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 IFF 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

SECRET

Chart "A"

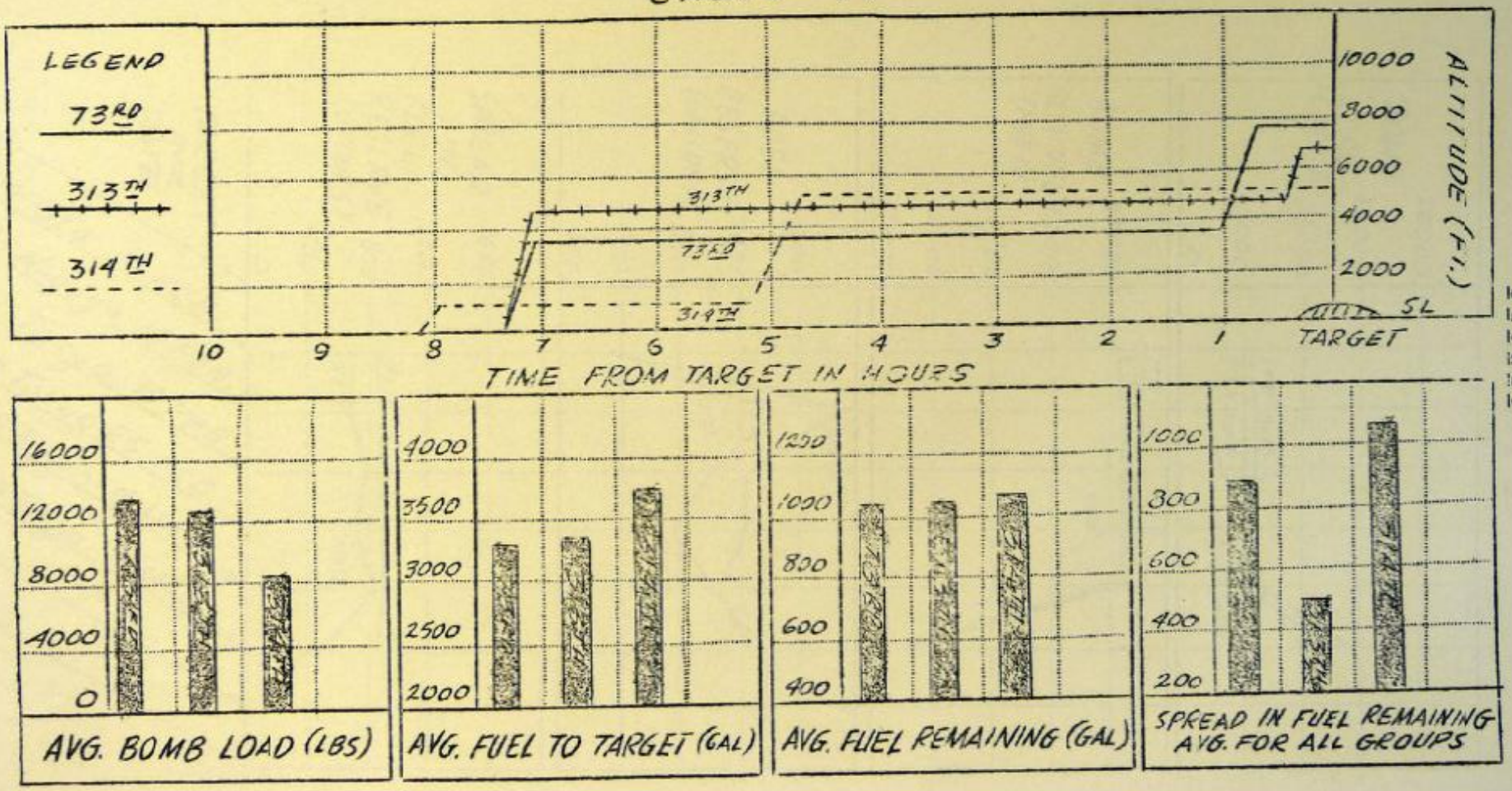

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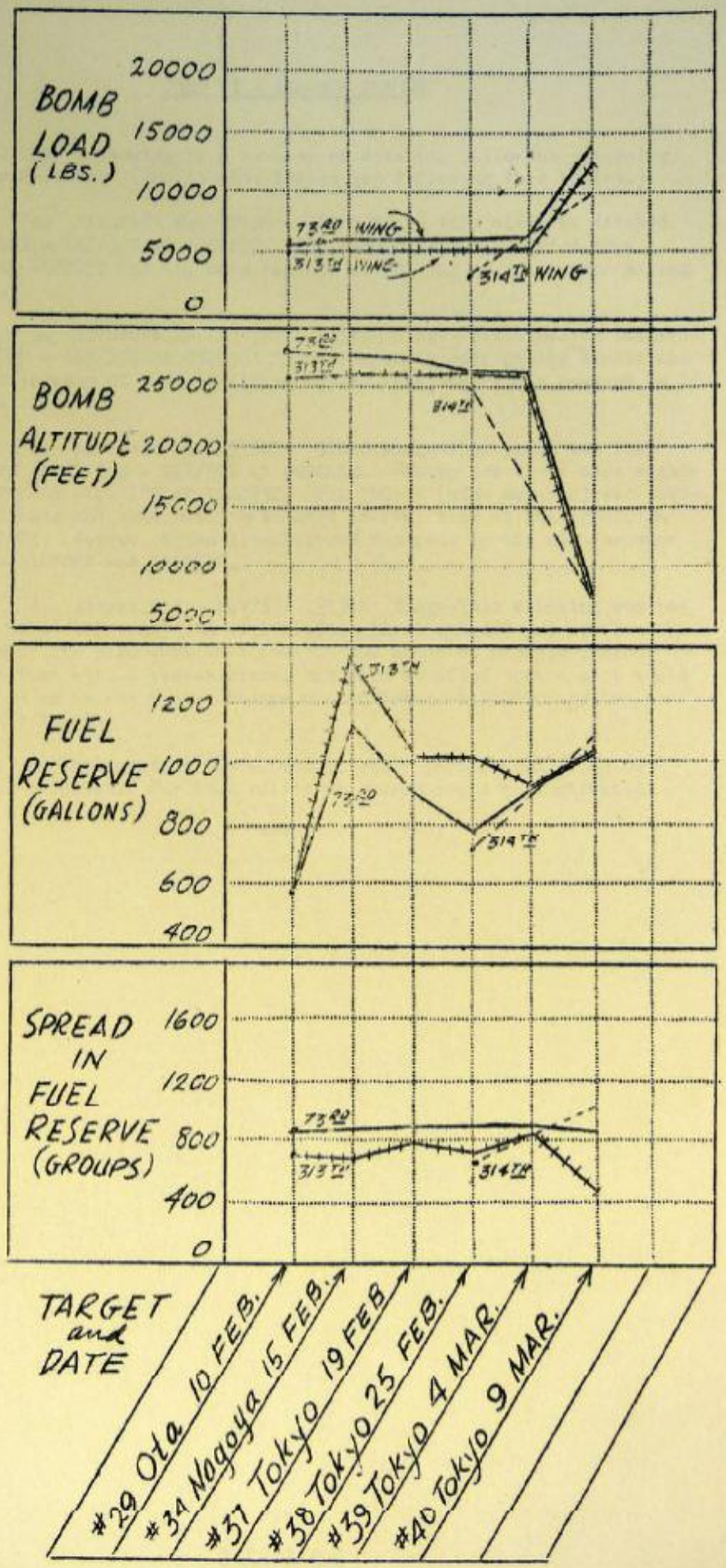
Chart "B"


BOMB LOAD (LBS.)
20000
15000
10000
5000
0
73RD WING
313TH WING
314TH WING
BOMB ALTITUDE (FEET)
25000
20000
15000
10000
5000
73RD
313TH
314TH
FUEL RESERVE (GALLONS)
1200
1000
800
600
400
313TH
73RD
314TH
SPREAD IN FUEL RESERVE (GROUPS)
1600
1200
800
400
0
73RD
313TH
314TH
TARGET and DATE
#29 Ota 10 FEB.
#34 Nagoya 15 FEB.
#37 Tokyo 19 FEB
#38 Tokyo 25 FEB.
#39 Tokyo 4 MAR.
#40 Tokyo 9 MAR.

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 100345Z. The crew of 11 was sighted by a Dumbo at 100725Z and all were rescued at 101130Z by the tender Bering Strait.

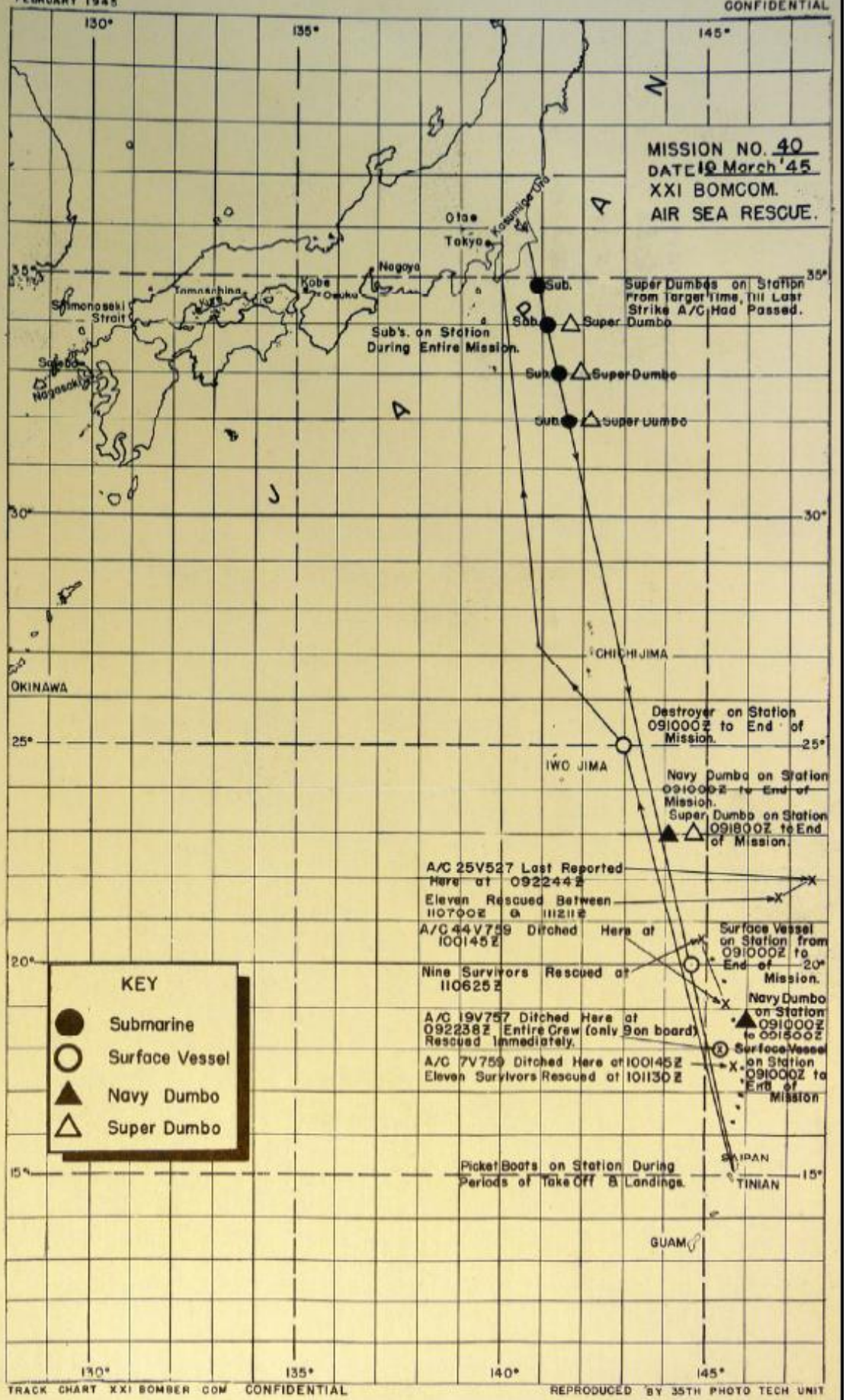
b. Aircraft No. 19V757: 313th Wing--This ditching occurred at 18/00N - 145/15E at 092238Z alongside the tender Bering Strait and the entire crew of 8, in addition to one passenger, was rescued in 18 minutes.

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.
Otsu
Tokyo
Kasumigaura
Nagoya
Kobe
Osaka
Tamashima
Kure
Shimonoseki Strait
Sasebo
Nagasaki
Sub.
Super Dumbos on Station from Target Time, Till Last Strike A/C Had Passed.
Sub's. on Station During Entire Mission.
Super Dumbo
CHICHIJIMA
OKINAWA
Destroyer on Station 091000Z to End of Mission.
IWO JIMA
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
Surface Vessel on Station from 091000Z to End of Mission.
Nine Survivors Rescued at 110625Z
Navy Dumbo on Station 091000Z to 091500Z
A/C 19V757 Ditched Here at 092238Z. Entire Crew (only 9 on board) Rescued Immediately.
Surface Vessel on Station 091000Z to End of Mission
A/C 7V759 Ditched Here at 100145Z
Eleven Survivors Rescued at 101130Z
KEY
Submarine
Surface Vessel
Navy Dumbo
Super Dumbo
Picket Boats on Station During Periods of Take Off & Landings.
SAIPAN
TINIAN
GUAM
130°
135°
140°
145°
35°
30°
25°
20°
15°

SECRET

ANNEX

B

WEATHER

I - Weather

II - Chart - Forecast vs - Observed Weather

III - Prognostic Map

IV - Synoptic Map

Mission No. 40

10 March 1945

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.

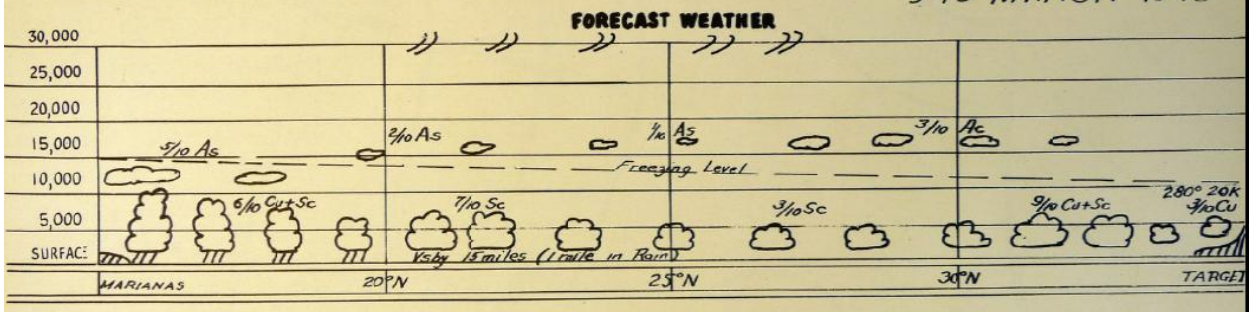
3. Target: 3/10 stratocumulus, base 3000 feet, tops 5000 feet, was reported. The top of the haze layer over the target was at 7000 feet. Visibility was 10 miles being reduced as low as zero in smoke. Smoke was observed bellowing up over the target area to 23,000 feet. Severeturbulence was reported over 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.

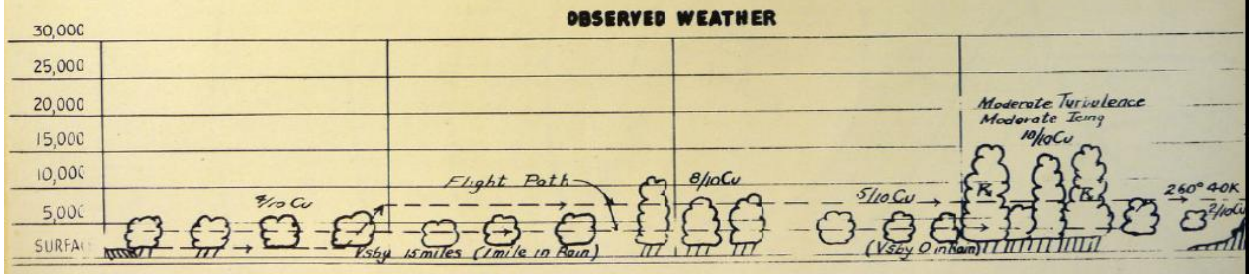
4. Route Returning: The same weather was encountered as on the route outgoing.

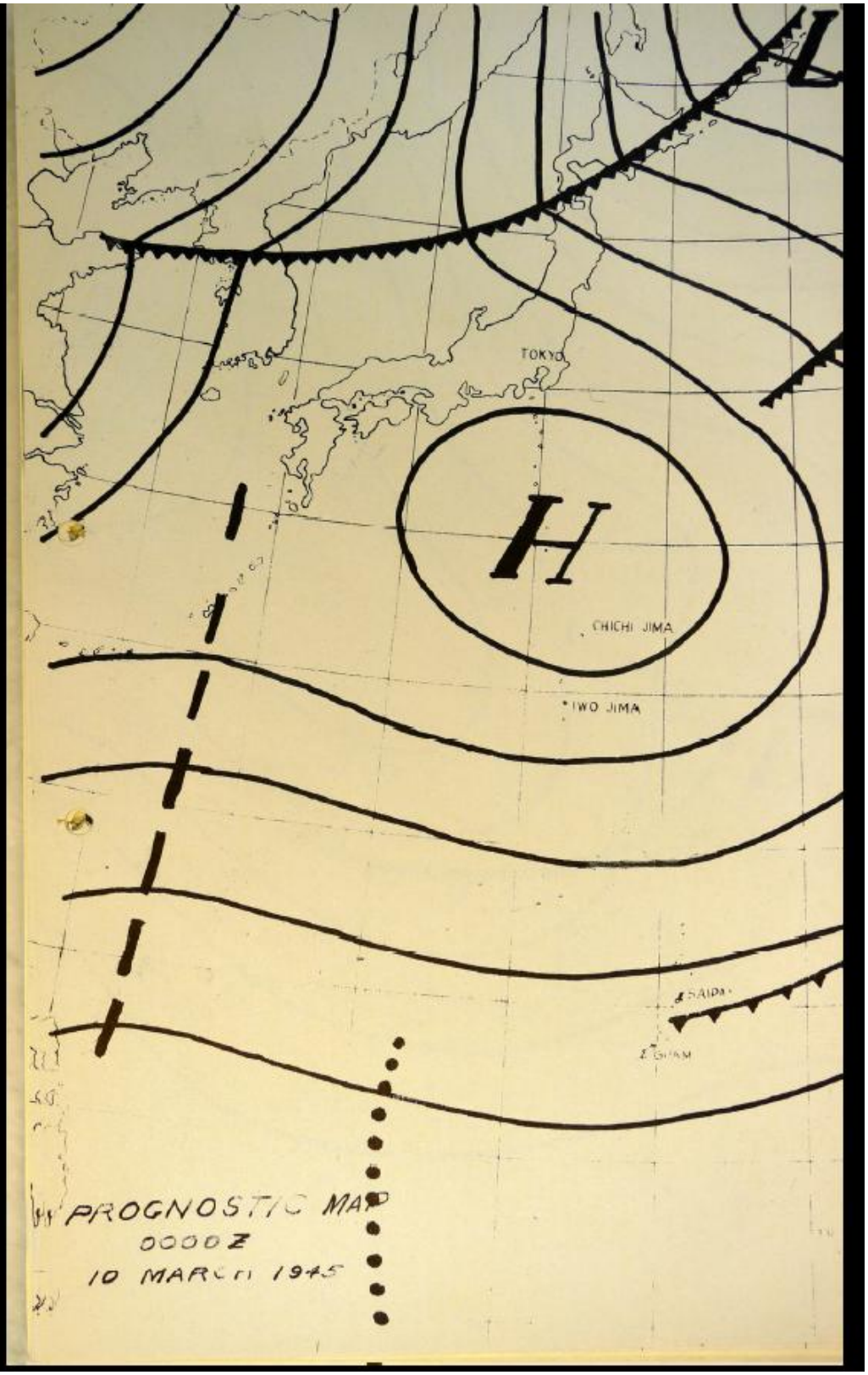
5. Bases on Return: 5/10 cumulus, bases 1800 feet, tops 6000 feet. Visibility was 15 miles.

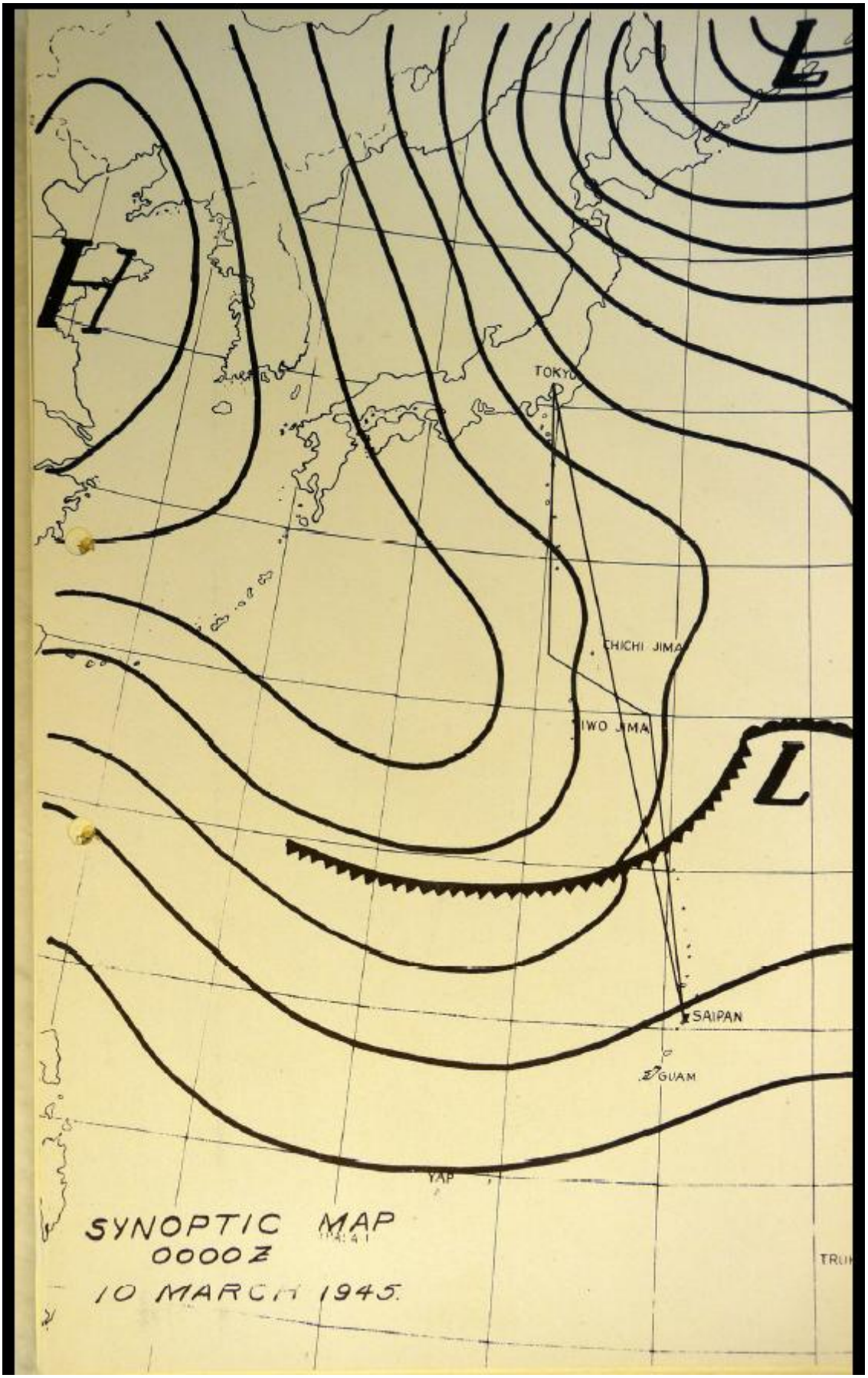
6. Forecast was considered good except that weather between 30 degrees north and 34 degrees north was considerably more severe than forecast, and winds were higher than those forecast.

9-10 MARCH 1945






L
TOKYO
H
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
PROGNOSTIC MAP
0000Z
10 MARCH 1945


H
L
L
TOKYO
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
YAP
SYNOPTIC MAP
0000Z
10 MARCH 1945.

SECRET

ANNEX

C

COMMUNICATIONS

Part I - Radar Counter Measures

Part II - Communications (Radio)

Mission No. 40
10 March 1945

PART I - RADAR COUNTER MEASURES

1. 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) 300/1200/6: 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/.8-.5: 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:

Characteristics	Intercept Location	Remarks
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:

Type Equipment	Frequency	PRF	Pulse Width
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 Katsura. 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.

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

PART I - ENEMY AIR OPPOSITION

1. 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:

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

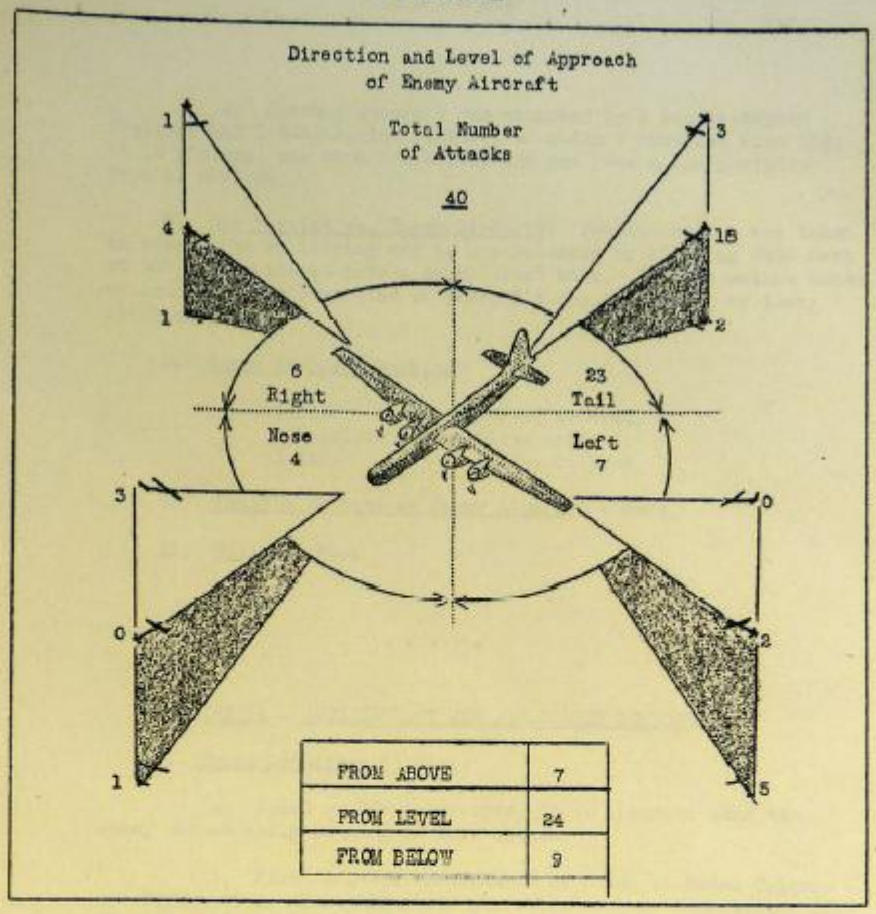
3. Enemy Aircraft Sighted, But Not Attacking:

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.



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 distinguising 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 - ANTIAIRCRAFT 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:

Location	Number
(1) Chiba Peninsula:	
(a) Kisarurw (35/24N - 139/56E)	13
(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) South Tokyo:	
(a) Haneda (35/33N - 139/45E)	6
(3) Tokyo:	
(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 - 140/05E	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 CL 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 Steel 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., Gunamachi 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.

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 buildings destroyed; entire roof of 1 large building superficially damaged.

AREAS OF DAMAGE

Note: See annotations on attached enlarged photograph.

Area	Sq. ft. of damage
1	373,060,000
2	13,350,000
3	400,000
4	800,000
5	825,000
6	6,847,000
7	2,990,000
8	851,000
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 82% was destroyed. (Reference M-9)

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