

IIIa (37)

NAGASAKI

105

2 of 2

HEADQUARTERS (PACIFIC)
United States Strategic Bombing Survey
APO 234, c/o Postmaster
San Francisco, California

26 October 1945

SUBJECT: Transmittal of Intelligence Material.

TO: Regional Headquarters, United States Strategic
Bombing Survey, Nagasaki, Japan.

Enclosed are folders containing information on
targets located in the Nagasaki Area. This information
is for use of field teams, and for your files.

RICHARD REEVE,
Commander, USNR,
Chief, G-2

NAGASAKI AREA

99.39-2529 Miyazaki Airfield

Airfield Report 54, 1 May
DA 71, 18 May
Litho-Mosaic, March 1945

2524 Kushira Airfield

Airfield Report 51, 25 April
DA 57, 7 May
Litho-mosaic, April 1945

2520 Kokubu Airfield

Airfield Report 57, 3 May, 1945
DA 55, 6 May

2516 Kanoya East Airfield

Photographic Intelligence Report #488, 30 March (Interprom TWO)
DA 85, 10 June

2514 Kagoshima Airfield

Airdrome Report 47, 18 April
Litho-mosaic June 1943

2507 Ibusuki Seaplane Station

A/F Report #84, 25 May
Litho-mosaic, May 1945

2501 Chiran Airfield

A/F Report 77, 20 May
DA 92, 14 June
Litho-mosaic, May 1945

1379 Miyakanojo Airfield

A/F Report 71, 17 May
DA 66, 14 May
Litho-mosaic, ~~May~~ April, 1945

1378 Kanoya Airfield

DA 88, 12 June
Litho-mosaic, April, 1945
Airfield Report 61

Nagasaki
NAGASAKI AREA

90.37-2512 Inami Airfield

Airdrome Report 45, 14 April
DA 56, 6 May
Litho-mosaic, April 1945

849 Omura Airfield

Airdrome Report 44, 25, March
DA 93, 15 June
Litho-mosaic, March 1945

90.36 Nagasaki Urban Area

JTG, March 45
Litho-mosaic
Target Info. Sheet

Sasebo Urban Area

Target Info. Sheet
D/A 129, 7 Aug 45
Litho-mosaic

752 Sasebo Naval Dockyard

Photos

758 Naval Arsenal & Engines - Sasebo

Photos

1627 Omura A/C Factory, Omura

D/A 30, 31 Mar. 45
JTG, Sept 44 & Apr 45

90.35-1870 Tachiarai Machine Works, Tachiarai

DA 45, 23 April
JTG Target Info. Sheet, 22 June
Litho-mosaic, March 1945
Photos - pre-strike

1236 Tachiarai Airfield

Photo Intelligence Report No. A/F 19
DA 45, 23 April
Litho-mosaic, March 1945

90.33-2537 Saeki Airfield

Photographic Intelligence Report 599, 13 June
DA 67, 16 May
Litho-mosaic, July 1945

NAGASAKI AREA

90.33

2536 Tonitaka A/F

D/A 83, 9 June 1945

P.I. Report 632, 4 June 1945

Lithos

2531 Nittagahara A/F

D/A 62, 13 May 1945

P.I. Report 499, 31 March 1945

Lithos

2080 Oita Naval Air Depot

D/A 94, 18 June 1945

1308 Oita A/F

D/A 94, 15 June 1945

A/F 59, 3 May 1945

Lithos

1307 Usa A/F

D/A 86, 10 June 1945

A/F 53, 26 April 1945

Lithos

TOPOGRAPHIC SAFETY

EASTMAN TOPOGRAPHIC SAFETY

EASTMAN TOPOGRAPHIC SAFETY



1(VV 82 PLXR 240 Z44 X71 RG X28 AUG 45 1015 X12 1000 XBR @ NAGASAKI X45° X REST X61)



3(VV82PLR240-Z44X71R4X28AUG 45-1020X121500 XNAGASAKI X30 713-24)CONFIDENTIALX61)



4

0078219 XX 24074417 001288916 16 031012 0011400988 137 0013-2-100112 11.16.17



5

WBCN XX247 JAA17 NXC284/4-26 0310 0011 0010/05 13, 113-24101 0011 0011





1. Aerial view of the city of San Francisco, California, showing the city grid and the San Francisco Bay.

9

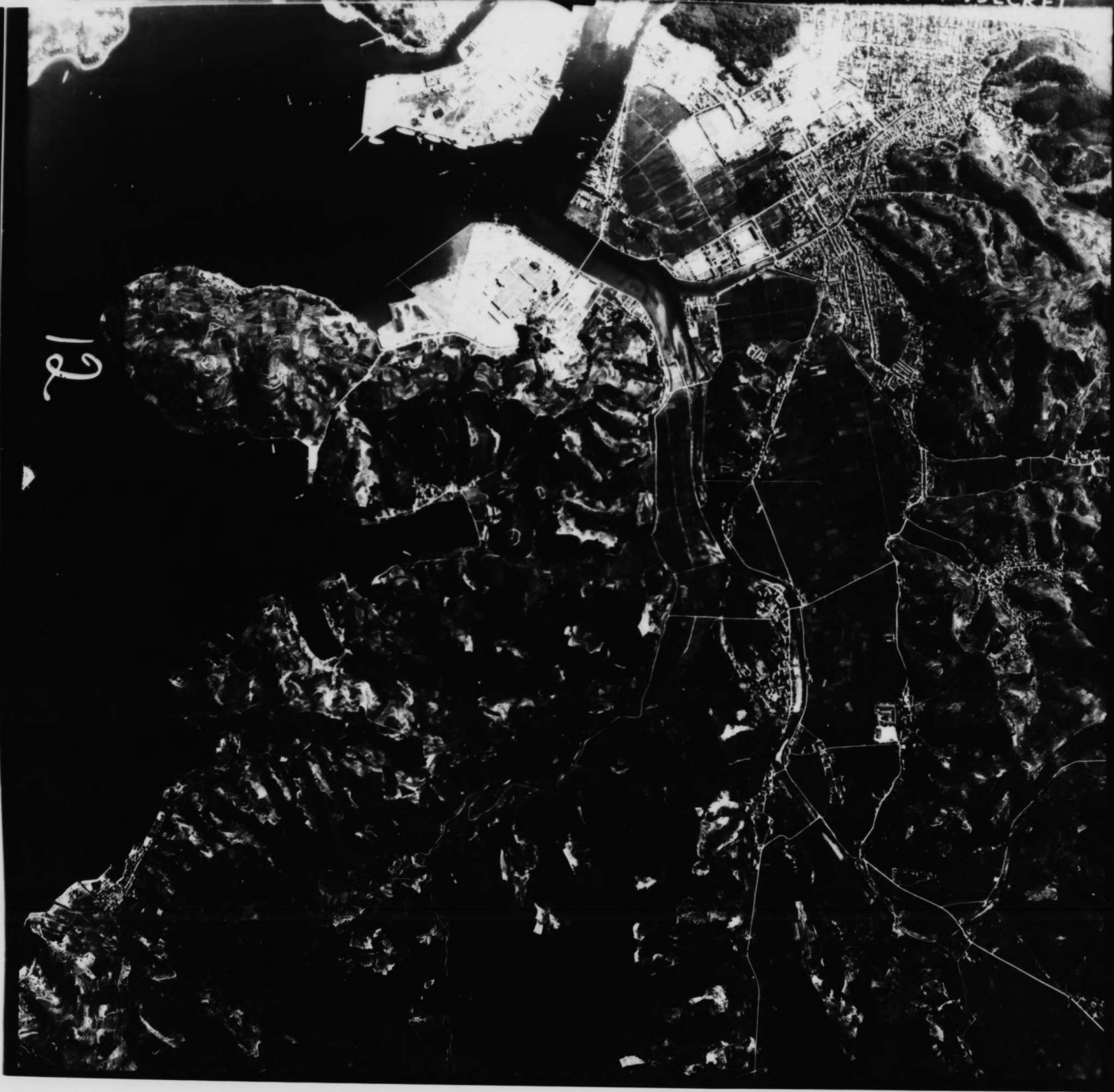
(VV821) XR 240 14417 15128A116 16 103112 150113 140115 151013-24 100112 111116 16



(VV82 PLXR 240 Z44X71RGX28AUG 45 1030X12 1500XNAGASAKI X360°X3-24XCONFIDENTIALX61)

12.
20AF(55BM-16-10)V-

X 8 - 8 - 1030 (24-32,000') (33°15'N-132°35'E) (OWA JIMA) (7303) SECRET



20AF(55BM-16-104.V - 13)(58-1030)(24"-32,000)(-3°15'N 137°35'E)(UWAF C.M.F. 117303) 55902E



13V



NAGASAKI AREA
MITSUBISHI STEEL & ARMS WORKS
TARGET NO 90.36-546
32°45' N - 129°52' E
ELEVATION 25 FT. (APPROX)
JUNE 1945

A-2 SECTION
XXI BOMBER COMMAND
3D PHOTO RCN SQ PHOTOS
28 MARCH 1945
PREPARED BY 949TH ENGR AVN TOPO CO

MAG. DEC
5°03'
ANNUAL
CHANGE

APPROX SCALE
0 2000 4000 6000 8000 10000 12000 14000 FEET

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C. I. U.
TWENTIETH AIR FORCE
APO 234, c/o POSTMASTER
SAN FRANCISCO, CALIFORNIA

10 August 1945

SPECIAL FLASH DAMAGE ASSESSMENT REPORT NO. 10

Mission No.: 3FR5M 395

Target Area: Sasebo (90.36)

Date Flown: 9 August 1945

Airplane Commander: T. C. Kendall
1st Lt, AC

20 AF Mission SBM 16, 9 August 1945, 509th Group

TARGET NAGASAKI 90.36 URBAN:

Photos show target completely smoke obscured.

Approved.....
FRANK E. DELANEY
CAPT, AC, Asst A-2

H. D. Darby
Approved.....
HAMILTON D. DARBY
MAJOR, AC, In Charge

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C. I. U.
TWENTIETH AIR FORCE
APO 234, c/o POSTMASTER
SAN FRANCISCO, CALIFORNIA

SPECIAL DAMAGE ASSESSMENT
FLASH REPORT NO. 11

DATE: 10 August 1945

Mission No. 3PR5M 398

Target Area: Sasebo (90.36)

Date Flown: 10 August 1945

A/C Commander: W. L. Voris,
1st Lt., AC:

Mean Time of Photography: 1010K

Altitude (average): 31,000'

(This tentative report is subject to change
after a more detailed study and is to be
considered strictly as advance information.)

Damage to NAGASAKI - 90.36 - Urban.

20AF SBM 16 - Strike, 9 August 1945. 509th Bomb Group.

Built-up area: Sq. Mi. Total: 3.3 Sq. Mi. Destroyed: 0.93

Percent Destroyed: 30

Targets damaged by current strike: 4 numbered, 9 other.

Quality and limitations of photographs: 25% cloud cover.
Much of city in dark cloud shadow.

Damage confined mainly to NW portion of city. No
damage in South quarter of city.

No damage to shipping noted.

Damage to targets is as follows:

<u>Number</u>	<u>Name</u>	<u>Extent of Damage</u>
546	Mitsubishi Steel & Arms Works. (In cloud shadow)	Probably destroyed.
2022	Mitsubishi-Urakani Ordnance Plant	30% damaged. 70% cloud ob- scured. One large saw-tooth roof building gutted. 5 smaller buildings gutted.
	Urakani Branch, Gas Works	90% destroyed. All buildings seem destroyed. Gasometer ap- parently remains. Photo coverage dark and hazy.
	Mitsubishi Woodworking Plant	100% destroyed.
	Kyushu Gas Works	50% destroyed. 3 buildings destroyed. Two gasometers apparently undamaged.

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TWENTIETH AIR FORCE
APO 234, c/o POSTMASTER
SAN FRANCISCO, CALIFORNIA

10 August 1945

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1st Lt, AC

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Photos show target completely smoke obscured.

Approved.....
FRANK E. DELANEY
CAPT, AC, Asst A-2

Approved.....
HAMILTON D. DARBY
MAJOR, AC, In Charge

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Mitsubishi Woodworking Plant

100% destroyed.

Kyushu Gas Works

50% destroyed. 3 buildings
destroyed. Two gasometers
apparently undamaged.

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TWENTIETH AIR FORCE
APO 234, c/o POSTMASTER
SAN FRANCISCO, CALIFORNIA

10 August 1945

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Mission No.: 3FR5M 395

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Date Flown: 9 August 1945

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1st Lt, AC

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TARGET NAGASAKI 90.36 URBAN:

Photos show target completely smoke obscured.

Approved.....
FRANK E. DELANEY
CAPT, AC, Asst A-2

H. D. Darby
Approved.....
HAMILTON D. DARBY
MAJOR, AC, In Charge

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SPECIAL DAMAGE ASSESSMENT
FLASH REPORT NO. 11, Cont'd.

<u>Target - Name</u>	<u>Extent of Damage</u>
Nagasaki Station & Freight Yard	- 20% destroyed. Hazy photos show numerous small shop-type bldgs. destroyed. 2 possible train sheds - gutted.
Unidentified Industry	100% destroyed or damaged. Partly smoke obscured area seems a mass of crumbled ruins.
Steam Power Plant	90% destroyed. 2 largest bldgs. gutted. Several small bldgs. destroyed. Fire noted still burning in target area.
Several small Unidentified Factories	- 100% destroyed or damaged. Partly smoke obscured. Target area seems a mass of crumbled ruins.
Unidentified Small Industry	Target area still afire. Plant area obscured by smoke.
Unidentified Industry	100% damaged. One large bldg. still burning. 5 small bldgs. apparently damaged.
Prison	Probably 100% destroyed. All bldgs. apparently destroyed. Area partly smoke obscured.
1842 - Nagasaki & Dejima Wharves & R. R. Yards.	- 25% destroyed.
542 - Akunoura Engine Works (Mitsubishi Jukogyo KK)	- About 65% damage (gutted or structural)
Eldg. No. 12E	- 100% destroyed.
" " 12F	- 100% Structural Damage.
" " 12G	- Minor Damage.
" " 12H	- " " "
" " 15a, b, c, d, e,	100% structural damage.
" " 16	- Minor Damage.

(Reference: J.T.G. Illustration No. 90.36-542 P3/1, 21 March 1945)

Damage is located as follows on XXI-BC Litho-Mosaic, Nagasaki Area, Mitsubishi Steel & Arms Works, 90.36-546, June 1945.

Area bounded by: 075130, 081120, 082113, 080099, 085090, 090085, 118064, 112059, 110055, 104056, 106060, 103065, 100065, 099067, 099070, 092078, 089076, 080085, 078102, 073109, 070114, 069117, 070120, 073123, 075130.

Area bounded by: 069119, 070113, 072110, 073107, 076105, 077100, 077094, 070095, 069102, 064104, 067105, 065111, 061114, 059115, 060116, 069119.

Area bounded by: 077088, 077084, 071084, 073085, 071091, 072092, 073091, 077088.

Area bounded by: 081082, 088075, 089072, 086072, 083074, 079070, 080076, 078078, 081082.

Area bounded by: 084051, 081045, 079044, 077050, 080051, 084051.

APPROVED. *H. D. Darby*
HAMILTON D. DARBY,
for Major, AC, In Charge.

APPROVED. *Frank E. Delaney*
FRANK E. DELANEY,
for Captain, AC, Asst A-2

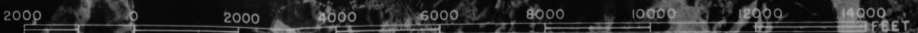


NAGASAKI AREA
MITSUBISHI STEEL & ARMS WORKS
TARGET NO 90.36-546
32°45' N - 129°52' E
ELEVATION 25 FT. (APPROX.)
JUNE 1945

A-2 SECTION
XXI BOMBER COMMAND
3D PHOTO RCN SQ PHOTOS
28 MARCH 1945
PREPARED BY 949TH ENGR AVN TOPO CO

MAG. DEC
5°05'
ANNUAL
CHANGE
1" = 1000'

APPROX SCALE



Kent

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C. I. U.
TWENTIETH AIR FORCE
APO 234, c/o POSTMASTER
SAN FRANCISCO, CALIFORNIA

3 August 1945

SHIPPING REPORT NO. 49

NAGASAKI HARBOR

Mission No.: 3PR5M 366, 29 July 1945

Target Area: Sasebo 90.36

Naval: 1 PF

Merchant: 11; 65,970 G.T.

4 operative; 12,800 G.T.
7 fitting and building; 53,170 G.T.

5 SAL
1 SBL
2 SCL
2 SCS
1 SAS

Last complete coverage: 23 May 1945, CIU Shipping Report No. 13.

Reference: ONI 208J Revised Supplement, 3 January 1945.

Reference prints: 3:34-36

Annotated and attached: harbor plan.

TABULATION OF SHIPPING
(NAVAL)

LOCATION	TYPE	LENGTH	TONNAGE	REMARKS
A	PF	220'		Kaibokan class

(MERCHANT)

1	SCS	210'	900	Type E (mod)
2	SAS	210'	1000	Type TS tanker, Koryu Maru class
3	SAL	517'	10000	*Nagasaki Type TL (mod) fitting
4	SAL	517'	10000	*Nagasaki Type TL (mod) fitting
5	SCL	350'	3250	**Awaiting outfitting
6	SCS	210'	900	Type E (mod)
7	SBL	445'	6670	Type A (mod) fitting, Batopaha Maru class.
8	SAL	517'	10000	*Nagasaki Type TL (mod) fitting
9	SAL	517'	10000	*Nagasaki Type TL (mod)
10	SCL	350'	3250	**Building
11	SAL	517'	10000	Building

*A new variety of TL conversion. The standard 517' TL (mod) tanker hull has been converted to dry cargo carrier. This model has 5 goal post type masts and 6 major hatches. Bridge is located between second and third hatch. For temporary drawing see Weekly Intelligence Volume 2, No. 1, 16 July 1945. This conversion model will be referred to in future reports as Nagasaki Type Pending more specific information.

**This hull recently launched and awaiting outfitting resembles vessel of new design described in Weekly Intelligence, Volume 2, No. 2; 23 July 1945, in shipyards on Inno Shima. Superstructure and stack are aft. Vessel has 4 hatches forward of bridge and one hatch aft of stack.

Approved.....*Jack M. Jones*
FOR HAMILTON D. DABBY CAPT, AC
MAJOR, AC

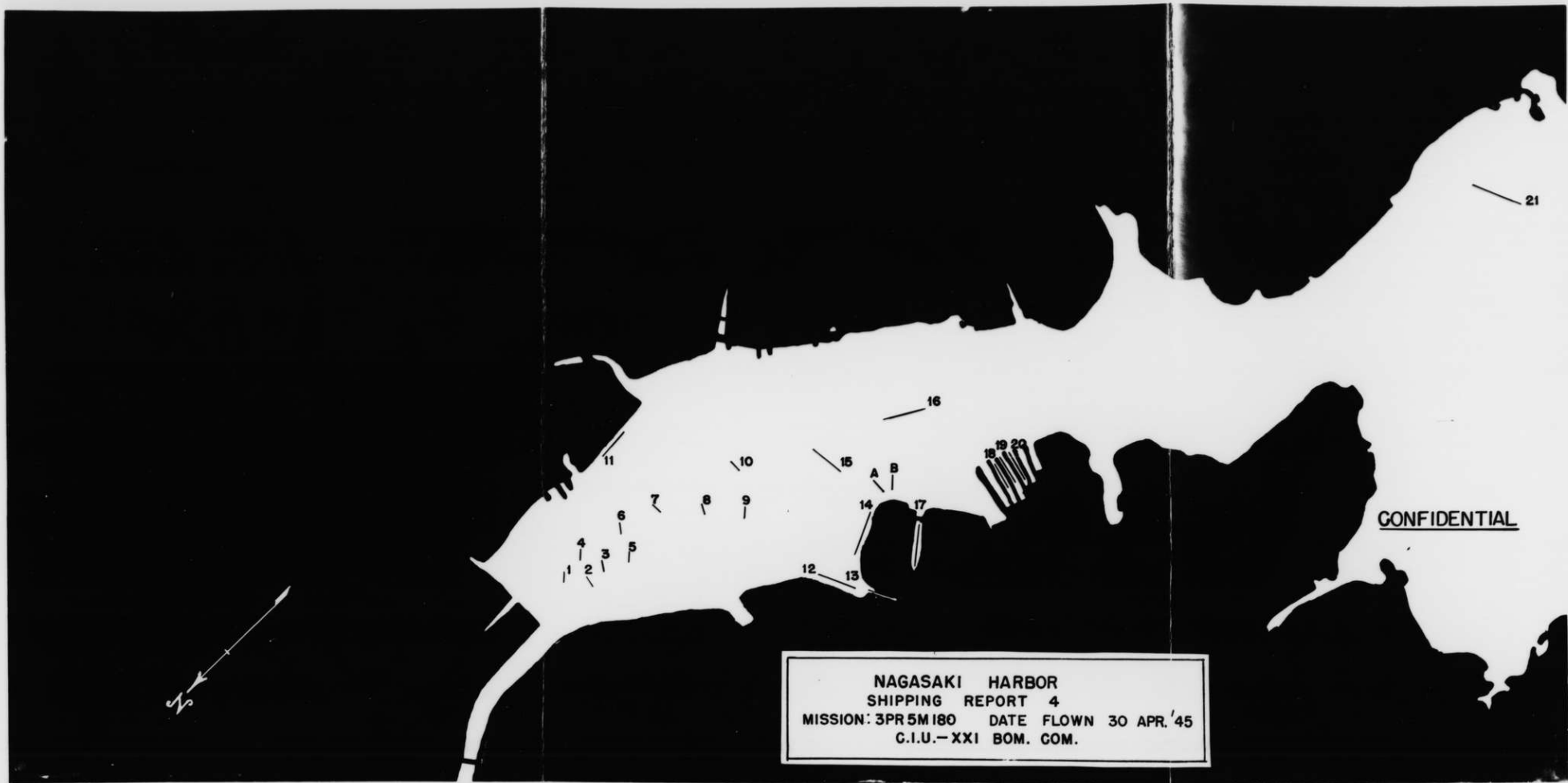
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2671 C 35PTU 3 AUG 45

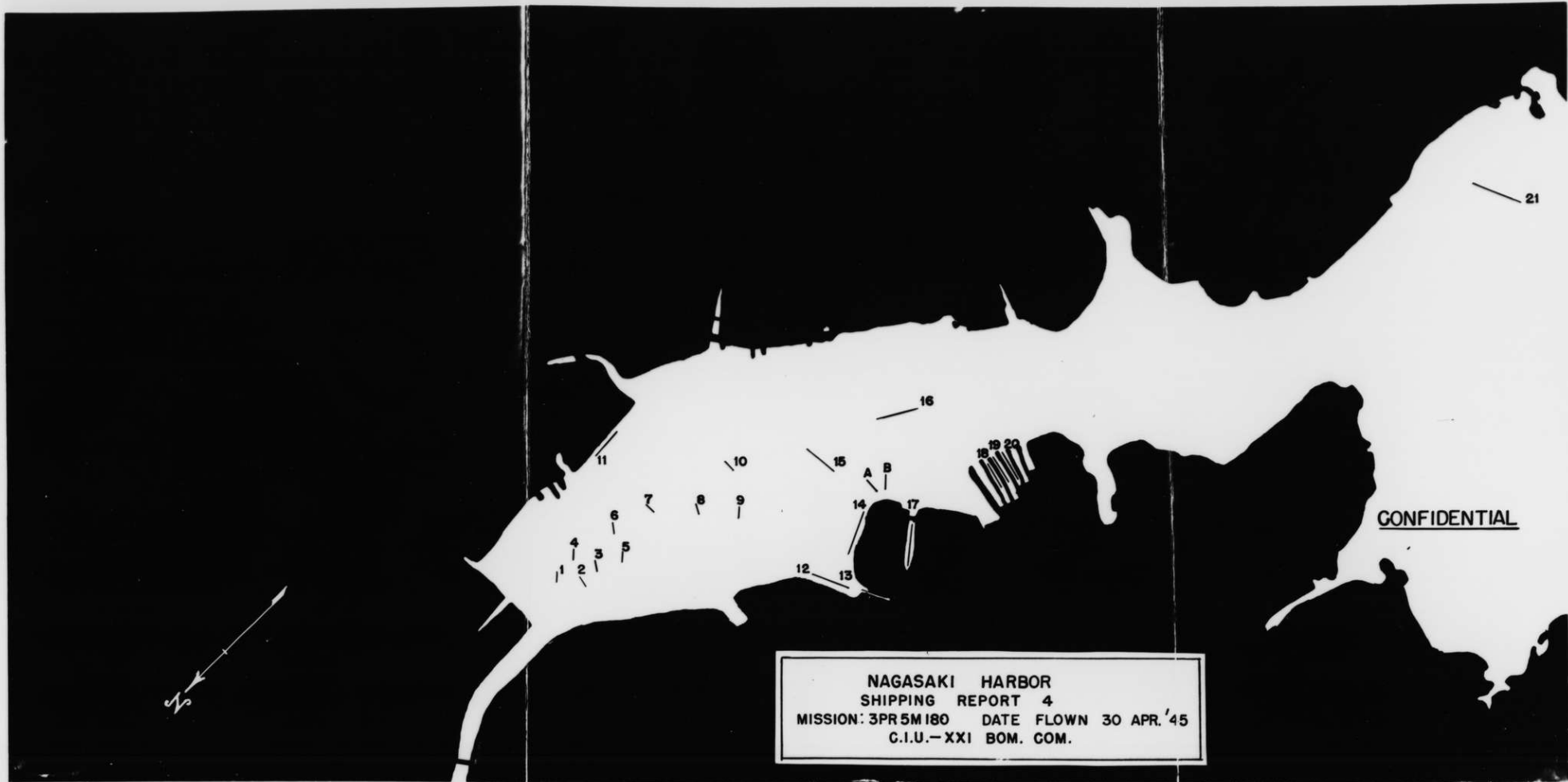
NAGASAKI HARBOR
SHIPPING REPORT NO. 49
Mission 3PR5M366
Date of Photography 29 July 45
C.I.U. Twentieth Air Force
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NAGASAKI HARBOR
SHIPPING REPORT 4
MISSION: 3PR 5M 180 DATE FLOWN 30 APR. '45
C.I.U.—XXI BOM. COM.

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NAGASAKI HARBOR
SHIPPING REPORT 4
MISSION: 3PR5M180 DATE FLOWN 30 APR. '45
C.I.U.—XXI BOM. COM.

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90.36 - Nagasaki Harbor

NAGASAKI HARBOR (32/44 N--129/52 E): First 3PR cover. Naval vessels visible: 3. Merchant vessels visible: 22 (all over 200')

Naval Vessels: 1 720' CV, fitting out.
2 235' DD.

Merchant Vessels:

Operative	Fitting out or Awaiting Repairs	Under Construction
1 cable ship	3 type TL (Modified)	1 type TL (Modified)
8 type E	3 type A (Modified)	probable
1 type TL (Modified)	2 type E	2 MV, unidentified
1 type TM		

References: a and c. No photography attached.

(From: Survey Report 45 - dated 15 Mar. 45 - date flown 10 Mar. 45. 21 Bom. Com.)

*****Shipping terminus. See insert at beginning of this section*****

3. Principal port of embarkation.--HQ BC #6 dated 28 Sept '44 SECRET

4. Strategic sea area in the NAGASAKI - SASEBO area is defined as follows:
North of 32-10 N, and E of line connecting point at 32-10 N, 129-00 E with the OSE SAKI lighthouse on FUKAYE SHIMA in the GOTO RETTO (32-36-05 N, 128-36-01 E), east of the line connecting KASHIWA SAKI on NW tip of FUKAYE SHIMA, HIME SHIMA to its N, and the point at 33-30 N, 128-55 E, as well as S of 33-30 N, except for ARIAKE-NO-UMI and TACHIBANA WAN, east of the line connecting KABA SHIMA (32-32-08 N, 129-46-06 E) in the NAGASAKI-KO vicinity, and ONIKI SAKI in the entrance to SAKITSU WAN on the W coast of AMAKUSA SHIMA SHIMA.
(See Notices to Mariners, OP 16 FE 137)

NAGASAKI HARBOR (32-44-N., 129-52 E) Harbor 50 percent cloud covered
Naval: 1. Merchant: 19, 80,030 G.T.

NV: 1 Escort, KAIBOKAN class

MV: 5 SBL; 4 type A, modified, 1 490' in length.
7 SCS; all type E, modified 2 fitting
2 SAL; type TL, modified fitting.
1 SAS, type TS
1 FTR
1 TARE, 2-stalk, 430'
1 Unidentified

Reference Photos: 221-6.

(From: S/R 183 - dated 30 June 1945 - flown 25 June 1945 - 21 BC)

NAGASAKI HARBOR - Shipping

Naval: 2 AM - 200' (3 on 16 Apr. 45)

Merchant: 15 (32 on 16 Apr. 45)
 1 Type TL (Mod) - outfitting 3 Type E
 1 Type A (Mod) - outfitting 1 FTD
 2 Type A (Mod - under construction 1 Type A (Mod)
 1 Type TL (Mod)

Last previous report - CIU S/R 93

Reference prints 2: 38-40 and 4L: 60-62

(From: S/R 99 - dated 25 Apr. 45 - flown 21 Apr. 45 - 21 BC)

(30 Apr 45)

2 Naval Vessels

21 Merchant vessels (76,360 GT)

23

NV

MV

2 PF-UN2 (Escorts)

4 Sal

1 TB

4 SBL

1 FU

10 SSS

1 FT

(21 Apr 45)

2 Naval vessels

15 Merchant vessels

23

NV

MV

2 PF-UN2 (escorts)

1 SAL, fitting

1 SAL

2 SBL

8 SOS

2 SBL, building

1 FTD

(See CIU S/R 99)

(From Shipping report 4 - dated 8 May 45 - flown 30 Apr. 45) 21 BC)

NAGASAKI HARBOR REPORT NO. 4.

Nagasaki harbor is one of Japan's three major shipbuilding centers. It includes the large Mitsubishi Tategami Shipyard which is capable of handling battleships and carriers. Operating in connection with the Tategami yards is the Mitsubishi dockyard (3 graving docks), the Akunoura Engine Works, and/ electric al equipment plant, and in addition, also included as a part of Nagasaki harbor, are the Kawanami Kogyo KK shipyards on Koyagi Island (1 large and 2 small drydocks, several small shipyards, and the numerous piers, wharves, quays, cranes, etc., found in the entire inner harbor.

(2 photos 1 mosaic - filed under T-544 - T-1842 and T-860 in that order.)

(From: Harbor Report No. 4 - dated 28 May 1945 - 21 BC)

NAGASAKI HARBOR * SHIPPING

(32/43 N., 129/50 E)

- Naval: 3
- 1 CV, Hayatakas Class - 750' - Outfitting
- 2 Escorts, PF-UN-2 - 220'

- Merchant: 13
- 1 Type A (Modified)
- 7 Type E
- 2 Type A (Modified) outfitting
- 1 Type A (Mofidifa) under construction
- 2 Type TL (modified) under construction

Reference: ONI 208-J and Recognition Manual, January 1945
 Reference prints 3R:25-27 and 3L:25-27
 No prints attached
 (From: S/R 63 - dated 3 Apr. 45 - flown 28 Mar. 45 - 21 B.C.)

- Naval: 3
- 1 CV, Hayataka Class, 745' - probable
- 2 PG, 210' - probable

- Merchant: 10
 - 7 Sugar Class
 - 3 Unidentified
- Reference: ONI 208 - J, 229 - Jan. 45
 Reference prints - 2: 1-3 and 3L: 1-4
 No prints attached.

(From: S/R 81 - dated 12 Apr. 45 - flown 8 Apr. 45 - 21 B.C.)

(32/44 N., 129/52 E) Shipping

- Naval: 1 CV, in drydock 720' to 740' (3 Naval and 13 Merchant on 28 March 1945)
- 2 Escorts - about 200'
- Merchant: 22 over ~~222~~ 200'

Reference prints: 1V: 36,37
 Last previous report - CIU S/R 63
 No prints attached.
 (From: S/R 82 - flown 11 Apr. 45 - dated 15 Apr. 45 - 21 B.C.)

- Naval: 3 AM, No. 1 Class (3 on 11 Apr. 45)
- Merchant: 32 (22 on 11 Apr 45)
- 4 SAL, Type L (Mod) - 3 fitting out
- 1 Cable ship
- 2 Unidentified
- 3 Under construction (Possible tankers)
- 1 Sbs
- 2 SBL
- 10 SCS
- 9 Unidentifield, 6" coverage only

Last previous report - CIU S R 82
 No prints attached.
 (From: S/R 93 - dated 22 Apr. 45 - flown 16 Apr. 45 - 21 BC)

NAGASAKI Harbor Shipping

94

NAGASAKI HARBOR: NAVAL VESSELS

Annotation	Type	Length	Remarks
A	PF-UN2	220	
B	PF-UN2	220	

NAGASAKI HARBOR: MERCHANT VESSELS

Annotation	Type	Length	Tonnage	Remarks
1	SCS	210	880	Type "E"
2	SCS	210	880	" "
3	SCS	210	880	" "
4	SCS	210	880	" "
5	SCS	210	880	" "
6	SCS	210	880	" "
7	SCS	210	880	" "
8	SCS	210	880	" "
9	FU	228	880	" "
10	SCS	210	880	
11	FT	374	4202	Cable ship
12	SAL	517	10000	TL modified
13	SCS	210	880	
14	SAL	520	10000	Fitting. Probably TL (mod)
15	SBL	460	8800	Type "A"
16	TB	440	6670	Probable troop transport
17	SAL	517	10000	Fitting
18	SBL	450	6670	Prob. "A" (mod). Hull $\frac{1}{2}$ built
19	SAL	520	10000	Prob. TL (mod); 2/3 complete
20	SBL	450	6670	Prob. "A" (mod). Keel being laid; less than 1/3 complete.
21	SBL	450	6670	
TOTAL GROSS TONNAGE:			82,772	

(From: S/R No. 4 - flown 30 Apr. 45 - dated 8 May 45 - 21 BC)

(HARBOR REPORT #4) 28 MAY 1945

UNIDENTIFIED TARGETS

2. Unidentified industry - on W side inner harbor. Four major buildings in a rectangular area covering 209,600 sq. ft. Included as part of target are five probable overhead conveyors for unloading ships.
33. Unidentified factory - in V-shaped area on E side of inner harbor, between Megami Point and Tanoo Yama.
34. Unidentified pier, 95' long - located at N end of above factory.
35. Unidentified pier, 145' long - located adjacent to above pier.

Inclosure 3: Annotated mosaic

OTAO COAL DUMP

49. Located W side of inner harbor near unidentified industry (2).

Inclosure 3: Annotated mosaic.

CONFIDENTIAL

-4-

Continued on Page 5

P. 5

Harbor Report No. 4, cont'd.

PRINCIPAL PIERS AND HARVES

- 5. Tategami Shipyard (see Target 544)
- 11. Akunoura fitting out wharf (see Target 542)
- 22. Deshima quay (see Target 1842)

Inclosure 3: Annotated mosaic

SECONDARY PIERS AND HARVES

- 3. Kozaki Point pier (see Target 545)
- 544K. Tategami pier (see Target 544)
- 12. Mizuno-Ura pier (see Target 542)
- 13. Municipal floating pier (see Target 542)
- 14. Municipal floating pier, 125' long - 800' S of mouth of Uragami-Gawa.
- 50. Possible municipal floating pier, 87' long - at mouth of Uragami-Gawa, off the W bank.
- 15. Department of Railways Wharf (see Target 1842)
- 16. Department of Railways Pier " " "
- 17. Municipal floating pier " " "
- 18. Municipal floating pier No. 1 " " "
- 19. Municipal floating pier No. 2 " " "
- 20. Municipal floating pier No. 3 " " "
- 21. Unidentified floating pier " " "
- 23. Wharf, 1400' long - on E side inner harbor, S of Deshima quay.
- 24. Customs wharf, 58' long - S of Deshima quay.
- 25. Partially covered pier, 210' long - E side of inner harbor.
- 26. Unidentified floating pier, 210' long - E side of inner harbor, about 500' S of mouth of Matsue Kawa.
- 27. Mitsubishi floating pier, 175' long - 1450' S of mouth of Matsue Kawa, on E side of inner harbor.
- 28. Unidentified pier, 150' long - E side of inner harbor.
- 29. Wharf, about 3300' frontage - E side of inner harbor.
- 31. Wharf area and Mitsubishi coal dump, 1100' frontage - on W side of Tanco Yama.
- 34. Unidentified pier, 95' long (see 33).
- 35. Unidentified pier, 145' long (see 33).
- 37. Small floating pier, 100' long - in area of XXI 6102.- SE side outer Harbor.
- 38. Floating pier, 175' long - in area of XXI 6102 - SE side outer harbor.
- 40. Floating pier (see Target 860).

Inclosure 3: Annotated mosaic

<u>FLOATING CRANES</u>					
46.	Jib crane on base	96'	x	194'	
47.	" " " "	28'	x	67'	
48.	" " " "	58'	x	105'	
50.	" " " "	40'	x	87'	
51.	" " " "	40'	x	87'	

Inclosure 3: Annotated mosaic.

- References:
- 1. AOF 90.36 - July 1944
 - 2. JANIS 84 Chapter VI - August 1944
 - 3. Third Phase PI Report No. 126, 18th PID, Hq. 14th Air Force, APO 627
 - 4. PI Handbook
 - 5. ONI 208-J (Revised) Supplement 3 - January 1945

- Inclosures:
- 1. Annotated print 3PR5M180-3L:30 — FILED T-544
 - 2. Annotated print 3PR5M180-3R:30 — " T-1842
 - 3. Annotated mosaic, Nagasaki Harbor — " T-860

DISTRIBUTION: "B"

Approved: *E. W. Whelan* 1st Lt. AC
 HAMILTON D. DARBY
 MAJOR, AC

F44(3)
Serial: 0285

UNITED STATES PACIFIC FLEET
PHOTOGRAPHIC INTERPRETATION SQUADRON TWO

LMM/hk

Keen
Keen
(Retain)

CONFIDENTIAL

18 March 1945.

PHOTOGRAPHIC INTELLIGENCE REPORT NO. 467

SHIPPING REPORT:

NAGASAKI HARBOR AREA, KYUSHU, JAPAN.
32° 43' N., 129° 52' E.

543

Based on XXI Bom Com 3FR5M75 of 9 March 1945.

Reference:

(a) A. O. F. 90,36 Sasebo 18 July 1944.

Coverage:

Complete vertical 24" x 40".

SUMMARY

NAVAL

1 CV 750' (oa). Probable UNRYU class.
1 ARC.
2 PF.

MERCHANT

22,000 g.t. operational - 11 ships.
23,600 g.t. building - 3 ships.
35,600 g.t. outfitting - 7 ships.

DETAIL

NAVAL

NO.	TYPE	LENGTH(oa)	LOCATION*	REMARKS
1	CV	750	M	Outfitting. Flight deck 725' x 90'. Island structures do not appear complete. Sponsons. Two elevators. Probably same unit of UNRYU class which was photographed outfitting in this position on 17 November 1944.
1	ARC	385-95	Near T	Resembles cable layer TOYU MARU. 3700 g.t.
2	PF	220-30	M	

MERCHANT

NO.	TYPE	LENGTH(oa)	GROSS TON	LOCATION*	REMARKS
1	SAL	520	10,000	H	AMATSU MARU class.
2	SAL	520	20,000	M	AMATSU MARU class. One outfitting in drydocks at M, machinery hatches open. One docked at Akunoura Engine Works. Probably outfitting.
1	SAL?	520	10,000?	T	Probably AMATSU MARU class. On ways. Hull not complete.
1	SBL?	465-80	7,000?	T	On ways. Hull nearing completion. 60% of main deck laid. No hatches visible.
1	SBL	445	6,600	.	BATAFAHA MARU class. Docked Nagasaki and Dejima Wharves.
2	SBL	445	13,200	K, M	BATAFAHA MARU class. Outfitting. Ship at M in drydock.

Next

NO.	TYPE	LENGTH(ao)	GROSS TON	LOCATION*	REMARKS
1	SBL?	445	6,600?	T	Probably BATAIWA MARU class. On ways. Hull outline nearly complete.
1	Unident.	220	1,000	M	Probable harbor craft.
8	SCS	210	6,400	H, K	Standardized type.
3	SCS	210	2,400	K	Moored in channel. Two awaiting outfitting. One without stern section.

Three of six building slips at Tategami Shipyard empty. Two drydocks at Kawanami Shipyard empty. No ships visible on building slips at this yard.

*Location:

- H - Nagasaki Harbor.
- K - Kawanami Industry Co. Shipyard. Target 860.
- M - Mitsubishi Dockyard Target 543.
- T - Tategami Shipyard Target 544.

R. De Lancie

R. De LANCIE,
Commanding.

F44(3)
Serial: I/054

UNITED STATES PACIFIC FLEET
PHOTOGRAPHIC INTELLIGENCE SQUADRON TWO

Kent
Geog
RS/rs

4 May 1945

CONFIDENTIAL

PHOTOGRAPHIC INTELLIGENCE REPORT NO. 616

SHIPPING REPORT: NAGASAKI HARBOR, KYUSHU, JAPAN
32° 44' N., 129° 51' E.

Based on MRI Porton sortie 3FR5M180 of 30 April 1945.

References: (a) Interpreter TMO P.I. Report No. 595 of 24 April 1945.
(b) A.S.P. 90.36, Sasebo Area, 18 July 1944.

Coverage: Complete vertical 24" and 40" at 32,000'.

SUMMARY

NAVAL

2 FF.
1 ARC.

MERCHANT

39,600 g.t. operational - 14 ships.
30,000 g.t. outfitting - 3 ships.
30,000 g.t. building - 3 ships.
800 g.t. repairing - 1 ship.

Ships less than 200' not listed. Three of six building ways empty at Tategami Shipyard.

DETAIL

NAVAL

No.	Type	Length(oa)	Remarks
2	FF	220	LAIBOKU, Mitsubishi Dockyard.
1	ARC	385-95	Cablelayer TOYO MARU, 3,700 g.t. Present 16 April 1945.

MERCHANT

No.	Type	Length(oa)	Gross Ton	Remarks
1	SAL	520	10,000	AMATSU MARU class. Docked at Munoura Engine Works.
3	SAL	520	30,000	AMATSU MARU class. All outfitting. Two in drydock and one docked at Mitsubishi Dockyard. All have machinery hatches open.
1	SAL	520	10,000	AMATSU MARU class. On ways at Tategami Shipyard. Bulkheads and shell in progress.
1	SAL	520	10,000	AMATSU MARU class. On ways at Tategami Shipyard. Bridge built, main deck completed, ready for launching. Same status 16 April 1945.
1	SAL	520	10,000	AMATSU MARU class. On ways at Tategami Shipyard. Frames going in.
2	SBL	445	13,200	B-TAKAZA MARU class.
1	T	440	7,000	KOAN MARU class.
1	FT	230	1,200	
10	SCS	210	8,000	One in drydock at Mitsubishi Dockyard.

R. De Lancie
R. De LANCIE,
Commanding.

FL44(3)
Serial: I/092

UNITED STATES PACIFIC FLEET
PHOTOGRAPHIC INTERPRETATION SQUADRON TWO

RSW/krm *L. Kent*

CONFIDENTIAL

29 May 1945

PHOTOGRAPHIC INTELLIGENCE REPORT NO. 663

SHIFTING REPORT: NAGASAKI HARBOR, KYUSHU, JAPAN.
32° 44' N., 129° 51' E.

Based on: XXI Bom Com sortie 3FR5M227 of 23 May 1945.

References: (a) Interpron Two P.I. Report No. 595 of 4 May 1945.
(b) A.O.F. 90.36 Sasebo Area, 18 July 1944.

SUMMARY

NAVAL

1 DE
2 IF

MERCHANT

19,300 g.t. operational - 7 ships.
50,000 g.t. outfitting - 5 ships.
22,600 g.t. building - 4 ships.
1,600 g.t. repairing - 2 ships.

Ships less than 200' not listed.

Two of six building ways empty at Tategami Shipyard.

DETAIL

NAVAL

No.	Type	Length(oa)	Remarks
1	DE	255-60	In drydock Mitsubishi Dockyard.
2	IF	220-230	Moored at Mitsubishi Dockyard. Engine hatches open.

MERCHANT

No.	Type	Length(oa)	Gross Tons	Remarks
2	SAL	520	20,000	AMATSU MARU class. Outfitting at Akunouva Engine Works.
3	SAL	520	30,000	AMATSU MARU class. All outfitting at Mitsubishi Dockyard, one in drydock. All have machinery hatches open. One of these launched since 30 April 1945.
1	SAL	520	10,000	AMATSU MARU class. On ways at Tategami Shipyard. Bulkheads and shell plating in progress.
1	SBL	445	6,600	BATOYAMA MARU class.
1	SBL	445	6,600	BATOYAMA MARU class. On ways at Tategami Shipyard. Tank top completed. This ship previously reported as SAL of AMATSU MARU class.
1	T	430-440	7,000	KON MARU class.
1	SAS	320-330	3,500	Probable KANETSU MARU class. On ways at Tategami Shipyard. Main deck substantially complete.
1	SCL	310	2,300	AKESHIMA MARU class.
1	MV	290-300	2,500	Possible AKESHIMA MARU class. On ways at Tategami Shipyard. Bottom plating complete.
1	SB	210-220	1,000	
5	SCS	210	4,000	Two in drydock at Mitsubishi Dockyard.

COVERAGE

Complete vertical 24" and 40" at 30,000'

R. De Lancie
R. De LANCIE,
Commanding.

F44(3)
Serial: I/0276

UNITED STATES PACIFIC FLEET
PHOTOGRAPHIC INTERPRETATION SQUADRON TWO

Kent
RSW/krm

CONFIDENTIAL

4 August 1945

PHOTOGRAPHIC INTELLIGENCE REPORT NO. 797

SHIPPING REPORT: 90.36 NAGASAKI HARBOR, KYUSHU, JAPAN.
32° 44' N., 129° 51' E.

Based on: XX AF sortie 3PR5M366 of 29 JULY 1945.

References: (a) Interpron Two P.I. Report No. 663 of 23 May 1945.
(b) A.O.F. 90.36 Sasebo Area, 18 July 1944.
(c) Weekly Intelligence, Vol. 2 No. 1, 16 July 1945 -
"Tankers Converted to Freighters".

SUMMARY

Naval
1 PF.

Merchant
12,740 g.t.; operational - 4 ships.
33,200 g.t.; outfitting - 4 ships.
19,870 g.t.; building - 3 ships.
6,670 g.t., repairing - 1 ship.
Ships under 200' not listed.

DETAIL

<u>Naval</u>	<u>NO.</u>	<u>TYPE</u>	<u>LENGTH(oa)</u>	<u>REMARKS</u>
	1	PF	220	KAIBOKAN alongside SBL at Akunoura Engine Works (Target 543)

<u>Merchant</u>	<u>NO.</u>	<u>TYPE</u>	<u>LENGTH(oa)</u>	<u>GROSS TON</u>	<u>REMARKS</u>
	1	SBL	517	10,000	S/L hull (AMATSU MARU class) converted to dry cargo carrier (see Reference (c)). Outfitting at Akunoura Engine Works (Target 545).
	2	SBL	517	20,000	Converted S/L hulls outfitting at Mitsubishi Dockyards (Target 543). One nearly completed.
	1	SBL	517	10,000	Converted S/L moored in harbor, has steam up.
	1	MV	500-525	10,000	Building at Tategami Shipyard (Target 544). Bottom plating laid, little progress since 23 May 1945.
	1	SBL	445	6,670	BATOP/HA MARU class. Repairing in dry-dock at Mitsubishi Dockyards (Target 543).
	1	SBL	445	6,670	BATOP/HA MARU class. Building at Tategami Shipyard (Target 544). Between-deck plating partially completed. Progress slow since 23 May 1945.
	1	MV	330-340	3,200	Building at Tategami Shipyard (Target 544). Nearly ready for launching.
	1	MV	330-340	3,200	Awaiting outfitting, moored in harbor, launched since 23 May 1945.
	2	SCS	210	1,740	
	1	SAS	210	1,000	KORYU MARU class. Alongside quay at Akunoura Engine Works (Target 545).

COVERAGE

Complete 24" verticle, 60% 40" at 31,000'.

R. De LANCIE
R. De LANCIE,
Commanding.

F44(3)
Serial 0348

UNITED STATES PACIFIC FLEET
PHOTOGRAPHIC INTERPRETATION SQUADRON TWO

LMM/rs

CONFIDENTIAL

5 April 1945

PHOTOGRAPHIC INTELLIGENCE REPORT NO. 533

SHIPPING REPORT: NAGASAKI HARBOR, KYUSHU, JAPAN
32° 44' N, 129° 51' E.

Based on XXI BomCom 3PR5M 103 of 28 March 1945.

References: (a) Interpron TWO P. I. Report No. 467 of 18 March 1945.
(b) A.O.E. 90.36 Sasebo Area, 18 July 1944.

Coverage: Complete vertical 6", 24", 40" at 34,000'.

SUMMARY

NAVAL

1 CV UNRYU class.
2 PF.

MERCHANT

37,600 g.t. operational - 13 ships.
40,000 g.t. building - 4 ships.
10,000 g.t. outfitting - 1 ship.

DETAIL

NAVAL

No.	Type	Length(oa)	Location	Remarks
1	CV	750	M	UNRYU class. Outfitting in drydock. Flight deck 725' x 90'. Small island on starboard side opposite forward elevator. Two horizontal stacks abaft island. After elevator platform installed, forward one may be present but not observed, elevator hatch open. Sponsons present. Unidentified objects on flight deck.
2	PF	220	M	

MERCHANT

No.	Type	Length(oa)	Gross Ton	Location	Remarks
1	SAL	520	10,000	M	AMATSU MARU class. In drydock. Appears operational.
1	SAL	520	10,000	M	AMATSU MARU class. Outfitting at dock previously occupied by CV.
1	SAL	520	10,000	T	AMATSU MARU class. On ways. Hull complete, top deck laid. Bridge taking shape. Ready for launching. This ship on ways 9 March and referred to as SBL?.
1	SAL	520	10,000	T	AMATSU MARU class. On ways. Hull outline nearly complete. Transverse bulkheads going in. Previously referred to as SBL.
1	SAL	520	10,000	T	AMATSU MARU class. On ways. Top deck laid. Appears ready for launching. Previously referred to as SAL?.

MERCHANT (cont.)

No.	Type	Length(oa)	Gross Ton	Location*	Remarks
1	SAL	520	10,000	T	AMATSU MARU class. On ways. Bottom plates laid. Ship being laid down on 9 March.
3	SBL	445	19,800	H,N	
1	FTD	235	1,200	H	
1	SCS	220	1,000	H	
7	SCS	210	5,600	H,N	

Four of the six building ways at T occupied. All three drydocks at M occupied.

*Location

H - Nagasaki Harbor.

N - Nagasaki and Dejima Wharves. Target 1842.

M - Mitsubishi Dockyard, Target 543.

T - Tategami Shipyard. Target 544.

R. DeLancie
R. De LANCIE.

Kent

F44(3)
Serial: I/023

UNITED STATES PACIFIC FLEET RSW/krm
PHOTOGRAPHIC INTERPRETATION SQUADRON TWO

CONFIDENTIAL

24 April 1945.

PHOTOGRAPHIC INTELLIGENCE REPORT NO. 595.

SHIPPING REPORT: NAGASAKI HARBOR, KYUSHU, JAPAN.
32° 44' N., 129° 51' E.

Based on XXI Bom Com sortie 3PR5:1147 of 16 April 1945.

References: (a) Interpron Two P.I. Report No. 533 of 5 April 1945.
(b) A.O.F. 90.36, Sasebo Area, 18 July 1944.

Coverage: Complete vertical 24" and partial 40" at 32,500'.

SUMMARY

NAVAL
3 PF.
1 ARC.

MERCHANT
31,500 g.t. operational - 12 ships.
30,000 g.t. outfitting - 3 ships.
30,000 g.t. building - 3 ships.
Three of six ways empty at Tategami Shipyard. Two of three drydocks empty at Mitsubishi Dockyard.

DETAIL

<u>NAVAL</u>			<u>REMARKS</u>
<u>NO.</u>	<u>TYPE</u>	<u>LENGTH(oa)</u>	
3	PF	220	KAIBOKAN, Moored at Mitsubishi Dockyard, target 543.
1	ARC	385-95	Cable layer TOYU MARU, 3,700 g.t. was at Nagasaki 9 March.

<u>MERCHANT</u>				<u>REMARKS</u>
<u>NO</u>	<u>TYPE</u>	<u>LENGTH(oa)</u>	<u>GROSS TON</u>	
1	SAL	520	10,000	AMATSU MARU class. Moored in harbor.
3	SAL	520	30,000	AMATSU MARU class. Outfitting. One at Akunoura Engine Works, machinery hatches open. Two at Mitsubishi Dockyard.
1	SAL	520	10,000	AMATSU MARU class. On ways at Tategami Shipyard, target 544. Hull outline complete, little change since 28 March.
1	SAL	520	10,000	AMATSU MARU class. On ways at Tategami Shipyard. Hull complete, bridge built, ready for launching. Bridge built since 28 March.
1	SAL	520	10,000	AMATSU MARU class. On ways at Tategami Shipyard. Hull outline taking shape. Bottom plates had been laid on 28 March.
2	SBL	445	13,200	BATAPAHA MARU class. Moored in harbor.
1	MV	240	1,500	
1	FT	225	1,200	
7	SCS	210	5,600	

R. De Lancia
R. De LANCIE,
Commanding.

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

JOINT PHOTO INTELLIGENCE GROUP
Photographic Division
AC/AS, Intelligence

IMMEDIATE INTERPRETATION REPORT NO. 6
OBJECTIVE AREA NUMBER 90.36
Date 24 October 1944

<u>PHOTO DATE</u>	<u>MISSION NUMBER</u>	<u>PRINT NUMBER</u>	<u>F/L & ALT</u>	<u>APPROX SCALE</u>	<u>TYPE COVER</u>
6 Oct 44	468BG/4MR9	RV88-95 LV88-95	12"-26,000	1/26,000	Recon

<u>LOCALITIES COVERED</u>	<u>Date</u>	<u>LAST COVERAGE Mission No.</u>	<u>Print Nos.</u>	<u>Report No.</u>	<u>LAST REPORT Date</u>	<u>Org.</u>
Nagasaki, Japan	20 Aug 44	11PL/M7	R & L 1-9 V, L & R 1-3			

<u>INSTALLATIONS COVERED</u>	<u>TARGET NUMBER</u>	<u>PRINT NUMBERS</u>	<u>PHOTO QUALITY</u>
Megami Point Oil Storage	832	LV91	Good
Military Area (Prob. Munitions Storage)	None	LV90-91-92	Good
Prob. Military Storage	None	LV92-93	Good
Dojima-Nagasaki Wharves & R.R. Yds.	1842	(LV90-91 RV91-92)	Fair Fair
Waterfront warehouses, prob. military	None	LV-91'	
Tategami Shipyard	544	RV91-92	Good
Mitsubishi Dockyard	543	RV91-92	9/10 cloud covered
Akunura Eng. Wks. (not visible)	542	RV91-92	Completely clouded
Mitsubishi Elec. Co. (not visible)	829	RV91-92	Completely clouded
Hayashi Com'l. Co. Eng. Wks. (not visible)	828	RV91-92	Completely clouded
Kawanami Industrial Co. Shipyard	860	RV92-93	Good
Warehouse Area	None	RV93 -94	Fair
Mitsubishi Steel & Arms Wks.	546	RV89 -91	Good
Mitsubishi Rolling Mill	1795	RV90 -91	Fair (cloud shadow)
Prob. Assembly Plant	None	RV89 -90	Good
Unident. Factory	None	RV89 -90	Good
Ogakura Dam	None	RV89 -90	Good
Kozaki Point Oil Storages	545	RV91-92	Good
Prob. Shipyard under const.	None	RV91-92	Good

REMARKS:

Map Reference: Target Folder 90.36
Photos scale small for detail interpretation
Photos of better quality generally than previous cover

Lewis E. Stevens
LEWIS E. STEVENS

Major, Air Corps
Chief, Joint Photo Intelligence Group
Evaluation Br., Photographic Division
Office of the Asst Chief of Air Staff,
Intelligence

DISTRIBUTION XX

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

↑ N(16834)(4MR9)(RV89)(REST'D)

Unidentified
Factory

Prob. Assembly
Plant

OGAKURA
Dam

19455

N(468134)(4MR4)(RV90)(REST'D)

MITSUBISHI Rolling Mill

MITSUBISHI Steel & Arms Works

Dejima

NAGASAKI
Wharfs & Yards

19455

↓ N(46886) (4NR9)(LV91) Rest'd



19455

N(468134)(4MR9)(RV92)(REST'D)



KOZAKI Pt. Oil Storage

Prob. Shipyard
under construction

TATEGAMI
Shipyard

9455

N(468 BG)(4HR9)(RV93)(REST'D)

Whse. Area

KAWANAMI IND. Co.
Shipyard

19455

EASTMAN REGULAR SAFETY

EASTMAN REGULAR SAFETY

EASTMAN REGULAR SAFETY

LN (46886) (4MR9) (LY93) Rest'd



Prob. Mill. Storage

0562 EASTMAN REGULAR SAFETY

0561 EASTMAN REGULAR SAFETY

0560 EASTMAN REGULAR SAFETY

19455

CONFIDENTIAL

C. I. U.
XXI BOMBER COMMAND
APO 234, c/o POSTMASTER
SAN FRANCISCO, CALIFORNIA

(Combined PI Sections: 3rd Photo Recon Sqdn and 35th Photo Tech Unit)

28 May 1945

HARBOR REPORT NO. 4

NAGASAKI HARBOR
32/43N - 129/50E

Photography:

3PR5M75
3PR5M103
3PR5M180

Date Flown:

10 March 1945
28 March 1945
30 April 1945

SUMMARY

Nagasaki harbor is one of Japan's three major ship-building centers. It includes the large Mitsubishi Tategami Shipyard which is capable of handling battleships and carriers. Operating in connection with the Tategami yards is the Mitsubishi dockyard (3 graving docks), the Akunoura Engine Works, an electrical equipment plant, and the Mitsubishi Steel Co.

In addition; also included as a part of Nagasaki harbor, are the Lawanani Kogyo KK shipyards on Moyagi Island (1 large and 2 small drydocks), several small shipyards, and the numerous piers, wharves, quays, cranes, etc., found in the entire inner harbor.

TARGET 544 (32/44N - 129/51E) Tategami Shipyard (Mitsubishi Jukogyo KK)

This shipyard, located on the W side of the inner harbor, has built all types of merchant and naval vessels (up to 40,000 tons) and is one of the primary shipbuilding yards in Japan. Shops in the target area (W and N of the ways) include the following: plate shop, machine shops, tool, woodworking and iron shops. The allied Akunoura Engine Works is capable of completely outfitting finished hulls, but there is probably an anchorage N of the ways (5) used for partially outfitting some units. At target 544 there are 5 cranes visible in addition to the gantry cranes over the ways.

Slipways: (See inclosure 1)

A. 110' x 850' (width between gantries)
B. 110' x 850' " " "
C. 170' x 630' (combined width between gantries - C & D)
D. 170' x 615' " " " "
E. 80' x 450' (width between gantries)
F. 30' x 450' " " "

Construction activity on ways:

A. None
B. 500' (approx) M/V, building
C. 517', probable M/V S/L, building
D. None
E. Keel laid for 450' M/V
F. None

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Harbor Report No. 4, Cont'd.

Probable launching sequence:

- C. First
- B. Second
- E. Third

West and N of the slipways are two heavy industrial areas containing the following main buildings:

- G. A roughly rectangular building (304,000 sq. ft.), probable heavy machine shop. Smaller buildings in this area are probably machine shops, sheet metal and blacksmith shops.
- H. A roughly rectangular building (76,500 sq. ft.), probably a smith shop and marking shed.
- I. Mold loft area (32,340 sq. ft.).
- J. Probable joiner shop (50,175 sq. ft.).
- K. Tategami pier - 130' long.
5. Tategami shipyard wharf, on the NE side of Tategami Shipyard, is used as a fitting-out wharf. One locomotive crane services the 780' of waterfront berthing space.

Inclosure 1: Annotated print 3PR5M180-3L:30

TARGET 543 (32/44N - 129/51E) Mitsubishi Dockyard

This complete ship repair dockyard, located in area N of Target 544, is credited with approximately 7 percent of the ship repair accomplished by commercial docks. Its facilities include 3 concrete, granite-faced drydocks, outfitting sheds, fitting out wharf and 4 cranes:

6. Graving dock No. 1 - 90' x 532'
7. Graving dock No. 3 - 100' x 728'
8. Graving dock No. 2 - 80' x 375'
9. Outfitting sheds covering about 68,000 sq. ft.
10. Fitting out wharf, about 595' long.

Activity in dockyard:

6. Graving dock No. 1 - SAL tanker; 517'; fitting out
7. Graving dock No. 3 - SAL tanker; 517'; fitting out
8. Graving dock No. 2 - SCS, 210'
10. Fitting out wharf - SAL tanker, 517' tied up, probably fitting out.

Inclosure 1: Annotated print 3PR5M180-3L: 30

TARGET 542 (32/44N - 129/52E) Akunoura Engine Works

One of Japan's leading marine engine works, located N of Target 543, on the W side of the inner harbor. The compound is comprised of more than 40 buildings including boiler shop, electric steel plant, copper works, experimental tank and laboratory, and machinery assembly shop with gear cutting and propeller balancing equipment - the plant is divided in two main building areas. Administration buildings are located on the waterfront to the N, near Target 829. One giant hammerhead crane is visible on the dock.

- A. Irregularly-shaped area covering approximately 605,000 sq. ft.; probably containing blacksmith shop, copper and brass foundry, and machine shop.

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Harbor Report 4, cont'd.

- B. Irregularly-shaped area covering about 175,000 sq. ft. containing a probable boiler shop.
- .11. V-shaped fitting out wharf with total berthage space of about 1600' - one 150' ton fixed hammerhead crane on S side.
- .12. Mizuno-Ura pier SW corner of Mizuno-Ura (Bay) - 140' long.
- .13. Municipal floating pier, NW corner Mizuno-Ura (Bay) - 190' long.

Inclosure 1: Annotated print 3PR5M 180-3L:30

TARGET 829 (32/45 N--129/52 E) Mitsubishi Electric Mfg. Co.

Located N of Target 542 on W side of inner harbor. A manufacturer of marine electrical apparatus, this plant is integrated with the Amamura Engine Works.

Inclosure 2: Annotated print 3PR5M 180-3R: 30

TARGET 360 (32/42 N--129/49 E) Kawasaki Industry Co. Shipyard

Located on Koyagi Island two miles SW of the entrance to Nagasaki inner harbor; engaged in commercial shipbuilding and repair - has facilities for building ships up to 10,000 tons. In addition to two reported dry-docks and slipway, a new wetdock and drydock has been constructed - other indications of expansions are visible throughout the area.

- 30. Unidentified small-craft boatyard - some small boats are visible on the ways. Three small buildings and other small sheds, as well as one possible drydock 150' long are visible - located on E side of inner harbor.
- 32. Probable small shipyard, on E side of inner harbor, has one large and a number of small buildings. At least 12 ways are visible - five small boats are on ways.
- 39. Building under construction in area of about 426,650 sq. ft., on NW side of reclaimed land now joining former islands of Kageno and Koyagi.
- 40. Floating pier, 200' long - NE corner Koyagi Island.
- 41. Wetdock and drydock, 120' x 1290' total dimensions, on E side of Koyagi Island. An area covering approximately 1,430,000 sq. ft. contains several unidentified new buildings.
 - A. Drydock - 120' x 700' - 460' covered by roof
 - B. Wetdock - 120' x 590'
- 42. Possible covered drydock - E side of Koyagi Island (such an installation had previously been indicated in this location)
- 43. Unidentified slipway on E side Koyagi Island - 350' long and about 48' wide at entrance.
- 44. Drydock on E side Koyagi Island - about 45' x 300'.
- 45. Framework - may be gantry cranes. Two largest frames measure 70' x 350'; the two smaller 70' x 175'

Inclosure 3: Annotated mosaic

TARGET 1795 (32/45 N--129/52 E) Mitsubishi Steel Rolling Mill

Located on W bank of Urakama River

Inclosure 3: Annotated mosaic

TARGET 546 (32/45 N--129/52 E) Mitsubishi Steel and Arms Works

Located on E bank of Urakama River, across from Target 1795 - manufactures torpedoes and naval munitions.

Inclosure 3: Annotated mosaic

TARGET 1842 (32/45 N--129/52 E) Nagasaki & Dejima Wharves and RR Yards

Covers entire area at NE end of inner harbor and contains numerous small warehouses, storehouses and oil storages. Included in this area is one principal wharf and at least seven secondary wharves and piers. It includes a marshalling yard and numerous spur tracks.

22. Doshima quay, on E side of inner harbor. This is a major general cargo dock with 6 storage type buildings and several small cranes - it has a berthage of 1360'. Terminus of RR switch tracks is in rear of warehouses.
15. Department of Railways Wharf, on N shore of inner harbor and on S side of Nakano Shima. Water frontage of 105' x 210' is serviced by at least one RR spur.
16. Department of Railways Pier, on N shore of inner harbor - 95' long. It projects from a fishing wharf.
17. Municipal floating pier, 60' long, NE corner inner harbor.
18. Municipal floating pier No. 1, 410' long, E side inner harbor.
19. Municipal floating pier No. 2, 150' long, E side inner harbor.
20. Municipal floating pier No. 3, 308' long, E side inner harbor.
21. Unidentified floating pier, 245' long, E side inner harbor.

Inclosure 2: Annotated print 3PR5M180-3R: 30

XXI TARGET 6102 (32/42 N--129/50 E) Unidentified Factory

On SE side of outer harbor, across from Target 860.

36. Small ship repair yard with four visible ways - 4 small craft are either under construction or being repaired.

Inclosure 3: Annotated mosaic

TARGET 545 (32/43 N--129/51 E) Kozaki Point Oil Storages

At least five groups of fuel oil tanks situated on waterfront around Kozaki Point.

3. Oil bunkering pier, 180', on NW side of Mishdomari Ura on W side inner harbor.

Inclosure 3: Annotated mosaic

TARGET 832 (32/43 N--129/51 E) Mogami Point Oil Storages

Two groups of oil storage tanks, one N and one S of Mogami Point - on E side of inner harbor.

Inclosure 3: Annotated mosaic

UNIDENTIFIED TARGETS

2. Unidentified industry - on W side inner harbor. Four major buildings in a rectangular area covering 209,600 sq. ft. Included as part of target are five probable overhead conveyors for unloading ships.
33. Unidentified factory - in V-shaped area on E side of inner harbor, between Mogami Point and Tanoo Yam.
34. Unidentified pier, 95' long - located at NW end of above factory.
35. Unidentified pier, 145' long - located adjacent to above pier.

Inclosure 3: Annotated mosaic

OTAO COAL DUMP

49. Located W side of inner harbor near unidentified industry (2).

Inclosure 3: Annotated mosaic.

PRINCIPAL PIERS AND WHARVES

- 5. Tatogami Shipyard (see Target 544)
- 11. Akunoura fitting out wharf (see Target 542)
- 22. Deshima quay (see Target 1842)

Inclosure 3: Annotated mosaic

SECONDARY PIERS AND WHARVES

- 3. Kozaki Point pier (see Target 545)
- 544K. Tatogami pier (see Target 544)
- 12. Mizuno-Ura pier (see Target 542)
- 13. Municipal floating pier (see Target 542)
- 14. Municipal floating pier, 125' long - 800' S of mouth of Urugami-Gawa.
- 20. Possible municipal floating pier, 87' long - at mouth of Urugami-Gawa, off the W bank.
- 15. Department of Railways Wharf (see Target 1842)
- 16. Department of Railways Pier " " "
- 17. Municipal floating pier " " "
- 18. Municipal floating pier No. 1 " " "
- 19. Municipal floating pier No. 2 " " "
- 20. Municipal floating pier No. 3 " " "
- 21. Unidentified floating pier " " "
- 23. Wharf, 1200' long - on E side inner harbor, S of Deshima quay.
- 24. Customs wharf, 58' long - S of Deshima quay.
- 25. Partially covered pier, 210' long - E side of inner harbor.
- 26. Unidentified floating pier, 210' long - E side of inner harbor, about 500' S of mouth of Matsue Kawa.
- 27. Mitsubishi floating pier, 175' long - 1450' S of mouth of Matsue Kawa, on E side of inner harbor.
- 28. Unidentified pier, 150' long - E side of inner harbor.
- 29. Wharf, about 3300' frontage - E side of inner harbor.
- 31. Wharf area and Mitsubishi coal dump, 1100' frontage - on W side of Tanco Yama.
- 34. Unidentified pier, 95' long (see 33).
- 35. Unidentified pier, 145' long (see 33).
- 37. Small floating pier, 100' long - in area of XXI 6102 - SE side outer Harbor.
- 38. Floating pier, 175' long - in area of XXI 6102 - SE side outer harbor.
- 40. Floating pier (see Target 860).

Inclosure 3: Annotated mosaic

<u>FLOATING CRANES</u>					
46.	Jib crane on base	96'	x	194'	
47.	" " " "	28'	x	67'	
48.	" " " "	58'	x	105'	
50.	" " " "	40'	x	87'	
51.	" " " "	40'	x	87'	

Inclosure 3: Annotated mosaic.

- References:
- 1. AOF 90.36 - July 1944
 - 2. JANIS 84 Chapter VI - August 1944
 - 3. Third Phase PI Report No. 126, 18th PID, Hq. 14th Air Force, APO 627
 - 4. PI Handbook
 - 5. ONI 208-J (Revised) Supplement 3 - January 1945

- Inclosures:
- 1. Annotated print 3PR5M180-3L:30
 - 2. Annotated print 3PR5M180-3R:30
 - 3. Annotated mosaic, Nagasaki Harbor

DISTRIBUTION: "B"

Approved: *E. W. Whately* 1st Lt. AC
 HAMILTON D. DARBY
 MAJOR, AC

3PR5M180-3L 70

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HARBOR REPORT 4
NAGASAKI HARBOR
INCL 1

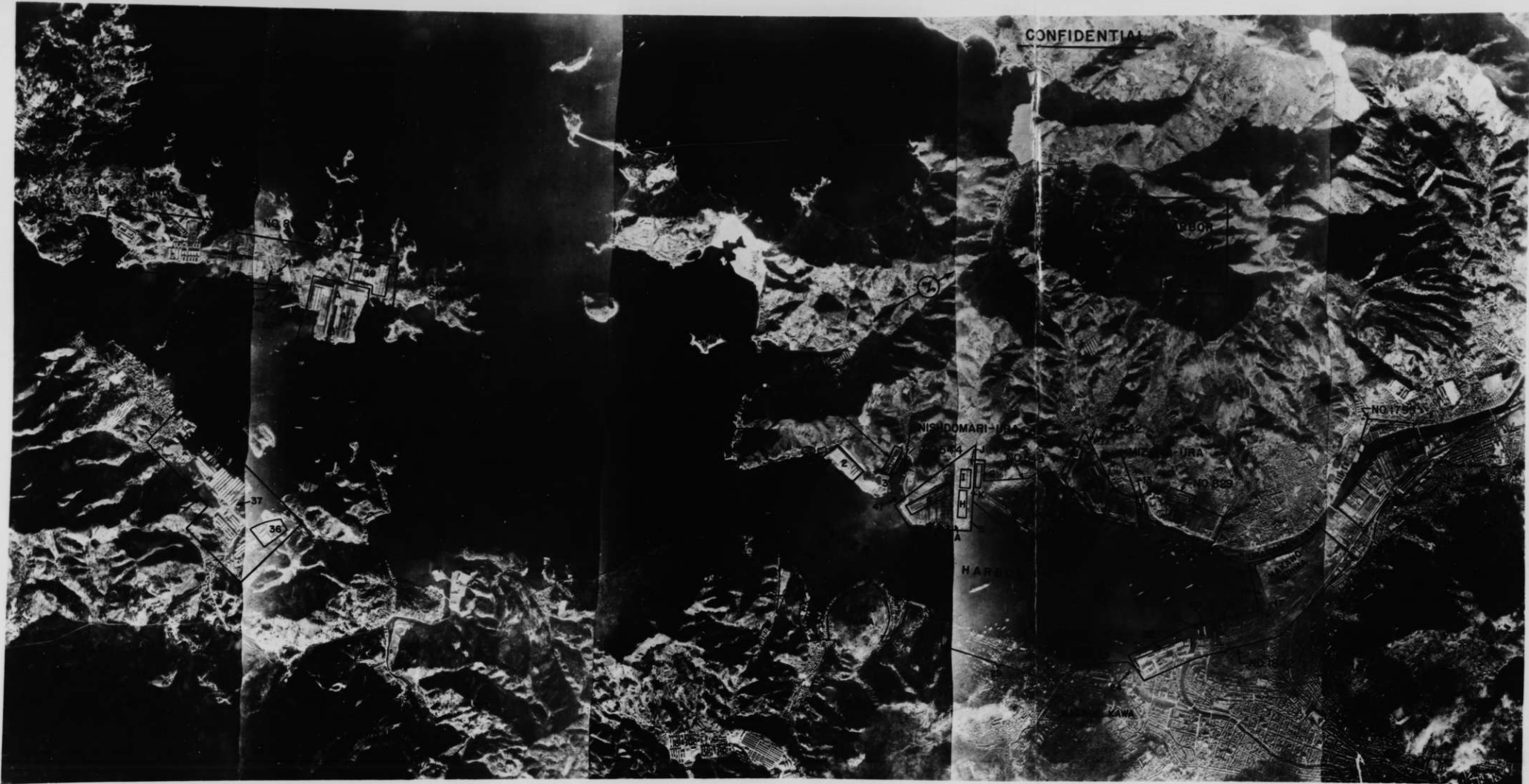
3PR 5 M 190-3R:30

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HARBOR REPORT 4
NAGASAKI HARBOR
INCL. 2

CONFIDENTIAL



HEADQUARTERS TWENTIETH AIR FORCE	
Chief of Staff	
Deputy C. of S. P & A	
Deputy C. of S. Op.	
Deputy C. of S. T.M.A.E.	
A. G.	

NAGASAKI URBAN AREA

PRE-ATTACK ASSESSMENT

SIGNIFICANCE

The Nagasaki area derives its industrial importance chiefly from the extensive shipbuilding and ship repair facilities of the Mitsubishi and Koyagi Shima yards. In addition, there are small-boat yards engaged in the construction of small wooden vessels. The Akunoura Engine Works, a producer of large ship engines, and the Hayashi Commercial Co. Engine Works are functionally integrated with the ship construction and repair installations of the area. These facilities are estimated to represent some 10 percent of marine engine capacity, 15 percent of shipbuilding capacity, and 6 percent of ship repair capacity for Japan Proper; and to employ some 60,000 workers (67 percent of total industrial employment in Nagasaki). The large shipways and graving docks permit the construction and repair of the largest merchant and naval vessels.

Two large ordnance plants, the Mitsubishi Steel and Arms Works and the Mitsubishi-Urakami Ordnance Plant, are estimated to employ some 14,000 workers and to account for the production of some 7 percent of arms and munitions (principally naval torpedoes) and 5 percent of heavy ordnance and A/A guns for Japan Proper.

The Mitsubishi Electric Manufacturing Co. is estimated to have 10 percent of total capacity in Japan Proper for the production of heavy electrical equipment, principally large ship turbines.

The city is also a strategically located military supply port.

DESCRIPTION AND LAYOUT

Nagasaki, located on the western side of Kyushu Island, occupies a very limited, amphitheater-like site with narrow valleys extending back from the harbor to the east, and to the north along the Urakami River. The principal industrial concentration (shipbuilding and repair, and marine engine works) is on the western side of the harbor. The eastern side of the harbor contains the important loading and storage facilities. The city proper located at the head of the harbor, is partly built on reclaimed land and extends back into the surrounding hills.

CONCENTRATION

Commercial and public buildings are concentrated in the eastern and central parts of the city. Densely-grouped housing crowds the commercial areas and extends in an almost unbroken mass to the hills, fanning out on both sides of the harbor and up the narrow valleys.

CONSTRUCTION & VULNERABILITY

- ZONE R - RESIDENTIAL
- R₁ - Over 40% built-up - comprising 30% of area of buildings.
 - R₂ - 20 - 40% built-up - comprising 38% of area of buildings.
 - R₃ - less than 20% built-up - comprising 10% of area of buildings.

Predominantly residential type buildings used as dwellings, small shops and household industry, mostly one story with some two story, framed in timber with walls and partitions of heavy plaster

construction. Floors are of wood covered with heavy compressed straw matting. Roofs are generally of tile with a few of corrugated or sheet iron over wood framing and rafters. Along main streets are two and some three-story commercial buildings housing stores, shops, etc. Roofs are as above. Floors are generally wood. A few large, modern fire-resistive buildings serving as office buildings, hotels and municipal buildings are found concentrated in downtown section. Roofs of all except latter group of large buildings are combustible and are readily penetrable by all incendiary bombs.

ZONE M - MANUFACTURING

Built-upness 43% - comprising 16% of area of buildings.

Industry is concentrated along waterfront, predominantly heavy manufacturing including shipbuilding, marine engines and boilers, steel production and fabrication, and arms. Plants are predominantly of one-story steel frame, medium span gable roof, buildings with roofs of corrugated asbestos and iron. Many buildings have travelling cranes. Roofs of buildings are readily penetrable by all incendiary bombs. Susceptibility of important targets to damage from conflagration during area attack are ~~listed below~~ *found in Table 1.*

<u>Target</u>	<u>Susceptibility to Damage from Fire Spread</u>
90.36-546	Slight
90.36-829	Moderate
90.36-1795	Moderate
90.36-842	Moderate
90.36-543	Moderate
90.36-544	Moderate
90.36-828	Moderate
90.36-2022	None

ZONE X - MIXED RESIDENTIAL/INDUSTRIAL

Built-upness 33% - comprising 1 1/2% of area of buildings.

Combined residential/industrial area containing about equal areas of both classes. Residential construction same as described above. Industrial construction small factories including both wall-bearing and frame construction, predominantly combustible roofs readily penetrable by all incendiary bombs. Entire zone susceptible to destruction by conflagration.

ZONE S - STORAGE

Built-upness 28% - comprising 4% of area of buildings.

Predominantly one-story steel and wood frame buildings with medium span, gable roofs of light weight sheet materials. Buildings are generally divided into moderate sized fire divisions by fire walls. Few moderate sized three and four story reinforced concrete frame buildings. Roofs of buildings except reinforced concrete structures are readily penetrable by all incendiary bombs. Because of wide streets, railroads, etc. storage facilities are only moderately susceptible to damage from fire spread.

ZONE T - TRANSPORTATION

Built-upness 9% - comprising 0.5% of area of buildings.

Concentrated in single terminus at waterfront consisting of station of reinforced concrete and some small transit and storage sheds of wood and steel frame construction. Roofs of the sheds are of light weight materials, are generally combustible, and are readily penetrable by incendiary bombs. Because of isolation, low density of buildings and low vulnerability of important portions to fire damage, transportation facilities are susceptible to only minor damage from fire spread.

WEAPON REC- COMMENDATIONS

The most suitable weapon for attack on the congested areas of Nagasaki (Zones R₁, R₂, and X) is the M-69 (or M-74) in aimable clusters. This bomb will also be effective on many of the industrial buildings in Zones M, S, and T provided these buildings are within formation patterns.

It is not believed that any available high explosive or fragmentation bomb is worth the weight of M-69 clusters which it would displace. On the other hand, a high explosive charge (X feature) or white phosphorous cup attached to the bomb should considerably increase its effectiveness.

Suggestions for the tactical employment of the M-69 type bomb in attacks on congested urban areas are made in the paper on "Physical Vulnerability and Weapon Recommendations" at the front of the Urban Area's Target System Folder. In general, aiming points should be selected in well built-up zones, and an attempt made to secure high local densities in a number of nearly contiguous areas.

LEVEL OF DAMAGE

A successful area attack against Nagasaki will damage or destroy factories and a large proportion of the housing in the city. The purpose of this pre-attack assessment is to indicate the probable amount of production which will be lost in factories as a result of the following combination of factors:

- (1) Damage or destruction of factory structures and equipment.
- (2) Absenteeism (housing destruction, etc.).
- (3) Cost of repair and replacement.

Assumptions of physical damage are as follows:

- (1) The substantial destruction of zones R₁ and R₂ (estimated to contain not less than 75 percent of the housing, and 80 percent of the population).
- (2) Conflagration damage to industrial structures at risk in or adjacent to zones R₁ and R₂ as measured by the physical vulnerability assessment (see Table 1).

Table 1

Estimates of Industrial Employment and Plant Vulnerability to Fire Spread

<u>Target No.</u>	<u>Identified Priority Plants</u>	<u>Estimated Employment</u>	<u>Vulnerability to Fire Spread</u>
	<u>Shipbuilding and Ship Repair</u>		
90.36-543	Mitsubishi Dockyard	10,000	Moderate
90.36-544	Tategami Shipyard	20,000	Moderate
90.36-860	Kawanami Industry Co. Shipyard 1/	10,000	None
90.36-542	Akunoura Engine Works	10,000	Moderate
90.36-828	Hayashi Commercial Co., Engine Works	2,000	High Moderate
	<u>Ordnance</u>		
90.36-546	Mitsubishi Steel and Arms Works	6,000	Slight None
90.36-2022	Mitsubishi-Urakami Ordnance Plant	8,000	None
	<u>Machinery, Tools and Instruments</u>		
90.36-829	Mitsubishi Electric Mfg. Co.	4,000	Moderate
	<u>Chemicals and Oil</u>		
90.36-545	Kozaki Point Oil Storages	300	None
90.36-832	Megami Point Oil Storages	100	None
	<u>Transportation, Communication, Wharf Activities</u>		
90.36-1842	Nagasaki & Dejima Wharves and RR Yards	5,000	Moderate
	<u>Unidentified Priority Plants</u>		
	<u>Shipbuilding and Ship Repair</u>		
	Small boat yards	8,000	None
	<u>Chemicals and Oil</u>		
	Small chemical and oil plants	600	High
	<u>Non-Priority Plants</u>		
	Clothing	500	High
	Construction	2,000	High
	Food Products	2,000	High
	Gas and Electricity	1,000	High
	Lumber, Woodenware	2,000	High
	Printing	500	High
	Textiles	500	High
	Other Manufacturing	1,500	High

1/

Located to south of city, outside of area covered by mosaics.

DIRECT
PRODUCTION
LOSS

Production loss of identified priority plants, including transportation and wharf installations, attributable to damage to structures and equipment is 71 percent of total loss; of unidentified priority plants 16 percent; and of non-priority plants 65 percent. Of a total production loss of 166,000 man-months 67 percent consists of damage to industrial structures and equipment.

Major concentration of loss is against the shipbuilding and ship repair industry which out-ranks all other industry in Nagasaki in importance. The two ordnance plants will incur production loss only through absenteeism; transportation and wharf installations through damage to buildings and equipment; and electrical equipment manufacturing by damage to buildings and equipment, and absenteeism in equal proportions.

The relationship between direct production loss and annual industrial production for Nagasaki is as follows:

Table 2

Direct Production Loss as Proportion of Annual Industrial Production

<u>Industry</u>	<u>Loss in Months</u>	<u>Production Loss - Percent Annual Prod.</u>
Shipbuilding and Ship Repair	1.8	15
Ordnance	1.0	8
Machinery, Tools, Instruments	2.0	17
Chemicals and Oils	2.4	20
Transportation, Communications, Wharf Activities	2.5	20
AVERAGE	1.7	14
Non-Priority Industry	2.4	20
AVERAGE	1.8	15

Photographic cover reveals little in the way of barracks adjacent to industrial plants for worker housing. It is probable, therefore, that the bulk of industrial workers are housed in the city proper. Nagasaki has long been an important industrial city in Japan. The war does not appear to have caused any significant change in the city's industry, population, or the residential location of industrial workers.

INDIRECT
PRODUCTION
LOSS

For purposes of this pre-attack assessment, certain factors are used to indicate the general magnitude of the cost of repair and replacement. This cost is a legitimate addition to direct industrial loss. The cost of repair and replacement, however, has an impact on final output which is delayed and uncertain in point of time.

The overall cost of repair and replacement of damaged industrial plants is estimated at 195,000 man-months.

The cost of repair and replacement of industrial loss, as estimated above, does not include any allowance for the cost of repair and replacement of (1) buildings, equipment, and stocks of non-priority industries, (2) stocks in warehouses, stores, or in transit, (3) raw material stocks in factories, and (4) damaged and destroyed residential buildings.

The total estimated direct and indirect production loss is 361,000 man-months.

Replacement of industrial equipment and stocks is a task of priority industries. Restoration of building damage is a charge against the construction industry and producers of building materials. Much of this indirect loss will be a burden to other areas rather than to industry in Nagasaki.

On the basis of the assumed level of damage, a substantial order of loss is imposed on industrial production in Nagasaki. This loss concentrates against two major functions - shipbuilding and transportation. The cost of repair and replacement, although causing an additional strain on Japanese industry, will be diffused. This burden, of itself, should not create a condition of significant industrial unbalance or strain.

ESTIMATED
PRODUCTION
LOSS FROM A
REDUCED LEVEL
OF DAMAGE

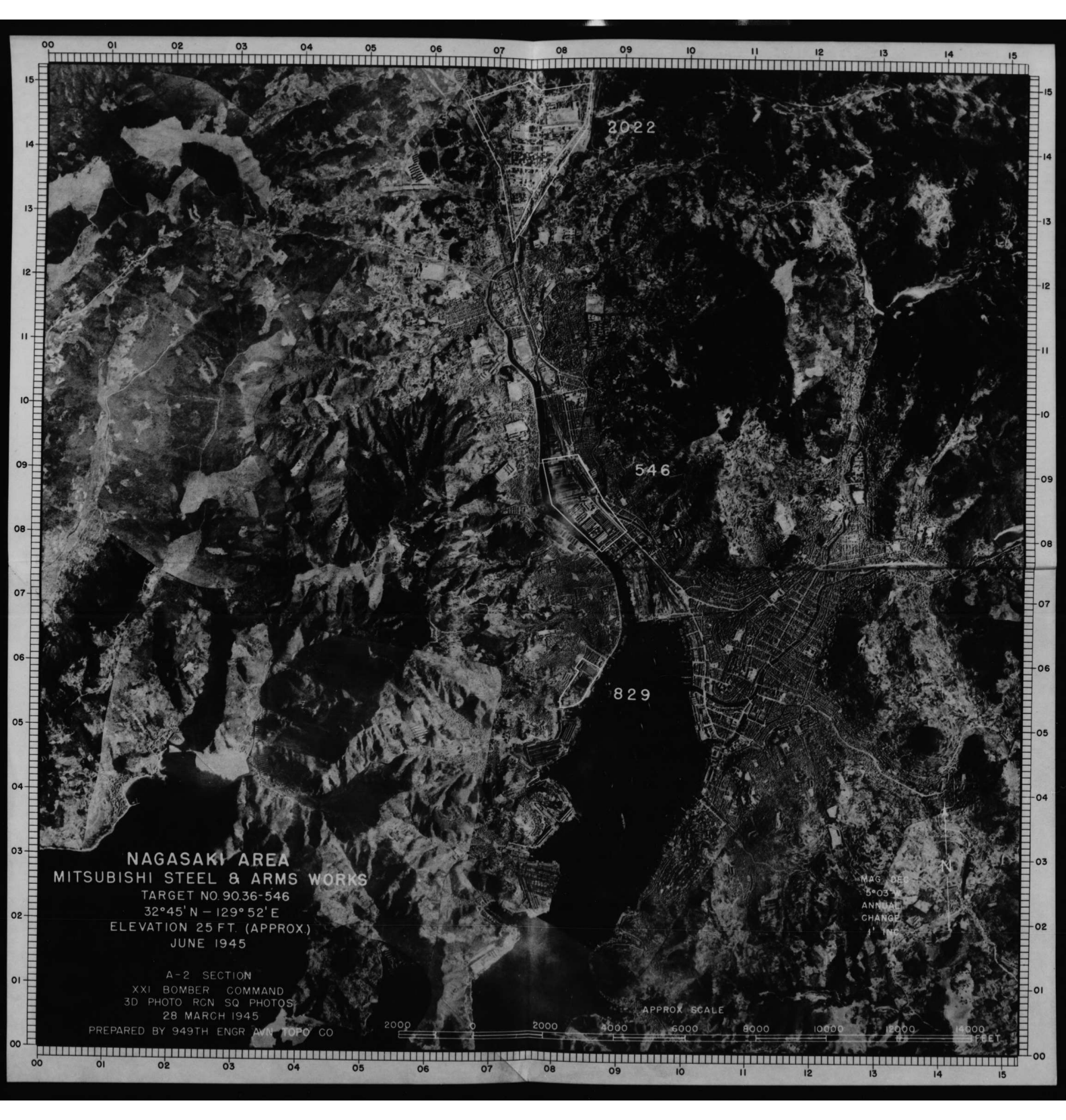
A reduction in the level of damage by some 50 percent, both to industrial plants and housing (destruction of 50 percent of housing in zones R₁ and R₂) would cause direct production loss to decrease somewhat more than a proportionate amount. As the level of damage is still substantial, the effect of the declining rate of absenteeism is not significant. Direct production loss as a proportion of annual industrial production declines from 1.8 months' loss to .85 months' loss.

SIGNIFICANT INSTALLATIONS

(See _____)

Reference Number	Name	Comment
1	TARGET 2022 - Mitsubishi-Urakami Ordnance Plant (Mitsubishi-Urakami Heiki Seisakusho)	Branch of Mitsubishi Steel and Arms Works (TARGET 546); unconfirmed production of ship fittings and naval ordnance.
2	Unidentified Industry	Requires all types of merchant and naval craft.
3	Urakami Branch Gas Works	
4	Barracks	Builds all types of merchant and naval ships.
5	Prison	Reported flour mill and grain storage.
6	Unidentified Industry	
7	Several small unidentified factories	In aggregate, comprises large oil bunkering storage.
8	Medical School & Hospital	Camouflaged, but no other evidence of conversion to other use.
9	Probable Barracks or School	

Reference Number	Name	Comment
10	TARGET 546 - Mitsubishi Steel and Arms Works (Mitsubishi Heiki Seisakusho)	Integrated steel ingot/rolling/casting works, producing ship plate and shapes, as well as naval ordnance (principally torpedoes).
11	TARGET 1795 (now cancelled) - Casting Plant of Mitsubishi Steel and Arms Works	Castings for Mitsubishi Steel and Arms Works (TARGET 546).
12	Mitsubishi Woodworking Plant	Produces wooden fittings and cuts lumber for Nagasaki's shipyards.
13	Steam Power Plant	Small standby plant.
14	Unidentified Small Industry	
15	Unidentified Small Industry	
16	TARGET 828 - Hayashi Commercial Co. Engine Works (Hayashi Kane Shoten KK)	Reported producer of marine engines.
17	(Part of TARGET 1842) - Nagasaki Station and Freight Yard	
18	Kyushu Gas Works	
19	TARGET 1842 - Nagasaki and Dejima Wharves and RR Yards	
20	TARGET 829 - Mitsubishi Electric Mfg. Co. (Mitsubishi Denki KK)	Produces heavy turbo-generators and other electrical equipment.
21	TARGET 542 - Akunoura Engine Works (Mitsubishi Jukogyo KK)	Major producer of marine engines, boilers, etc.
22	TARGET 543 - Mitsubishi Dockyard	Repairs all types of merchant and naval craft.
23	TARGET 544 - Tategami Shipyard (Mitsubishi Jukogyo KK)	Builds all types of merchant and naval ships.
24	Small Industrial Plant	Reported flour mill and grain storage.
25	TARGET 545 - Kozaki Point Oil Storages	In aggregate, comprises large oil bunkering storage.
26	New Shipyard	Probable producer of small standardized cargo vessels.



NAGASAKI AREA
MITSUBISHI STEEL & ARMS WORKS
TARGET NO. 90.36-546
32°45' N - 129° 52' E
ELEVATION 25 FT. (APPROX.)
JUNE 1945

A-2 SECTION
XXI BOMBER COMMAND
3D PHOTO RCN SQ PHOTOS
28 MARCH 1945
PREPARED BY 949TH ENGR AVN TOPO CO

2022

546

829

MAG. DEG.
5°03' N
ANNUAL
CHANGE
1" = 100'

APPROX SCALE

2000 0 2000 4000 6000 8000 10000 12000 14000 FEET

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NOT TO BE TAKEN
INTO THE AIR ON
COMBAT MISSIONS

TARGET: Nagasaki Urban Industrial
Area
Objective Area: 90.36

T A R G E T I N F O R M A T I O N S H E E T

NAGASAKI URBAN INDUSTRIAL AREA

Latitude: 32° 44' N
Longitude: 129° 52' E
Elevation: Approximately Sea Level

1. LOCATION AND IDENTIFICATION: Kyushu is the southernmost main island of the mountain arc of Japan. It is about 200 miles from north to south and 150 miles across. The Gotto-Retto plus the Danjo-Gunto, extend from just off the northwest tip southwest to nearly 128° E. Off the southern tip of Kyushu the Nansei Shoto and associated islands extend all the way to Formosa.

With the exception of a few restricted alluvial deposits where some of the main streams enter the sea, the entire coast line of Kyushu is of the highly irregular submerged type. The island is composed of some sediments but lava flows and other crystalline rocks prevail. The terrain is hilly or mountainous and is chopped up by deep narrow valleys with but a few isolated lowlands limited for the most part to river mouths and bayheads. Numerous large and small volcanoes are scattered over the entire island. Some of these are active and form pillars of cloud by day and pillars of flame by night. They are symmetrical cones having steep upper slopes covered with lava and ash that descend to broad sloping ash aprons and alluvial fans along the coasts.

The more or less isolated northwest corner of Kyushu may be regarded as the "Northwest Hill Lands". This entire province is intricately cut up by rivers and arms of the sea. In the northern part are low rounded flat-topped hills that go up to 1500 feet. The southern part is rugged, has several large volcanic cones, and is separated by large deep bays into three peninsulas which are joined to the rest of Kyushu by large Tara-dake volcano (3,551 feet) and other associated lava cones. One narrow rugged peninsula swings to the north and nearby joins the mainland just south of Sasebo almost land-locking large irregular Omura Bay. Another peninsula extends eastward and its large club-foot shaped east end just about closes off Ariake Bay. It is composed mainly of Unzan-dake volcano (4,488 feet), still active, and a group of smaller cones. The third peninsula is narrow and fairly straight, and juts out to the southwest for about twelve miles. At the west side of its base is short, narrow, and protected Nagasaki Harbor which is almost completely surrounded by rugged hills the ascend abruptly to 900 to 2000 feet.

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The City of Nagasaki, lying along the eastern shore of upper Nagasaki Harbor, is generally thought of as including its industrial suburbs of Inase and Akunoura on the west side of the harbor and Urakami extending northward along both sides of the Urakami River. A combined area of roughly 12 square miles occupies a site similar to an amphitheatre, reaching out from the reclaimed land along the waterfront with tentacle-like growths into the narrow valleys of the surrounding hills. The TARGET AREA (indicated as Zone 1 on the "Incendiary Zone Map of Nagasaki and Vicinity," Map M-4 in Air Objective Folder 90.36) extends from the railroad station at the northeast corner of the harbor southward along the eastern waterfront for approximately 1½ miles, and from a quarter of a mile to a mile inland to the east. Four small rivers flow in a general westerly direction through the city, which is also traversed by several wide avenues.

2. TARGET DESCRIPTION:

a. General -- The Nagasaki area has an estimated population of 253,000 and its average population density of some 7000-8000 per square mile is far below that of Japan's principal industrial cities. However, the congestion within the city (target area) itself is reflected in the jam-packed, eave-to-eave building pattern which has caused Nagasaki to be described as "a sea of roofs". The section of the target area along the waterfront contains all the important port loading and storage facilities, including 30 or more military warehouses. Crowding against this warehouse area on the east is the highly concentrated mercantile district of the city in which are situated the chief harbor/shipping offices and business houses. In the central part of Nagasaki and extending to the NE on either side of the Nakashima River are numerous commercial and government buildings, almost engulfed by the mass of densely grouped small shop buildings and residences which press around them from all sides and overflow in terraced confusion up the slopes of the surrounding hills.

Only slightly less congested as a result of wartime expansion than Nagasaki City itself, is the narrow Akunoura-Inase-Urakami strip along the west shore of the harbor and northward along the Urakami River. (Indicated as Zone 2 on the "Incendiary Zone Map of Nagasaki and Vicinity", Map M-4 in Air Objective Folder 90.36). Construction of housing for shipyard and industrial workers has taken place in these sections and in the N Urakami area barracks for troops have been built.

b. Buildings -- While many of the commercial and public buildings in Nagasaki are of stone and reinforced concrete construction, some of them, such as the main railroad station, are wooden tile-roof structures. No statistics are available on the number of wooden buildings compared with the number of relatively modern fireproof construction, but photographic and other evidence indicates that construction in Nagasaki does not vary from that of other Japanese

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cities, either large or small. It can be assumed on this basis that at least 90% of the target area is composed of crowded highly inflammable wooden structures.

c. Fire Defenses'- The street plan of Nagasaki, conforming mainly to the topographic features of the surrounding hills and the Nakashima River channel, is a negligible factor in controlling the spread of fires. Construction of firebreaks has been made impractical by the limited amount of level space in the city, although a few wide avenues and four river channels and canals running through the city might be partially effective in checking fires. Nagasaki is known to have a plentiful water supply from three reservoirs in the hills to the east, but no information is available on its fire-fighting facilities.

3. IMPORTANCE: Nagasaki's position in western Kyushu has resulted in its becoming vitally important as a port for the trans-shipment of military supplies and the embarkation of troops in support of Japan's operations in China, Formosa, Southeast Asia and the Southwest Pacific. The docks and freight yards adjacent to the target area are believed to be congested with military supplies. Reconnaissance photography and other sources indicate extensive enlargement of these dock and storage facilities.

Industrially the Nagasaki area is most important as a major shipbuilding (estimated 15% of Empire total) and repair center for both naval and merchant vessels, and it is also the location of integrated naval ordnance, marine engine, and marine electrical equipment plants.

Despite the fact that the important industrial targets lie across the harbor to the west, outside the main incendiary zone, the wartime functions of the entire Nagasaki area would be seriously disrupted by a successful incendiary attack on the prescribed target area. Destruction of the freightyards, docks, and military warehouses adjoining Zone 1 would not only cripple the supply-channel facilities, but also would destroy tremendous quantities of valuable military stores. A great many workers from the shipyards and industrial plants across the harbor live in Nagasaki proper, and a general conflagration destroying their housing would have a marked effect on the industrial production of the area.

4. AIMING POINTS: Aiming points will be specified in the Field Order.

28 March 1945

TARGET SECTION, A-2
XXI BOMBER COMMAND

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B

NOT TO BE TAKEN
INTO THE AIR ON
COMBAT MISSIONS

TARGET: Nagasaki Urban Industrial
Area
Objective Area: 90.36

T A R G E T I N F O R M A T I O N S H E E T

NAGASAKI URBAN INDUSTRIAL AREA

Latitude: 32° 44' N
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Elevation: Approximately Sea Level

1. LOCATION AND IDENTIFICATION: Kyushu is the southernmost main island of the mountain arc of Japan. It is about 200 miles from north to south and 150 miles across. The Gotto-Retto plus the Danjo-Gunto, extend from just off the northwest tip southwest to nearly 128° E. Off the southern tip of Kyushu the Nansei Shoto and associated islands extend all the way to Formosa.

With the exception of a few restricted alluvial deposits where some of the main streams enter the sea, the entire coast line of Kyushu is of the highly irregular submerged type. The island is composed of some sediments but lava flows and other crystalline rocks prevail. The terrain is hilly or mountainous and is chopped up by deep narrow valleys with but a few isolated lowlands limited for the most part to river mouths and bayheads. Numerous large and small volcanoes are scattered over the entire island. Some of these are active and form pillars of cloud by day and pillars of flame by night. They are symmetrical cones having steep upper slopes covered with lava and ash that descend to broad sloping ash aprons and alluvial fans along the coasts.

The more or less isolated northwest corner of Kyushu may be regarded as the "Northwest Hill Lands". This entire province is intricately cut up by rivers and arms of the sea. In the northern part are low rounded flat-topped hills that go up to 1500 feet. The southern part is rugged, has several large volcanic cones, and is separated by large deep bays into three peninsulas which are joined to the rest of Kyushu by large Tara-dake volcano (3,551 feet) and other associated lava cones. One narrow rugged peninsula swings to the north and nearby joins the mainland just south of Sasebo almost land-locking large irregular Omura Bay. Another peninsula extends eastward and its large club-foot shaped east end just about closes off Ariake Bay. It is composed mainly of Unzan-dake volcano (4,488 feet), still active, and a group of smaller cones. The third peninsula is narrow and fairly straight, and juts out to the southwest for about twelve miles. At the west side of its base is short, narrow, and protected Nagasaki Harbor which is almost completely surrounded by rugged hills the ascend abruptly to 900 to 2000 feet.

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The City of Nagasaki, lying along the eastern shore of upper Nagasaki Harbor, is generally thought of as including its industrial suburbs of Inase and Akunoura on the west side of the harbor and Urakami extending northward along both sides of the Urakami River. A combined area of roughly 12 square miles occupies a site similar to an amphitheatre, reaching out from the reclaimed land along the waterfront with tentacle-like growths into the narrow valleys of the surrounding hills. The TARGET AREA (indicated as Zone 1 on the "Incendiary Zone Map of Nagasaki and Vicinity," Map M-4 in Air Objective Folder 90.36) extends from the railroad station at the northeast corner of the harbor southward along the eastern waterfront for approximately 1½ miles, and from a quarter of a mile to a mile inland to the east. Four small rivers flow in a general westerly direction through the city, which is also traversed by several wide avenues.

2. TARGET DESCRIPTION:

a. General -- The Nagasaki area has an estimated population of 253,000 and its average population density of some 7000-8000 per square mile is far below that of Japan's principal industrial cities. However, the congestion within the city (target area) itself is reflected in the jam-packed, cave-to-cave building pattern which has caused Nagasaki to be described as "a sea of roofs". The section of the target area along the waterfront contains all the important port loading and storage facilities, including 30 or more military warehouses. Crowding against this warehouse area on the east is the highly concentrated mercantile district of the city in which are situated the chief harbor/shipping offices and business houses. In the central part of Nagasaki and extending to the NE on either side of the Nakashima River are numerous commercial and government buildings, almost engulfed by the mass of densely grouped small shop buildings and residences which press around them from all sides and overflow in terraced confusion up the slopes of the surrounding hills.

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b. Buildings -- While many of the commercial and public buildings in Nagasaki are of stone and reinforced concrete construction, some of them, such as the main railroad station, are wooden tile-roof structures. No statistics are available on the number of wooden buildings compared with the number of relatively modern fireproof construction, but photographic and other evidence indicates that construction in Nagasaki does not vary from that of other Japanese

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cities, either large or small. It can be assumed on this basis that at least 90% of the target area is composed of crowded highly inflammable wooden structures.

c. Fire Defenses:- The street plan of Nagasaki, conforming mainly to the topographic features of the surrounding hills and the Nakashima River channel, is a negligible factor in controlling the spread of fires. Construction of firebreaks has been made impractical by the limited amount of level space in the city, although a few wide avenues and four river channels and canals running through the city might be partially effective in checking fires. Nagasaki is known to have a plentiful water supply from three reservoirs in the hills to the east, but no information is available on its fire-fighting facilities.

3. IMPORTANCE: Nagasaki's position in western Kyushu has resulted in its becoming vitally important as a port for the trans-shipment of military supplies and the embarkation of troops in support of Japan's operations in China, Formosa, Southeast Asia and the Southwest Pacific. The docks and freight yards adjacent to the target area are believed to be congested with military supplies. Reconnaissance photography and other sources indicate extensive enlargement of these dock and storage facilities.

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4. AIMING POINTS: Aiming points will be specified in the Field Order.

28 March 1945

TARGET SECTION, A-2
XXI BOMBER COMMAND

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NOT TO BE TAKEN
INTO THE AIR ON
COMBAT MISSIONS

TARGET: Nagasaki Urban Industrial
Area
Objective Area: 90.36

T A R G E T I N F O R M A T I O N S H E E T

NAGASAKI URBAN INDUSTRIAL AREA

Latitude: 32° 44' N
Longitude: 129° 52' E
Elevation: Approximately Sea Level

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28 March 1945

TARGET SECTION, A-2
XXI BOMBER COMMAND

TARGET SUMMARY

NO. _____ FILE NAGASAKI 4/A
 DATE 18 July '45 COORDINATES _____
 LOCATION West Coast of Kyushu
 FUNCTION _____
 TYPE STRUCTURE _____
 TOTAL AREA _____ BUILT UP AREA _____ %

PLANNING				EXECUTION			
AIM. PT. <u>069 143</u>				DATE _____	MISSION _____		
BOMBING METHOD _____	<u>078 083</u> RAD		FT. _____	FO NO. _____	WING _____		
REF. _____				BOMBING METHOD _____			
IP _____				FORCE _____	AXIS _____		
AXIS <u>32° 18' N</u>	<u>129° 31' E</u>			ALT. _____	TONS/A/C _____		
	<u>35°</u>	ALT. <u>18,000</u>		A/C LOST _____	AS _____		IPH _____
		<u>127102</u>					
		<u>112056</u>					
<u>6 gals - 114086</u>							

BOMBS			BOMBS		
TYPE <u>M17</u>	<u>E48</u>		TYPE _____		
FUZE _____			FUZE _____		
TONS AB _____			TONS AB _____		
IN SET. _____			IN SET. _____		
NO. A/C _____	<u>264</u>		NO. A/C _____		
TONS PT _____			TONS PT _____		

WIND	DIRECTION	VELOCITY	WIND	DIRECTION	VELOCITY
AT ALT. _____			AT ALT. _____		
SURFACE _____			SURFACE _____		
EXP'D DEN. _____	T/A	EXP'D P _____ %	WEATHER OVER TARGET _____		
REMARKS _____			REMARKS _____		

PHOTOS				PHOTOS			
MISSION	ROLL	PRINTS	DATE	MISSION	ROLL	PRINTS	DATE

RESULTS

DENSITY _____	T/A	AREA DAMAGED _____	SQ. FT
FRACTION OF DAMAGE _____		STRUCTURAL _____	SQ. FT
REMARKS _____		SUPERFICIAL _____	SQ. FT

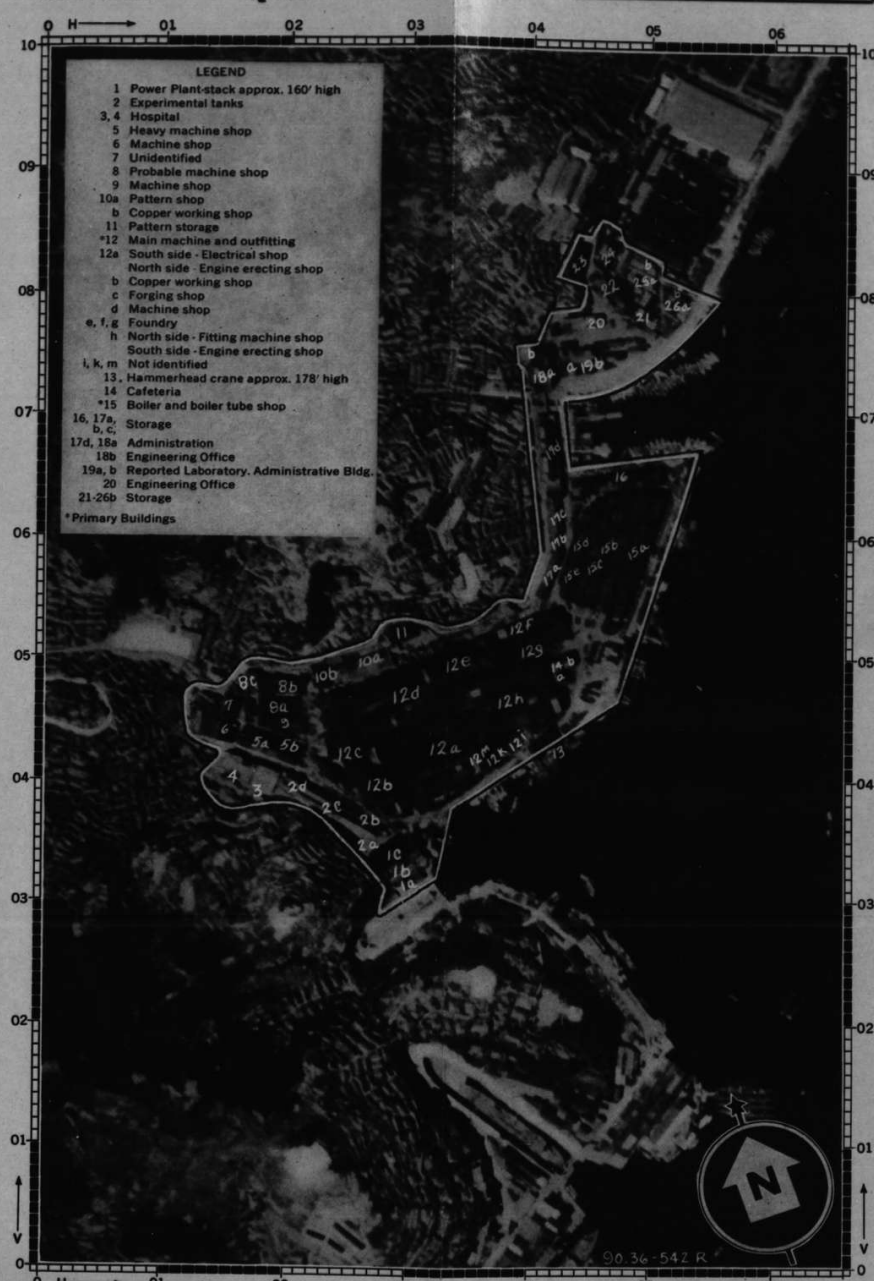
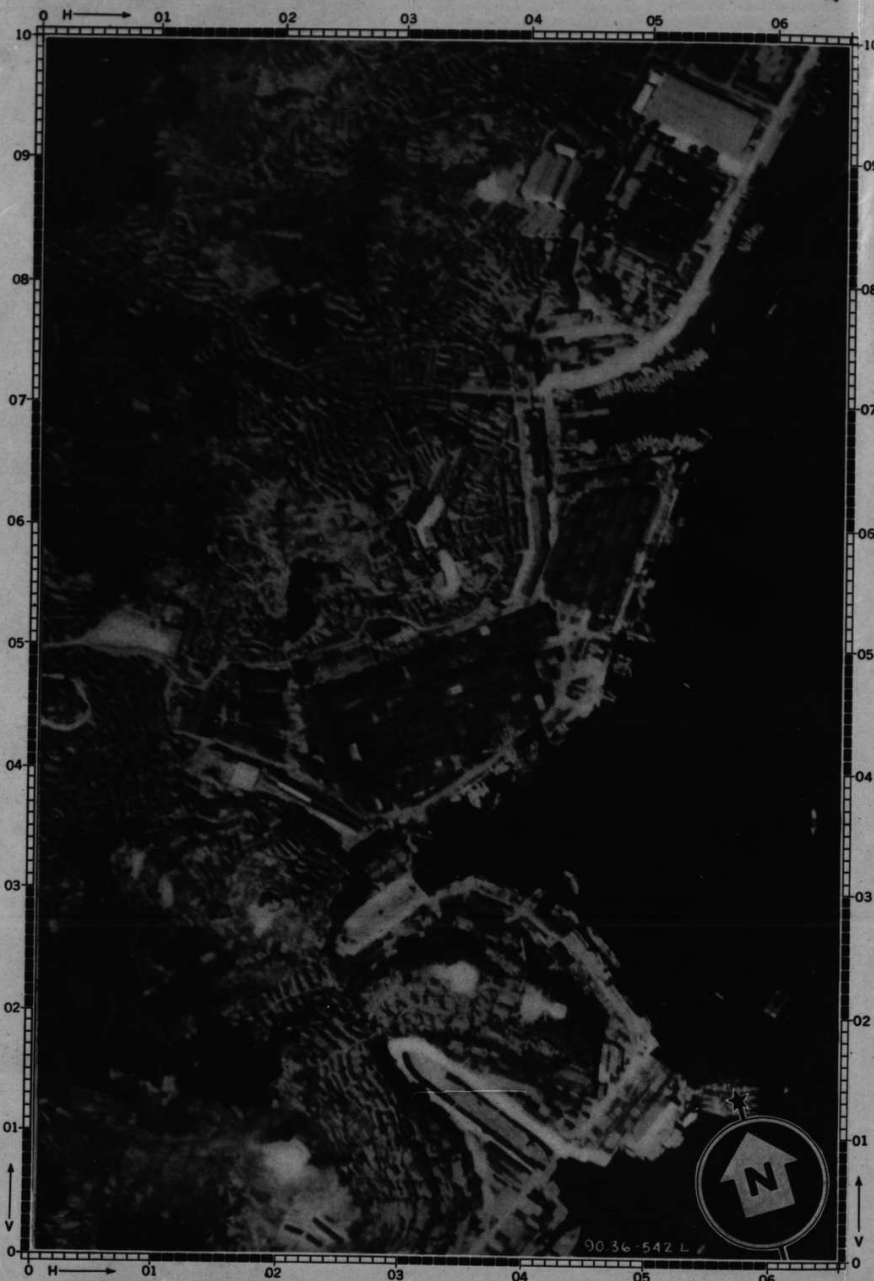
**JOINT
TARGET
GROUP**
WASHINGTON, D. C.

**AKUNOURA ENGINE WORKS
NAGASAKI JAPAN**

CONFIDENTIAL

ILLUSTRATION No. . 90.36-542 P3/1
DATE 19 April 1945
TARGET No. 90.36-542
COORDINATES . . . 32°44'N 129°52'E
PHOTOGRAPHED . . . 20 August 1944

0 500 1000 1500 2000 2500 3000 FEET
0 1/4 1/2 MILE
1:6000 APPROX.



- LEGEND**
- 1 Power Plant-stack approx. 160' high
 - 2 Experimental tanks
 - 3, 4 Hospital
 - 5 Heavy machine shop
 - 6 Machine shop
 - 7 Unidentified
 - 8 Probable machine shop
 - 9 Machine shop
 - 10a Pattern shop
 - b Copper working shop
 - 11 Pattern storage
 - *12 Main machine and outfitting
 - 12a South side - Electrical shop
 - North side - Engine erecting shop
 - b Copper working shop
 - c Forging shop
 - d Machine shop
 - e, f, g Foundry
 - h North side - Fitting machine shop
 - South side - Engine erecting shop
 - i, k, m Not identified
 - 13 Hammerhead crane approx. 178' high
 - 14 Cafeteria
 - *15 Boiler and boiler tube shop
 - 16, 17a Storage
 - b, c Administration
 - 17d, 18a Engineering Office
 - 18b Engineering Office
 - 19a, b Reported Laboratory, Administrative Bldg.
 - 20 Engineering Office
 - 21-26b Storage
- *Primary Buildings





NAGASAKI
Kyushu Island, Japan
SCALE 1:15,000
NAVY BOMBER COMMAND
21 AUGUST 1944
RESTRICTED



NAGASAKI CITY

32° 45' N - 129° 52' W

MARCH 1945

A-2 SECTION

XXI BOMBER COMMAND

XX BOMCOM PHOTOS

AUGUST 1944

PREPARED BY 949TH ENGR AVN TOPO CO

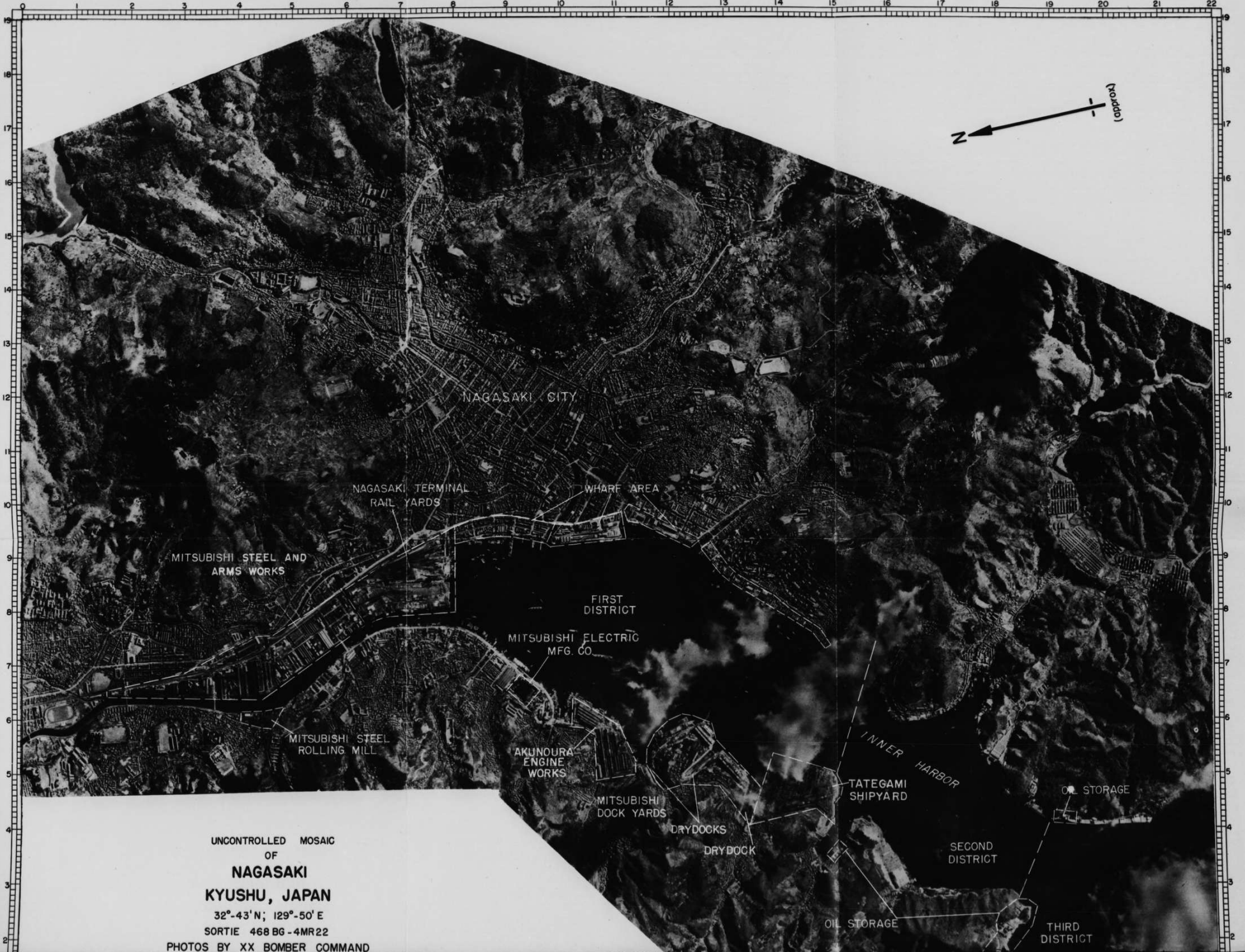
MAG. DEC.

5° 03' W

ANNUAL CHANGE

1' INC





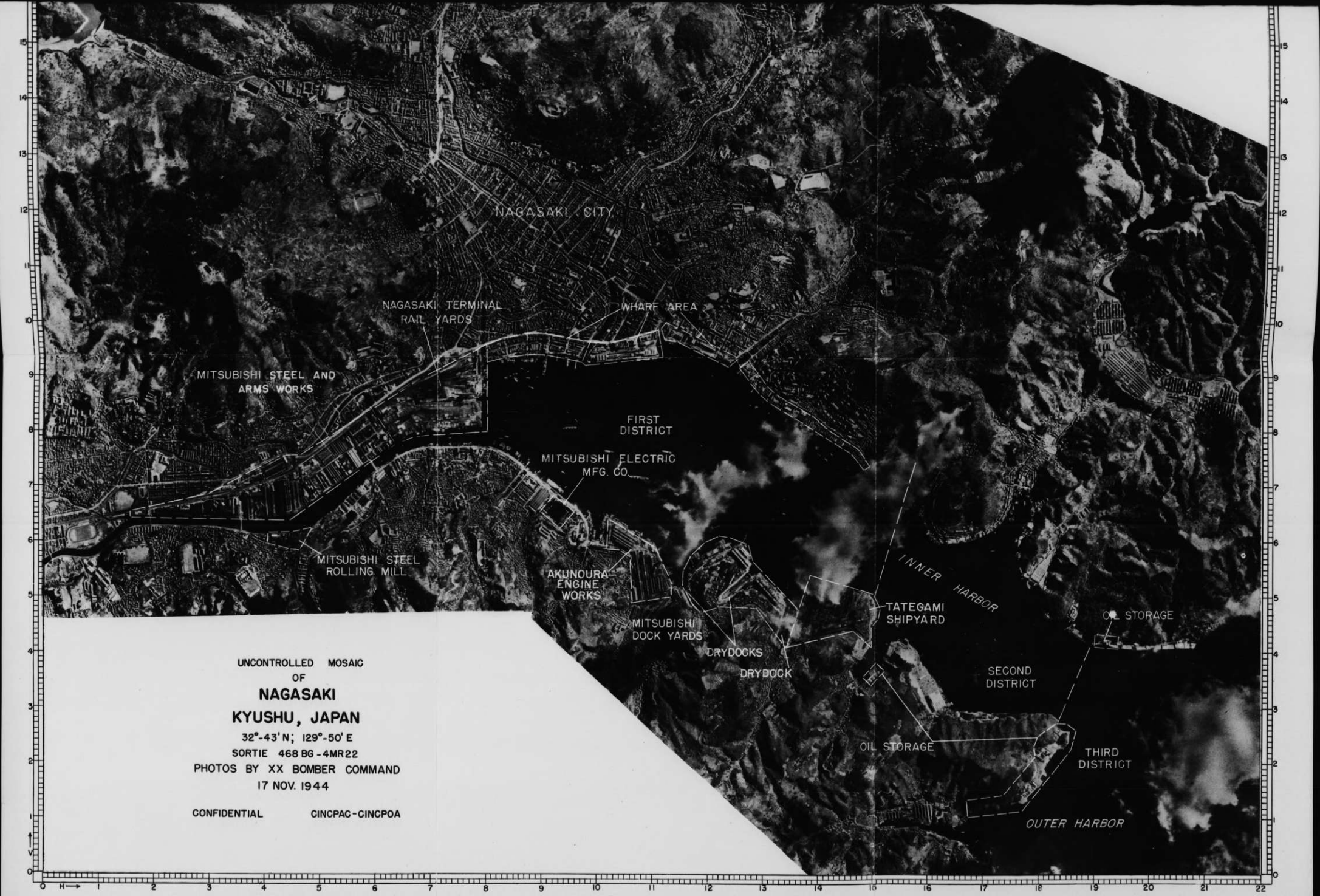
UNCONTROLLED MOSAIC
OF
NAGASAKI

KYUSHU, JAPAN

32°-43' N; 129°-50' E

SORTIE 468 BG-4MR22

PHOTOS BY XX BOMBER COMMAND



UNCONTROLLED MOSAIC
OF
NAGASAKI

KYUSHU, JAPAN

32°-43' N; 129°-50' E

SORTIE 468 BG-4MR22

PHOTOS BY XX BOMBER COMMAND

17 NOV. 1944

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CINCPAC-CINCPQA

NAGASAKI CITY

NAGASAKI TERMINAL
RAIL YARDS

WHARF AREA

MITSUBISHI STEEL AND
ARMS WORKS

FIRST DISTRICT

MITSUBISHI ELECTRIC
MFG. CO.

MITSUBISHI STEEL
ROLLING MILL

AKUNOURA
ENGINE
WORKS

MITSUBISHI
DOCK YARDS

DRYDOCKS

DRYDOCK

INNER HARBOR

TATEGAMI
SHIPYARD

OIL STORAGE

SECOND DISTRICT

OIL STORAGE

THIRD DISTRICT

OUTER HARBOR

file Nagasaki

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C. I. U.
TWENTIETH AIR FORCE
APO 234, c/o POSTMASTER
SAN FRANCISCO, CALIFORNIA

18 August 1945

DAMAGE ASSESSMENT REPORT NO. 187

NAGASAKI-90.36-URBAN

20 Air Force Mission SBM-16, 9 August 1945 509th Bomb Group

SUMMARY OF DAMAGE

Built-up area: Sq.Mi. total - 3.3; Sq.Mi. destroyed - 1.40

Percent destroyed - 42.4

Total damage to date: 1.45 sq.mi. Percent of built-up area: 43.9

Targets damaged by current strike: 4 numbered; 18 other

DAMAGE WITHIN LIMITS OF BUILT-UP AREA:

<u>Area damage from current strike:</u>	<u>Sq. Mi.</u>	<u>Destroyed</u>	
		<u>Sq.Mi.</u>	<u>Percent</u>
Built-up area (Urban)	2.3	1.0	35.7
Built-up area (Industrial)	.50	.40	80.0
Built-up area (Total)	3.3	1.40	42.4

Area damage from all strikes:

Built-up area (Urban)	2.3	1.0	35.7
Built-up area (Industrial)	.50	.45	90.0
Built-up area (Total)	3.3	1.45	43.9

Damage to targets

	<u>Damage</u>
542 Akunoura Engine Works	60% destroyed and gutted (old damage - cause unknown)
546 Mitsubishi Steel & Arms Works	95% destroyed and gutted (old damage - cause unknown)
829 Mitsubishi Electric Mfg. Co.	5% destroyed
1795 Mitsubishi Steel Rolling Mill	100% gutted
1842 Nagasaki & Dejima Wharves & RR Yards	60% destroyed

At least 21 small unidentified industries were in the built-up area - of these 18 were destroyed.

DAMAGE OUTSIDE BUILT-UP AREA (within 5 mile-radius of center of city)

Area damage: none

Damage to targets:

	<u>Damage</u>
543 Mitsubishi Dockyard	None visible
544 Tategami Shipyard	None visible
545 Kozaki Point Oil Storage	None visible (partial coverage)
832 Megami Point Oil Storage	None visible
860 Kawanami Ind. Co. Shipyard	Not covered
Okagura Dam	None visible
Large barracks area S of city	None visible
2022 Mitsubishi-Murakami Ordnance Plant	100% destroyed

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D/A Report 137 - Con't

Reference: AAF Air Objective Folder 90.36

Photos: Pre-strike: 3PR5M366-3: 31-06 29 July 1945
Post-strike: 3PR5M396-2: 9-12 13 August 1945

Inclosures: 1. Annotated mosaic showing damage
2. Post-strike mosaic

Approved. *P. A. V. C. B...*
HAMILTON D. DARBY
MAJOR, AC

DISTRIBUTION "B"

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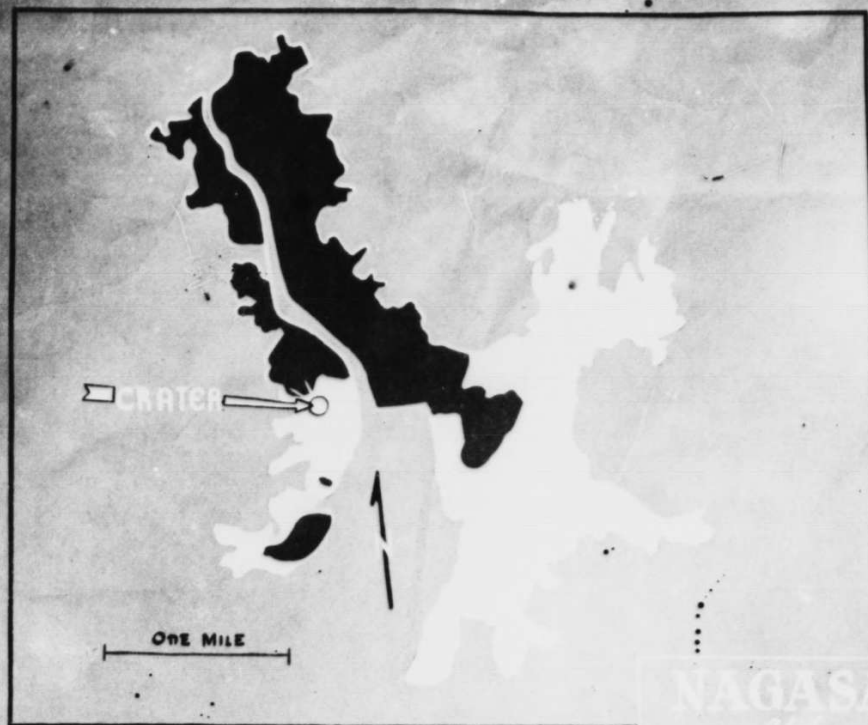


Damage Assessment Report
 NAGASAKI 187
 90.36 - Urban
 Mission SBM 18 STRIKE
 9 AUG. 1945
 G.I.U. - 20 A.F.

KEY
 — Urban Built-Up Area
 Industrial Built-Up Area
 Sparsely Built-Up Area
 New Damage
 Old Damage



DAMAGE ASSESSMENT RPT 187
POST STRIKE
NAGASAKI-90.36-URBAN
20 AF MISSION SBM 16 STRIKE
9 AUG. 1945
CIU-20 AF
CONFIDENTIAL



NAGASAKI

Nippon

MISSION NO	SBM-16			
DAMAGE	1.4 SQ. MI. (44%)			
WINGS	509th B.G.			
DATE	9 AUG. 45			
DAY/NIGHT				
BOMB TYPE				
AV. LOAD				
A/C AIRBORNE				
A/C BOMB. P.T.				
TONS ON P.T.				
ALTITUDE				
BOMB. METH.				
CLAIMS				
LOSSES				

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NOT TO BE TAKEN
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TARGET: Nagasaki Urban Industrial
Area
Objective Area: 90,36

T A R G E T I N F O R M A T I O N S H E E T

NAGASAKI URBAN INDUSTRIAL AREA

Latitude: 32° 44' N
Longitude: 129° 52' E
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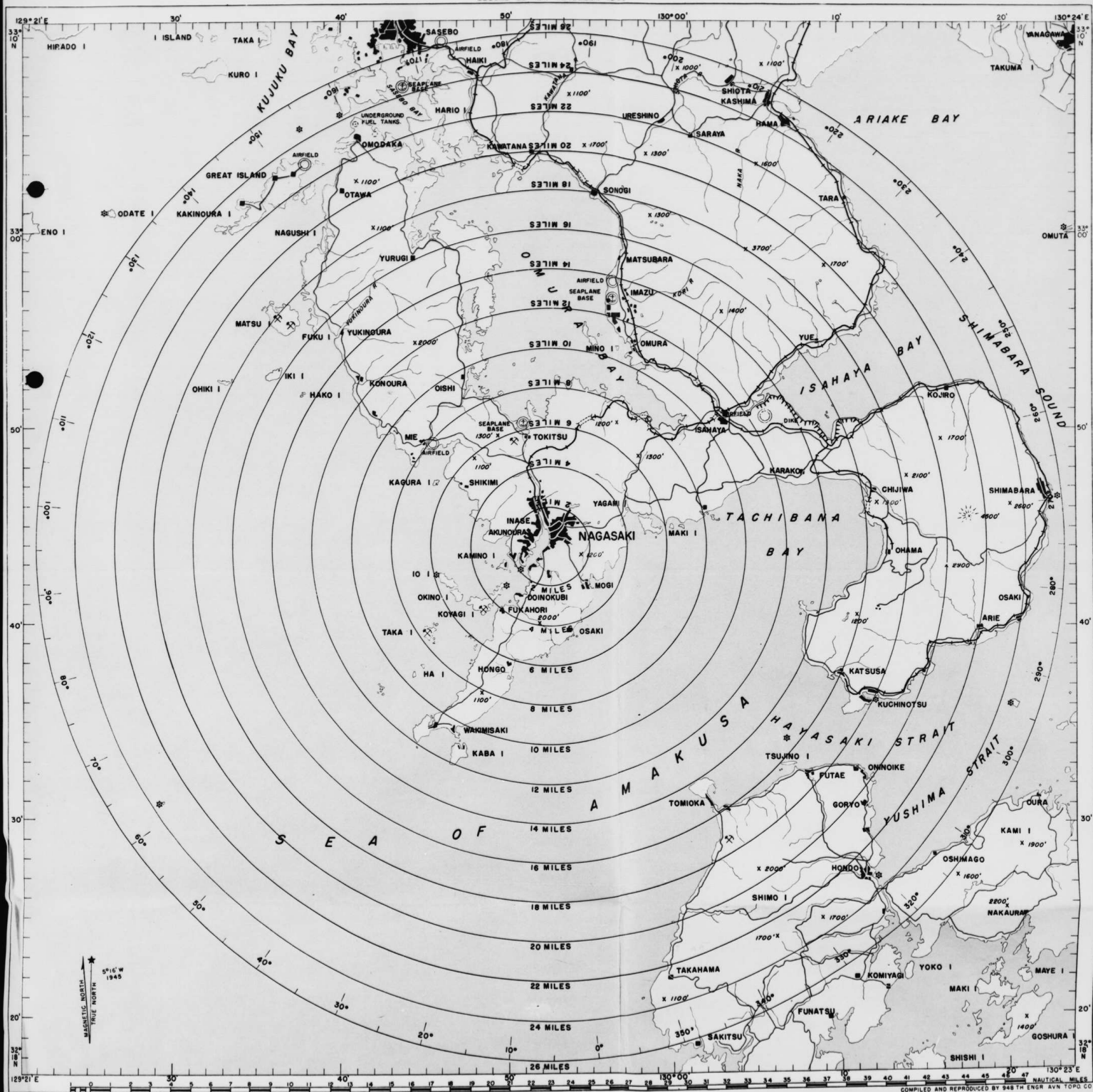
Industrially the Nagasaki area is most important as a major shipbuilding (estimated 15% of Empire total) and repair center for both naval and merchant vessels, and it is also the location of integrated naval ordnance, marine engine, and marine electrical equipment plants.

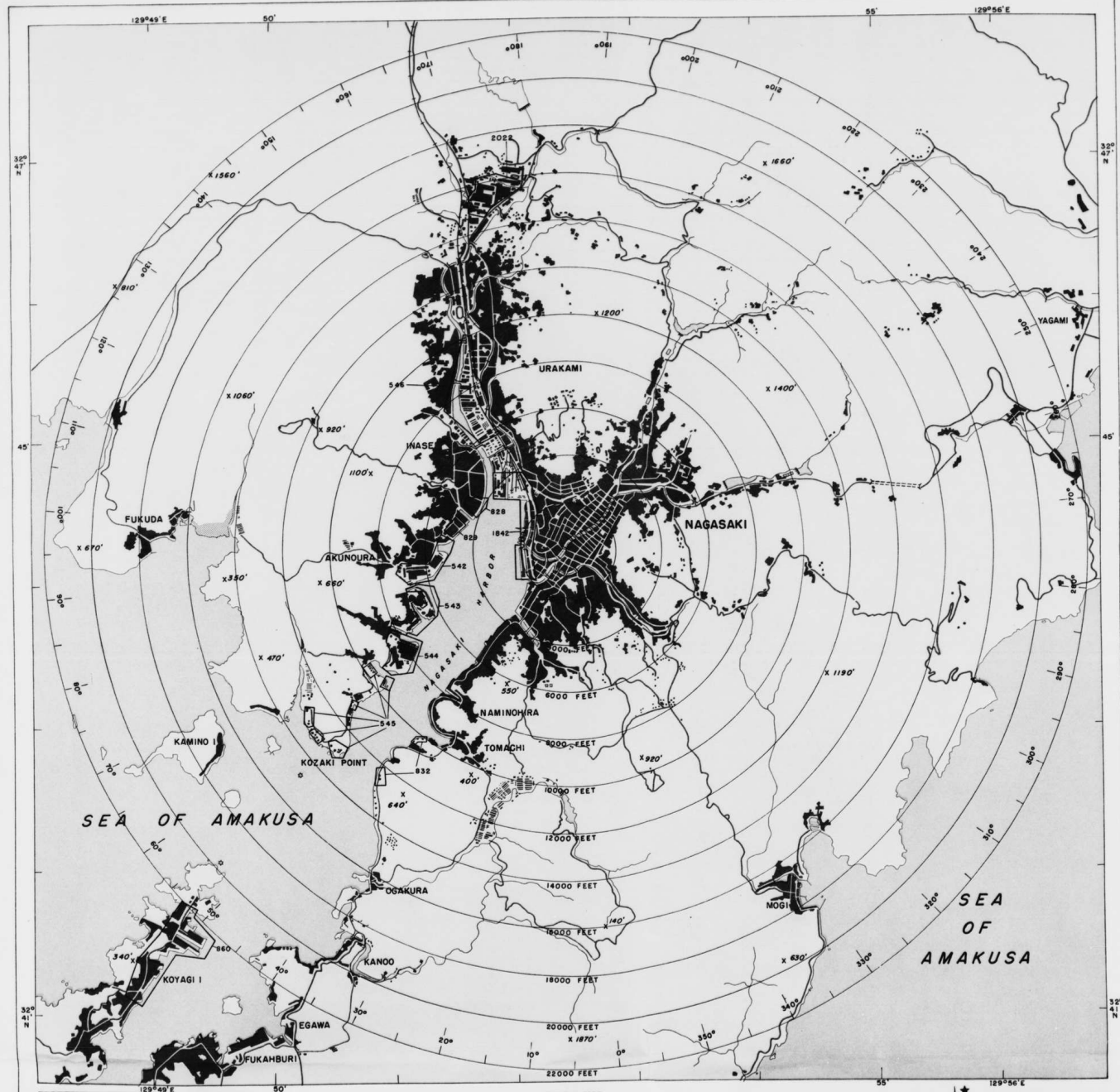
Despite the fact that the important industrial targets lie across the harbor to the west, outside the main incendiary zone, the wartime functions of the entire Nagasaki area would be seriously disrupted by a successful incendiary attack on the prescribed target area. Destruction of the freightyards, docks, and military warehouses adjoining Zone 1 would not only cripple the supply-channel facilities, but also would destroy tremendous quantities of valuable military stores. A great many workers from the shipyards and industrial plants across the harbor live in Nagasaki proper, and a general conflagration destroying their housing would have a marked effect on the industrial production of the area.

4. AIMING POINTS: Aiming points will be specified in the Field Order.

28 March 1945

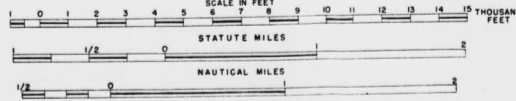
TARGET SECTION, A-2
XXI BOMBER COMMAND





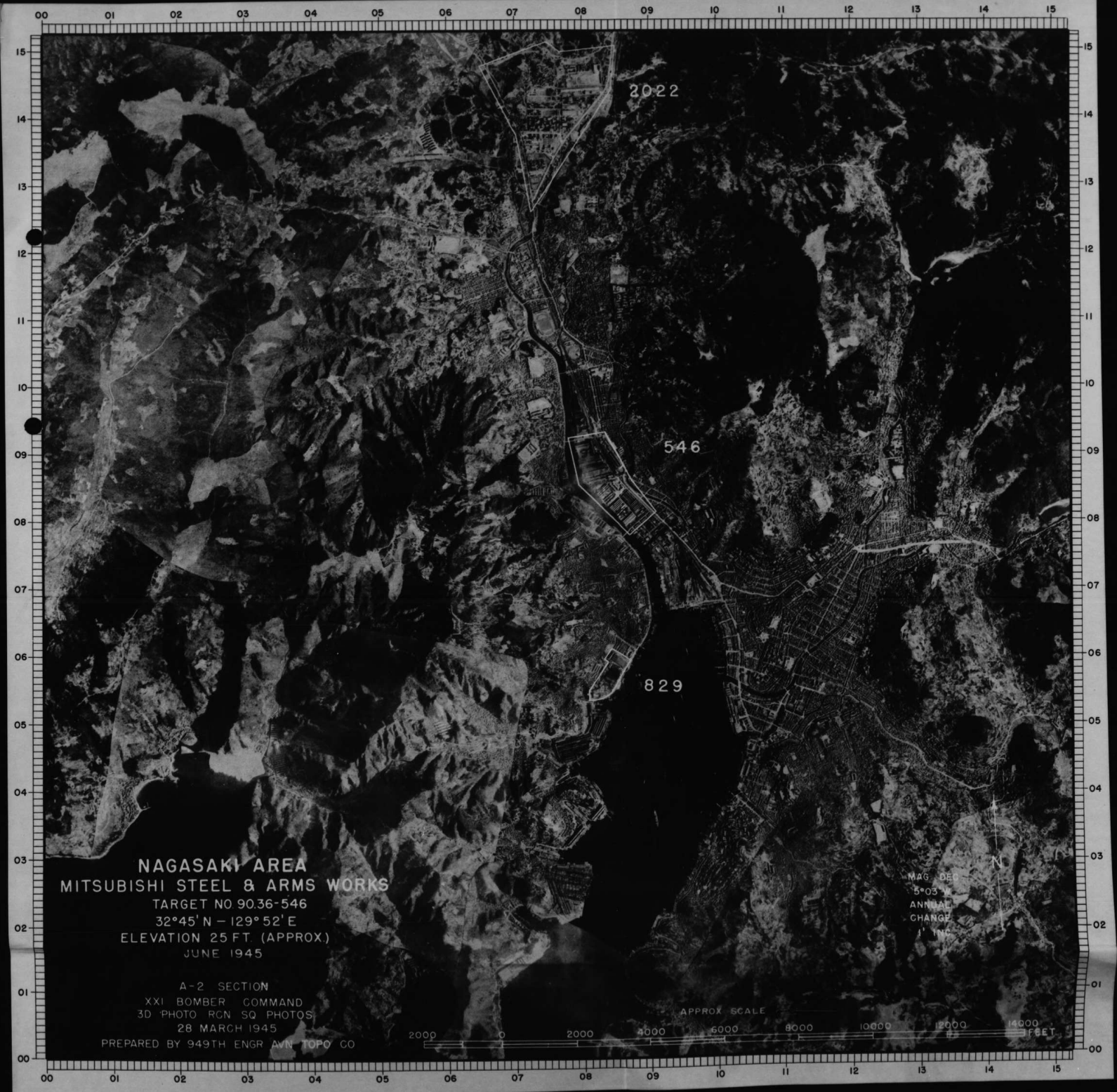
NO.	DESIGNATION	ELEV.
542	AKUNOURA ENGINE WORKS	15'
543	MITSUBISHI DOCKYARD	15'
544	TATEGAMI SHIPYARD	15'
545	KOZAKI POINT OIL STORAGE	15'
546	MITSUBISHI STEEL & ARMS WORKS	25'
828	HANASHI COMMERCIAL CO ENGINE WORKS	15'
829	MITSUBISHI ELECTRIC MFG CO	15'
832	MISAKI POINT OIL STORAGE	15'
860	KAWANAMI INDUSTRY CO SHIPYARD	20'
1802	NAGASAKI & DEJIMA WHARVES & BARRACKS	15'
2022	MITSUBISHI-URAKAMI ORDNANCE PLANT	50'

COMPILED FROM A-17 TARGET CHART, 90.36-542, FEBRUARY, 1944
468 TH BOMB GROUP PHOTOS, NOVEMBER, 1944
21 ST PHOTO. RECON. SQDN. PHOTOS, OCTOBER, 1944



COMPASS ROSE INDICATES
MAGNETIC BEARING TOWARD
THE TARGET.

ANNUAL MAGNETIC
CHANGE: 2' INCREASE
M.V. 5°16' W (1945)



NAGASAKI AREA
MITSUBISHI STEEL & ARMS WORKS
TARGET NO 9036-546
32°45' N - 129° 52' E
ELEVATION 25 FT. (APPROX.)
JUNE 1945

A-2 SECTION
XXI BOMBER COMMAND
3D PHOTO RCN SQ PHOTOS
28 MARCH 1945
PREPARED BY 949TH ENGR AVN TOPO CO

MAG DEC
5°03' N
ANNUAL
CHANGE
1" = 1000'

APPROX SCALE



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C. I. U.
TWENTIETH AIR FORCE
APO 234, c/o POSTMASTER
SAN FRANCISCO, CALIFORNIA

10 August 1945

SPECIAL FLASH DAMAGE ASSESSMENT REPORT NO. 10

Mission No.: 3FR5M 395

Target Area: Sasebo (90.36)

Date Flown: 9 August 1945

Airplane Commander: T. C. Kendall
1st Lt, AC

20 AF Mission SBM 16, 9 August 1945, 509th Group

TARGET NAGASAKI 90.36 URBAN:

Photos show target completely smoke obscured.

Approved.....
FRANK E. DELANEY
CAPT, AC, Asst A-2

H. D. Darby
Approved.....
HAMILTON D. DARBY
MAJOR, AC, In Charge

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C. I. U.
 TWENTIETH AIR FORCE
 APO 234, c/o POSTMASTER
 SAN FRANCISCO, CALIFORNIA

SPECIAL DAMAGE ASSESSMENT
FLASH REPORT NO. 11

DATE: 10 August 1945

Mission No. 3PR5M 398

Target Area: Sasebo (90.36)

Date Flown: 10 August 1945

A/C Commander: W. L. Voris,
 1st Lt., AC:

Mean Time of Photography: 1010K

Altitude (average): 31,000'

(This tentative report is subject to change
 after a more detailed study and is to be
 considered strictly as advance information.)

Damage to NAGASAKI - 90.36 - Urban.

20AF SBM 16 - Strike, 9 August 1945. 509th Bomb Group.

Built-up area: Sq. Mi. Total: 3.3 Sq. Mi. Destroyed: 0.98

Percent Destroyed: 30

Targets damaged by current strike: 4 numbered, 9 other.

Quality and limitations of photographs: 25% cloud cover.
 Much of city in dark cloud shadow.

Damage confined mainly to NW portion of city. No
 damage in South quarter of city.

No damage to shipping noted.

Damage to targets is as follows:

<u>Number</u>	<u>Name</u>	<u>Extent of Damage</u>
546	Mitsubishi Steel & Armas Works. (In cloud shadow)	Probably destroyed.
2022	Mitsubishi-Urakani Ordnance Plant	30% damaged. 70% cloud ob- scured. One large saw-tooth roof building gutted. 5 smaller buildings gutted.
	Urakani Branch, Gas Works	90% destroyed. All buildings seem destroyed. Gasometer ap- parently remains. Photo coverage dark and hazy.
	Mitsubishi Woodworking Plant	100% destroyed.
	Kyushu Gas Works	50% destroyed. 3 buildings destroyed. Two gasometers apparently undamaged.

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SPECIAL DAMAGE ASSESSMENT
FLASH REPORT NO. 11, Cont'd.

<u>Target - Name</u>	<u>Extent of Damage</u>
Nagasaki Station & Freight Yard	- 20% destroyed. Hazy photos show numerous small shop-type bldgs. destroyed. 2 possible train sheds - gutted.
Unidentified Industry	100% destroyed or damaged. Partly smoke obscured area seems a mass of crumbled ruins.
Steam Power Plant	90% destroyed. 2 largest bldgs. gutted. Several small bldgs. destroyed. Fire noted still burning in target area.
Several small Unidentified Factories	- 100% destroyed or damaged. Partly smoke obscured. Target area seems a mass of crumbled ruins.
Unidentified Small Industry	Target area still afire. Plant area obscured by smoke.
Unidentified Industry	100% damaged. One large bldg. still burning. 5 small bldgs. apparently damaged.
Prison	Probably 100% destroyed. All bldgs. apparently destroyed. Area partly smoke obscured.
1842 - Nagasaki & Dejima Wharves & R. R. Yards.	- 25% destroyed.
542 - Akunoura Engine Works (Mitsubishi Jukogyo KK)	- About 65% damage (gutted or structural)
Eldg. No. 12E	- 100% destroyed.
" " 12F	- 100% Structural Damage.
" " 12G	- Minor Damage.
" " 12H	- " " "
" " 15a, b, c, d, e,	100% structural damage.
" " 16	- Minor Damage.

(Reference: J.T.G. Illustration No. 90.36-542 P3/1, 21 March 1945)

Damage is located as follows on XXI BC Litho-Mosaic, Nagasaki Area, Mitsubishi Steel & Arms Works, 90.36-546, June 1945.

Area bounded by: 075130, 081120, 082113, 080099, 085090, 090085, 118064, 112059, 110055, 104056, 106060, 103065, 100065, 099067, 099070, 092078, 089076, 080085, 078102, 073109, 070114, 069117, 070120, 073123, 075130.

Area bounded by: 069119, 070113, 072110, 073107, 076105, 077100, 077094, 070095, 069102, 064104, 067105, 065111, 061114, 059115, 060116, 069119.

Area bounded by: 077088, 077084, 071084, 073085, 071091, 072092, 073091, 077088.

Area bounded by: 081082, 088075, 089072, 086072, 083074, 079070, 080076, 078078, 081082.

Area bounded by: 084051, 081045, 079044, 077050, 080051, 084051.

APPROVED. *[Signature]* APPROVED. *[Signature]*
HAMILTON D. DARBY, FRANK E. DELANEY,
for Major, AC, In Charge. for Captain, AC, Asst A-2

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C. I. U.
 TWENTIETH AIR FORCE
 APO 234, c/o POSTMASTER
 SAN FRANCISCO, CALIFORNIA

18 August 1945

DAMAGE ASSESSMENT REPORT NO. 187

NIIGASAKI-90.36-URBAN

20 Air Force Mission SBM-16, 9 August 1945 509th Bomb Group

SUMMARY OF DAMAGE

Built-up area: Sq.Mi. total - 3.3; Sq.Mi. destroyed - 1.40

Percent destroyed - 42.4

Total damage to date: 1.45 sq.mi. Percent of built-up area: 43.9

Targets damaged by current strike: 4 numbered; 13 other

DAMAGE WITHIN LIMITS OF BUILT-UP AREA:

<u>Area damage from current strike:</u>	<u>Sq. Mi.</u>	<u>Destroyed</u>	
		<u>Sq.Mi.</u>	<u>Percent</u>
Built-up area (Urban)	2.8	1.0	35.7
Built-up area (Industrial)	.50	.40	80.0
Built-up area (Total)	3.3	1.40	42.4

Area damage from all strikes:

Built-up area (Urban)	2.8	1.0	35.7
Built-up area (Industrial)	.50	.45	90.0
Built-up area (Total)	3.3	1.45	43.9

Damage to targets

Damage

542 Arunoura Engine Works	60% destroyed and gutted (old damage - cause unknown)
546 Mitsubishi Steel & Arms Works	95% destroyed and gutted (old damage - cause unknown)
829 Mitsubishi Electric Mfg. Co.	5% destroyed
1795 Mitsubishi Steel Rolling Mill	100% gutted
1942 Nagasaki & Dejima Wharves & RR Yards	60% destroyed

At least 21 small unidentified industries were in the built-up area - of these 13 were destroyed.

DAMAGE OUTSIDE BUILT-UP AREA (within 5 mile radius of center of city)

Area damage: none

Damage to targets:

Damage

543 Mitsubishi Dockyard	None visible
544 Tategami Shipyard	None visible
545 Kozaki Point Oil Storage	None visible (partial coverage)
832 Megami Point Oil Storage	None visible
860 Kawanami Ind. Co. Shipyard	Not covered
Okagura Dam	None visible
Large barracks area S of city	None visible
2022 Mitsubishi-Murakami Ordnance Plant	100% destroyed

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D/A Report 187 - Con't

Reference: AAF Air Objective Folder 90.36

Photos: Pre-strike: 3PR5M366-3: 01-06 29 July 1945
Post-strike: 3PR5M396-2: 9-12 13 August 1945

Inlosures: 1. Annotated mosaic showing damage
2. Post-strike mosaic

Approved. *P. A. V. C. B...*
HAMILTON D. DARBY
MAJOR, AC

DISTRIBUTION "B"

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Damage Assessment Report
 NAGASAKI 187
 90.36 - Urban
 Mission SBM 16 STRIKE
 9 AUG. 1945
 CIU-20 A.F.

KEY
 — Urban Built-Up Area
 - - - Industrial Built-Up Area
 ▨ Sparsely Built-Up Area
 ▩ New Damage
 ▧ Old Damage

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DAMAGE ASSESSMENT RPT 187
POST STRIKE
NAGASAKI-90.36-URBAN
20 AF MISSION SBM 16 STRIKE
9 AUG. 1945
CIU-20 AF
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ONE MILE