

S E C R E T

II - PHOTO RECONNAISSANCE

Mission No. 16

11 November 1944

A. Photo Mission, 12 November 1944

1. On 12 November a single B-29 of the 444th Group flew a reconnaissance mission for the purpose of taking damage assessment photographs of Nanking. Take-off was at 0045Z. A route to Nanking was flown passing over Chao Lake. Because of 10/10 cloud coverage over the target area, no photographs were taken. The aircraft was over the target at 26,000' indicated altitude at 0315Z and again from 0345Z to 0355Z at 27,000' indicated altitude, but no openings in the cloud coverage appeared. On the return to base #3 engine went out, and the exhaust stack of #2 engine was blown. Landing was made at 0858Z.

2. No fighters were seen, no antiaircraft opposition was encountered and no observations were made.

B. Photo Mission, 16 November 1944

1. A single B-29 of the 468th Group (a combat aircraft not specially modified for photo reconnaissance) flew a photo mission on 16 November for the purpose of securing damage assessment photographs of the Nanking area. Other objectives not connected with Mission No. 16 were also photographed.

2. The route was flown as planned, direct from Pengshan to Nanking, returning by way of Liangshan airfield. Approximately 2500 miles were flown during 9 1/2 hours of flight. Two runs were made over Nanking at an altitude of 28,000'. The first was on a heading of 35°, the flight line passing down the Yangtze River to get coverage of the riverside areas. The second was on a heading of 315°, securing photographs of military objectives southeast of Nanking and within the city itself.

3. Both visual observation and photographs showed 3 airfields in the area immediately southeast of the city, instead of 2 as were shown on the target chart used for Mission 16.

4. Weather was favorable with only scattered 1/10 cloud coverage.

5. Antiaircraft opposition was moderate and inaccurate. Although many enemy aircraft were observed on the ground, only 3 to 4 were seen in the air and these far below. None of the enemy aircraft approached close enough to be identified.

C. Photo Mission, 17 November 1944

1. The same B-29 of the 468th Group that flew the photo reconnaissance mission on the 16 of November flew over Omura on the following day, 17 November. Damage assessment photographs were taken, and other targets photographed.

2. Again the route planned was in general the one actually flown, direct from Pengshan to Nagasaki, and after covering targets as indicated below, the aircraft returned to Pengshan direct from Fusan, Korea. The

I-II-1

S E C R E T

DECLASSIFIED

Authority NND 760063
By SM NARA Date 11/3/05

S E C R E T

following targets were photographed:

<u>Target</u>	<u>Heading over Target</u>
Nagasaki	55° T
Omura	356° T
Tachiarai	325° T
Watanabe	320° T
Fukuoka Harbor	325° T
Watanabe (second run)	265° T
Fusan, Korea	225° T

3. Weather conditions were good over most of the targets photographed. Although Watanabe had a thin 7/10 cloud coverage and other targets had only scattered clouds from 1/10 to 3/10.

4. No enemy air opposition was met. Antiaircraft opposition over Omura was moderate to intense but inaccurate, the bursts appearing approximately 4000' below.

5. An aircraft carrier being built in Nagasaki Harbor was photographed.

6. For details of target damage assessment see Annex L, "Target Damage Assessment."

I-II-2

S E C R E T

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/30/05*

S E C R E T

ANNEX

J

BATTLE LOSSES AND BATTLE DAMAGE*

* There are no known battle losses. For details of aircraft lost through unknown causes, see Mission Operational Losses, Annex A, Part IX.

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

S E C R E T

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/30/05*

S E C R E T

ANNEX

K

FUNCTIONING OF EQUIPMENT

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

* Prepared by Operations, Plans and Training Section,
XX Bomber Command

Note: The information formerly entitled "Malfunctions
of Equipment - Engineering" and carried as Part
II of this Annex will now and in the future be
part of the Consolidated Mission Statistical
Summary. Reference is made to Annex M, Table XI.

S E C R E T

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/30/05*

S E C R E T

I - FUNCTIONING OF EQUIPMENT

Mission No. 16

11 November 1944

A. Summary

	40th	444th	462nd	468th	Total
Total A/C on hand in Group	37	38	35	36	146
Less: A/C undergoing acceptance check	1	-	-	-	1
A/C in depot	2	-	1	-	3
A/C in Fwd. area - operational	-	1	-	-	1
A/C in Fwd. area - nonoperational	-	1	2	-	3
Photo reconnaissance A/C	-	1	1	1	3
A/C undergoing major repairs	3	5	9	2	19
 A/C airborne rear area	31	30	22	33	116
Less: A/C returning to rear area bases	3	2	2	2	9
 A/C landing in Forward area	28	28	20	31	107
Plus: Operational in Forward area	-	1	-	-	1
 A/C available for mission	28	29	20	31	108
Less: A/C failing to take off on mission	3	1	4	4	12
 A/C airborne on mission	25	28	16	27	96
Less: A/C failing to bomb PT- mechanical	3	5	9	11	28
A/C failing to bomb PT- other reasons	5	5	1	3	14
A/C bombing alternate target	15	9	1	-	25
 A/C bombing Omura	2	9	5	13	29

B. Details by Aircraft

Total Combat A/C on hand	146
Less: A/C not becoming airborne - rear area	30
a. A/C undergoing acceptance check - 40th: 1 A/C	
b. A/C in depot (3):	
(1) A/C 295 (40th): sheet metal repairs	
(2) A/C 418 (40th): awaiting parts	
(3) A/C 287 (462nd): fuselage sheet metal repairs	
c. A/C in Forward area for mission - 4 (1 operational and 1 non-operational - 444th; 2 non-operational - 462nd)	
d. A/C undergoing major repairs (19):	
(1) A/C 348 (40th): 2 engine changes; 400 hour inspection	
(2) A/C 541 (40th): awaiting parts (carburetor assembly)	
(3) A/C 404 (40th): 4 tire changes; retraction test	
(4) A/C 315 (444th): excessive vibration; carburetor trouble	
(5) A/C 341 (444th): 3 engine changes	
(6) A/C 524 (444th): right main spar	
(7) A/C 584 (444th): fuel cell change	
(8) A/C 202 (444th): 4 engine changes	
(9) A/C 248 (462nd): awaiting parts (pump assembly, fuel transfer); #4 engine change	
(10) A/C 316 (462nd): #2 and #3 engine change	
(11) A/C 329 (462nd): #3 turbo and #3 engine trouble	
(12) A/C 346 (462nd): #1 engine change, 50 hour inspection	
(13) A/C 382 (462nd): #1 turbo trouble	

K-I-1

S E C R E T

DECLASSIFIED

Authority NND 760063

By SM NARA Date 11/30/05

S E C R E T

(14) A/C 479 (462nd): #3 engine change; #3 cylinder change #1 - 4 engines

(15) A/C 484 (462nd): #3 engine change

(16) A/C 362 (462nd): #4 engine change

(17) A/C 827 (462nd): #4 engine change; sheet metal repair

(18) A/C 389 (462nd): #3 engine change; 400 hour inspection

(19) A/C 411 (468th): #1 - 4 engine changes

e. Photo reconnaissance aircraft (3):

(1) A/C 360 (444th)

(2) A/C 209 (462nd)

(3) A/C 471 (468th)

A/C airborne - rear area 116

Less: A/C failing to reach the forward area 9

a. A/C 269 (40th): cylinder trouble, #2 engine

b. A/C 452 (40th): spurting main fuel line, #4 engine

c. A/C 363 (40th): #1 and #3 cylinder head temperature high

d. A/C 343 (444th): 3 engines running rough

e. A/C 215 (444th): abandoned and crashed in forward area

f. A/C 531 (462nd): #3 engine trouble

g. A/C 386 (462nd): #1 turbo trouble

h. A/C 454 (468th): #1 engine cutting out; tachometer and generator trouble

i. A/C 417 (468th): #2 engine and #1 propeller trouble

A/C reaching forward area 107

Plus: A/C in forward area for mission (444th) 1

A/C available for mission 108

Less: A/C failing to take off on mission 12

a. A/C 579 (40th): #1 engine throwing oil

b. A/C 275 (40th): #2 oil cooler regulator leak

c. A/C 587 (40th): oil leak #1 engine

d. A/C 464 (444th): engine failure before take-off

e. A/C 273 (462nd): fuel pressure (#3 eng.) only 14#

f. A/C 359 (462nd): starter burned out

g. A/C 299 (462nd): #1 cylinder change

h. A/C 393 (462nd): blown cylinder

i. A/C 355 (468th): ripped wing

j. A/C 356 (468th): liquidometer leak

k. A/C 442 (468th): tachometer generator out

l. A/C 828 (468th): #1 prop governor change

A/C airborne on mission 96

Less: A/C failing to bomb primary target - mechanical reasons 28

a. Bombed secondary target (7):

(1) A/C 507 (444th): prop governor #3 engine inoperative

(2) A/C 475 (462nd): radar inoperative over primary

(3) A/C 395 (468th): radar out (also weather)

(4) A/C 362 (468th): radar out (also weather)

(5) A/C 284 (468th): unspecified mechanical trouble

(6) A/C 265 (468th): radar out (also weather)

(7) A/C 272 (468th): propeller governor malfunction

b. Bombed target of opportunity (7):

(1) A/C 324 (444th): #2 nose window broken on take-off, could not pressurize

(2) A/C 204 (444th): #4 intercooler inoperative

(3) A/C 830 (462nd): #4 oil cooler inoperative

K-I-2

S E C R E T

DECLASSIFIED

Authority NND 760063

By SM NARA Date 11/3/05

S E C R E T

(4) A/C 409 (468th): #3 fuel booster shorted (also weather)
(5) A/C 407 (468th): radar out (also weather)
(6) A/C 487 (468th): radar out (also weather)
(7) A/C 397 (468th): radar out (also weather)

c. Jettisoned bombs (12):
(1) A/C 297 (40th): #1 turbo burned out
(2) A/C 319 (40th): #4 engine and right landing gear trouble
(3) A/C 831 (40th): #18 cylinder head #4 engine separated from barrel
(4) A/C 340 (444th): excessive oil loss #1 engine
(5) A/C 267 (444th): electrical system malfunction
(6) A/C 581 (462nd): #1 engine failure
(7) A/C 338 (462nd): lost #2 engine; bad oil leak and oil coolers #3 engine
(8) A/C 461 (462nd): blown blister; shortage of oxygen and gasoline
(9) A/C 213 (462nd): radar inoperative over primary
(10) A/C 505 (462nd): radar inoperative (also weather)
(11) A/C 542 (468th): right nacelle landing gear would not close
(12) A/C 6208 (468th): radar out (also weather)

d. Brought bombs back (2):
(1) A/C 285 (462nd): right landing gear would not retract
(2) A/C 278 (462nd): radar out (also weather)

Less: A/C failing to bomb primary target - other reasons 14
a. Bombed secondary target - 5
b. Bombed target of opportunity - 5
c. Jettisoned bombs - 1
d. Missing and disposition of bombs unknown - 3

Less: A/C bombing alternate target - Wanking (original last resort target) 25

A/C bombing Omara 29

K-I-3

S E C R E T

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/30/05*

SECRET

SUMMARY OF ALL GROUPS - F.O. #16

PRIMARY TARGET

Group	Over-all ave.	40th	44th	462nd	468th
No. of aircraft	28	2	9	5	12
Total Time	13:48	14:33	13:28	14:07	13:11
Time to target	-	-	5:49	5:55	6:09
Fuel					
Ave.	6410	6435	6410	6490	6370
Max.	7040	6800	6650	6800	7040
Min.	5900	6070	6200	5900	6000
Aux. Fuel Carried					
Ave.	1850	1860	1850	1900	1830
Max.	2100	1920	1900	2100	1900
Min.	1700	1800	1800	1700	1800
Burnable Reserve					
Ave.	830	825	820	810	850
Max.	1250	1250	1100	1200	1200
Min.	260	400	600	400	260
* Air Miles	3310	3180	3270	3290	3370
Ground Miles	3160	2960	3095	3210	3225
* Miles/Air Miles	1.94	2.02	1.96	1.97	1.89
** Ave. Bomb. Alt	22500	23000	23250	21000	22600
Starting Gross Wt.					
Ave.	132400	131780	133000	131900	132100
Max.	134055	132000	134055	133015	132905
Min.	129990	131560	132340	129990	131500
Wt of Bombs					
Ave.	6365	6300	6560	5620	6245
Max.	8360	6300	7330	8360	7085
Min.	3875	6300	6300	3875	5820
No. of Bombs					
M-64 or M-43	8.15	8	8.8	8	7.75
M-76 (FT-MP)	3.97	4	4.45	2.6	4.17

* Air Mile figures are of doubtful accuracy.

** Pressure Altitude

SECRET

DECLASSIFIED

Authority *NND 760063*By *SM* NARA Date *11/3/05*

SECRET

SUMMARY OF ALL GROUPS F.O. #16

SECONDARY TARGET

Group	Over-all Ave.	40th	444th	462nd	468th
No. of Aircraft	14	2	3	1	8
Total Time	12:00	13:12	10:49	13:50	11:55
Time to target		7:30	-	8:27	7:16
Fuel Burned	Ave. 5850 Max. 6700	6300	5670	6625	5700
Aux. fuel carried	Min. 4550 Ave. 1840 Max. 1900	6300	6000	-	6700
Burnable Reserve	Min. 1700 Ave. 1390 Max. 2750	1800	1865	1700	4550
*Air Miles	2810	900	1300	475	1800
Round Miles	2690	3407	2570	-	2750
*Gals./air Miles	2.08	3215	2490	3298	500
**Ave. Bomb Alt	19000	18500	19500	17000	2700
Starting Gross Wt.	Ave. 132500 Max. 133360	131950	133000	133020	132400
Weight of Bombs	Min. 131590 Ave. 6550 Max. 7875 Min. 5995	132310	133360	-	132600
Number of Bombs	M-64 or M-43 9.28 M-76 (PT - NP) 3.07	131590	132425	7875	131860
		6300	7000	-	6270
		6300	7330	-	6540
		6300	6845	-	5995
		8	9	10	9.62
		4	4.33	5	2.12

*Air mile figures are of doubtful accuracy
**Pressure Altitude.

SECRET

R-11-1-2

SECRET
 SUMMARY OF ALL GROUPS F.O. #16
TERTIARY TARGET

Group	Over-all Ave.	40th	444th	462nd	468th
No. of aircraft	23	13	9	1	0
Total Time	11:07	10:50	11:18	13:10	-
Time to Target	-	6:25	6:56	-	-
Fuel Burned	Ave. 5480 Max. 6700 Min. 4400	5220 5950	5820 6700	6000	-
Aux. Fuel Carried	Ave. 1855 Max. 1900 Min. 1800	1365 1900 1800	5000 1855 1900 1800	1800	-
Burnable Reserve	Ave. 1760 Max. 2800 Min. 600	2035 2800 1350 2520 2400	1430 2200 600 2830 2740	1200	-
*Air Miles	2665	2520	2740	3080	2950
Ground Miles	2560	2400	2740	2950	2950
*Gals./air Miles	2.05	2.07	2.07	1.95	1.95
**Ave Bomb Lt.	20000	19600	20700	19000	19000
Starting Ave.	132400	132100	133000	132315	132315
Gross Weight	Max. 134000 Min. 130450	133545 130450	134000 131910	-	-
Weight of Bombs	Ave. 6590 Max. 7330 Min. 6300	6300 6900 6300	6960 7330 6300	6645	-
No. of Bombs	M-64orm-43 8.36 M-76(PT-MP) 4.18	8 4	8.3 4.45	9 4	-

*Air mile figures are of doubtful accuracy
 **Pressure altitude.

SECRET

S E C R E T

ANNEX

L

TARGET DAMAGE ASSESSMENT

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

S E C R E T

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

HEADQUARTERS
XX BOMBER COMMAND
Intelligence Section
APO 493

DAMAGE ASSESSMENT REPORT NO. 21

TARGET: Omura Aircraft Factory, Omura, Kyushu, Japan. (32° 55' N - 129° 56' E).

GENERAL STATEMENT:

This report relates to damage resulting from a daylight attack through ten-tenths cloud on the Omura Aircraft Factory on 11 November 1944. A total of 29 aircraft attacked dropping 223 500# GP and 123 500# Incendiary Bombs. This was the second attack on the factory, the first having occurred on 25 October 1944 (See XX Bomber Command D.A. Report No. 17). Assessment of damage was accomplished from good to excellent photography obtained by the 468th Bomb Group, XX Bomber Command, on 17 November 1944.

No new damage was noted within the confines of the Omura Aircraft Works. A total of 28 bombs were identified probably representing the disposition of the bomb loads of 4 aircraft. A group of 8 bombs were found approximately 1.2 miles east of the center of the target area (Aircraft Factory), another group of 8 approximately 1.9 miles northwest, another group of 4 approximately 3.8 miles NNW and a group of 8 approximately 2.8 miles north. Damage resulting includes the destruction of a barracks-type building, 2 shed-type buildings, a dwelling and 7 workers' quarters. In addition damage occurred to 3 barracks-type buildings, 4 dwellings, a railroad trestle, 5 shed-type buildings, and 7 workers' quarters.

Further clearing of debris is noted in the plant area but the appearance of the target remains virtually unchanged. No major repair work has as yet been undertaken.

A total of 138 aircraft, of which 114 are single engine small, were identified. This represents a decrease of 56 aircraft since the last coverage of 6 November.

REFERENCES: (1) D.A. Report No. 17, XX Bomber Command, 31 October 1944.
(2) 18th P.I.D., Third Phase Report No. 130, 22 October 1944.

WEIGHT OF ATTACK: (1) 29 Aircraft, 223 500# GP, 123 500# IB.

PHOTOGRAPHY: (1) XX Bomber Command Mission No. 4MR22, 17 November 1944, scale 1:16,000, quality good to excellent.

PREVIOUS PHOTO COVER: (1) XX Bomber Command Mission No. 4MR15, 6 November, scale 1:15,500, quality excellent.

ANNEXES: (1) Annotated Photo and Bomb Fall Plot.

REMARKS:

Numbers in parentheses preceding statements below refer to corresponding numbers on the attached Annotated print.

DETAILS OF DAMAGE:

- (1) Eight bombs falling in a workers' quarters area located approximately 1.2 miles east of the center of the target, the bend in the through north - south road in the aircraft factory area, destroyed 7 of the quarters and damaged as many more.
- (2) Approximately 1.9 miles northwest of the center of the target a group of eight bombs fell in the vicinity of a light industrial plant. Two shed type buildings were about half-destroyed and 5 others were dam-

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

DECLASSIFIED

Authority NND 760063

By SM NARA Date 11/3/05

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

aged. In addition several small houses just southeast were damaged by a near miss.

- (3) A group of 7 bombs are seen to have fallen approximately 2.8 miles north of the target center near the junction of the Korli River and a railroad. A railroad trestle appears to be damaged and a barracks-type building has been destroyed and 3 similar buildings and a house have been damaged. South of the above bombs a small hutment has been destroyed and another damaged. This bomb was probably dropped with the others but fell wide. No other craters were identified in the immediate vicinity of this last bomb.
- (4) Four craters were found in open ground approximately 3.8 miles NNW of the target center.

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

PREPARED BY: TARGET UNIT
INTELLIGENCE SECTION
21 NOVEMBER 1944

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

DECLASSIFIED

Authority *NND 760063*
By *SM* NARA Date *11/30/05*



100
E

16.98

DECLASSIFIED
Authority **NND 760063**
By **SM** NARA Date **11/3/05**

ANNEX I
D.A. REPORT NO.21
OMURA AIRCRAFT FACTORY
OMURA, JAPAN
MISSION 16

1000' 500' 0 1000' 2000' 3000' 4000' 5000' 6000'

CONFIDENTIAL

NAVAL AIR
ARSENAL



DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/3/05*

CONFIDENTIAL
REPRODUCED BY
NON PHOTO TECH UNIT

CONFIDENTIAL
RECORDED BY
KRM PHOTO TECH UNIT

2

DECLASSIFIED

Authority **NND 760063**

By **SM** NARA Date **11/3/05**

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

HEADQUARTERS
XX BOMBER COMMAND
Intelligence Section
APO 493

DAMAGE ASSESSMENT REPORT NO. 22

TARGET: Nanking-Pukow, China. (32° 02' N - 118° 46' E).

GENERAL STATEMENT:

This report relates to damage resulting from a daylight attack on the Nanking-Pukow dock, rail and storage facilities on 11 November 1944. This was designated as a "Last Resort Target" of the attack directed against the Omura Aircraft Factory. Point Island storage facilities at Shanghai was designated as the "Secondary Target". Bad weather over the primary target resulted in a substantial diversion of the attacking force to the last resort target, 24 aircraft having attacked dropping a total of 200 500# GP and 94 500# IB bombs. Assessment of damage was accomplished from good quality reconnaissance photography obtained by the 468th Bomb Group, XX Bomber Command, on 16 November 1944.

No definite assignment of targets was made at the last resort target, but rather crews were briefed to attack shipping, rail, dock and storage facilities. Since little shipping was present, nearly all of the attacks developed against the other categories. Most of the aircraft attacked the Tienstin-Pukow RR terminal with one attacking the large Power Plant, and the remainder, attacking warehouses areas in the vicinity of the Kiang-Pien RR Station.

The main weight of bombs fell across the eastern section of the Tienstin-Pukow RR Terminal with only a few scattered bombs in the west end of the yard. The choke points at both the west and east ends were hit but traffic is seen to have been resumed by the time of the reconnaissance 5 days later. The railroad station took several near misses and possibly suffered damage though the station appears intact on the photos. Just south of the station 3 barracks-type buildings and a small multiple-type building were destroyed and 4 or 5 other small buildings were damaged. North of the station 5 dormitory-like bays, a long narrow warehouse, 8-10 small miscellaneous buildings and approximately 50 hutments were destroyed and 10-12 small buildings, a large warehouse and over 50 hutments were damaged. No damaged rolling stock were identified. One of the covered passenger loading platforms took a direct hit as did the passenger ferry wharf destroying a segment of the wharf proper.

The large power plant on the east side of the river took a near miss but no damage to the building was identified on the photos. A small building north of the plant and another to the south received damage. A 150' collier-type vessel tied up at the wharf directly east of the plant took a direct hit and when last seen on strike photos was burning furiously and drifting down the river.

A long warehouse building north of the Kiang-Pien RR Station was destroyed and an estimated 50 native hutments were destroyed and a like number damaged.

Strike photos show ineffective attempts on the part of the enemy to screen objectives with smoke. Several smoke bombs were noticed during the course of the attack notably near the Powerhouse and the railway stations. The attempt was abandoned approximately midway in the attack.

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

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

REFERENCES: (1) 18th P.I.D. Third Phase Report No. 28.

WEIGHT OF ATTACK: 24 Aircraft, 200 500# GP and 94 500# IB bombs.

PHOTOGRAPHY: (1) Strike Photos, scale varied, quality excellent.
(2) XX Bomber Command, Mission No. 44R21, 16 November 1944, scale 1:14,000, quality good to excellent.

PREVIOUS PHOTO COVER: (1) 21 PR, 44B127, 17 August 1944, scale 1:16,000, quality excellent.

ANNEXES: (1) Annotated Photo and Bomb Fall Plot.

REMARKS:

One formation of 12 aircraft, 3 formations of 2 aircraft, and 6 individual aircraft attacked the target. Strike photos were obtained showing the results of 4 of the 10 attacks. Approximately 50% of the bombs reported to have been dropped were identified and are shown on the attached Bomb Fall Plot.

Numbers in parentheses preceding statements below refer to corresponding numbers on the attached annotated print.

DETAILS OF DAMAGE:

A. Tienstin-Pukow RR Terminal.

- (1) The RR station building appears to be undamaged but several bombs falling just north and east may have caused damage.
- (2) Just south of the station building 3 barracks-type buildings were destroyed and another damaged and at least 3 other nearby buildings were damaged.
- (3) A direct hit is seen on one of the passenger loading platform coverings.
- (4) Several small buildings associated with a small boat-yard south of the terminal appear damaged.
- (5) West of item (2) a small multiple-type building has been destroyed and another small building damaged.
- (6) Bombs falling in the northern section of the yard destroyed a long narrow multiple-type building and at least 10 other small nearby buildings. In addition 4 or 5 small buildings were damaged and an estimated 50 hutments just west were destroyed and as many more damaged.
- (7) Just north of item (6) 2 small hutments were destroyed and 8-10 small buildings were damaged.
- (8) Five dormitory-like buildings north of the station were destroyed and 7-8 other buildings damaged, 2 heavily. Approximately 1/3 of a warehouse projection was also destroyed.
- (9) The pontoon wharf used as a passenger ferry has been destroyed and a section of the pier damaged. Part of the covered walk also appears damaged.
- (10) Several hutments were destroyed and several more damaged just south of the water tower.

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

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/3/05*

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

B. Powerhouse:

- (11) The large power plant across the river from the Pukow Terminal took a near miss but no damage to the building is observed. Smoke was seen to be issuing from the stack at the moment of bomb impacts. The next series of strike photos include the power plant and no smoke is seen. This reconnaissance 5 days after the attack still shows no smoke and the possibility, therefore, exists that damage by blast may have occurred. A small building to the north of the plant and another to the south have been damaged.
- (12) A 150' collier-type vessel which was tied up at a small wharf directly east of the power plant was seen on the strike photos to have been hit. Later strike photos showed the vessel in mid-stream burning furiously.

C. Military Warehouses:

- (13) A group of warehouses located southwest of the Kiang-Pien RR station was the objective of two aircraft. Strike photos show the bombs to have fallen short damaging a pontoon wharf.

D. Warehouse Area:

- (14) Bombs falling in the vicinity of a warehouse area north of the Kiang-Pien Station destroyed a long narrow warehouse and destroyed an estimated 50 hutments and damaged as many more.

James L. Scott, Jr.
Lt. Col., Air Corps
Chief, Intelligence Section

PREPARED BY: TARGET UNIT
INTELLIGENCE SECTION
21 November 1944

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

DECLASSIFIED

Authority *NND 760063*
By *SM* NARA Date *11/30/05*



10

TIENSTIN-PUKOW
R.R. TERMINAL

YANGTZE RIV

KIANG-PIEN
R.R. STATION

11

12

13

14

16.99

DECLASSIFIED
Authority *NND 760063*
By *SM* NARA Date *11/3/05*

ANNEX I
D. A. REPORT NO. 22
NANKING - PUKOW, CHINA
MISSION 16

1000' 500' 0 1000' 2000' 3000'

CONFIDENTIAL

YANGTZE RIVER

KIANG-PIEN
R.R. STATION

13

14

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/3/05*

CONFIDENTIAL

REPRODUCED BY
10TH PHOTO TECH. UNIT

DECLASSIFIED

Authority NND 760063

By SM NARA Date 11/3/05

99

CONFIDENTIAL
REPRODUCED BY
10TH PHOTO TECH. UNIT

S E C R E T

ANNEX

M

CONSOLIDATED MISSION STATISTICAL SUMMARY

```
* * * * *
* Prepared by: *
* Statistical Section *
* * * * *
* IX Bomber Command *
* * * * *
```

S E C R E T

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/30/05*

S E C R E T

XX BOMBER COMMAND
 CONSOLIDATED MISSION STATISTICAL SUMMARY

Mission Number Sixteen
 11 November 1944

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

11-17-44 **SR**
 Date Initials

Table I - Aircraft Participating - Rear to Forward Area

Group	Mission Number	Field Order No.	Combat A/C on Hand In Group	A/C Participating in Mission		A/C Remaining In Fwd Area To Participate In Mission	A/C Airborne In Rear Area For Mission	A/C Arriving In F.A. For Mission						A/C Airborne In Rear Area Failing To Reach Fwd Area	Per cent
				Total	% Of Aircraft On Hand That Participated			Total	On D-5	On D-4	On D-3	On D-2	On D-1		
40th	16	16	34 Depot 2	31	91%	0	31	28				19	9	3	10%
444th	16	16	** 37	31	84%	1	30	28				23	5	2	7%
462nd	16	16	** 33 Depot 1	22	67%	0	22	20				8	12	2	9%
468th	16	16	** 35	33	94%	0	33	31				15	16	2	6%
TOTAL	16	16	* 139 Depot 3	117	82%	1	116	107				65	42	9	5%

* Excludes A/C arriving in theater from D-3 to D-Day that did not participate in mission.

** Excludes one A/C being used for reconnaissance missions.

444th - A/C 42-62360
 462nd - A/C 42-6209
 468th - A/C 42-24471

S E C R E T

S E C R E T

XX BOMBER COMMAND
 CONSOLIDATED MISSION STATISTICAL SUMMARY

Mission Number Sixteen
 11 November 1944

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

11-21-44
 Date Initials

Table II - Aircraft Participating From Forward Area

Group	Total A/C In Fwd. Area For Mission	Total A/C Taking Off From Fwd. Area On Mission	A/C In Fwd. Area Failing To Become Airborne On Mission		Airborne A/C Failing To Bomb Designated Primary Or Alternate Primary Target						Time Of First Takeoff	Time* Of Latest Return	Aver Time Of Flight*			
			Total No.	Percent	Reason					A/C Bombing Primary			A/C Bombing Alternate Primary	Airborne A/C Not Bombing Primary		
					Total No.	Percent	Mech	Pers	Wea						T/A & Flak	Misc. & Unknown
40th	28	25	3	11%	8	32%	3		5			1836Z	1002Z	13:38	10:51	10:17
444th	29	28	1	4%	10	36%	5		2		3	1842Z	0928Z	13:42	11:11	10:00
462nd	20	16	4	25%	10	62.5%	9		1			1826Z	0951Z	14:13	12:50	10:06
468th	31	27	4	13%	14	52%	11		3			1828Z	0956Z	13:54		11:27
TOT'L	108	96	12	11%	42	44%	28		11		3	1826Z	1002Z	13:52	11:03	10:36

* Excludes aircraft which landed at other fields.

S E C R E T

S E C R E T

XX BOMBER COMMAND
 CONSOLIDATED MISSION STATISTICAL SUMMARY

Mission Number Sixteen
 11 November 1944

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

11-17-44 *SR*
 Date Initials

Table III - Bombing Runs

Group	No. of A/C Bomb- ing	Target Bombd	Time of Release		Altitude of Release		Visual Bombing		Radar Bombing		On the Leader	Aircraft Dropping On	
			Earliest	Latest	Highest	Lowest	A/C Sighting For R & D	Range	A/C Sighting For R & D	Range		AFCE	Manual
40th	2	Omura	0013Z	0118Z	25,000	22,000			2		10	2	
	15	Nanking	2303Z	0213Z	21,500	19,500	3		2			4	11
	2	Shanghai	0251Z	0320Z	21,200	18,000	2					2	
	3	Opportunity	0105Z	0338Z	19,200	15,000	3					2	1
444th	9	Omura	0046Z	0123Z	25,000	18,200		1	8		4	4	5
	9	Nanking	0038Z	0258Z	25,000	18,500	5					5	4
	2	Shanghai	2343Z	0152Z	20,400	19,000	1		1				2
	2	Opportunity	2904Z	0354Z	18,000	15,100	2						2
462nd	5	Omura	0031Z	0046Z	23,000	20,000				5			5
	1	Nanking	0256Z	0256Z	20,000	20,000	1						1
	1	Shanghai	0301Z	0301Z	17,000	17,000	1						1
	2	Opportunity	0045Z	0304Z	18,000	15,000	2						2
468th	* 13	Omura	0036Z	0125Z	20,500	19,500	1		9		3	11	2
	** 7	Shanghai	0001Z	0302Z	22,400	18,000	4		3			6	1
	5	Opportunity	0039Z	0540Z	23,400	12,400	4		1			5	
TOTAL	29	Omura	0013Z	0125Z	28,500	18,200	1	1	19	5	14	17	12
	25	Nanking	2303Z	0258Z	25,000	18,500	9		2			9	16
	12	Shanghai	2343Z	0320Z	22,400	17,000	8		4			8	4
	12	Opportunity	2904Z	0540Z	23,400	12,400	11		1			7	5

* One A/C also hit target of Opportunity.
 ** Two A/C also hit target of Opportunity.

S E C R E T

SECRET

XX BOMBER COMMAND
 CONSOLIDATED MISSION STATISTICAL SUMMARY

SECRET
 By Authority of the
 Commanding General
11-17-44 SK
 Date Initials

Mission Number Sixteen
 11 November 1944

Table IV - Bomb Loading & Disposal

Group	* Type of Bombs	Bomb Loading				On Targets				Bomb Disposal			
		Fusing		Average No. Loaded Per 1/C	Tot. No. Loaded in 1/C Airborne in Fwd Area	Omura	Nanking	Shanghai	Targets of Opportunity	Unknown	Jettison	Return	Unknown
		Nose	Tail										
40th	500# GP	.1	.01	8	200	16	119	16	24		25		
	500# Inc	Inst	N.D.	4	100	8	56	8	12		16		
444th	500# GP	.1	.01	8.9	248	79	80	18	18	26	27		
	500# Inc	Inst	N.D.	4.5	126	40	38	9	9	14	14	2	
462nd	500# GP	.1	.025	8.5	136	40	9	10	16		42	19	
	500# Inc	Inst	N.D.	3.5	56	13	4	5	7		18	9	
468th	500# GP	.1	.01	7.2	195	88		47	60				
	500# Inc	Inst	N.D.	4.7	126	62		25	16		23		
TOTAL	500# GP	.1	** .01	8.1	779	223	208	91	118	26	94	19	
	500# Inc	Inst	N.D.	4.3	408	123	98	47	44	14	71	11	

* 500# GP - AN-M 43) / AN-M 6h) Actual weight may average over 500 pounds.
 500# Bomb, Oil - Incendiary AN-M 76 (actual weight approximately 475 pounds)
 ** Includes 462nd Bombs fused at .025

SECRET

SECRET

SECRET
By Authority of the
Commanding General:

11-16-44 SR
Date Initials

XX BOMBER COMMAND
CONSOLIDATED MISSION STATISTICAL SUMMARY

Mission Number Sixteen
11 November 1944

Table V -- Aircraft Lost and Damaged

Aircraft Lost

Group	Serial Number	Missing	Crashed	Explanation
40th	6237	X		Unknown
444th	6300	X		Unknown
	6307	X		Unknown
	63419	X		Unknown
	*6215		X	Enroute from Rear Area to Fwd Area
468th	6365	X		Unknown
TOTAL		5	1	

* A/C lost enroute to Forward Area for combat mission.

Aircraft Damaged

Minor Damage

Group	Serial Number	E/A	A/A	Own Guns	Other	Explanation
40th	6344	X				About 100 holes in ship - Radar Compartment left elevator, #1 & #3 engine, upper fw turret, CFC seat, left wing stabilizer
	6298	X				L.T. Wing Flaps, left wheel well door, #1 engine
	6303				X	Tunnel blew a hole when under pressure. Loss of cabin pressurization
	6322				X	Fomardiers' lower glass cracked
	63394			X		Liason antenna shot away
		2		1	2	
444th	6324				X	Two nose windows
	24472				X	Top blister blown
	63378	X				Fuselage and nacelle, hydraulic pump, and bomb bay doors shot out
		1			2	
462nd	24505				X	Upper sighting blister
468th	63424		X			Horizontal stabilizer has a hole through i
			1			
GRAND TOTAL		3	1	1	5	

SECRET

DECLASSIFIED

Authority NND 760063

By SM NARA Date 11/3/05

S E C R E T

XX BOMBER COMMAND
 CONSOLIDATED MISSION STATISTICAL SUMMARY

Mission Number Sixteen
 11 November 1944

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

11-15-44 SR
 Date Initials

Table VI - Attacks & Passes by Enemy Aircraft

DIRECTION	ALTITUDE															
	HIGH				LOW				LEVEL				TOTAL			
	40th	444th	462nd	468th	40th	444th	462nd	468th	40th	444th	462nd	468th	40th	444th	462nd	468th
0800		4								1					5	
0900		1													1	
1000	3					1			1	1			4	2		
1100												1				1
1200		7	1			5								12	1	
0100	1		3				3						1		6	
0200	5	2	1				2			3		1	5	5	3	1
0300	1						1			1			1	1	1	
0400						1				1				2		
0500												1				1
0600					1							1	1			1
0700	1				2	4	1	1			1		3	4	2	1
TOTAL	11	14	5		3	11	7	3	1	7	1	2	15	32	13	5

S E C R E T

S E C R E T

XX BOMBER COMMAND
 CONSOLIDATED MISSION STATISTICAL SUMMARY

Mission Number Sixteen
 11 November 1944

S E C R E T

By Authority of the
 Commanding General:

11-16-44 SR
 Date Initials

Table VII - Personnel Losses

Crew Position	Killed				Missing				Seriously Injured				Slightly Injured				Total Casualties				Total Participating			
	40	444	462	468	40	444	462	468	40	444	462	468	40	444	462	468	40	444	462	468	40	444	462	468
Pilot					1	2		1									1	2		1	25	29	16	28
Co-Pilot					1	2		1									1	2		1	25	29	16	27
Navigator					1	2		1				1					1	3		1	25	29	16	28
Bombardier					1	2		1									1	2		1	25	29	16	27
Flt. Engr.					1	2		1									1	2		1	25	29	16	27
Radar					1	2		1									1	2		1	24	29	16	27
Radio					1	2		1									1	2		1	25	29	16	27
CFC Spec.					1	2		1				1	1				2	3		1	25	29	16	27
Right Gnr.					1	2		1									1	2		1	25	29	16	27
Left Gnr.					1	2		1									1	2		1	25	29	16	27
Tail Gnr.					1	2		1									1	2		1	25	29	16	27
PCM																					1			2
Unknown		2				2												4						
Others					1												1				4	5	5	2
TOTAL		2			12	24		11					1	2			13	28		11	279	324	181	303

S E C R E T

S E C R E T

XX BOMBER COMMAND
 CONSOLIDATED MISSION STATISTICAL SUMMARY

Mission Number Sixteen
 11 November 1944

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

11-16-44 SR
 Date Initials

Table VIII - Expenditures of Ammunition and Claims Against Enemy Aircraft

Group	Ammunition Expended Per Plane In Combat Flying					Total Expended	Claims Against Enemy Aircraft					
	Upper Front	Lower Front	Upper Rear	Lower Rear	50 Cal. Tail		Destroyed	Probably Destroyed	Damaged	Per 1000 Pounds Expended In Combat		
										Destroyed	Probably Destroyed	Damaged
40th	21	20	27	48	22	3,460	0	0	2	-	-	.58
444th	42	28	42	54	41	5,175	2	1	8	.39	.19	1.55
462nd	16	14	16	9	8	985	0	1	0	-	1.02	-
468th	10	13	8	20	12	1,655	0	0	2	-	-	1.20
TOTAL	23	19	24	35	22	11,275	2	2	12	.18	.18	1.06

S E C R E T

S E C R E T

XX BOMBER COMMAND
 CONSOLIDATED MISSION STATISTICAL SUMMARY

Mission Number Sixteen
 11 November 1944

S E C R E T
 By Authority of the
 Commanding General:
11-18-44 JR
 Date Initials

Table IX - Gasoline Loading and Consumption

Group	Average Gross Wt. Per Plane		Average Gallons Loaded Per Plane		Average Gallons Consumed Per <u>1/C</u> Bear to Fwd Area	Aver Gals Consumed On Mission		Aver Gals Remaining in <u>1/C</u> after Mission		Gallons Taken From Forward Area Stocks			Fwd to Bear Area Average Gallons		
	Before P.A. Take-Off	Before P.A. Take-Off For Mission	Before P.A. Take-Off	Before P.A. Take-Off For Mission		Per A/C Bombing Primary	Per Airborne <u>1/C</u> Not Bombing Primary	Per <u>1/C</u> Bombing Primary	Per Airborne <u>1/C</u> Not Bombing Primary	Total	Per A/c Bombing Primary	Per Airborne <u>1/C</u> Not Bombing Primary	Loaded For Return to P.A.	Consumed on Return to P.A.	Remaining After Return to P.A.
40th	132,892	132,103	7,258	7,255	3,328	6,435 5,202	4,944	875 2,069	2,281	114203	5,970 4,737	4,479	3,465	2,646	819
444th	133,777	133,021	7,232	7,258	3,211	6,423 5,851	5,138	832 1,410	2,112	149091	5,964 5,392	4,679	3,462	2,612	850
462nd	133,464	132,705	7,154	7,273	2,959	6,600 6,300	5,337	694 900	1,933	78688	5,887 5,587	4,624	3,482	2,608	874
468th	132,997	132,106	7,209	7,221	3,459	6,397	5,804	842	1,419	157485	6,298	5,705	3,651	2,609	1,044
TOTAL	133,262	132,480	7,218	7,252	3,291	6,448 5,493	5,354	813 1,773	1,888	499567	6,045 5,090	4,951	3,524	2,620	904

* 1/C bombing banking per orders issued by radio

S E C R E T

SECRET

SECRET
By Authority of the
Commanding General:

11-20-44 JR
Date Initials

XX BOMBER COMMAND
CONSOLIDATED MISSION STATISTICAL SUMMARY

Mission Number Sixteen
11 November 1944

Table X - Aircraft Failing to Bomb Primary Target

Group	Total Combat A/C on Hand	A/C Failing Primary	A/C Failing Alternate Primary	Recon. A/C	Accept- ance Check	A/C Failing To Bomb Primary	
						Which Were In Depot or Sv. Group	Which Were On Hand In Group
40th	37	2	15		1	2	17
444th	38	9	9	1			19
462nd	35	5	1	1		1	27
468th	36	13		1			22
TOTAL	146	29	25	3	1	3	85

Aircraft Failing to Bomb Primary Target on Mission #16

A/C Serial No.	Rear Area		Fwd. Area		Reason
	Air- borne	Not Air- borne	Air- borne	Not Air- borne	

40th P.G.

6269	X				Cylinder trouble #2 engine
6295		X			22ND A.P. - Sheet metal repairs
6348		X			400 hr. insp. - 2 engine changes
6418		X			28TH SV. GP. - Awaiting parts
24452	X				#4 Engine feathered, main fuel line on #4 engine started spurting
24541		X			Parts, carburetor assy.
63363	X				#1 & #3 Cylinder heads temp. high
63404		X			4 Tire changes, retraction test
24579				X	#10 Cylinder - #1 engine throwing oil
6275				X	#2 Oil cooler regulator leak
24587				X	Rad oil leak #1 engine
6297			X		#1 Turbo burned out
6319			X		#4 Engine, right landing gear trouble
6298			X		Weather
24589			X		Weather
6322			X		Weather
63394			X		Weather
24466			X		Weather
93831			X		#18 Cylinder head #4 engine separated from barrel, engine feathered
TOTALS	2	5	8	3	

444th P.G.

6315		X			Excessive vibration, carburetor trouble
6341		X			3 Engine changes
6342	X				2 Engines running rough
24524		X			Right main spar
24584		X			Fuel cell change
65202		X			4 Engine changes
6215	X				Abandoned & crashed in Fwd. Area
24464				X	Engine failure at takeoff attempt
6300			X		Missing

SECRET

DECLASSIFIED

Authority NND 760063
By *SM* NARA Date 11/3/05

SECRET

SECRET
 By Authority of the
 Commanding General
 11-20-44 SR
 Date Initials

A/C Serial No.	Rear Area		Fwd. Area		Reason
	Air- borne	Not Air- borne	Air- borne	Not Air- borne	

444th B.G.

6307			X		Missing
63419			X		Missing
65204			X		#4 Intercooler inoperative
24472			X		Weather, bombed secondary
6267			X		Electrical system malfunction
24507			X		Prop governor #3 engine inoperative
24538			X		Weather and enemy action
6324			X		2 Nose windows broken on takeoff could not pressurize
6340			X		Excessive oil loss #1 engine
63403				*	Oil leak
TOTALS	2	5	10	2	

462nd P.G.

6248		X			Parts, pump assy fuel transfer, #4 engine change
6287		X			22ND A.D. - Fuselage sheet metal repairs
6316		X			#2 and #3 engine change
6329		X			#3 Turbo on #3
6346		X			#1 Engine change, 50 hour inspection
6382		X			#1 Turbo trouble
24479		X			#3 Engine change, #3 cylinder change #1 - 4 engine
24484		X			#3 Engine change
24531	X				#3 Engine change
63362		X			#4 Engine change
63386	X				#1 Turbo trouble
93827		X			#4 Engine change, sheet metal repair
6273				X	Fuel pressure #3 engine only 14 pounds
6359				X	Starter burned out
6299				X	#1 Cylinder being changed
63393				X	Blown cylinder
93830			X		Oil cooler inoperative #4
6338			X		Lost #2 engine, very bad oil leak, and bad oil coolers #3 engine
6213			X		Radar inoperative over primary
24461			X		Plister blew out, short of oxygen & gas
24505			X		Complete overcast, radar ineffective due to interference
24475			X		Radar inoperative over primary
6285			X		Could not retract right landing gear
6311			X		Lost formation in soup
6278			X		Radar out, whole area overcast
24581			X		#1 Engine failure
6347				*	Transport operational
6354				*	Transport Operational
TOTALS	2	10	10	6	

SECRET

DECLASSIFIED

Authority NND 760063
 By *SM* NARA Date 11/3/05

SECRET

SECRET
 By Authority of the
 Commanding General
 11-20-44 *JK*
 Date Initials

Serial No.	Rear Area		Fwd. Area		Reason
	Air-borne	Not Air-borne	Air-borne	Not Air-borne	

468th P.G.

6389		X			#2 Engine change, 400 hour inspection
6411		X			#1-4 Engine changes
6454	X				#1 Engine cuts out, #2 tach upper #1 generator out
63417	X				#2 Engine change, #1 prop change
63355			X		Ripped wing
63356			X		Liquidometer leak
24442			X		Tach generator out
93828			X		#1 Prop governor change
24542			X		Right nacelle landing gear wouldn't close
6362			X		Weather and radar out
63395			X		Weather and radar out
24546			X		Weather
6208			X		Weather and radar out
6265			X		Weather and radar out
6397			X		Weather and radar out
63415			X		Weather
24487			X		Weather and radar out
6272			X		Mechanical
6284			X		Mechanical
6407			X		Radar out and weather
6409			X		#3 Fuel booster shorted and weather
24429			X		Weather
TOTALS	2	2	14	4	
GRAND TOTALS	<u>9</u>	<u>22</u>	<u>42</u>	<u>15</u>	

* Aircraft not scheduled to participate in mission.

SECRET

SECRET

SECRET
By Authority of the
Commanding General:
11-21-44 SK
Date Initials

XX BOMBER COMMAND
CONSOLIDATE MISSION STATISTICAL SUMMARY

Mission Number Sixteen
11 November 1944

Table XI - Engineering Malfunctions

Part I-- Engineering Malfunctions Preventing Airborne A/C From Bombing Primary

		40th	444th	462nd	468th	Total
ELECTRICAL	General		1			1
POWER PLANT	Turbo-supercharger	1				1
	Cylinder	1				1
	Engine Failure	1		1		2
	TOTAL	3		1		4
FUEL SYSTEM	Fuel booster				1	1
	Intercooler		1			1
	TOTAL		1		1	2
OIL SYSTEM	Oil leak		2	1		3
	Oil cooler			2		2
	TOTAL		2	3		5
OTHER	Prop governor		1			1
	Landing gear	1		1		2
	Right L.C. nacelle doors				1	1
	Broken windows		1			1
	Plow blister			1		1
	TOTAL	1	2	2	1	6
GRAND TOTALS		4	6	6	2	18

NOTE: For detail, see Table X "Summary of A/C Failing to Bomb Primary".

- 1 -

SECRET

DECLASSIFIED

Authority *NND 760063*
By *SM* NARA Date *11/30/05*

S E C R E T
 By Authority of the
 Commanding General,
 11-21-44
 Date Initials

Part II - Engineering Malfunctions Not Preventing A/C From Bombing Primary

	40th	444th	462nd	468th	Total	
ELECTRICAL	Landing Lights	3	1		1	5
	Generator	4	3	1	1	9
	Defroster Fan		1			1
	Voltage Regulator	1			1	2
	Wheel Well Lights	1				1
	Damaged or Crossed Wires	1				1
	Formation Lights			1		1
	Exterior Lights				1	1
	Inverter Relay				1	1
TOTAL	10	5	2	5	22	
POWER PLANT	Engine Ran Rough	1	2	1	4	8
	Excessive Oil Consumption				1	1
	Turbo-supercharger				2	2
	Exhaust System				1	1
	Intercooler flap inoperative		1			1
TOTAL	1	3	1	8	13	
FUEL SYSTEM	Transfer System		11	1	3	15
	Gas Leak				1	1
	Carburetor		1		1	2
	Pressure Low	3			1	4
	Pressure Gage	1				1
	Fuel boost rheostat	1				1
TOTAL	5	12	1	6	24	
INSTRUMENTS	Flux Gate Compass		2			2
	Carburetor Air Temp	3	3	3	3	12
	Cylinder Head Temp Gage	3	4	1	2	10
	Tachometer	5	6	5	5	21
	Auto Position Indicator		1			1
	A.F.C.T.		1		2	3
	Radio Compass	2			2	4
	Airspeed Indicator	2				2
	Manifold Pressure Gage	1				1
	Turn and Bank Indicator			1		1
	Direct Reading Pressure Gage				1	1
	Flight Indicator				1	1
TOTAL	16	17	10	16	59	
OIL SYSTEM	Oil Leak	2	3	4	5	14
	Oil Temp. Regulator	1	1	4	2	8
	Oil Pressure Low	2	1	3	1	7
	Oil Pressure High	2			2	4
TOTAL	7	5	11	10	33	
PROPELLER	Prop Governor	1	4	1		6
	Feathering Props	1				1
	TOTAL	2	4	1		7

S E C R E T

By Authority of the
Commanding General:

11-21-44 *JA*
Date Initials

Part II - Engineering Malfunctions Not Preventing A/C From Bombing Primary - cont'

	40th	444th	462nd	468th	Total
Oxygen Leak		1			1
Hydraulic Leak	1			1	2
Prokes Locked	1				1
Landing Gear Failure	1				1
OTHER					
Pressurization	2				2
Rivets Popped Out	1				1
Aircraft Vibration			1		1
Nose Cowl Overheated				1	1
TOTALS	6	1	1	2	10
GRAND TOTALS	47	47	27	47	168

NOTE PERTAINING TO BOTH PART I AND PART II:

Only engineering malfunctions are listed. All other malfunctions, such as radar, are excluded. If one aircraft had more than one engineering malfunction all malfunctions have been listed.

- 3 -

S E C R E T

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/30/05*

SECRET

ANNEX

N

FIELD ORDERS

* * * * *
* All Field Orders Material in the following *
* Annex originally classified TOP SECRET, is *
* hereby reclassified to SECRET *
* By authority of the C. G., XX Bomber Command *
* 21 Nov. 1944 FLJ *
* Date Initials *
* * * * *

SECRET

SECRET

SECRET

Auth: CG, XX BC

Initials: XXX

Date:

NOT TO BE TAKEN INTO THE AIR

ON COMBAT MISSION

XX Bomber Command
APO 493
7 November 1944 - 1130

FIELD ORDERS)
:
NUMBER 16)

MAPS: AAF Aeronautical Charts, 1:1,000,000: 385, 386, 387, 388, 491, 492,
493, 494, 495.

(or) International Maps of the World, 1:1,000,000: CHUNGKING, CHANGSHA,
HANKOW, NANKING, NANTUNG, SHANGHAI, NAGASAKI,
KAGOSIMA, OSAKA.

AAF Aeronautical Charts, 1:500,000: 386C, 386D, 388D, 492A, 493B.

AAF Long Range Air Navigation Charts, 1:3,000,000: 17.

Naval Aviation Charts, V-30 Series, 1:2,188,000: 16, 17.

Naval Aviation Chart, HO:5494.

1. a. (1) Hostile Ground Situation: See Annex No. 1, Intelligence Summary.
(2) Hostile Air Situation: See Annex 1, Intelligence Summary.
b. (1) Omitted.
(2) Friendly Air Situation:
 - (a) Friendly Airfields: See Annex No. 1, Intelligence Summary.
 - (b) The 312th Fighter Wing will provide fighter cover for VLR bases in the CHENGTU Area.
2. Staging from bases in the CHENGTU Area, the XX Bomber Command conducts a maximum effort daylight attack on D-Day against IAF Target No. 90.36-1627. See Annex No. 2, Radar Folder, and Annex No. 1, Intelligence Summary.

ROUTE OUT: Designated below.

Aircraft will take off from bases in the CHENGTU Area at two minute intervals and climb, on course, to 7,000 feet pressure altitude, cruise for thirty minutes and then climb on course to 13,000 feet pressure altitude.

BASE ALTITUDE: 13,000 feet pressure altitude.

- 1 -

SECRET

DECLASSIFIED

Authority NND 760063

By SM NARA Date 11/30/05

SECRET

IP: OIJIMA ISLAND (32°34'N, 128°54'E).

AXIS OF ATTACK: 73° Mag.

AIMING POINT: Reference AAF Target Illustration No. 90.36-1627 P4A, issued September 1944, the 40th and 462nd Bombardment Groups will use the Southeast corner of Building No. 19 in Area A as an aiming point. The 444th and 468th Bombardment Groups will use Building No. 4 in Area D as an aiming point.

METHOD OF BOMBING: Twelve-plane formation salvo pattern.

ROUTE BACK: TARGET - (33°12'N, 118°42'E) - LIANGSHAN AIRFIELD (30°42'N, 107°50'E) - BASE AREA.

3. a. The 40th Bombardment Group, dispatching its aircraft as rapidly as possible from its forward base beginning at 1832Z on D minus one, will bomb from 22,000 feet pressure altitude.

ROUTE OUT: BASE AREA - ANKANG AIRFIELD (32°35'N, 109°14'E) - ASSEMBLY POINT #1 (33°12'N, 118°42'E) - ASSEMBLY POINT #2 (32°02'N, 128°25'E) - IP - TARGET.

ASSEMBLY ALTITUDES: ASSEMBLY POINT #1: Base altitude plus or minus an odd thousand feet; ASSEMBLY POINT #2: 22,000 feet pressure altitude

BOMB LOAD:

- (1) Minimum of ten bombs per aircraft equipped with center section wing tanks.
- (2) Minimum of eight bombs per aircraft not equipped with center section wing tanks.
- (3) Both 500# GP (TNT or Amatol filled) bombs, fused .1 second nose and .01 second tail, and 500# M-76 Incendiary bombs, fused instantaneous nose and non-delay tail, will be carried in each aircraft, mixed in the ratio of two demos to one incendiary with the incendiaries loaded to release last.

- b. The 444th Bombardment Group dispatching its aircraft as rapidly as possible from its forward base beginning at 1842Z on D minus one, will bomb from 23,000 feet pressure altitude.

ROUTE OUT: BASE AREA - ANKANG AIRFIELD (32°35'N, 109°14'E) - ASSEMBLY POINT #1 (33°12'N, 118°42'E) - ASSEMBLY POINT #2 (32°02'N, 128°25'E) - IP - TARGET.

ASSEMBLY ALTITUDES: ASSEMBLY POINT #1: Base altitude plus or minus even thousand feet. ASSEMBLY POINT #2: 23,000 feet pressure altitude.

BOMB LOAD:

- (1) Minimum of eleven bombs per aircraft equipped with center section wing tanks.

- 2 -

SECRET

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/3/05*

SECRET

- (2) Minimum of eight bombs per aircraft not equipped with center section wing tanks.
 - (3) Both 500# GP (TNT or Amatol filled) bombs, fused .1 second nose and .01 second tail, and 500# M-76 Incendiary bombs, fused instantaneous nose and non-delay tail, will be carried in each aircraft, mixed in the ratio of two demos to one incendiary with the incendiaries loaded to release last.
- d. The 462nd Bombardment Group, dispatching its aircraft as rapidly as possible from its forward base beginning at 1826Z on D minus one, will bomb from 20,000 feet pressure altitude.

ROUTE OUT: BASE AREA - ANKANG AIRFIELD (32°35'N, 109°14'E) - ASSEMBLY POINT #1 (33°53'N, 120°30'E) - ASSEMBLY POINT #2 (32°02'N, 128°25'E) - IP - TARGET.

ASSEMBLY ALTITUDE: ASSEMBLY POINT #1: Base altitude plus or minus an odd thousand feet, ASSEMBLY POINT #2: 20,000 feet pressure altitude.

BOMB LOAD:

- (1) Minimum of nine bombs per aircraft equipped with center section wing tanks.
 - (2) Minimum of eight bombs per aircraft not equipped with center section wing tanks.
 - (3) Both 500# GP (TNT or Amatol filled) bombs, fused .1 second nose and .01 second tail and 500# M-76 incendiary bombs, fused instantaneous nose and non-delay tail, will be carried in each aircraft, mixed in the ratio of two demos to one incendiary with the incendiaries loaded to release last.
- e. The 468th Bombardment Group, dispatching its aircraft as rapidly as possible from its forward base beginning at 1828Z on D-Day will bomb from 21,000 feet pressure altitude.

ROUTE OUT: BASE AREA - ANKANG AIRFIELD (32°35'N, 109°14'E) - ASSEMBLY POINT #1 (33°53'N, 120°30'E) - ASSEMBLY POINT #2 (32°02'N, 128°25'E) - IP - TARGET.

ASSEMBLY ALTITUDES: ASSEMBLY POINT #1: Base altitude plus or minus an even thousand feet, ASSEMBLY POINT #2: 21,000 feet pressure altitude.

BOMB LOAD:

- (1) Minimum of ten bombs per aircraft equipped with center section wing tanks.
- (2) Minimum of eight bombs per aircraft not equipped with center section wing tanks.
- (3) Both 500# GP (TNT or Amatol filled) bombs, fused .1 second nose and .01 second tail, and 500# M-76 Incendiary Bombs fused instantaneous

- 3 -

SECRET

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/30/05*

SECRET

m

nose and non-delay tail, will be carried in each aircraft, mixed in the ratio of two demos to one incendiary with the incendiaries loaded to release last.

- x. (1) SECONDARY TARGETS: AAF Target No. 90.36-834 and AAF Target No. 83.1-113 (POINT ISLAND storage facilities). See Annex No. 1, Intelligence Summary and Annex No. 2, Radar Folder.
- (2) LAST RESORT TARGET: AAF Target No. 83.1-129 (Dock Area and Warehouses). See Annex No. 1, Intelligence Summary, and Annex No. 2, Radar Folder.
- (3) Aircraft will move to the forward area on D minus three, D minus two and continue on D minus one. No more than eight aircraft per group will move forward on D minus three.
- (4) Radar and K-18 photographs of the CHINA COAST and potential assembly points will be taken by all aircraft equipped with cameras.
- (5) Strike photos will be taken by all camera-equipped aircraft.
- (6) Standard Operating Procedure:
- (a) Indicated airspeeds that individual planes of a twelve plane formation will fly to Assembly Point #1 are as follows:
- Leader flies 195 m.p.h. ind.
Numbers 2, 3, and 4 fly 190 to 195 m.p.h. ind.
Numbers 5, 6, 7, and 8 fly 195 to 200 m.p.h. ind.
Numbers 9, 10, 11, and 12 fly 200 to 205 m.p.h. ind.
- (b) All turns for assembly will be made as follows:
- 40th Group circles left.
444th Group circles right.
462nd Group circles left.
468th Group circles right.
- (c) If instrument conditions prevail at Assembly Point #1, aircraft will proceed directly to Assembly Point #2.
- (d) Indicated airspeeds to be flown from Assembly Point #1 to Target are as follows:
- Cruise 195 m.p.h. ind.
Climb 195 m.p.h. ind.
Bomb 195 m.p.h. ind.
Turn right from target at 200 m.p.h. IAS and lose 1,000 feet.
- (e) assigned bombing altitudes will be attained prior to reaching Assembly Point #2.
- (f) Let down will be executed at 200 m.p.h. IAS and a maximum of 200 feet per minute.
- (7) After landing at CHENGTU on completion of the mission, airplanes will be re-serviced immediately to a total of 3200 gallons of burnable

- 4 -

SECRET

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/30/05*

SECRET

gasoline, necessary engine oil and necessary oxygen. Normal return to the INDIA bases will be made on D plus one.

4. No change.
5. a. (1) Signal Communications: See Annex No. 3, Signal Instructions.
(2) RCM: See Annex No. 4, RCM Instructions.
- b. Command Post: Forward Echelon Detachment, Headquarters, XX Bomber Command, APO 493.

By command of MAJOR GENERAL LEMAY:

JOHN E. UPSTON,
Brigadier General, U.S.A.
Chief of Staff.

OFFICIAL:

JOSEPH J. PRESTON
Colonel, Air Corps
Deputy Chief of Staff
Operations

ANNEXES:

- #1 - Intelligence Summary
- #2 - Radar Folder
- #3 - Signal Instructions
- #4 - RCM Instructions

DISTRIBUTION:

- 1 - CG, Twentieth Air Force
- 1 - CG, China Theatre
- 1 - CG, AF, IB (less Annex No. 1)
- 1 - CG, AF, IB Evaluation Board
- 1 - CG, India-Burma Theatre
- 1 - Fourteenth Air Force
- 1 - 312th Wing (F)
- 1 - CG, XX BC
- 1 - D/CS, Operations
- 1 - CO, Fwd. Ech. Det. XX BC
- 1 - CO, Fwd. Ech. Det. XX BC (ACC) (less Annexes 1, 2, 4)
- 2 - Chief, Intelligence Section
- 2 - Chief, Opns, Plans & Tng Section
- 3 - CO, 40th Bomb Group
- 3 - CO, 444th Bomb Group
- 3 - CO, 462nd Bomb Group
- 3 - CO, 468th Bomb Group

- 5 -

SECRET

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/30/05*

SECRET

NOT TO BE TAKEN INTO THE AIR
ON COMBAT MISSIONS

* * * * *
* SECRET *
* By Auth of the C.G. *
* XX Bomber Command *
* * * * *
* 7 Nov 1944 J.D.G. *
* Date Initials *
* * * * *

ANNEX NO. 1 TO FIELD ORDERS NO. 16, XX BOMB COMD

I. INTELLIGENCE SUMMARY

SECTION I: ENEMY GROUND SITUATION

For exact location of the Battle Line, see Exhibit A, "Navigator's Aid Chart", dated 8 November, 1944, and refer to "Radiogram Extract Report" of 7 November, 1944, disseminated by this Headquarters.

SECTION II: ENEMY ORDER OF BATTLE - SEA

Information of special concern to the mission will be disseminated by secret radio prior to the final mission briefing.

SECTION III: ENEMY ORDER OF BATTLE - AIR

Refer to SECRET letter dated 8 November 1944, subject: Air Estimate China and Japan. Any pertinent changes will be disseminated by secret radio prior to the final mission briefing. Anticipated interception is rated as moderate.

SECTION IV: ENEMY AIRCRAFT

For new types of enemy aircraft which might be encountered, see "Technical Air Intelligence Center Summary #5", dated September 1944.

SECTION V: ENEMY AIRFIELDS

For the latest information on enemy airfields in China, see "Enemy Airfield Report No. 4", dated 2 November 1944, published by this Headquarters.

For the latest information on enemy airfields in Japan, see the "Provisional Airfield List - Japan, Enemy Airfield Report No. 1", dated 12 July 1944, published by Washington, and second edition of same report, dated 19 October 1944.

SECTION VI: ENEMY ANTI-AIRCRAFT

For radar warning nets and Flak information refer to "Flak intelligence Bulletin No. J-2", dated 8 November 1944, and "Enemy Antiaircraft Defense Bulletin No. 6", dated 1 November 1944.

SECTION VII: EVASION AND ESCAPE

Refer to "Bulletins on Evasion and Escape" ("BEE") - #11 dated 5 October, 1944, "On the Communist Forces"; #10 dated 8 September, 1944; #9 dated 2 August 1944, "Escape and Evasion in North China"; #8 dated 26 June 1944, "On China".

Also refer to:

AGAS Map "Communist Areas in Northern China", inclosed with letter dated 7 Nov 1944.

AGAS-CHINA (TOP SECRET) Bulletin dated 18 Sept 1944 - "Evasion & Escape in Henan and Shansi".

AGAS-CHINA - Bulletin dated 3 September 1944 - "Evasion & Escape in Shantung Province".

AGAS-CHINA (TOP SECRET) Bulletin #3 dated 8 April 1944, "Yangtze Valley and Northern China".

SECRET

DECLASSIFIED

Authority NND 760063

By SM NARA Date 11/3/05

SECRET

SECTION VIII: PRISONER OF WAR C. MFS

None known to be in Target Areas. Refer to "Japanese P.O.W. Camps", issued by P.O.W. Unit, XX Bomber Command and distributed in July.

SECTION IX: AIR SEA RESCUE

Details to be supplied at final briefing. No change in standard operating procedure -- see Signal Instructions.

SECTION X: NAVIGATOR'S AID CHART

A Navigator's Aid Chart, Exhibit A, dated 8 November 1944, has been provided, and two copies will be carried in each airplane -- one for the pilot and one for the navigator. This chart shows the battle line, radar warning nets, antiaircraft emplacements, principal cities, and gives certain details on friendly airfields for use in emergency.

II. TARGET INTELLIGENCE

SECTION I: LIST OF VISUAL TARGET DATA

1. Primary Target: Omura Aircraft Plant

Objective Folder 90.36 (for briefing).
XX Bomber Command Charts: C No. 21 (2nd edition), TC23,
TC23A, TC23L.
Target Model No. A40-2 (for briefing).
Target Model Photos.
Mosaic.
Enlarged Mosaic (for briefing).

2. Alternate Target: Sasebo Aircraft Factory

Objective Folder Data 90.36 - 834 (for briefing).
XX Bomber Command Target Chart No. 20A.
Mosaic.

3. Secondary Target: Point Island Storage Area, Shanghai

Objective Folder 83.1 (for briefing).
AAF Target Chart No. 83.1 - 108.
Mosaic.

4. Last Resort Target: Wharf Area, Nanking, China

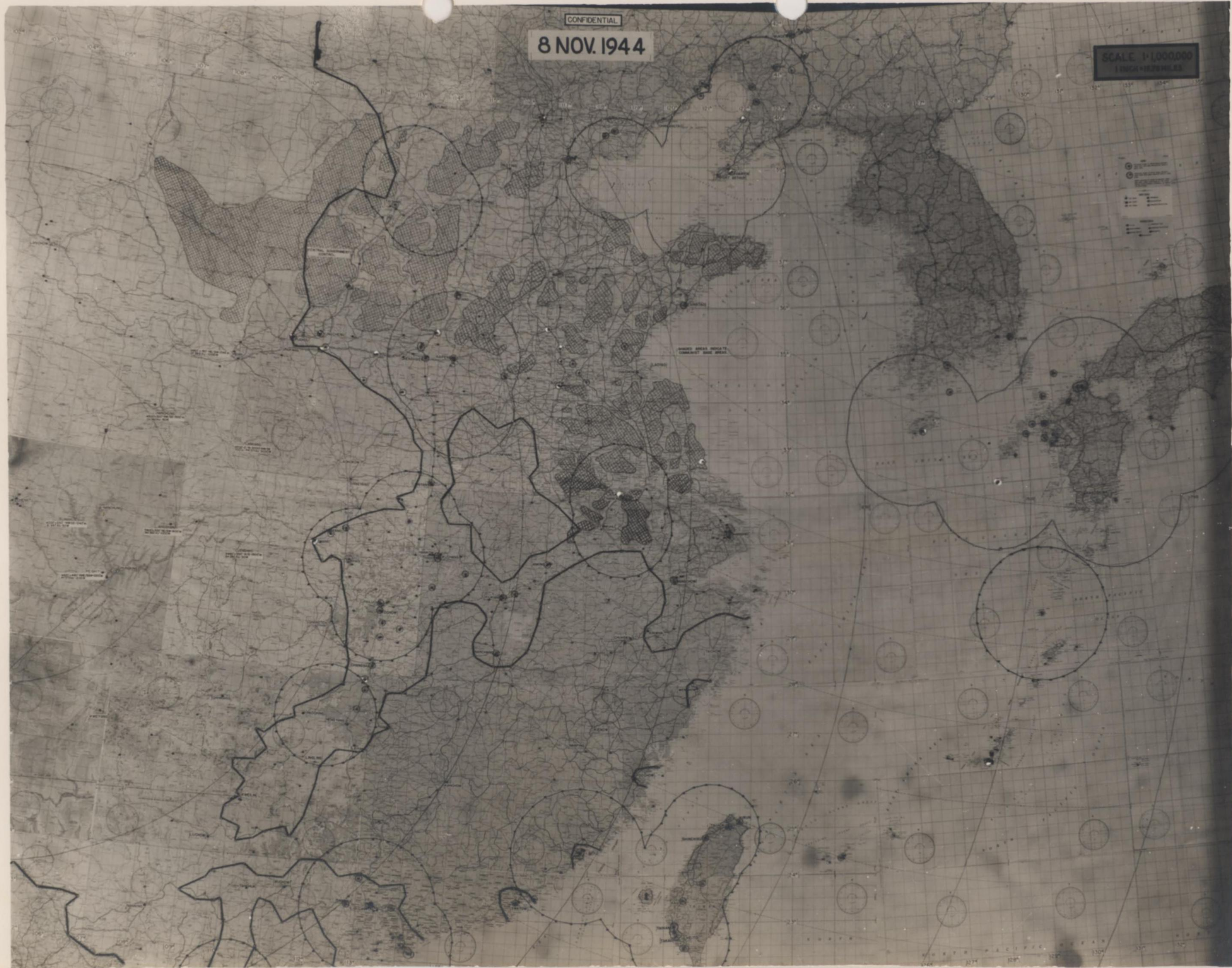
Objective Folder Data 83.1 - 129
14th AF Target Chart No. 31

By command of MAJOR GENERAL LEMAY:

J. E. URSTON,
Brigadier General, U.S.A.,
Chief of Staff.

OFFICIAL:

James D. Garcia
per file
JAMES D. GARCIA,
Colonel, Air Corps,
Chief, Intelligence Section.



CONFIDENTIAL
8 NOV. 1944

SCALE 1:100,000
1 INCH = 2.5 MILES

DECLASSIFIED
Authority *MD 760063*
By *SMARA* Date *11/30*

"CONFIDENTIAL"

"CONFIDENTIAL"

S E C R E T

SECRET
Auth: CG XX BC
Initials 114
Date: 7 Nov 44

NOT TO BE TAKEN INTO THE AIR

ON COMBAT MISSION

ANNEX NO. 2 TO FIELD ORDERS NUMBER 16, XX BOMBER COMMAND

RADAR FOLDER

1. Lead Crew radar operators using the AN/APQ-13, will employ the standard radar-bombsight procedure against the target. Lead and Deputy lead radar operators will operate radar equipment continuously. All other radar operators in formation will operate the equipment periodically as a navigational aid, to check equipment and for the purpose of taking scope pictures. All operators except the lead operator and in aircraft equipped with scope cameras will switch the AN/APQ-13 to "Stand-by" on the bombing run if the lead aircraft signals interference difficulty.
2. Scope cameras will be installed in deputy lead, second deputy lead and as many other aircraft as possible, commensurate with the number of scope cameras available. Radar scope photographs will be taken as presently prescribed, at approximately one-mile intervals while on the bomb run, at the instant of bomb release, and at approximately one-mile intervals after leaving the target.
3. The SCR-729 and SCR-695 will be operated in accordance with the Tactical Doctrine and the current SOI in effect on the date of the mission. In addition, the SCR-729 may be used to home on IFF installed in air-sea rescue craft when necessary.
4. The final rendezvous point is the DANJO ARCHIPELAGO, located at 32° 02' N and 128° 25' E. From this point, all aircraft will fly a course of 43° M to the I.P., OIJIMA ISLAND, located at 32° 34' N and 128° 54' E. From the I.P. all aircraft will fly a course of 73° M to the target, the OMURA AIRCRAFT PLANT, located at 32° 55' N and 129° 56' E. Three (3) scope drawings, "A," "B" and "C" at forty (40), sixteen (16) and six (6) miles respectively from the target and scope drawing "X," six (6) miles from the I.P. were furnished with Field Orders Number 13. These will be used for study.
5. The course to the OMURA AIRCRAFT PLANT, located on the far shore of OMURA BAY, passes directly over the center of MINO ISLAND, which is located on course about one (1) mile before the target. This course is correct only if the same aiming point as used for Field Orders Number 13 is used. An aiming point in the southern part of MINO ISLAND will change the course to pass over the center of the southern half of MINO ISLAND and conversely if the aiming point is changed to within the old NAVAL AIR STATION. With the proper combination of gain, tilt and intensity, the target will appear at a distance of over fifty (50) miles. MINO ISLAND will appear as a separate and distinct signal from the target at over forty (40) miles. The radar aiming point is the shore line edge of the target return, with the aircraft on course. The bombardier will be informed of the offset distance between the shore line and the actual aiming point.
6. Two (2) radar navigation maps, scale 1:250,000 and 1:1,000,000, an OMURA photo mosaic and three (3) sheets "A," "B" and "C" of actual scope photographs, in addition to the predicted drawings, were furnished with Field Orders Number 13 and will be used for study. Photograph sheets "A" and "B" are of the OMURA and SASSEBO areas. Particular attention will be given to the appearance of the target from several headings and of other distinguishing features. Note especially that the center neck of MINO ISLAND disappears at close range, giving the appearance of two (2) distinct islands.

- 1 -

S E C R E T

DECLASSIFIED

Authority NND 760063

By SM NARA Date 11/3/05

S E C R E T

7. Photograph sheet "C" contains scope photographs of HUNGTZE LAKE and of the CHINA COAST. The south shore of the lake at 33° 12' N and 118° 42' E is an assembly point for aircraft of the 40th and 444th Bomb Groups. Aircraft of the 462nd and 468th Bomb Groups will fly over the lake but will rendezvous at 33° 53' N and 120° 30' E on the CHINA COAST. Particular attention will be paid to discrepancies between the map and the scope photographs, which show that the map is incorrectly plotted.

8. The secondary target is the SASEBO AIRCRAFT FACTORY located at 33° 09' N and 129° 45' E. This target is 64.5 statute miles on a heading of 56° M from the I.P., OIJIMA ISLAND. Predicted drawing "X," on an axis of attack of 71° M, and predicted drawing "Z," on an axis of attack of 56° M are furnished for study. In addition, drawing "Y" on an axis of 315° M was previously furnished with Field Orders Number 15. The radar aiming point will be the center of the target return. The scope photograph sheets and the radar navigation maps previously furnished cover this target and will be carefully studied.

9. Another secondary target is POINT ISLAND STORAGE, SHANGHAI, located at 31° 17' N and 121° 53' E. Predicted scope drawing "C"-- "Shanghai," on an axis of 282° M, and a radar navigational map have been previously furnished and will be used for detailed study.

10. The last resort target is the WHARF AREA, NANKING, CHINA, located at 32° 06' N and 118° 43' E. HSUANWU LAKE, in the center of the city, and approximately four (4) miles from the target, will serve as an excellent check point. The radar aiming point will be at the shore line edge of the YANGTZE RIVER. Target chart Number 31 is furnished and radar navigational map B-16 will be supplied prior to take-off.

By Command Of MAJOR GENERAL LEMAY:

JOHN E. UPSTON
Brigadier General, USA
Chief of Staff

OFFICIAL:

Francis B. Morgan
FRANCIS B. MORGAN
Major, Sig Corps
Actg Communications Officer

Exhibits:

- "A" - Scope drawings "X" and "Z" for:
SASEBO AIRCRAFT FACTORY, SASEBO, JAPAN. 90.36-834.
- "B" - Radar Navigation map B-16 (to be furnished prior to take-off) and target chart 31 for:
WHARF AREA, NANKING, CHINA. 83.1-129.

- 2 -

S E C R E T

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/30/05*

SECRET

EXHIBITS TO ANNEX 2, F.O. 16

Mission No. 16

11 November 1944

Exhibits to Annex 2, Field Order No. 16 are listed below with their approximate original size.

<u>Title or Description</u>	<u>Approximate original size in inches</u>
* Probable appearance at Point "X" - 6 miles from I.P.	8 x 16 1/4
* Probable appearance at Point "A"	8 x 16 1/4
* Probable appearance at Point "B"	8 x 16 1/4
* Probable appearance at Point "C"	8 x 16 1/4
Probable appearance at Point "X" - 12 miles from Target	8 x 16 1/4
* Probable appearance at Point "Y"	8 x 16 1/4
Probable appearance at Point "Z"	8 x 16 1/4
* Radar Scope Photograph - Omura Area, Japan	16 1/4 x 16 1/4
* Radar Scope Photographs - Nagasaki - Omura Area, Japan	16 1/4 x 16 1/4
* Radar Scope Photographs - Hung - Tse Lake Area, China	16 1/4 x 16 1/4
* Radar Navigation Map, Japan - Chart No. A - 5	16 1/4 x 16 1/4
* Radar Approach Chart, Japan Chart No. C - 10	16 1/4 x 16 1/4
* Photograph - Omura Area	16 1/4 x 16 1/4
* Probable Appearance at Point C - 11 miles from Target	8 x 16 1/4
* Radar Approach Chart, China - Chart No. B - 13	16 1/4 x 16 1/4
Radar Approach Chart, China - Chart No. B - 16	16 1/4 x 16 1/4

Those exhibits marked with an asterisk have been previously reproduced and may be found in Tactical Mission Report No. 13, Annex O. Those which have not been previously reproduced follow.

SECRET

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/30/05*

CONFIDENTIAL

R-90.36-834 SHEET X

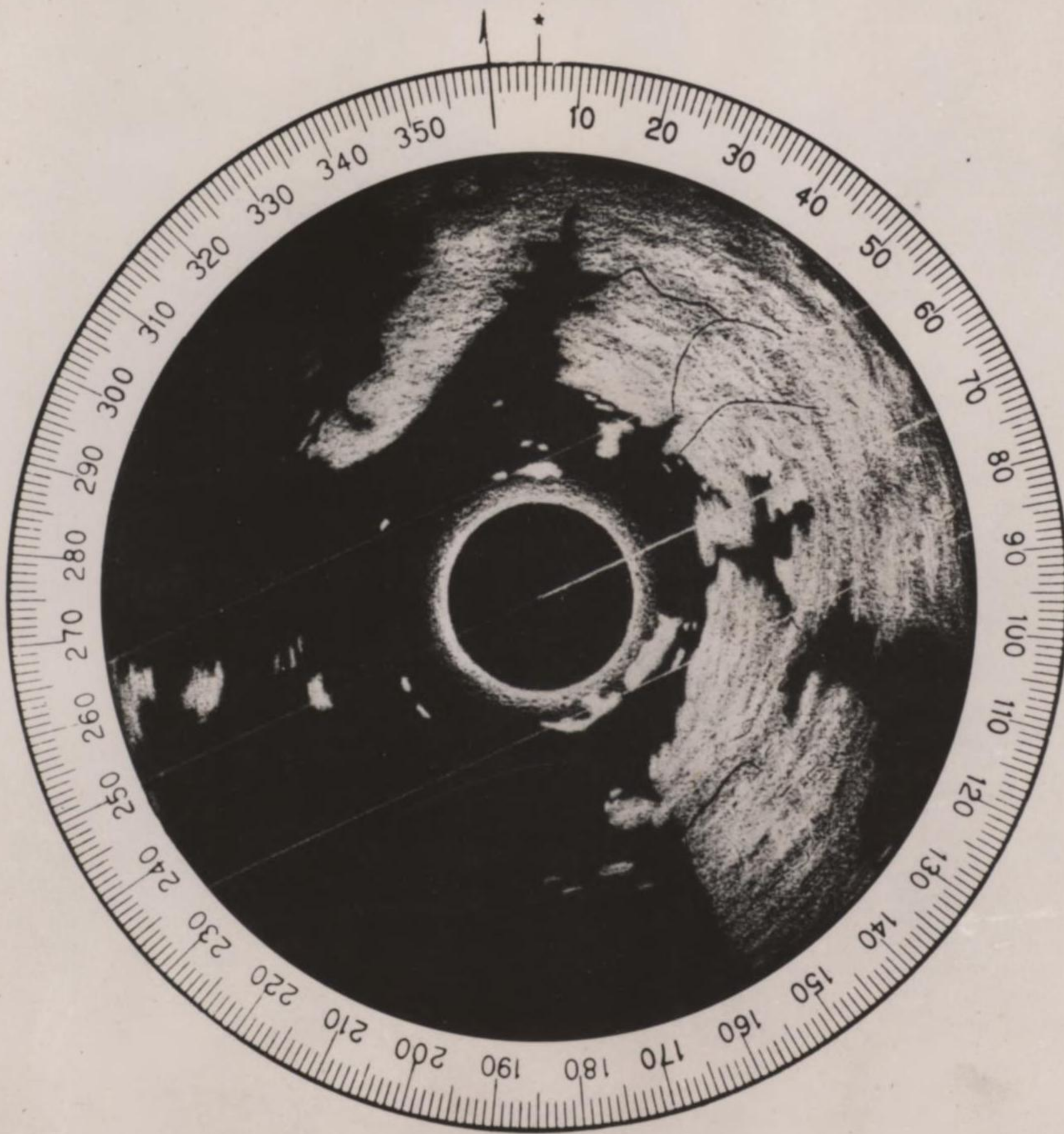
PROBABLE APPEARANCE AT POINT "X"

12 MILES FROM TARGET

ALTITUDE: 25,000'

SWEEP: 20 MILES

LUBBER LINE FOR CONDITION OF "NO DRIFT"
COINCIDES WITH CENTER DRIFT LINE



SCOPE PICTURES USABLE WITHIN SEVERAL THOUSAND FEET OF THE ALTITUDE FOR WHICH DISTORTIONS HAVE BEEN CALCULATED.

AT ALTITUDES OTHER THAN 25,000 GREATEST UNCERTAINTY OF DISTORTIONS WILL OCCUR NEAR CENTER OF SCOPE PICTURE.

CONFIDENTIAL

PREPARED BY TARGET UNIT—INTELLIGENCE SECTION — XX BOMBER COMMAND

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/3/05*

CONFIDENTIAL

R-90.36-834 SHEET Z

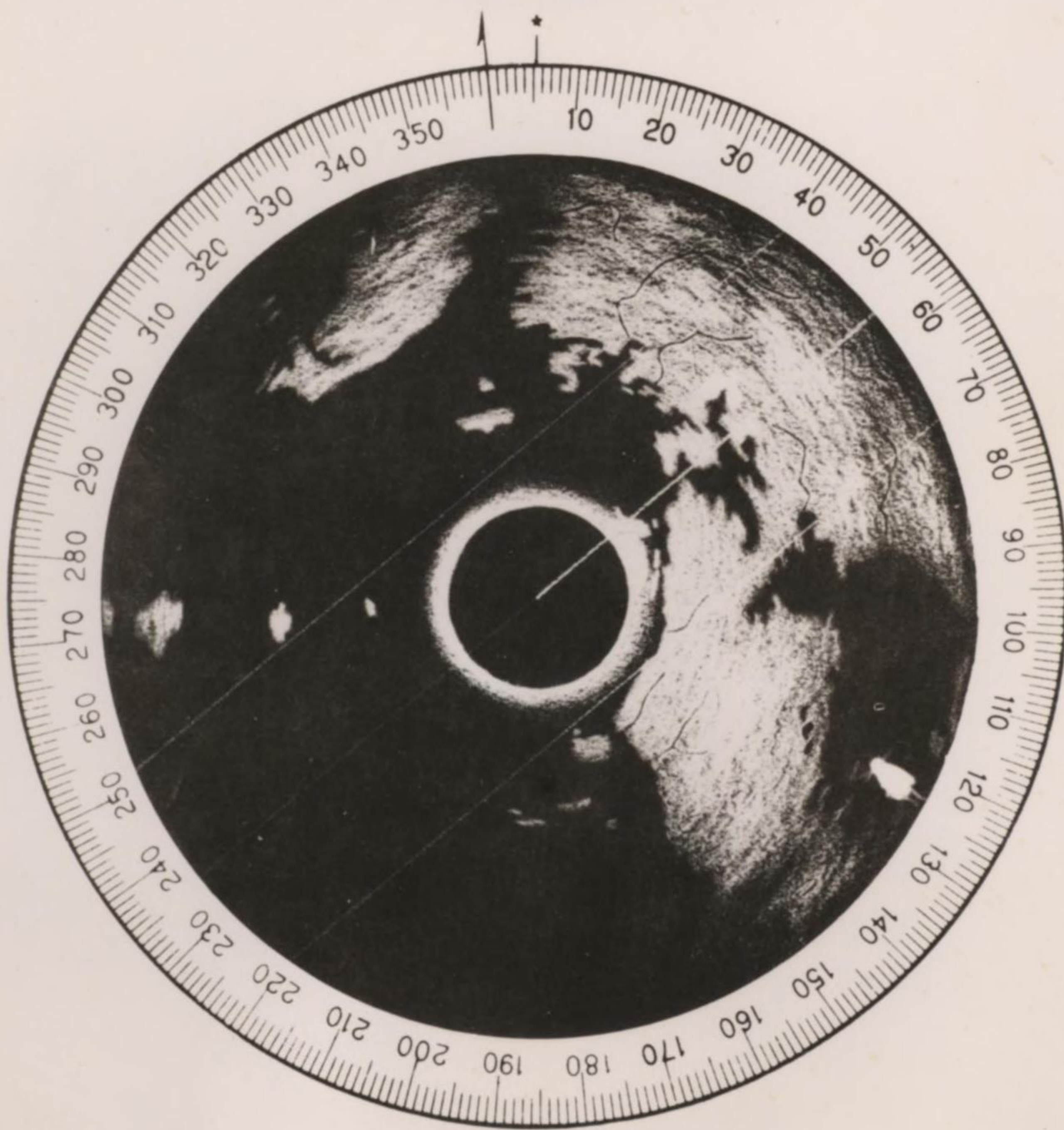
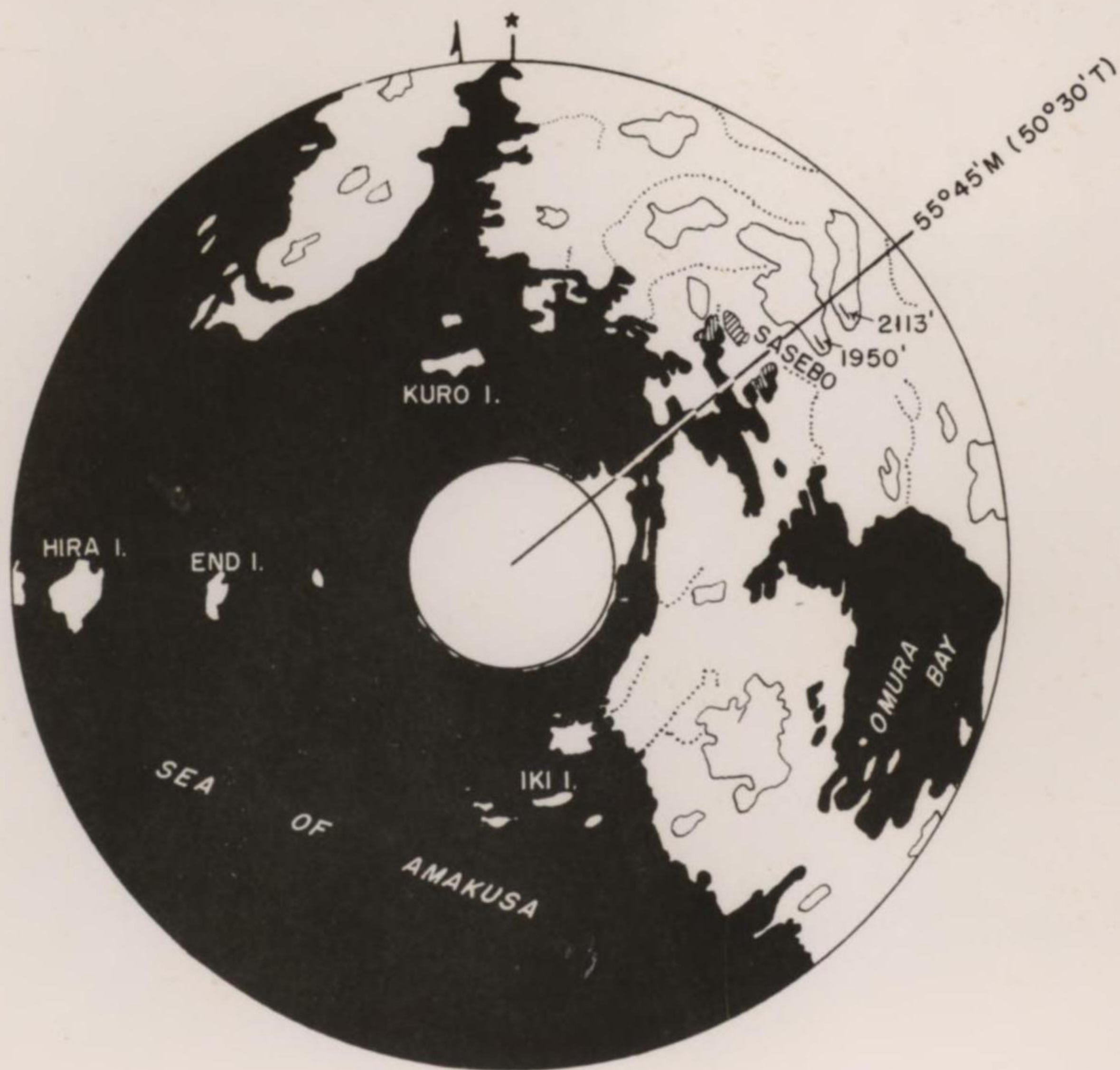
PROBABLE APPEARANCE AT POINT "Z"

12 MILES FROM TARGET

ALTITUDE: 25,000'

SWEEP: 20 MILES

LUBBER LINE FOR CONDITION OF "NO DRIFT"
COINCIDES WITH CENTER DRIFT LINE



SCOPE PICTURES USABLE WITHIN SEVERAL THOUSAND FEET OF THE ALTITUDE FOR WHICH DISTORTIONS HAVE BEEN CALCULATED.

AT ALTITUDES OTHER THAN 25,000 GREATEST UNCERTAINTY OF DISTORTIONS WILL OCCUR NEAR CENTER OF SCOPE PICTURE.

CONFIDENTIAL

PREPARED BY TARGET UNIT—INTELLIGENCE SECTION — XX BOMBER COMMAND

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/3/05*

NANKING AREA

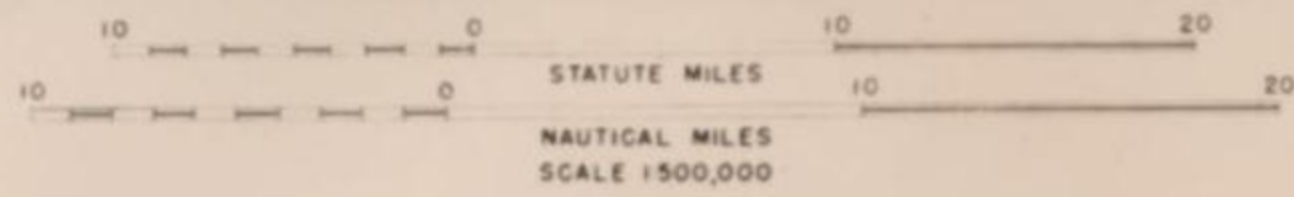
RADAR APPROACH CHART - CHINA

CHART NO. B-16 RESTRICTED



TARGET: UNIT-INTELLIGENCE SECTION
XX BOMBER COMMAND

RESTRICTED



RESTRICTED

COMPILED AND REPRODUCED BY
548 TH ENGR AVN TPOD CD
NOVEMBER 1944

DECLASSIFIED

Authority **NND 760063**

By **SM** NARA Date **11/3/05**

SECRET

SECRET
AUTH: CG, XX BC.
INITIALS: W/4
DATE: 7 Nov 44.

NOT TO BE TAKEN INTO THE AIR
ON COMBAT MISSION

Annex No. 4 to Field Orders No. 16 XX Bomb Comd

RCM INSTRUCTIONS

1. Each Group will furnish two (2) RCM equipped aircraft, each with one RCM Observer.
2. Enroute to the target, the Bombardment Groups will search the early warning band from 40 to 300 MC. If anti-aircraft fire from a land site is encountered, or if a Naval Task Force is sighted, all Observers will change from early warning search and concentrate on radar fire control.
3. From the IP to the target and return to the IP, particular attention will be placed on radar fire control equipment. The Bombardment Groups will search the following bands:
 - a. 40th Bombardment Group
 - (1) 70-300 MC
 - (2) 1000-3300 MC
 - b. 444th Bombardment Group
 - (1) 300-1000 MC
 - (2) Enemy Communications
 - c. 462nd Bombardment Group
 - (1) 70-300 MC
 - (2) Enemy Communications
 - d. 468th Bombardment Group
 - (1) 70-300 MC
 - (2) 300-1000 MC

Enemy Communications search assignments will be monitored over the target and during enemy aircraft intercepts.

By command of Major General LEMAY:

OFFICIAL:

Francis E. Morgan
FRANCIS E. MORGAN
Major, Sig Corps
Actg Comm O

JOHN E. UPSTON
Brigadier General, U. S. A.
Chief of Staff

SECRET

DECLASSIFIED

Authority NND 760063
By SM NARA Date 11/3/05

S E C R E T

ANNEX

0

SUPPLEMENTAL INFORMATION

- I - Change of Target
- II - Target Information
 - A. Omura *
 - B. Sasebo
 - C. Shanghai (Point Island)*
 - D. Nanking
- III - Aids to Visual Bombing
- IV - Antiaircraft Information
- V - Determination of Bomb Load**

* See also Tactical Mission Report #13, Annex P, "Supplemental Information."

** Prepared by Operations, Plans and Training Section.

S E C R E T

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/30/05*

S E C R E T

I - CHANGE OF TARGET

Mission No. 16

11 November 1944

Because weather information indicated that it would be impossible to bomb the primary and secondary targets visually, a telegram was sent from the Headquarters, Advance Echelon Detachment to the Groups directing that each Group contact its aircraft, which were already airborne, and instruct them to bomb the last resort target instead of proceeding to the primary target at Omura.

S E C R E T

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/30/05*

NOT TO BE TAKEN INTO THE AIR ON COMBAT MISSIONS

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

TARGET NO. 1627

OBJECTIVE FOLDER NO. 90.36

TARGET DATA

1. OBJECTIVE:

OMURA AIRCRAFT PLANT, OMURA, JAPAN.

2. COORDINATES AND ELEVATION:

Latitude: 32° 55' N
Longitude: 129° 56' 30" E.
Elevation: 20'.

3. LOCATION AND IDENTIFIABLE FEATURES:

The Omura Aircraft Plant is located in the eastern shore of almost landlocked Omura Bay, approximately 20 miles SE of Sasebo Harbor and 1 mile northwest of the town of Omura.

The plant area is shaped like an isosceles triangle, the longest side being on the bay. Mino Island, shaped like a brassiere lies about 1.5 miles to the west-south-west, with heart shaped Usu Island 3/4 of a mile directly south. The airfield is located 1 mile to the north of the main plant.

4. IMPORTANCE:

The plant area is divided into three distinct parts.

a. The old area 2200' X 1800' extending diagonally back from the main wharfs.

b. The new south plant 2550' X 1010' extending south along the shore line.

c. New east plant which is a continuation of the old plant.

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

5. VULNERABLE AREAS:

Each one of the three plant areas mentioned in paragraph 4 presents a separate objective. The old plant is believed to be the preferred choice for the first attack. The large flat-topped sub-assembly building in the north central location being a particularly vulnerable target.

OCTOBER 1944

TARGET UNIT INTELLIGENCE
XX BOMBER COMMAND

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

DECLASSIFIED

Authority NND 760063
By SM NARA Date 11/30/05

NOT TO BE TAKEN INTO THE AIR ON A COMBAT MISSION

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

TARGET NO. 834

OBJECTIVE FOLDER NO. 90.36

TARGET DATA

1. OBJECTIVE:

Sasebo Aircraft Factory, Sasebo, Japan.

2. COORDINATES AND ELEVATION:

Latitude: 33° 09'N.
Longitude: 129° 45'E.
Elevation: Approximately Sea Level.

3. LOCATION AND IDENTIFIABLE FEATURES:

Sasebo is located at the northwest corner of irregular Sasebo Bay. It lies in the mouth of a narrow valley cramped between a fifteen hundred-foot ridge to the west and a two thousand-foot ridge to the east. Its eastern suburbs spread along the shore of a stubby peninsula - the largest in the bay - at the tip of which is prominent Sasebo Naval Air Station. On the southeast side of the peninsula about a mile and a half northeast of the Naval Air Station is the Naval Aircraft Factory.

The factory area is rectangular in outline measuring approximately 2400' x 1200' with its long axis lying north-south and extending through a conical volcanic island 3000' out in the bay. It is bordered on the northeast by a small river and to the east and northeast are extensive groups of revetted and underground naval storages. There are some 25 shop and hangar-type buildings plus a number of administration and small storage buildings in the area. Four shop-type buildings about 160' square are along the southwest side and six hangars about 100' square are located in the northwest corner. Near the center of the plant is a machine shop-type building about 140' x 270'. The ground to the north of the plant is being leveled, possibly for expansion. There is one large seaplane ramp or slipway 180' wide, and one large hammerhead crane at the southeast corner. Along the waterfront to the southeast and across the river are several medium size shop and storage buildings.

4. IMPORTANCE:

This plant, which assembles perhaps 1% of all Japanese aircraft, is primarily devoted to manufacturing floatplanes (Petes) for the Navy and to producing engine mounts and small parts. The latter are probably supplied to the large Omura Aircraft Plant nearby.

Destruction of this target should have a rather immediate effect on the front-line strength of Naval floatplanes, although this effect would be of short duration unless the buildings containing jigs and machine tools suffered bomb strikes. The jigs and machine tools are custom made and require up to six months for replacement.

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

DECLASSIFIED

Authority NND 760063

By SM NARA Date 11/3/05

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

5. VULNERABLE AREA AND SUGGESTED AIMING POINT:

The large assembly type building 320' x 350' located in the central part of the plant area presents a suitable aiming point.

The total area contains approximately 2,880,000 sq. feet. To obtain a saturation of 360 hits (1 hit per 8000 sq. feet) it would be necessary to release 1340 bombs - assuming an accuracy of 1500' Cep. at 25,000' altitude, with an 85% assurance of success.

OCTOBER 22, 1944.

TARGET UNIT, INTELLIGENCE
XX BOMBER COMMAND.

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

- 2 -

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/30/05*

SECRET

NOT TO BE TAKEN INTO THE AIR ON COMBAT MISSIONS

TARGET NO. 113
OBJECTIVE FOLDER NO. 83.1

TARGET DATA

1. OBJECTIVE:

Point Island Storage Area, SHANGHAI.

2. COORDINATES AND ELEVATION:

Latitude: 31° 17' N
Longitude: 121° 33' E
Elevation: Approximately Sea Level.

3. LOCATION AND IDENTIFIABLE FEATURES:

POINT ISLAND is a half-moon shaped island in the HWANGPU River, about 9 miles from its junction with the YANGTZE at WCOSUNG. The extensive barracks and storage areas on the island should be susceptible to incendiary attack. The northern third of the island is more extensively developed than the remainder and contains the following facilities.

a. Barracks Area 375' x 1500' with 26 buildings averaging 25' x 125'.

b. Warehouse Area 500 x 2700 feet with 21 large buildings averaging 55 x 205 feet. Five small piers and a 950 foot quay connect this area to the river.

c. Warehouse and Storage Area 540 x 1850 feet consisting of 18 buildings averaging 55 x 175 feet.

4. IMPORTANCE:

POINT ISLAND is a large storage and trans-shipment point for both the Japanese Army and Navy. While not possessing the strategic importance of other objectives in SHANGHAI, it is vulnerable to incendiary attack, is removed from the main part of the city with its large Chinese population, and is at least 3 1/4 miles from the nearest known prisoner-of-war camp. Devastation of the POINT ISLAND Area by fire would destroy substantial quantities of military supplies and would probably cause the death of a number of enemy troops.

5. AIMING POINT:

The aiming point should be slightly north of the center point of the target area.

AUGUST 1944

TARGET SECTION, A-2
XX BOMBER COMMAND

- 1 -

SECRET

DECLASSIFIED

Authority NND 760063

By SM NARA Date 11/3/05

NOT TO BE TAKEN INTO THE AIR ON COMBAT MISSIONS

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

TARGET NO. 129

OBJECTIVE FOLDER NO. 83.1

TARGET DATA

1. OBJECTIVE:

Wharf Area, Nanking, China.

2. COORDINATES AND ELEVATION:

Latitude: 32° 06' N.
Longitude: 118° 43' E.
Elevation: Approximately 60 feet.

3. LOCATION AND IDENTIFIABLE FEATURES:

Metropolis Nanking is located on the east bank of the Yangtze River about 165 miles northwest of Shanghai. A large bend in the river just north of the city is cut off by two narrow canals thus forming a small crescent shaped island and a large globular island immediately on its south side. Another large but much narrower island is just south of the city. The walled-city is somewhat elongated on a northwest-southeast axis with the southeast end blunt and the northwest end ~~cut off~~ along the river. The Pukow railroad terminus is just across the river. A conspicuous canal, confluent with the Yangtze, bounds the city on the southwest, south and east. A meandering stream enters this canal from the southeast. At the northeast corner of the city a range of hills, with the highest point about 450 feet, extends east for about four miles. At the center of the south flank of these hills is the tomb of famous Sun Yat Sen. Hsuanwu Lake with its four sizeable islands is a prominent check point of the northeast edge of the city. A canal outside the city wall connects this lake with the river. Most of the wharf area is chopped off from the rest of the city by another canal.

Other important check points in the target area are two airfields. The Ming Ku Kung field is in the southeast end of the city within the wall. It covers an area about 3,600' x 3,800'. It has two concrete runways, 2,800' and 2,600' long that forms an "X" in the middle of the field. The Tai Chiao Chan Airfield is in the southeast suburbs of Nanking approximately two miles south-southeast of the Ming Ku Kung field. It measures about 4,300' x 5,000'. Three runways intersect at the southwest corner. The northeast-southwest runway is unpaved. The other two are concrete. The hangar and operations area is at the north side of the field.

4. IMPORTANCE:

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

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

DECLASSIFIED

Authority NND 760063
By SM NARA Date 11/3/05

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

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

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

5. VULNERABLE AREAS AND AIMING POINTS:

There are two aiming points of opportunity at Nanking.

- a. The wharf area near the railway terminal on the east side of the river where ocean-going vessels may be found.
- b. The railway terminal on the Pukow or west side of the river which normally contains the greater volume of rolling stock.

6 NOVEMBER 1944.

TARGET UNIT, INTELLIGENCE
XX BOMBER COMMAND.

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

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/3/05*

S E C R E T

AIDS TO VISUAL BOMBING

Mission No. 16

11 November 1944

The visual aids included in the Bombardier's folders and their approximate original size are as follows:

Title or Description	Size in Inches
* Nagasaki Area - Chart No. 21	8 1/4 x 16 1/8
* Omura Area - Target Chart No. 23	16 1/4 x 17
* Omura Area - Target Chart No. 23A	14 1/4 x 16 1/4
* Omura Area - Perspective Chart No. 23A	8 1/4 x 16 1/8
* Photos of Models of Omura Area	8 1/4 x 16 1/2
* Photo - Omura Area	16 1/4 x 16 1/4
Sasebo Area - Perspective Chart No. 20B	8 x 15 3/4
Sasebo Area - Target Chart No. 20A	15 1/4 x 16 1/4
Photo of Models of Sasebo Area	8 1/4 x 16 1/2
Sasebo Area - Photo Mosaic	16 1/4 x 16 1/4
* Shanghai Area - Photo Mosaic	9 3/4 x 16 1/4
Nanking Target Chart No. 31	22 x 24 1/4

Those exhibits marked with an asterisk have been previously reproduced and may be found in Tactical Mission Report No. 13, Annex P. Those exhibits not marked with an asterisk have not been previously reproduced and are included in the material which follows.

S E C R E T

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/30/05*

TARGET UNIT, INTELL. SEC.
 XX BOMBER COMMAND

SASEBO AREA

PERSPECTIVE CHART NO. 20B
 RESTRICTED

SASEBO AIRCRAFT FACTORY (33°08'45"N, 129°45'10"E) ELEV. 30 FEET
 15 MILES FROM TARGET - ALTITUDE 25,000 FEET
 NOVEMBER 1944

UNITS OF TANGENCY

ALTITUDE IN THOUSANDS OF FEET	
10	11 12 13 14 15 16 17 18
12	.11 .10 .09 .09 .08 .08 .07 .06
24	.22 .20 .19 .17 .16 .15 .14 .14
36	.33 .30 .28 .26 .24 .23 .21 .20
49	.44 .41 .37 .35 .32 .30 .29 .27
61	.55 .51 .47 .43 .41 .38 .36 .34
73	.66 .61 .56 .52 .49 .46 .43 .41
85	.77 .71 .65 .61 .57 .53 .50 .47
97	.88 .81 .75 .69 .65 .61 .57 .54
109	.99 .91 .84 .78 .73 .68 .64 .61
122	1.11 1.01 .94 .87 .81 .76 .72 .68
134	1.22 1.11 1.03 .96 .89 .84 .79 .74
146	1.33 1.22 1.12 1.04 .97 .91 .86 .81
158	1.44 1.32 1.22 1.13 1.05 .99 .93 .88
170	1.55 1.42 1.31 1.22 1.13 1.06 1.00 .95
182	1.66 1.52 1.40 1.30 1.22 1.14 1.07 1.01
194	1.77 1.62 1.50 1.39 1.30 1.22 1.14 1.08
207	1.88 1.72 1.59 1.48 1.38 1.29 1.22 1.15
219	1.99 1.82 1.68 1.56 1.46 1.37 1.29 1.22
231	2.10 1.93 1.78 1.65 1.54 1.44 1.36 1.28
243	2.21 2.02 1.87 1.74 1.62 1.52 1.43 1.35
255	2.32 2.13 1.96 1.82 1.70 1.60 1.50 1.42
268	2.43 2.23 2.06 1.91 1.78 1.67 1.57 1.49
280	2.54 2.33 2.15 2.00 1.86 1.75 1.65 1.55
292	2.65 2.43 2.24 2.08 1.95 1.82 1.72 1.62
304	2.76 2.53 2.34 2.17 2.03 1.90 1.79 1.69
316	2.87 2.63 2.43 2.26 2.11 1.98 1.86 1.76
328	2.98 2.74 2.53 2.35 2.19 2.05 1.93 1.82
340	3.10 2.84 2.62 2.43 2.27 2.13 2.00 1.89
353	3.21 2.94 2.71 2.52 2.35 2.20 2.07 1.96
365	3.32 3.04 2.81 2.61 2.43 2.28 2.15 2.03
377	3.43 3.14 2.90 2.69 2.51 2.36 2.22 2.09
389	3.54 3.24 2.99 2.78 2.59 2.43 2.29 2.16
401	3.65 3.34 3.09 2.87 2.68 2.51 2.36 2.23
413	3.76 3.45 3.18 2.95 2.76 2.58 2.43 2.30
426	3.87 3.55 3.27 3.04 2.84 2.66 2.50 2.36
438	3.98 3.65 3.37 3.13 2.92 2.74 2.58 2.43
450	4.09 3.75 3.46 3.21 3.00 2.81 2.65 2.50
462	4.20 3.85 3.55 3.30 3.08 2.89 2.72 2.57
474	4.31 3.95 3.65 3.39 3.16 2.96 2.79 2.63
486	4.42 4.05 3.74 3.47 3.24 3.04 2.86 2.70
498	4.53 4.15 3.84 3.56 3.32 3.12 2.93 2.77
511	4.64 4.26 3.93 3.65 3.40 3.19 3.00 2.84
523	4.75 4.36 4.02 3.73 3.49 3.27 3.08 2.90
535	4.86 4.46 4.12 3.82 3.57 3.34 3.15 2.97
547	4.97 4.56 4.21 3.91 3.65 3.42 3.22 3.04



UNITS OF TANGENCY

ALTITUDE IN THOUSANDS OF FEET	
19	20 21 22 23 24 25 26 27
06	.06 .06 .06 .05 .05 .05 .05 .05
13	.12 .12 .11 .11 .10 .10 .09 .09
19	.18 .17 .17 .16 .15 .15 .14 .14
26	.24 .23 .22 .21 .20 .19 .19 .18
32	.30 .29 .28 .26 .25 .24 .23 .23
38	.36 .35 .33 .32 .30 .29 .28 .27
45	.43 .41 .39 .37 .35 .34 .33 .32
51	.49 .46 .44 .42 .41 .39 .37 .36
58	.55 .52 .50 .48 .46 .43 .42 .41
64	.61 .58 .55 .53 .51 .49 .47 .45
70	.67 .64 .61 .58 .56 .54 .51 .50
77	.73 .69 .66 .63 .61 .58 .56 .54
83	.79 .75 .72 .69 .66 .63 .61 .59
90	.85 .81 .77 .74 .71 .68 .65 .63
96	.91 .87 .83 .79 .76 .73 .70 .68
102	.97 .93 .88 .85 .81 .78 .75 .72
109	1.03 .98 .94 .90 .86 .83 .80 .77
115	1.09 1.04 .99 .95 .91 .88 .84 .81
122	1.16 1.10 1.05 1.00 .96 .92 .89 .86
128	1.22 1.16 1.11 1.06 1.01 .97 .94 .90
134	1.28 1.22 1.16 1.11 1.06 1.02 .98 .95
141	1.34 1.27 1.22 1.16 1.11 1.07 1.03 .99
147	1.40 1.33 1.27 1.22 1.17 1.12 1.08 1.04
154	1.46 1.39 1.33 1.27 1.22 1.17 1.12 1.08
160	1.52 1.45 1.38 1.32 1.27 1.22 1.17 1.13
166	1.58 1.51 1.44 1.37 1.32 1.26 1.22 1.17
173	1.64 1.56 1.49 1.43 1.37 1.31 1.26 1.22
179	1.70 1.62 1.55 1.48 1.42 1.36 1.31 1.26
186	1.76 1.68 1.60 1.53 1.47 1.41 1.36 1.31
192	1.82 1.74 1.66 1.59 1.52 1.46 1.40 1.35
198	1.88 1.80 1.71 1.64 1.57 1.51 1.45 1.40
205	1.95 1.85 1.77 1.69 1.62 1.56 1.50 1.44
211	2.01 1.91 1.82 1.74 1.67 1.61 1.54 1.49
218	2.07 1.97 1.88 1.80 1.72 1.65 1.59 1.53
224	2.13 2.03 1.93 1.85 1.77 1.70 1.64 1.58
230	2.19 2.08 1.99 1.90 1.82 1.75 1.68 1.62
237	2.25 2.14 2.05 1.96 1.87 1.80 1.73 1.67
243	2.31 2.20 2.10 2.01 1.93 1.85 1.78 1.71
250	2.37 2.26 2.16 2.06 1.98 1.90 1.82 1.76
256	2.43 2.32 2.21 2.11 2.03 1.95 1.87 1.80
262	2.49 2.37 2.27 2.17 2.08 1.99 1.92 1.85
269	2.55 2.43 2.32 2.22 2.13 2.04 1.96 1.89
275	2.61 2.49 2.38 2.27 2.18 2.09 2.01 1.94
282	2.68 2.55 2.43 2.33 2.23 2.14 2.06 1.98
288	2.74 2.61 2.49 2.38 2.28 2.19 2.10 2.03

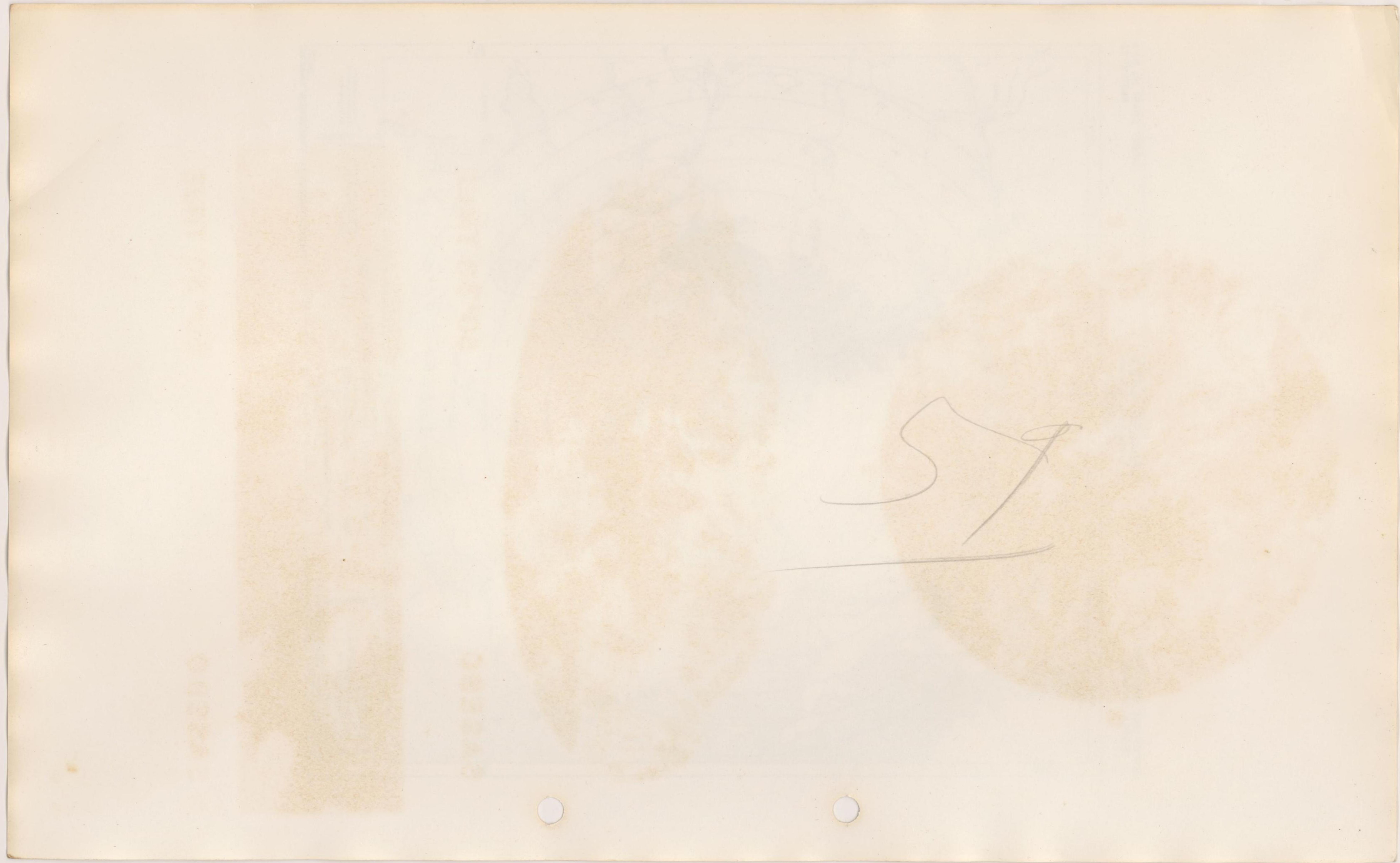
16.65

HEADING 55°45' MAG (±50°30' TRUE)

RESTRICTED

BS

RESTRICTED





SASEBO

50° 30' TRUE



SASEBO

50° 30' TRUE



16.69

TARGET UNIT-INTELLIGENCE SECTION
XX BOMBER COMMAND

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/305*

08384

20. 20. 1972



08384

20. 20. 1972

"CONFIDENTIAL"

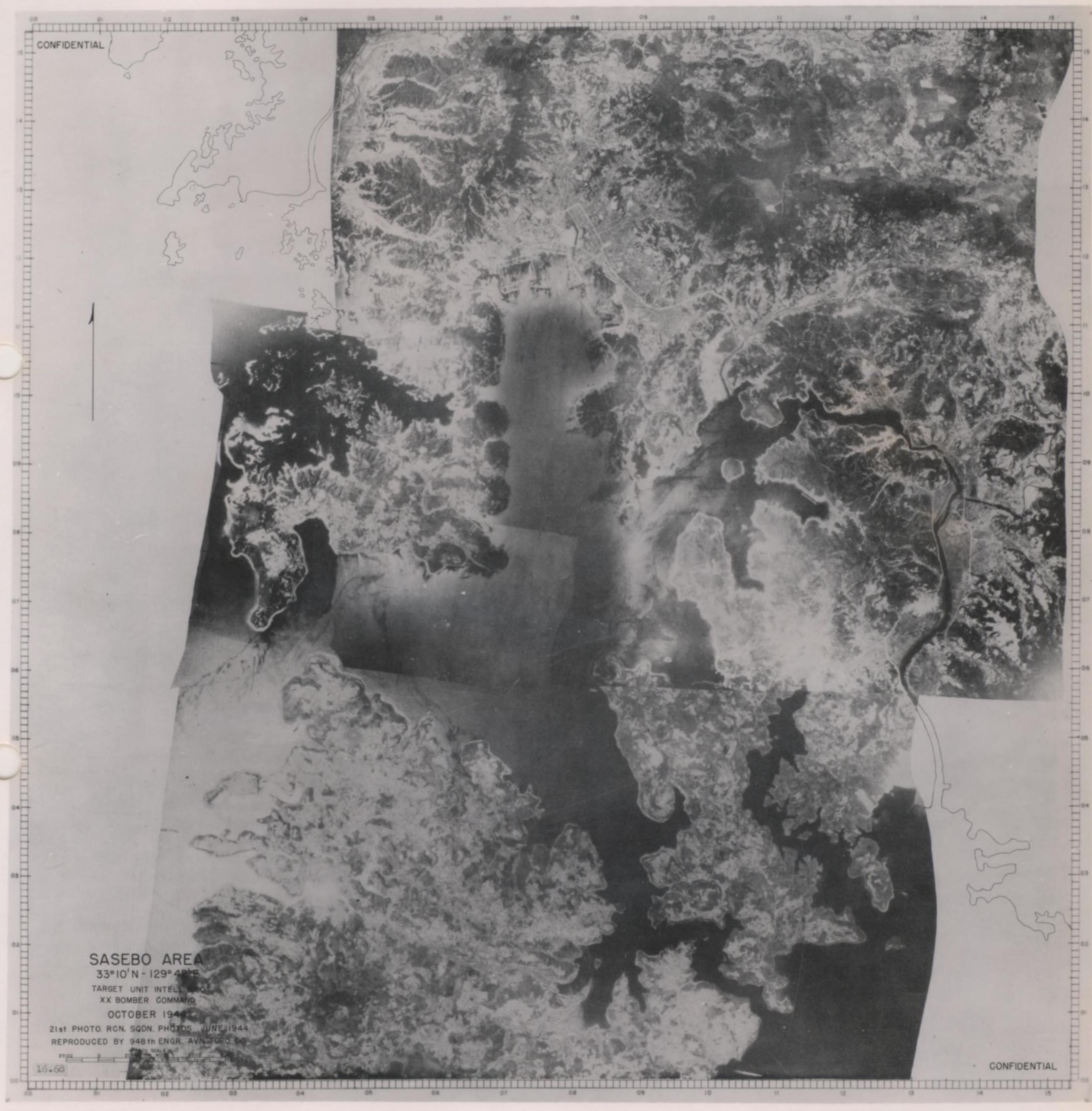
59

"CONFIDENTIAL"

DECLASSIFIED

Authority **NND 760063**

By **SM** NARA Date **11/3/05**



"CONFIDENTIAL"

PS

"CONFIDENTIAL"

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/3/05*

TARGET CHART NO. 31

NANKING

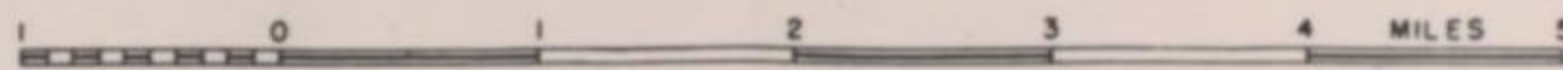
32° 02' N. - 118° 47' E.

RESTRICTED



COMPILED BY
 PHOTOGRAMMETRY SECTION
 21 ST. PHOTO RECON. SQUADRON
 14 TH. U.S.A.A.F. 16 JANUARY 1944

NOTE: ELEVATIONS ARE IN FEET.



AUTHORITY:
 TRI-METROCON PHOTOGRAPHS
 21 ST. PHOTO RECON. SQUADRON
 20 NOVEMBER 1943
 18 TH. P.I.D.

REPRODUCED BY 807 ENGR. A.F. HQ. CG.

RESTRICTED

DECLASSIFIED

Authority **NND 760063**

By **SM** NARA Date **11/3/05**

RESTRICTED

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/3/05*

SECRET

HEADQUARTERS
XX BOMBER COMMAND
Intelligence Section
AFO #493

SECRET
By Auth of the C.G.
XX Bomber Command
8 Nov 44
Date Initials

FLAK INTELLIGENCE BULLETIN NUMBER J-2

8 November 1944

NAGASAKI - SASIBO - OMURA

JAPAN

Foreword

This series of bulletins will list known gun defenses of local areas as contrasted with the general area as covered in the series entitled "Enemy Antiaircraft Defense Bulletins." Subsequent issues concerning the above areas will be published when later information is received. If a mission is ordered to an area where available information is more recent than that published, this information will be transmitted to the Group S-2.

James D. Garcia
JAMES D. GARCIA,
Colonel, Air Corps,
Chief, Intelligence Section.

Distribution:
Squadrons

SECRET

DECLASSIFIED

Authority *NND 760063*
By *SM* NARA Date *11/30/05*

I. ANTI-AIRCRAFT DEFENSES

Reference Figure 2A-2B

Location	FAA Guns	S/L's	Radar	Photo Cover
OMURA	8	-	1-Prob E.W.	30-10-43 21- 8-44 25-10-44
NAGASAKI	27 11 Prob.	4 3 Prob.	-	30-10-43 18- 6-44 21- 8-44 6-10-44
SASEBO	11 4 Prob.	3 Prob.	-	30-10-43 18- 6-44

II. FIRE ENCOUNTERED FROM THE NAGASAKI, SASEBO, and OMURA AREAS:

Reference: Figures 2A and 2B.

OMURA

Meager to moderate and inaccurate black FAA fire reported by 35% (38 out of 59) of the aircraft over the area from 0000Z to 0213Z at altitudes varying from 22,000 to 26,000 feet on 25 October 1944. Weather conditions were CAVU.

In addition to the black bursts that were reported, a small number of white bursts were observed which may have been phosphorous. It is believed that a Predicted Concentration type of fire was used.

NAGASAKI

Meager and inaccurate AA fire was encountered on 7-8 July at 1641Z and 1634Z at 19,300 altitude.

Meager and inaccurate HAA fire and moderate and inaccurate AA fire was encountered on 10-11 August from 1533Z to 1702Z at altitudes varying from 15,000 to 18,000 feet. HAA fire was believed to be Continuously Pointed and bursts were reported as level. No searchlight activity was reported.

Meager to moderate and inaccurate black FAA fire was reported by 60% (10 out of 19) of the aircraft over the area from 0124Z to 0128Z at altitudes varying from 23,000 to 25,000 feet under CAVU to 5/10's undercast. Deviations were ahead and abreast, level or below and to the left. Barrage fire or inaccurate Continuously Pointed fire is believed to have been used.

SECRET

81144-J2

SASEBO

Meager to moderate and inaccurate HAA fire was encountered on 7-8 July at altitudes varying from 15,000 to 18,000 feet. Undercast was reported as 10/10's, and deviations as behind and right.

Two to three searchlight beams that never located the aircraft were reported on 7-8 July under same conditions as above.

Meager and inaccurate AA fire was encountered on 7-8 July at altitudes varying from 14,400 to 19,000'.

Meager and inaccurate HAA fire was encountered on 10-11 August at 1616Z at an altitude of 17,000 feet.

Thirty to fifty accurate searchlight beams were also reported under same conditions as above.

Enemy aircraft flying at same altitude and course were observed.

Meager and inaccurate HAA fire was reported by 23% (7 out of 30) of the aircraft over the area from 0055Z to 0230Z at altitudes varying from 21,000 to 25,000 feet. Bursts were reported as black with a small number of white, and weather conditions as CAVU. Fire originated from both land-based and ship-borne antiaircraft. Deviations varied from 5000 feet below, behind and right to level, behind and in line.

III. PROBABLE ACCURACY AND INTENSITY OF FIRE THAT WILL BE ENCOUNTERED:

Conditions: (daylight, altitude above 20,000', CAVU conditions).

OMURA

HAA fire from land-based guns will probably be meager and inaccurate. Any naval shipping the area will possibly improve the intensity and accuracy.

NAGASAKI

HAA fire will probably be meager to moderate and generally inaccurate from land-based guns. Fire from shipping will increase land-based opposition to moderate, and accurate to inaccurate.

SASEBO

HAA fire from land based guns will probably be meager and inaccurate. Fire from shipping will improve the intensity and accuracy depending upon the tonnage present to possibly moderate and accurate.

- 2 -

SECRET

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/3/05*

S E C R E T

81144-J2

IV. ADJACENT GUN DEFENDED AREAS: References: Fig 1, 2A and 2B

FUKUOKA 3 HAA Guns reported, photo cover 18-6-44, no gun (HAA) fire has been encountered. 12 to 15 searchlights reported on night of 15-16 June 1944.

GREAT ISLAND Undetermined number of searchlights reported on night of 15-16 June 1944. No photo cover of this area.

HIRA ISLAND Meager and inaccurate HAA fire was encountered on 10 August 1944 at 1609Z by one aircraft at 16,000 feet altitude. Bursts were reported 1,500 feet below, and fire was believed to be continuously pointed. No photo cover of this area.

IKI ISLAND Meager and inaccurate HAA fire was encountered on night of 15-16 June at 14,000 feet altitude. Reported as probably barrage type of fire.
Approximately 35 searchlights at unstated accuracy were also reported at the south end of the island.
No photo cover of this area.

KONONINATO No HAA fire has been encountered from this area. Six HAA , based on photo cover of 18-6-44.

KONCURA Meager and inaccurate HAA fire was reported on 7 July 1944 at 15,000 feet altitude at 1654Z and on 25 October 1944 at 0113Z at 25,000 feet under CAVU conditions.

OKINO ISLAND Meager and inaccurate HAA fire was encountered on night of 15-16 June 1944. It was reported at the same altitude but a considerable distance away from the aircraft.
Undetermined number of searchlights were reported on night of 15-16 June 1944. No photo cover of this area.

OMUTA 4 HAA Guns reported, based on cover of 6-10-44.

OUJIMA Meager and inaccurate HAA fire was reported by 2 A/C of 2 individual formations, at 0153Z and 0157Z at an altitude of 24,000 feet. Bursts were reported as black, and deviations as below (10,000 feet at 0153Z) ahead, left, and in line. Weather conditions were CAVU. No shipping was reported in the area.

- 3 -

S E C R E T

DECLASSIFIED

Authority *NND 760063*
By *SM* NARA Date *11/30/05*

S E C R E T

81144-J2

OZU

One aircraft reported one searchlight that never located the aircraft at 1714Z on the night of 7-8 July 1944, in the vicinity of OZU. No photo cover of this area.

SHIMONO ISLAND

Undetermined number of searchlight beams of an unstated accuracy were reported on the night of 15-16 June 1944.

On the night of 20 August 1944, one searchlight beam that never located the aircraft was reported. No photo cover of this area.

SHISHIKI

Meager and accurate to inaccurate gun (HAA) fire was reported by two individual aircraft at 1611Z-1617Z and 1758Z at altitudes of 15,000 and 16,000 feet on the night of 7 - 8 July 1944. Undercast was reported as 6/10's and 10/10's and there is the possibility that this fire was radar controlled. No photo cover of this area.

TOMITSU (Vicinity of)

Moderate and inaccurate black HAA fire was reported by 1 A/C on 25 October 44 at 25000 feet altitude at 0122Z under CAVU conditions. Deviations were reported as level, ahead and in line. No shipping was reported in the area.

TSUMIZU BAY

Meager to moderate and inaccurate black HAA fire was reported by 3 A/C on 25 October 1944 at 0127Z and 0200Z at altitudes varying from 24,000 to 25,000 feet. Weather conditions were from CAVU conditions to 5/10's undercast, and deviations as above and below, abreast and behind, and to the left and right. No shipping was reported in the area.

YAATA

HAA fire from this area has varied from meager to moderate and inaccurate during night time to intense and accurate during daylight. An average of 30 searchlights varying from accurate to inaccurate has been reported. Moderate and inaccurate A/C fire has also been encountered at lower altitudes (8-14,000'). One possible ground-to-air rocket was reported on 20 August 1944.

This area is defended by approximately 171 guns (HAA), 100 A/C, and 42 searchlights, based on photo cover of 18-6-44 and strike photos of 20-8-44. In addition there are approximately ten probable or possible gun-laying radars and possibly 2 early warning radar.

Detailed tabulation of fire encountered from this area follows: (Next Page)

- 4 -

S E C R E T

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/30/05*

S E C R E T

81114-J2

Date	Type	Strength*	Accuracy**	Remarks
15-16 June	AW	2	2	51 A/C, 8-14,000', AW up to 10,000-12,000 feet with red tracers. E/A reported on same course and altitude 24 S/L's at TOMINO POINT reported as picking up A/C and passing on to S/L's near target area. 4-10 S/L's reported on HOKU ISLAND, 12-15 S/L's reported at KUKENO OKA.
10 August	S/L's	12	?	-
20 August	HAA	1	1	Barrage type at BRL, 0803Z-0856Z, 23,500-26,600'. Continuously Pointed reported at 0803Z.
20 August	HAA	3	2	1522Z-1626Z, 14,000-22,000', fire reported by 8 out of 10 A/C.
21 August	No AA fire encountered by one A/C at 0457Z, 30,000' altitude.			
20 August	S/L's	30	2	Never located A/C, 1522Z, 1626Z, 14,000-22,000', CAWU to 9/10's undercast.
20 August	Grd-to-air Rocket (possible)	One	2	1 A/C reported one possible ground-to-air rocket at 16,000', 9/10 undercast tops at 9,000 feet.

Strength* Strength for anti-aircraft fire is shown as:
 1 - Intense
 2 - Moderate
 3 - Meager
 Strength for Searchlights and Rockets indicates number of beams or rockets reported.

Accuracy** Accuracy for anti-aircraft fire, S/L's and Rockets is shown as:
 1 - Accurate
 2 - Inaccurate

S E C R E T

81142-J2

V. WARNING NETS:

It is expected that the enemy will have prior warning of any approach to the target area for the following reasons:

- A. Existence of a warning net in Occupied CHINA which has tracked our aircraft from 110 to 113 degrees East to the CHINA Coast, and on the return.
- B. Identification of possible, probable or definite early warning and gun laying radar installations in Japan proper (Current issue of Enemy Antiaircraft Defense Bulletin, Section "B", and Figure 2).
- C. Existence of a visual warning net in Occupied CHINA and JAPAN.

VI. SMOKESCREENS:

Only information relating to Smokescreens concerns the YAMATA Area where it is possible that an ineffective attempt was made on 20 August 1944.

VII. BALLOONS:

- A. CONVENTIONAL BALLOONS: Reference Current issue of EAADB, Section "D".

Location	Number	Altitude	Remarks
YAMATA	10 Balloons	2,500 feet	Reported by several aircraft; approximately 10 located on strike photos, 20 August 1944.
NAGASAKI	1 Balloon	Approximately 500 feet.	Identified at KOYUJI ISLAND, east center part at water's edge on cover of 6-10-44.
TSUBARA IS.	2 Balloons	Approximately 1000 feet	Reported by 1 A/C on 25 Oct 44 at 0158Z.

- B. HIGH ALTITUDE BALLOONS: Reference: Current issue of Enemy Antiaircraft Defense Bulletin, Section E.

On 20 August 1944 between 0800 and 0815Z photographs were taken of possible new type of antiaircraft weapon - high altitude balloons. These balloons were flying at approximately 22-24,000 feet. Two balloons were identified in the vicinity of FUKUOKA and possibly five individual balloons in the YAMATA-KOJI Area.

The purpose of these balloons is not clear because of insufficient information. Eight balloons, possibly similar to those at YAMATA, were also sighted at 20,000 feet, 25 miles West of ANSHAN on 26 September 1944.

If balloons of this type are observed on course, they should be bypassed until definite and complete information as to their capabilities is obtained.

(REF: A.I.D., XX BC, Vol 1, #14)

- 6 -

S E C R E T

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/3/05*

SECRET

81144-J2

In addition, on 25 Oct 1944, three sightings of High-altitude balloons were made as follows:

(1) The crew of one aircraft at 0106Z, nine minutes before bombs away, observed one possible high-altitude balloon at an altitude of 25,000 feet about one-half mile to the right of OMURA. The balloon was described as being generally round in shape.

(2) The crew of a second aircraft reported a black free balloon, larger than a conventional barrage balloon, at about 15,000 feet, directly over OMURA at 0116Z. The observation was made from 25,000 feet, and the balloon appeared to be rising slowly.

(3) Eight to twelve large balloons were observed at from 23,000 to 26,000 feet altitude about 10 miles south of OMURA at 0130Z by the crew of a third aircraft. These balloons were believed to have been released when our aircraft entered the target area, but the nature of release was not observed. The color of the balloons was described as silver-gray and no cables were observed. They did not appear to be drifting and apparently remained stationary while in sight.

VIII. BLACKOUT:

In the past the efficiency and extent of the Blackout in Northern KYUSEU has varied considerably. It is expected, however, that with improvement in the warning nets and additional air-raid practices, that blackout in this area should be good to excellent in the future.

First aircraft over the area might find the Blackout poor, and based on past reports, it is believed that naval navigational aids will continue to function during periods of attack.

Because of indicated lack of good communication between KYUSEU and adjacent islands it is also probable that the state of blackout will be variable at those islands.

IX. RECOMMENDED ROUTES OF APPROACH AND WITHDRAWAL: (Reference Figs. 2A and 2B)

Flak Clocks showing probability of damage or loss are superimposed over the appropriate area with the target to be attacked indicated by "T.t", Figure 2A for the "IN" course and Figure 2B for the "OUT" course. Recommended routes should be through the narrowest sectors of the red areas.

Also the element of surprise should be utilized, and areas where fire has been encountered or where HAA guns are reported (Figure 1) should be by-passed if possible.

X. SOURCES OF INFORMATION:

- A. 3rd Phase P.I. Reports, 18th P.I.D., 14th Air Force, of areas concerned
- B. AA Charts published by the office of the Assistant Chief of Air Staff, Intelligence, Hq., U.S. Army Air Forces and Photographic Interpreta-

- 7 -

SECRET

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/3/05*

S E C R E T

81144-J2

tion Center, Division of Naval Intelligence, Navy Department, of areas concerned.

- C. Photo Interpretation by Target Section, XX Bomber Command.
- D. Photo Cover by 21st Photo Recon. Squadron, Hqs., 14th Air Force and XX Bomber Command.
- E. Operations of XX Bomber Command.

- 8 -

S E C R E T

DECLASSIFIED

Authority *NND 760063*

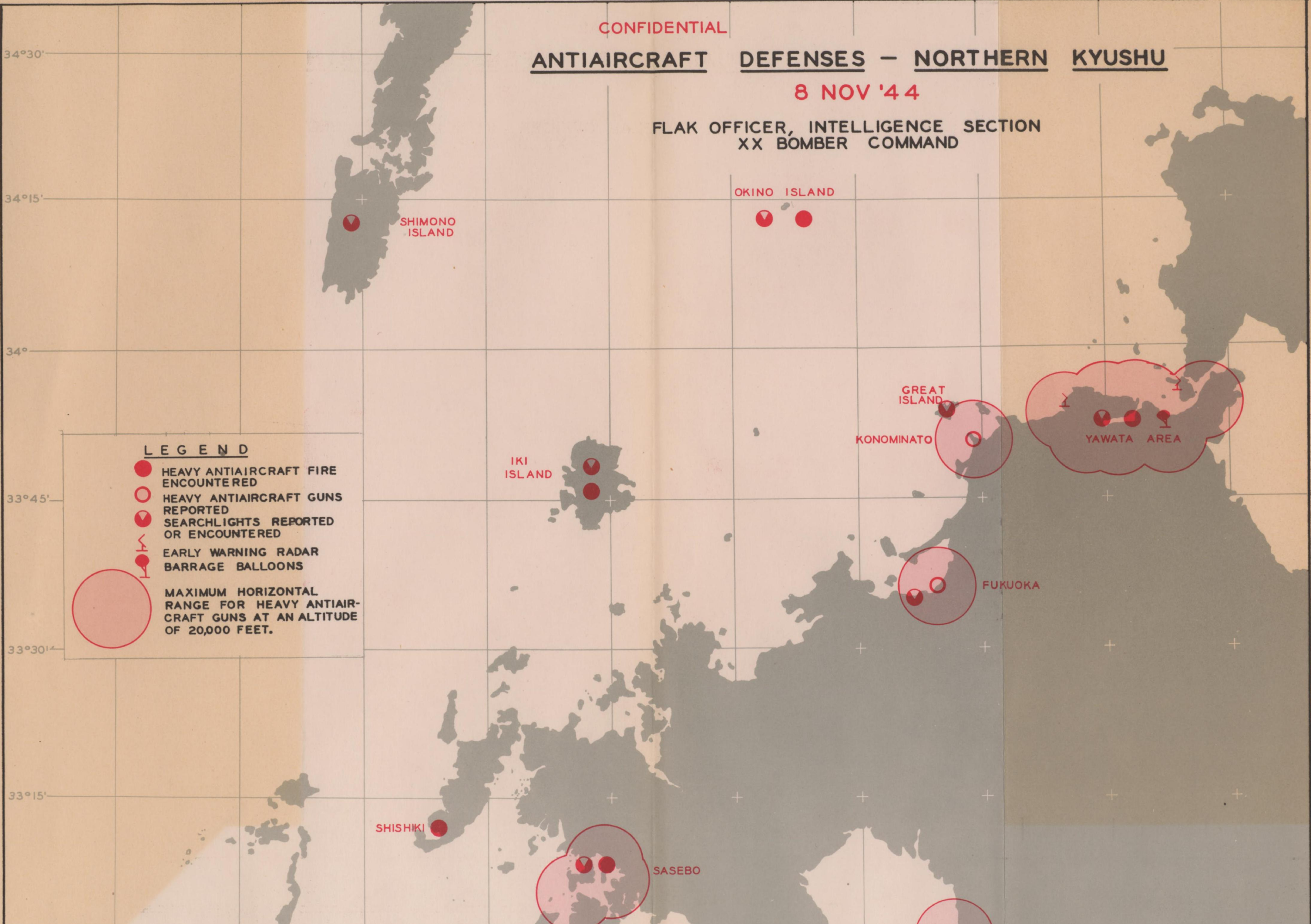
By *SM* NARA Date *11/30/05*

CONFIDENTIAL

ANTI-AIRCRAFT DEFENSES - NORTHERN KYUSHU

8 NOV '44

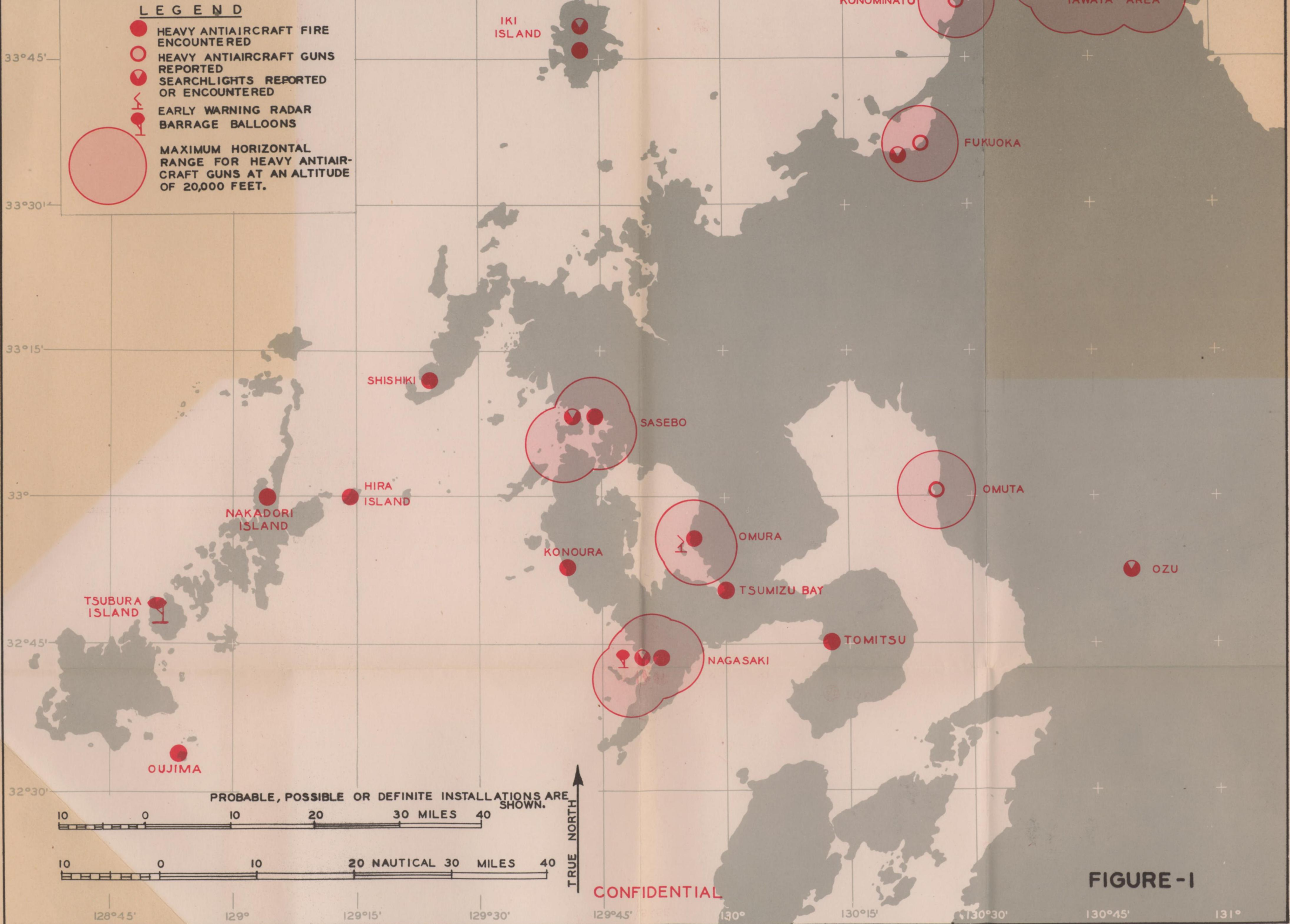
FLAK OFFICER, INTELLIGENCE SECTION
XX BOMBER COMMAND



LEGEND

- HEAVY ANTI-AIRCRAFT FIRE ENCOUNTERED
- HEAVY ANTI-AIRCRAFT GUNS REPORTED
- ◐ SEARCHLIGHTS REPORTED OR ENCOUNTERED
- ⚡ EARLY WARNING RADAR
- ⊙ BARRAGE BALLOONS
- MAXIMUM HORIZONTAL RANGE FOR HEAVY ANTI-AIRCRAFT GUNS AT AN ALTITUDE OF 20,000 FEET.

34°30'
34°15'
34°
33°45'
33°30'
33°15'



33°45'

33°30'

33°15'

33°

32°45'

32°30'

128°45' 129° 129°15' 129°30' 129°45' 130° 130°15' 130°30' 130°45' 131°

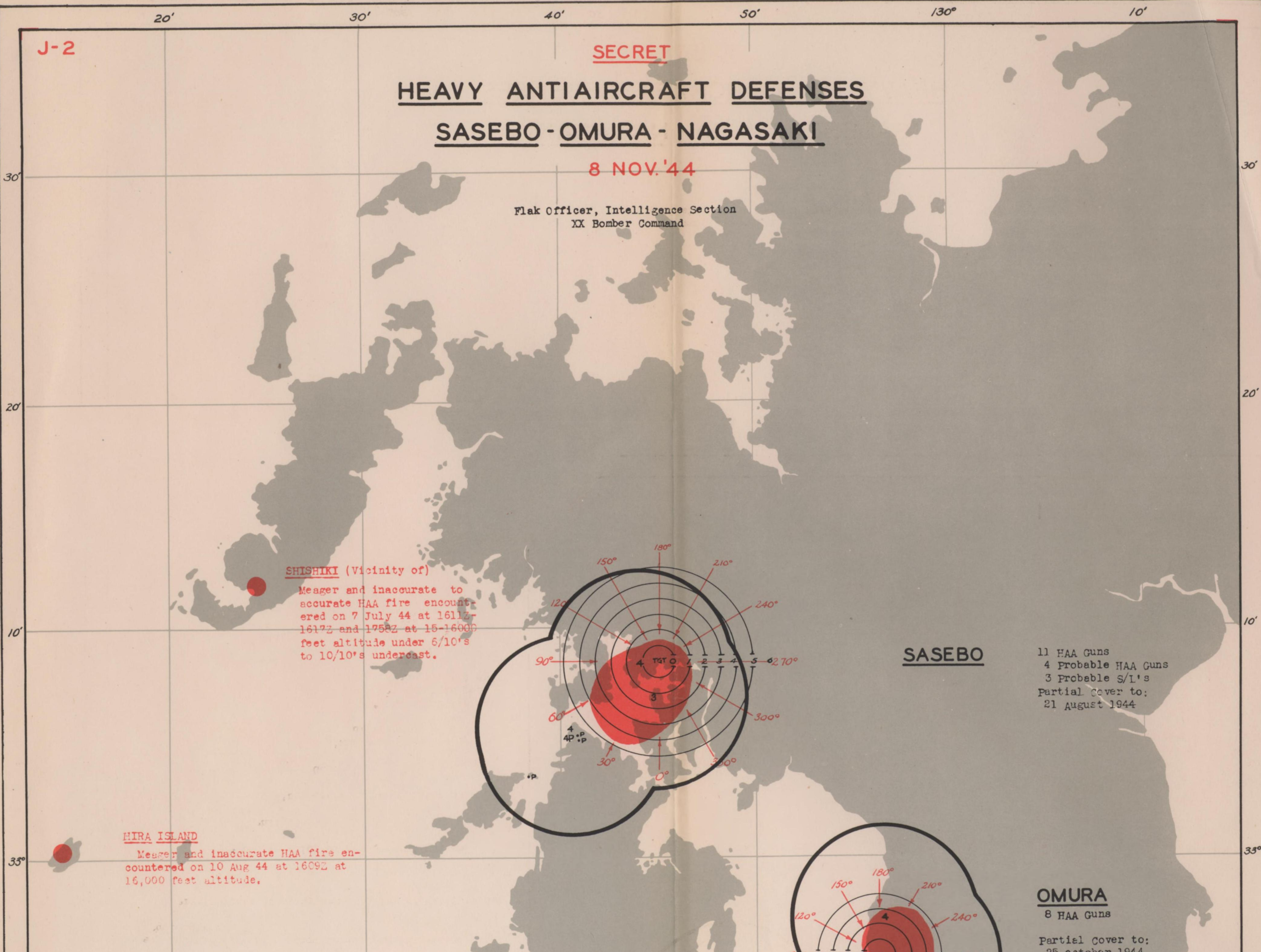
J-2

SECRET

HEAVY ANTI-AIRCRAFT DEFENSES
SASEBO - OMURA - NAGASAKI

8 NOV. '44

Flak Officer, Intelligence Section
XX Bomber Command



SHISHIKI (Vicinity of)
Meager and inaccurate to accurate HAA fire encountered on 7 July 44 at 1611Z-1617Z and 1758Z at 15-16000 feet altitude under 6/10's to 10/10's undercast.

HIRA ISLAND
Meager and inaccurate HAA fire encountered on 10 Aug 44 at 1609Z at 16,000 feet altitude.

SASEBO

11 HAA Guns
4 Probable HAA Guns
3 Probable S/L's
Partial cover to:
21 August 1944

OMURA

8 HAA Guns

Partial cover to:
25 October 1944

KONCURA

Meager and inaccurate HAA fire encountered on 7 July 44 at 15,000 feet altitude at 1654Z, and on 25 Oct 44 at 0113Z at 25,000 feet under CAVU conditions.

OMURA

8 HAA Guns

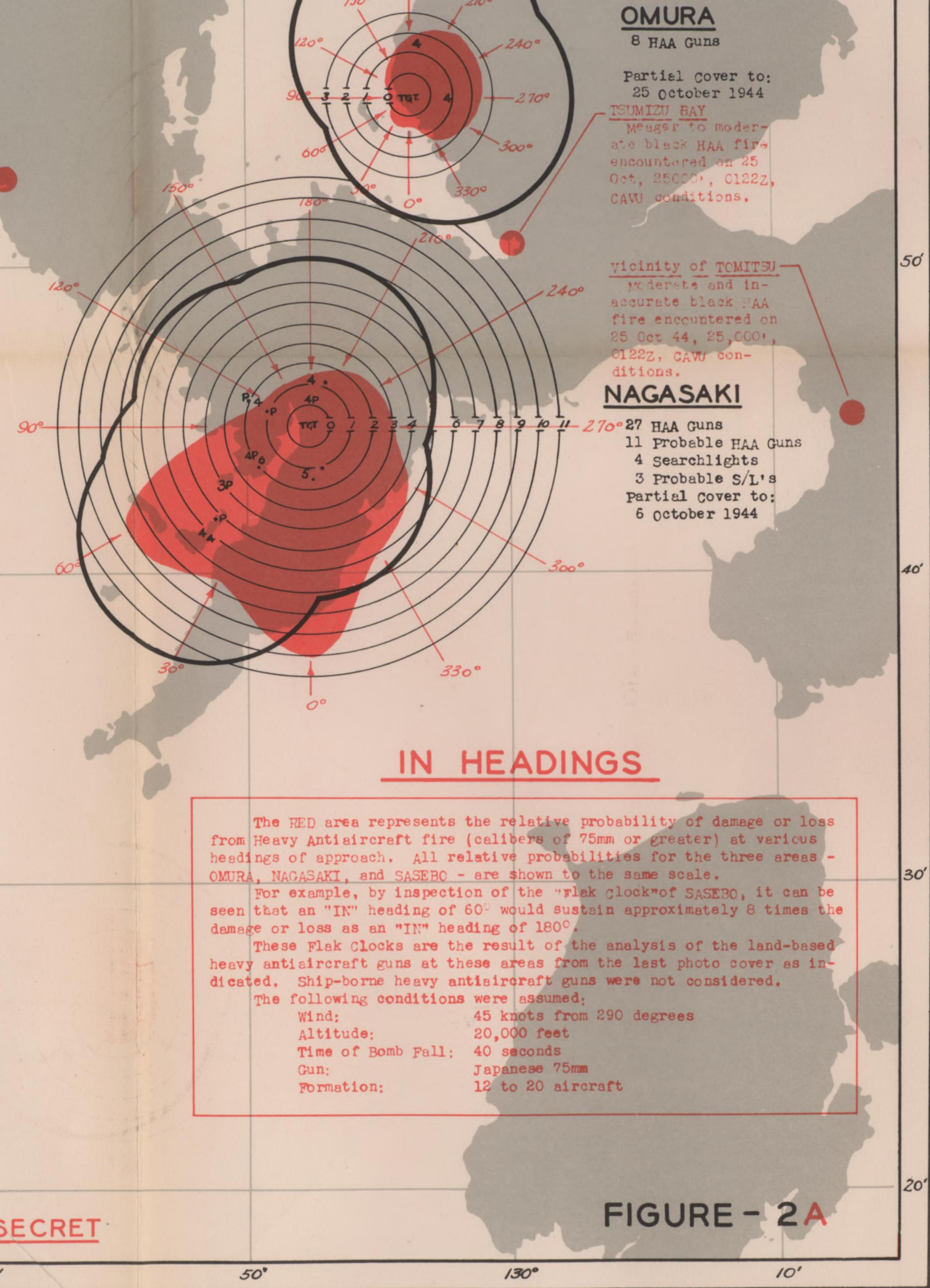
Partial cover to:
 25 October 1944

TSUMIZU BAY
 Meager to moderate black HAA fire encountered on 25 Oct, 25000', 0122Z, CAVU conditions.

vicinity of **TOMITSU**
 moderate and inaccurate black HAA fire encountered on 25 Oct 44, 25,000', 0122Z, CAVU conditions.

NAGASAKI

27 HAA Guns
 11 Probable HAA Guns
 4 Searchlights
 3 Probable S/L's
 Partial cover to:
 6 October 1944



LEGEND

- Heavy Antiaircraft fire encountered from land-based guns, no photo cover.
- Numbers indicate quantity and location of HAA Guns as:
 4 4 HAA Guns
- Dots indicate the location of one Searchlight as:
 • 1 Searchlight
- "P" indicates a Possible or Probable position as:
 4P 4 Probable HAA Guns
- Heavy black circles show maximum range for the heavy antiaircraft gun defense at an altitude of 20,000'.
- Concentric circles are a measure of the effectiveness of the heavy antiaircraft gun defense (shown in red) relative to various headings of approach (Fig 2A) and headings of withdrawal (Fig 2B).
- Sources of Information:
 1. 3rd Phase P.I. Reports, 18th P.I.D., 14th A.F.
 2. Photos by 21st PRS.
 3. P.I. by Target Unit, XX Bomber Command
 4. Photos by XX Bomber Command

IN HEADINGS

The RED area represents the relative probability of damage or loss from Heavy Antiaircraft fire (calibers of 75mm or greater) at various headings of approach. All relative probabilities for the three areas - OMURA, NAGASAKI, and SASEBO - are shown to the same scale.

For example, by inspection of the "flak clock" of SASEBO, it can be seen that an "IN" heading of 60° would sustain approximately 8 times the damage or loss as an "IN" heading of 180°.

These Flak Clocks are the result of the analysis of the land-based heavy antiaircraft guns at these areas from the last photo cover as indicated. Ship-borne heavy antiaircraft guns were not considered.

The following conditions were assumed:

Wind:	45 knots from 290 degrees
Altitude:	20,000 feet
Time of Bomb Fall:	40 seconds
Gun:	Japanese 75mm
Formation:	12 to 20 aircraft

SECRET

FIGURE - 2A

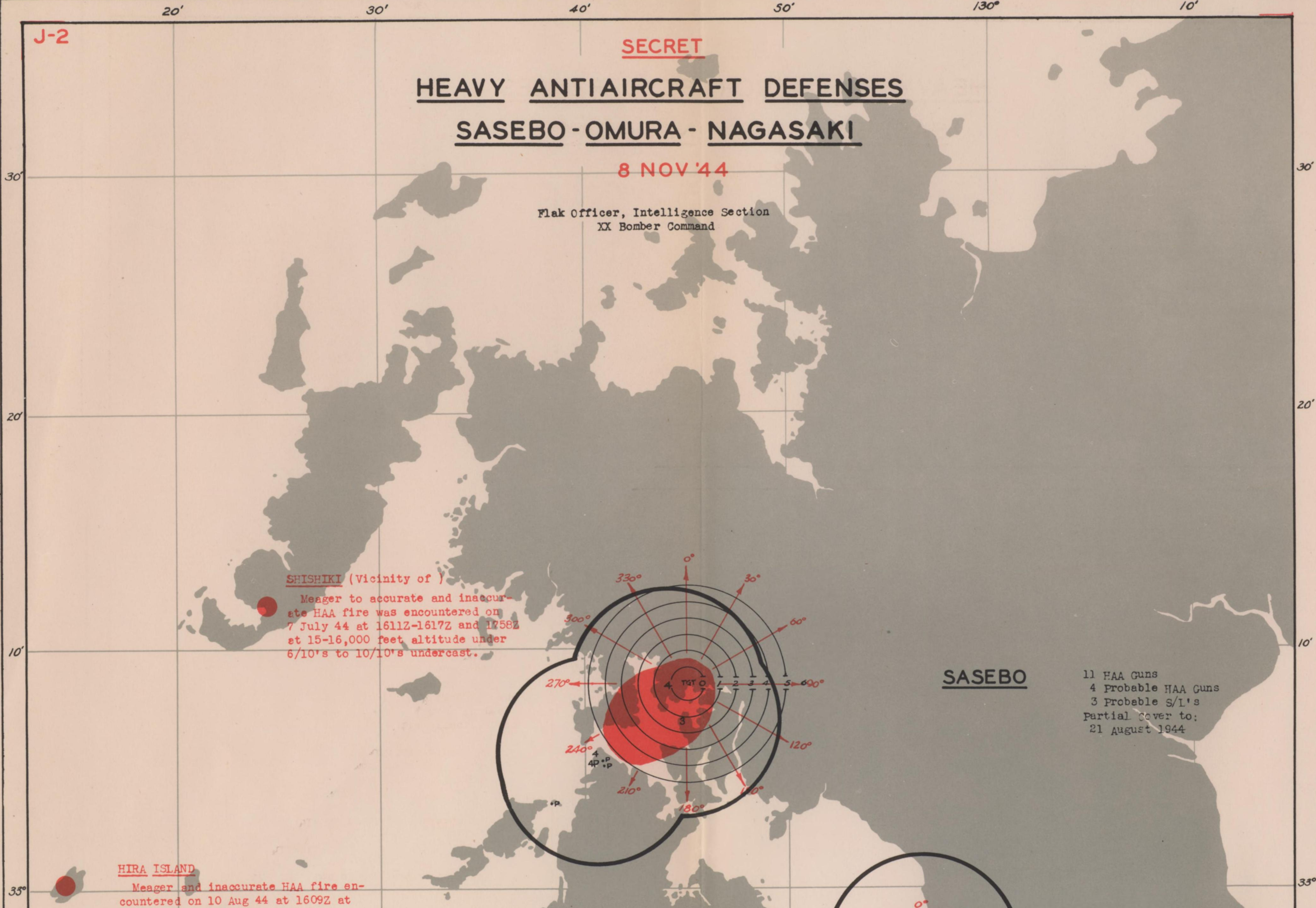
J-2

SECRET

HEAVY ANTI-AIRCRAFT DEFENSES
SASEBO - OMURA - NAGASAKI

8 NOV '44

Flak Officer, Intelligence Section
XX Bomber Command



SHISHIKI (Vicinity of)

Meager to accurate and inaccurate HAA fire was encountered on 7 July 44 at 1611Z-1617Z and 1758Z at 15-16,000 feet altitude under 6/10's to 10/10's undercast.

HIRA ISLAND

Meager and inaccurate HAA fire encountered on 10 Aug 44 at 1609Z at 16,000 feet altitude.

SASEBO

11 HAA Guns
4 Probable HAA Guns
3 Probable S/L's
Partial cover to:
21 August 1944

OMURA

8 HAA Guns

Partial cover to:
25 October 1944

KONOURA

Meager and inaccurate HAA fire encountered on 7 July 44 at 15,000 feet altitude at 1654Z, and on 25 Oct 44 at 0113Z at 25,000 feet under CAVU conditions.

OMURA

8 HAA Guns

Partial cover to:
 25 October 1944

TSUMIZU BAY

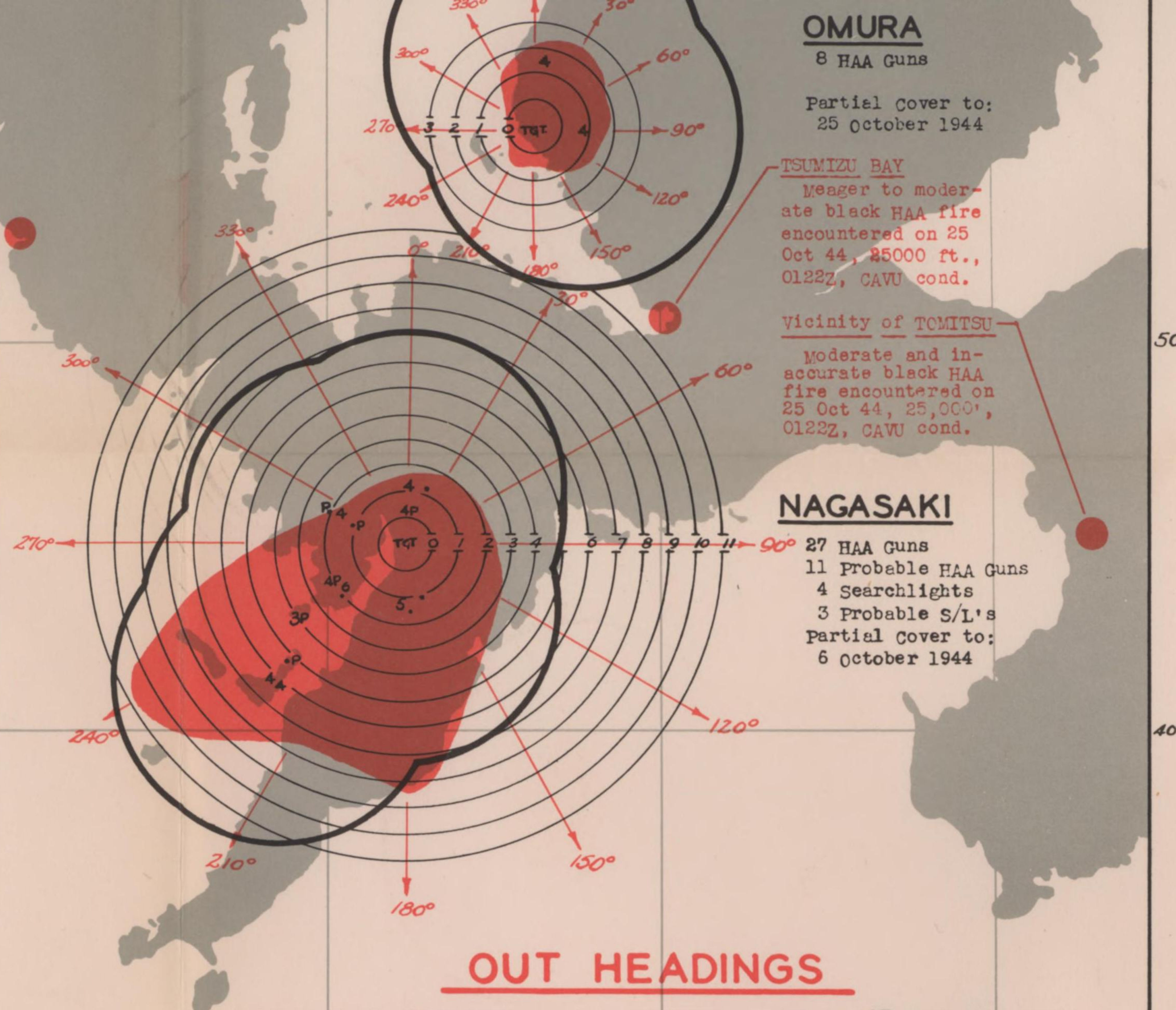
Meager to moderate black HAA fire encountered on 25 Oct 44, 25000 ft., 0122Z, CAVU cond.

Vicinity of TOMITSU

Moderate and inaccurate black HAA fire encountered on 25 Oct 44, 25,000', 0122Z, CAVU cond.

NAGASAKI

27 HAA Guns
 11 Probable HAA Guns
 4 Searchlights
 3 Probable S/L's
 Partial cover to:
 6 October 1944



LEGEND



Heavy Antiaircraft fire encountered from land-based guns, no photo cover.

Numbers indicate quantity and location of HAA Guns as:

4 4 HAA Guns

Dots indicate the location of one Searchlight as:

• 1 Searchlight

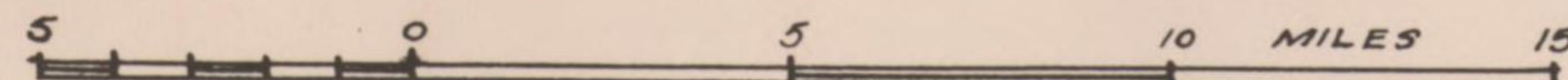
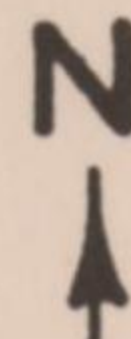
"P" indicates a Possible or Probable position as:

4P 4 Probable HAA Guns

Heavy black circles show maximum range for the heavy anti-aircraft gun defense at an altitude of 20,000'.

Concentric circles are a measure of the effectiveness of the heavy anti-aircraft gun defense (shown in red) relative to various headings of approach (Fig 2A) and headings of withdrawal (Fig 2B).

- Sources of Information:
- 3rd Phase P.I. Reports, 18th P.I.D., 14th A.F.
 - Photos by 21st PRS.
 - P.I. by Target Unit, XX Bomber Command
 - Photos by XX Bomber Command



OUT HEADINGS

The RED area represents the relative probability of damage or loss from Heavy Antiaircraft fire (calibers of 75mm or greater) at various headings of withdrawal. All relative probabilities for the three areas - OMURA, NAGASAKI and SASEBO - are shown to the same scale.

For example, by inspection of the "flak clock" of SASEBO, it can be seen that an "OUT" heading of 180° would sustain approximately 5 times the damage or loss as an "OUT" heading of 0°.

These Flak Clocks are the result of the analysis of the land-based heavy anti-aircraft guns at these areas from the last photo cover as indicated. Ship-borne heavy anti-aircraft guns were not considered.

The following conditions were assumed:

- Wind: 45 knots from 290 degrees
- Altitude: 20,000 feet
- Time of Bomb Fall: 40 seconds
- Gun: Japanese 75mm
- Formation: 12 to 20 aircraft

SECRET

FIGURE - 2B

S E C R E T

D E T E R M I N A T I O N O F B O M B L O A D

Mission No. 16

11 November 1944

1. Aircraft not equipped with center section wing tanks were directed to load a minimum of eight 500-pound bombs. This applied uniformly to each of the groups. Aircraft equipped with center wing section tanks were directed to carry the following loads:

- 40th Group - a minimum of ten 500-pound bombs
- 444th Group - a minimum of eleven 500-pound bombs
- 462nd Group - a minimum of nine 500-pound bombs
- 468th Group - a minimum of ten 500-pound bombs per aircraft

All groups were instructed that the bomb load of each aircraft would be composed of both 500-pound GP bombs (TNT or Amatol filled) and 500-pound m-76 Incendiary bombs loaded in the ratio of two (2) demolition bombs to one (1) Incendiary bomb. Demolition bombs were to be carried on the lower racks and Incendiary bombs on the upper racks so that the incendiary bombs would be released last.

2. In an attempt to secure not only a co-extensive pattern of 500 lb G.P.'s and M-76 Incendiaries, but also one in which a reasonable uniform distribution of both types of bombs could be expected, the decision was made to carry a mixed load in each plane.

3. By means of loading M-76's in the top racks and the GP's in the lower racks, it is possible to exploit the good ballistic characteristics of the M-76. The actual time of fall of the M-76 from 25,000 feet is only .23 of a second longer than that of the 500 lb G.P. and difference in trail is only fifteen (15) mils greater. These two factors combined would result in the impact of the M-76 being 274 feet short of the impact of the 500 lb G.P. at a true air speed of 300 miles per hour or a ground speed of approximately 441 feet per second. These conditions exist if both bombs were released simultaneously. With the present method of loading the M-76 on the top racks this differential is reduced somewhat. In as much as the aiming point was selected after due consideration to the size of the target, the probable bombing accuracy, and the expected dimensions of the formation pattern, it is unlikely that the difference in the ballistic characteristics of these two bombs will result in any wastage of bombs.

4. Examinations of results of previous attacks demonstrates the validity of the hypothesis that, except in rare instances, the individual points of impact of the M-76 and the 500 lb G.P. will be far enough apart that the detonation of the 500 lb G.P. will have no appreciable deleterious effect on the Incendiary action of the M-76 bomb. This phenomenon is explained by the dimensions and density of the formation pattern, as well as by the dispersion of bombs within a salvo.

5. Careful analysis of the various vital installations within the target area with respect to height, type of structure, roof construction, and probable contents, indicated that the 500-pound G.P. (TNT filled) bomb should be fuzeed one-tenth (0.1) second nose and one one-hundred (.01) second tail delay. It was calculated that this fuzeing would permit adequate penetration, maximum down ward fragmentation, and effective blast in an area some 8 to 12 feet below the point of entry in the roof.

6. Similar analysis resulted in the recommendation that the 500-pound M-76 Incendiary Bomb be fuzeed instantaneous nose and non-delay tail. The fuze-functioning time of the instantaneous nose fuze varies from .0004 to .0006 seconds, a delay sufficient to detonate from three to four feet below the point of entry. The fuze-functioning time of the non-delay tail fuze is slower than the instantaneous nose fuze, but significantly faster than a .01 second tail delay. As a consequence activation of either the instantaneous nose fuze or the non-delay tail fuze would cause detonation of the M-76 Incendiary bomb far enough below the point of entry to provide a high degree of assurance that its contents would be widely dispersed and yet contained within the structure.

S E C R E T

DECLASSIFIED

Authority NND 760063

By SM NARA Date 11/3/05

S E C R E T

HEADQUARTERS
XX BOMBER COMMAND
APO 493

DISTRIBUTION -- MISSION NO. 16

11 November 1944

Copy No.

1	Commanding General, Twentieth Air Force
2	Commanding General, XX Bomber Command
3	Chief of Staff, XX Bomber Command
4	Chief, Intelligence Section, XX Bomber Command
5	Commanding Officer, Forward Echelon Detachment, Headquarters XX Bomber Command (Attention: Intelligence Officer)
6	Commanding Officer, 40th Bombardment Group
7	Commanding Officer, 444th Bombardment Group
8	Commanding Officer, 462nd Bombardment Group
9	Commanding Officer, 468th Bombardment Group
10 - 39	Commanding General, Army Air Forces, Attention: AC/AS, Intelligence, Collection Division
40	Assistant Chief Air Staff, Intelligence
41	CINCPAA (thru DEPCOMAF Twenty)
42	COMGENPAA (thru DEPCOMAF Twenty)
43	Air Commander, Eastern Air Command, Attention: DCAS, OPTI
44	Chief, Air Evaluation Board, Headquarters, Army Air Forces, United States Forces, India Burma,
45	Commanding General, Tenth Air Force
46	Commanding General, Fourteenth Air Force
47	DEPCOMAF Twenty
48	Chief of Staff, Twentieth Air Force
49	Joint Intelligence Collection Agency
50	ALUSLO, c/o XX Bomber Command
51	Statistical Control, XX Bomber Command
52	Communications (Radar), XX Bomber Command
53	Photo Interpretation, XX Bomber Command
54	Operational Analysis, XX Bomber Command
55	Special Projects, XX Bomber Command
56	Historical Officer, XX Bomber Command
57	Operational Intelligence, XX Bomber Command

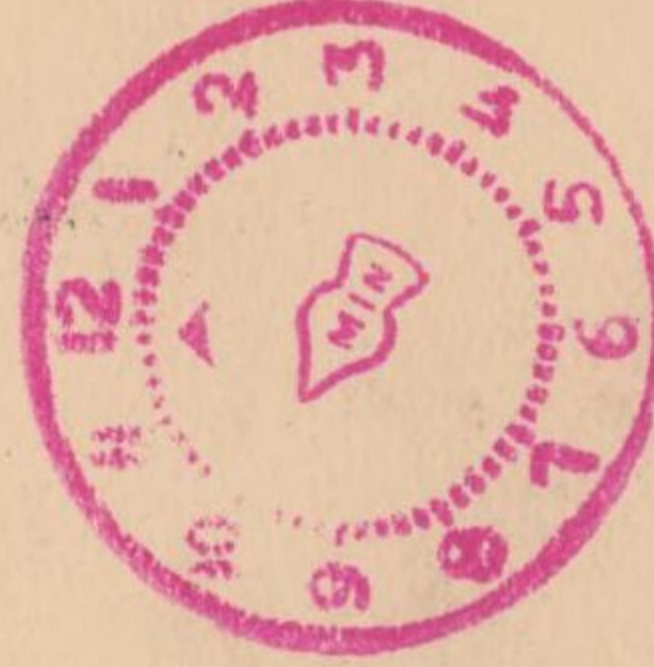
S E C R E T

DECLASSIFIED

Authority *NND 760063*

By *SM* NARA Date *11/3/05*

NOV 20 1944



IN

IN

HEADQUARTERS
TWENTIETH AIR FORCE
ADJUTANT GENERAL

9816

