes 5 A/C missing, information unavailable.

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MISSION 40

DISPOSITION OF BOMBS

DATE 9 March 1945

UNIT	TYPE & WEIGHT OF BOMB		FUZE SETTING		LOADED ON AIR- BORNE AIRCRAFT		RELEASED ON TARGETS				JETTISONED		RETURNED		UNKNOWN			
							URBAN AREA-TOKYO PRIMARY										LAST RESORT AND TARGET OF OPP.	
							Nose	Tail	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons
497	M47-ii2	100 IB	Inst.	None	552	19	537	18.5			-	-	15	.5	-	-	-	-
	E28	500 Inc Clu	18.7	"	1354	225.6	1210	201.6			-	-	88	14.7	56	9.3	-	-
498	M47-ii2	100 IB	Inst.	"	552	19	368	12.7			-	-	184	6.3	-	-	-	-
	E28	500 Inc Clu	17.3	"	1560	260	1245	207.5			120	20	194	32.3	1	.2	-	-
499	M47-ii2	100 IB	Inst.	"	552	19	368	12.7			-	-	-	-	184	6.3	-	-
	E28	500 Inc Clu	18.6	"	1520	253.3	1438	239.7			40	6.6	42	7	-	-	-	-
500	M47-ii2	100 IB	Inst.	"	550	19	543	18.7			-	-	7	.3	-	-	-	-
	E28	500 Inc Clu	18.8	"	1510	251.7	1078	179.7			196	32.7	181	30.1	55	9.2	-	-
73 WG	M47-ii2	100 IB			2206	76	1816	62.6			-	-	206	7.1	184	6.3	-	-
	E28	500 Inc Clu			5944	990.6	4971	828.5			356	59.3	505	84.1	112	18.7	-	-
6	E46	500 Inc Clu	*		989	197.8	976	195.2			-	-	9	1.8	4	.8	-	-
9	E46	500 Inc Clu	*		833	166.6	614	122.8			90	18	125	25	4	.8	-	-
504	M47-ii2	100 IB	Inst.	None	720	24.8	678	23.4			42	1.4	-	-	-	-	-	-
	E46	500 Inc Clu	*		638	127.6	477	95.4			59	11.8	102	20.4	-	-	-	-
505	E46	500 Inc Clu	*		626	125.2	495	99			90	18	38	7.6	3	.6	-	-
	M47-ii2	100 IB	Inst.	None	720	24.8	359	12.4			144	4.9	217	7.5	-	-	-	-
313 WG	E46	500 Inc Clu			3086	617.2	2562	512.4			239	47.8	274	54.8	11	2.2	-	-
	M47-ii2	100 IB			1440	49.6	1037	35.8			186	6.3	217	7.5	-	-	-	-
19	E46	500 Inc Clu	*		663	132.6	586	117.2			24	4.8	52	10.4	1	.2	-	-
29	M46	Photoflash			2	-	2	-			-	-	-	-	-	-	-	-
	E46	500 Inc Clu	*		404	80.8	400	80			-	-	4	.8	-	-	-	-
	M47-ii2	100 IB	Inst.	None	976	33.6	830	28.5			-	-	134	4.7	12	.4	-	-
314 WG	E46	500 Inc Clu			1067	213.4	986	197.2			24	4.8	56	11.2	1	.2	-	-
	M47-ii2	100 IB			976	33.6	830	28.5			-	-	134	4.7	12	.4	-	-
	M46	Photoflash			2	-	2	-			-	-	-	-	-	-	-	-
21 BC	E28	500 Inc Clu			5944	990.6	4971	828.5			356	59.3	505	84.1	112	18.7	-	-
	E46	500 Inc Clu			4153	830.6	3548	709.6			263	52.6	330	66	12	2.4	-	-
	M47-ii2	100 IB			4622	159.2	3683	126.9			186	6.3	557	19.3	196	6.7	-	-
	M46	Photoflash			2	-	2	-			-	-	-	-	-	-	-	-

* Ince ndiary clusters set to open 2500 ft. above ground.

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MISSION NO. 40DATE 9 March 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					
497	-	-	-	-	-	-	-	5							1	4	336	-	-	-	-
498	-	-	-	-	-	1 <u>a</u>	1	1							-	1	466	-	11	3	14
499	-	-	-	-	-	-	-	8							-	8	351	-	-	-	-
500	-	-	-	-	-	-	-	9							-	9	372	-	-	-	-
73 WING	-	-	-	-	-	1	1	23							1	22	1525	-	11	3	14
6	-	-	-	1 <u>f</u>	-	-	1	-	-						-	-	358	-	-	1	1
9	-	-	-	-	2	-	2	-	9						-	9	359	3	-	-	3
504	-	-	-	-	-	-	-	-	-						-	-	191	-	-	-	-
505	-	-	-	-	1	-	1	-	-						-	-	236	-	-	-	-
313 WING	-	-	-	1	3 <u>b</u>	-	4	-	9						-	9	1144	3	-	1	4
19	-	-	-	-	1 <u>g</u>	3 <u>c</u>	4	-	3						-	3	334	-	36	1	37
29	-	2 <u>d</u>	-	-	-	3 <u>e</u>	5	-	7						-	7	304	-	46	1	47
314 WING	-	2	-	-	1	6	9	-	10						-	10	638	-	82	2	84
21 B.C.	-	2	-	1	4	7	14	-	42						1	41	3307	3	93	6	102

a Missing. No word.b 3 A/C ditched. Became lost over Honshu and used excessive fuel.
31 personnel rescued.c Missing. No word.d 1 A/C ditched enroute to base. All 11 crew members rescued.

1 A/C missing, believed shot down over primary.

e Missing. No word.f 1 A/C lost to survey 3/14/45.g 1 A/C lost to survey 3/14/45.

SECRET

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MISSION _____

40

DATE _____

9 March 1945

ENEMY OPPOSITION AND AMMUNITION EXPENDITURES

UNIT	NO. OF E/A ENCOUNTERED	ATTACKS BY E/A	ENEMY A/C DESTROYED & DAMAGED			AMMUNITION EXPENDITURES							
			TYPE OR MODEL	DES- TROYED	PROB. DESTR'D	DAMAGED	20 M.M.			.50 CALIBER			
							FIRED	ON LOST A/C	TOTAL	FIRED	ON LOST A/C	TOTAL	
	XXXX SIGHTED												
497	10	9		-	-	-			None Loaded				
498	1	1		-	-	-							
499	5	5		-	-	-							
500	9	9		-	-	-							
73 WG	10	24		-	-	-			None Loaded				
6	6	3		-	-	-			None Loaded				
9	10	1		-	-	-			None Loaded				
504	1	1		-	-	-				100	-	100	
505	5	-		-	-	-				120	-	120	
313 WG	22	5		-	-	-				220		220	
19	31	2		-	-	-			None Loaded				
29	11	9		-	-	-				120	-	120	
314 WG	42	11		-	-	-				120	-	120	
21 BC	74	40		-	-	-				340	-	340*	

* Expended on test firing.

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MISSION 40

DATE 9 March 1945

FLIGHT DATA & FUEL CONSUMPTION

	497 Gp.	498 Gp.	499 Gp.	500 Gp.	73rd Wing
<u>A/C COMPLETING MISSION</u> *	34	36	39	36	145
<u>FLIGHT DATA</u>					
Avg. Time At Low Altitude	6:45	6:50	6:35	6:35	6:41
Avg. Time Of Climb To Bombing Altitude	:05	:12	:17	:21	:14
Avg. Time At Bombing Altitude	:20	:28	:31	:28	:27
Avg. Flying Time	14:29	15:05	14:42	14:48	14:46
Avg. Distance Flown (Nautical Air Miles)	2771	2835	2794	2750	2788
<u>FUEL CONSUMPTION</u>					
Consumed To Target:					
Average	3267	3340	3310	3305	3306
Maximum	3891	3904	3661	3585	3904
Minimum	2907	2975	2888	3010	2888
Consumed From Target To Base: (A/C Without Malfunction)					
No. Of Aircraft	32	32	38	35	137
Average	2431	2431	2384	2355	2399
Maximum	2874	2645	2762	2763	2874
Minimum	1695	2120	2038	2171	1695
Consumed From Target To Base: (A/C With Malfunction)					
No. Of Aircraft	2	4	1	1	8
Average	2578	2700	2269	2461	2586
Maximum	2598	2795	2269	2461	2795
Minimum	2559	2600	2269	2461	2269
Total Fuel Used:					
Average	5742	5791	5693	5660	5721
Maximum	6081	6270	6280	6183	6280
Minimum	5165	5408	5222	5235	5165
Total Fuel Remaining:					
Average	1012	940	1107	1060	1032
Maximum	1595	1305	1578	1465	1595
Minimum	679	300	520	617	300
Avg. Gals. Consumed Per Hour	396.5	384.0	387.3	382.4	387.3
Avg. Gals. Consumed Per Mile	2.07	2.04	2.04	2.06	2.05
TOTAL FUEL USED ON AIRBORNE A/C	199504	229520	231262	203492	863778

* A/C for which fuel data are available.

SECRET

SECRET

MISSION 40
DATE 9 March 1945

FLIGHT DATA & FUEL CONSUMPTION

	6 Gp.	9 Gp.	504 Gp.	505 Gp.	313th Wing
<u>A/C COMPLETING MISSION</u> *	32	25	15	20	92
<u>FLIGHT DATA</u>					
Avg. Time At Low Altitude	7:35	7:00	7:12	7:15	7:17
Avg. Time Of Climb To Bombing Altitude	:05	:08	:05	:05	:06
Avg. Time At Bombing Altitude	:25	:33	:28	:20	:27
Avg. Flying Time	15:31	15:25	15:04	15:12	15:21
Avg. Distance Flown (Nautical Air Miles)	2864	2641	2814	2636	2746
<u>FUEL CONSUMPTION</u>					
Consumed To Target:					
Average	3410	3350	3274	3309	3350
Maximum	3604	3930	3500	3907	3930
Minimum	3203	3200	3050	2959	2959
Consumed From Target To Base: (A/C Without Malfunction)					
No. Of Aircraft	31	23	15	20	89
Average	2427	2410	2390	2286	2385
Maximum	2454	2897	2820	2593	2897
Minimum	2271	2024	2125	1973	1973
Consumed From Target To Base: (A/C With Malfunction)					
No. Of Aircraft	1	2	None	None	3
Average	2152	2743	-	-	2546
Maximum	2152	2749	-	-	2749
Minimum	2152	2737	-	-	2152
Total Fuel Used:					
Average	5837	5696	5664	5590	5717
Maximum	6060	5933	5924	6196	6196
Minimum	5474	5490	5433	5123	5123
Total Fuel Remaining:					
Average	923	1089	1121	1152	1050
Maximum	1286	1295	1352	1500	1500
Minimum	700	852	861	504	504
Avg. Gals. Consumed Per Hour	376.1	369.4	375.8	367.8	372.4
Avg. Gals. Consumed Per Mile	2.04	2.16	2.01	2.12	2.08
TOTAL FUEL USED ON AIRBORNE A/C	186967	174600	104552	135545	601664

* A/C for which fuel data are available.

SECRET

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MISSION 40

DATE 9 March 1945

WEIGHT DATA

UNIT	NO. ** AIRCRAFT AIRBORNE	AVERAGE BASIC WT. OF A/C	AVERAGE USEFUL LOAD	AVERAGE NO. OF BOMBS LOADED	* AVERAGE WT OF BOMBS LOADED	AVERAGE FUEL LOADED	AVG WT OF FUEL LOADED (6 LBS PER GAL)	AVERAGE MISC. WEIGHT	AVERAGE GROSS WEIGHT AT TAKE OFF
497	34	74555	59145	14.9 - M47-12 36.6 - E28	13853	6760	40560	4732	133700
498	42	74525	59345	13.2 - M47-12 37.1 - E28	13909	6740	40440	4996	133870
499	39	74452	58584	13.5 - M47-12 37.1 - E28	13930	6800	40800	3854	133036
500	36	74540	59360	13.4 - M47-12 36.8 - E28	13818	6720	40320	5222	133900
73 WING	151	74516	59107		13880	6755	40530	4697	133623
6	32	75350	58707	30.9 - E46	13132	6760	40560	5015	134057
9	25	74800	60000	26 - E46	12625	6785	40710	6665	134800
				22.5 - M47-12					
504	15	75000	58387	31.9 - E46	13558	6785	40710	4119	133387
505	20	73447	59104	24.1 - E46	12182	6760	40560	6362	132551
				27.7 - M47-12					
313 WING	92	74730	59092		12857	6771	40626	5609	133822
19	23	74600	60825	23.7 - E46	10073	7328	43968	6784	135425
29	20	76800	59540	15.5 - E46	9213	7360	44160	6167	136340
				37.5 - M47-12					
314 WING	43	75623	60227		9673	7343	44058	6496	135851
21 B.C.	286	74751	59271		12918	6849	41094	5259	134022

* Actual weight M47-12 - IB equals 70 lbs.
 Actual weight E28 - I Clu equals 350 lbs.
 Actual weight E46 - I Clu equals 425 lbs.

** Based on A/C for which data are available.

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FLIGHT DATA & FUEL CONSUMPTION

	19 Gr.	29 Gr.	314 Wg.	21st B.C.
<u>A/C COMPLETING MISSION</u> *	23	20	43	280
<u>FLIGHT DATA</u>				
Avg. Time At Low Altitude	3:19	2:05	2:45	6:16
Avg. Time Of Climb To Bombing Altitude	:16	:10	:13	:11
Avg. Time At Bombing Altitude	4:17	5:56	5:03	1:09
Avg. Flying Time	15:42	14:52	15:19	15:03
Avg. Distance Flown (Nautical Air Miles)	2800	2886	2840	2782
<u>FUEL CONSUMPTION</u>				
Consumed To Target:				
Average	3783	3725	3756	3390
Maximum	4058	4280	4280	4280
Minimum	3566	3130	3130	2888
Consumed From Target To Base: (A/C Without Malfunction)				
No. Of Aircraft	22	20	42	268
Average	2544	2485	2516	2413
Maximum	2840	2753	2840	2897
Minimum	2059	2058	2058	1695
Consumed From Target To Base: (A/C With Malfunction)				
No. Of Aircraft	1	None	1	12
Average	3001	-	3001	2611
Maximum	3001	-	3001	3001
Minimum	3001	-	3001	2152
Total Fuel Used:				
Average	6352	6578	6457	5833
Maximum	6809	6895	6895	6895
Minimum	5819	5835	5819	5123
Total Fuel Remaining:				
Average	1039	1105	1070	1044
Maximum	1507	1495	1507	1595
Minimum	550	435	435	300
Avg. Gals. Consumed Per Hour	404.6	442.4	421.5	387.6
Avg. Gals. Consumed Per Mile	2.27	2.28	2.27	2.10
TOTAL FUEL USED ON AIRBORNE A/C	169223	168862	338085	1803527

* A/C for which fuel data are available.

2 A/C of 19th Group landed at Iwo Jima.

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ANNEX

F

XXI BOMBER COMMAND FIELD ORDER

Mission No. 40

10 March 1945

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FROM: COM GEN XXI BOM COM

SECRET

TO : COM GEN 73RD BOMB WING
COM GEN 313TH BOMB WING
COM GEN 314TH BOMB WING

By Auth of CG XXI BC

CP 7 March 45
Initials Date

XXI BOMBER COMMAND
GUAM
0800 7 March 1945

FIELD ORDER NUMBER 43. MEETINGHOUSE NUMBER 2

1. Omitted.

2. The XXI Bomber Command will attack Urban Area of Meetinghouse with maximum effort on "D" Day. Location: 3541N - 13948E.

3. a. 73rd Wing:

(1) First A/C will take off at Zero Hour.

<u>Offset A.P.</u>	<u>MPI</u>	<u>Course</u>	<u>Force</u>
353830N - 13953E	354254N - 1394745E	312° True	2/3
Same	354205N - 1394830E	312° True	1/3

(3) Altitude of Attack: 7,000 to 7,800 feet.

(4) Bomb Load: One squadron - M-47 Incendiary Clusters (scheduled to be dropped first) fused instantaneous nose. Balance of squadrons - E-28 Incendiary Clusters fused to open 2,000 feet above target.

(5) Route:

Base
2500N - 14300E
2715N - 14053E
3450N - 14000E
3519N - 14025E
3532N - 1400430E (IP)
Target
3550N - 13953E
3537N - 14033E
Base

(6) Altitude enroute to target: 3,000 to 3,500 feet.

(7) The 73rd Wing will dispatch two radio-homing aircraft to take off prior to main force and to fly between points 3502N - 14000E and 3450N - 14000E for 1 hour and 30 minutes for the purpose of transmitting homing signals to main force.

b. 313th Wing:

(1) First A/C will take off at Zero Hour.

<u>Offset A.P.</u>	<u>MPI</u>	<u>Course</u>	<u>Force</u>
353830N - 13953E	354205N - 1394830E	312° True	1/3
Same	354054N - 1394832E	302° True	2/3

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FIELD ORDER NUMBER 43, MEETINGHOUSE NUMBER 2, CONTINUED

- (3) Altitude of Attack: 6,000 to 6,800 feet.
- (4) Bomb Load: One squadron - M-47 Incendiary Clusters (scheduled to be dropped first) fused instantaneous nose fuse. Balance of squadrons - E-46 Incendiary Clusters fused to open 2,500 feet above the target.
- (5) Route: Same as 73rd Wing.
- (6) Altitude enroute to target: 4,000 to 4,500 feet.
- (7) The 313th Wing will dispatch two radio-homing aircraft to take off prior to main force and to fly between points 3502N - 14000E and 3450N - 14000E for 1 hour and 30 minutes for the purpose of transmitting homing signals to main force.

c. 314th Wing:

- (1) First A/C will take off at Zero Hour minus 40 minutes.

<u>Offset A.P.</u>	<u>MPI</u>	<u>Course</u>	<u>Force</u>
353845N - 13948E	354057N - 1394653E	338° True	All Sq

- (3) Altitude of Attack: 5,000 to 5,800 feet.
- (4) Bomb Load: One squadron - M-47 Incendiary Clusters (scheduled to be dropped first) fused instantaneous nose fuse. Balance of squadrons - E-46 Incendiary Clusters fused to open 2,500 feet.
- (5) Route:
 - Base
 - 2500N - 14300E
 - 2715N - 14053E
 - 3502N - 14000E
 - 3525N - 1395430E
 - Target
 - 3550N - 13953E
 - 3557N - 14033E
 - Base
- (6) Altitude enroute to target: 5,000 to 5,500 feet.

- x. (1) Attacking by individual aircraft with minimum interval between aircraft. Plan of attack will be for radar bombing but visual bombing method will be used if possible. If visual bombing is done bombardiers should endeavor to place an even distribution of bombs over incendiary Zone #1.
- (2) Intervalometer Setting:
 - (a) M-47 Incendiary Clusters: 100 feet.
 - (b) E-46 and E-28 Incendiary Clusters: 50 feet.
- (3) Calibrated airspeed of 230 M.P.H. will be flown by all aircraft on bombing run.
- (4) No ammunition will be carried.
- (5) If visual release is used the aiming point will be other than a conflagration previously started.

FIELD ORDER NUMBER 43. MEETINGHOUSE NUMBER 2. CONTINUED

- (6) All A/C not equipped with bomb bay tank will salvo immediately after intervalometer has been actuated.
- (7) For this mission pins and oar-o-seal wires may be removed from fuses prior to take off.
- (8) During flight altimeter setting will be set at 29.92.
- (9) Zero Hour and "D" Day: 091815K.

4. a. No Change.

b. This is XXI Bom Com Tactical Mission No. 40.

5. Communications:

- a. (1) Radio silence will prevail enroute to target except in case of an aircraft in extreme emergency.
- (2) Four special radio-homing planes, two from the 73rd Wing and two from the 313th Wing will proceed to a predesignated point and orbit for radio homing purposes. Designated radio planes will carry one (1) spare Liaison Transmitter and one (1) spare Liaison Dynamotor. All radio planes will begin transmitting homing signal 20 minutes prior to arrival of main force at designated points. (Reference Regulation 100-37 XXI Bom Com) Radio homing planes will fly designated course for one hour and thirty minutes. The most capable radio operators available will be assigned to the special radio planes. The allocation of planes, altitude, frequency and identification signals will be as follows:

<u>Unit</u>	<u>Altitude</u>	<u>Frequency</u>	<u>Identification</u>
73rd	24,000	424 kos	B
73rd	25,000	524 kos	C
313th	26,000	230 kos	N
313th	27,000	330 kos	A

(3) Jamming tactics may be employed by the enemy but 1 frequency of the 4 should remain open.

(4) Wings will predesignate one plane per squadron as the only plane to transmit a strike report.

(a) Special strike report will consist of time over target ((GMT), target bombed, method of bombing, cloud coverage, results obtained, fighter opposition and flak opposition.

<u>Time</u>	-	Over Target (GMT)
<u>Target Bombed</u>	- P	- Primary
<u>Method of Bombing</u>	- V	- Visual
	- R	- Radar
	- N	- Navigation
<u>Cloud Coverage</u>	- 1 to 9	for tenths
		X for 10/10
<u>Bombing Results</u>	- A	- General Conflagration
	- B	- Several Large Fires
	- C	- Many Fires
	- D	- Few Scattered Fires
	- E	- Unobserved
<u>Fighter Opposition</u>	- A	- Heavy
	- B	- Moderate
	- C	- Meager
	- D	- None

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FIELD ORDER NUMBER 43, MEETINGHOUSE NUMBER 2, CONTINUED

Flak Opposition

- A - Heavy
- B - Moderate
- C - Meager
- D - None

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ANNEX

G

DISTRIBUTION LIST

Mission No. 40

10 March 1945

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TACTICAL MISSION REPORTS

Copy No.

1 Commanding General, Twentieth Air Force
2 Commanding General, XXI Bomber Command
3 Deputy Commander, Twentieth Air Force
4 Chief of Staff, Twentieth Air Force
5 Chief of Staff, XXI Bomber Command
6 Deputy C/S, Opns, XXI Bomber Command
7 Deputy C/S, Sup & Maint, XXI Bomber Command
8 A/C of S, A-2, XXI Bomber Command
9 Commanding General, Army Air Forces, ATTN: AC/AS
Intelligence
10 Commander in Chief, Pacific Ocean Areas (Adv Hq)
11 Commander in Chief, Pacific Ocean Areas (Rear Hq)
12 Chief of Naval Operations, OP-16-V
13 Joint Intelligence Center, Pacific Ocean Areas
14 Commander Air Force, Pacific Fleet
15 Commander, Fifth Fleet
16 Commander, First Carrier Task Force
17 Commander, Forward Area
18 Commanding General, U.S. Army Forces in Far East
19 Commanding General, U.S. Army Forces, Pacific Ocean
Areas
20 Commanding General, Allied Air Forces, Southwest
Pacific Areas
21 Commanding General, SWPA, ATTN: G-2, Section 22 (RCM)
22 Commanding General, Far East Air Forces
23 Commanding General, U.S. Strategic Air Forces In
Europe
24 Commanding General, Eighth Air Force
25 Commanding General, Mediterranean Allied Air Forces
26 Commanding General, Fifteenth Air Force
27 - 28 Commanding General, Seventh Air Force
29 Commanding General, VII Bomber Command
30 - 31 Commanding General, VII Fighter Command
32 Commanding General, Eleventh Air Force
33 Commanding General, XX Bomber Command
34 Commanding General, 58th Bombardment Wing
35 Commanding General, 73rd Bombardment Wing
36 Commanding General, 313th Bombardment Wing
37 Commanding General, 314th Bombardment Wing
38 Commanding General, 315th Bombardment Wing
39 Commanding Officer, 3rd Photo Recon Squadron
40 Commanding Officer, 33rd Statistical Control Unit
41 Chemical Warfare Officer, XXI Bomber Command
42 Tactics & Training Section, A-3, XXI Bomber Command
43 Ordnance Officer, XXI Bomber Command
44 Commanding General, XXI Bomber Command, Detachment "A"
45 - 46 Historical Officer, XXI Bomber Command

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47 - 76 Commanding General, Army Air Forces, ATTN: AC/AS
 Intelligence, Collection Division

77 AAF Evaluation Board, c/o Headquarters AAFPOA

78 Commanding Officer, 6th Bomb Group (VH)

79 Commanding Officer, 9th Bomb Group (VH)

80 Commanding Officer, 16th Bomb Group (VH)

81 Commanding Officer, 19th Bomb Group (VH)

82 Commanding Officer, 29th Bomb Group (VH)

83 Commanding Officer, 39th Bomb Group (VH)

84 Commanding Officer, 40th Bomb Group (VH)

85 Commanding Officer, 330th Bomb Group (VH)

86 Commanding Officer, 331st Bomb Group (VH)

87 Commanding Officer, 444th Bomb Group (VH)

88 Commanding Officer, 462nd Bomb Group (VH)

89 Commanding Officer, 468th Bomb Group (VH)

90 Commanding Officer, 497th Bomb Group (VH)

91 Commanding Officer, 498th Bomb Group (VH)

92 Commanding Officer, 499th Bomb Group (VH)

93 Commanding Officer, 500th Bomb Group (VH)

94 Commanding Officer, 501st Bomb Group (VH)

95 Commanding Officer, 502nd Bomb Group (VH)

96 Commanding Officer, 504th Bomb Group (VH)

97 Commanding Officer, 505th Bomb Group (VH)

98 XXI Bomber Command Lead Crew School, Muroc AAB,
 Muroc Lake, Calif.

99 Commanding Officer, 15th Fighter Group

100 Commanding Officer, 21st Fighter Group

101 Commanding Officer, 506th Fighter Group

102 Reports Section, A-2, XXI Bomber Command (File Copy)

103 - 115 Reports Section, A-2, XXI Bomber Command