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58/59 Infantry Battalion
1943 - 1945, Appendice to
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TERRAIN STUDIES, HANDBOOKS & INFORMATION RESUMES

HQ 15 Aust Inf Bde (AIF)
G153

14 May 44.

24 Aust Inf Bn (AIF)
57/60 Aust Inf Bn
58/59 Aust Inf Bn ✓

1. Copies of the following publications are forwarded for perusal and circulation on the following basis:

(a) Terrain Studies

- (i) No 59 Area Study of MADANG (2 Vols)
- (ii) No 65 Area Study of SEPIK District (2 Vols)
- (iii) No 69 Locality Study of MADANG.

(b) Terrain Handbooks

No 17 WEWAK.

(c) Information Resumes

No 6 RAI COAST and FINISTERRE (not to 24 Aust Inf Bn).

2. The circulation will be as follows:

(a) First	57/60 Aust Inf Bn	14 - 16 May.
Second	58/59 Aust Inf Bn	17 - 20 May.
Third	24 Aust Inf Bn	23 - 26 May.

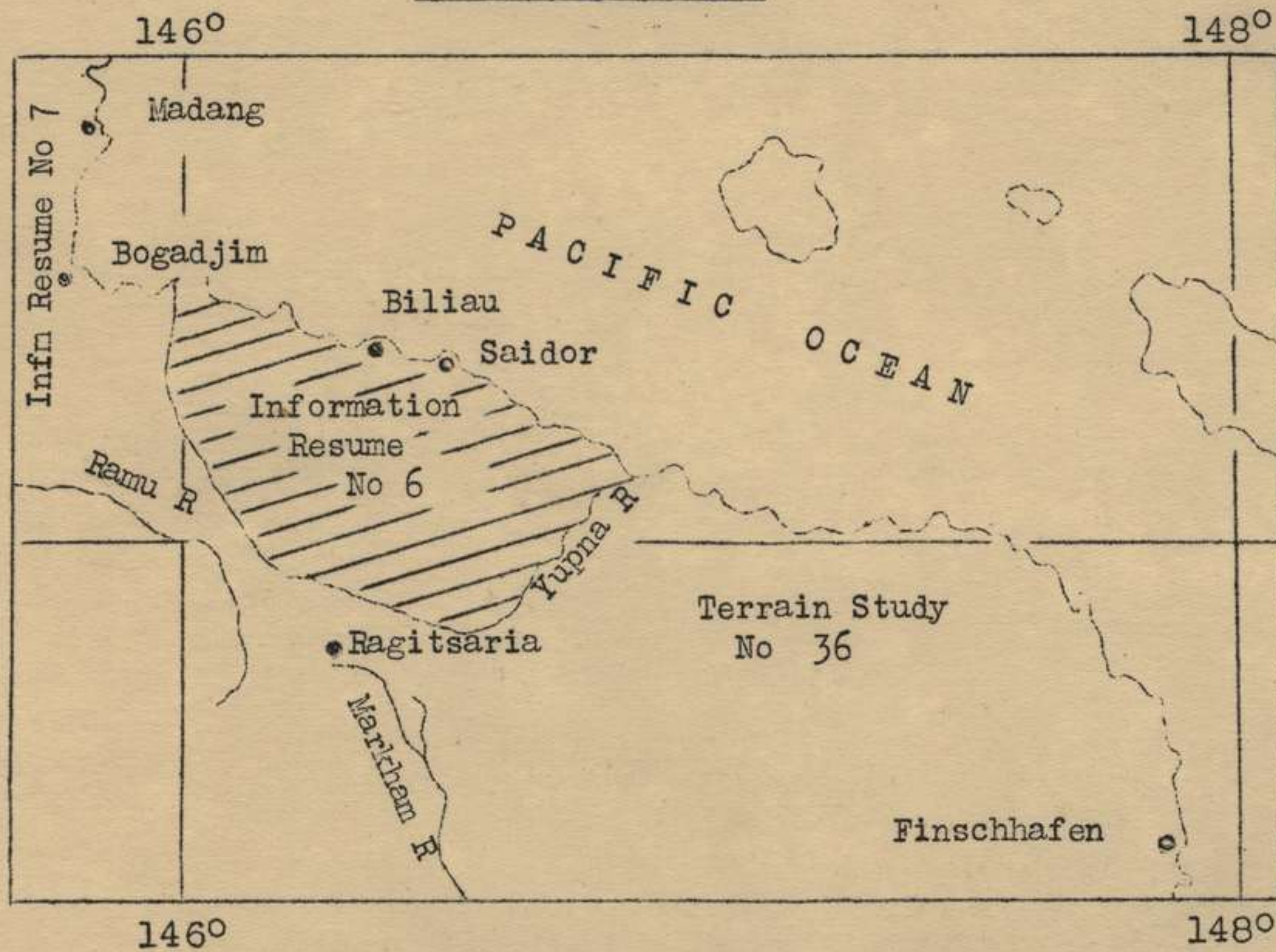
(b) Publications will be forwarded direct to the next unit. 24 Aust. Inf Bn will return books to this HQ.

(c) Failure to receive publications in a reasonable time will be signalled to this HQ.

3. If additional time is required by units to make a wider internal circulation, application may be made to this HQ on the completion of the present arrangements.

B. H. Zanus.

Major
BM 15 Aust Inf Bde

INFORMATION RESUME NO 6 (REVISED)RAI COAST & FINISTERRE AREALOCALITY SKETCH

SCALE: 30 miles to 1 inch

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- "F". Coastal Annotation BOGADJIM 1" Map
 "G". Coastal Annotation POMMERN BAY 1" Map
 "H". Coastal Annotation SINGORKAI 1" Map

PART I

ENEMY MOVEMENTS

In late March and April 1943, the enemy sent numerous patrols along the RAI COAST to select and prepare staging points for barges carrying troops and supplies from MADANG to the FINSCHHAFEN and LAE - SALAMAUA areas.

Active enemy patrolling, carried out with the co-operation of the natives, made it impossible for Allied observation parties to operate near the coastal fringe, and our patrols withdrew.

Until the fall of LAE, only routine barge traffic used the coast, the main barge staging points being in the vicinity of the following villages:-

MARAKUM, MINDIRI, FANGGER(FUNGAIR) and GALI.

Close attention was paid by the enemy to camouflage from the air and the exact pinpointing of staging camps in these areas was difficult, even after the general location became known. Information from enemy sources reveals that many native villages along the coast have been deserted by their inhabitants who, fearing Allied bombing, have moved inland to the foothills. In some cases they still bring food to the coast for the supply of Japanese troops.

After the fall of LAE, reinforcements were hurriedly marched from MADANG to SIO along the coastal route and the scale of transport by barge was greatly increased. The march from MADANG to SIO was scheduled to take nineteen days, the average daily march being fifteen kilometres. Of the several hundred streams and rivers which empty into the sea along the coast, the enemy considered only five impossible to ford.

Since the advance of Allied troops, north from FINSCHHAFEN, there is evidence that enemy reinforcements are moving eastwards along the RAI COAST and it is logical to assume that he will strengthen the defence of his keypoint areas along the coast, in view of the increasing Allied threat to these centres. There is, however, no direct evidence that this has been done.

Enemy infiltration from the coast has been slight. The ranges between the coastal belt and the RAMU VALLEY effectively prevent any considerable force infiltrating from that direction to the Allied flank in the RAMU VALLEY. In recent weeks some activity has been noted on the GALI, RUANGE, TAPEN track. This track joins the main route to WANTOAT, itself an important track junction. It has not yet been possible to assess accurately the scope of this activity and its probable purpose.

PART II

GEOGRAPHICAL INFORMATION

1. REGIONAL DESCRIPTION

(a) Location

RAI COAST is a name applied to section of the north coast of NEW GUINEA from the ASTROLABE BAY on the west to the YUPNA RIVER on the east. The boundaries of this area, sometimes known as MACLAY COAST (Evolution from "MAKLAI", name of early Russian Anthropologist, who visited coast in 1880 - 90), are only vaguely established.

For administrative purposes the western boundary was fixed west of CAPE RIGNEY, just including BAU PLANTATION area, and the eastern boundary is now recognised to be the YUPNA - URUWA DIVIDE. The area has been divided by the administration into two subdivisions, the portion lying westward of the NANKINA RIVER being known as RAI COAST Number One, and the portion from here eastward to the YUPNA - URUWA DIVIDE being known as RAI COAST Number Two. This distinction has passed over into native usage.

While the RAI COAST is generally assumed to have for its southern boundary the FINISTERRE DIVIDE, this study includes the southern slopes of the FINISTERRE RANGE, from the ridge between the GUSAP RIVER and MARKHAM Headwaters on the east to the URIA RIVER (MADANG Strat WO 7353) on the west.

(b) General Description

The topography of this area is largely determined by the massive watershed known as the FINISTERRE RANGE, beginning with low mountains at its western extremity south of ASTROLABE BAY and running in a direction approximately southeast by east, rising rapidly to great height with rugged peaks of 12,000 - 13,000 feet altitude in its central and easterly reaches.

Aside from an extremely narrow coastal strip, the RAI COAST is a maze of ridges, cross-ridges, and spurs descending from this divide northward to the sea, the spur-ends near the coast forming a belt of steep kunai-covered foothills which are a characteristic feature of the landscape as viewed from the coast. The mountain contours are highly irregular, the ridges and spurs lying in helter-skelter arrangement. In general, the ridges and peaks are sharp, having extremely steep slopes. The area is drained by a mass of mountain torrents flowing through deep ravines and gorges and merging into numerous rivers of considerable size, which flow northward to the sea.

The topography of the southern slopes of the FINISTERRE RANGE is similar to that of the RAI COAST proper but the slopes are steeper and shorter. The networks of tributaries feed larger rivers which flow in a southwesterly direction through kunai foothills and empty into the RAMU RIVER.

The drainage from the southern slopes of the eastern extremity of the FINISTERRE RANGE feeds the headwaters of the easterly-flowing MARKHAM RIVER. The MARKHAM area is not dealt with in this study, the boundary being the ridge coming down between the GUSAP and MARKHAM RIVERS. This ridge is the watershed dividing drainage from the southern slopes of the FINISTERRE RANGE into RAMU tributaries and MARKHAM tributaries respectively.

(c) Points of Military Importance

The RAI COAST is important to the enemy mainly as an L of C to his forces in the SIO area and as a protection to his left flank at MADANG.

It is isolated from the south by the FINISTERRE RANGE, crossed by two difficult recognised tracks. The track from SAIDOR to LAGAP ESTATE follows up a series of spurs from the coast, SE of NANKINA RIVER to YUPAN watershed. It then passes over the FINISTERRE and SARUWAGED RANGES through KAWIEN - WANTOAT CROSSING to WANTOAT drome on the WANTOAT RIVER. This is by far the best track over the FINISTERRES. It is possible for troops travelling lightly to walk from LAGAP to WANTOAT in eight days. The track was used during Jun 43 and to that date had NOT been used by the enemy and was possibly not known to them.

2. SEAWARD APPROACHES

(a) Offshore Conditions

The RAI COAST affords safe navigation for the largest of vessels to within one half mile offshore except in certain areas such as DEKAYS BAY, where offshore reefs extend about 3 miles offshore. Other reported offshore patches are off LEPSIUS POINT, MUR and MALALAMAI. In addition, in the MALALAMAI - BONGA area beach reefs are to be found approximately one half mile offshore. This coast is considered remarkably free of reef and safe for navigation, and Admiralty Charts are considered reliable.

Prevailing Winds:

Prevailing winds are of the normal pattern, viz, SE from May to October, and NW from November to April, with variable winds at the change of the seasons. The SE generally blows more easterly here, continuously and strongly, slackening only from the earliest morning hours to an hour or two after sunrise in the midst of the season. The NW is generally intermittent and squally.

Because of the direction of the coastline, moderate to heavy seas may be experienced in either season. August is considered to be the month in which the heaviest SE seas arise, while heavy seas during the NW season frequently occur in February.

The state of the sea varies normally from calm to slight, but very rough seas are not infrequent.

VITIAZ - DAMPIER STRAITS are severely affected by the SE blow. When inter-island vessels of about 3,000 tons have to reduce speed coastal schooners may be forced to seek shelter. Currents running through these straits are normally strong. Barge traffic is evidently affected only slightly as it is known to be carried on extensively.

Tides:

Normally the tide rises once in 24 hours. It appears that high tide occurs between 0200 and 0400 hrs with a Northern declination of the Sun and between 1400 and 1600 hrs with a Southern declination of the Sun. The greatest spring rise probably does not exceed 3' 9".

A rare tidal wave has been experienced.

(b) Anchorage

- NOM Two main anchorages. One $\frac{1}{4}$ mile off mouth of KABUR RIVER; deep water, fair shelter; capable 5,000 tons. Second behind reef opposite NOM PLANTATION; 500 tons, sheltered.
- MUR Main anchorage one mile west of MUR PLANTATION, $\frac{1}{4}$ mile offshore behind barrier reef; shelter for large vessels. Minor anchorage off Plantation, for 20 tons, SE shelter.
- SAIDOR NW Season. DEKAYS BAY, $\frac{1}{2}$ mile offshore; 1,000 tons; some shelter SE Season also. Five minor anchorages between tongues of reef in small bays between LAGAP and SAUI; 20 - 40 tons.
SE Season. WAB BAY; 2,000 tons, $\frac{1}{4}$ mile out. GUMBI; good shelter for small craft; entrance through narrow channel.
- BILIAU Opposite Mission through 40 ft gap in reef. Good shelter in SE for 2 vessels 60 tons. Reported schooner anchorage in bay east of BILIAU with shelter in NW season.
- DAGUR Fair SE anchorage for small craft in bays east of DAGUR. NW anchorage for small craft in bays south of SINGOR.
- SELIAL Anchorage for small craft in SE season. No shelter from NW.
- MINDIRI Anchorage for 60 tons in 3 bays east of MINDIRI; sheltered from SE, and also some shelter from NW in bay nearest to Plantation.
- BAU Exposed anchorage for 700 tons 200 yds offshore between BAU and CAPE RIGNY.

3. COASTLINE

(a) Description of Coastline

Detailed description of coastline is given in Terrain Handbook 11 and Terrain Study 59.

A summary of significant coastal features, including conditions for landing and general terrain of coastal shelf, is given on annotated 1" maps.

This information is derived from air photographs, captured enemy documents and Terrain Studies and Handbooks.

SAIDOR 1" sheet is attached as Appendix "E". BOGADJIM, POMMERN BAY and SINGORKAI sheets will be forwarded as soon as available.

(b) Hinterland

Kunai foothills are typical around the YUPNA and MOT river mouths - also between KANGGURIRA and YAGOMAI villages. Otherwise there is little variation in the coastline, the general feature being a narrow coastal belt of rain forest and native coconut groves, behind which rise steep kunai hills. There are two points where cliffs rise from the sea. One is between YAIMAS and GUMBI villages (near HELMHOLTZ POINT).

This one is more a wooded bluff than a cliff, and is traversed easily by the coastal track, which is well cut here, though narrow. The other is between SEL and SEURE, east of BUNSEN POINT. It is a coral rock cliff and presents a difficulty to coastal travel other than afoot in that the road breaks off on either side, and passage is afforded only over rough boulders or on the tidal sand at its base. This short strip can be traversed by horse at low tide or at high tide if the sea is calm. (It is reported that tide levels on this coast are higher during NW Season and lower during SE Season). However, in stormy weather heavy seas crash against the rock at the base of the cliff.

Aside from these two points the entire coastal track lies on the flat coastal strip and may be classified as a good road. Except for a few strips of open beach, particularly near river mouths, and a few stretches of flat kunai land, the road passes through coastal bush, affording good air and ground cover.

The only other natural obstacle to coastal travel is presented by the many rivers, which are quite easily fordable in the southeast season (May to October), but many of which are difficult to cross throughout much of the northwest season, and some of which become so dangerous as to be considered impassable at times of flood.

The NANKINA RIVER is the only one in this area which was bridged, (suspension bridge a few hundred yards from mouth), the bridge having since been partly destroyed. The enemy when patrolling the area have always used an alternate road running from WAB VILLAGE to SAUI (SAVEI) VILLAGE skirting the coast and crossing the NANKINA RIVER at its mouth where a fair crossing is available when the river is not in flood. The coastal track passed over this bridge, but the bridge was suitable only for foot traffic. The river can generally be forded by horse a short distance below the bridge.

4. TOWNS AND VILLAGES

- (a) Towns. Nil.
- (b) Villages. None large. For locations, see map.
- (c) Mission Stations

Lutheran Mission Station at BILIAU (IRIS POINT): In charge of Rev Paul G. FREYBERG (loyal American) until January 1943. Lay-worker: J. LINDNER (loyal Australian), also supervising MINDIRI PLANTATION, property of Lutheran Mission MADANG. Both these missionaries were removed by government evacuation order of 14 Jan 43. They, together with the Roman Catholic Missionary of GUMBI, in compliance with this order travelled across the FINISTERRES and through the MARKHAM and WATUT VALLEYS to WAU. (See Section 5 for their route).

All buildings on Mission Stations and YALA Estate, which could be of use to the enemy have been destroyed. This includes all buildings at SAIDOR Patrol Base. Buildings on LAGAP Estate and SAUI and WILWILLAN VILLAGES adjoining LAGAP Estate have been burnt by the enemy.

Catholic Mission Station at GUMBI (near HELMHOLTZ POINT): In charge of Rev Fr A.A. AUFINGER until his removal by government evacuation order January 1943.

(d) Government Patrol Base

The RAI COAST Patrol Base was located at SAIDOR on the eastern bank of the NANKINA RIVER. Quite a few houses of native material were located here. It was the base of operations for government patrols in the RAI COAST area. Last patrol officer in charge was Lieut R.H. BOYAN; he left the RAI COAST in January to guide a party of evacuees to BENA BENA.

5. ROADS AND TRAILS

General Description

There are no roads used for vehicular traffic on the RAI COAST. The coastal track, which runs from BOGADJIM to FINSCHHAFEN, could probably be improved for vehicular traffic but a great obstacle to this is the frequent intersection by inlets, creeks and rivers of all sizes. Bridging in fact is the main difficulty and is not practicable owing to size and strength of streams. Horses have been used on this track quite frequently.

All other tracks in the area are unfit for anything but foot traffic. Horses have occasionally been used for very short distances into the hills but it is necessary to dismount and lead the animal over a great part of even the best of tracks.

Apart from the one coastal track mentioned, all tracks are mere trails through precipitous mountains in jungle. Most of them are very difficult even for foot traffic. For description of main track known, see Appendix "A".

Routes

(a) BILIAU (WP3583) to MARAWASA (LL 6206):

This track leads from IRIS POINT over the FINISTERRES to the MARKHAM - RAMU DIVIDE. It is suitable only for small patrols, not for troop movements of any size. (For complete description - 3 pages - see Appendix "A").

(b) SAIDOR (WP 4877) - WANTOAT (LM 1409) - KAIAPIT (LQ 8990):

A description of the section from WANTOAT to KAIAPIT is given in Terrain Handbook 2 - MARKHAM RIVER VALLEY, as Route 53 on pages 11 and 12. The whole of the track was used by Lieut FAIRFAX ROSS (AIB) from February to July 43, but no mention is made of the condition of the track in his report. However, walking times between villages are given in Appendix "C".

(c) MALALAMAI (WP 7164) to WANTOAT:

This track is shown on a map accompanying G2, GHQ's report of 6 Aug 43 on Enemy Situation RAMU VALLEY Activity (MADANG - BOGADJIM - DUMPUR ROAD), but no mention is made of it in the report.

(d) NADZAB - BOANA (LR 4872) - WORIN (LM 5510):

This track is described in full in LAE - NADZAB Information Resume 12 (Pages 10-11). From WORIN, it crosses an 8,000 ft range to HAMDINGAN (LM 6119) and follows down the KELEMEN RIVER to the coast.

(e) A connecting track exists between WANTOAT and WORIN, but there is no available information to hand on its condition. It passes through BUM BUM, GANMA and GEROKAI to WORIN.

6. TRANSPORT

(a) Barges

Main barge staging points are near MARAKUM, MINDIRI, BILIAU, FANGGER(FUNGAIR) and GALI. In addition, there are many other places along the coast where landing conditions and cover from air observation are satisfactory.

The NW season is definitely more difficult for barge traffic than the SE.

(b) Motor Transport

Many sections of the coastal track could easily be converted for MT, but frequent river crossings, many requiring wide bridges, have prevented the route from being developed. All other tracks are unsuitable.

(c) Pack Transport

Possible over most of coastal track, but river crossings a serious difficulty.

(d) Native Carriers

Owing to sparseness of population, carriers normally are scarce. Because of difficult terrain and frequent river crossings, 35 lbs is considered to be the maximum load.

7. AIRFIELDS

The old civil airfield at SAIDOR Patrol Base is reported to be 880 yards long and 75 yards wide, well drained and hard surfaced. It was obstructed by Government Order in January 43 being traversed by ditches but could be made serviceable without much effort.

This is the only constructed airfield on the RAI COAST. Possible sites are as under:-

POSSIBLE AIRFIELD SITES

(Information on these sites supplied by Fifth Air Force, 18 Dec 43)

<u>Location</u>	<u>Description</u>	<u>Present Classification</u>
BILIAU - TETERI	On coastal strip. Large kunai area 3,000 yds long.	ELG
YAIMAS - SUIT	On coastal strip. Large kunai area 3,000 yds long.	ELG
SAIDOR	In area adjacent to present site. Two additional strips could be constructed running SE - NW and east - west.	ELG
WILWILLAN - FANGGER	In long kunai $\frac{1}{4}$ mile from and parallel to beach. $\frac{1}{2}$ mile by 1 mile, altitude 25'. Very few scrub trees.	ELG
SEURE	1 mile long in SE direction. Kunai, very few trees. Altitude 50 feet.	ELG

8. RIVERS AND CREEKS

There are no navigable rivers. All are normally quite shallow in the dry season, but quickly swollen to severe flood stages during the rainy season. The beds are generally boulder-strewn, and mouths are frequently changed in shape and size by shifting sand and gravel bars. For this reason it is a good rule always to use a local native as guide when fording streams of any size near the mouth. Swimming is rarely possible because of the boulders, shallow beds, and consequent strong currents. The best method of crossing when the stream is more than waist-deep is the native method of "bouncing" along in upright position, not opposing the current, but allowing oneself to be carried downstream, progressing further across the stream with each step as the feet touch bottom by leaps. If the stream is less than waist-deep, care must be taken to place each footstep firmly among the boulders and to keep one's side always towards the current to present the least possible resistance, so that one is not swept from his feet and crushed against the rocks or carried out to sea.

Principal rivers are:-

GOWAR: Mouth between BIBI and KULILAU
YAGANON: Mouth between DEIN and MINDIRI, one
of most dangerous on RAI COAST
YANGDAR: Mouth between LAMTUB and SINGOR
MOT: Mouth between TETERI and YAMAI.
Large stream, dangerous in wet
season
NANKINA: Mouth at HELMHOLTZ POINT. Large
stream. Foot bridge. Fordable
except in flood
YUPNA: Mouth east of GALI

9. LAKES AND SWAMPS

(a) Lakes

There is one lake mapped high up above the headwaters of the YUPNA RIVER, called LAKE WAMBA. Nothing further is known except that its altitude must be well over 7,000 feet. Other than this, there are only a few very small and insignificant ponds or pools here and there in mountain districts.

(b) Swamps

There are no swamps in the RAI COAST or FINISTERRE areas.

10. MOUNTAINS AND RIDGES

The FINISTERRE RANGE:

The only mountain range in this area is the FINISTERRE RANGE, which has been described in Section 1(b) General Description. It is extremely rough, serrated, and covered with forest except at the butt-ends of the coastal spurs, which form a belt of steep kunai hills. (One of the most likely theories as to the origin of the name "RAI" is that it comes from the coastal word for kunai, "rei". This belt of kunai hills is one of the most characteristic features of the RAI COAST). An alternative explanation for the term is that it is derived from the native expression for SE.

11. VEGETATION

(a) General Nature

The vegetation of the RAI COAST corresponds roughly with that of the MADANG area. The chief differences are that there is more kunai and very little sago, due to the dryness of the climate and lack of swamps. Above the belt of kunai there is little but the average mountain forest, both primary and secondary, with very few open stretches of higher grassland. The typical tropical rain forest stretches from the belt of kunai hills to an altitude of about 5,000 - 6,000 feet, where it gradually merges into the scrubber moss forest which clothes the crest of the FINISTERRE RANGE. Many of the peaks are apparently bare of vegetation (above 10,000 feet), being lightly sprinkled with bracken and wiry grasses. Only in the upper reaches of the YUPNA RIVER does one find larger sections of grassland at high altitude, notably the ZEDZED VALLEY, which lies just over the ridge south of NOKOPO.

(b) Plantations

A list of the plantations on the RAI COAST is as follows:-

<u>Name</u>	<u>Location</u>	<u>Owner</u>	<u>Crop</u>	<u>Condition</u> <u>January 1943</u>
BAU	CAPE RIGNY	W.R.Carpenter	Coconut	Mature, probably overgrown
YALA	POMMERN BAY	A.K.Smith	Coconut Rubber	Young, beginning to bear
MINDIRI	HERWARTH POINT	M.M.Luth	Coconut	Small, young, not bearing
LALOU	BANG RIVER mouth	Catholic Mission	Coconut	Young, not bearing
SELIAL	West of LAMTUB	S.Farnham	Cocoa, Rubber	Young, irreparably overgrown
GUMBI	HELMHOLTZ POINT	Catholic Mission	Coconut	Bearing, western part overgrown
LAGAP	DEKAYS BAY	B.G.Hall	Coconut Rubber	Young, not bearing
NOM	Near MUR	B.G.Hall	Coconut	New, not bearing

(c) Poisonous and Skin Irritating Plants & Shrubs

Same as for MADANG area. There are also certain shrubs and vines whose sap is used to poison fish. It is said to be poisonous to human beings in larger quantities.

(d) Grazing Land and Open Grassland

This is also described in Section 1(b) and in Section 10. Burning off of kunai usually takes place in September and October.

12. RESOURCES, REPAIR FACILITIES, ETC

(a) Cereals, Vegetables, Fruits, etc

Native foods are produced in fair quantities by the mountain natives. Along the beach the natives rarely produce a large surplus besides what is needed for their own consumption.

The principal native foods are yams, taro, sweet potatoes, bananas, maize, manihot (manioc or cassava), cucumbers, pineapples, papayas, and pitpit (cane blossoms).

In addition to these more or less normal native foods, large quantities of potatoes are raised in the KAR area, which lies in the 3,000 - 4,000 foot belt, in the vicinity of the middle YAGANON. This is above HERWARTH POINT. The Lutheran Mission, MADANG, regularly purchased potatoes from the KAR natives at the rate of about a ton every six weeks, and the area under potato cultivation was being steadily increased up to the time of the occupation of MADANG by the Japanese. At an appointed date the potatoes were carried down in netbags by the women and were purchased at MINDIRI. Similar potato cultivation was being begun in the SEREMORE - RAMBA area above CAPE IRIS and in the vicinity of TAPEN near the YUPNA RIVER. The quantity of potatoes produced in these last two areas mentioned was quite small, but there has been a steady increase and improvement in quality. In all three areas excellent cabbages are also produced. The price paid for potatoes in 1942 was 1d. per pound for those of average size, and 1½d. per pound for exceptionally large potatoes. They were customarily thus graded, and the smaller potatoes were not even brought down to the beach. As no potatoes have been brought here by Europeans since November 1942, the planting area has probably been reduced, but it could probably be increased to maximum production in record time, as the potatoes mature quickly here.

(b) Animals and Poultry, etc

The enemy have exhausted livestock on the coast with the exception of some cattle on the BAU Estate, these are now living in a wild state.

(c) Water

Streams are abundant from which water for domestic purposes may be drawn, but it is advisable always to boil such water, if it is to be used for drinking in the coastal area. In the mountains there are plenty of springs which supply pure drinking-water. The mountain natives are very careful about drinking-water, and in the mountains one is always safe in using water of springs where natives drink.

13. POPULATION

(a) Loyalties

Indications are that the natives of this area are, in general, co-operating with the Japanese and are hostile to our cause. An exception is in the vicinity of the LAGAP Estate, where the natives have proved loyal and have given assistance to our parties.

A large proportion of the native population has evacuated the coastal belt for the greater security of the mountains.

(b) Numbers

The number of natives living in the RAI COAST area proper from the beach south to the top of the divide is estimated at 11,000. The number living on the south slopes of the FINISTERRES (not including the RAMU VALLEY as such) is probably about 4,000.

(c) Racial Types

They are roughly classified as Melanesians in the beach strip and Papuans in the mountain areas, though there has been a considerable amount of intermingling.

(d) Languages

It is impractical to list all languages, as the area comprised in this study contains about thirty or more languages and distinct dialects. The largest group on the beach villages and some hill villages from BILIAU to SIWIT (SUIT). There are two large common-language groups in the mountains. One of these groups consists of the ELAUA (RAUWA) District, on the southern slopes of the FINISTERRE RANGE west of the BURA RIVER, and the Kar District on the northern slopes of the FINISTERRES west of the YANGDAR RIVER; this is one language group, the divide presenting no barrier to the common language. The other large mountain group is composed of the dwellers in the headwater region of the MOT RIVER on the northern slopes and the GUSAP RIVER system on the southern slopes.

In addition, the Gedaged language, introduced from MADANG by Luthern Mission, MADANG, is spoken by the majority of beach dwellers of RAI COAST Number One, many of the hill dwellers back of them, and the inhabitants of the KAR District. A "lingua franca" for the mountains is also being introduced by the Lutheran Mission. It is the Kate language, which is now beginning to be spoken throughout the YUPNA RIVER system, the headwaters of the MOT RIVER, and the GUSAP RIVER system.

Pidgin English is spoken by nearly all the natives except those dwelling in mountain regions higher than about 3,500 feet. Even in these higher regions one or two men who speak Pidgin can be found in most of the villages.

(e) State of Civilization

Nearly all degrees are found in this area. The beach area inhabitants compare roughly with those of the MADANG locality, if a trifle less advanced. From here on back to the divide one can find a gradation which ends with those who have had only a few years' contact with Europeans. There is no area which has not been under mission influence for at least four years.

Occasional fighting still goes on in a few isolated mountain areas, but there is no more continuous warfare to be found in the area. It is rather to be considered as individual cases of murder. Even these are becoming quite rare.

14. ADMINISTRATION

Administration was carried out by a Patrol Officer stationed at SAIDOR.

15.

MEDICAL PROBLEMS

(a) Diseases to which the Area is Subject

From a European point of view the area is a fairly healthy one.

Malaria is prevalent along the coast, but because of the comparatively dry climate of the RAI COAST, the higher kunai lands are much less mosquito-infested, and the higher mountain areas are free of malaria-carrying Anopheles mosquitoes.

Tropical ulcers are quite common, any slight cut or abrasion readily becomes affected forming an ulcer. Prompt treatment of all skin lesions with iodine greatly lowers the incidence, and prompt application of hot fomentations of Condy's solution to incipient ulcers usually prevents their growth and causes rapid healing. Bandaging is essential.

Yaws (framboesia) is very common in the coastal and kunai belt. While injection of sufferers with Novarsenobillon was regularly carried out by the missions, this disease was kept fairly well under control. However, since injections have become unavailable, the disease will undoubtedly be spreading rapidly again, particularly in the region of the higher kunai hills and fringe of the wooded belt.

Filaria (elephantiasis) is extremely common in certain portions of the coastal strip, such as the vicinity of WARAI and of MALALAMAI, but other sections are almost entirely free of it. This disease rarely attacks Europeans, probably because they protect themselves from mosquito bites.

(b) Pests

Same as for MADANG. Fleas especially common in villages of the highest altitude belt.

(c) Reptiles

Aside from those mentioned in the MADANG Resume, there is one variety of snake found on the RAI COAST which is said to be extremely deadly. It is a long, light-coloured snake; the ground colour is almost white, and it has mauve spots and markings on the back. It is not abroad during daylight hours, but frequently lies on roads and trails at night, and will attack and give chase to human beings on their approach. Adult length is about eight to ten feet.

16. CLIMATE

The RAI COAST is in general much drier than the MADANG locality.

Rainfall:

CAPE RIGNEY rainfall records for twenty-one months between the year 1924 and 1926 inclusive are the only available rainfall statistics along the RAI COAST. These figures indicate that the dry season occurs between May and October (monthly rainfall varying from two to six inches), and the wet season between November and March (monthly rainfall varying from six to eighteen inches). These seasons coincide with the SE trade winds and the NW monsoons respectively. The annual rainfall is approximately one hundred inches.

Although this data is very scanty, it may be regarded as fairly representative of conditions along the coastal areas; the FINISTERRE RANGES are at right angles to the prevailing winds and act as a barrier to the moist NW winds, thus causing heavy precipitation between November and March. On the other hand, the SE winds are dry by the time they pass over the ranges, precipitation occurring on the southern side of the range.

In general, the annual rainfall along the coastal areas probably varies between seventy and one hundred and twenty inches, and gradually increases towards the ranges. The local topographical differences may cause quite large variations in rainfall in near-by villages throughout the area. BILIAU is considered to be the driest village on the RAI COAST.

APPENDIX "A"

ROUTE BILIAU (RAI COAST) to RAGITSARIA (on main route
MADANG - LAE) via MATOKO, SEWE, GUSAP

BILIAU to BISI:

Half hour, good track, mostly kunai. BILIAU Mission Station is an American Lutheran Station. The main house is European built, the remainder of the buildings are sheds and kunai huts. There is accommodation for one hundred men.

The house is a landmark on a knoll commanding a good view of the open sea. It has an aluminium-painted galvanized iron roof, which is visible for miles up the pass and is a distinct landmark from the air.

Water supply from rain water tanks, can also be obtained from streams and sink holes.

Food would have to be acquired from natives, and is not in sufficient quantities to supply big parties.

The native foods, yams, taro, and bananas, are most plentiful during period July to August.

The route to BISI is over undulating kunai hills and could readily be improved for jeep traffic. No stream crossings are necessary and the going is good.

BISI village consists of six or seven small native houses, with accommodation for a hundred. Water supply is adequate in rainy season only. Food position is the same as at BILIAU. From here on a jeep traffic road would be impracticable.

BISI to GORIONG:

One hour, fair going along kunai grass ridges. The only bush is adjacent to village.

GORIONG village commands a good view of sea and beach in both directions. It is situated on a spur, altitude 500 - 600 feet. Cover from aircraft at village only.

GORIONG to DAMOI:

Half hour fair climbing, still up a kunai ridge - open route with no cover.

DAMOI is a small village, accommodates approximately fifty men. Food and water as for GORIONG.

DAMOI to MAIBANG:

One hour, constant ascent up kunai ridge, altitude approximately 1,200 feet. Slight cover is afforded en route near MAIBANG, but village itself has little cover.

MAIBANG has accommodation for a hundred. Good view of sea and beach may be had over an arc of sixty degrees. Food position as for DAMOI, water supply is not plentiful.

MAIBANG to SEREMORE:

Four hours steady climbing, under plenty of cover over most of the way - native pad only. Streams en route supply water.

Just off the route, not more than three or four hours off main track, is the village of KORAMORE (RUMBA). The Luluai of this village, NANAURO, is the most helpful native in this area, as guide, interpreter, and general assistant.

SEREMORE is on an open ridge. Accommodation available for one hundred men, food and water as for MAIBANG. From here on, food becomes more plentiful; potatoes and cabbages are available. Height approximately 4,000 feet, and it commands a splendid view of the approaches to MADANG and the sea lanes to NEW BRITAIN.

SEREMORE to MATOKO:

Four hours stiff climbing under cover - native pads only. There are bamboos in the area which contain pure, clean water, though it takes a native to find them.

En route, SANGAPULI is passed through, at 5,700 feet, a new village, small, with scanty accommodation.

MATOKO, altitude 5,700 feet. The village is strung out along a ridge 5,700 feet high. A small plateau 100 feet below on the west side of the ridge is the site of three huts used by the mission helpers. This site is sheltered from strong winds. These helpers are the natives who should be contacted in seeking help. Mission helper ITILINGKEC has influence. This village is the centre of mission and government administration and controls a population of approximately three hundred people.

MATOKO to TUKUPULI:

Two and a half hours, with river crossing at YANGDAR RIVER (three or four hours down from MATOKO). The route is a stiff descent to the river and a sharp ascent to TUKUPULI via FUNEYENDE.

The river is crossed by stepping-stones. Floods do not rise to great height and are crossed on a log across stream. Water is suitable for drinking.

FUNEYENDE is a small hamlet of no importance.

TUKUPULI is also only a hamlet. It is the last outpost of the inhabited section.

NOTE: Re carriers. From the coast to MATOKO, carriers are engaged from village to village. However, from MATOKO to SEWE, arrangements for carriers must be made at MATOKO.

From TUKUPULI:

The route leads up and over the main FINISTERRE RANGE. For the first three and a half hours, the climb is very steep, rising from 5,600 feet to 8,800 feet through low moss forest, ascent all the time being up a sharp ridge. At the crest there are enormous boulders. The descent down to TOHO CREEK is equally steep, from 8,800 feet to 7,200 feet. This descent took one to one and a quarter hours and is followed by a rise to a small ridge at approximately 7,900 feet, which is a good camp site. This last stage (from TOHO Creek) is a one hour walk.

From CAMP SITE, 7,900 feet, near TOHO CREEK, to SEWE:

Eight and a half hours, a stiff climb up GALAPU CREEK to pass, at 9,800 feet, and then descent to SEWE, at 5,600 feet. Between top of pass and SEWE, about fifteen minutes down from the pass, is FREYBERG PLATEAU, at 9,200 feet altitude, about two hundred by four hundred yards in area. The greater part of the plateau is grassland, with a small waterhole at the eastern end, surrounded by bog. The western end of the plateau may be considered a possible dropping ground.

From the abovementioned plateau down to DESITA CREEK (at 8,100 feet) the going is over a tangled mass of logs and roots, very difficult and tiring. A small native hut is passed ten minutes before reaching DESITA CREEK.

From DESITA CREEK the route leads mostly along the crest of a ridge, over a landslide, to a rocky point (7,100 feet) overlooking SEWE (5,600 feet). The route from that point to SEWE is an extremely steep zigzag track, and this leg takes thirty minutes.

SEWE. Water supply some distance away. Accommodation for one hundred men. Food for isolated parties only, except during abundant season, May - July. This refers to all the localities in the FINISTERRE Mountain area. New carriers are picked up here, and thence from village to village.

From SEWE (5,600 feet) to DANA (6,000 feet):

Two and a half hours, very stiff going, over ridge (6,100 feet) separating the GUSAP proper from the tributary KOMBAMOLE. These crossings are at 4,900 feet and 5,700 feet respectively.

DANA is a relatively small village. Accommodation for one hundred men, water nearby, food limited.

DANA (6,000 feet) to BUTEMU (4,300 feet):

Seven hours. A hard track following shoulders of spurs; passes several small hamlets, including KOKO. Immediately after passing KOKO en route to BUTEMU, the route passes into a deep gorge over precipitous rock faces scaled by sapling ladders. MAMBUE CREEK, at the bottom of the gorge, intersects the track at 4,500 feet and flows into the GUSAP RIVER. Climbing up the side of the gorge is continued up a steep ridge, rising to 5,800 feet, and then down to BUTEMU at 4,300 feet.

BUTEMU. Accommodation for one hundred. Water nearby and food available in good season (May - July) for passing patrols.

BUTEMU (4,300 feet) to BAKOKONO (3,130 feet):

Four hours. Steep descent for three to four hours to GUSAP RIVER (3,000 feet), crossed on log bridge. Five minutes from here is a small salt spring used by natives for cooking. The route from here up to BAKOKONO is fairly level up to a small creek crossing, then rises steeply to BAKOKONO, a climb of just over 100 feet.

BAKOKONO. Similar village to BUTEMU.

BAKOKONO (3,130 feet) to HINGGIA (3,850 feet):

Three hours rough going over spurs and down to creek beds, about seven in number, through a hamlet and isolated small fields en route.

HINGGIA. Accommodation for fifty men. Conditions otherwise similar to abovementioned village.

HINGGIA (3,850 feet) to GUSAP (2,000 feet):

One and a half hours. First half-hour down to creek crossing at 2,600 feet, through kunai hills with little air cover. The next leg of the route is a half-hour ascent up the side of a kunai ridge to 3,050 feet, then a descent down to GUSAP at 2,000 feet.

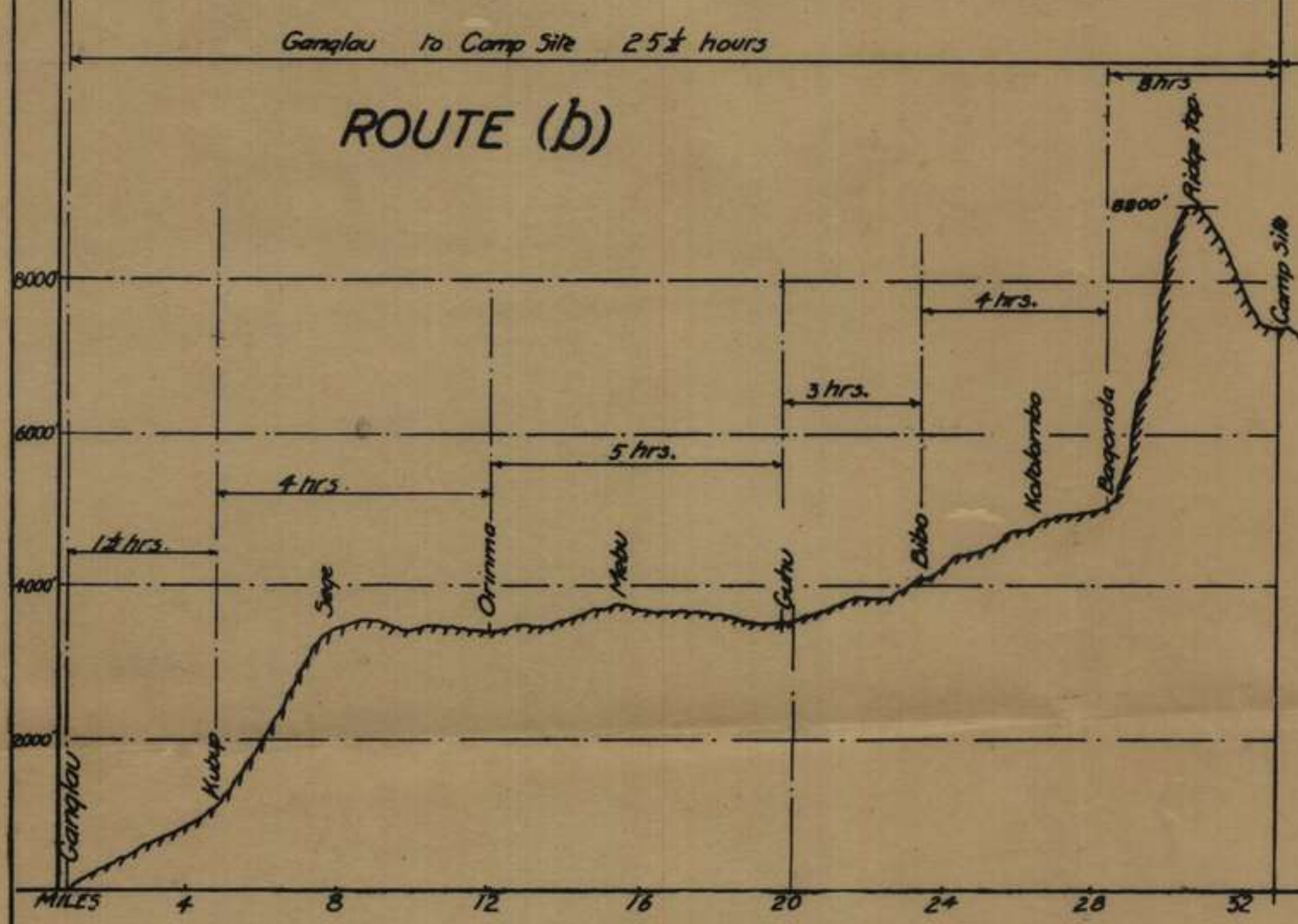
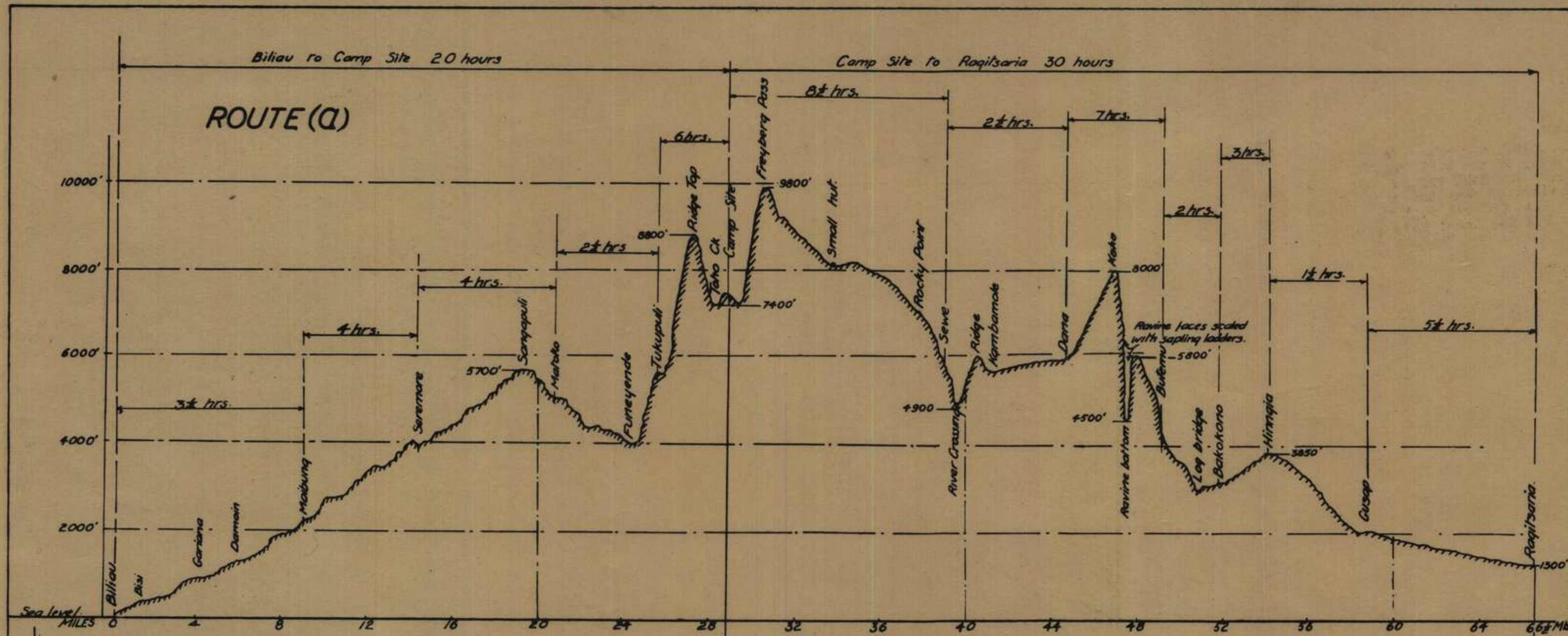
GUSAP (2,000 feet). Accommodation for fifty to seventyfive. Village is composed of two small groups alongside the river. Water plentiful, both river and spring water. Food position good during May - July.

GUSAP to RAGITSARIA (1,300 feet):

Five and a half hours easy going, a gradual descent of 700 feet through open kunai country of the RAMU VALLEY.

RAGITSARIA (1,300 feet) is on the RAMU VALLEY route connecting MADANG and LAE, and situated near the head of the YATI RIVER at approximately Lat 06° 07' S, Long 146° 02' E (Australian Aeronautical Map Sheet B8).

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PROFILES OF
(a) ROUTE FROM BILIAU TO CAMP SITE TO RAGITSARIA
(b) ROUTE FROM GANGLAU TO CAMP SITE (JUNCTION WITH ROUTE (a))

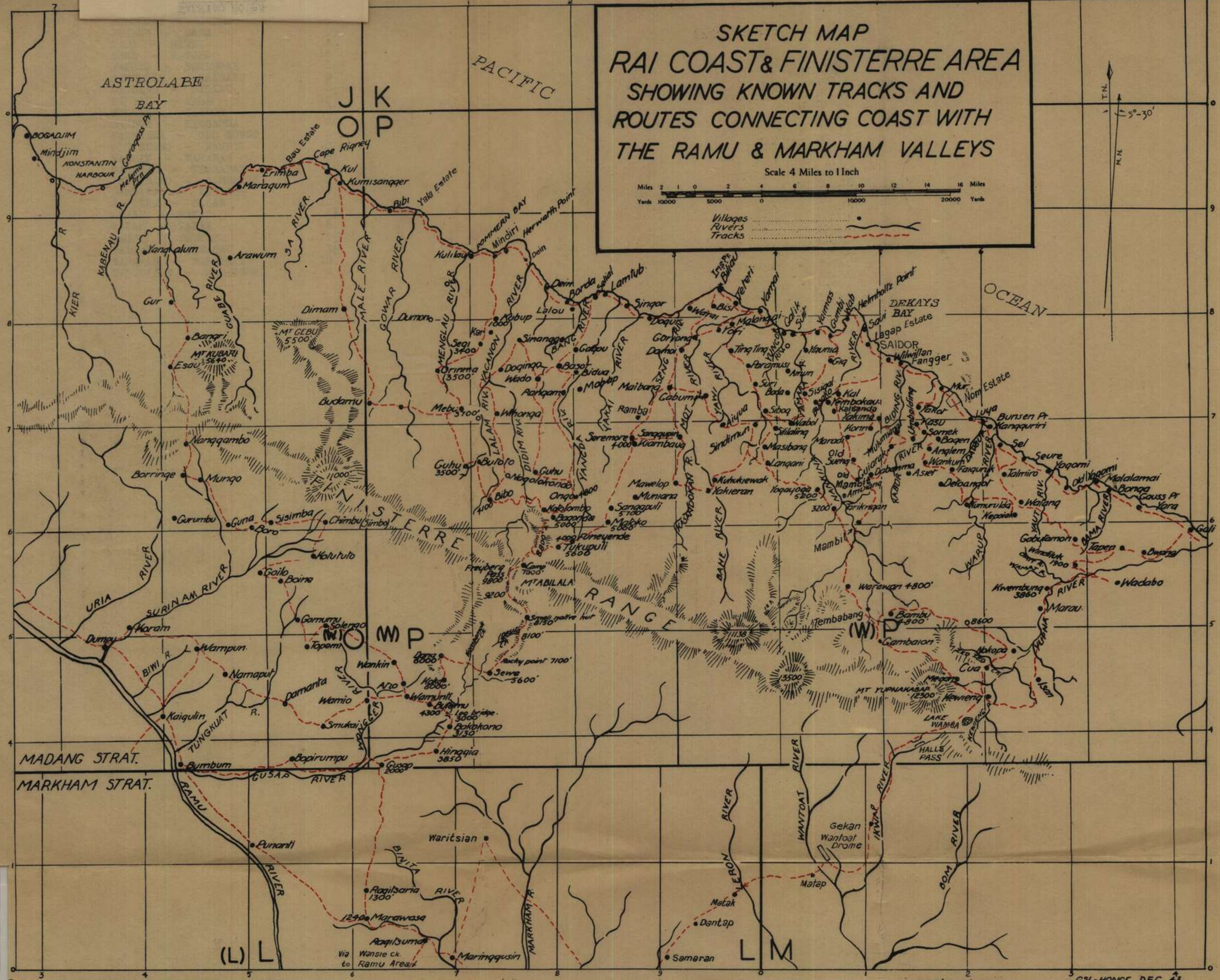
SCALES HORIZONTAL 4 MILES TO 1 INCH
 VERTICAL 2000 FEET TO 1 INCH
 (DISTORTION 10.5 : 1)

G.S.I. H.Q.N.G.F.
 16 DEC '43

SKETCH MAP RAI COAST & FINISTERRE AREA SHOWING KNOWN TRACKS AND ROUTES CONNECTING COAST WITH THE RAMU & MARKHAM VALLEYS

Scale 4 Miles to 1 Inch
Miles 2 1 0 2 4 6 8 10 12 14 16 Miles
Yards 10000 5000 0 10000 20000 Yards

Villages
Rivers
Tracks



SAIDOR AREA

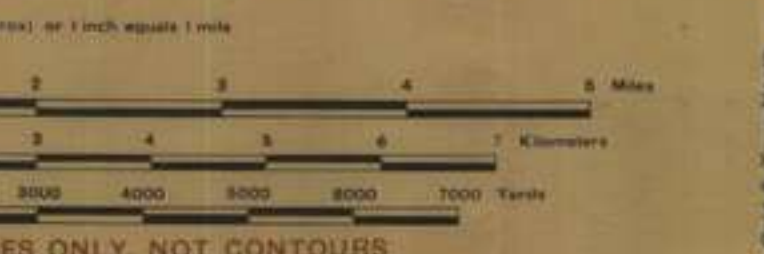
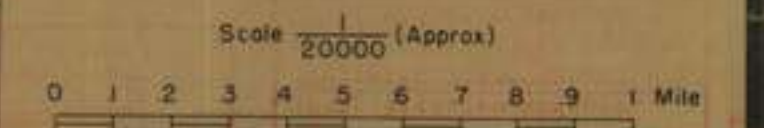
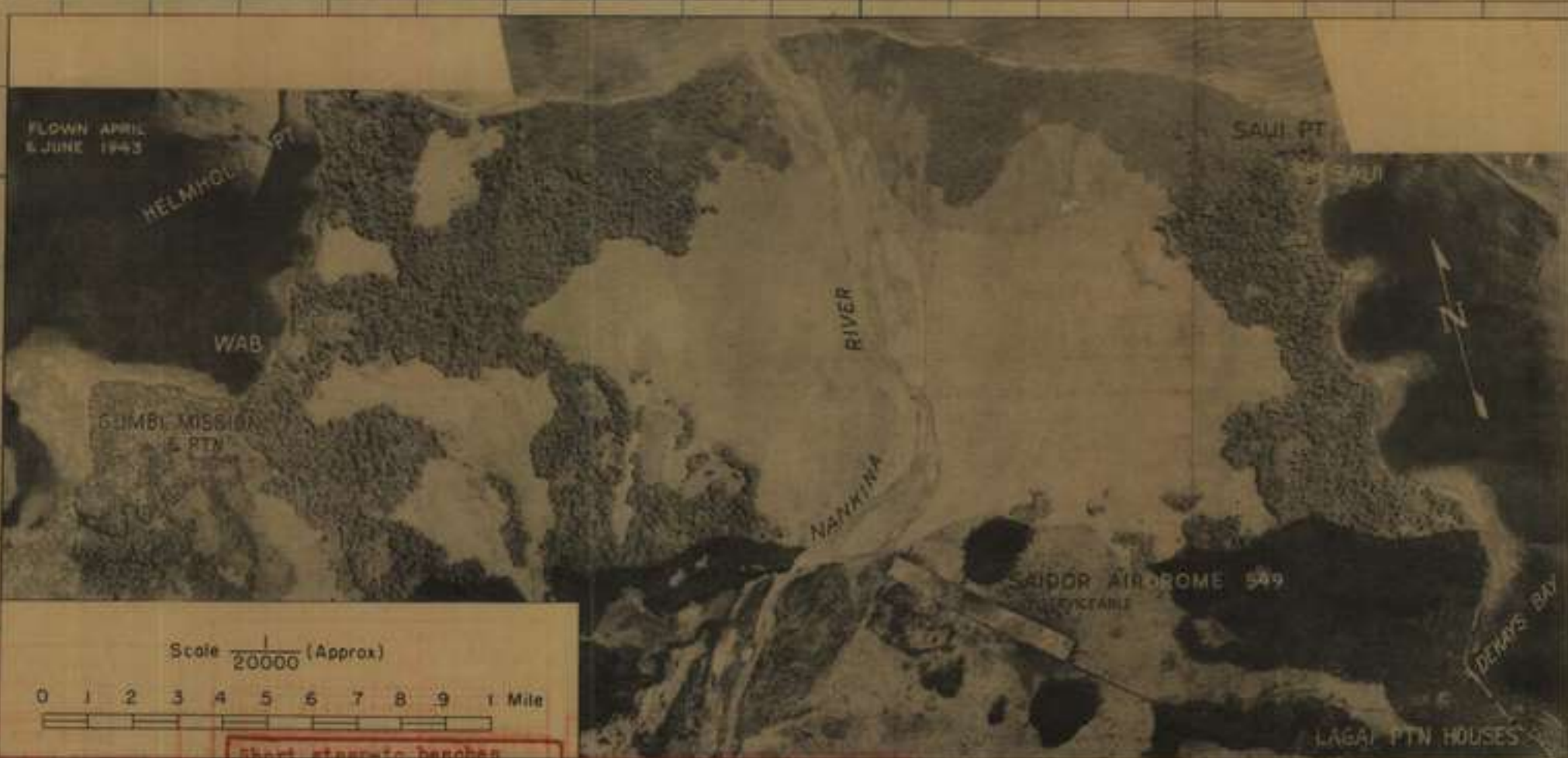
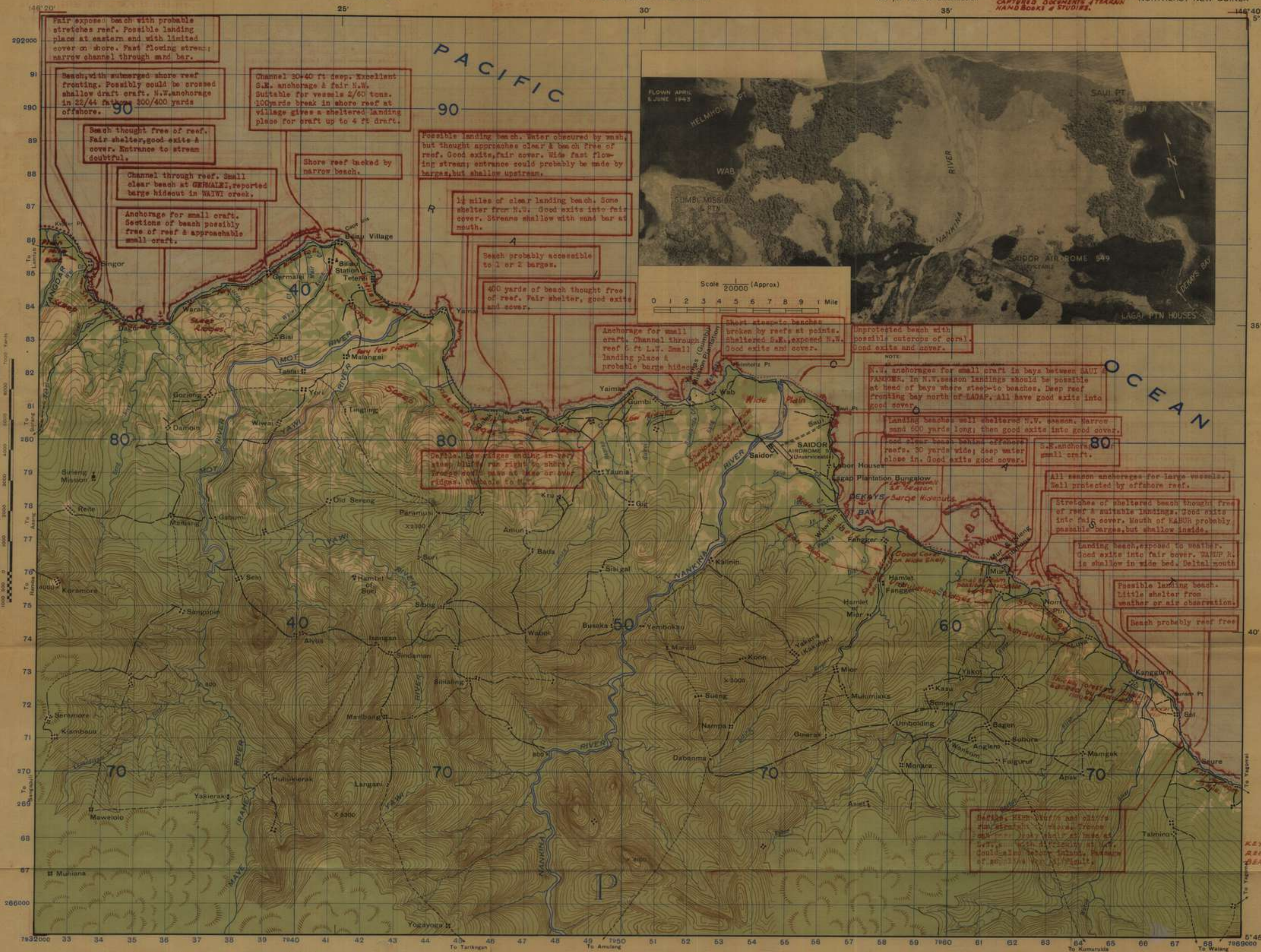
PHOTO 276-Y 4 OCT 43

APPX "D"
INFORMATION RESUME NO 6
2ND REVISION
GSI NGF 17 DEC 43.



NGF/MISC/7389

REPRODUCED BY 2/1 AUST. ARMY TOPO. SURVEY COY. DEC. 43.



INDEX TO SHEETS

146°00'	147°00'
146°15'	146°30'
146°30'	146°45'
146°45'	147°00'

POWERN BAY SAIDOR
GUSAP NANKINA SINGO RAKAI

1000 METER MODIFIED BRITISH GRID SYSTEM
N. E. 1. EQUATORIAL ZONE
Origin of grid: Lat. Equator-Long. 150°E, whose coordinates are X = 1,000,000M and Y = 900,000M
To give the coordinates of a point use only larger figures on the grid lines, and add estimated tenths of kilometers. The small numbers at the corners are the full coordinates referred to the origin of the grid zone.
Nearest similar reference on this grid is 500 km distant. ALWAYS indicate grid letter in giving a reference on this grid.

SAIDOR
5530 - E14620/15X20

LEGEND

- Secondary roads
- Trails, probable
- Native village
- Mission
- Breakers
- Streams, intermittent
- Swamps
- Underwater obstruction
- Junks
- Plantations
- Chesand
- Farm lines, interval approx 100 ft
- Native Gardens

RELIABILITY DIAGRAM

A - Reliable, from vertical photos
B - Fairly reliable, from oblique photos
C - Doubtful, from distant oblique and/or existing maps.

WARNING: FORM LINES ONLY, NOT CONTOURS
All Elevations are Approximate

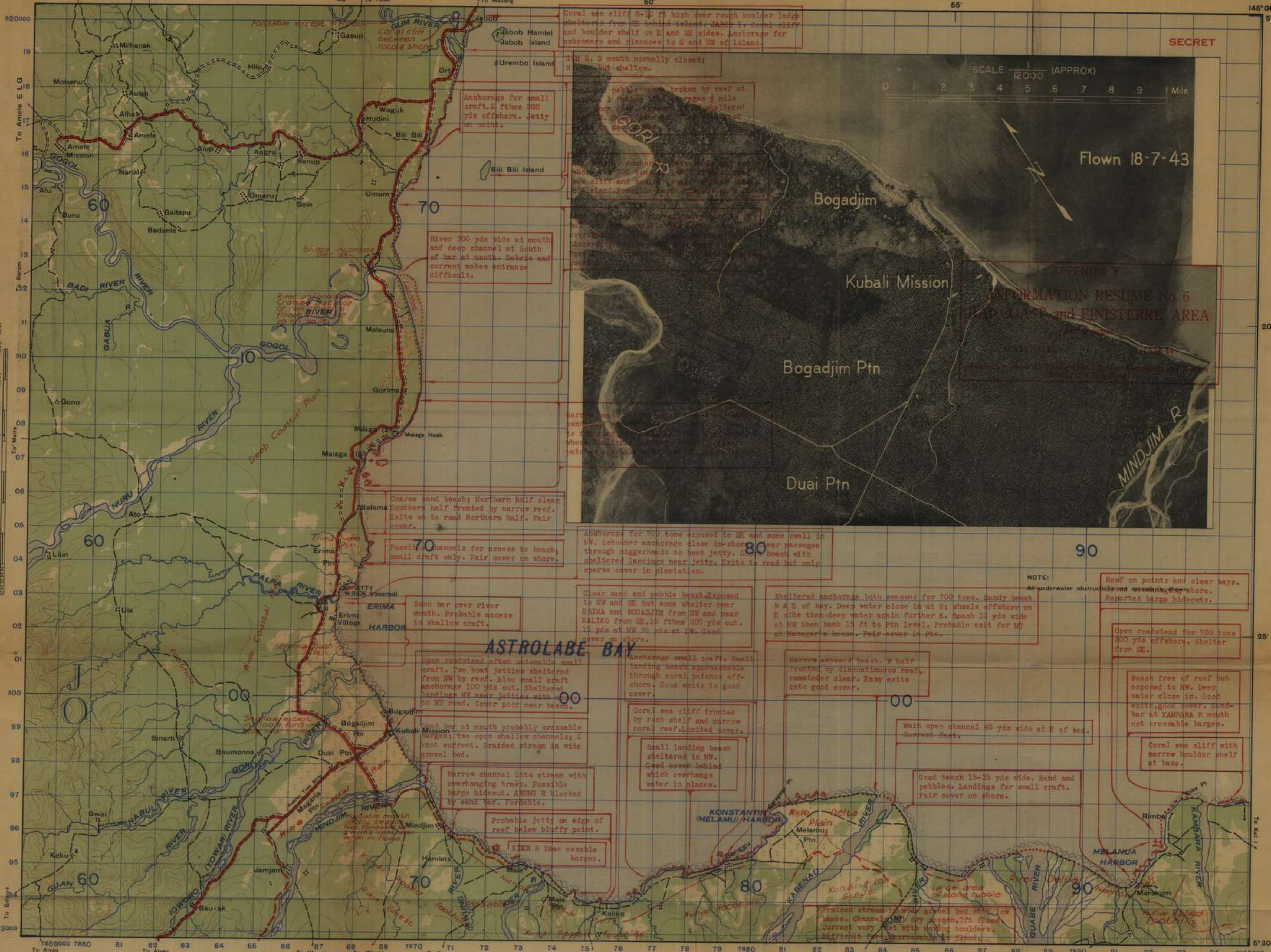
NOTE: AIRPHOTOS USED FOR THIS MAP WILL HAVE SEASONAL CORRECTIONS AND ANNOTATIONS WHICH COME TO YOUR ATTENTION AND ARE SUBJECT TO THE CHIEF ENGINEER, USAFFE, APO SB.

Prepared under the direction of the Chief Engineer, USAFFE, by Staff Map Plots, USAFFE, Aug 1943.
Compilation from information geographers, missions 123-XX and 127-22 May 1943 by the Photo Sq, 5th Air Force, U. S. Army, and information from ANDAU, AIG and HQHQF.
Photometry from aerial and oblique photographs using trimetron plotting device for distances determined by Parallax Stereo-comparograph grid based on control furnished by AD Bureau, NHP. Feb and Mar 1943 and from Aert O'H. Co.
London: Special Orthographic Projection.
1:1 Revision based on information from AGS Terrain Study 55, G2 and NG24U.

CAUTION:
This map was produced from aerial photographs. Due to lack of accurate ground control, distances scaled on this map may be at variance with actual ground distances.

NGF/MBC/7380

SECRET



SCALE 1/12000 (APPROX)
0 1 2 3 4 5 6 7 8 9 Mile

Flown 18-7-43

APPENDIX F
INFORMATION RESUME No. 6
BOGADJIM and ERIMA AREA

NOTE:
All underwater obstructions are indicated on the shore.

Reef on points and clear bays. Reported barge hideouts.

Open roadstead for 700 tons 200 yds offshore. Shelter from SE.

Beach free of reef but exposed to NW. Deep water close in. Good shelter at KAMBARA R mouth not crossable barges.

Coral sea cliff with narrow boulder shelf at base.

Main open channel 80 yds wide at E of bed. Current fast.

Good beach 15-15 yds wide. Sand and pebbles. Landings for small craft. Fair cover on shore.

Sheltered anchorage both seasons for 700 tons. Sandy beach N & E of bay. Deep water close in at N; shoals offshore on E side then deep water again further S. Beach 10 yds wide at NW then bank 15 ft to Ptn level. Probable exit for MT at Manager's house. Fair cover in Ptn.

Narrow exposed beach. E half fringed by discontinuous reef, remainder clear. Easy exits into good cover.

Small landing beach sheltered in NW. Good cover behind which overhangs water in places.

Coral sea cliff fringed by rock shelf and narrow coral reef. Limited cover.

Clear sand and pebble beach. Exposed to NW and SE but some shelter near ERIMA and BOGADJIM from NW and near KALIKO from SE. 15 fms 200 yds out. 15 yds at NW 25 yds at SE. Good cover on shore.

Sand bar over river mouth. Probable access to shallow craft.

Open roadstead often untenable small craft. Two boat jetties sheltered from NW by reef. Also small craft anchorage 100 yds out. Sheltered landings NW near jetties with access to MT road. Cover poor near beach.

Sand bar at mouth probably crossable barges; two open shallow channels; 2 not current. Braided stream in wide gravel bed.

Narrow channel into stream with overhanging trees. Possible barge hideout. ANUM R blocked by sand bar. Forbidd.

Probable jetty on edge of reef below bluff point.

KIRIR R impr. suitable barges.

Large area of stone rubble. Channel very dry in low water. Current very fast with moving boulders. Difficult for barges to proceed.

Good anchorage for 700 tons exposed to SE and some swell in NW. Schooner anchorage close in-shore near passages through zigzags to boat jetty. Good beach with sheltered landings near jetty. Exits to road but only sparse cover in plantation.

River 300 yds wide at mouth and deep channel at South of bar at mouth. Debris and current makes entrance difficult.

Anchorage for small craft. 2 fms 200 yds offshore. Jetty on point.

Coral sea cliff 8-12 ft high over rough boulder ledge sheltered from SE behind island. JABOB I. Coral cliff and boulder shelf on E and SE sides. Anchorage for schooners and pinnaces to S and SW of island.

Prepared under the direction of the Chief Engineer, USAFFE, by Base Map Plant, USAFFE, August 1943. Compilation from reconnaissance photographs, missions 88-X and 87-X Feb 1943, and 125-Y and 127-Z May 1943 by 8th Photo Sq, 8th Air Force, U. S. Army. Planimetry from vertical and oblique photographs, using instrumenting and information from ANGAU, Kdr LMG, Property and Survey Branch Dept of Interior, ACT, Aust LMG and AGS. Elevations for features determined by Forebird Stereo-comparograph and information from AGS and RAFF. Grid based on control furnished by AD Survey, RGF, Feb and Mar 1943 and from Aust Ge. C. Lambert conformal conic projection.

LEGEND
NAT. ROAD
RAIL
TRAIL
STREAMS
SWAMP
JUNGLE
PLANTATION
CRATER
FARM LINES
UNDERWATER OBSTRUCTION
BREAKERS
NATIVE GARDENS

Scale 1/63380 (Approx) or 1 inch equals 1 mile
0 1 2 3 4 5 Miles
0 1 2 3 4 5 Kilometers
0 1000 2000 3000 4000 5000 6000 7000 Yards

"WARNING: FORM LINES ONLY, NOT CONTOURS"

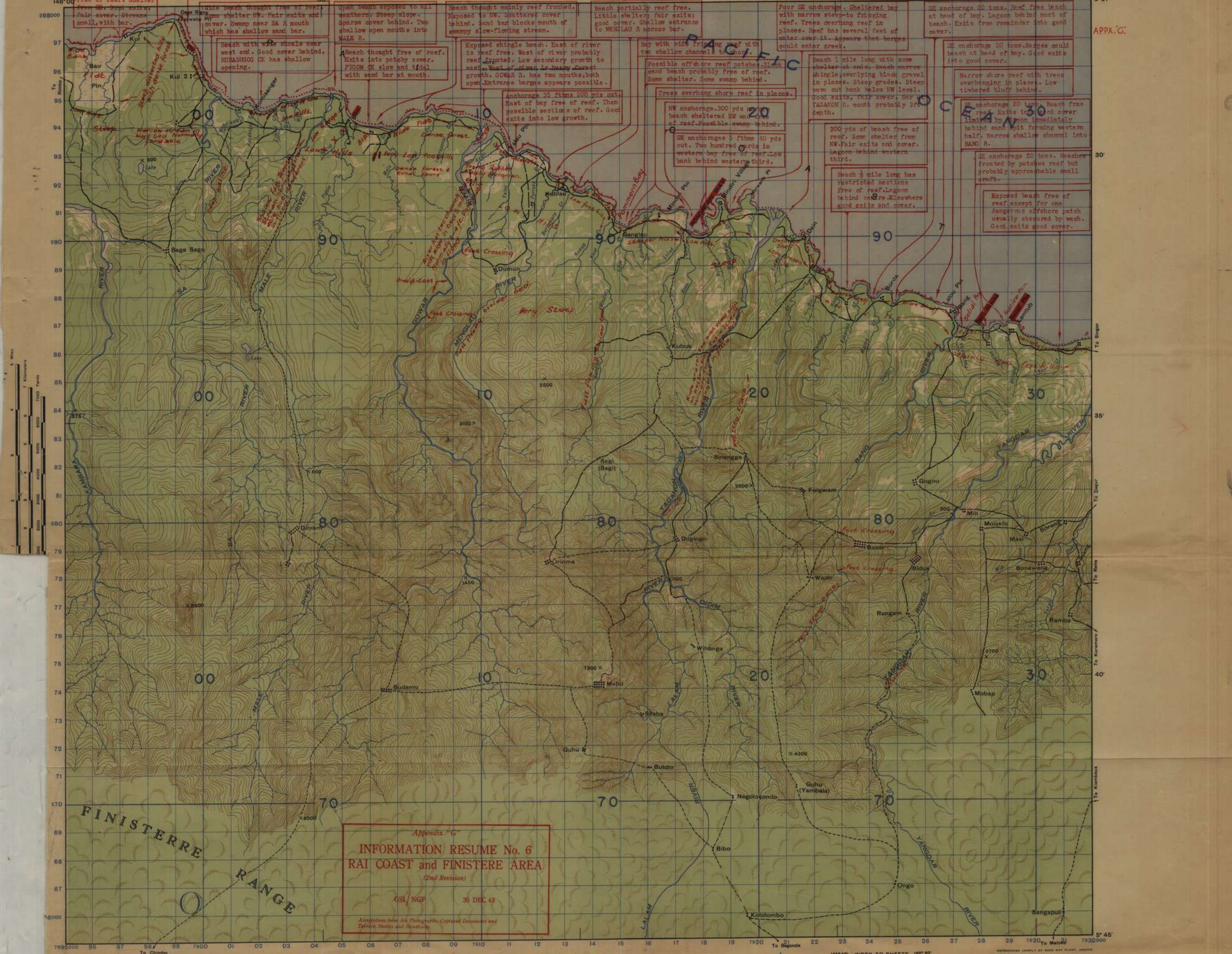
NOTE: OFFICERS USING THIS MAP WILL MAKE NECESSARY CORRECTIONS AND ADDITIONS WHICH SHOULD BE REFERRED TO THE CHIEF ENGINEER, USAFFE, APO 80.

Grid & True North
Magnetic North
Approximate mean declination 1943
Annual magnetic increase 3'

INDEX TO SHEETS
AMAIMON MADANG
BAGASIN BOGADJIM
URIGINIA MT KUBARI POMERN BAY

1000 METER MODIFIED BRITISH GRID SYSTEM
N. E. 1. EQUATORIAL ZONE
Origin of grid Lat South-Lana 10° S, whose coordinates are X 3,800,000M and Y 900,000M
To give the coordinates of a point only larger figures on the grid lines, and add estimated tenths of kilometers. The small numbers at the corners are the full coordinates referred to the origin of the grid zone.
Nearest similar reference on this grid is 500 km distant. ALWAYS indicate grid letter in giving a reference on this grid.

BOGADJIM
5515 - E14540 / 15x20



Narrow steep-to reef.

Wide beach thought free of reef. Fair shelter NW. Fair exits and cover. Swamp near SA R mouth which has shallow sand bar.

Beach with wide shoals near west end. Good cover behind. HURASHOG CK has shallow opening.

Upon beach exposed to sea weathers. Steep slope. Sparse cover behind. Two shallow open mouths into MALE R.

Beach thought free of reef. Exits into patchy cover. FIGOM CK slow and tidal with sand bar at mouth.

Beach thought mainly reef fronted. Exposed to NW. Sparse cover behind. Sand bar blocks mouth of swampy slow-flowing stream.

Exposed shingle beach. East of river is reef free. West of river probably reef fringed. Low secondary growth to east. East of river is heavy forest growth. GOWAR R. has two mouths, both open. Entrance barges appears possible.

Beach partially reef free. Little shelter. Fair exits; good cover. Shallow entrance to MENILAU R across bar.

Bay with wide fringing reef with two shallow channels to shore.

Poor SE anchorage. Sheltered bay with narrow steep-to fringing reef. Trees overhang reef in places. Reef has several feet of water over it. Appears that barges could enter creek.

Beach 1 mile long with some shelter at ends. Beach narrow shingle, overlying black gravel in places. Steep grades. Steep NW cut bank below HW level. TADANON R. mouth probably 3ft depth.

SE anchorage 30 tons. Reef free beach at head of bay. Lagoon behind most of beach. Exits from remainder into good cover.

SE anchorage 20 tons. Barges could beach at head of bay. Good exits into good cover.

Narrow shore reef with trees overhanging in places. Low timbered bluff behind.

SE anchorage 20 tons. Beach free of reef. Exits into good cover limited by reef immediately behind sand spit forming western half. Narrow shallow channel into BANG R.

SE anchorage 30 tons. Beach fringed by patches reef but probably approachable small craft.

Exposed beach free of reef except for one dangerous offshore patch usually obscured by wash. Good exits good cover.

Appendix "C"
INFORMATION RESUME No. 6
RAI COAST and FINISTERRE AREA
(2nd Revision)
GSI NGF 30 DEC 43
Annotations from Air Photos, Captured Documents and Terrain Studies and Handbooks



LEGEND

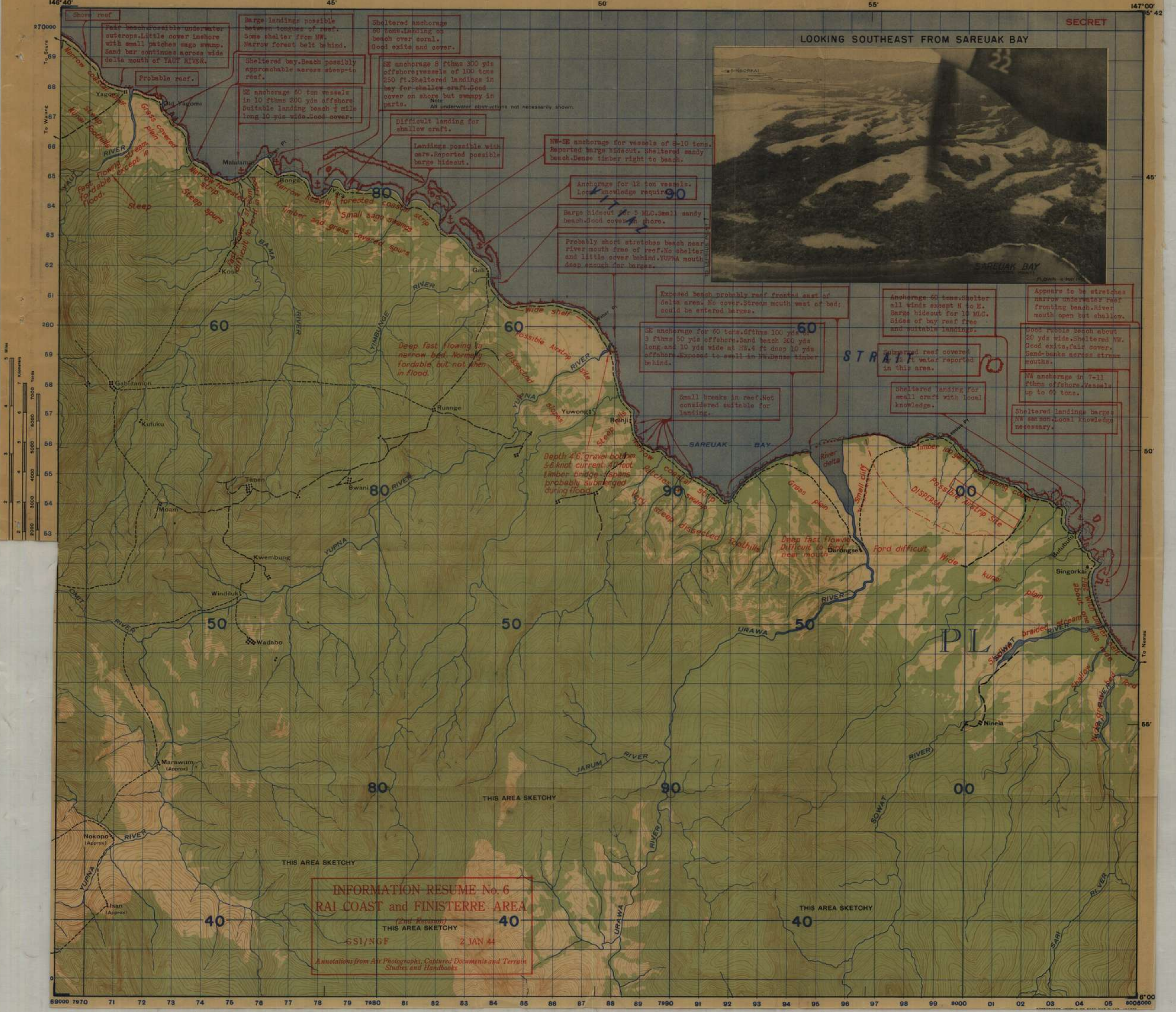
Scale 1:50,000 (Approx) or 1 inch equals 1 mile

INDEX TO SHEETS

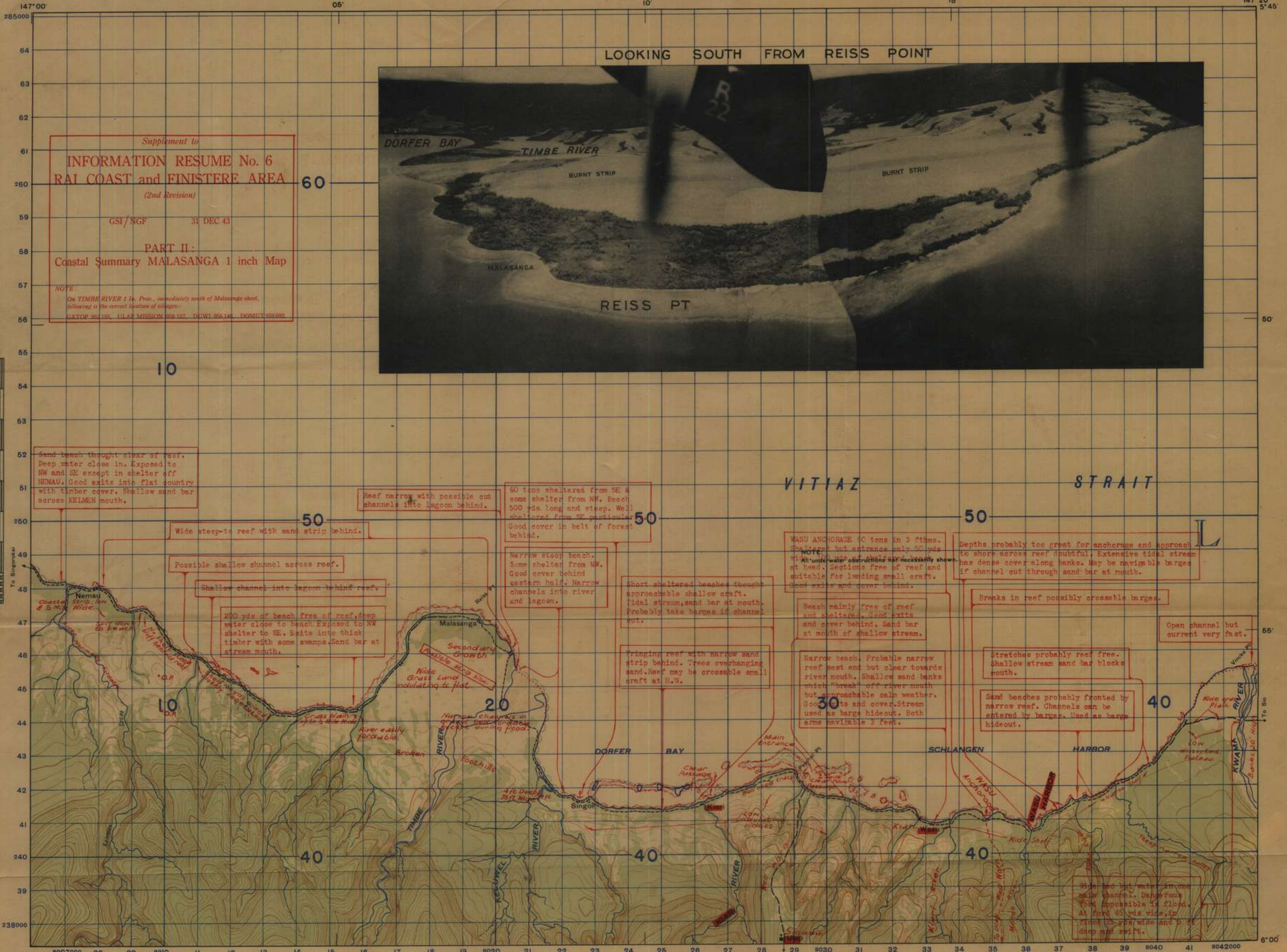
REPRODUCED FROM THE BASE MAP PLANS, GROUPS

SECRET

LOOKING SOUTHEAST FROM SAREUAK BAY



INFORMATION RESUME No. 6
RAI COAST and FINISTERRE AREA
(2nd Revision)
THIS AREA SKETCHY
ESI/NGF 2 JAN 44
Annotations from Air Photographs, Captured Documents and Terrain Studies and Handbooks



Supplement to
INFORMATION RESUME No. 6
RAI COAST and FINISTERE AREA
(2nd Revision)

GSI/NGF 31 DEC 43

PART II:
Coastal Summary MALASANGA 1 inch Map

NOTE:
On TIMBE RIVER 1 in. Prov., immediately south of Malasanga sheet,
following is the correct location of villages:
GATOP 961156, HILAT MISSION 968157, DUMI 966186, TOMUTH 969097

Sand beach thought clear of reef.
Deep water close in. Exposed to
NW and SE except in shelter off
NEMAU. Good exits into flat country
with timber cover. Shallow sand bar
across KEIMEN mouth.

Wide steep-to reef with sand strip behind.

Possible shallow channel across reef.

Shallow channel into lagoon behind reef.

200 yds of beach free of reef, deep
water close to beach. Exposed to NW
shelter to SE. Exits into thick
timber with some swamps. Sand bar at
stream mouth.

Reef narrow with possible out
channels into lagoon behind.

60 tons sheltered from SE &
some shelter from NW. Beach
500 yds long and steep. Well
sheltered from SE particular
Good cover in belt of forest
behind.

Narrow steep beach.
Some shelter from NW.
Good cover behind
eastern half. Narrow
channels into river
and lagoon.

Short sheltered beaches thought
approachable shallow craft.
Tidal stream, sand bar at mouth.
Probably take barges if channel
cut.

Fringing reef with narrow sand
strip behind. Trees overhanging
sand. Reef may be crossable small
craft at N.W.

WASU ANCHORAGE 60 tons in 3 fms.
Sheltered but entrance only 50 yds
at head. Sections free of reef and
suitable for landing small craft.
Good exits and cover behind.

Beach mainly free of reef
and sheltered. Sand exits
and cover behind. Sand bar
at mouth of shallow stream.

Narrow beach. Probable narrow
reef east end but clear towards
river mouth. Shallow sand banks
which "break" off river mouth
but approachable calm weather.
Good exits and cover. Stream
used as barge hideout. Both
arms navigable 3 feet.

NOTE:
All underwater obstructions not necessarily shown.

Depths probably too great for anchorage and approach
to shore across reef doubtful. Extensive tidal stream
has dense cover along banks. May be navigable barges
if channel cut through sand bar at mouth.

Breaks in reef possibly crossable barges.

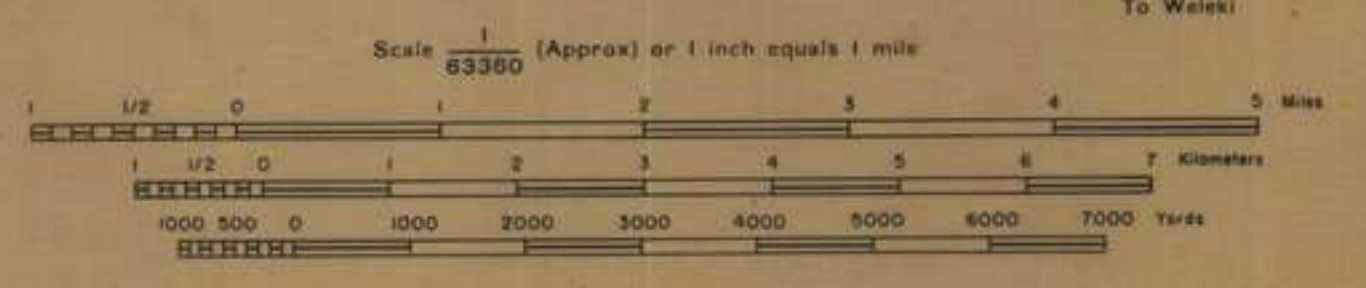
Stretches probably reef free.
Shallow stream sand bar blocks
mouth.

Sand beaches probably fronted by
narrow reef. Channels can be
entered by barges. Used as barge
hideout.

Open channel but
current very fast.

High and deep water in one
small channel. Dangerous
ford impossible in flood.
At ford 45 yds wide, 10
ft deep 15 yds wide and 5 ft
deep and swift.

- LEGEND**
- Beach
 - Trails, probable
 - Streams, intermittent
 - Swamps
 - Jungles
 - Plantations
 - Grassland
 - Farm lines, interval approx 100 ft
 - Underwater obstruction
 - Breakers



"WARNING: FORM LINES ONLY, NOT CONTOURS"

NOTE: OFFICERS USING THIS MAP WILL MARK HEREIN CORRECTIONS AND
ADDITIONS WHICH COME TO THEIR ATTENTION AND MAIL DIRECT TO
"THE CHIEF ENGINEER, USAFFE, APO 501"



Approximate mean declination 1943
Annual magnetic increase 3'

INDEX TO SHEETS 146°40' 147°40'

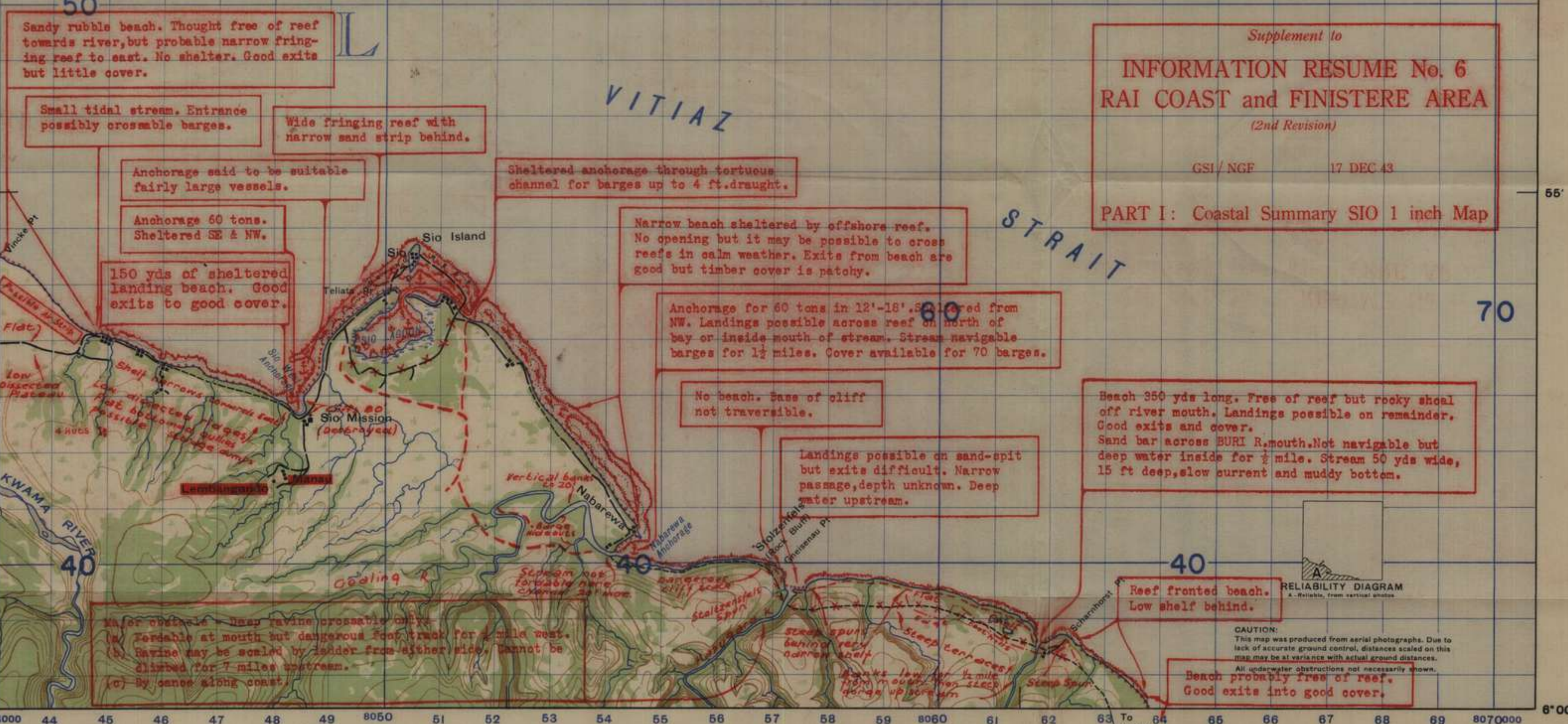
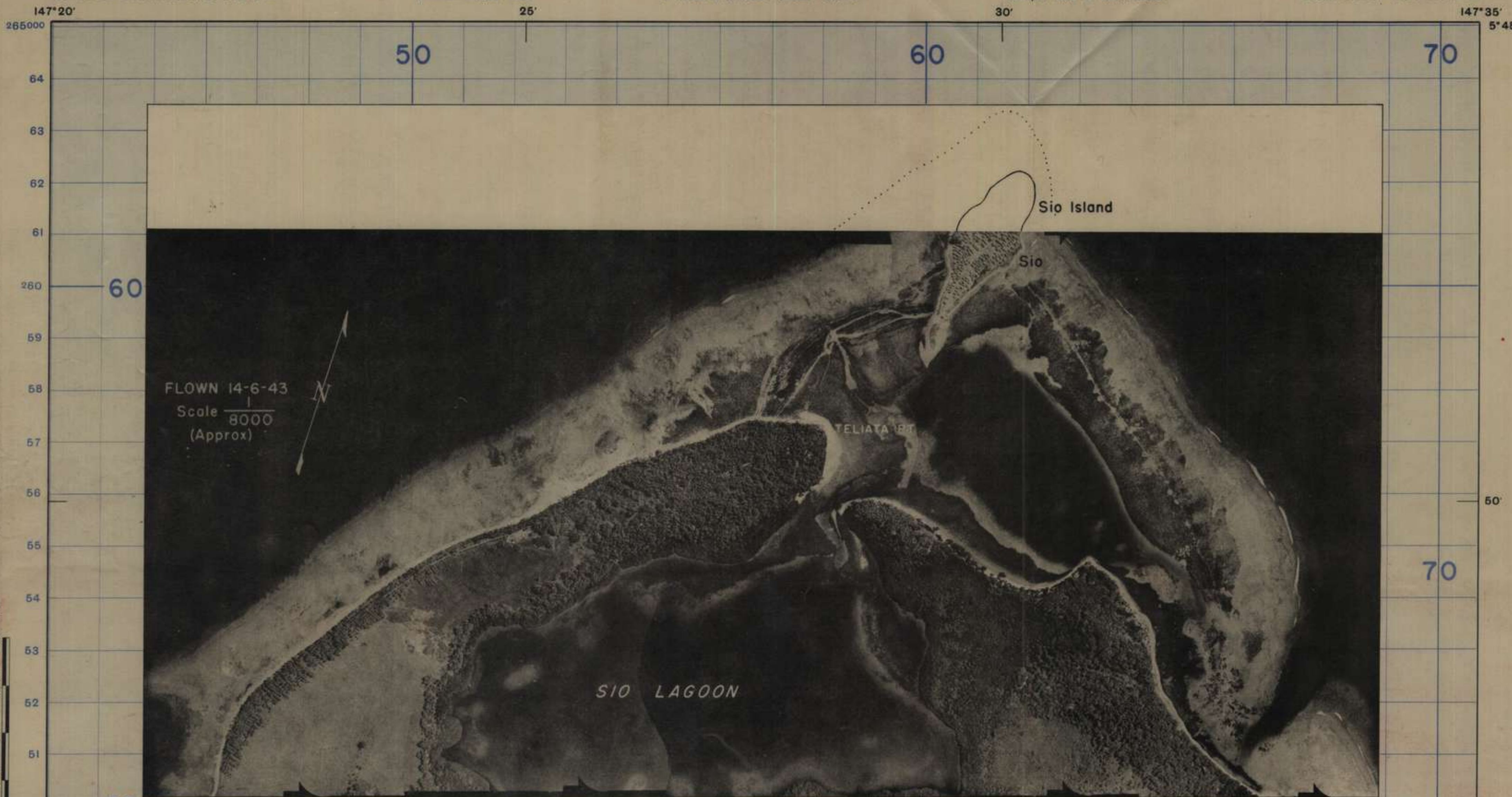


REPRODUCED EXACTLY BY BASE MAP PLANT, USAFFE
AND A. H. S. CARTOGRAPHIC CO. AUGUST 1943
1000 METER MODIFIED BRITISH GRID SYSTEM
N. E. 1. EQUATORIAL ZONE
Origin of grid: Lat. Equator-Long. 100°E, whose coordinates
are X 3,000,000.0M and Y 900,000.0M
To give the coordinates of a point use only larger figures
on the grid lines, and add estimated tenths of kilometers.
The small numbers at the corners are the full coordinates
referred to the origin of the grid zone.
Nearest similar reference on this grid is 500 km distant.
ALWAYS indicate grid letter in giving a reference on
this grid.

MALASANGA
S545 - E14700/15X20

Prepared under the direction of the Chief Engineer, USAFFE, by
Base Map Plant, USAFFE, Aug 1943.
Compilation from tri-stereo photographs, missions
135-XX May 1943, 136-XX May 1943 and 148-XX May 1943 by 8th
Photo Sq, 8th Air Force, U. S. Army and information from ANDAU,
AOS and Aust LHO.
Topography from vertical and oblique photographs using
tri-stereo plotting and Fairchild stereo-comparograph.
Grid based on a control furnished by AD Survey, NGF, Feb and
Mar 1943 and from Aust Oil Co.
Lambert conical orthographic projection.

CAUTION:
This map was produced from aerial photographs. Due to
lack of accurate ground control, distances scaled on this
map may be at variance with actual ground distances.

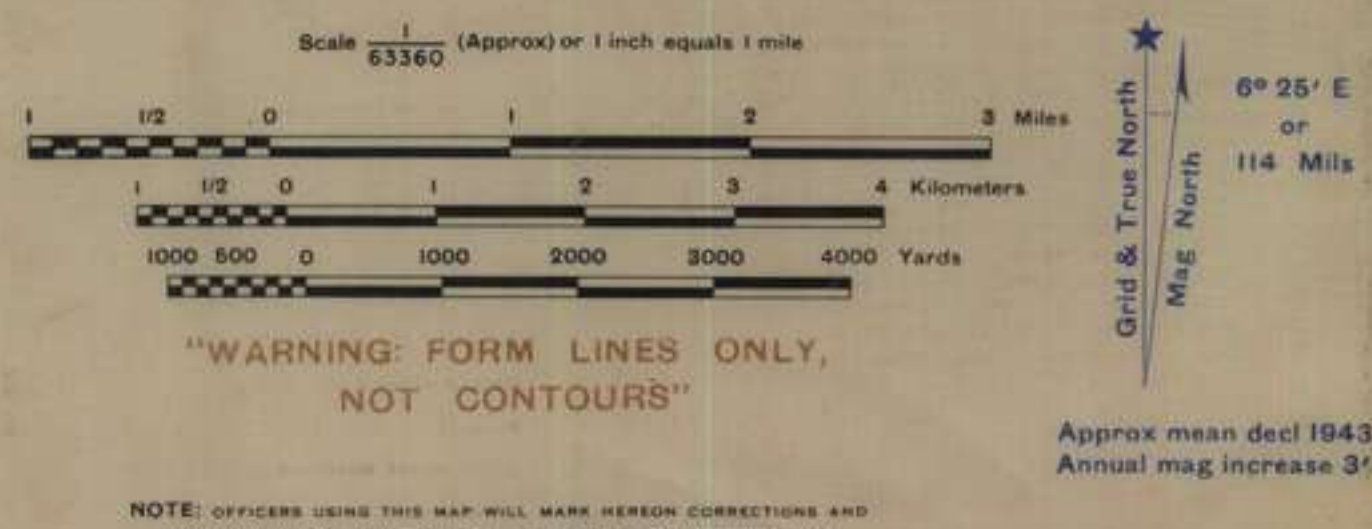


Supplement to
INFORMATION RESUME No. 6
RAI COAST and FINISTERE AREA
(2nd Revision)
GSI/NGF 17 DEC 43
PART I: Coastal Summary SIO 1 inch Map

Prepared under the direction of the Chief Engineer, USAFFE, by Base Map Plant, USAFFE, August 1943. Compilation from tri-metron photography, missions 132-XX and 135-XX May 1943 by 8th Photo Sq, 5th Air Force, U. S. Army and information from ANGAU and Aust LHQ. Preliminary from vertical and oblique photographs using tri-metron plotting. Elevations from form lines determined by Fairchild Stereo-comparagraph. Grid based on control furnished by AD Survey, NGF, Feb and Mar 1943 and from Aust Oil Co. Lambert Conical Orthomorphic Projection. 1st Revision based on information from AGS Terrain Study 36.

Beach..... LEGEND Reef.....

- Trails
- Trails, probable
- Streams, intermittent
- Swamps
- Jungle
- Plantations
- Grassland
- Form lines, interval approx 100 ft.
- Native village
- Mission
- Underwater obstruction
- Breakers



INDEX TO SHEETS

MALA-SANGA	SIO
TIMBE RIVER	KALASA

REPRODUCED BY BASE MAP PLANT, USAFFE, OCTOBER 1943

1000 METER MODIFIED BRITISH GRID SYSTEM
N. E. 1. EQUATORIAL ZONE
Origin of grid: Lat Equator-Long 110°E, whose coordinates are X-3,800,000M and Y-900,000M
To give the coordinates of a point use only large figure on the grid lines, and add estimated tenths.
The small numbers at the corners are the full coordinates referred to the origin of the grid zone.
Nearest similar reference on this grid is 500 km distant.
ALWAYS indicate grid letter in giving a reference on this grid.

SIO
S545 - E14720/15

NOTE: OFFICERS USING THIS MAP WILL MARK HEREON CORRECTIONS AND ADDITIONS WHICH COME TO THEIR ATTENTION AND MAIL DIRECT TO "THE CHIEF ENGINEER, USAFFE, APO 501."