

AWM52
2nd Australian Imperial Force and
Commonwealth Military Forces unit war
diaries, 1939-45 War

Item number: 8/2/21

21 Infantry Brigade

Intelligence Review No. 4, Oboe
Two 1945

8/2/21

AUSTRALIAN ARCHIVES
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Appendices to 1 Aust. Corps
Intelligence Review No. 4
"OBOE TWO"
May, 1945.

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APPENDICES TO IAUST CORPS
INTELLIGENCE REVIEW NO. 4

Ob oe Two

OIL INSTALLATIONS & POSSIBLE OIL STREAMS

- WHARF No. 7
- 1 x 1 1/2" BLACK OIL LINE
 - 1 x 4" WHITE OIL LINE
 - 1 x 2" DRINKING WATER LINE
 - 1 x 2" FRESH WATER LINE (FOR BOILERS)
 - 1 x 3" STEAM LINE
 - 1 x 3" FOAMITE LINE

- WHARF No. 6
- 1 x 4" SLOP LINE
 - 1 x 6" WHITE OIL LINES (BENZINE)
 - 1 x 10" BLACK OIL LINES
 - 1 x 8" LUBRICATING LINE
 - 1 x 2" DRINKING WATER LINE
 - 1 x 2" FRESH WATER LINE (FOR BOILERS)
 - 1 x 3" STEAM LINE
 - 1 x 3" FOAMITE LINE

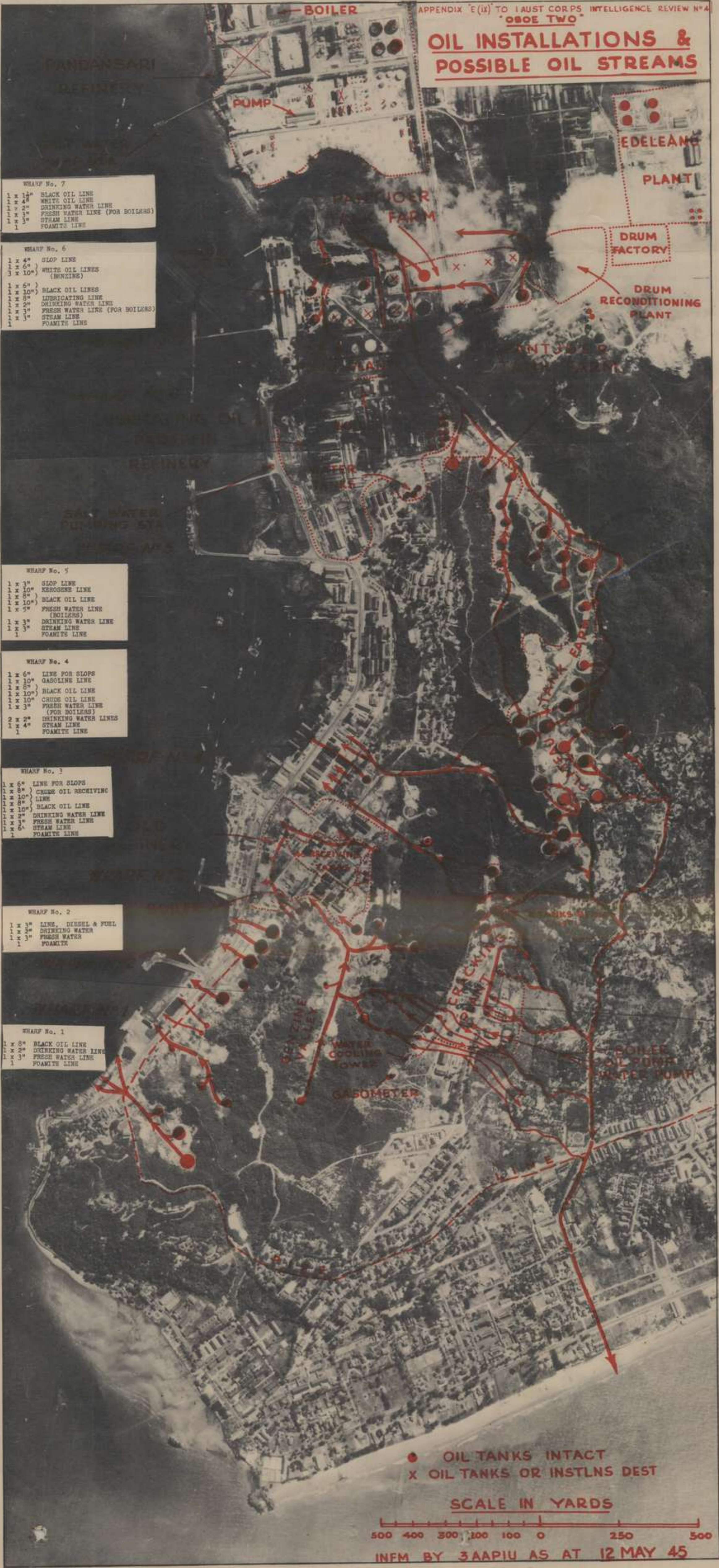
- WHARF No. 5
- 1 x 3" SLOP LINE
 - 1 x 10" KEROSENE LINE
 - 1 x 8" BLACK OIL LINE
 - 1 x 10" FRESH WATER LINE (BOILERS)
 - 1 x 3" DRINKING WATER LINE
 - 1 x 3" STEAM LINE
 - 1 x 3" FOAMITE LINE

- WHARF No. 4
- 1 x 6" LINE FOR SLOPS
 - 1 x 10" GASOLINE LINE
 - 1 x 8" BLACK OIL LINE
 - 1 x 10" CRUDE OIL LINE
 - 1 x 3" FRESH WATER LINE (FOR BOILERS)
 - 2 x 2" DRINKING WATER LINES
 - 1 x 4" STEAM LINE
 - 1 x 4" FOAMITE LINE

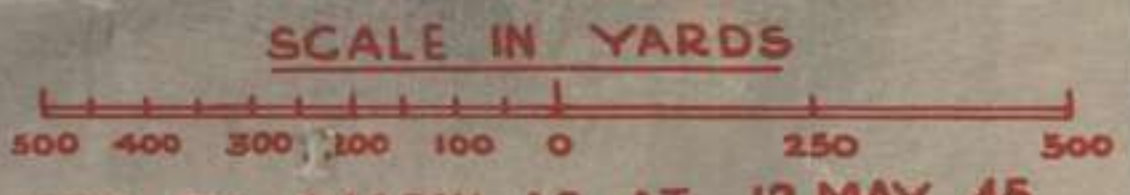
- WHARF No. 3
- 1 x 6" LINE FOR SLOPS
 - 1 x 8" CRUDE OIL RECEIVING LINE
 - 1 x 8" BLACK OIL LINE
 - 1 x 3" DRINKING WATER LINE
 - 1 x 3" FRESH WATER LINE
 - 1 x 6" STEAM LINE
 - 1 x 6" FOAMITE LINE

- WHARF No. 2
- 1 x 3" LINE, DIESEL & FUEL
 - 1 x 2" DRINKING WATER
 - 1 x 3" FRESH WATER
 - 1 x 3" FOAMITE

- WHARF No. 1
- 1 x 8" BLACK OIL LINE
 - 1 x 2" DRINKING WATER LINE
 - 1 x 3" FRESH WATER LINE
 - 1 x 3" FOAMITE LINE



● OIL TANKS INTACT
X OIL TANKS OR INSTLNS DEST



INFM BY 3A APIU AS AT 12 MAY 45

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APPENDICES TO 1 AUST CORPS INTELLIGENCE REVIEW NO 4

OBOE TWO

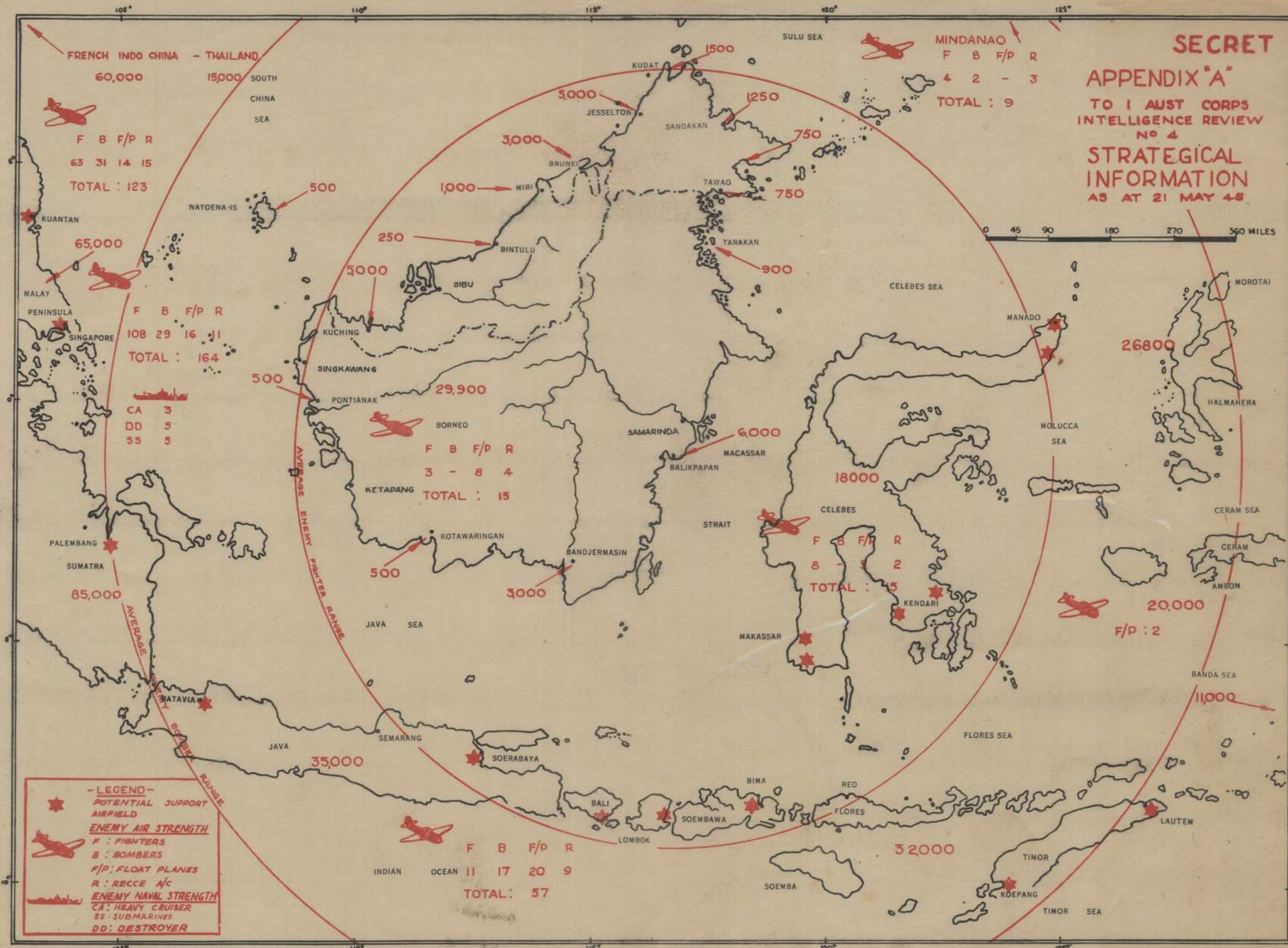
- "A" Strategic Information
- "B" Enemy Strengths - BORNEO
- "C" DUTCH Defences - BALIKPAPAN
- "D" (i) Enemy Defences - BALIKPAPAN
(ii) " " - SEPINGGANG - MANGGAR
(iii) Characteristics of Japanese AA weapons
- "E" (i) Annotated Air Photographs of
to
(vii) BALIKPAPAN - KLANDASAN
(ix) Oil Installations and Natural Flow
of Oil - BALIKPAPAN
(x) Annotated Mosaics of Defences
to
(xii) BALIKPAPAN - MANGGAR
- "F" Enemy Activity and Minefields
- "G" Beach Reports
(i) Vicinity MANGGAR BESAR River
(ii) BATAKAN BESAR Area
(iii) SEPINGGANG BESAR to SEPINGGANG KETJIL
(iv) STALKOEDO - KLANDASAN Area
- "H" Beach Profile Sketches
- "I" Topographical Map
BALIKPAPAN - MANGGAR
- "J" (i) Annotated Offshore Obliques BALIKPAPAN
(ii) " " " SEPINGGANG
(iii) " " " MANGGAR
- "K" BORNEO Communications Map
- "L" GEOLOGY Map - BALIKPAPAN
- "M" General reference Map BALIKPAPAN -
SAMARINDA
- "N" Wharves and Jetties - BALIKPAPAN
- "O" Characteristics of Most Common
Engineering Timbers Found in the
BALIKPAPAN Area

GSI 1 Aust Corps

27 May 45

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APPENDIX "A"
TO I AUST CORPS
INTELLIGENCE REVIEW
No 4
STRATEGICAL
INFORMATION
AS AT 21 MAY 45



FRENCH INDO CHINA - THAILAND
60,000 15,000

F B F/P R
63 31 14 15
TOTAL : 123

65,000

F B F/P R
108 29 16 11
TOTAL : 164

CA 3
DD 5
SS 5

85,000

- LEGEND -
★ POTENTIAL SUPPORT AIRFIELD
ENEMY AIR STRENGTH
F : FIGHTERS
B : BOMBERS
F/P : FLOAT PLANES
R : RECCE A/C
ENEMY NAVAL STRENGTH
CA : HEAVY CRUISER
SS : SUBMARINES
DD : DESTROYER

F B F/P R
11 17 20 9
TOTAL : 57

MINDANAO
F B F/P R
4 2 - 3
TOTAL : 9

1500
5000
1250
750
3000
1000
750

500
250
5000
900

29,900
BORNEO
F B F/P R
3 - 8 4
TOTAL : 15

6,000
MACASSAR

18,000
CELEBES
F B F/P R
8 - 3 2
TOTAL : 5

26,800

20,000
F/P : 2

35,000

32,000

11,000

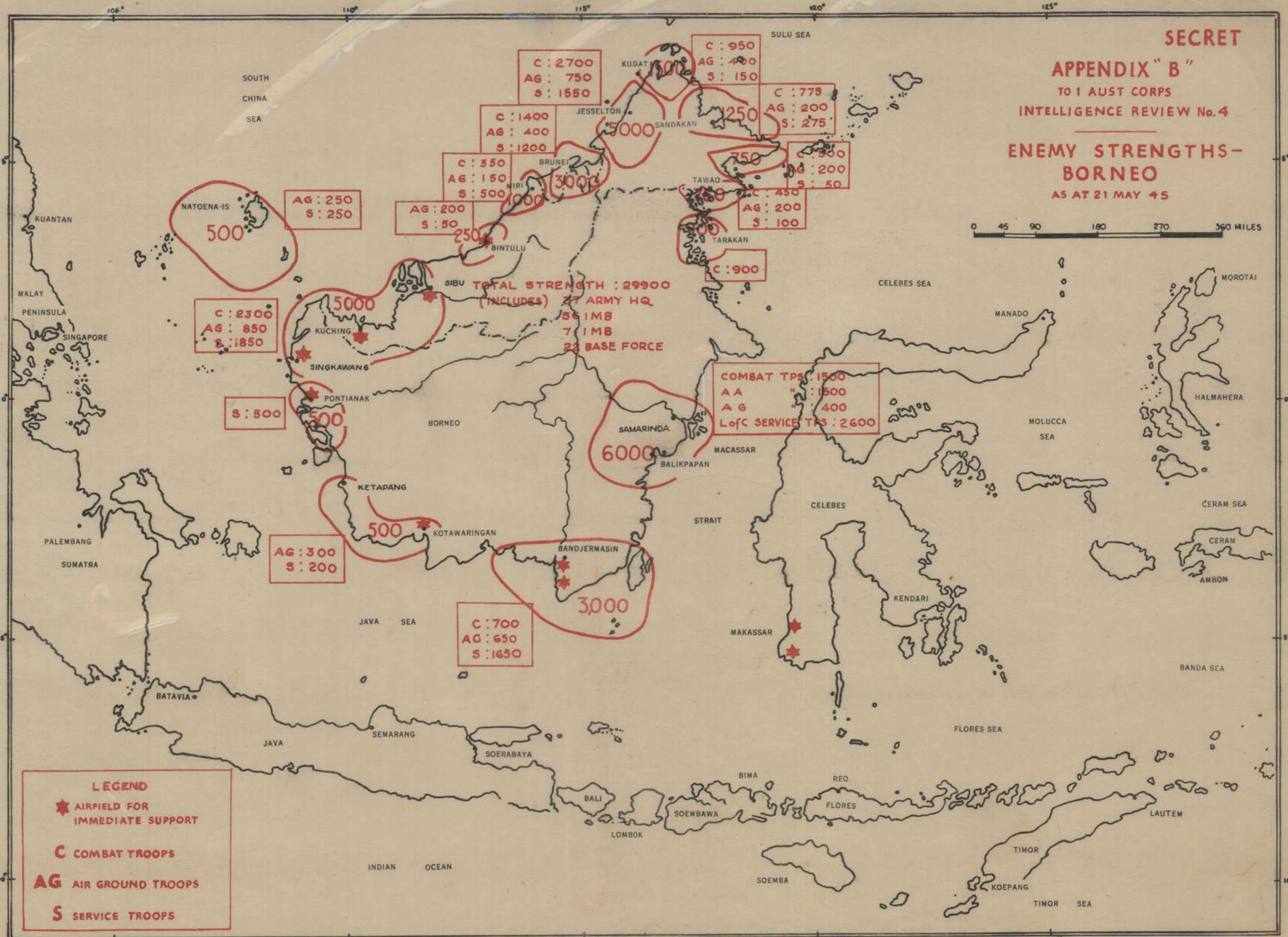
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APPENDIX "B"

TO I AUST CORPS
INTELLIGENCE REVIEW No. 4

ENEMY STRENGTHS -
BORNEO

AS AT 21 MAY 45



LEGEND

- AIRFIELD FOR IMMEDIATE SUPPORT
- C** COMBAT TROOPS
- AG** AIR GROUND TROOPS
- S** SERVICE TROOPS

DUTCH DEFENCES BALIKPAPAN

REF MAP: NORTH EAST BORNEO 1:50,000

LEGEND

- ROADS
- JEEP TRACKS
- HIGHWAY BRIDGE
- RIVERS
- SPOT HEIGHTS 40
- TANKS OIL OR GAS
- MANGROVES
- BUILT UP AREAS
- PILLBOX L M G
- PILLBOX H M G
- GUN EMPLACEMENT
- GUN EMPLACEMENT (OCCUPIED)

Under the Dutch defence plan, each zone was to be occupied by an infantry company, HMG sections and mobile artillery. (In fact only two companies supported by a mortar and HMG company were available). Pillboxes in zones A, B, C, D were of concrete. Positions in zones E, F were revetted with vertical logs and roofed with earth-covered logs.

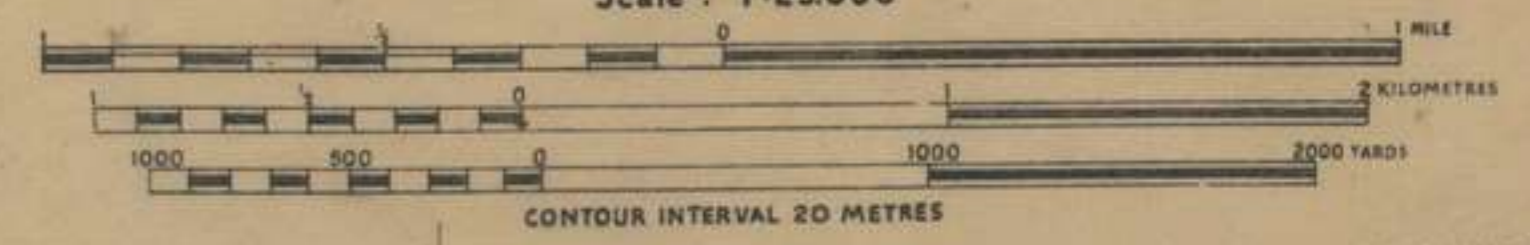


26 Jan 42 - Japs landed in MUNDIR and MAIN Rivers. MAIN force marched north and captured MAIN. MUNDIR force deployed to SE and entered Dutch positions on wide front from rear.

Night 23/24 Jan 42 - Japs entered BALIKPAPAN BAY under cover heavy rain. High tide carried barges over mudflats.

26 Jan 42 - Japs landed at MAMUDAS airfield and turned Dutch left flank.

Scale: 1:25,000



REPRODUCED BY 2/1 AUST ARMY TOPO SVY COY MAY 45

GS: I AUST CORPS

ENEMY INFORMATION

SEPINGGANG - MANGGAR

INFORMATION TO 22 MAY 1945

BALIKPAPAN

SHEET C

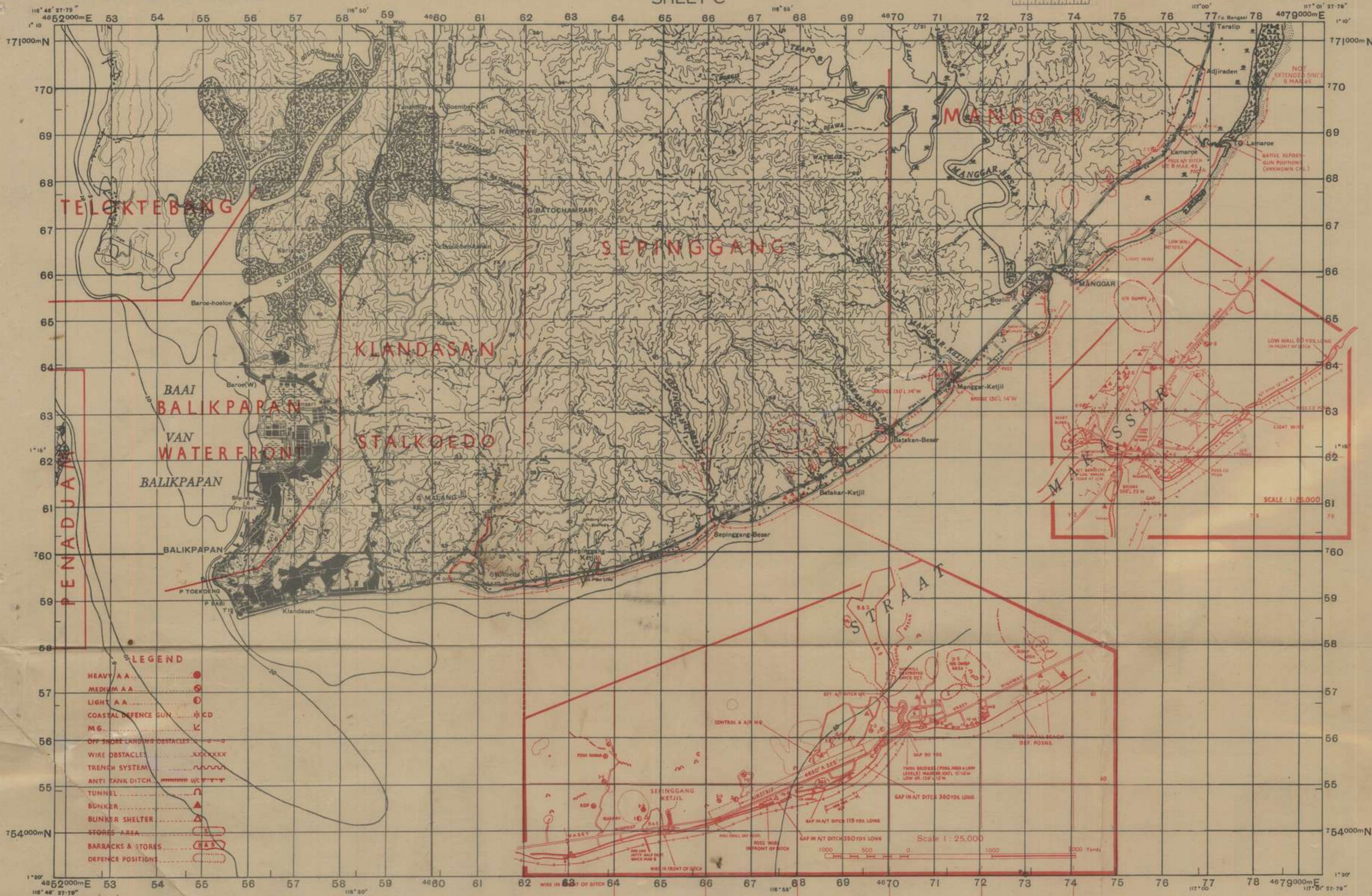
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APPENDIX "D(II)" TO I AUST CORPS
INTELLIGENCE REVIEW NO. 4

"OBOE TWO"

SHEET 67/XXII-C

NORTH EAST BORNEO 1:50,000



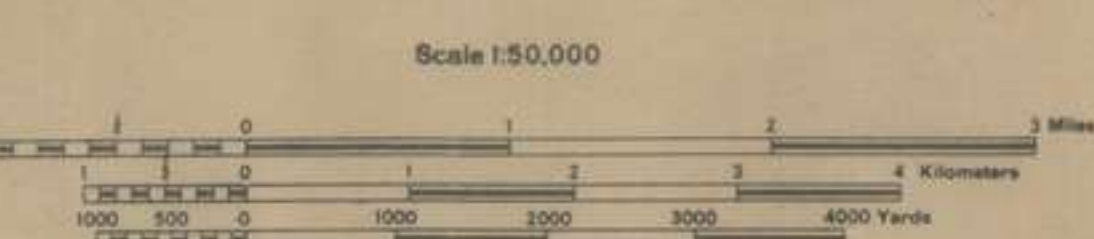
- LEGEND**
- HEAVY A.A. (Symbol)
 - MEDIUM A.A. (Symbol)
 - LIGHT A.A. (Symbol)
 - COASTAL DEFENCE GUN (Symbol)
 - M.G. (Symbol)
 - OFF SHORE LANDING OBSTACLES (Symbol)
 - WIRE OBSTACLES (Symbol)
 - TRENCH SYSTEM (Symbol)
 - ANTI TANK DITCH (Symbol)
 - TUNNEL (Symbol)
 - BUNKER (Symbol)
 - BUNKER SHELTER (Symbol)
 - STORES AREA (Symbol)
 - BARRACKS & STORES (Symbol)
 - DEFENCE POSITIONS (Symbol)

IC0/MSC/7513
CONTROL: Existing Map of 1:25,000 Series BALIKPAPAN
AIR PHOTOGRAPHY: 58 Photo Sp. 6 Photo Group; 39 Bomber Sp. 5 Bomber Group; U.S.A.A.F. Missions 288-2-2 Oct 44, 289-2-4 Oct 44, 288-2-3 Oct 44 and 44083 Oct 44
COMPILATION: 2/1 Aust Army Topo Coy, Aust Svy Corps from Air Photos; and 1:25,000 Maps of BALIKPAPAN prepared by Dutch Topographic Service Batavia, 1933.
DRAWING & REPRODUCTION: 2/1 Aust Army Topo Coy, Aust Svy Corps, Feb 45.

- LEGEND**
- Road, hard surfaced (Symbol)
 - Road, lightly surfaced (Symbol)
 - Road, earth (Symbol)
 - Joop Track (Symbol)
 - Trail (Symbol)
 - Railway, narrow gauge (Symbol)
 - Highway Bridge (Symbol)
 - Spot Elevation (Symbol)
 - Tanks, Oil or Gas (Symbol)
 - Oil or Gas Well (Symbol)
 - Mangroves (Symbol)
 - Mud Flats (Symbol)
 - Streams (Symbol)
 - Swamp (Symbol)
 - Bank (Symbol)
 - Levee (Symbol)

- ABBREVIATIONS**
- G GOENGG (MOUNTAIN)
 - BT BOEKIT (HILL)
 - P POELAU (ISLAND)
 - TG TANGJONG (CAPE)
 - S SOENGAI (RIVER)
 - B BAAI (BAY)

APPROXIMATE SOLAR DECLINATION 1944
FROM CENTER OF SHEET
MAGNETIC VARIATION INCREASES
See diagram only to obtain magnetic value.
To determine magnetic north line, connect the point 'M' on the north edge of the map with the center of the right hand magnetic north and magnetic north, as indicated on the diagram at the north edge of the map.



CONTOUR INTERVAL 20 METRES EXCEPT FIRST 10 METRES
SHOWN IN BROKEN LINE
LAMBERT CONICAL ORTHOMORPHIC PROJECTION
HEIGHTS & DEPTHS IN METRES



TO GIVE A GRID REFERENCE ON THIS SHEET ALWAYS QUOTE THE SHEET NAME AND ATTENTION TO LARGER MAPS, FIGURES ONLY

EAST		WEST	
TAKE WEST EDGE OF SQUARE IN WHICH POINT LIES, AND READ THE 100 METRE FIGURES. OPPOSITE THIS LINE ON NORTH OR SOUTH MARGIN.	TAKE SOUTH EDGE OF SQUARE IN WHICH POINT LIES, AND READ THE 100 METRE FIGURES. OPPOSITE THIS LINE ON EAST OR WEST MARGIN.	TAKE EAST EDGE OF SQUARE IN WHICH POINT LIES, AND READ THE 100 METRE FIGURES. OPPOSITE THIS LINE ON NORTH OR SOUTH MARGIN.	TAKE NORTH EDGE OF SQUARE IN WHICH POINT LIES, AND READ THE 100 METRE FIGURES. OPPOSITE THIS LINE ON EAST OR WEST MARGIN.

1 Metre = 1000 METRES
1 Square Mile = 1609 METRES

NOTE: OFFICERS USING THIS MAP ARE REQUESTED TO MAKE ANY NECESSARY ADDITIONS AND AMENDMENTS ON THE MAP ITSELF AND FORWARD SAME TO SURVEY DIRECTORATE, H.Q. OF FORCE CONCERNED

GSI I AUST CORPS
BALIKPAPAN C
NORTH EAST BORNEO

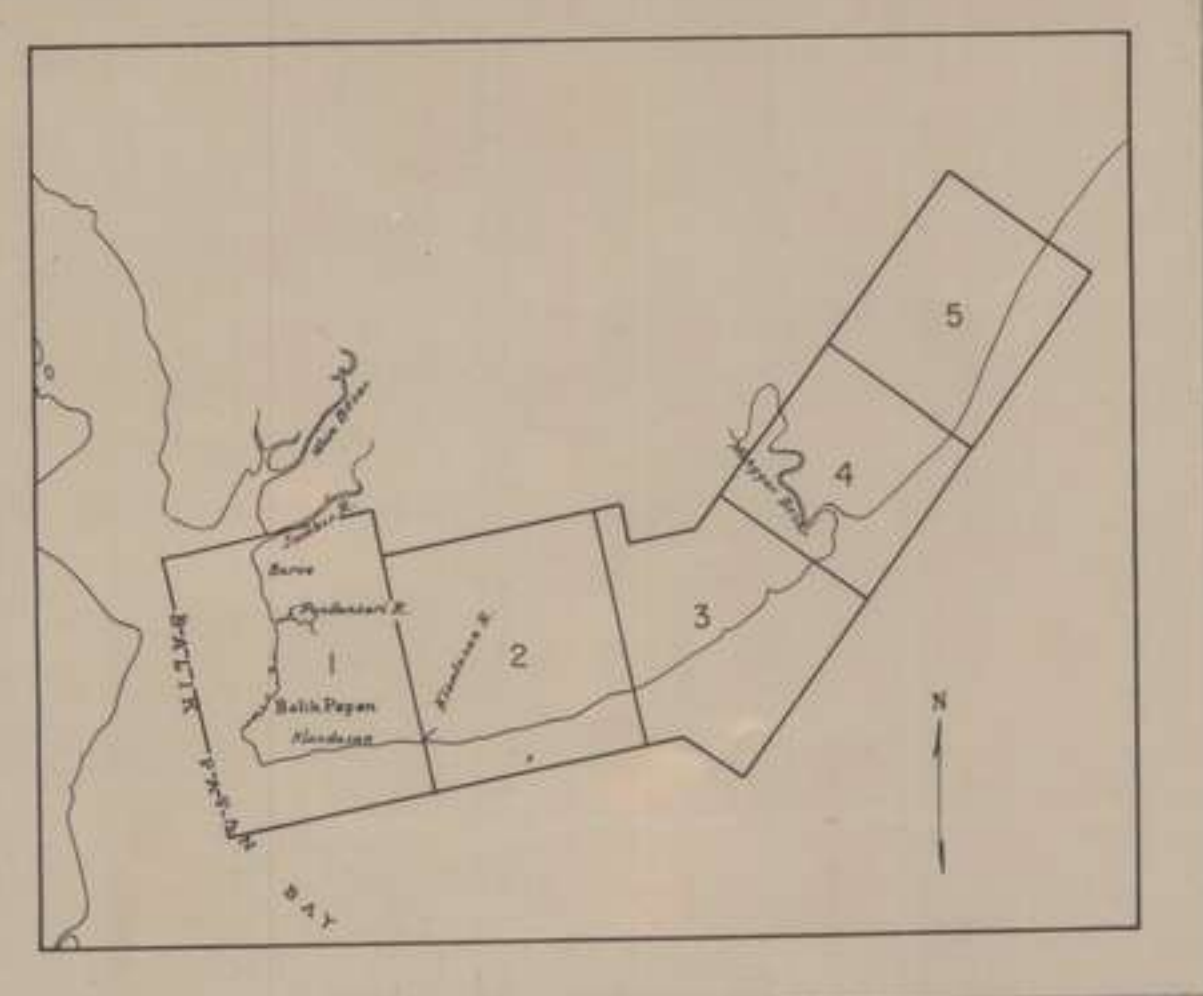
CHARACTERISTICS OF JAPANESE AA WEAPONS

Appendix "D" (111) to
1 Aust Corps Intelligence
Review No. 4 - OBOE TWO

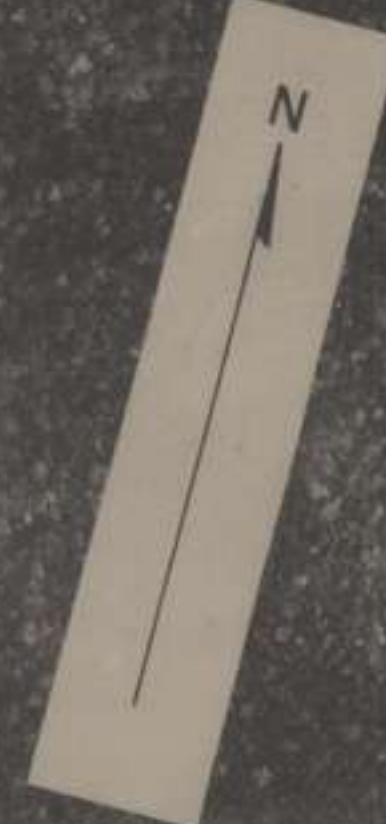
Calibre		Model		Service	Length in Calibres	Muzzle Velo- city (ft per sec)	Hori- zontal Range (yds)	Maximum Ceilings		Extreme Deter- rent Range (ft)	Prac- tical Rate of fire (rounds per min)	Types of Projectile	Weight of Projectile (lbs)	Max Fuze Setting	Remarks
mm	Inches	Type	Year					Fuze (ft)	Effective (ft)						
7.7	.303	92	1932	Army Navy	94	2350	4580		2500	3200	250	Ball, AP, I, T (HE also reported)	.029	No fuze	Extremely mobile weapon.
13.2	.52	93	1933	Army Navy	109	2620	7000		3000	5000	250 per barrel	Ball, AP, I, T (HE also reported)	.11	No fuze	Single and twin barrel versions in use. triple, quad- ruple have been reported in use. Six barrel pom pom reported in prod- uction. Extremely mobile weapon.
20	.79	98	1938	Army	73	3100	7000		5000	7750	130	AP, HE, APT, HET, HETS D, ITS D	.3	Point deton- ating	Mobile weapon. Type 99, 20 mm Oerlikon aircraft cannon with similar performance have been used as land- based AA.
25	.98	96	1936	Navy	60	2850	7435		6500	10500	120 per barrel	AP, HE, HET, HETS D, HEI	.6	Point deton- ating	Static gun in single, twin or triple barrel version. Fully mobile version single and twin barrel also in use.
40	1.57	91	1931	Navy		2000	6230		5000	10000	70 per barrel	AP, HE, HE time fuzed, HET, HETS D	1.7	Point deton- ating 10 sec time fuze	Adaptation of British Vickers. Single and twin barrel versions on static mount. Note: Small number of captured British Bofors 40mm, a mobile gun with much higher perform- ance may be encountered.
75	2.96	88 89	1928 1929	Army	44.2	2360	14800	28300	23550		20	HE shrapnel	14.4	35 secs	Mobile gun. Used with Type 2 director
76.2	3	3 88	1914 1928	Navy	40	2220	11800	22200	18900		18	HE shrapnel	13.2	35 secs	Static gun. Commonly referred to by Japanese as 8 cm 40 cal.
80	3.12	98	1938		60	3040	14900				25 per barrel		14.4	55 secs	Twin mount. Not yet reported in service
88	3.43	99	1939	Army		3048	19000	37000	30000		20-25		20		Mobile gun - PW states adapted from German Flak 36- very little evidence available
100	3.94	98	1938	Navy	65	3310	20400	44300	38100		15 per barrel		28.7	55 secs	Static gun, twin mount - captured IWO JIMA.

Appendix "D (iii)" Contd.

Calibre		Model		Service	Length in Calibres	Muzzle Veloc- ity (ft per second)	Hori- zontal Range (Yds)	Maximum Ceiling		Extreme Deterr- ent Range (ft)	Prac- tical Rate of Fire (rds per min)	Types of Projectile	Weight of Proj- ectile (lbs)	Maximum Fuze Setting	Remarks
MM	Inches	Type	Year					Fuze (ft)	Effective (ft)						
105	4.13	14	1925	Army	42	2300	15000	30000	23000		10-12	HE	30	57 secs	Mobile gun - early reports indicate that it was unsatisfactory - little known of performance, but not considered to be in general use
120	4.72	10	1931	Navy	45	2700	17100	32800	29200		10-12	HE HE shrapnel HE phosphorus	45.7	55 secs	Static gun - one of the most widely used Japanese AA guns
120	4.72	U/I		Army	56	2820	21800	46000	36000		15	-			Experimental
127	5	88 89	1928 1929	Navy	40	2360	15400	31000	25200		12-15 per barrel	HE	50.8	55 secs	Static - twin mount - widely used on ships as well as shore batteries



PUMPING
STATION



BALIKPAPAN) 160CT-44-1005(24-2

Information by 3 AAPIU as at 6 May 45.

SECRET
BALIKPAPAN - MANGGAR
SHEET 2 of 5

Appendix "E" XI
to 1 Aust Corps Intelligence
Review No. 4 - OBOE TWO.

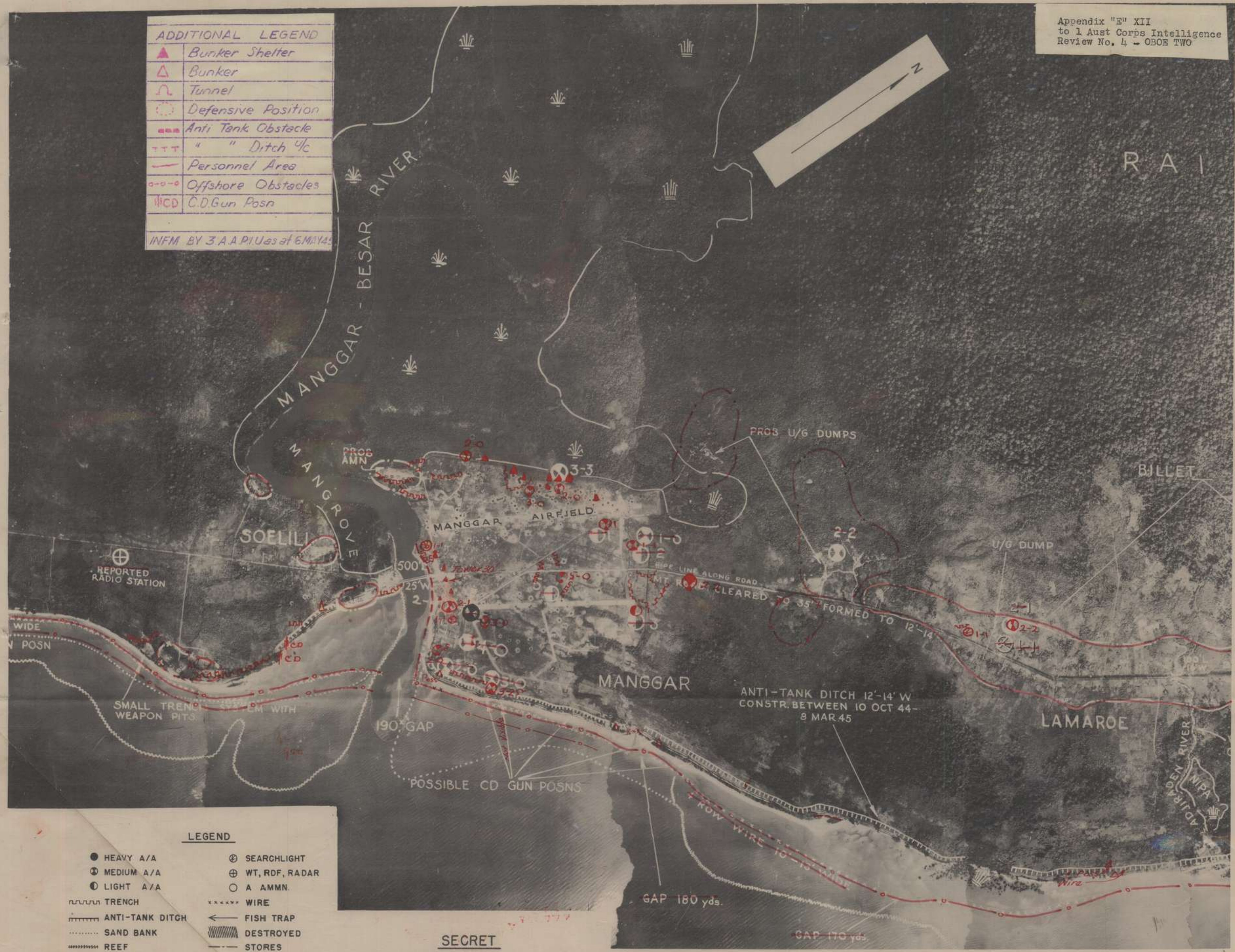


Information by 3 AAPIU as at 6 May 45.

SECRET
BALIKPAPAN - MANGGAR
SHEET 3 of 5

ADDITIONAL LEGEND	
▲	Bunker Shelter
△	Bunker
∩	Tunnel
○	Defensive Position
—	Anti Tank Obstacle
TTT	" " Ditch 4/6
—	Personnel Area
o-o-o	Offshore Obstacles
CD	C.D. Gun Posn

INFM BY 3.A.A.P.I.U.s of 6 MAY 45



LEGEND

●	HEAVY A/A	⊕	SEARCHLIGHT
⊗	MEDIUM A/A	⊕	WT, RDF, RADAR
⊙	LIGHT A/A	○	A AMMN
—	TRENCH	XXXXX	WIRE
—	ANTI-TANK DITCH	←	FISH TRAP
—	SAND BANK		DESTROYED
—	REEF	---	STORES
—	PERSONEL	-x-	PERS. & STORES

SECRET
BALIKPAPAN - MANGGAR
 SHEET 4 of 5

RAIN FOREST



BILLET AREA

ADJIRADEN

TARATIP

NIPA

NIPA

W 100 L 14 W

UNIDENTIFIED

TARATIP RIVER

100 L 14 W

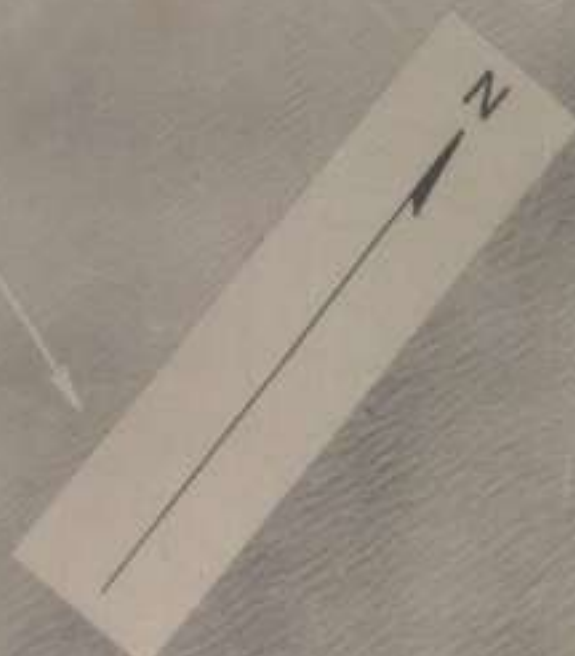
WIRE DEFENCE UNDER CONSTR. OR PROJECTED A/TK DITCH

MANGROVE

CAPE LAMAROE

SHALLOW SAND-BANK

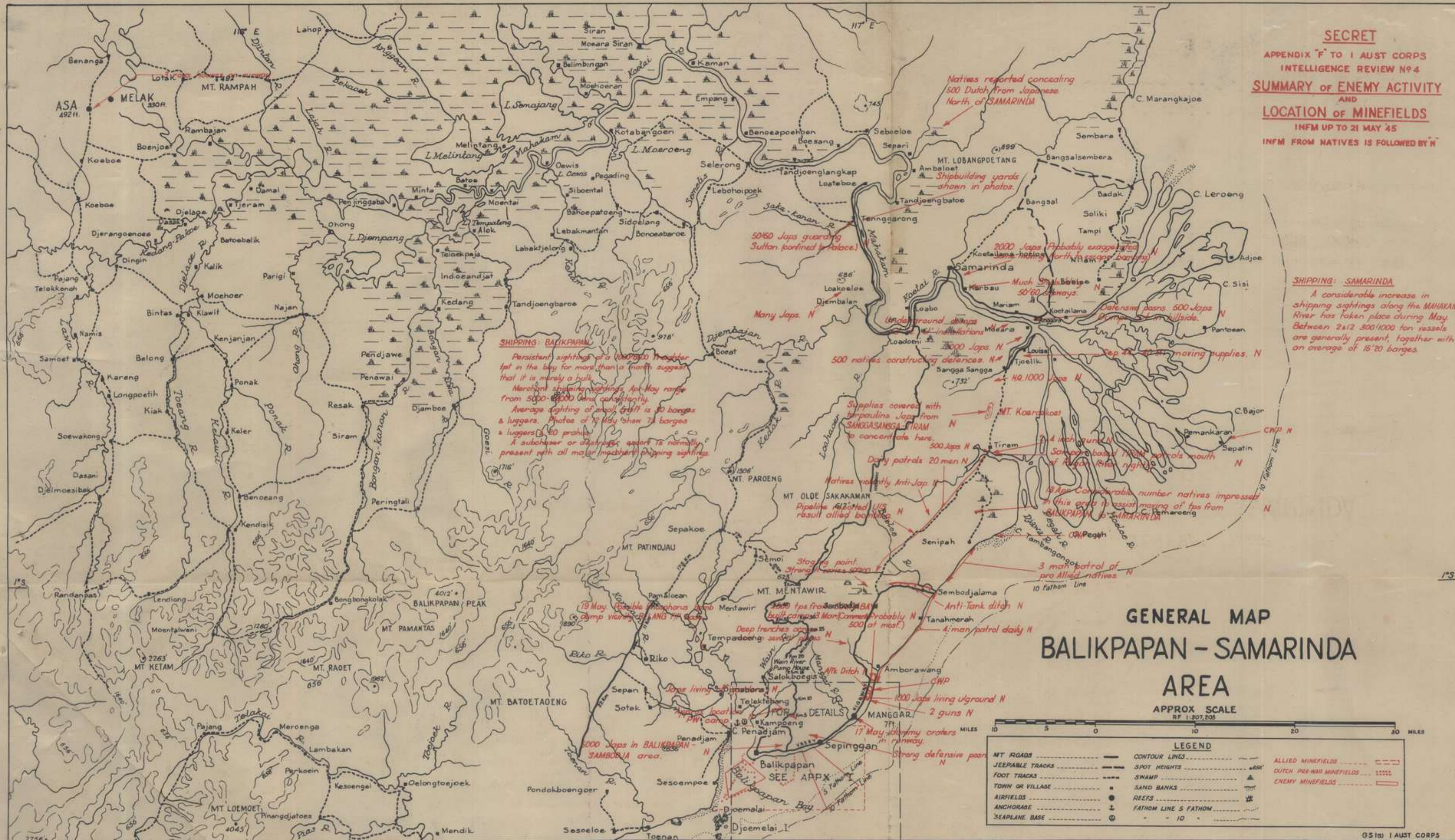
Not extended since 8 Mar 45



SECRET
BALIKPAPAN - MANGGAR
SHEET 5 of 5

Appendix "E" XIII
to 1 Aust Corps Intelligence
Review No. 4 - OEOE TWO

*INFORMATION BY 3 MARIU
AS AT 4 MAY 45*



SECRET
APPENDIX F TO I AUST CORPS
INTELLIGENCE REVIEW N°4
SUMMARY OF ENEMY ACTIVITY
AND
LOCATION OF MINEFIELDS
INFM UP TO 21 MAY '45
INFM FROM NATIVES IS FOLLOWED BY N

Natives reported concealing 500 Dutch from Japanese North of SAMARINDA

Shipbuilding yards shown in photos

5000 Japs guarding Sultan (confined to palace.)

Many Japs N

500 natives constructing defences N

Supplies covered with sampulins Japs from SANGGASANGGA TRAM to concentrate here

Daily patrols 20 men N

Natives violently Anti-Jap N

Pipeline reported U/S result allied bombing

19 May possible ambush on Mentawir Camp vicinity SAMARINDA

Deep trenches across road

3000 Japs in BALIKPAPAN SAMBOJA area

Strong defensive pos N

500 Japs N

MT. KOARAKOAT

4 inch guns N

Sampulins based N (patrols mouth of Rupa Rupa night)

3 man patrol of pro Allied natives 10 Fathom Line

Anti-Tank ditch N

4 man patrol daily N

1000 Japs living underground N

2 guns N

17 May enemy craters in runway

SHIPPING: BALIKPAPAN
Persistent sightings of a 1000-2000 ton freighter in the bay for more than a month suggest that it is merely a bulk Merchant shipping sightings Apr-May range from 5000-8000 tons consistently. Average sighting of small craft is 30 barges & luggers. Photos of 12 May show 73 barges & luggers. A submarine or destroyer escort is normally present with all major merchant shipping sightings.

SHIPPING: SAMARINDA
A considerable increase in shipping sightings along the MAHAKAM River has taken place during May. Between 2 and 300/1000 ton vessels are generally present, together with an average of 15-20 barges.

**GENERAL MAP
BALIKPAPAN - SAMARINDA
AREA**

APPROX SCALE
RF 1:207,205

10 5 0 10 20 30 MILES

LEGEND	
MT ROADS	CONTOUR LINES
JEEPABLE TRACKS	SPOT HEIGHTS
FOOT TRACKS	SWAMP
TOWN OR VILLAGE	SAND BANKS
AIRFIELDS	REEFS
ANCHORAGE	FATHOM LINE 5 FATHOM
SEAPLANE BASE	FATHOM LINE 10
ALLIED MINEFIELDS	DUTCH PRE-WAR MINEFIELDS
	ENEMY MINEFIELDS

GS 103 I AUST CORPS

REPRODUCED BY 2/I AUST ARMY TOPO SVY COY, MAY 45

ICG/MISC/7507 ICG/MISC/7508

BEACH REPORT
Ref Map 1:50,000 BALIKPAPAN Sheet "C" - See Appendices "HI" and "H2"

Description from RIGHT to LEFT looking from seaward

Beach No. 1 - 758668 to 726643 (vicinity MANGGAR BESAR River)

1. SEAWARD APPROACH

(a) Obstacles

Reef offshore SW of MANGGAR BESAR River and sandbar offshore NE of MANGGAR BESAR River - See sketch maps Appendices "HI" and "H2"

(b) Depths Offshore

(i) Owing to lack of large scale charts, detailed information cannot be supplied.

(ii) NE of MANGGAR BESAR River there is 13 ft and 16 ft of water at LW springs approximately 1 mile and 1½ miles offshore respectively.

(iii) SW of MANGGAR BESAR there is 13 ft to 16 ft of water at LW springs approximately ¾ of a mile offshore.

(c) Surf

Between June and August surf should be inconsiderable.

(d) Currents

No information available.

(e) Prominent Landmarks

The mouth of the MANGGAR BESAR River.

2. BETWEEN LW AND HW MARK

(a) Length

5350 yards.

(b) Width

(i) NE of sandbank jutting out from north bank of MANGGAR River an average of 130 yards.

(ii) On north bank of MANGGAR BESAR River 400 yards.

(iii) On south bank of MANGGAR BESAR River 750 yards.

(iv) SW of sandbank jutting out from south bank of MANGGAR BESAR River 230 yards.

See sketch map - Appendix "H2" for further particulars.

(c) Gradient

Owing to lack of detailed charts it is not possible to supply accurate information. The following gradients and watergaps have been calculated from available information but pending receipt of more detailed data should be accepted with reserve. Tides have been accepted at 7 ft and 1 ft above chart datum for HW and LW respectively.

Appendix "GI" Contd.

Description from RIGHT to LEFT looking from seaward

Locality	Distance Offshore	Gradient	WATERGAPS			
			HW		LW	
			LSTs	LCM(6)s	LSTs	LCM(6)s
NE of sandbank off MANGGAR BESAR River	400 ft	1/66	1462 ft with 9 ft at bow	214 ft with 3 ft 3 in at bow	3150 ft with 9 ft at bow	1342 ft with 3 ft 10 in at bow
	From 400 ft to 5280ft	1/348				
SW of sandbank off MANGGAR BESAR River	700 ft	1/117	1238 ft with 8 ft 6 in at bow	418 ft with 3 ft 6 in at bow	1840 ft with 8 ft 6 in at bow	818 ft with 3 ft 9 in at bow
	From 700 ft to 3960 ft	1/217				

(d) Nature

Sand.

(e) Obstacles

With the exception of a gap of 190 yards at the mouth of the S MANGGAR BESAR, an obstacle lines the coast throughout the length of the beach, at distances offshore varying from 20 - 300 yards and averaging 50 - 70 yards.

In addition a second offshore obstacle is being constructed 120 yards on the seaward side of the first obstacle, on both sides of the S MANGGAR BESAR and has been completed to the NE for 1200 yards, and SW for 2500 yards. The total length of new construction since 6 Apr 45 is 2000 yards.

This obstacle comprises 3 rows of stout wood posts, driven into the sea-bed, with posts of each row staggered. Rows are approximately 6 feet apart with 6 feet between individual posts.

Posts of each row are horizontally crossbraced with stout timber, across the top to those of each of the other rows, with the ends of the bracings protruding beyond the outer rows of posts. These top bracings run diagonally across the lines of staggered posts, and in places are braced in the opposite diagonal direction. In all, the obstacle measures 10 - 12 feet in width. Although it cannot be stated from photos held, it is possible that barbed wire is also included in this obstacle.

3. ABOVE HW MARK

(a) Length

5350 yards.

(b) Width

From 5 to 15 yards.

(c) Gradient

From 1/33 to 1/100.

(d) Nature

Sand.

(e) Obstacles

No report of obstacles though mines a possibility.

Description from RIGHT to LEFT looking from seaward

Appendix "GI" Contd.

4. ENEMY DEFENCES

In addition to the offshore obstacles described previously an anti-tank ditch 12 - 14 feet wide lines the shore opposite MANGGAR from 758668 to 741658, also from 735656 to 735651. There is a gap in the ditch of approximately 50 yards at 749665, where a light wire obstacle spans the stream. Along the NE bank of the S MANGGAR BESAR River, a tank barricade has been constructed and braced with logs for a distance of 2 - 300 yards on either side of the VASEY Highway Bridge.

Between the ditch and the beach opposite MANGGAR Airfield are spaced 3 CD gun positions and 2 bunkers. At the end of the anti-tank ditch at 735651, there are two CD gun positions constructed of earth covered concrete or heavy timber, opening seawards. A trench system 400 yards long extends along the shore from these positions.

A total of 30 medium AA positions (6 occupied) and 3 Lt AA are located in the airfield area and several of these, supported by extensive trenches and weapon pits would be potential shore defence positions.

5. EXITS

(a) Infantry

(i) NE of the MANGGAR BESAR River a small stream runs parallel to and 150 yards behind the beach for a distance of 450 yards, then swings into the sea. It should not be a major obstacle.

(ii) A low bank 3 to 4 feet high lies immediately behind and along the beach on the NE bank of the MANGGAR BESAR River but several tracks traverse it.

(iii) Troops should experience little difficulty in reaching the MT road which runs 50 to 1300 yards inland as the anti-tank ditch should not be an obstacle to infantry.

(b) Vehicles

(i) Wheeled) See sub-para (a) (i) and (ii). It is reported that the beach above HW should be firm enough for vehicles and behind the beach to the MT road the ground appears to be firm and passable to MT once the anti-tank ditch is negotiated.

(ii) Tracked)

6. HINTERLAND

(i) The beach is backed by low flat country which, except in the vicinity of the airfield, is covered with low scrub. The plain varies from 600 yards to a mile in width. Apart from a swampy area about 1/4 of a mile inland NE of the MANGGAR BESAR River the ground appears to be firm. Suitable ground for a BMA should be available.

(ii) The MANGGAR BESAR River is not fordable near its mouth.

7. CRAFT ANCHORAGES AND HIDEOUTS

In the mouth of the MANGGAR BESAR River.

8. GENERAL COMMENTS

The approach to the beach is almost entirely over reef or sand bars. In view of this fact, the shallow gradients and the possibility of the enemy demolishing the bridge over the MANGGAR BESAR River it would appear to be suitable only for a diversionary landing.

BEACH REPORT

Ref Map: 1:50,000 BALIKPAPAN Sheet "C" - See Appendices "H1", "H2" and "H3"

Description from RIGHT to LEFT looking from seaward

Beach No. 2 - 720638 to 691617 - BATAKAN BESAR area.

1. SEAWARD APPROACH

(a) Obstacles

Reef offshore - See sketch maps Appendices "H1", "H2" and "H3".

(b) Depths Offshore

The coral reef is awash at LW and off the reef the bottom shelves sharply. There is 13 ft to 17 ft of water at LW springs off the reef.

(c) Surf

Should be inconsiderable between June and August.

(d) Currents

No information available.

(e) Prominent Landmarks

The only possible landmarks appear to be the villages of MANGGAR KETJIL, BATAKAN BESAR and BATAKAN KETJIL.

2. BETWEEN LW AND HW MARKS

(a) Length

4000 yards.

(b) Width

Average 800 feet. See sketch map Appendices "H2" and "H3".

(c) Gradient

It would seem that LSTs would ground on the edge of the reef at all tides. At LW LCMs would probably ground on the edge of the reef but at HW would probably ground 250 feet offshore. The gradient between HW and LW should be approximately 1/100.

(d) Nature

The beach has irregular sand ridges rising to 18 ins in height with narrow muddy strips in between. The ridges should be firm enough for MT.

(e) Obstacles

An offshore landing obstacle lines the coast at a distance of 45 - 120 yards offshore along the entire length of coast. Obstacles also run from the shore to this main obstacle at the mouths of 3 small streams - refs 715636, ⁷⁰¹⁶²⁴ and 690616. (For description of these obstacles see Beach No. 1 Appendix GI para 2 (e)).
Fishtraps extend to the edge of the reef beyond the obstacle at intervals along the shore.

Appendix "G2" Contd.

Description from RIGHT to LEFT looking from seaward

3. ABOVE HW MARK

(a) Length

4000 yards.

(b) Width

Not known but probably not more than 15 yards.

(c) Gradient

Fairly steep.

(d) Nature

Firm white sand.

(e) Obstacles

Three small streams enter the sea along the beach but all should be fordable. Mines, though not reported are a possibility.

4. ENEMY DEFENCES

In addition to the offshore obstacle referred to previously, there are defence lines along the SW bank of each of the three small streams behind the beach. At 715636 and 701625 the defence line consists of an anti-tank ditch extending inland for 4 - 500 yards along the stream banks, while at 690616, although the area is cloud covered in recent photos, it is thought that a third similar anti-tank ditch has been constructed.

Spaced along the shore immediately behind the beach are 3 probable CD gun positions and 3 bunkers. In addition several bunkers and gun positions line the shore to the NE and SW of the beach, and could be used in beach defence.

Odd trenches and weapon pits line the high ground behind the beach protecting the large camp area inland at the SW end of the beach.

The 3.3 Heavy AA at the SW end of SEPINGGANG Airfield could be used for coast defence in this beach area.

5. EXITS

(a) Infantry) Providing the anti-tank ditch can be negotiated, should present no difficulties. The MT road is 150 to 250
(b) Vehicles) yards inland and the beach is reported to be firm above HW.

6. HINTERLAND

The beach is backed by a coastal flat 400 to 600 yards wide, covered mainly with some patches of cultivation, coconuts and timber. Behind the coastal flat the country rises into low, undulating, timbered ridges interspersed with cultivated valleys. A suitable area for a BMA should be obtainable easily.

7. CRAFT ANCHORAGES AND HIDEOUTS

None available.

8. GENERAL COMMENTS

This beach would be suitable only for landings in LVTs.

BEACH REPORT

Ref Map : 1:50,000 BALIKPAPAN Sheet "C" - See Appendices "HI", "H3" and "H4"

Description from RIGHT to LEFT looking from seaward

Beach No. 3 - 665606 to 632595 - SEPINGGANG BESAR to SEPINGGANG KETJIL

1. SEAWARD APPROACH

(a) Obstacles

Except for some narrow channels, coral reef, awash at LW springs, fringes the entire beach - See Sketch Maps - Appendices "HI", "H3" and "H4".

(b) Depths Offshore

Owing to lack of detailed charts definite information cannot be supplied, but it seems that the depths fall away gradually on the ocean edge of the reef for about 150 yards and then drop sharply. There are soundings of 17 ft to 23 ft at LW springs about 1100 yards off shore.

(c) Surf

Between June and August surf should be inconsiderable.

(d) Currents

No information available.

(e) Prominent Landmarks

The villages and rivers of SEPINGGANG BESAR and SEPINGGANG KETJIL and the SEPINGGANG Airfield appear to be the most prominent landmarks, but it is questionable whether they will be discernable from any distance offshore. Good offshore obliques may disclose better landmarks.

2. BETWEEN HW AND LW MARKS

(a) Length

4000 yards.

(b) Width

Average 250 yards but see "H3" and "H4".

(c) Gradient

It would seem that ^{at} all tides LSTs would ground off the edge of the fringing reef (See Appendix "H4"), but owing to lack of data it is not possible to calculate the gradient beyond the reef. LCMs at HW should ground on sand on the landward side of the reef, but at LW would not be able to negotiate the reef.

(d) Nature

The beach is irregular and has sand ridges rising to 2 ft in height with mud channels in between. The ridges would be firm enough for MT.

(e) Obstacles

An offshore obstacle, described for Beach No. 1 in Appendix "GI" para 2 (e), lines this entire beach at a distance varying from 45 to 120 yards and averaging 75/80 yards offshore.

In the right section from SEPINGGANG BESAR to 654600 a second line of this obstacle runs parallel to the beach at an average distance of 30-40 yards seaward of the main obstacle.

3. ABOVE HW MARK

(a) Length

4000 yards.

(b) Width

About 5 to 10 yards.

(c) Gradient

The gradient is reported to be between 1/10 and 1/16.

(d) Nature

Sand or pebble.

(e) Obstacles

No report of obstacles but mines are a possibility.

4. ENEMY DEFENCES

An anti-tank ditch 12/14 ft wide with spoil banks 5/15 ft wide, and in places revetted, lines the entire length of beach with the exception of the following three gaps:

660606 - 380 yards.
654600 - 115 yards.
648599 - 350 yards.

Along the west bank of the SEPINGGANG BESAR River and the east bank of the small stream at SEPINGGANG KETJIL there is a branch of this ditch extending upstream for 1000 yards and 300 yards respectively. Along the SEPINGGANG BESAR River 700 yards of this ditch is under construction.

Other defences along this beach include 2 CD gun positions and 9 bunkers with small supporting trench systems.

AA positions inland from the beach total 3-3 heavy, 10-6 medium and 10 light. These are generally located in defence positions and could probably be used for coast defence.

The most extensive defence position consisting of trenches, weapon pits and underground positions is located behind the centre of the airfield.

5. EXITS

Once the anti-tank ditch is negotiated, vehicles and troops should experience little difficulty in moving off the beach to the VASEY Highway at most places along the beach.

6. HINTERLAND

Behind this beach is a firm sandy flat 200/300 yards wide between SEPINGGANG KETJIL and the airfield, then widening to average 450 yards. This flat is mostly open being largely occupied by the airfield. A narrow strip of coconuts fringes the beach at the airfield, and there are some small isolated patches of low secondary growth. Behind the flat the country rises fairly sharply to low hills covered mostly with secondary growth, merging into dense rain forest some 1400 yards inland. Barracks and other buildings are located between the airfield and the beach. A suitable area for a BMA should be available.

Appendix "G3" Contd.

Description from RIGHT to LEFT looking from seaward

7. CRAFT ANCHORAGES AND HIDEOUTS

Limited exposed anchorage for small craft is available at SEPINGGANG BESAR. The "pipe line" jetty (950 feet long) at SEPINGGANG KETJIL was formerly built to the edge of a gap in the reef, but between 8 Mar 45 and 6 Apr 45 about 500 feet of the seaward end was destroyed. It is doubtful if this jetty could have been used by other than small vessels.

The three narrow channels are too restricted for landing craft to operate safely. There are no barge hideouts in this area.

8. GENERAL COMMENTS

There are narrow channels through the reef in places but the widest is 50 yards. It would seem that LVTs would be needed for a landing on this beach.

BEACH REPORT

Ref Map: 1:50,000 BALIKPAPAN Sheet "C" - See Appendices "HI" and "H5"

Description from RIGHT to LEFT looking from seaward

Beach No. 4 - 604594 to 559586 - STALKOEDO - KLANDASAN Area

1. SEAWARD APPROACH

(a) Obstacles

Nil.

(b) Depths Offshore

See Profile Sketches Appendix "H5". There are depths of 5 to 7 feet at LW springs 150 to 175 yards offshore.

(c) Surf

Surf should be insconsiderable between June and August.

(d) Nature

A firm sandy bottom.

(e) Prominent Landmarks

SIGNAL Hill and BALIKPAPAN Bay at the west end of the beach and KLANDASAN Township behind the beach.

2. BETWEEN LW AND HW MARKS

(a) Length

4800 yards.

(b) Width

250 feet except near the centre where it widens out to 550 feet.

(c) Gradient

See Profile Sketches - Appendix "H5".

(d) Nature

A firm sandy beach.

(e) Obstacles

An offshore landing obstacle extends from STALKOEDO on the east to within 950 yards of the KLANDASAN or western end of the beach. At STALKOEDO the obstacle is up to 400 yards offshore, but for the greater portion of its length, it is from 25 to 45 yards offshore.

(For description of this offshore landing obstacle see Beach No. 1 Appendix "GI" para 2 (e)).

Between 8 Mar 45 and 6 Apr 45 the obstacle in this sector was extended by 100 yards, and between 6 Apr 45 and 12 May 45 it was extended a further 1150 yards, with a further 250 yards under construction. On 12 May there were very large quantities of timber and stores along the beach, doubtless for use in construction of this obstacle.

Small wooden jetties 130 feet long by 4/5 feet wide, and 120 feet long by 8/10 feet wide are located at the eastern end and centre of the beach respectively.

3. ABOVE HW MARK

(a) Length

4800 yards.

(b) Width

10 yards.

(c) Gradient

Reported to be more than 1/33.

(d) Nature

A firm sandy beach.

(e) Obstacles

No reports of obstacles but mines are a probability in this sector.

4. ENEMY DEFENCES

(a) CD Gun Positions

2 CD gun positions dug into the hills in the vicinity of 577598 (behind the Dutch Military Barracks).

2 probable CD gun positions on the beach at KLANDASAN in the vicinity of 565588.

2 probable CD gun positions dug into the slopes of SIGNAL Hill covering the southern and western approaches to the harbour.

(b) Field Artillery

No position can be identified on these photographs.

(c) AA Positions

Within this sector these can be divided into two sections.

(i) Those Along or Near the Beach

Hy. -	Nil located.
Med. -	7-0 in the STALKOEDO area.
	6-0 in the KLANDASAN area.
Light -	3 pits in the STALKOEDO area.
Searchlights -	1-1.

(ii) Those Along the Hills Behind the Beach

127mm -	2-2 (Twin barrel) at 576604.
Hy. (prob 120mm) -	4-3 on the summit of G. MALANG.
Hy. (75mm) -	3-3 at 595642 (3 1/4 miles north of the beach).
Med. -	3-3
Light -	6 pits.
Searchlights -	1-1

Of the total AA in this and the BALIKPAPAN waterfront area, landing forces approaching the KLANDASAN Beach could be engaged by direct arty fire from the following :-

127mm -	2-2 (Twin barrel)
Prob 120mm -	4-3
Hy (prob 75mm) -	4-4
Med (prob 25mm) -	18-5

Such forces could also be engaged by indirect fire from the remaining heavy AA positions and most of the remaining medium positions totalling :-

127mm	4-4 Twin Barrel
Hy (prob 75mm)	12-7
Med(prob 25mm)	18-7

(d) Ground Defences

(i) Trenches

The following have been located in photographs:-

Trenches and weapon pits on the ridges immediately behind STALKOEDO

Fairly extensive trench system on the beach at the mouth of the S KLANDASAN - BESAR.

Small trench systems on the ridges immediately behind the beach in the vicinity of 599595 and 589597.

A very large network of trenches and weapon pits is located on the ridge from 583601 to 583610 and extending down the eastern slopes towards VALLEY road.

Trench systems line ridges from 200 to 500 yards north of this system.

A large strongly defended locality comprising trenches, weapon pits and some bunkers along the ridge in the vicinity of 576602 covers the CD guns and AA positions in this area.

A covered trench lines the track north from P BABI to the foot of SIGNAL Hill.

(ii) Anti-Tank Obstacles

Since 8 Mar 45 a section of anti-tank ditch, water-filled at 12 May 45, 20 feet wide, 150 yards long, with soil banks on either side has been built on the flat between the coast and the Dutch Barracks at KLANDASAN. There are indications that this ditch is to be extended.

(iii) Bunkers and Bunker Shelters

Bunkers are located along the full length of the beach. Throughout the built up area behind this beach there are numerous bunker shelters, particularly in the KLANDASAN residential and barracks area where at least 60 can be located on these photos.

(iv) Tunnels

Approximately 50 tunnel entrances can be located on photos, mostly in the KLANDASAN, and particularly in the vicinity of the Dutch Barracks where there are about 30 tunnel entrances.

(v) Wire

It has been reported by natives that a five strand barbed wire fence on mangrove posts lines the beach about 30 to 40 yards inland. It is not possible to locate this wire on available photographs.

(vi) Oil

Portion at least of this beach is subject to the potential of burning oil defence. The probabilities of this and the areas concerned are illustrated in PART III para 21.

5. EXITS

Providing the anti-tank ditch can be negotiated foot troops and vehicles should have little difficulty in reaching the VASEY Highway.

6. HINTERLAND

The whole of the beach is backed by a firm, narrow, sandy coastal flat which varies from 200 to 400 yards averaging 300 yards wide. This flat is almost entirely a built-up area with a very large number of buildings ranging in size from dwellings to large administrative, stores and barracks buildings. A small patch of swamp occurs around a stream mouth 1300 yards from the eastern end of the beach. There is no timber cover along the western half of beach but along eastern half there is a narrow

belt of timber. Behind the flat the country rises fairly sharply to low rough broken ridges which overlook the whole beach and which are covered with dense secondary growth and large patches of cultivation. There are numerous groups of buildings along the coastal fringes of the hills. These hills extend inland behind BALIKPAPAN, SIGNAL Hill and another unnamed hill behind the western end of the beach are reported to be 280 feet and 350 feet high respectively. On the eastern end of the beach it is bounded by a small river 30/40 feet wide which meanders across a flat. Its banks appear flat and are lined with mangrove. A suitable area for a BMA should be available at the eastern end of the beach.

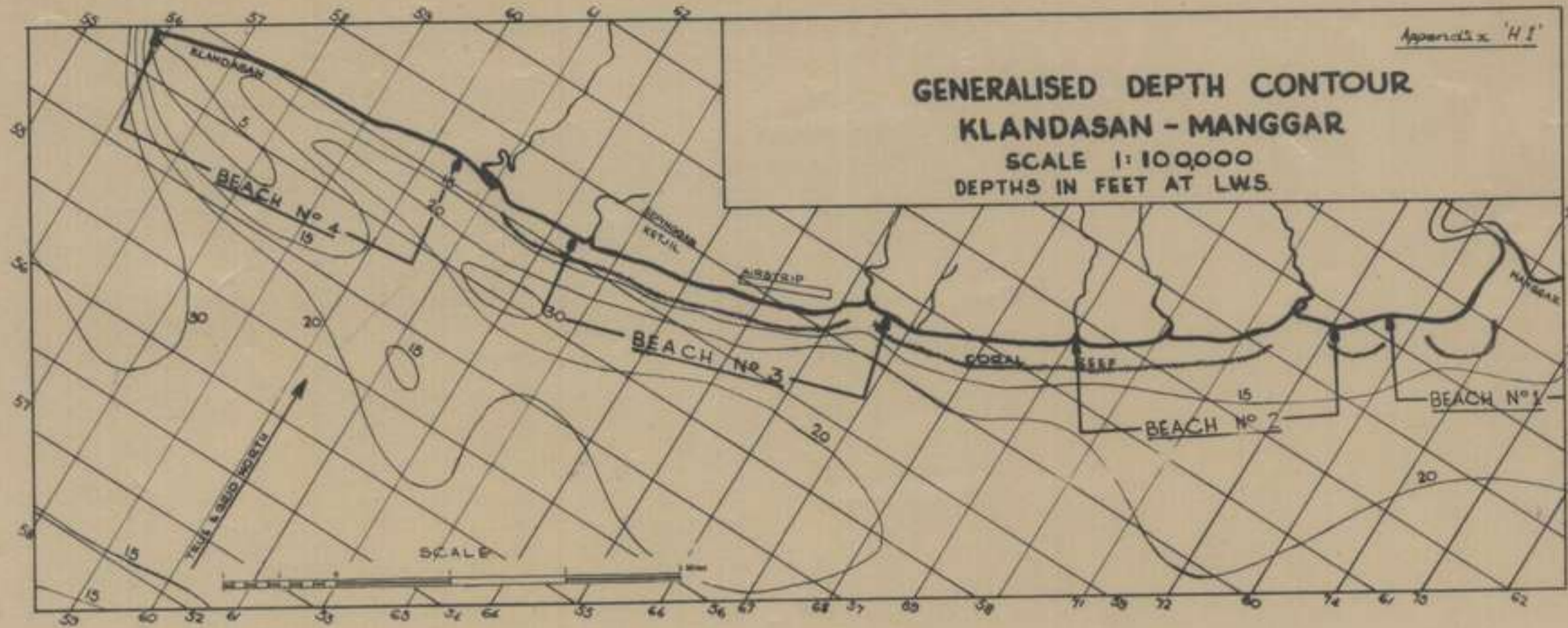
7. CRAFT ANCHORAGES AND HIDEOUTS

Craft anchorages are nil. Except in BALIKPAPAN Bay barge hideouts are nil but barges could be dispersed along the full length of the beach and within the BALIKPAPAN Bay area.

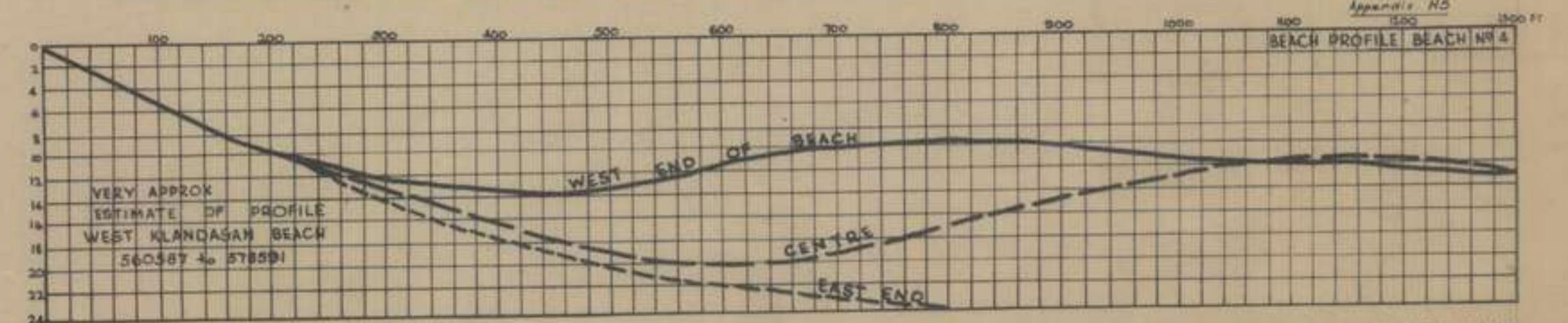
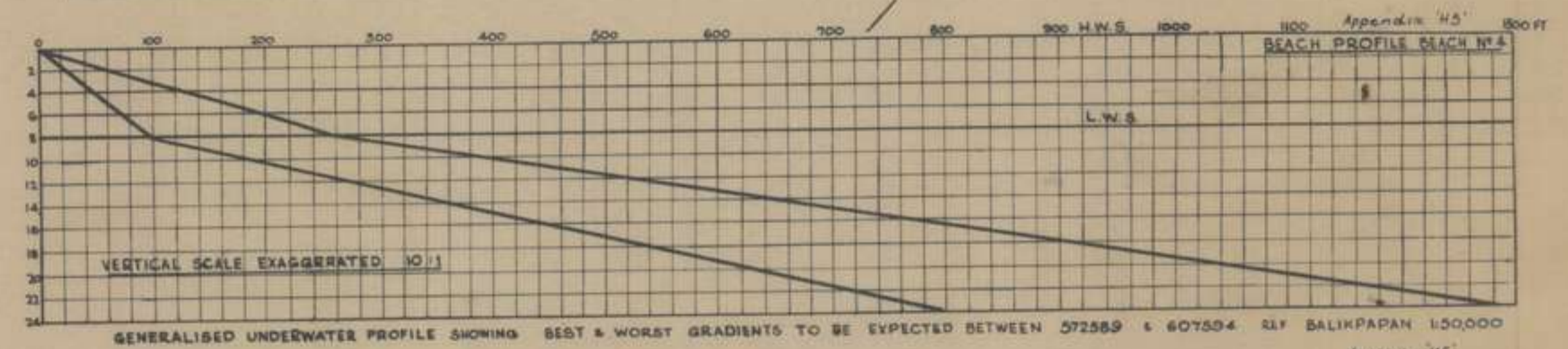
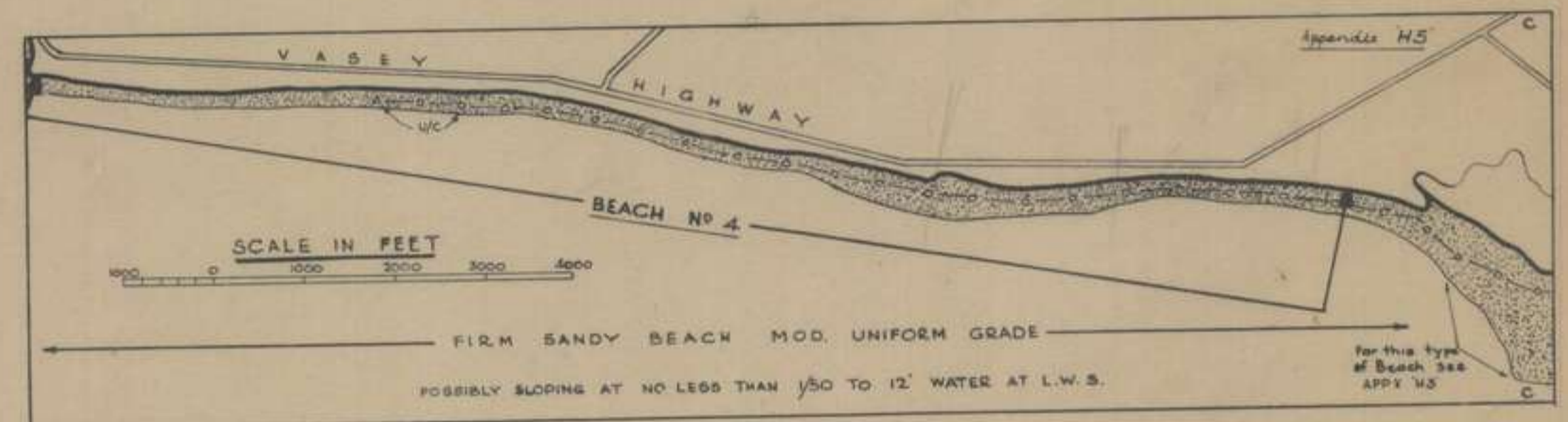
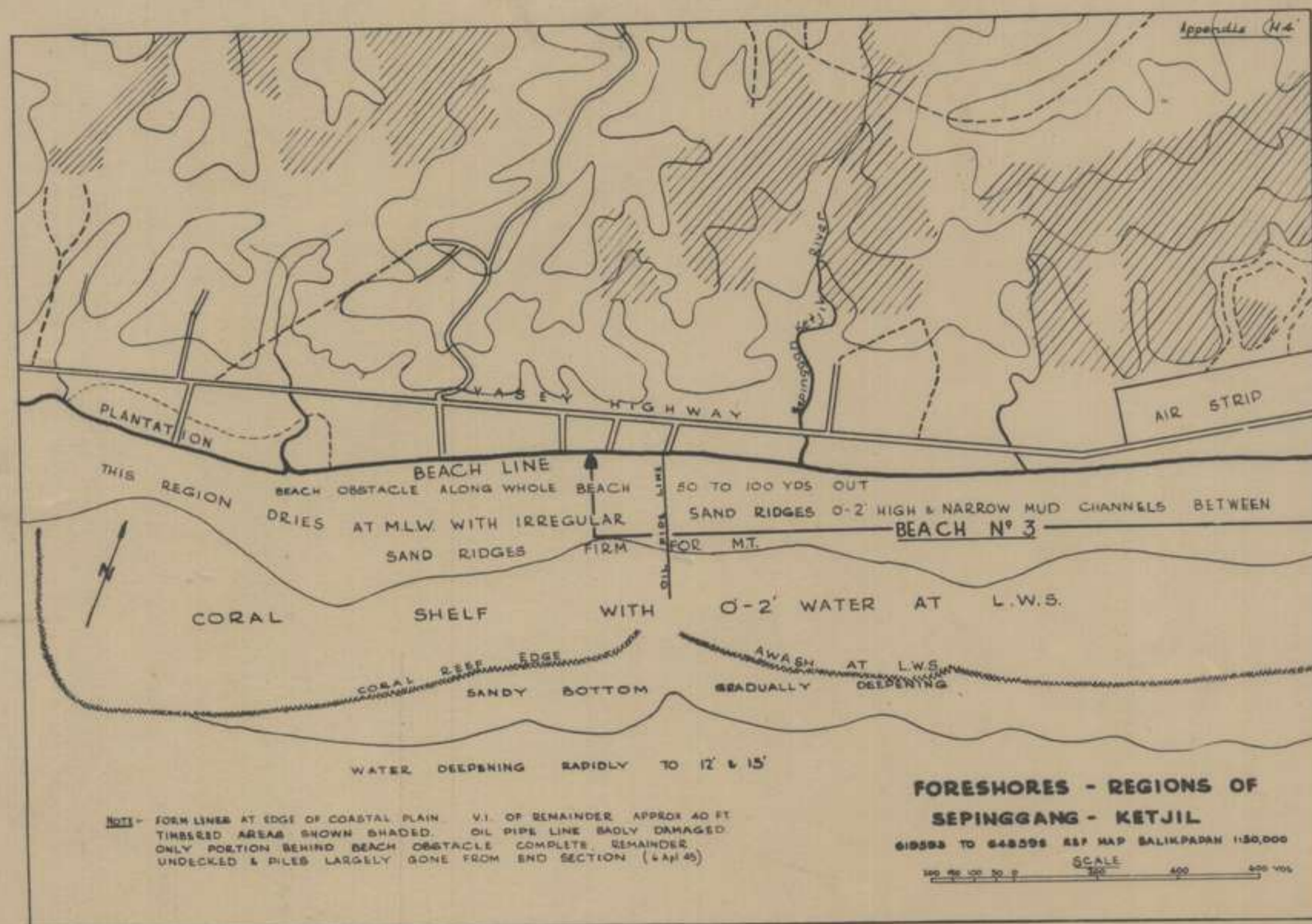
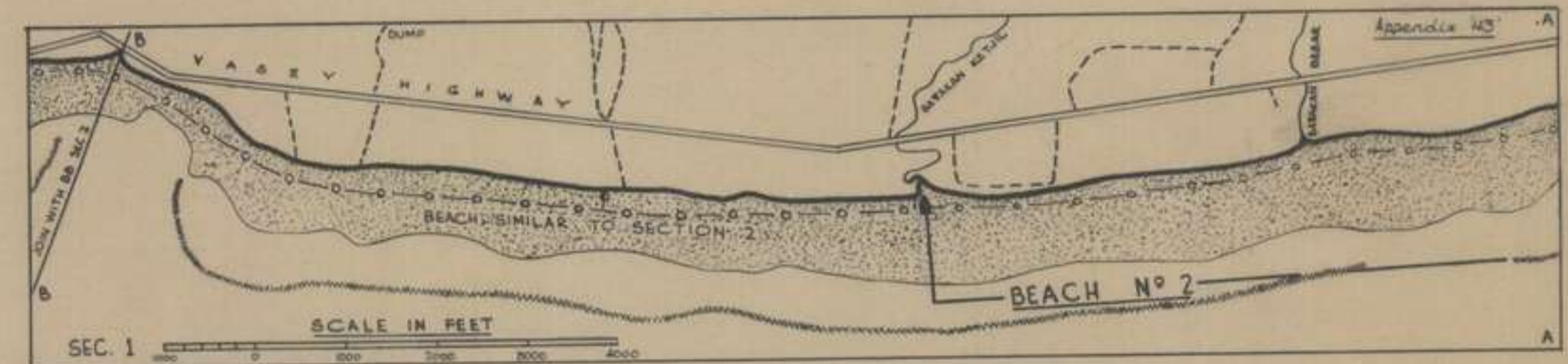
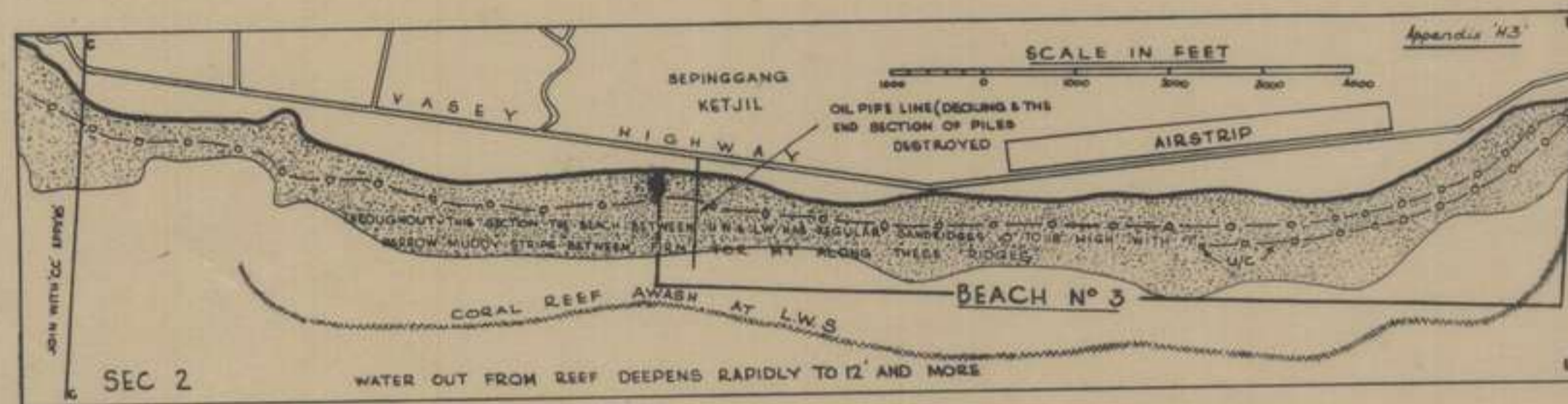
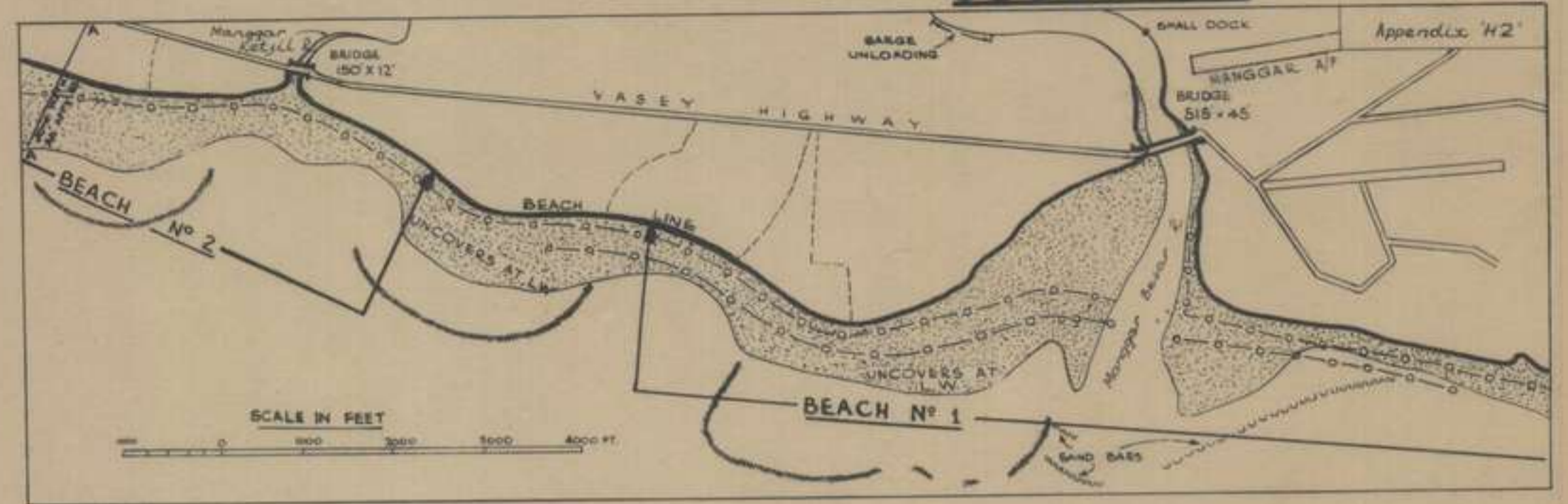
8. GENERAL COMMENTS

This is the best beach within the area studies. It should be suitable for landing operations. It is, however, the most heavily defended portion of the coast.

APPENDICES 'H1' TO 'H5' TO
IAUST CORPS INTELLIGENCE REVIEW N° 4
'OBOE TWO'

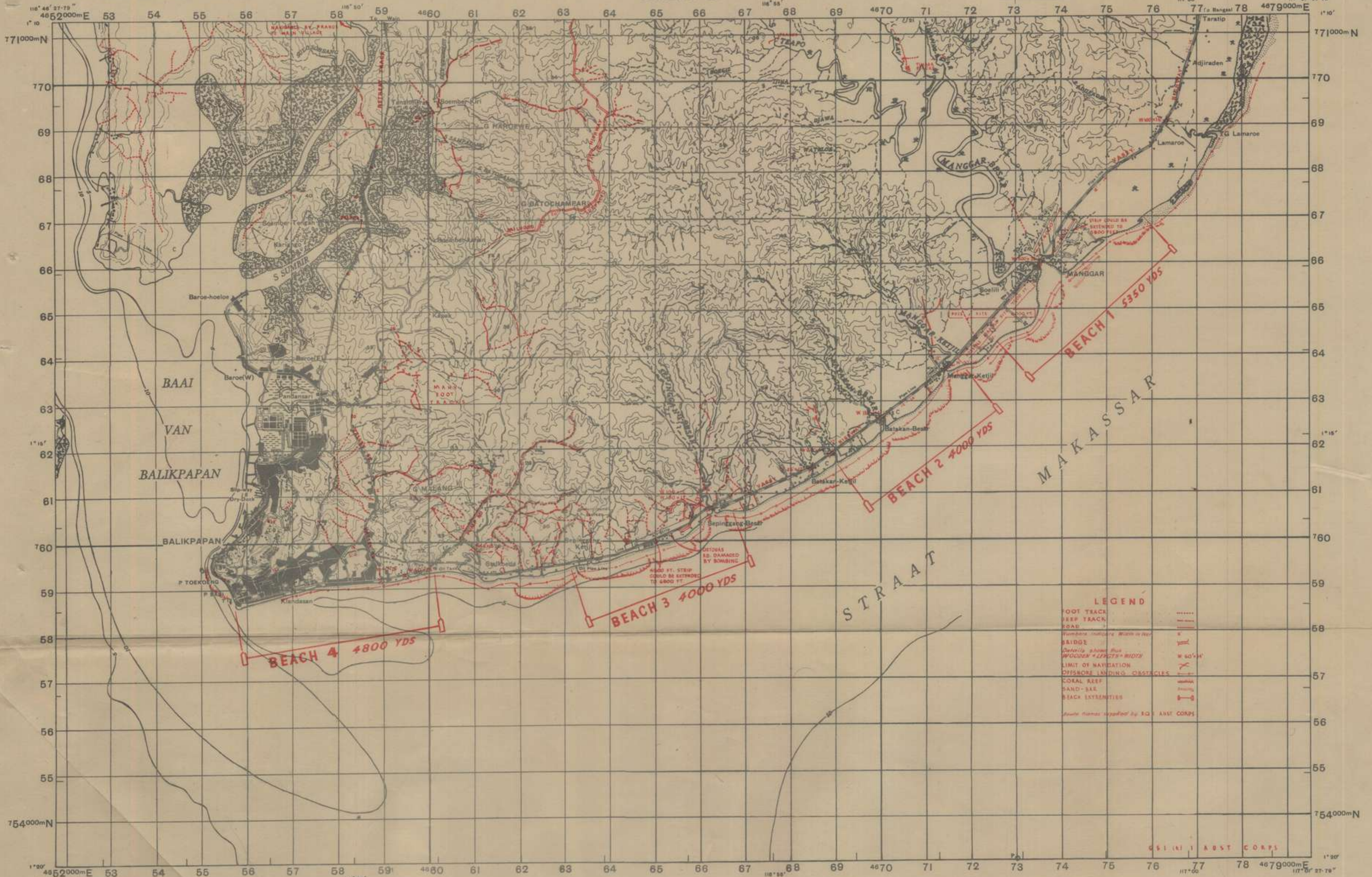


LEGEND APPLICABLE TO EACH APPENDIX
SAND UNCOVERING AT LW [Symbol] REEF [Symbol]
SAND BAR [Symbol] BEACH OBSTACLES [Symbol]



BALIKPAPAN
SHEET C

NORTH EAST BORNEO 1:50,000



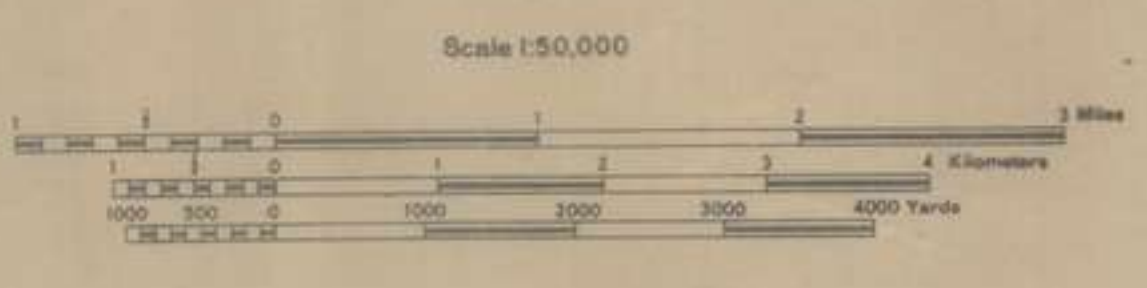
ICD/MSC/7503
CONTROL: Existing Map of 1:25,000 Series BALIKPAPAN.
AIR PHOTOGRAPHY: 28 Photo Sqn, 6 Photo Group; 28 Bomber Sqn, 5 Bomber Group; U.S.A.A.F. Missions 285-2-2 Oct 44, 283-2-4 Oct 44, 284-2-3 Oct 44 and 448283 Oct 44.
COMPILATION: 2/1 Aust Army Topo Svy Coy; Aust Svy Corps from Air Photo; and 1:25,000 Maps of BALIKPAPAN prepared by Dutch Topographic Service Batavia, 1932.
DRAWING & REPRODUCTION: 2/1 Aust Army Topo Svy Coy, Aust Svy Corps, Feb '45.

LEGEND

Read, hard surfaced	—
Read, lightly surfaced	- - -
Read, earth	· · · · ·
Jeep Track	—
Trail	—
Railway, narrow gauge	—
Buildings or Huts	■
Highway Bridge	—
Spot Elevation	141
Tank, Oil or Gas	○
Oil or Gas Well	○
Mangrove	■
Mud Flats	■
Stream	—
Swamp	■
Sand	■
Lagoon	■

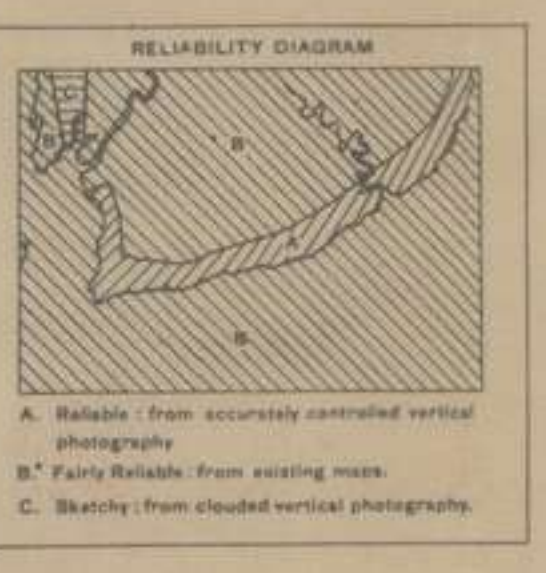
ABBREVIATIONS:

G	GOENONG	(MOUNTAIN)
BT	BOEKIT	(HILL)
P	POELAU	(ISLAND)
TG	TANDJOENG	(CAPE)
S	SOENGAI	(RIVER)
B	BAAI	(BAY)



CONTOUR INTERVAL 20 METRES EXCEPT FIRST 10 METRES SHOWN IN BROKEN LINE
LAMBERT CONICAL ORTHOMORPHIC PROJECTION
HEIGHTS & DEPTHS IN METRES

NOTE: OFFICERS USING THIS MAP ARE REQUESTED TO MAKE ANY NECESSARY ADDITIONS AND AMENDMENTS ON THE MAP ITSELF AND FORWARD SAME TO SURVEY DIRECTORATE, H Q OF FORCE CONCERNED

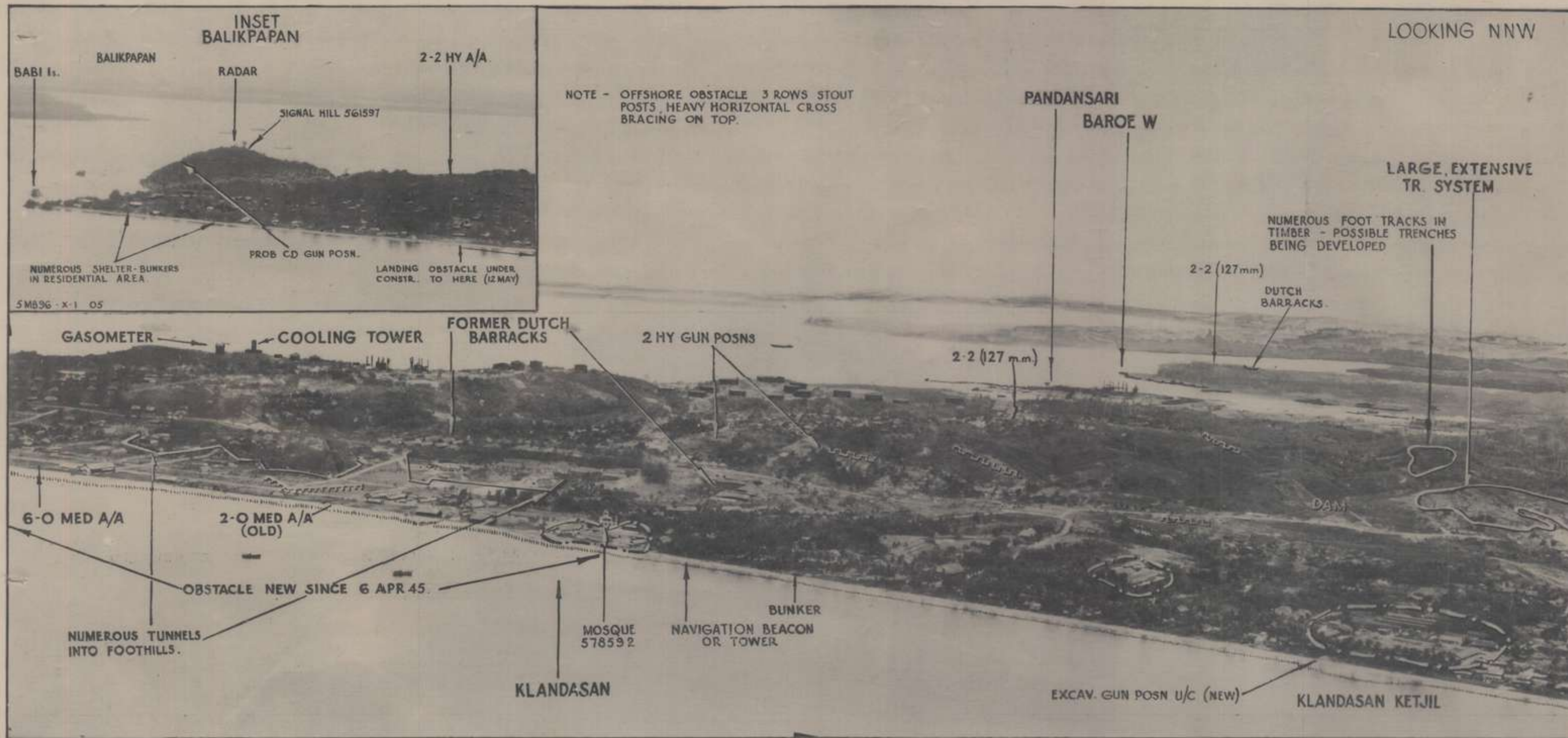


TO GIVE A CORRECT REFERENCE ON THIS SHEET ALWAYS QUOTE THE SHEET NAME PAY ATTENTION TO LARGER NUMBERS FOLLOWED ONLY BY SMALLER.

East	Take WEST EDGE of SQUARE in WHICH POINT LIES AND READ THE FIGURE NUMBER APPROPRIATE TO THE LINE ON NORTH OR SOUTH BOUNDARY.	North	Take SOUTH EDGE of SQUARE in WHICH POINT LIES AND READ THE FIGURE NUMBER APPROPRIATE TO THE LINE ON EAST OR WEST BOUNDARY.
Column North Boundary	1	Column South Boundary	2
Line	1000 METRES	Line	1000 METRES
Square	REPRESENT SQUARE KILOMETRE REFERENCE DISTANCE 100 KILOMETRES	Square	REPRESENT SQUARE KILOMETRE REFERENCE DISTANCE 100 KILOMETRES

BALIKPAPAN 1

APPENDIX "J(i)"
 I AUST CORPS INT. REVIEW No 4
 ANNOTATIONS BY 3AAPIU-INFM. TO 6 MAY 45.



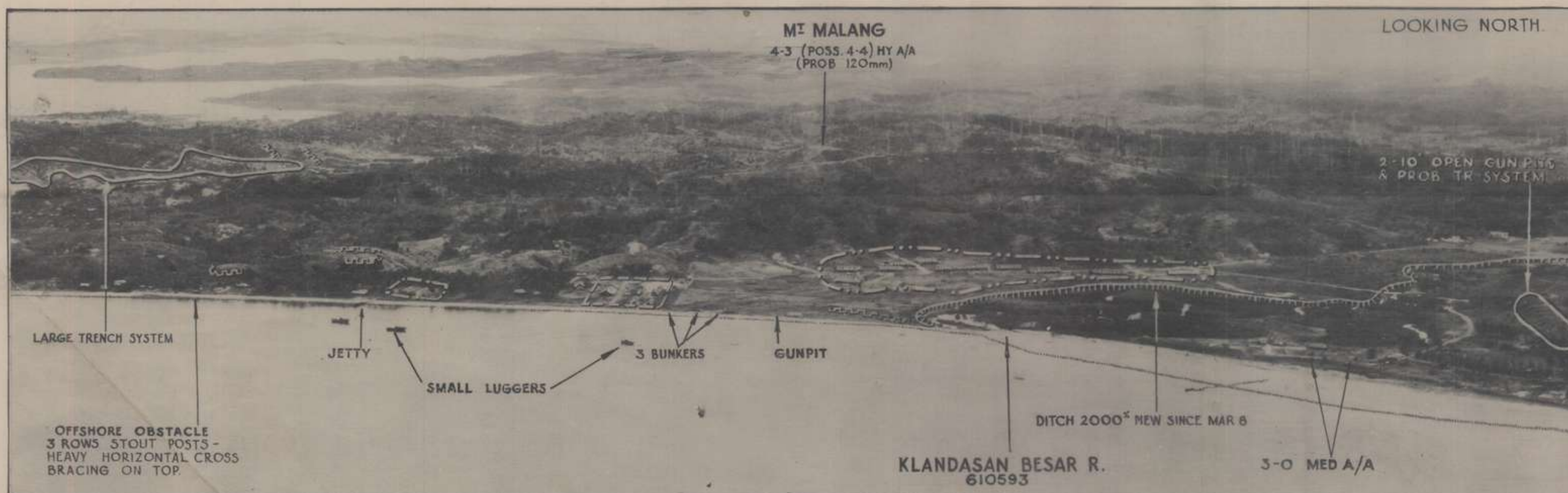
LOCALITY DIAGRAM

LEGEND

- STORES AREA.
- PERSONNEL AREA
- PERS. & STORES AREA
- DEFENDED AREA
- A/TK. DITCH
- TRENCH

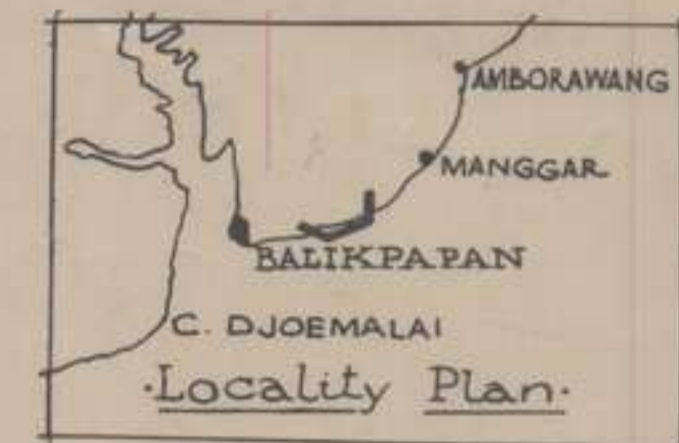
REF MAP - BALIKPAPAN 1-50,000

BALIKPAPAN 2

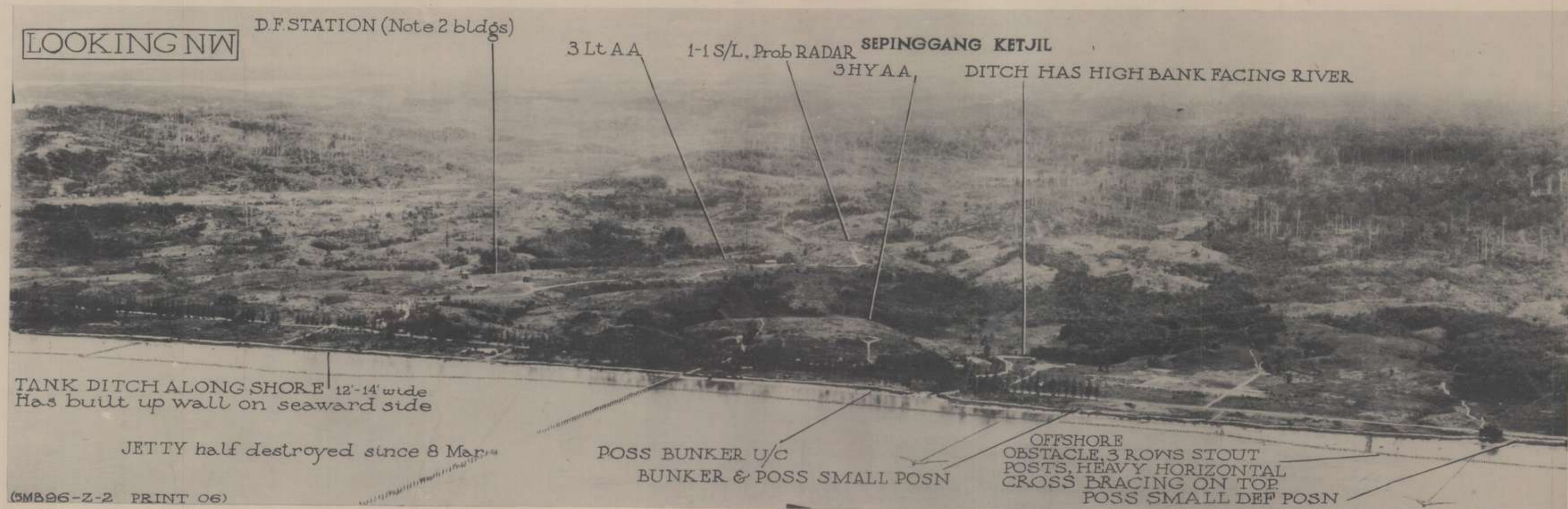


5MB96 Z-2 03.

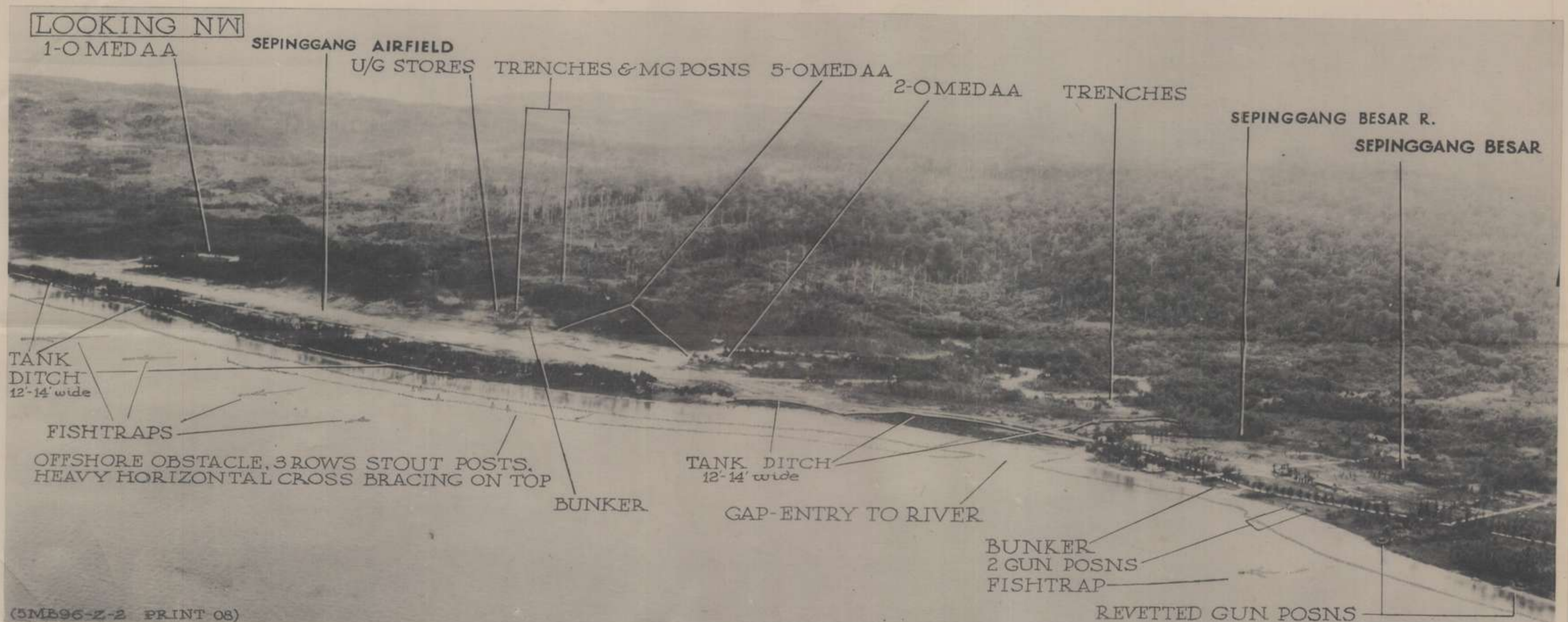
APPENDIX "J(ii)"
 I AUST CORPS INT REVIEW N°4
 ANNOTATIONS BY 3AAPIU INFM TO 6 May 45



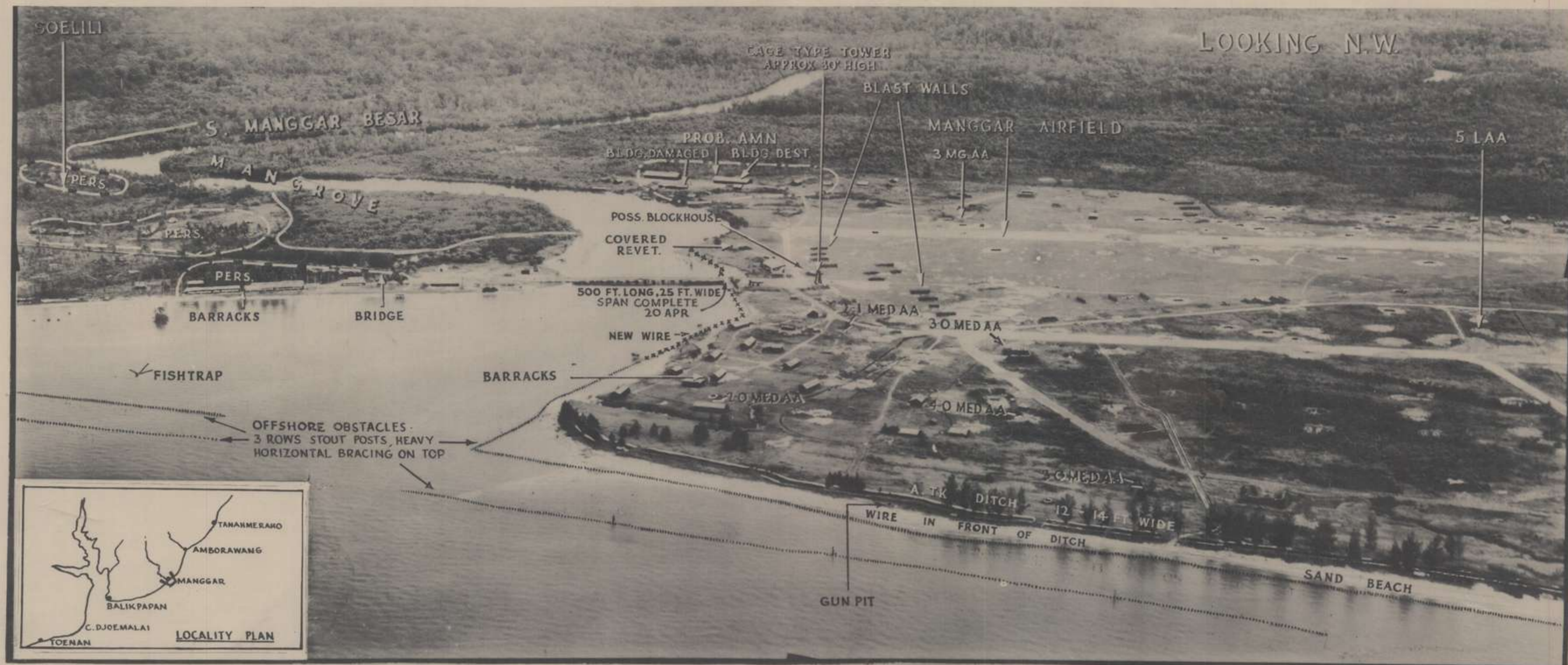
SEPINGGANG I



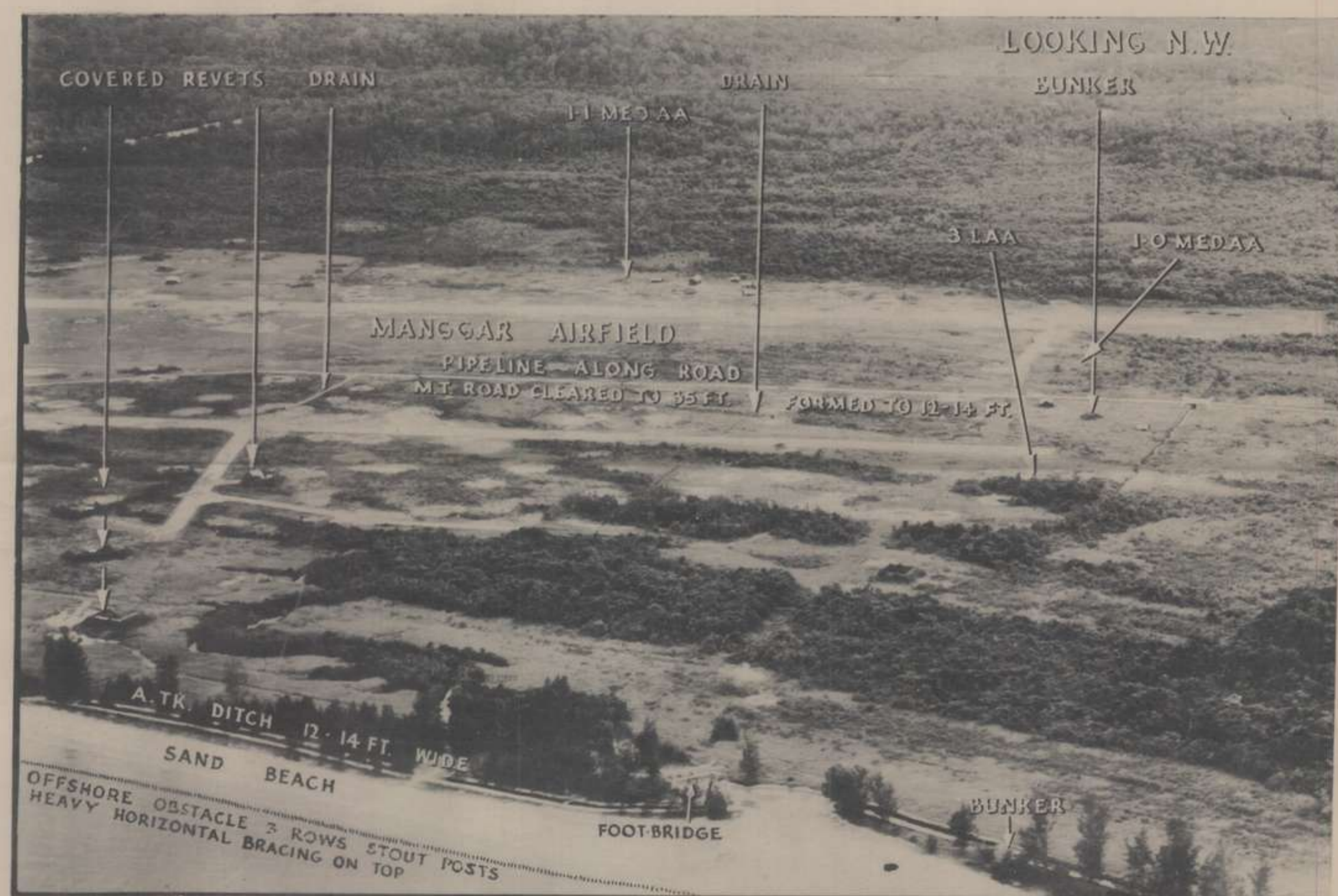
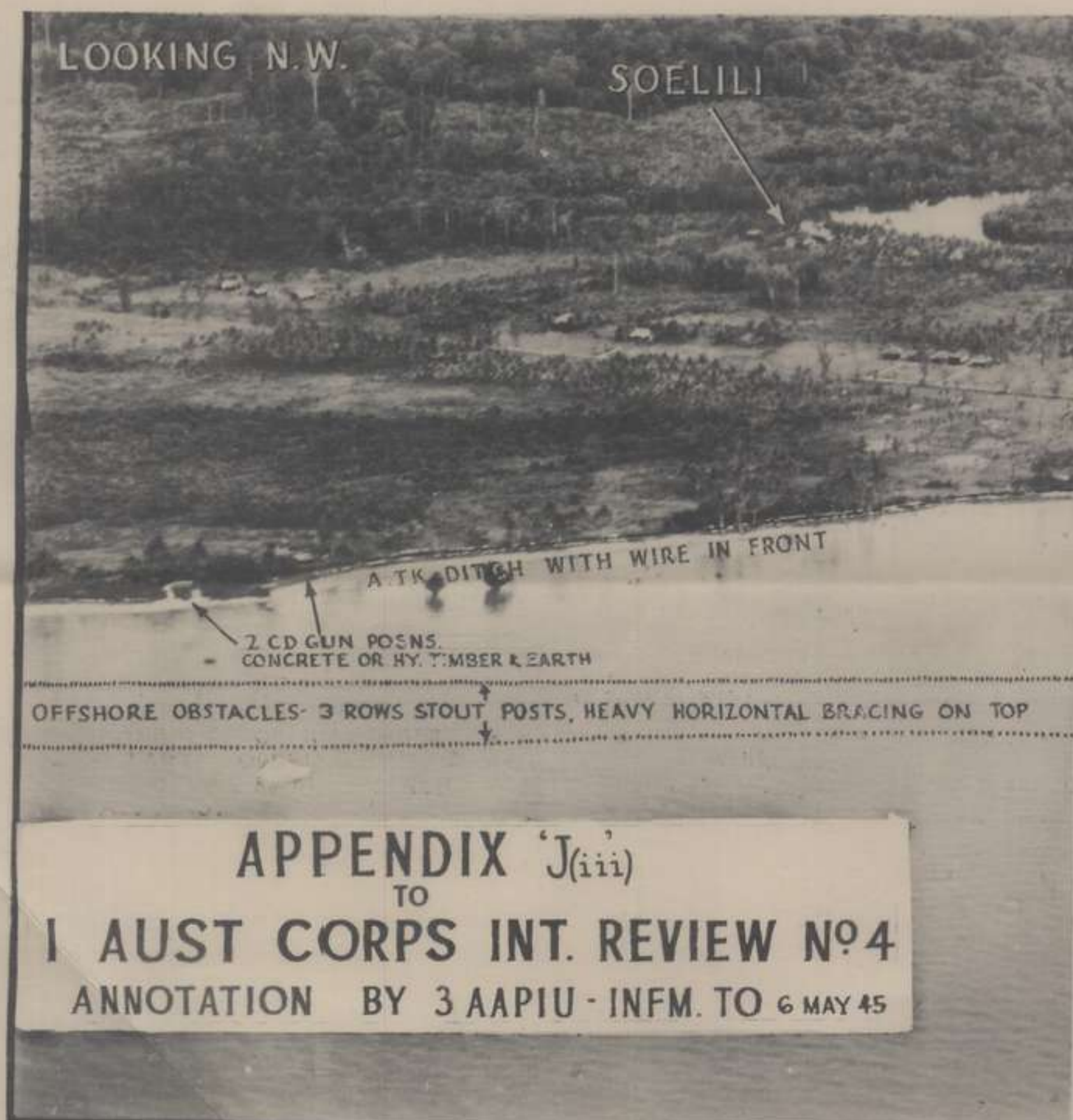
SEPINGGANG II



MANGGAR 1



MANGGAR 2



SECRET

Appendix "X"
to 1 Aust Corps Intelligence
Review No. 4 - OBOE TWO.

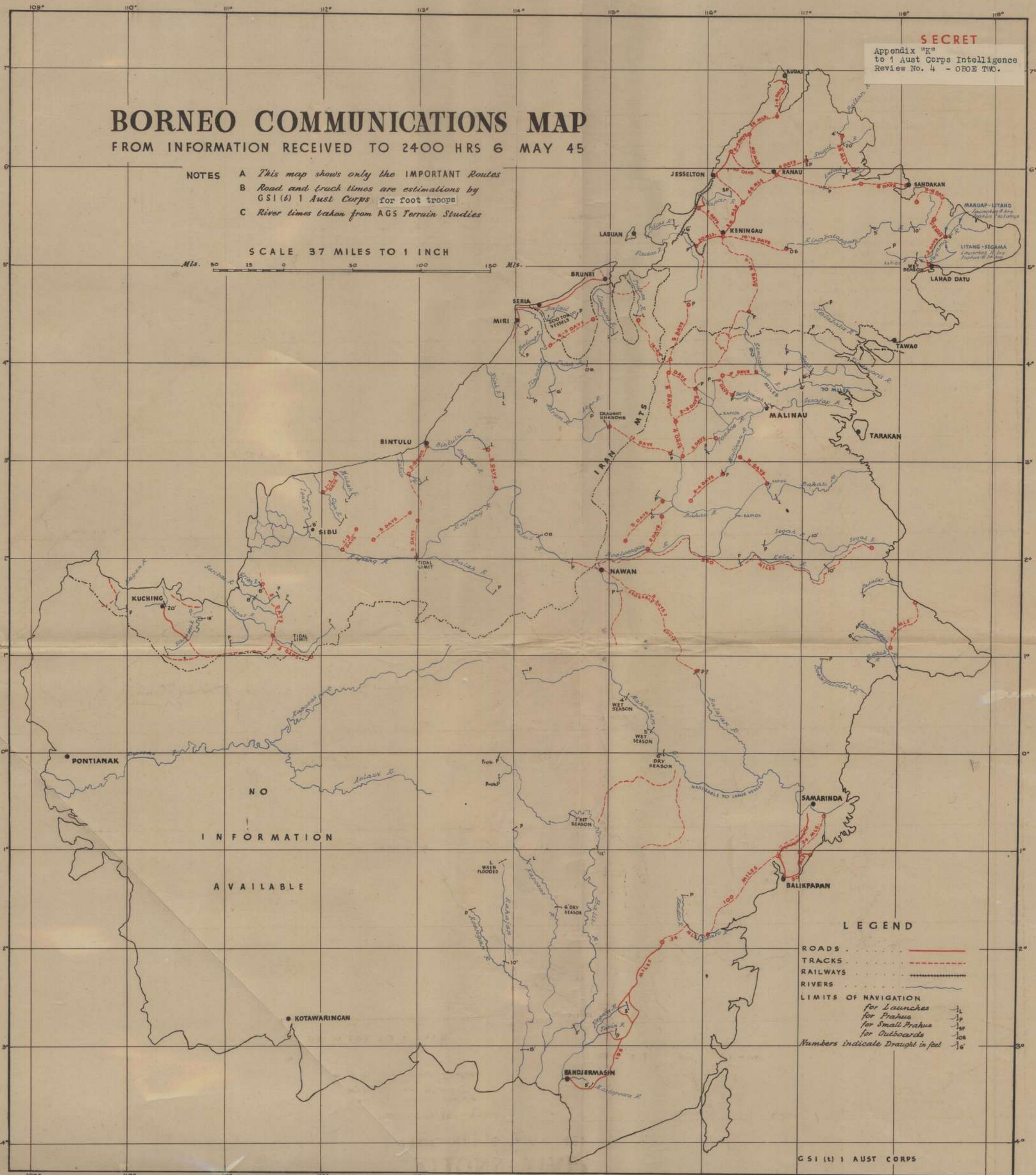
BORNEO COMMUNICATIONS MAP

FROM INFORMATION RECEIVED TO 2400 HRS 6 MAY 45

- NOTES
- A This map shows only the important Routes
 - B Road and track times are estimations by GSI (t) 1 Aust Corps for foot troops
 - C River times taken from AGS Terrain Studies

SCALE 37 MILES TO 1 INCH

Mls. 50 15 0 50 100 150 Mls.



NO
I N F O R M A T I O N
A V A I L A B L E

LEGEND

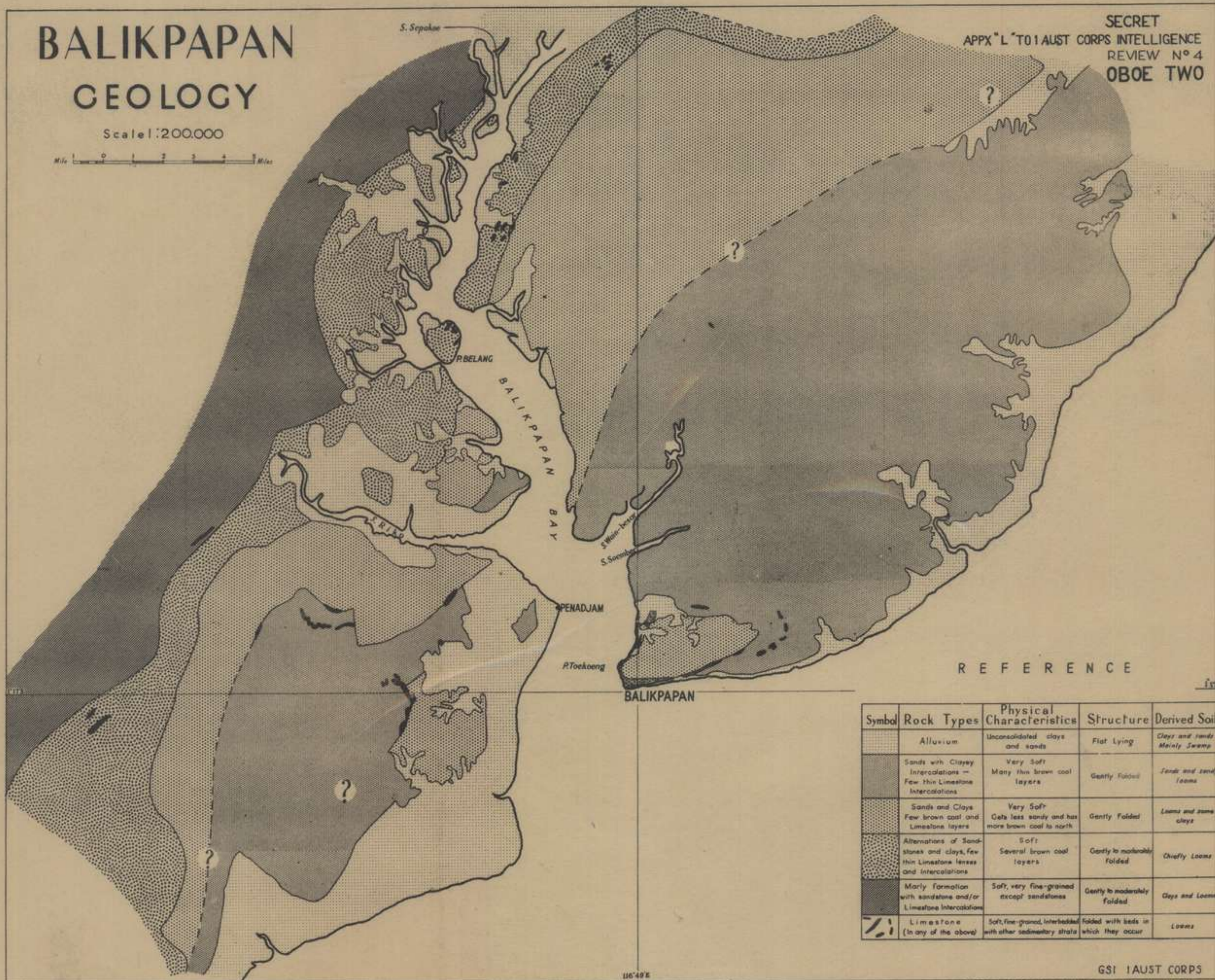
- ROADS
- TRACKS
- RAILWAYS
- RIVERS
- LIMITS OF NAVIGATION
- for Launches
- for Prahus
- for Small Prahus
- for Outboards
- Numbers indicate Draught in feet

GSI (t) 1 AUST CORPS

BALIKPAPAN GEOLOGY

Scale: 1:200,000

Miles 0 1 2 3 4



SECRET
APPX "L" TO 1AUST CORPS INTELLIGENCE
REVIEW N° 4
OBOE TWO

REFERENCE

Symbol	Rock Types	Physical Characteristics	Structure	Derived Soils
[Symbol]	Alluvium	Unconsolidated clays and sands	Flat lying	Clays and sands Mainly Swamp
[Symbol]	Sands with Clayey Intercolations - Few thin Limestone Intercolations	Very Soft Many thin brown coal layers	Gently Folded	Sands and sandy loams
[Symbol]	Sands and Clays Few brown coal and Limestone layers	Very Soft Gels less sandy and has more brown coal to north	Gently Folded	Loams and some clays
[Symbol]	Alternations of Sandstones and clays, few thin Limestone lenses and Intercolations	Soft Several brown coal layers	Gently to moderately Folded	Chiefly Loams
[Symbol]	Marly formation with sandstone and/or Limestone Intercolations	Soft, very fine-grained except sandstones	Gently to moderately Folded	Clays and Loams
[Symbol]	Limestone (In any of the above)	Soft, fine-grained, interbedded with other sedimentary strata	Folded with beds in which they occur	Loams

GS1 1AUST CORPS

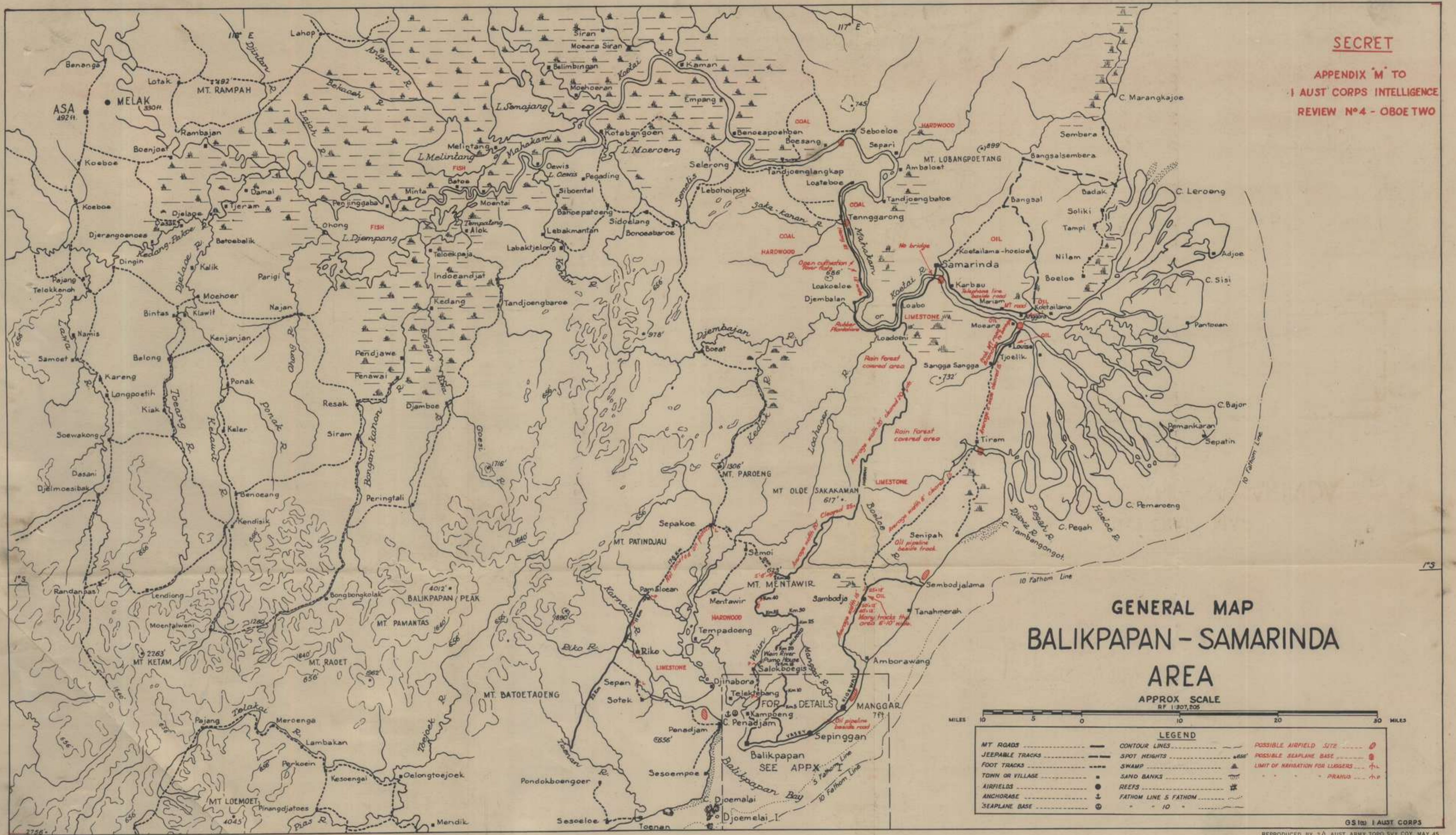
REPRODUCED BY 2/1 AUST ARMY TOPO SVY COY, MAY '45

1CO/MISC/7500

106°49'E

SECRET

APPENDIX 'M' TO
I AUST CORPS INTELLIGENCE
REVIEW N°4 - OBOETWO



100/1150/7507
100/1150/7508

GS 101 I AUST CORPS
REPRODUCED BY 2/1 AUST ARMY TOPO SVY COY, MAY 45

WHARVES AND JETTIES - BALIKPAPAN

Serial	Area	Wharf and/or Jetty	Map Ref	Neck		Head		Minimum depth of water at Mean Low Water Springs					
				Length (ft)	Width (ft)	Length (ft)	Width (ft)	Distances along Wharf Head (ft)	Alongside Wharf Head (ft)	At Distance of 10' (ft)	At Distance of 20' (ft)	At Distance of 35' (ft)	
1.	Town Area	Govt (KPM)	555599	115	10	75	13		4	7	9	11	
2.		Pier No. 1	555600	230	30	-	-						
3.		Pier No. 2)	557602	410	45	165	60	0-165	15	20	21	22
4.				557602	240	25	90	20	0-90	8	12	13	14
5.		Pier No. 3		558604	190	20	300	40	0-165 165-300	28 26	32 28	34 32	38 34
6.		Pier No. 4		560607	150	27	300	40	0-165 165-300	27 27	30 30	31 30	31 32
7.		Pier No. 5		562614	N end	15	720	30	0-165	33	38	44	48
					710				165-330	34	40	42	44
									330-500	34	40	44	48
					S end				500-665	36	41	44	49
					480				665-770	41	45	48	53
8.		Pier No. 6		562617	600	12	100	50	0-100	28	30	32	35
9.		Pier No. 7		563619	660	25	500	35	0-500	14	17	18	16
10.		PANDANJARI		562626	600	12	80	50					
11.				563622	180	12							
12.		SIGNAL HILL AREA		553597	125	25							
13.				554598	32	20	75	25					
14.				555598	135	7							
15.				555599	200	7							
16.	SLIPWAY JETTY AND SLIPWAY			564611	225	12	80	25					
17.	BAROE HOBBLE JETTIES		559641	300	8								
18.			557644	640	6								
19.			557653	170	12								

NOTES:

- i. In addition to wharves and jetties scheduled above, there are approximately six minor jetties to the north and west of main dock area in BALIKPAPAN area.
- ii. All wharves have been rebuilt and some enlarged by the Japanese.

WHARVES AND JETTIES - BALIKPAPAN

SECRET
Appendix 'N' to 1 Aust Corps
(Sheet 2) Intelligence Review No 4 OBOE-TWO.

Serial	Wharf	General Description	Use	Unloading Facilities	Pipelines										
					No	Size	Type	No	Size	No	Size	No	Size		
1.	Govt (KPM)	T-shaped jetty built by Japanese to replace old Govt Jetty.		Nil											
2.	Pier 1	(L-shaped head. Partially destroyed by Dutch and now repaired by Japanese (Old pier still extant. T-shaped head original wharf.)	Unloading of DPM and other large cargo ships. Principally used for unloading goods for transportation by barges to oil fields.	Light gauge railway to warehouse. (i) Fixed electric crane; max capacity 10 tons; radius 17' (7½' outside wharf) Lifting height 15'. (ii) Fixed electric crane; max capacity 5 tons; radius 17' (7½' outside wharf) Lifting height 16'. (iii) Light gauge railway.	1	8"	Black oil	1	3"	1	2"				
3.	Pier 2				1	3"	For bunkering launches and barges with fuel and diesel oil.	1	3"	1	2"				
4.	Pier 2														
5.	Pier 3	L-shaped left intact.		Light gauge railway.	1	6"	Slops	1	3"	1	2"	1	6"		
6.	Pier 4	L-shaped screw pile and timber constr. wharf left intact.		Light gauge railway.	1	6"	Slops	1	3"	2	2"	1	4"		
					1	10"	Gasoline								
					1	10"	kerosene								
					1	8"	black								
					1	10"	Oil								
					1	10"	crude oil								
7.	Pier 5	U-shaped; screw pile and timber constr. principal wharf.	General cargo wharf.	(i) Crane max cap 1 ton; radius 19' (11' outside wharf; lifting height 26'). (ii) Floating crane max capacity 10 tons lifting height 65'. (iii) Double track light gauge railway.	1	3"	Slops	1	3"	1	3"	1	3"		
					1	10"	Kerosene								
					1	8"	Black								
					1	10"	Oil								
8.	Pier 6	T-head; Junction damaged by air attack Japanese have connected this wharf to Pier 7 with a catwalk.	Oil wharf only.	Light gauge railway.	1	4"	Slops	1	3"	1	2"	1	3"		
					1	6"	White								
					1	10"	Oil								
					1	6"	Black								
					1	10"	Oil								
					1	8"	Lab Oil								
9.	Pier 7	T-head	Packed products	Light gauge railway	1	1½"	Black Oil	1	3"	1	2"	1	3"		
					1	4"	White "								
10.	PANDAN-SARI.	Small T-head fitted with pumps supplying PANDAN-SARI refinery.	Cannot be used for unloading purposes.												
11.	BALIKPAPAN and JETTY.	Jetty of concrete constr; reported destroyed but now restored by Japanese. Dimensions of slipway 660 x 40'		Slipway Data: (i) Length of Cradle 117' (ii) Max Breadth cradle 23' (iii) Max Load (approx) tons 150 (iv) Max draught at HST 8' (v) Max length of vessel slipped 106' (vi) Max beam of vessels slipped 19½'											

NOTE: Vessels longer than 32 ft can only be slipped at high tide.

- NOTE: (i) Pier No 2 to Pier 4 were mainly used for general cargo as they were near the main 'godowns'.
(ii) Pier No 5 to Pier 7 were mainly used for packed products, as storage facilities were adjacent to wharves
(iii) Shipping handled by BALIKPAPAN dock facilities per month, postwar, comprised 60-70 vessels as follows:
(a) 25 KPM Steamers. (b) 20-30 Ocean going tankers (c) Remainder smaller passenger liners.
(iv) Capacity of pipelines (gravity feed):- 3" - 250 barrels/hour 4" 500 barrels/hour
6" - 1000 " " 8" 2000 " "
10" - 3000 " "

CHARACTERISTICS OF THE MOST COMMON ENGINEERING TIMBERS FOUND IN THE BALIKPAPAN AREA -

SECRET
Appendix 'O'
1 Aust Corps Int-
elligence Review
No 4. OBOE TWO

Local Name	Botanical Name	Habitat	Occurrence.	General properties	Size	Air dry weight lbs per cu ft.	Uses.
Belion (Borneo Ironwood)	Dusidoroxyton Zuageri	Forest	Very abundant in places forming 6% of stand.	Dark brown, very heavy, very hard, very durable, straight grained and easily split. Trunk often ridged. Withstands changes of moisture & temperature & the attacks of Toredos and insects. One of the strongest known woods and shows little checking or warping even under the most extreme conditions. Sapwood and heartwood distinct but not very different in colour. Sapwood yellowish and scanty but durable and need not be removed. Wood darkens on exposure to air.	Trees often 2 to 3ft diam-eter Occurs in larger sizes Can be used as small as 12-13 inches in diameter.	60-70 logs sink.	Salt water piles. Wharf construction. Railway sleepers. Tool handles. Anything where great durability is required. Belion shingles are used for permanent roofing.
Nerbau (Nirabau Ipil, Dutch Borneo)	Afzelia Bakeri Intsia Bakeri	Flat land. River flats.	Abundant forming up to 0.5% of stand.	Very hard, very heavy, coarse-grained dark yellowish brown wood with sulphur yellow deposits. Very strong and durable and resistant to insect attack but not suitable for use in salt water. Sapwood white to pale yellow and not durable.	Trees up to 5ft diameter & 50ft clear length	48-75 logs sink.	High grade construction. Fine furniture Railway sleepers flooring. ships ribs and knees.
Merante (Oba Zulu N Borneo) (Abang Dyak)	Shorea sp	Forest	Very abundant in places forming up to 3% of stand.	Dark red, fine grained, soft to moderately hard, light to moderately heavy, keeping its shape well and little affected by shrinking or warping. Distinct sapwood and heartwood, the former being small in amount and white. The tree is of good shape with a scaly reddish-brown bark.	Trees often 2 to 4 ft in diameter with clear lengths of 60ft or more	40-45 logs float.	Scantlings, flooring, ships planking. Patterns. General House construction Mahogany substitute.

Appendix 'O' (Contd)

Local Name	Botanical Name	Habitat	Occurrence	General Properties	Size	Air dry weight lbs per cub ft	Uses.
Resak	Vatica Sp Cotylelobium Sp	Forest.	Abundant. Forms of 0.6% of stand.	Very hard, very heavy, yellow or yellowish brown to dark brown in colour, becoming much darker after exposure to the air. Comparatively little resin. Sapwood and heartwood distinct, the former white or pale yellow	Trees up to 3ft diamet- er and 50ft clear length.	52-65 logs sink.	General construction. House construction. Flooring, piles, sleepers, tool handles.
Resak Batu	Leguminosae family.	Forest.	Not abundant.	Specially hard and heavy form of Resak, coarser grained with different structure.			Wharf construction and where great strength is required.
Kapor (Borneo Camphor wood)	Dryobalanops Genus Principally D Aromaticus	Forest	Very abundant forms up to 3.5% of stand.	Moderately hard, moderately heavy, straight-grained brownish red. Sapwood and heartwood distinct, the former whitish or yellowish, needing to be removed before the wood is used. Trees of good shape, sound and easy to work. Sometimes subject to dry-rot.		40-50 logs often float.	Scantlings. Construction work except where in contact with water. Sleepers. Bridgeing. Flooring.
Griting (teruntum)	Lumnitzera littorea.	Mangrove swamps.	Abundant.	Hard, heavy, dark, grey, fine-grained. No very sharp distinction in colour between sapwood and heartwood. Wood is durable, seasons well and keeps its shape even on exposure to severe weather conditions. Becomes lighter in colour on aging or exposure to air.	Logs 2ft diam- eter and 30ft long.	50 logs sink	Piles with bark on. Bridge construction sleepers.
Dungun	Heritiera Littoralis	Inner edge of mangrove swamps.	Not abundant.	Very hard, very heavy, very durable, dark chocolate brown. One of the strongest and toughest woods. Difficult to saw. Heartwoods and sapwood very distinct, the latter white and not durable.	Up to 3ft diam- eter with 50ft clear length. Large sizes rare.	60-70 logs sink.	Piles, Bridge construction sleepers Tool handles

Appendix 'C' (Contd)

-3-

Local Name	Botanical Name	Habitat	Occurrence.	General properties.	Size.	Air dry weight lbs per cub ft	Uses.
Selangan.	<i>Shorea Hopea</i> and <i>Troptera borneensis</i>	Forest	Very abundant forming up to 8% of stand.	Very hard, heavy to very heavy yellowish brown when first cut, darkening on exposure to air. Strong elastic, durable, breaking with long splinter. Sapwood and heartwood distinct, the former white and useless.	Logs up to 5ft diameter and 50ft long.	52-65 Logs.	Bridges. General construction. Sleepers flooring. Files (type known as Selangan Batu.)
Serian (see also Heranti)	<i>Shorea</i> genus	Forest	Very abundant. Forming up to 17% of stand.	Very pale pink or yellow to dark red. Easily worked. Several of the species produce resin. Trees are of good form, but occasionally have large buttress roots.	Up to 5ft diameter and a clear length of 80ft	25-40 Logs float.	Temporary construction furniture (mahogany substitute) Scantlings. House construction.
Kruin	Genus <i>Dipterocarpus</i>	Forest	Very abundant. Forming up to 11% of stand.	Moderately hard, moderately heavy coarse grained, dark reddish-brown. Strong and stiff and durable under the proper circumstances. Sapwood is distinct from heartwood and relatively small in amount and light in colour. It contains an oleo resin. Decays in contact with water in Borneo. Shape of tree excellent. Buttress small or absent. Trees usually sound.	Trees up to 4ft diameter with clear lengths of 80ft or more	40-48 More than 50% sink when freshly cut.	Structural work. Furniture flooring ships plank-ing. Bridges and wharves.

ENEMY INFORMATION

SEPINGGANG - MANGGAR
INFORMATION TO 22 MAY 1945

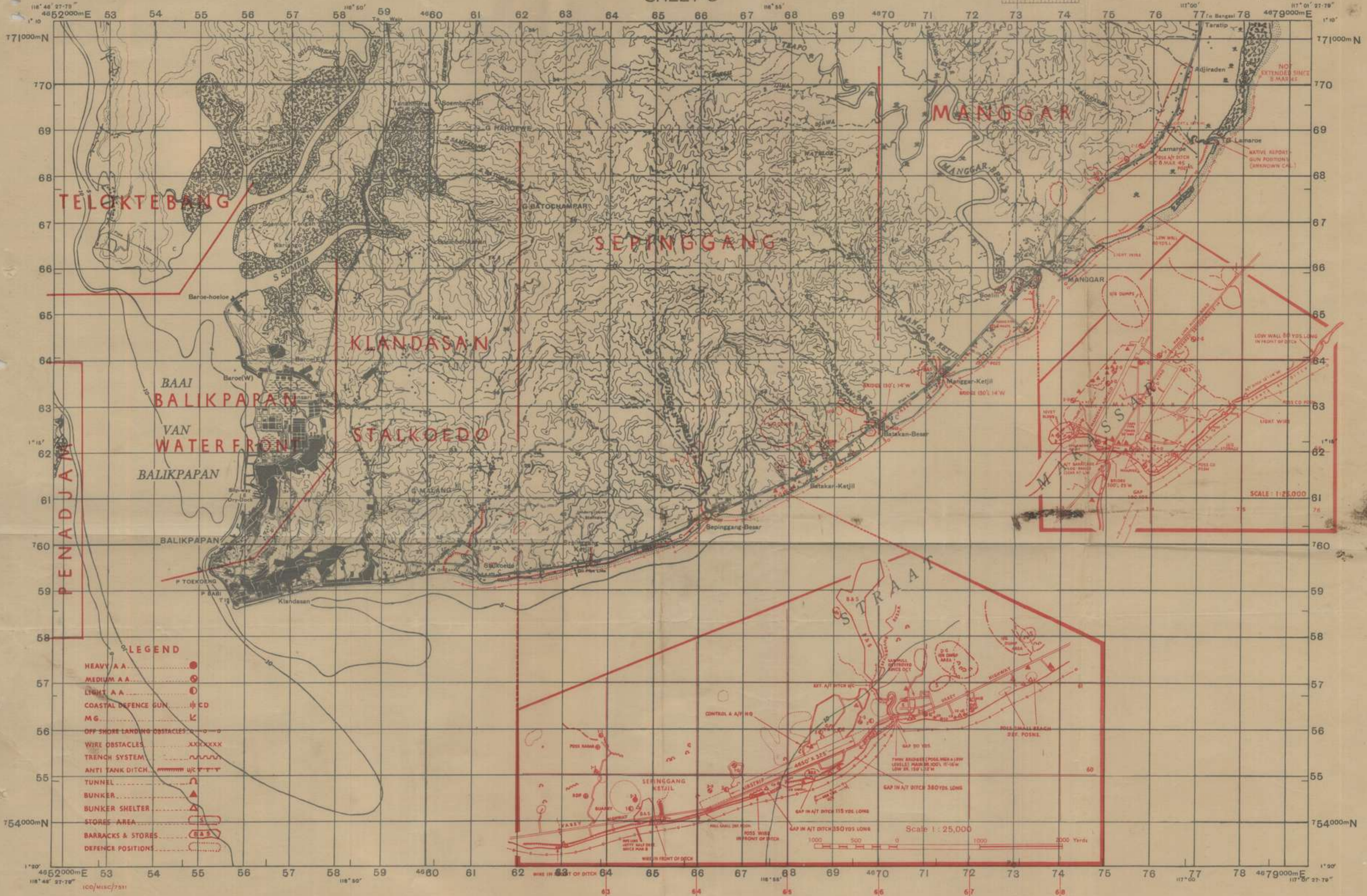
BALIKPAPAN SHEET C

SECRET

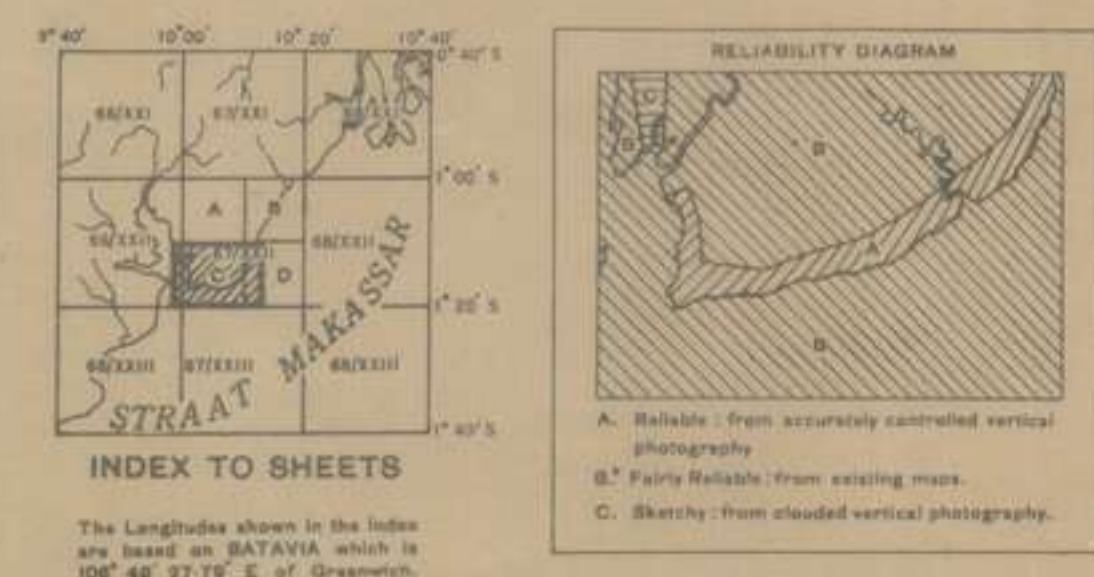
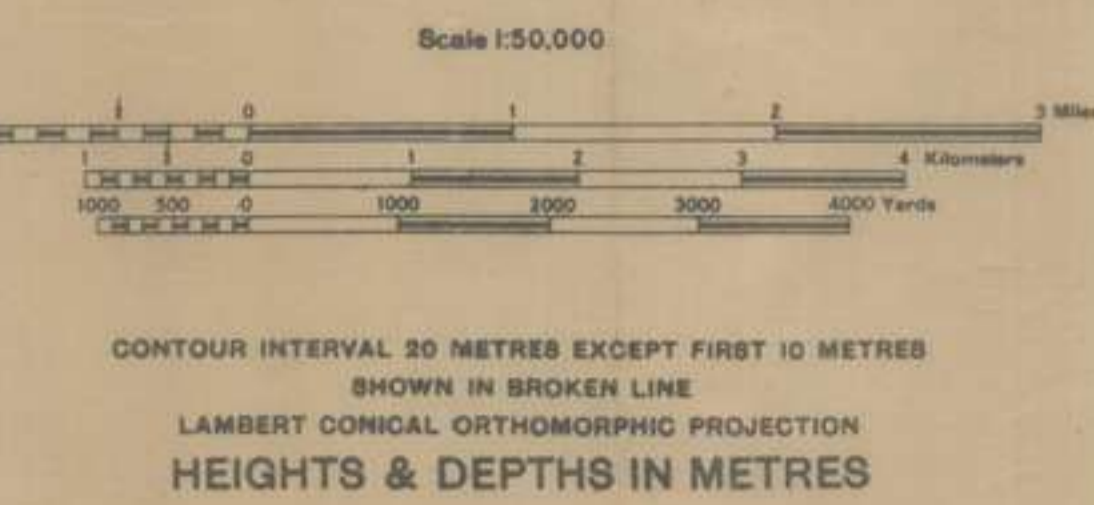
Appendix "M" to 7 Aust Div
Special OTOE TWO
Intelligence Review No 2

NORTH EAST BORNEO 1:50,000

SHEET 01/XXII-C



- LEGEND**
- HEAVY A.A. ●
 - MEDIUM A.A. ○
 - LIGHT A.A. ○
 - COASTAL DEFENCE GUN. | | CO
 - M.G. L
 - OFF SHORE LANDING OBSTACLES ○ ○ ○
 - WIRE OBSTACLES XXXXXXX
 - TRENCH SYSTEM - - - - -
 - ANTI TANK DITCH - - - - -
 - TUNNEL - - - - -
 - BUNKER ▲
 - BUNKER SHELTER ▲
 - STORES AREA S
 - BARRACKS & STORES BA S
 - DEFENCE POSITIONS ()



TO GIVE A GRID REFERENCE ON THIS SHEET ALWAYS QUOTE THE EASTING FIRST AND THE NORTHING SECOND.

RELIABILITY	REMARKS
A	Reliable - from accurately controlled vertical photography.
B	Fairly Reliable - from existing maps.
C	Sketchy - from clouded vertical photography.

- ICM/MSG/7503
CONTROL: Existing Map of 1:25,000 Series BALIKPAPAN.
AIR PHOTOGRAPHY: 38 Photo Squ. 8 Photo Group; 38 Bomber Squ. 9 Bomber Group; U.S.A.A.F. Missions 285-2-2 Oct 44, 282-2-4 Oct 44, 284-2-3 Oct 44 and 4M383 Oct 44.
COMPILED: 2/1 Aust Army Tapp Sq Coy, Aust Svy Corps from Air Photos; and 1:25,000 Maps of BALIKPAPAN prepared by Dutch Topographic Service Batavia, 1932.
DRAWING & REPRODUCTION: 2/1 Aust Army Tapp Sq Coy, Aust Svy Corps, Feb '45.
- ABBREVIATIONS**
- G GOENONG (MOUNTAIN)
 - BT BOEKIT (HILL)
 - P POELAU (ISLAND)
 - TG TANDJOENG (CAPE)
 - S SOENGAI (RIVER)
 - B BAAI (BAY)
- LEGEND**
- Road, hard surfaced
 - Road, lightly surfaced
 - Road, earth
 - Jeep Track
 - Trail
 - Railway, narrow gauge
 - Buildings or Huts
 - Highway Bridge
 - Spot Elevation
 - Tank, Oil or Gas
 - Oil or Gas Wells
 - Mangroves
 - Mud Flats
 - Streams
 - Swamp
 - Bank
 - Levee

NOTE: OFFICERS USING THIS MAP ARE REQUESTED TO MAKE ANY NECESSARY ADDITIONS AND AMENDMENTS ON THE MAP ITSELF AND FORWARD SAME TO SURVEY DIRECTORATE, H Q OF FORCE CONCERNED

651 1 AUST CORPS
BALIKPAPAN C
NORTH EAST BORNEO