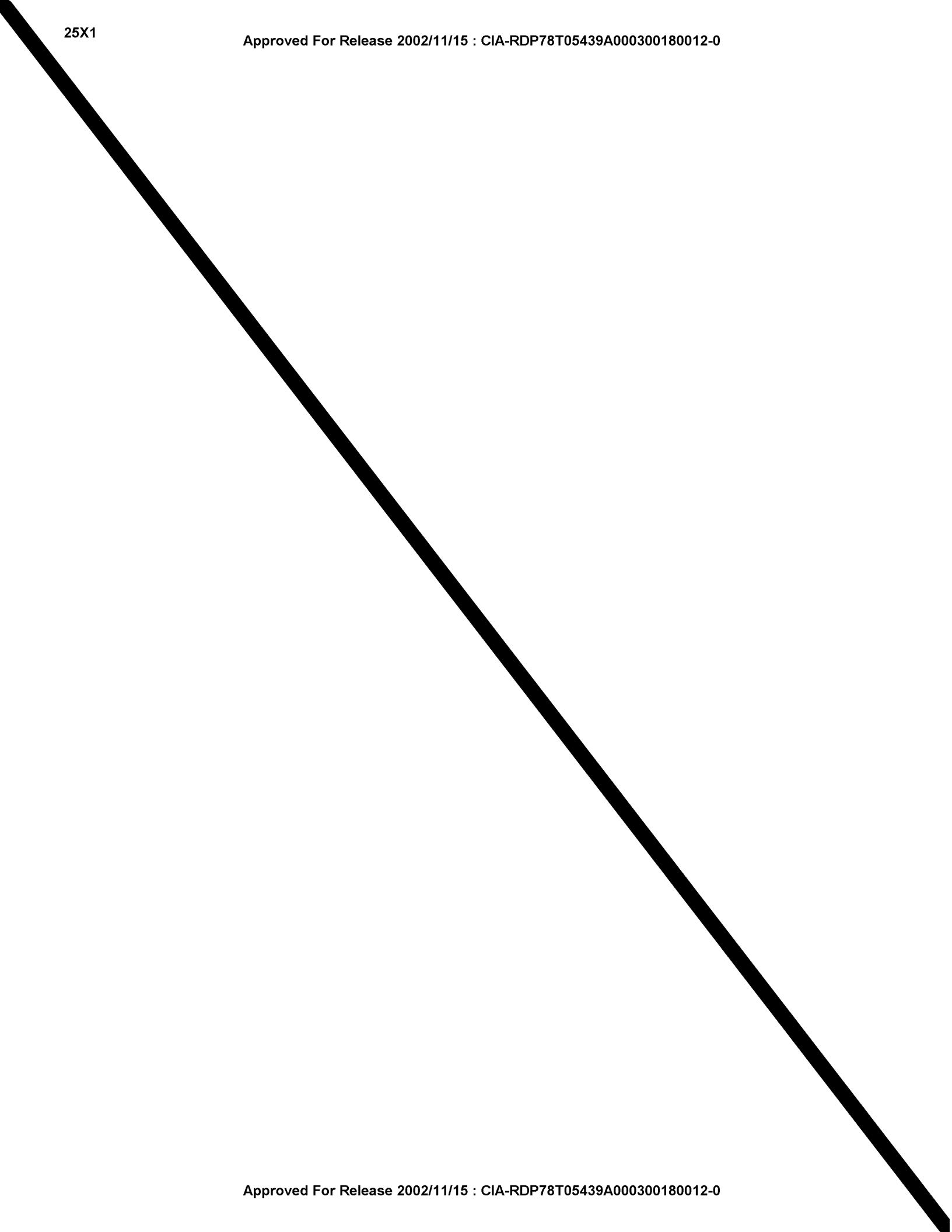

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CONFIDENTIAL VERSION

25X1A

PAINTER EXPEDITION

REPORT ON

SOUTHEAST CHINA COASTAL AREA

REPT NO. 609242

Amoy to Shanghai

ONI review(s) completed.

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1 NOVEMBER 1944

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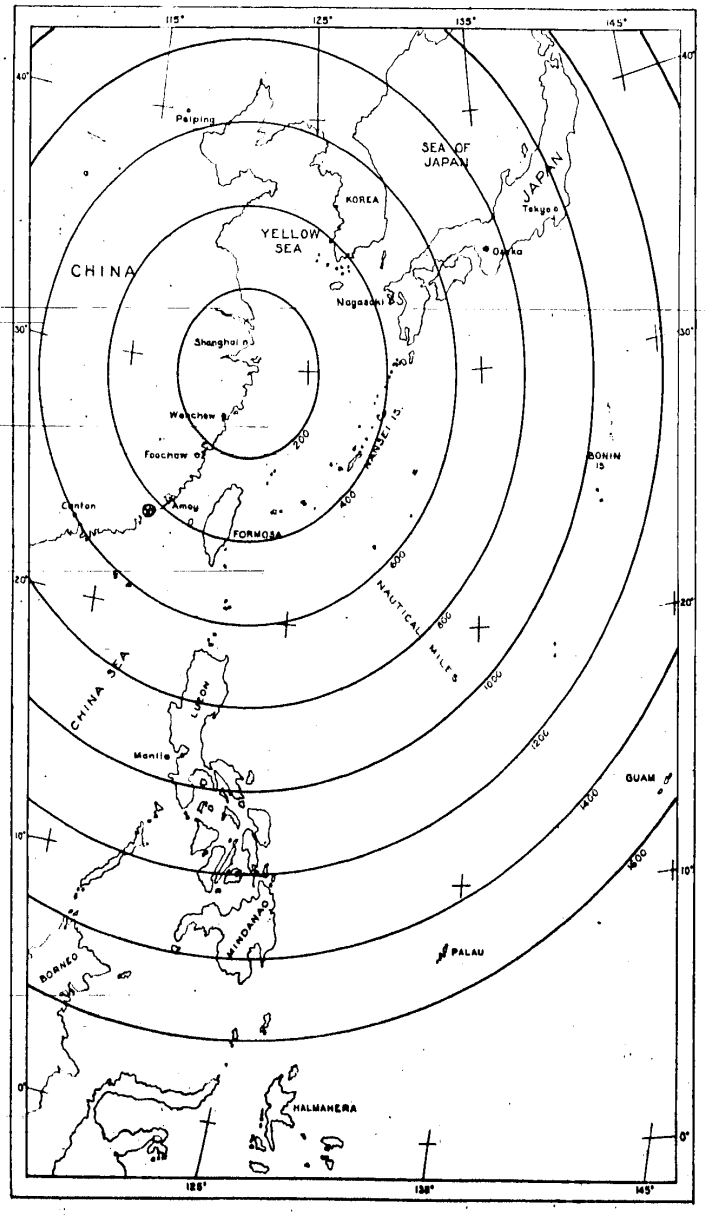
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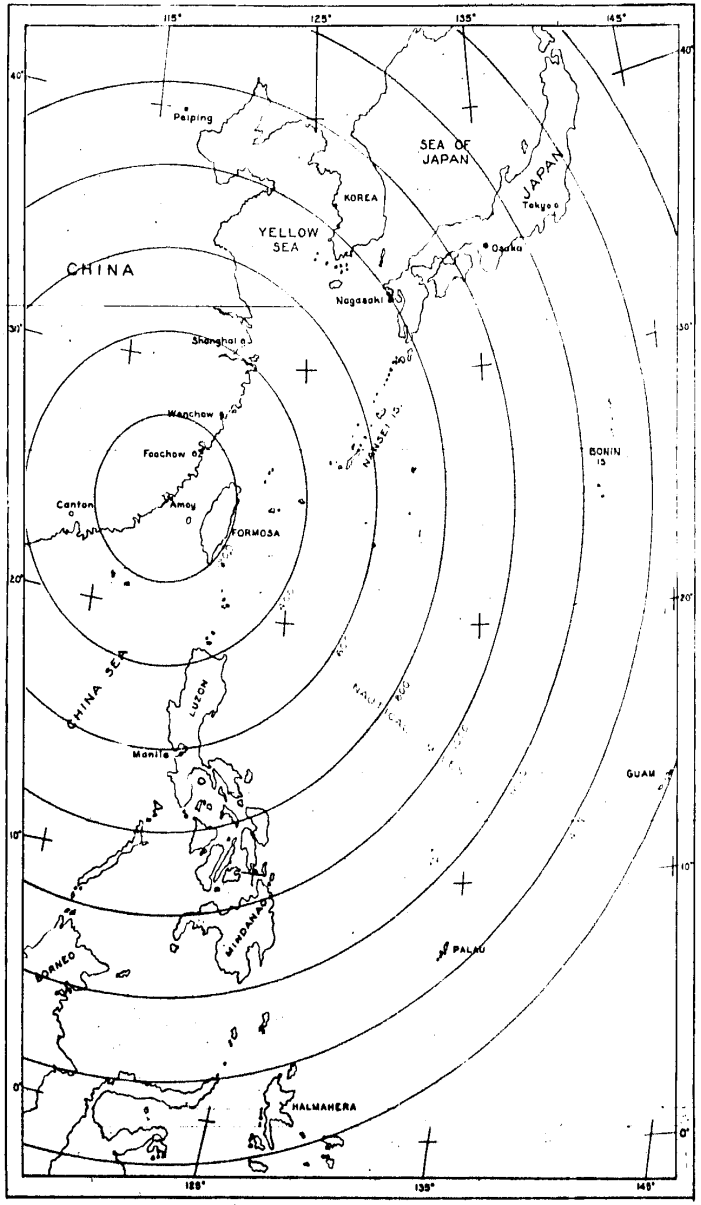
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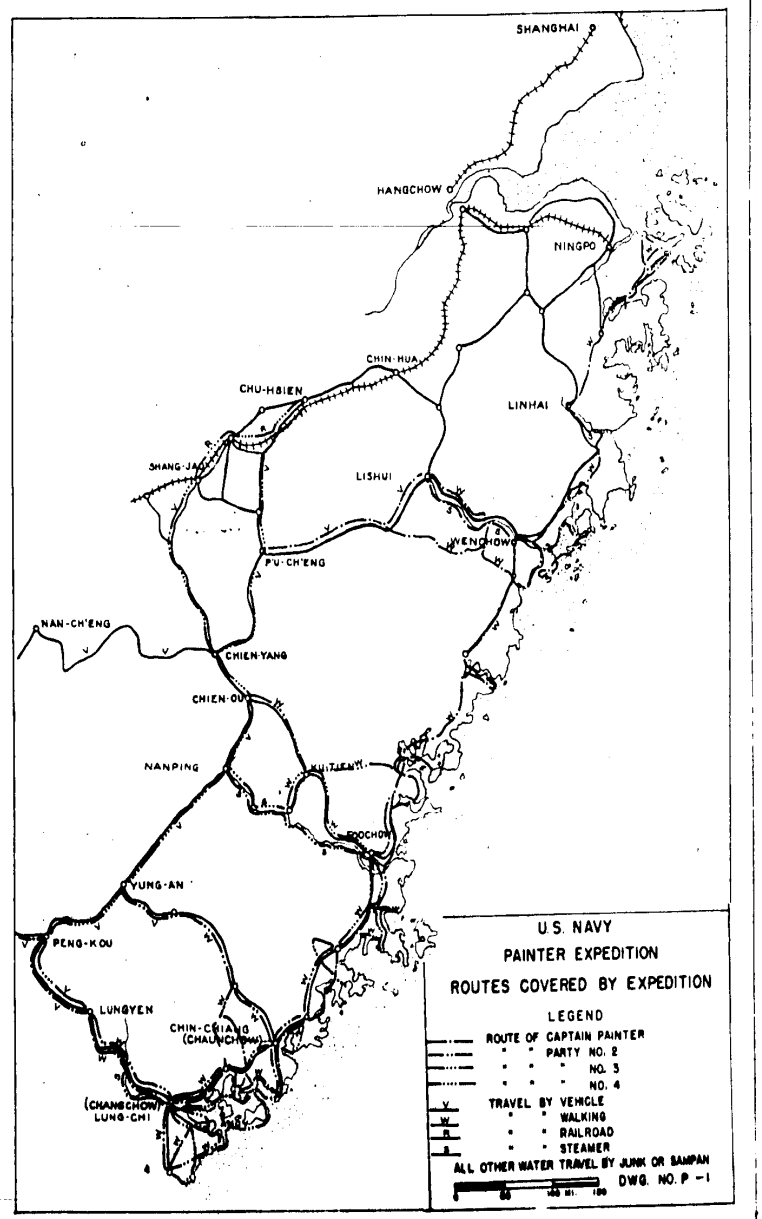


SECTION I. BRIEF

SECTION I - BRIEF

A. DIRECTIVE

1. Headquarters Forward Echelon, U.S. Army Forces, CBI Theater Top Secret letter AG 370.2 to Commander U.S. Naval Group, China dated 21 July 1944 directed that a ground reconnaissance be made covering possible bases in Southeastern China for the Fleet and for operations into and from China. This report is based on the completed reconnaissance. Attached Drawing No. P-2 shows the area under consideration.

B. RECONNAISSANCE AND OTHER DATA UPON WHICH REPORT IS BASED

1. A 76-day ground reconnaissance of the Southeastern China coast from Mimrod Sound to Amoy has been made by a detachment of Army and Navy personnel under the command of Captain W. L. Painter, CEC - USNR. The areas covered by the various parties into which the detachment was divided are shown on attached Drawing No. P-1. The detachment left Kan-hsien (Kanchow - 25°-50'N, 114°-54'E) on 2 August 1944 and returned to that base on 12 October. To expedite the survey and for security reasons, the personnel of the detachment were limited to eight Navy and five Army, supplemented by five Chinese engineers and Chinese interpreters.

2. Each area was examined with a view to its adaptability to meet the following major requisites, and rated as to engineering effort with time required to develop it for such functions:

(1) Fleet Anchorage.
(2) Fleet Base.
(3) Air Bases.
(4) Supply and Base for Interior China Operations.
(5) Beaches and Landing Areas.
(6) Ease of Military Occupation and Defense.
(7) Construction Effort and Time Element.
(8) Resources, Facilities, Labor, etc.

These are rated in the Conclusions on the basis of 100, that figure representing the best facility or condition available in any of the Areas under consideration.

3. Additional information on the expedition is given in Supplementary Data (Section III-G).

4. Data to supplement the ground reconnaissance for the preparation of this report has been obtained from aerial photographs, hydrographic charts, Chinese highway and postal maps, local Navy and Army intelligence material, and two recent studies of the Southeast China Coast, one the JICPOA Bulletin No. 99-44 dated 20 June 1944, the other prepared 12 July 1944 by Hq. U.S. Army Forces, CBI. These and other sources are listed in the Bibliography.

C. CONCLUSIONS

1. General.

The occupation and development of fleet and air bases to assist in furthering the attack on Japan and supplying interior China appear feasible on the China Coast between Shanghai and Swatow in a number of places, enumerated on the accompanying chart on a comparative basis.

2. Enemy Situation.

(a) The enemy does not occupy the coastal areas under consideration in any great force (as of 28 October 1944). His large concentrations of troops are in North China, Central China, in the Shanghai area and on Formosa. Control of the sea lanes should prevent early reinforcements from these concentrations, as rapid overland movements are not possible except to reinforce the Yin-hsien (Ningpo) area.

CONCLUSION CHART

Area	1 Fleet Anchorage	2 Fleet Base	3 No. of Strips VB&VIR*	4 Tons/day of Trans. to Inter.China	5 Beaches & Landing Areas	6 Ease of Occupation & Defense	7 Ease of Construction	8 Resources, Facilities etc.	No.of Construct. Battalions Required**
A. MIMROD SOUND	100	90	7plus CV	10,000	80	Oc. 80 Def. 80	75	Poor	69***
G. AMOY	90	100	9plus CV	5,000	100	Oc. 80 Def. 90	100	Limited	38***
L. SAMSA INLET	100	65	8plus CV	2,000	60	Oc. 100 Def. 100	55	None	25***
B. WENCHOW TO HAI-MEN	50	40	12	---	70	Oc. 85 Def. 60	80	Poor	19
F. MEICHEN SOUND	25	25	2	---	100	Oc. 100 Def. 100	100	None	6
C. NAMKWAN HARBOR	60	40	--	---	60	Oc. 100 Def. 100	60	None	2
E. LUNGTIEN PENINSULA	--	--	8	---	100	Oc. 95 Def. 90	100	None	10
	100* Best Area	100* Best Area			100* Best Area	100* Unoccupied by Enemy or Easiest Defended	100* Best Construction Conditions		
Railroad Construction to Ch'ang-sha (See Section II-H-2)									10
Completion of Interior Highway System less parts included in AREAS "C" and "D" (See Section II-H-3)									32

*See inside front cover for distance to targets.

**To carry out initial construction recommended in above items 1, 2, 3 and 4 in 120 days.

***AREA "A" figure includes 23 battalions for constructing Highway supply system to Railroad at Chin-hua and I-wu. AREA "G" figure includes 5 battalions for highway rehabilitation, Lung-chi to Lung-yen and Chin-chiang to Tung-an. AREA "D" figure includes 10 battalions for highway rehabilitation, Samsa to Chien-yang.

NOTE: Column 6 based on information available as of 28 October 1944.

(b) Since September 1st, however, the enemy has shown an increasing interest in the Coast. This may in part be explained by the importance put by Chinese newspapers on the interest shown by the U.S. Navy in the coast of China; every word released by the U.S. Navy regarding China is quoted and requoted. The increased tempo of the war in other Pacific areas may also account for this increased activity, as well as the wide rumors associated with the presence of our patrols. In any event, enemy forces in the coastal areas have reportedly been increased since 1 September 1944 as follows:

Area	Troops Sept.1	Troops Oct.28	Remarks
Chou-shan (Chusan)	500	13,000	Ye
Yung-chia (Wenchow)	None	10,000	?
Min-hou (Foochow)	None	10,000	Appears reliabl
Shan-t'ou (Swatow)	7,000	15,000	?
Mei-an (Amoy)	700	20,00	? ee

*Questionable figures may include puppets, and are being checked.

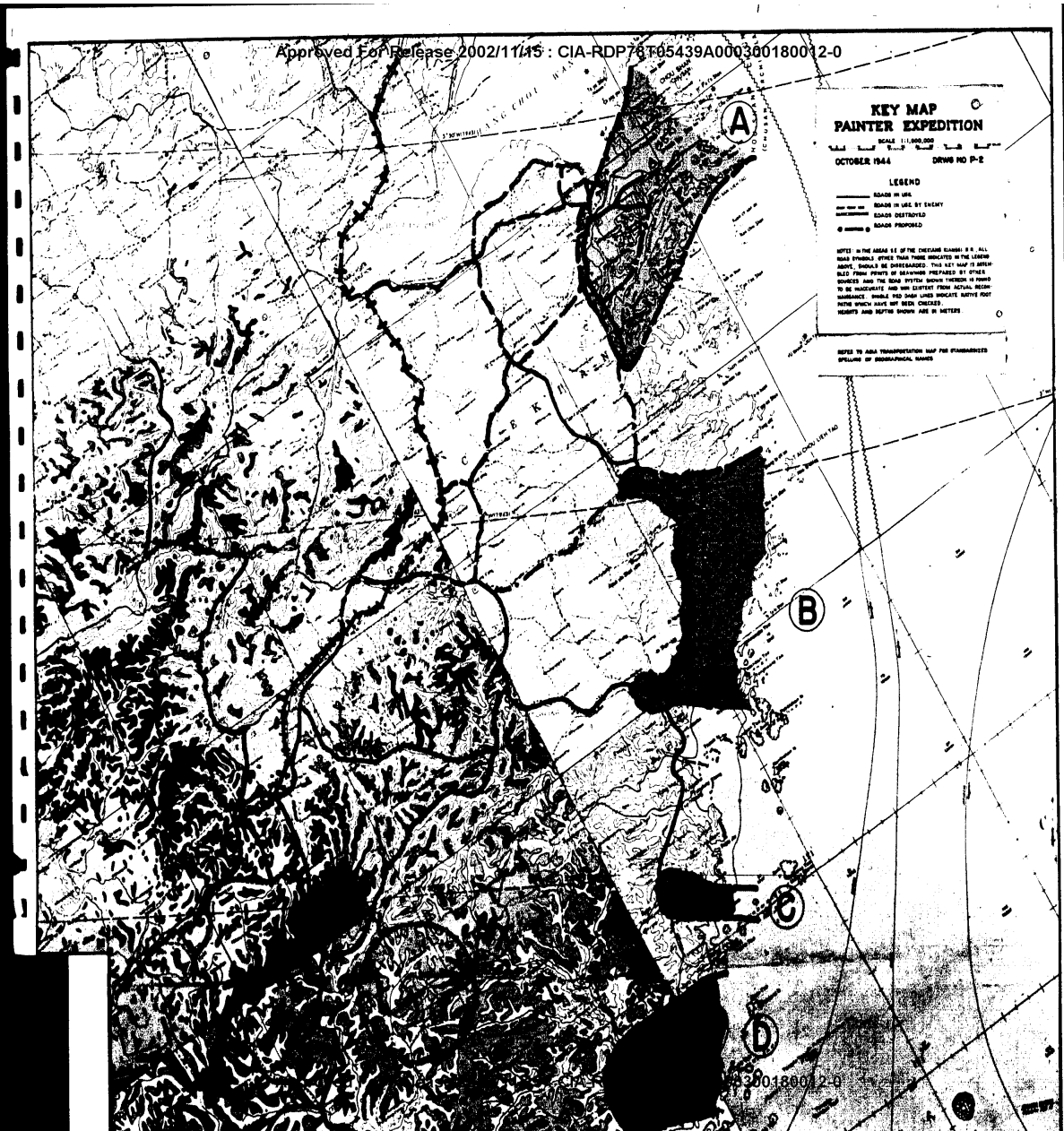
**See page 86.

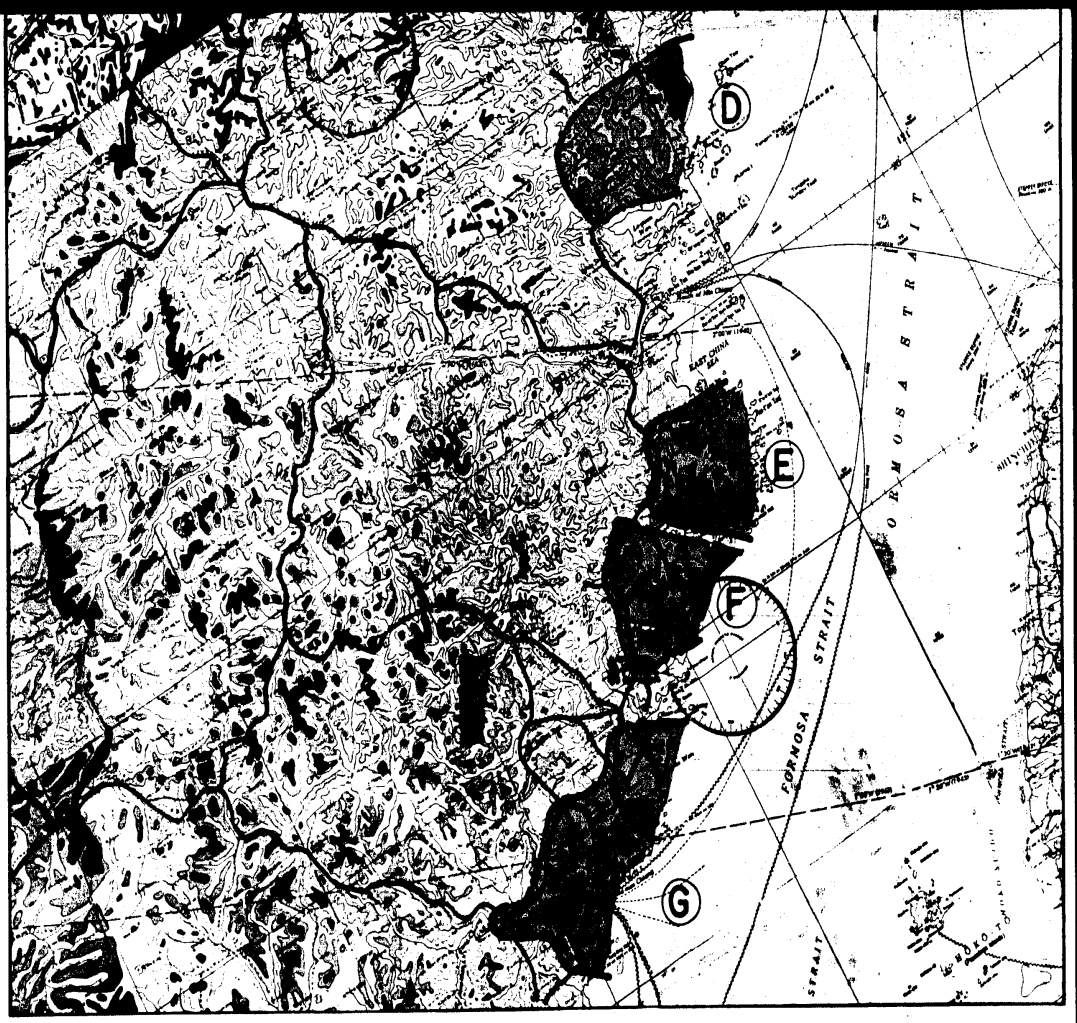
(c) In treating Item 6 (Ease of Military Occupation and Defense) under each Area, an attempt was made to cover terrain and installation features rather than the military strength and ability of the enemy in the Area, this report being primarily an engineering estimate of the situation. In the defense discussion roads, terrain, waterways and installations are emphasized; numbers of troops required for the assault and defenses are matters for the military commanders assigned the assault task.

(d) Plans for the assault of any area can of course only be formulated on the very latest intelligence information as to enemy strengths and installations. Changes in enemy disposition s are usually reported by intelligence sources within a few days after being effected. An intelligence net is maintained by Commander, U.S. Naval Group China, with agents in the principal areas.

(e) Included in Section III-D is an estimate by G-2 of the CBI Theater on the ability of the enemy to reinforce AREAS "A" through "G" based on present dispositions, using interior land and water transportation systems; it is dated 28 October 1944. The premise that the Japanese would be denied the use of sea routes can only be made when units of the U.S. Fleet are based in China waters; between now and D-Day considerable movements may take place along the China Coast and from Formosa. Lack of gasoline, forward bases, etc. hampers the 14th Air Force in maintaining a tight blockade, although it has apparently discouraged movements of larger vessels. From Formosa to Amoy is little more than an overnight trip by landing craft, and under the cover of weather enemy forces could easily be moved while there is no opposition from the Fleet. This applies to movements from Shanghai to Wenchow and other ports along the Coast as well--between now and proposed occupation dates large changes can take place.

(f) The presence of large numbers of enemy troops in the Amoy area, however, may shortly result in a Japanese landing on the adjacent coast proper (still in Chinese hands on Oct. 28) due to the need for food supplies. Amoy and Quemoy Islands cannot support even the present numbers without shipments from outside areas.

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F
G
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FORMOSA STRAIT
EAST CHINA SEA

3. Allied Military Assistance.

In the occupation of any coastal area where enemy forces are in control, it appears that only minor military assistance can be expected from Chinese sources.

4. Existing Installations.

Prewar structures are in such a state of disrepair or damage as to be of negligible value. Some usable warehouses, and buildings suitable for administrative use or for conversion to hospitals might escape destruction in the occupation of Amoy and Yin-hsien (Ningpo). A basic road system exists in the coastal area, but has been destroyed as shown on the accompanying Drawing No. P-2. Section II of this report contains estimates on the reconstruction of this road system.

5. Interior Supply.

(a) The best land route in the territory to supply the interior of China involves the capture and rehabilitation of the Chekiang-Kiangsi Railroad, the construction of one new highway and the improvement of two others from Mirard Sound to the Railroad. Parts of this railroad are now operated by Chinese and parts by Japanese forces. This would also afford access to approximately 10 additional sites for the construction of VLR bomber bases along the railroad route, in the Yu-shan - Ch'u-hsien area. Engineering considerations on this railway are covered in Section II-H.

(b) The above route should handle 10,000 tons of supplies per day from Mirard Sound. Two other main routes are practicable:

(1) From Amoy--three roads should handle 5000 tons per day.
(2) From Samsa Inlet--one road should handle 2000 tons per day.

6. Beaches and Landing Areas.

(a) One of the detrimental features of the Southeast China Coast is the lack of good landing beaches. Generally speaking, the beaches from Fu-ch'ing (Futsing - 25°-43'N, 119°-21'E) north to Hangchow are mud, while south of Fu-ch'ing approximately 40% of the beaches are of mud and 60% are of sand. Due to centuries of extensive cultivation in interior China, large quantities of alluvial soil and silt have been washed out to sea by the rivers. Consequently, extensive mud banks may be encountered in all harbor areas. Many beaches, however, do have a fairly steep gradient between mean and highest water (approximately 2½ hours preceding and 2½ hours after high tide for the Amoy area), and may be used safely at these tides for landing craft up to and including LCTs. Below mean water these beaches may shoal rapidly and even though they are covered with water at L.L.W., the depths are not sufficient for satisfactory operations.

(b) As most of the landing areas (jetties) and beaches are not fortified or defended by the enemy (as of 1 October 1944), it appears quite feasible to select suitable areas and tides for successful personnel and light equipment landings. Tides are semi-diurnal, with two highs and two lows per 24-hour day. Springs average 16' and Neaps 10' in the harbors along the coast. (See Supplementary Data, III-H.)

7. Types of Troops.

Due to the destruction of all roads (and in most cases even the footpaths for other than limited foot traffic), infantry would appear to be the only type of troops satisfactory for use in the initial phases. Engineer troops and equipment should be landed and utilized as soon as possible.

8. Resources, Labor and Material Assistance.

In the occupation and expeditious development of any of the coastal areas under consideration and the rehabilitation of the interior supply routes, United States Forces must plan on bringing in sufficient service and engineer troops with equipment and supplies to initiate all the work. Assistance may be expected from Chinese labor, but in the early stages cannot be evaluated. Later, in the operation, maintenance and improvement of installations, Chinese assistance can take a greater part.

D. RECOMMENDATIONS

1. Based on engineering and development considerations, and on enemy dispositions as of 10 September 1944, amended to 28 October 1944 areas are recommended in the order listed on the chart under CONCLUSIONS.

2. AREAS "B" and "E" afford little more than air base developments, and may be occupied and improved in conjunction with Fleet Bases. They are so situated as to be supplied by water routes.

3. In the light of extensive delays encountered in many previous acquisitions of land for military installations, and since virtually all recommended areas for development are owned and occupied by Chinese nationals, it is recommended that a board consisting of two Chinese and two American members be formed with full authority to acquire and permit occupation of land within one week after formal request is filed.

4. Due to the absence of large built-up landing areas and low rice land adjoining many of the landing sites, coupled with the destruction of all coastal roads, a minimum of military motorized equipment should be landed in the initial phases of the operation. This condition, however, does not hold in general for Amoy Island, Wei-t'ou (Huitau) Point or Othau Point, as a usable road system still exists on Amoy Island; and motorized equipment can move over the cultivated areas (sandy loam rolling country) on Wei-t'ou and Othau Points. Construction equipment to repair roads and drain rice fields should be landed as soon as practicable after the initial phases. Temporary pontoon docks should be constructed for early operation until permanent structures are available.

NOTE:

As the areas under consideration in this report are largely in enemy-dominated territory, complete and exact surveys for the best possible locations of installations in some cases could not be made. However, all areas were physically visited and installations have been shown in feasible locations. Detailed engineering studies and surveys after occupation may indicate a more efficient plan.

E. ACKNOWLEDGMENTS

In the preparation of this report acknowledgment is made for the cooperation of the CBI Theater command, the 14th Air Force, and the SACO Organization, both in Chungking and in the field. Appreciation is expressed for the assistance of the many Chinese officials who did so much to assist the parties in the field.

ALL PHOTOGRAPHS IN THIS REPORT EXCEPT AERIAL MOSAICS WERE TAKEN BY MEMBERS OF THE EXPEDITION

DURING THE PERIOD FROM 8 AUGUST 1944 TO 1 NOVEMBER 1944

SECTION III. DETAILED DESCRIPTION OF AREAS

SEC. II – A. AREA "A" NIMROD SOUND

A. AREA "A" - NIMROD SOUND

General.

(a) Nimrod Sound and environs afford a location for a large Fleet Anchorage, a major Fleet Base, airbases, a cargo ship anchorage, bivouac areas for large numbers of troops, a warehouse area for at least 25,000 tons storage, and access routes for the shipment of supplies into the interior of China.

(b) There are 4 airfield sites in this area (in addition to the enemy VF airbase at Ting-hai on Chou-shan I.), two of which are VLR, one VBH, and one for carrier-based planes, each site providing parallel runways. These sites are within VBH (B-24 and B-17) range of Japan.(See Target Map)

(c) Yin-hsien (Ningpo), a city of 250,000 approximately 30 miles to the north, is the eastern terminus of a former railroad. This railroad, with a paralleling highway, may be reconstructed westward to Hsiao-shan (29°-10'N, 120°-42'E), forming a junction with the Chekiang-Kiangsi Railroad and thus affording the best route for moving supplies to the west. The rehabilitation of the railroad is not recommended in the initial stages; the highway should be reconstructed first. (Route (A)).

(d) There are two additional possibilities for supply routes by the construction and improvement of highways to the west: Route (B)(improved) and Route (C)(new), connecting with the Chekiang-Kiangsi Railroad at I-wu and Chin-hua (Kinhwa) respectively.

1. Fleet Anchorage.

(a) Sufficient area and depth of water to anchor a large portion of the U.S. Fleet lies between the northeast tip of the Ketow Peninsula and the southeast portion of Chou-shan (Chusan) Island. Cambrian Pass is narrow, but provides ample depth for the largest ships. Rambler, Vernon and Beakhead are all navigable channels. Fremantle Channel is wide, deep and clear, and presents no problem in navigation.

(b) An excellent anchorage for AKs is provided within the confines of Nimrod Sound, in depths from 6-10 fathoms. At present the entrance to the Sound may be limited to three channels (the most preferable of which is Gough Pass) as there is a question over the soundings in Nupi Shan Channel shown on H.O.Chart 3212. Nupi Shan Channel should be sounded and dredged if required for the passage of cargo ships. This cargo ship anchorage is completely sheltered from typhoon and monsoon action.

(c) The waters of Medu Creek are quiet and sheltered, thus providing an excellent location for a ship repair area. Suitable areas ashore are available for the auxiliary ship repair installations.

2. Fleet Base.

(a) Sufficient valley area for the construction of a naval base (minus a few components which may be more suitably located elsewhere within the Sound) is found on the mainland just north of Mei Shan Island. There are three outlets by roads (to be constructed) from this site; one to the southwest along the shoreline to the warehouse and pier area; another to the northeast along the shore to the base supply and bunker fuel wharves; another to the north through the hills to the coast and thence westward to the troop supply wharf at Ch'uan-shan (29°-53'N, 121°-56'E). This latter road also provides connection to the bivouac area and with the city of Yin-hsien (Ningpo).

(b) The port director may be suitably located just across Junk Channel on high ground lying on the western extremity of Mei Shan Island. The northern shore of Mei Shan Island provides a location for amphibious craft, an area for the net and boom depot, and a ramp for landing craft. There is also a VLR dual runway airfield site on the southwestern part of Mei Shan which will provide good air communications for the Naval Base headquarters. As shown on Drawing No. PA-1, a tanker mooring for two tankers and a dock 1600 ft. long providing unloading space for three AKs are located on the southern shore of the eastern tip of the Peninsula. Fuel tanks may be erected on the hills just north of the tanker mooring.

#12,74 Portion of Naval Base area, Taken from Mei Shan Island across Junk Channel.

3. Air Bases.

(a) Under Paragraph 6 it is pointed out that the neutralisation and occupation of Chou-shan (Chusan) Island is the key to the occupation of the Nimrod Sound Area. The enemy airfield (approx. 3600'x250') on this island will then be available for VF and other carrier-based planes. A study of the available 1:50,000 scale maps and aerial photographs indicate that an additional airbase with parallel runways can be constructed about 5 miles southeast of the present field. It is recommended that this construction be carried out.

(b) As shown on Drawing No. PA-1, there are three airfield sites immediately adjacent to Nimrod Sound. In the valley to the northeast of Ning-hai it is possible to construct three parallel runways for VLR, with minimum distance between center lines of 1000 ft. Sand and stone are available within a radius of one mile. The soil in this valley has a large percentage of river-washed gravel present in its surface.

(c) Aviation gasoline could be supplied by the construction of a pipe line from a pumping station located approximately 8 miles up the bay at Adam Point (29°-51'N, 121°-41'E). Other supplies may be brought to this airbase by barges or LCTs landing at high tide near Hu Chiao Tou (29°-23'N, 121°-29'E), or by trucks traveling over the road leading west from the warehouse area to Fang-men (29°-39'N, 121°-25'E) and then south to Kwang Tsung (29°-20'N, 121°-25'E).

(d) The second airbase site is located just north of the tidal river, Tai Sung Kong, which empties into the Sound just west of Mei Shan Island. Dual runways of 6000 ft. length may be constructed here. The area is low and must be filled, but sand and stone are available immediately adjacent to the site. Supplies may be brought in by trucks from the warehouse area or by barges and LCTs from the sea at high tides.

(e) The third site is located on Mei Shan Island, where dual runways may be constructed for a length of 8000 ft. Supply to this site must be by barge or LCT.

(f) All four of these fields are within 150 miles of Shanghai, 800 miles of Nagasaki, and 1100 miles of Tokyo.

4. Supply and Base for Interior China Operations.

(a) The interior supply dock site and warehouse area is shown on Drawing No. PA-1. The terrain and depths of water along the northern shore of Nimrod Sound just southwest of Nimrod Island are suitable for the construction of ten finger piers. The slopes along this shore are fairly steep, and the space necessary to provide access to the piers must be obtained by blasting. The material removed will be used to fill out into the Sound and thus eliminate the irregularities of the shore line. The roadway thus formed can be connected to the valley just north of the dock site wherein ample space is provided for the construction of warehouses to accommodate 25,000 tons of supplies. In order to supply 10,000 tons per day to interior China via the Chekiang-Kiangsi Railroad it will be necessary to construct and/or improve two 4-lane truck routes (B)(improve) and (C)(new), and rehabilitate Route (A) to a 2-lane highway. (See Drawing No. PA-3).

(b) A detailed description of Route (B) follows:

(1) Beginning at Sang-chou (29°-44'N, 121°-24'E), the Japanese have repaired the present road leading westward to Pa-sao, Ch'eng-hsien, Ko-ch'a, Tung-yang and I-wu--which is on the railroad. The bridges on this route were designed for 8 tons; all bridges will have to be strengthened, and widened to accommodate four lanes of traffic. Construction battalions may be dispersed along this route with comparative ease once the bridges have been strengthened to carry heavy construction equipment. Sufficient rock for surfacing can be found immediately adjacent to the road throughout its length, but very little timber is found on this route. Existing grades and curves are not prohibitive, but some relocation will be necessary.

(2) From Sang-chou to Ch'eng-hsien (29°-32'N, 120°-48'E) there are approximately 70 bridges: one 430' long, one 400' long, one 340', one 240', seven from 50' to 80', twenty from 20' to 50', and the remainder less than 20'. These bridges vary in width from 10' to 15'. The width of the roadbed is approximately 24' shoulder to shoulder. This is the most difficult portion of the route to restore due to the fact that it traverses mountainous country with a heavy percentage of rock cuts.

(3) From Ch'eng-hsien to Tung-yang (29°-15'N, 120°-17'E) there are approximately 30 bridges: one having a length of 630', two a length of 230', one of 105', three from 60' to 80', two of 40', and the remainder approximately 20'. All of these bridges are 18' wide, while the width of the roadbed, shoulder to shoulder, is 24'. The least radius of curvature is 66'. The terrain is flat, and the road could be widened very easily.

(4) The total distance along this route from Sang-chou to I-wu is 116 miles. It is estimated that 7 battalions could put the road into usable condition within 120 days. These 7 battalions would remain on the road and subsequently widen it to four lanes over a longer period of time.

SEC. II - NIMROD (CONTINUED)

(c) A detailed description of Route (C) follows:

(1) This second route leads south from Fang-men to Ning-hai over a destroyed road, a distance of 22 miles. A portion of the supply to this road could be barged from the warehouse area down Nimrod Sound to Hou Chai Tou, connecting with a new road there and traversing approximately 8 miles westward to the village of Kwang Tsung, which is approximately 5 miles north of Ning-hai. From Ning-hai south, a new road passing through Mei-yu (29°-06'N, 121°-20'E) and connecting with a destroyed road at Goo-chen (28°-54'N, 121°-10'E), a distance of 56 miles, should be constructed. Goo-chen is 22 miles north of Lin-hai. The road is destroyed but is not difficult to restore. From Lin-hai a new road, which has been planned and surveyed by the provincial government, should be constructed westward, a distance of 95 miles. It would connect with an existing road at Shih Chu Kia (29°-50'N, 120°-09'E), which is 6 miles south of Yung-kang. From Yung-kang the road runs northwestward for a distance of 30 miles connecting to the Chekiang-Kiangsi Railroad at Chin-hua.

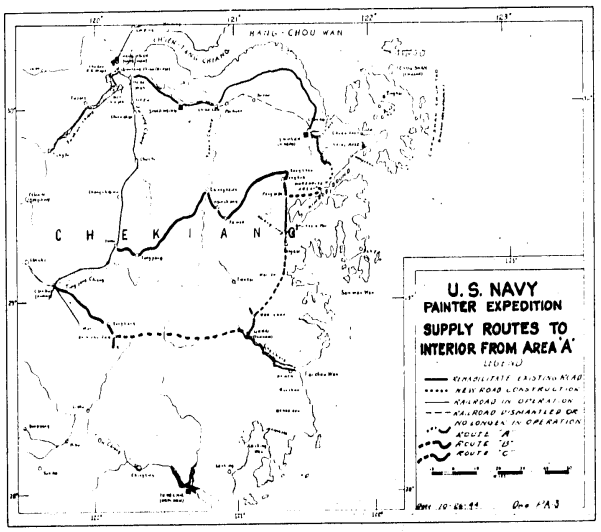
(2) The total distance from Fang-men to Chin-hua by this route is 231 miles. All existing bridges will have to be strengthened from their 6-ton design to meet military requirements. Stone and sand are found in abundance along this route. Some timber is available for log culverts and for short piling; long piling will have to be brought in. Existing grades and curves are not excessive, but some new location will be necessary.

(3) From Goo-chen to Lin-hai the road traverses fairly level ground. Approximately 70% is rice paddy, and there are no grades over 7%. The width of the road from shoulder to shoulder is 24', but bridges range from 12' to 18'. From Lin-hai to Shih Chu Chia the major portion of the location traverses rice paddy areas, but the western portion climbs over a low mountain range and heavy cuts will be necessary. There are 70 bridges on this portion, of which one is 820', two are 788' and 738' respectively, two are 656' and 626' respectively, one is 461', one is 394', one is 328', one 296', one 257', one 197', four at 160', three at 110', and the remainder are all less than 80'. From Shih Chu Chia to Chin-hua the width of the existing road from shoulder to shoulder is 22'. Bridges vary in width from 10' to 16'. There are approximately 12 bridges, one of which is 179' long while the remainder are 23' or less. This portion of the road has very good alignment and flat grades; only a few grades go as high as 6%. Curves have ample radii.

(4) Barges and LCTs carrying men and equipment may be brought in at Hai-men and thence, at high tide, up the river to Lin-hai where construction may be started in two directions: one northwestward toward Ning-hai, the other westward toward Chin-hua, while other troops landing in Nimrod Sound could start at Ning-hai and progress southward to Lin-hai. It may be possible to bring other troops and equipment over the existing road from Yin-hsien (Ningpo) through Ch'iang-k'ou, Pa-mao, Ch'ang-hsien, Lo-ch'a to Yung-kang, thus starting work from the western end of the route.

(5) It is estimated that 6 construction battalions could put the road leading north from Lin-hai to Ning-hai, a distance of 78 miles, into use within 170 days. It is further estimated that an additional 7 battalions could put the road leading west from Lin-hai to Chin-hua, a distance of 121 miles, into use within 180 days. These 13 battalions would remain on the road and subsequently widen it to four lanes.

(d) A detailed description of Route (A) follows:



(1) This route, leading from the proposed warehouse area northward 38 miles to Yin-hsien (Ningpo); thence along the southern shore of Hangchow Bay, a distance of 66 miles to Chiao Kou (30°-01'N, 120°-52'E). At this point the road crosses a wide river over which no bridge has ever been contemplated by the provincial government. Barges or a pontoon bridge must be utilized here to transship supplies across the river. From Chiao Kou the road traverses a distance of 80 miles northwestward to Mai-ao-shan, which is located on the Chekiang-Kiangsi Railroad just south of Hangchow.

(2) The railroad bed from Yin-hsien (Ningpo) to Hangchow is being used to some extent by motor traffic, but at best is only one lane in width. The total distance from Yin-hsien (Ningpo) to Mai-ao-shan is 116 miles. All bridges must be strengthened and widened. It is estimated that this route could be put into use within 180 days by 5 battalions.

(e) Summary of construction battalions necessary for road construction outside of AREA "A" to complete supply routes (A), (B) and (C) to the Chekiang-Kiangsi Railway follows:

	Battalions	Road Capacity Tonnage/day
Route (A) - Rehabilitate highway from Yin-hsien to Mai-ao-shan	3	9000
Route (B) - Improve road from Sung-chou to I-wu	7	4000
Route (C) - New road, Ning-hai to Chin-hua	13	4000
Totals	23	17,000

5. Beaches and Landing Areas.

(a) Landings may be made along the Sound at high tides on numerous dikes that lead to small cultivated valleys along the Sound. (See photos.)

(b) The best beaches are listed below:

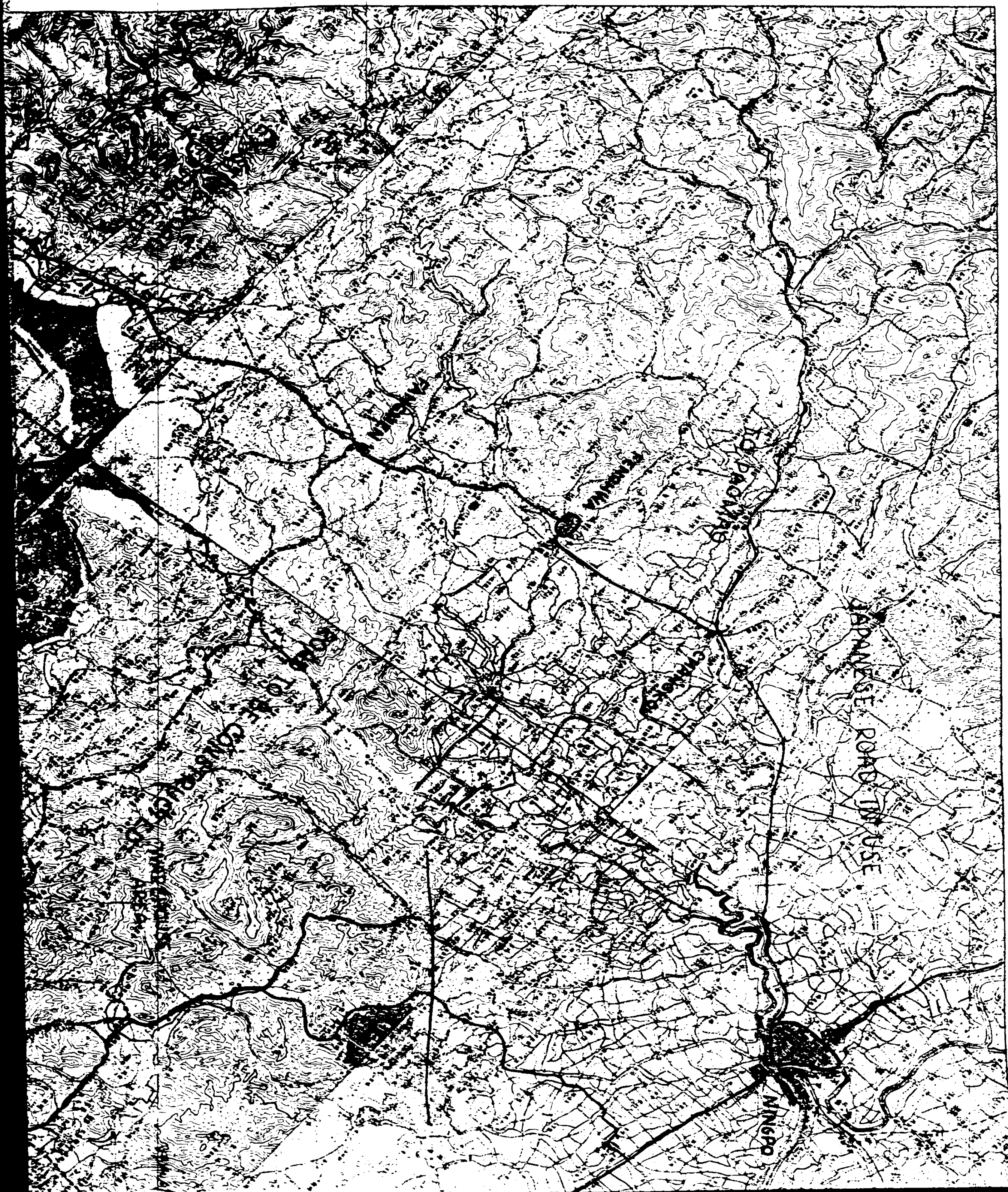
(aa) Chou-shan (Chusan) Island - Southern Side

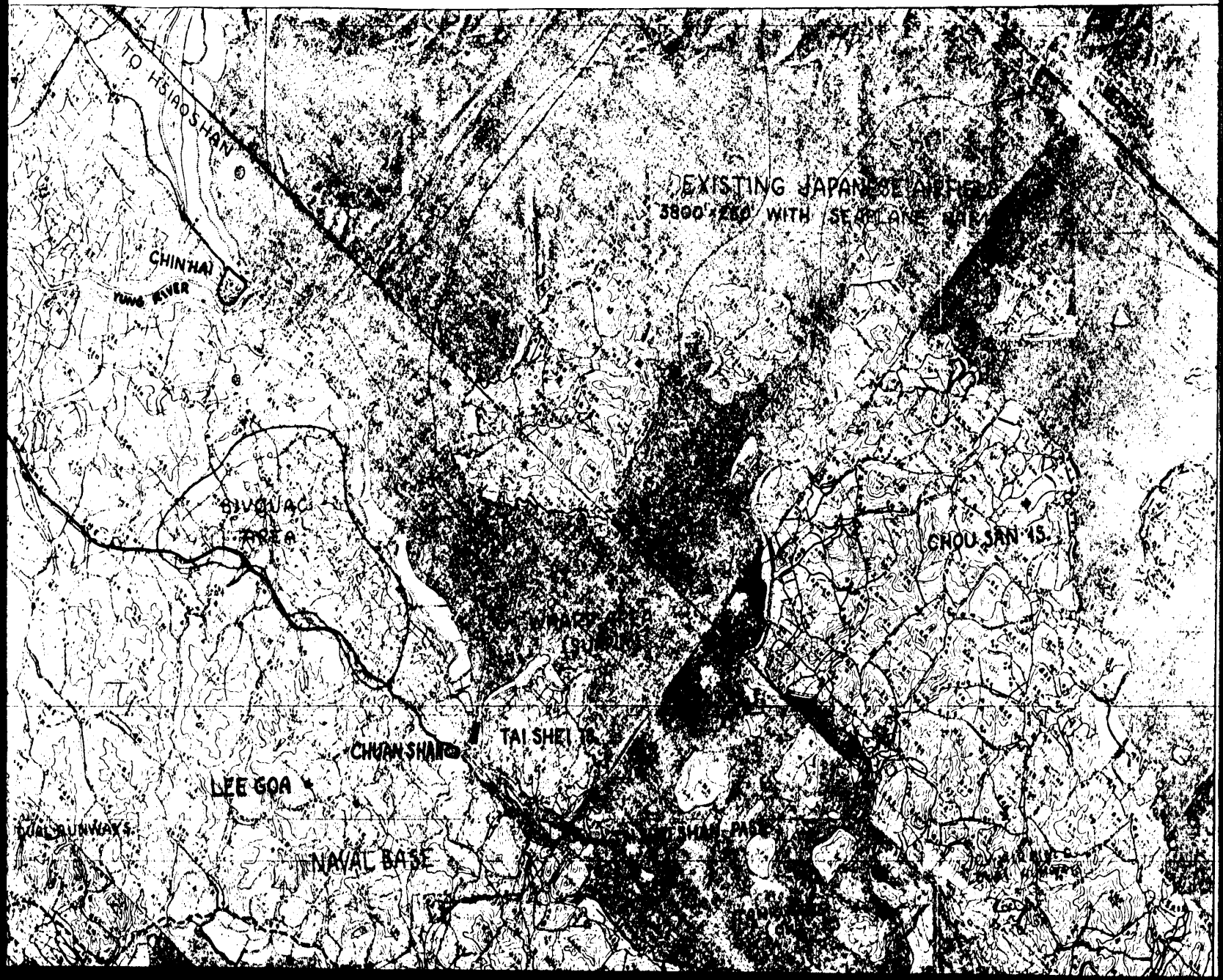
1. Ting-hai Harbor proper - The best portion of the beach appears to be to the west of Ting-hai City. It is to be noted that the enemy has erected a seaplane ramp to the east of the city and west of the airfield. Several small pontoons or jetties are evident in the center of the harbor.

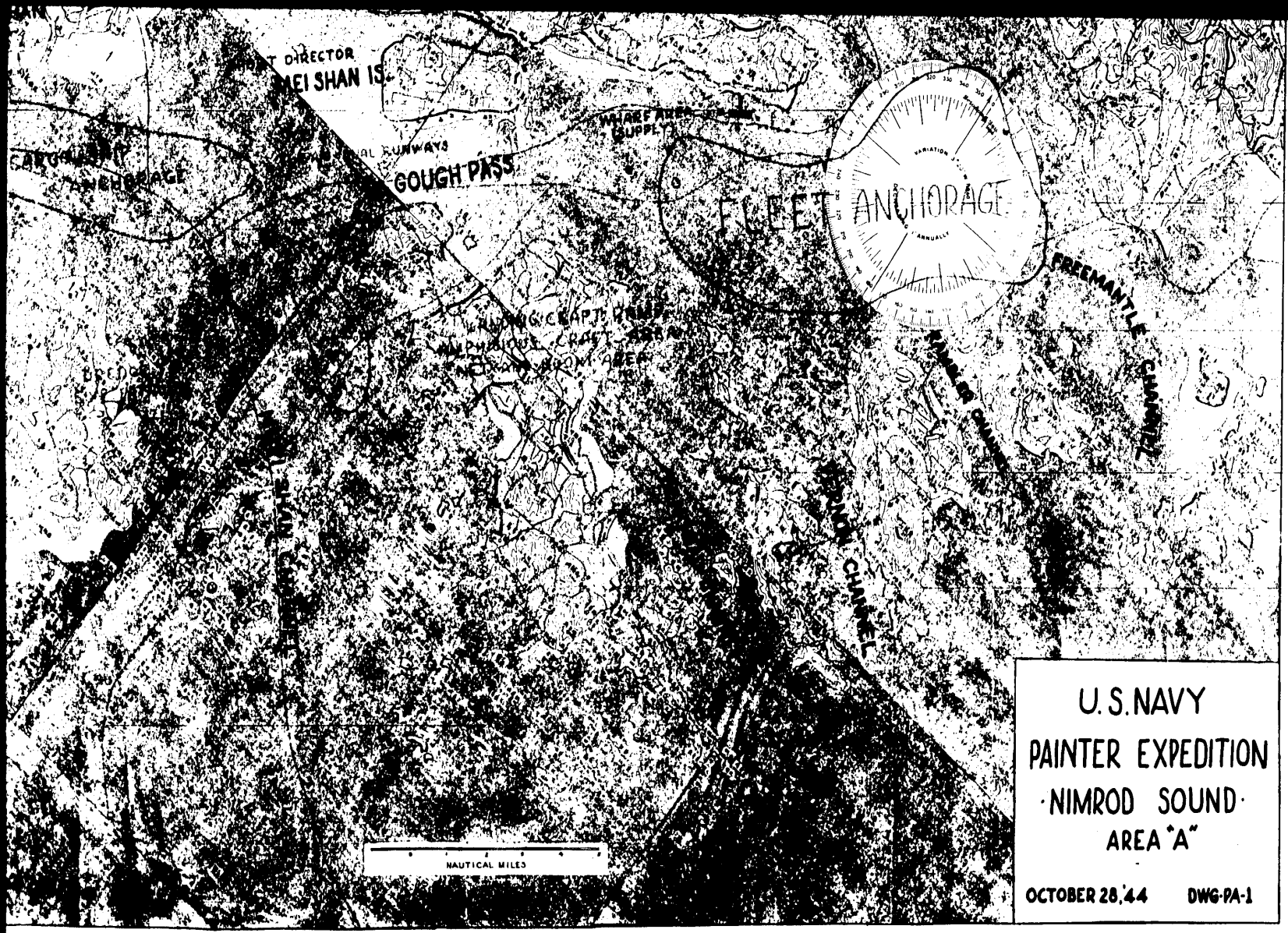
2. Meikle Island (29°-56'N, 122°-07'E) - The beaches on Chou-shan for about 2 miles east of Meikle Island appear usable for landing craft. The road leading east from Ting-hai City approaches the beach area about the center of the two mile section.

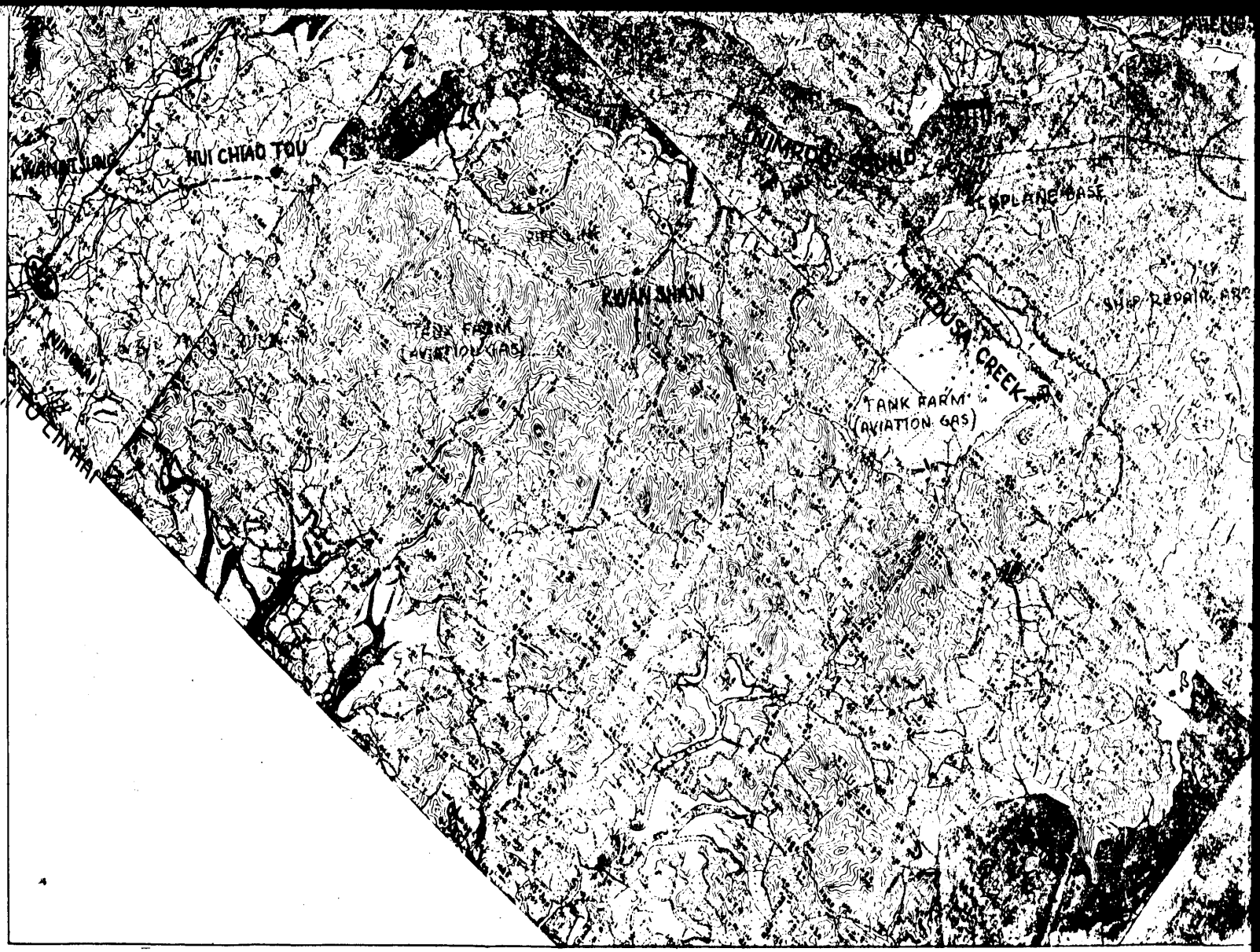
3. The beach area ne of Shen-kia-men and just north of Hsiao Kao Island appears usable for about 8000 feet. Here again the distance to the road leading to Ting-hai is not great.

NOTE: Road referred to above is probably pedestrian only and not suitable for motorised equipment.


JAPANESE ROAD TO USE
NINGPO


TO HSIAO SHAN
CHIN HAI
YUNG RIVER
EXISTING JAPANESE AIRFIELD
3800' x 200' WITH SEAPLANE RAMP
BIVOUAC AREA
CHOU SAN IS.
CHUAN SHAN
TAI SHEI TAO
LEE GOA
NAVAL BASE


MEI SHAN IS.
GOUGH PASS
ANCHORAGE
FLEET ANCHORAGE
FREEMANTLE CHANNEL
NIMROD CHANNEL
NAUTICAL MILES
U. S. NAVY
PAINTER EXPEDITION
·NIMROD SOUND·
AREA "A"
OCTOBER 28, '44
DWG-PA-1


KWANGTUNG
HUI CHIAO TOU
KWAN SHAN
TANK FARM
(AVIATION GAS)
MEDUSA CREEK
SHIP REPAIR
TANK FARM
(AVIATION GAS)

SEC. II - NIMROD (CONTINUED)

#11.39 Typical long stone jetties which are sometimes built out on these flats.

#11.18 Dikes at Low Tide.

#11.3 Typical beach formations.

(bb) Tai Shei Shan Area

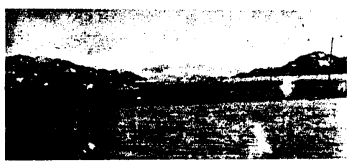
Tai Shei Shan Channel and Tai Shei Shan Pass are navigable at all tides for landing craft. The entire area west of the town of Chuan Shan affords suitable beaches at any tide, although the higher tides are recommended. The banks, although steep, are mud of a fairly stiff consistency; enough to hold a man from sinking below the ankles in most places. The width from high to low tide is probably not more than 50 yards for the greatest portion. At Chuan Shan itself, several small docks or jetties exist where landing craft can come alongside.

(cc) Yung River (Chen-hai)

1. The beaches to the northwest of Chen-hai are shoal and very wide at low water; to the east they are also poor except at extreme high tides. If there were no opposition the Japanese reported present as of 1 Sept.), the small river or canal (Liao Kiang) to the east could be utilized to land at the city of Kung-kuo on the east bank of the Yung River.
2. There are numerous jetties and landing piers in the Yung River itself suitable for all landing craft. Originally there were two pontoons available for landing with 16' of water alongside: one pontoon of 200' and one 110'.
3. It is reported that the Japanese landed on the dikes to the west of Chen-hai at high water when they captured the city of Yin-hsien (Ningpo). Garrison at Chen-hai as of 1 September 1944 was listed as 90 Japanese and 840 puppets.

(dd) Nimrod Sound (Ning-hai)

1. The beach area is south of the head of Nimrod Sound and landing craft must land at Hou Chiao Tou at the southern end of Ning-hai Bay. Landings can only be made satisfactorily at high tides when personnel and supplies may disembark directly on the dikes or on small jetties. At low tides landing craft are liable to ground. There is approximately one mile of suitable landing area at high tide.
2. Kei Shan Island and mainland opposite--The beaches along Kei Shan Channel are suitable for landings at almost all tides. The gradient is fairly steep and the mud not too soft; several small jetties exist, and duration at should provide sufficient support for unloading supplies in the early stages. (See photos).
3. Heng-shan--Mud flats extend some distance out on this area, and low tide landings are limited to several small channels. At high tides, landings may be made on the dikes. (See Photo of typical jetty.)

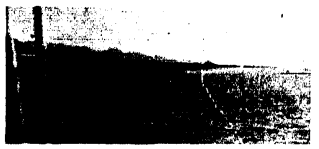


#11.44 Dikes at Low Tide.

#11.57 Rocky gravel beach which may be used at ... not very long and not typical.

#11.40 Typical beach formations.

#11.70 Dikes at High Tide.



#11.42 Typical beach formations.

SEC. II - NIMROD (CONTINUED)

(c) As covered under CONCLUSIONS, beaches in any of the areas cannot be considered as ideal. This is not unusual where high tides predominate in silt-carrying waters. Tides are listed as follows:

Place	Height above datum of soundings: Mean H.W. Springs	Mean H.W. Neaps	Mean Level	Hours	Datum to Which Soundings are reduced
KuoShan Is. -Daiwan I.	13½ feet	__ feet	__ feet		1'-3" below mean L. W. Springs
Nimrod Sound (Entrance)	13 "	8.7 "	----	Outer: 11h30m Inner: 12h30m	
Chou-shan Arch. -Roundabout I.	13 "	8-3/4 "		12h00m	
-Ting-hai Hbr.	10½ "	7 "	5½ "	12h05m	
-N.Volcano I.	12 "	10½ "	7½ "	Civil=	
Yung R.-Chinhai	8½ "	7¼ "	5 "		
Hangchow Bay -Middle Section	14 "				
-Chapu Rd.	25 "	16 "			
-Rambler I.	34 "	25 "			
Parker Is.- Bonham I.	14 "	11 "			
Saddle Is. -Side Saddle	15½ "	11-3/4"	9½ "		
-East Saddle	14 "				
Catalaff I.	14½ "	11 "	8½ "		
Yangtze Kiang -Tungsha Lt.Vl.	16 "	11 "	9½ "		
-Shamishan	13 "	10½ "	8 "		
-Woosung Bar	12½ "	9 "	7-3/4"		

(d) The last two hours of a flood tide and the first two hours of an ebb tide (or a total of 4 hours) are recommended for landing on defended beaches. High water should be utilized wherever possible. (See Section III-H for tidal curve.)

6. Ease of Military Occupation and Defense.

(a) Ease of Occupation

(1) At the entrance of the Sound, Chou-shan Island, with its VF airfield, naval and seaplane base is the key to the occupation of Nimrod. It should be neutralized and occupied at once, and its airfield put to our use.

(2) The intelligence map (drawn up on 1 September 1944 and amended to October 23, 1944) covers the enemy strengths and dispositions in the entire Area. Totals are 2,145 Japs and 7,300 puppets. The loyalty of the puppets to the enemy may be questioned, as puppet leaders were in contact with loyal Chinese leaders while Captain Painter was in the area. With any show of force on landings it is believed that the puppets would desert the Japanese. In fact, the Chinese generals in the Yin-hsien (Ningpo) area state they have agreements on puppet cooperation if U.S. Forces appear.

(3) The Nimrod Area (AREA "A") has been shown on Drawing No. P-2 to include considerably more than the areas adjacent to the Sound. Although the Sound is most important as it would afford an anchorage for the Fleet and provide Fleet shore installations and unloading facilities for AKs, it is recommended that the area (included in the boundary given for AREA "A") northwest of the Sound, embracing Tai Shei Shan Channel and the level ground to the west, should also be occupied. This would provide large bivouac areas, a supply docking area, and would close off such areas from the enemy preventing his use of them for building up counter-attacking units in force. This area westward to the Yung River was not occupied by the enemy as of Sept. 1, 1944.

Ø11.39 Wide shallow mud beach off Ning-shan (29-40; 121-47-30)

(4) AREA "A" also includes the cities of Ning-hai and Yin-hsien (Ningpo). Ning-hai, at the head of the Sound, is the headquarters of General Yu; it is unoccupied by the enemy as of Sept. 1, 1944 and affords a good base for airfields.(Ground is alluvial, gravel about 12" under the surface.) The area must be reached by landing craft at high tides where landings can easily be effected along the dikes and jetties at Hou Chiao Tou. The highway from Ning-hai to Yin-hsien can be readily repaired.

(5) The city of Yin-hsien (Ningpo), with a reported 1938 population of 250,000 is lightly held by the enemy as is Chen-hai, at the mouth of the Yung River (Sept.1). The rapid occupation of these cities and the defense of the two major routes leading to the area would give U.S. Forces a large base to develop and build up sufficient forces to eventually clean up the area south of the Chien T'ang River and open the Chekiang-Kiangsi Railroad to form a juncture with the Chinese Third War Zone Command at Yuan-shan (28°-10'N, 117°-44'E). (See Railroad report, 11-H-2) This route, both railroad and highway, is the logical supply line to central China.

(6) The southwest side of the Sound has little development possibilities except those adjacent to Medusa Creek and the proposed oil storage installations. It should be occupied for defense purposes only. It does not appear that the Japanese in Shipu Harbor are in sufficient force (as of 28 Oct.), nor is the terrain north of Shipu suitable, for a strong attack from that area.

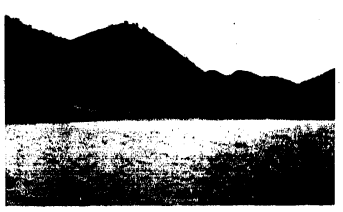
(7) Estimated friendly Chinese forces in the Area are as follows:

a. Under command of Gen. Yu Chia Min who is the senior officer in the area and Commissioner of Yin-hsien District with hq. at Ning-hai: an estimated 1000 fighting effectives;
b. Gen. Lei Ying, Mayor of Chen-hai, with headquarters at Li Gao: total strength of 500 fighting effectives;
c. Gen. Hsu, Mayor of Hsiang Shan Dist.: approx. 1000 fighting effectives.

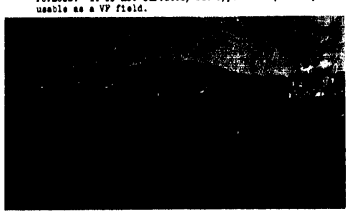
(8) The fighting ability of the above-mentioned troops cannot be estimated, but the company of men that acted as a guard escort for Captain Painter appeared well-trained, alert and well-armed up to and including new light machine guns. The three generals are of the highest caliber and ability in China, they know the terrain thoroughly as well as enemy positions and approximate strengths. Excellent cooperation can be expected from them.

(9) As all motor highways are destroyed except those shown on Drawing No. P-2, troops must move over footpaths. Consequently, no motorized equipment can be satisfactorily used in the early stages. The airfield at Yin-hsien (Ning-po) is a second-class installation used largely by small planes landing from Formosa. It is not surfaced, but appears temporarily usable as a VF field.

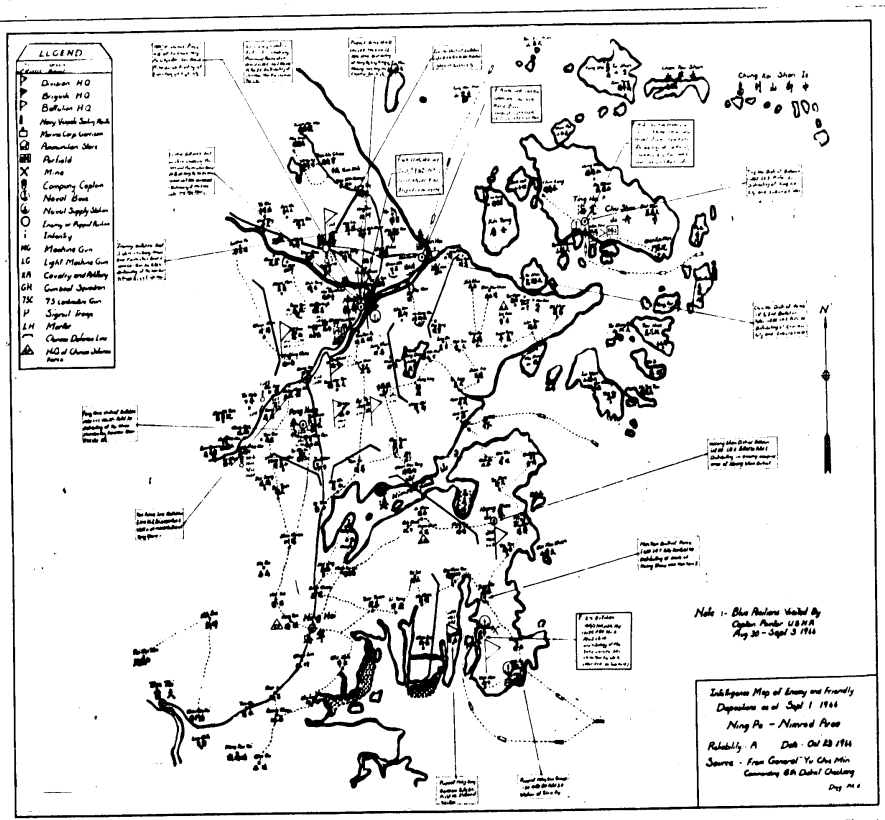
Ø11.97 Showing a case where a mud bank has formed along steep-to banks.



Ø11.95 Small indentation along shore at Lions Mouth showing very narrow beach.



Ø11.41 Jetty used by Native boats at high tide.



(b) Base of Defense

(1) The ability of the Japanese to reinforce and counterattack AREA "A" is covered in Section III-D.

(2) The destruction by air of several long bridges on the highway leading to Chin-hua (Kinhwa) and the ferry at Paocao (see Drawing No. P-8), as well as the large Ch'ien T'ang bridge from Hangchow should seriously hamper Japanese reinforcements.

(3) Air support in the harassment of the Hangchow-Shanghai Railroad and highway coupled with the destruction of the bridges on these routes would hamper enemy movement of troops. Section III-D includes an Army-CBI evaluation of such action.

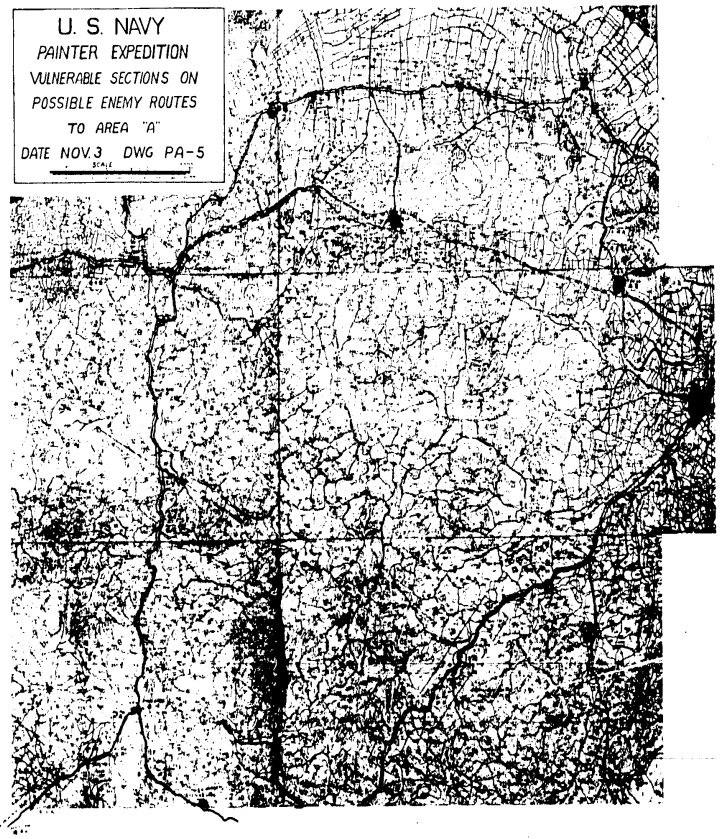
(4) The ability of the enemy to counterattack from south of Ning-hai appears limited due to the lack of enemy concentration in the immediate area (as of 28 Oct.), the destroyed state of all routes, as well as the mountainous character of the terrain.

7. Construction Effort and Time Element.

(a) The development of this base appears to present no unusual construction problems. The soil and terrain are such, however, that a period of extended wet weather would materially delay construction.

(b) With the occupation of Chou-shan (Chusan) Island, it is recommended that two construction battalions be landed: one to immediately repair and lengthen the existing enemy air strip at Ting-hai; the other to begin construction of an airfield with two parallel runways in the area near the southeast coast of Chou-shan Island.

SEC. II - NIMROD (CONTINUED)



(c) Observations on the airfield sites adjacent to Mimrod Sound indicate that the areas must be drained before heavy equipment can be employed to any advantage. Once the rice paddy soil is dry it becomes quite stable and will support heavy loads. Construction plans must include raising runways, taxiways, hardstands and roads approximately 2 feet above the present ground surface.

(d) In addition to the three airfields and the naval facilities delineated on Drawing PA-1, the following roads must be constructed within AREA "A":

Four-lane widths (New)	
From warehouse area to Fang-men	21 miles
From warehouse area to a junction with the Heng-shan - Yin-hsien road	8 miles
From Kwang Tsung to Hou Chiao Tou	6 miles
Total 4-lane	35 miles
Two-lane widths (New)	
From warehouse area to Heng-shan	3 miles
From Heng-shan to Naval Base	17 miles
From Naval Base to bunker fuel wharf	11 miles
From Naval Base to bivouac supply wharf (Chuan Shan)	9 miles
Total 2-lane	40 miles
Existing roads widened to four lanes	
From Ning-hai to Sung-chou	34 miles
From Heng-shan to Yin-hsien (Ningpo)	30 miles
Total	64 miles
Existing Road widened to two lanes	
From San-tin to Chuan Shan	19 miles

(e) It is estimated that within 120 days 54 construction battalions would provide the initial essential facilities of the Mimrod Area.

(f) Summary of construction troops necessary:

	Battalions
Mimrod Sound Area	
Fleet Base, including roads	10
Wharves and warehouses (including roads)	10
Bomber Air Bases (7 runways)	7
Bivouac & troop supply area (including roads)	3
Stevedoring	3(special)
Dredging, etc.	1(harbor stretcher)
	34
Chou-shan Island Air Bases	2
Interior Supply Routes	43
Grand Total	89

8. Resources, Facilities and Labor.

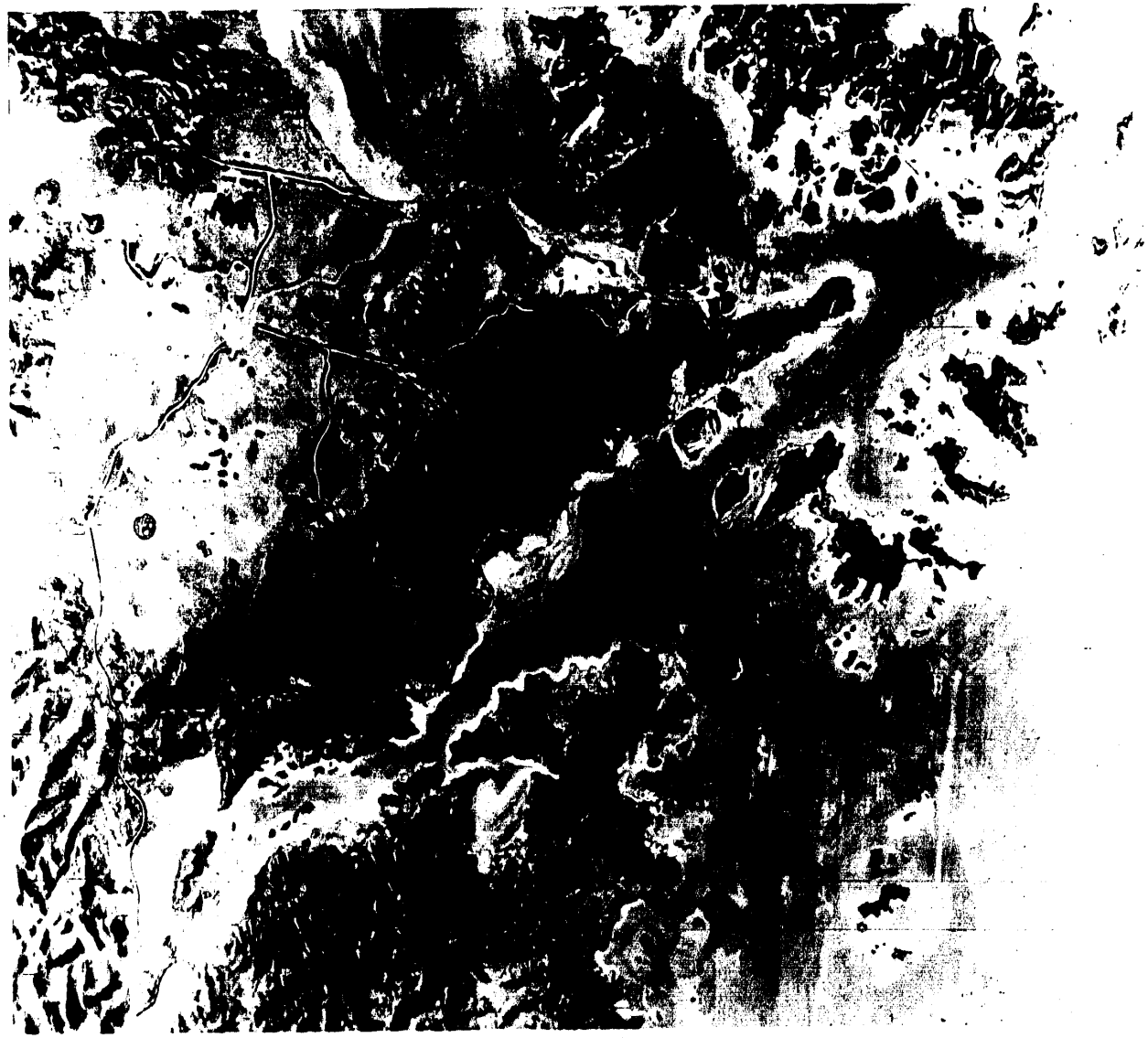
(a) The natural resources in the Mimrod Area consist only of rock and sand. The rock is a hard sandstone; the sand is fair for concrete and is found in the inland streams. The sand would have to be transported by truck or barge to the work sites along Mimrod Sound.

(b) There is practically no timber in the vicinity of Mimrod Sound. Native bricks are made in small quantities. Lime is obtained in small quantities by burning shells.

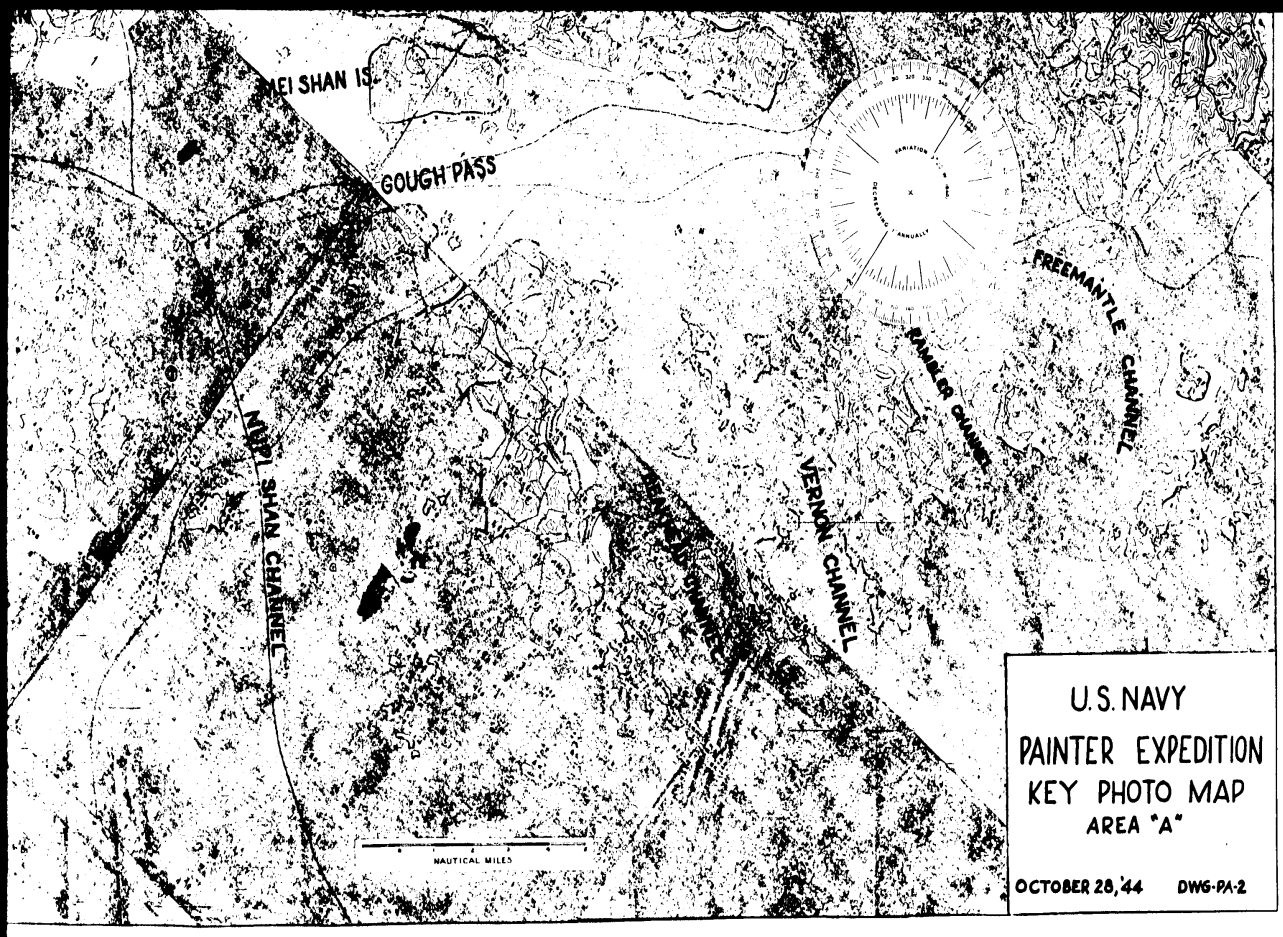
(c) All materials except sand and stone must be brought in by the landing forces.

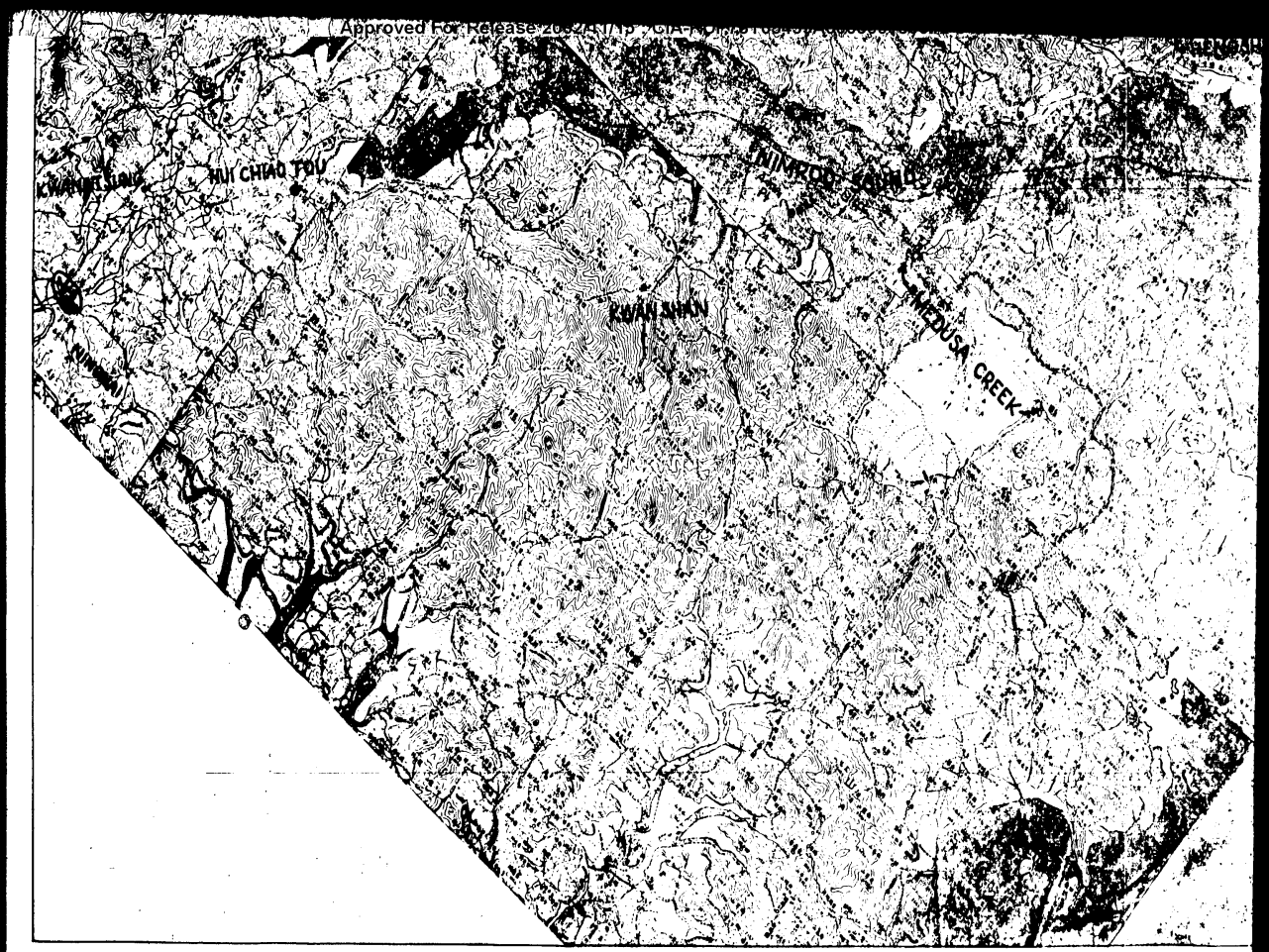
(d) Once the area is taken there will be approximately 100,000 native unskilled laborers that may be utilized to an advantage. Very little skilled labor will be found, possibly 1000 stone masons and 1500 carpenters.

SEC. II - NIMROD (CONTINUED)

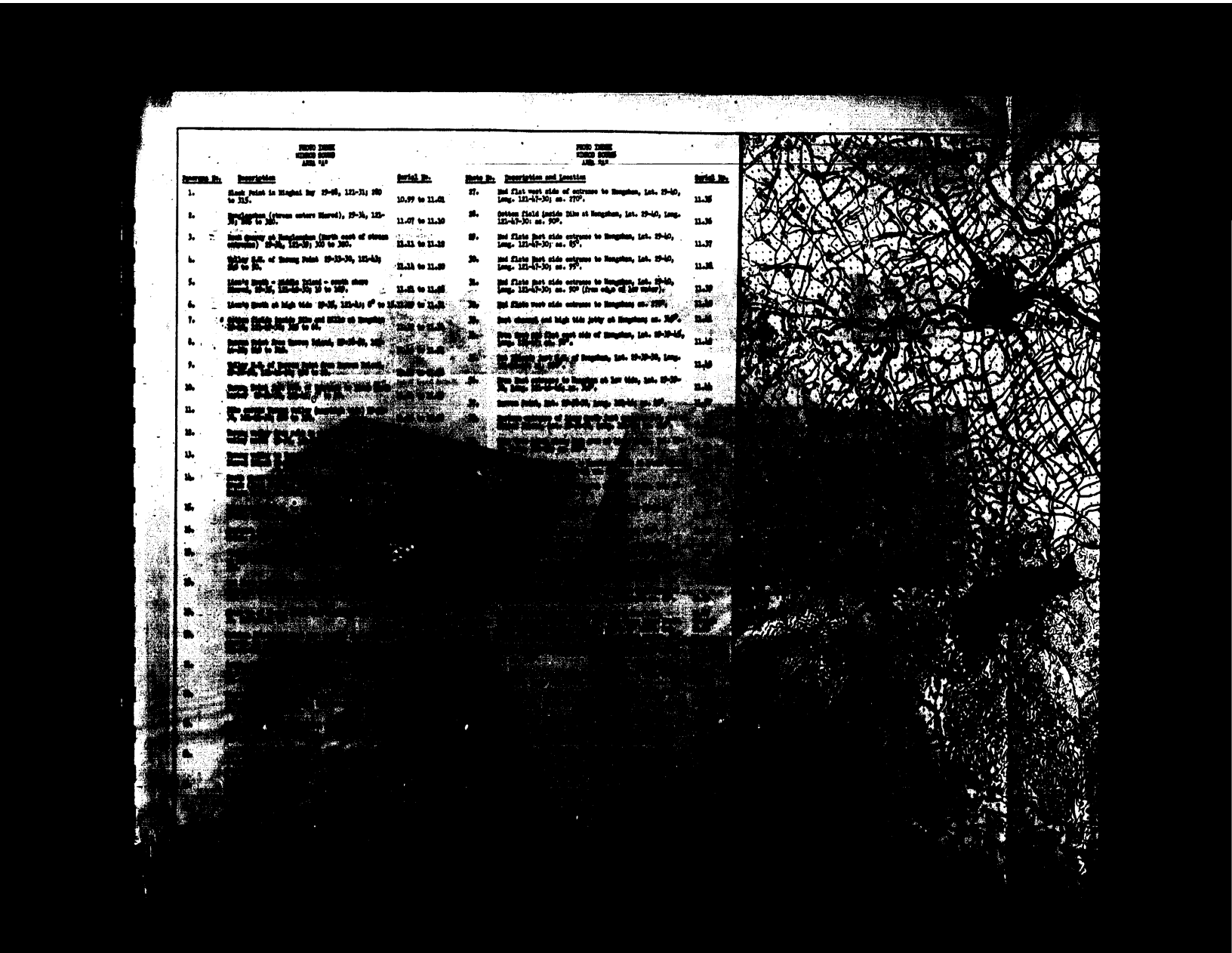


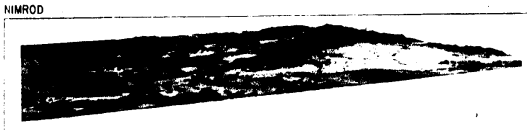
NIMROD SOUND MODEL
VERTICAL



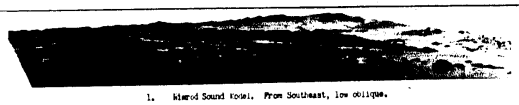


Chilkoot

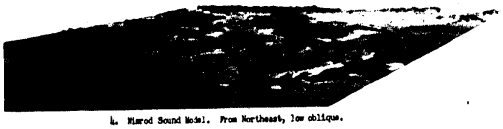




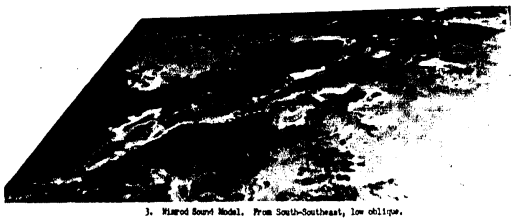
2. Nimrod Sound Model. From North-Northeast, low oblique.



1. Nimrod Sound Model. From Southeast, low oblique.



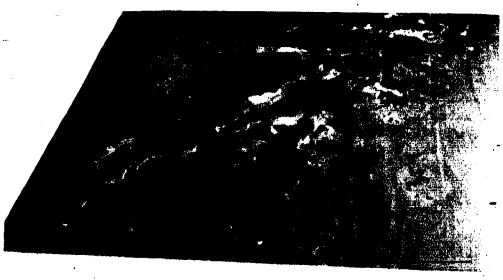
4. Nimrod Sound Model. From Northeast, low oblique.



3. Nimrod Sound Model. From South-Southeast, low oblique.

6. Nimrod Sound Model. From North-Northeast, high oblique.

5. Nimrod Sound Model. From Southeast, high oblique.

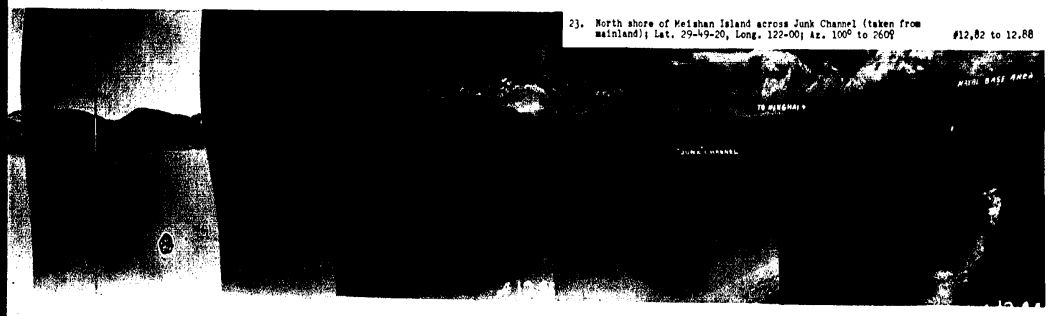


8. Nimrod Sound Model. From South-Southeast, high oblique.

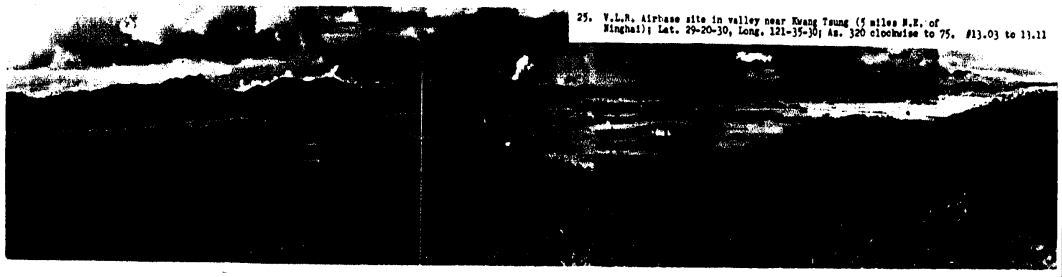
7. Nimrod Sound Model. From West, high oblique.

SEC. II - NIMROD (CONTINUED)

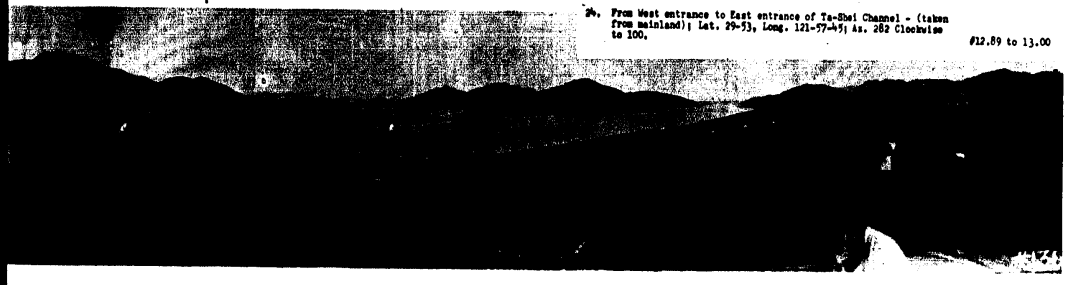
23. North shore of Meishan Island across Junk Channel (taken from mainland); Lat. 29-49-20, Long. 122-00; Az. 100° to 260° #12.82 to 12.88

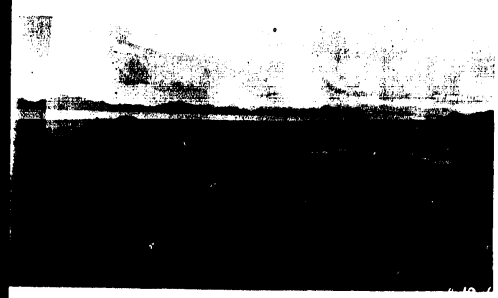


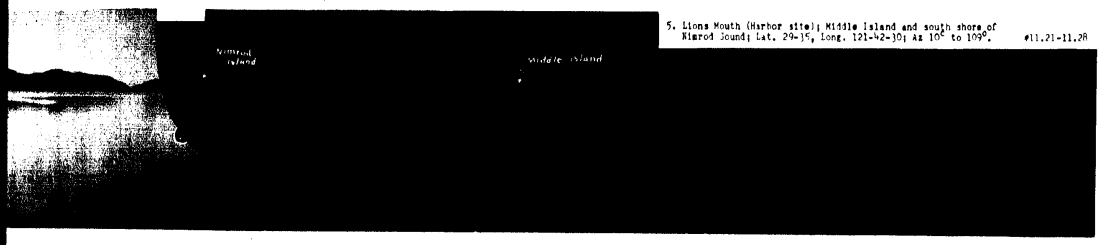
25. V.L.R. Airbase site in valley near Kwang Tsung (5 miles N.E. of Ninghai); Lat. 29-20-30, Long. 121-35-30; Az. 320 clockwise to 75. #13.03 to 13.11



24. From West entrance to East entrance of Te-Shei Channel - (taken from mainland); Lat. 29-53, Long. 121-57-45; Az. 282 Clockwise to 100. #12.89 to 13.00



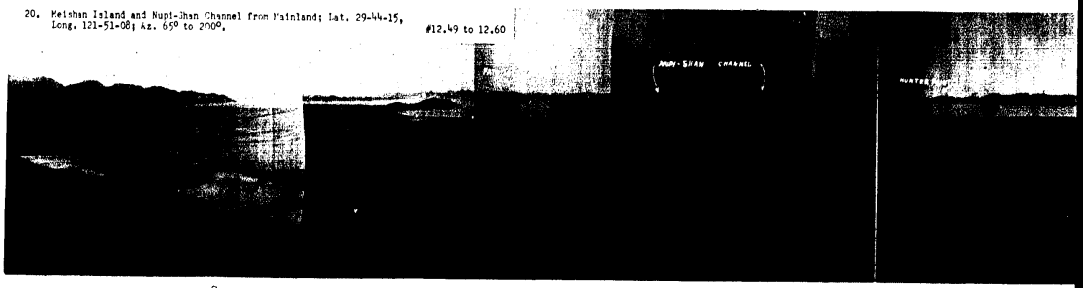




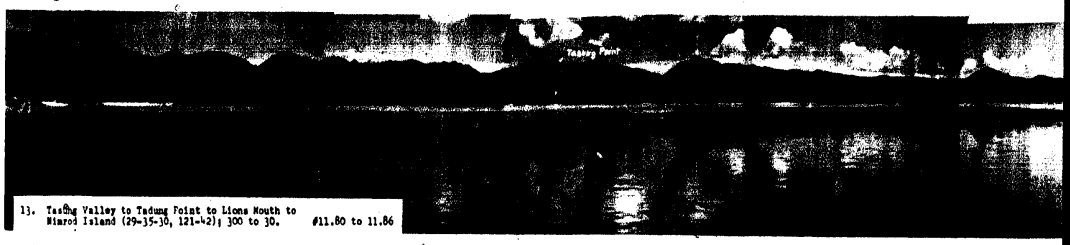
5. Lions Mouth (Harbor site); Middle Island and south shore of Mimrod Sound; Lat. 29-1°, Long. 121-42-30; Az 10° to 109°. #11.21-11.28

SEC. II - NIMROD (CONTINUED)

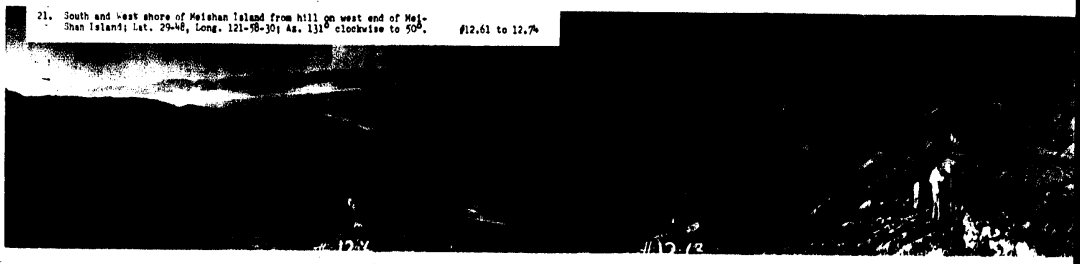
20. Meishan Island and Nupi-Shan Channel from Mainland; Lat. 29-44-15, Long. 121-51-08; Az. 65° to 200°. #12.49 to 12.60



13. Tasha Valley to Tadung Point to Lions Mouth to Nimrod Island (29-35-30, 121-42); 300 to 30. #11.80 to 11.86



21. South and west shore of Meishan Island from hill on west end of Mei-Shan Island; Lat. 29-48, Long. 121-58-30; Az. 131° clockwise to 50°. #12.61 to 12.74



SEC. II - B. AREA "B" WENCHOW TO HAI-MEN

B. AREA "B" - WENCHOW TO HAI-MEN

General.

(a) This Area offers an unusually large number of sites for airbases. In addition, large bivouac areas for troops are available. Supply to these bases from the sea is afforded by a cargo ship anchorage in Lo-ch'ing Wan near Wenchow, and also in Tai-chou Bay off the coast from Hai-men.

(b) The shallow entrance channels to both Wenchow and Hai-men prohibit the possibility of either becoming a port for cargo ships. Some supplies may be barged or carried by LCT up the river from Hai-men to Lin-hai, where Route (C)(described in AREA "A") leads to the west toward the interior of China. The former 2-lane road (80 miles in length) leading westward up the Ou River from Wenchow to Li-shui (28°-27'N, 119°-56'E) has been destroyed and would be difficult to rebuild since the route traversed is very broken and rocky. The river from Wenchow to Li-shui does not offer any real value as a supply route.

(c) Air development in AREA "B": One VBH and one VLR site, both providing parallel runways, are available at Wenchow, and one VBH site with parallel runways is available at Lin-hai. There is also one exceptionally good site just south of Hai-men providing space for six parallel VLR runways (see Drawings No. PB-1 and PB-6). The center of gravity of these four airbase sites is within VBH (B-24 & B-17) range of Japan.

1. Fleet Anchorage.

(a) There are only limited possibilities for a fleet anchorage in this area.

(b) A cargo ship anchorage is located in Lo-ch'ing Bay (Lotsing Wan). (See Drawing No. PB-1). The entrance channel and the bay itself are free from dangers to navigation. There is adequate shelter from typhoon and monsoon action.

(c) A partially protected anchorage for cargo ships is located just south of Chu-su Island (28°-41'N, 121°-46'E). From this anchorage barges and LCTs may take on cargo for the airfields located near Hai-men and Lin-hai. Tankers drawing not more than 18' may come into the port of Hai-men and discharge aviation gasoline for the proposed large airbase south of Hai-men. A concrete aviation gasoline storage barge might be anchored in the shelter of one of the islands for supplying shallow draft tankers.

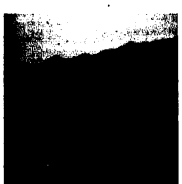
2. Fleet Base.

(a) Sufficient area for the construction of a small naval base is located on the western coast of Yu Huan Tao, a large island in Lo-ch'ing Bay. A wharf, 1000' long, may be constructed on the west coast of the island (28°-06'N, 121°-06'E). The hill overlooking the wharf is suitable for the location of a port director with the naval base in the valley north of this hill.

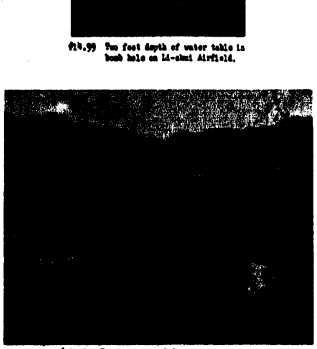
(b) A suitable location is also provided here for an amphibious craft landing and a combination LST and LCT ramp, as shown on Drawing No. PB-1. From the wharf an easily-navigated and protected barge or LCT channel leads south past the island of Wenchow Tao (Ling Kan - 27°-58'N, 120°-53'E)(whereon a VLR airbase site is located) up the river to a point opposite the proposed VBH airbase located approximately 3 miles southeast of Wenchow. An LCT ramp here (28°-01'30"N, 120°-40'30"E) will permit trucks to pick up supplies for this proposed airbase. Another LCT ramp can be constructed on the western end of Wenchow Tao.

(c) Leading to the north from the wharf proposed in Lo-ch'ing Bay, a barge or LCT channel is feasible to the village of Kiangsma (28°-20'N, 121°-16'E). An LCT ramp here will permit the discharge of supplies to trucks for transshipment to the proposed airbase near Hai-men. This provides a double supply route to the concentration of VLR fields.

Ø10.90 Former Airfield at Wenchow now in cultivation.



Ø10.99 Two foot depth of water table in bomb hole on Li-shui Airfield.



Ø10.07 Decking removed from masonry bridge; alluvial valley of Wu River tributary.

(d) The anchorage near Chu-su Island will permit cargo ships to discharge into barges or LCTs bound for Hai-men and Lin-hai. LCT landing ramps must be provided at both Hai-men and Lin-hai, as the present dock facilities are not suitable for the transshipment of supplies.

3. Air Bases.

(a) In the area approximately 3 miles southeast of Wenchow there is a broad flat plain intersected by fresh water canals. A former Chinese airstrip was located in this area, but it has practically returned to a state of cultivation (see Photo). It is possible to construct parallel runways 6000' in length and 2000' apart on centerline of runways at this site. A two-lane road must be constructed from the proposed LCT ramp at Wenchow to the airbase.

(b) Reconnaissance of the Island of Wenchow Tao (27°-58'N, 120°-53'E) shows that it is possible to build dual VLR runways 8000' long and 9000' apart on centerline. Supplies can be brought in by barge or LCT as outlined above.

(c) In the northern portion of this area, the valley(28°-51'N, 121°-12'E) to the northeast of Lin-hai provides a location for dual VBH runways 6000' long and 1000' apart on centerline. Supplies must be barged up the river from Hai-men and transported by trucks to the proposed airbase over a road, Route (C), which is outlined for construction in AREA "A", Paragraph 7.

(d) The broad coastal area south of Hai-men and near the village of Lu Chiao provides the unusual arrangement of three parallel dual-runway VLR fields, each pair 2000' apart, and each group of two, 8000' apart. A typical layout of this site showing existing contours is shown on Drawing No. PB-6.

(e) The center of gravity of all these air bases is within VBH (B-17 & B-24) range of important targets in Japan. The distance to Nagasaki is approximately 600 miles; to Osaka 1000 miles; to Tokyo 1200 miles. (See Target Map.)

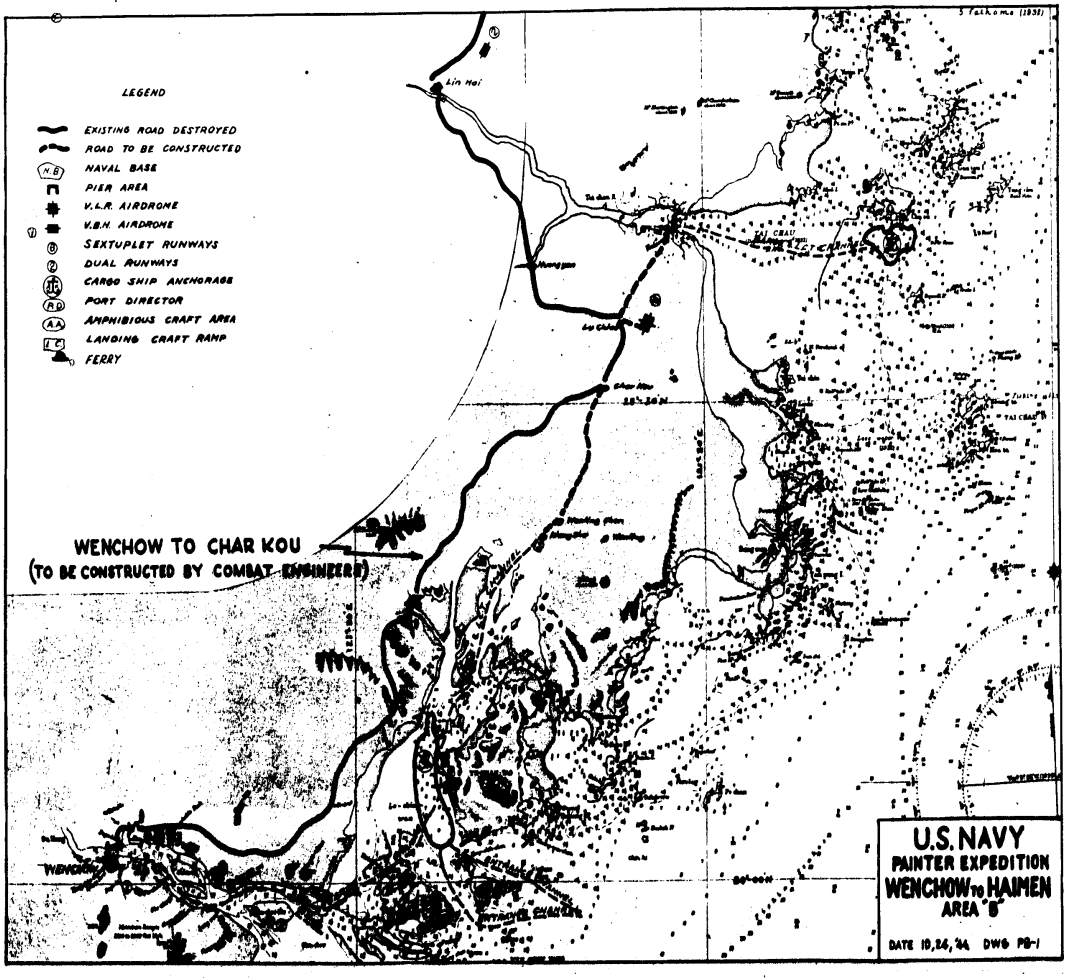
4. Supply and Base for Interior China Operations.

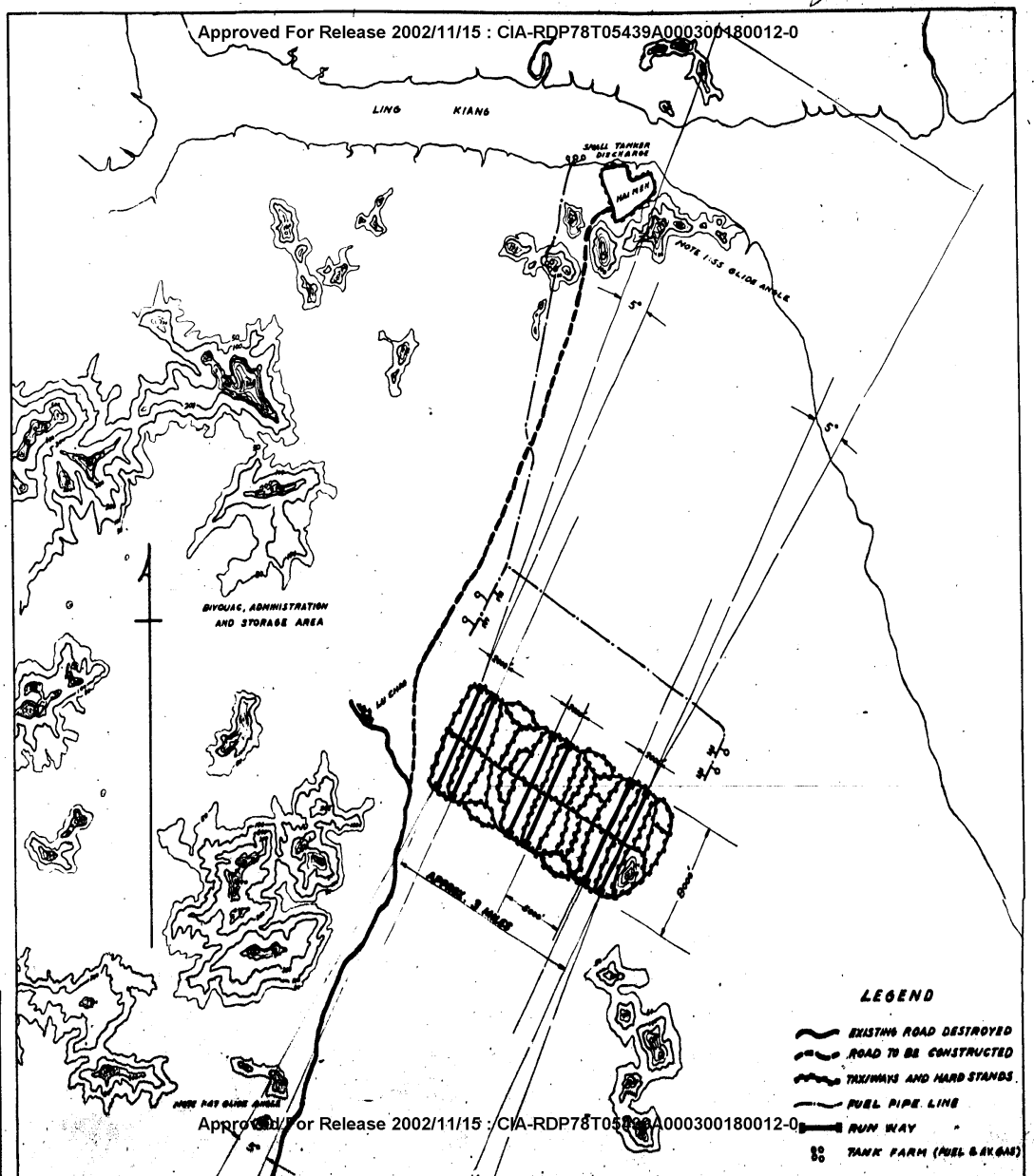
(a) Due to the lack of feasible overland routes and large dock areas, no supply to interior China is recommended from AREA "B".

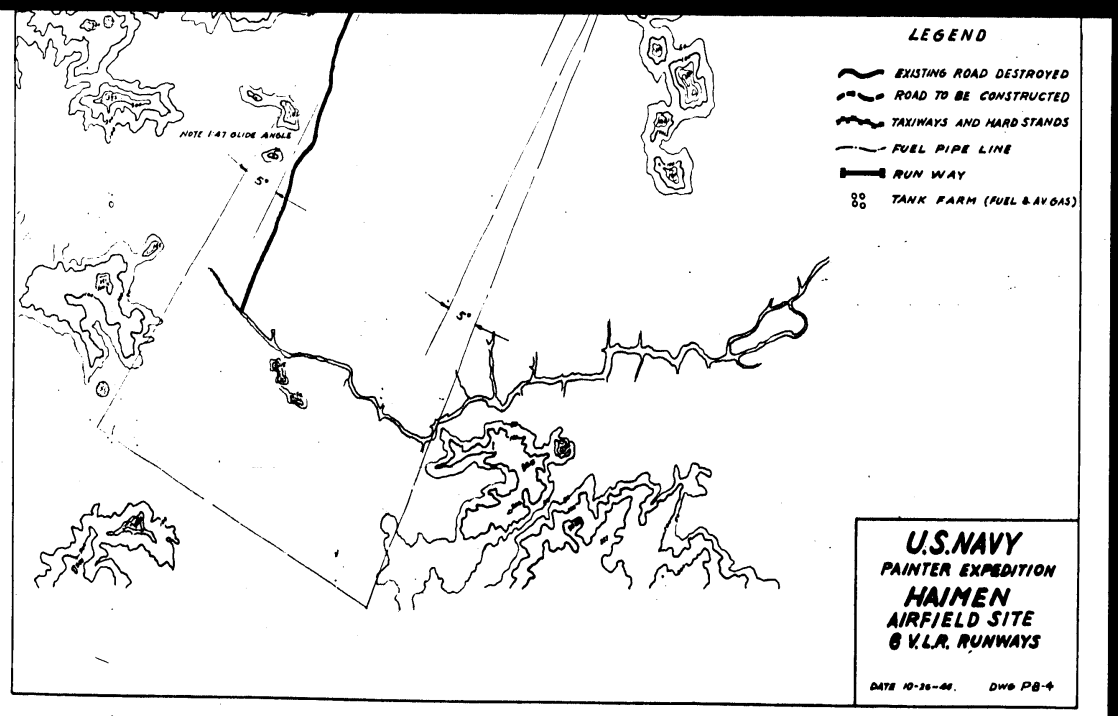
(b) The two lane road from Lin-hai south to Huangyen (28°-37'N, 121°-18'E), Lu Chiao (28°-36'N, 121°-21'E), Char-kou (28°-30'N, 121°-21'E) and on to Wenchow has been destroyed. It is recommended that the road from Lin-hai to Char-kou be rehabilitated to accommodate two lanes of traffic. It is further recommended that new two-lane roads be constructed from Lu Chiao to Haimen and from Char-kou to Kiangsma. It will also be necessary to construct connecting roads to the proposed air bases at Lin-hai, Lu Chiao and Wenchow.

(c) A detailed description of the Lin-hai to Char-kou road follows: There are 86 bridges on the 40 miles of road to be rehabilitated, one of which is 716' in length, one 561', one 161', one 99', two 76', three 65', and the remainder 40' or less. The present bridges were designed for 5 tons only, and will have to be strengthened to support heavy construction equipment. Sufficient rock for surfacing can be found by opening quarries immediately adjacent to the road throughout its length. No timber is found on this route. Alignment is good and there are no excessive grades. The terrain is flat and the road can be widened with ease. The river crossings at Lin-hai and Huangyen are affected by ferry-- it is not recommended that bridges be built at either place due to the size of the rivers.

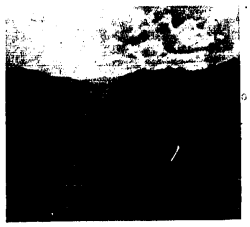
(d) It is estimated that this road (Lin-hai to Char-kou) could be rehabilitated and put into use by two construction battalions within 180 days.


LEGEND
EXISTING ROAD DESTROYED
ROAD TO BE CONSTRUCTED
NAVAL BASE
PIER AREA
V.L.R. AIRDROME
V.B.H. AIRDROME
SEXTUPLET RUNWAYS
DUAL RUNWAYS
CARGO SHIP ANCHORAGE
PORT DIRECTOR
AMPHIBIOUS CRAFT AREA
LANDING CRAFT RAMP
FERRY
WENCHOW TO CHAR KOU
(TO BE CONSTRUCTED BY COMBAT ENGINEERS)
Lin Hai
U.S. NAVY
PAINTER EXPEDITION
WENCHOW TO HAIMEN
AREA "B"
DATE 10,26,44 DWG PB-1





SEC. II - WENCHOW TO HAI-MEN (CONTINUED)



Ø18.86 Typical road alignment through a valley.

(e) The new roads proposed for construction as outlined in sub-paragraph (b) above total 25 miles. The terrain that they traverse is flat and offers no difficulty. It is estimated that one construction battalion could put these roads into use within 120 days.

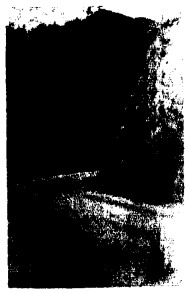
(f) Summary of construction battalions necessary for all road construction in AREA "B":

	Battalions
(1) Rehabilitate existing roads	2
(2) Construct new roads	1
Total	3

(g) If the road from Wenchow up the Ou River to Li-shui were to become necessary as a 2-lane supply route to interior China, it is estimated that 5 construction battalions could rehabilitate it within 120 days. It is not recommended that this construction be undertaken in the initial phases of a landing effort. The Chinese government could rebuild this road with the aid of supplies such as dynamite, power drills, air compressors, rock crushers, trucks and rollers. It is estimated that 180,000 Chinese laborers, with the help of the above equipment and U.S. Troop equipment operators, could rehabilitate this to a 2-lane road within 120 days.

Ø18.91 Typical road alignment in hills.

Ø15.03 Landslide in through cut approx. 19 miles east of Li-shui.



Ø18.98 Typical curve and cut bank.

Ø15.08 Retaining wall shot away/ vertical banks (in cuts).

Ø10.08 Demolished Masonry bridge approx. 42 miles East of Li-shui.

Ø15.00 Retaining wall and fill shot away.

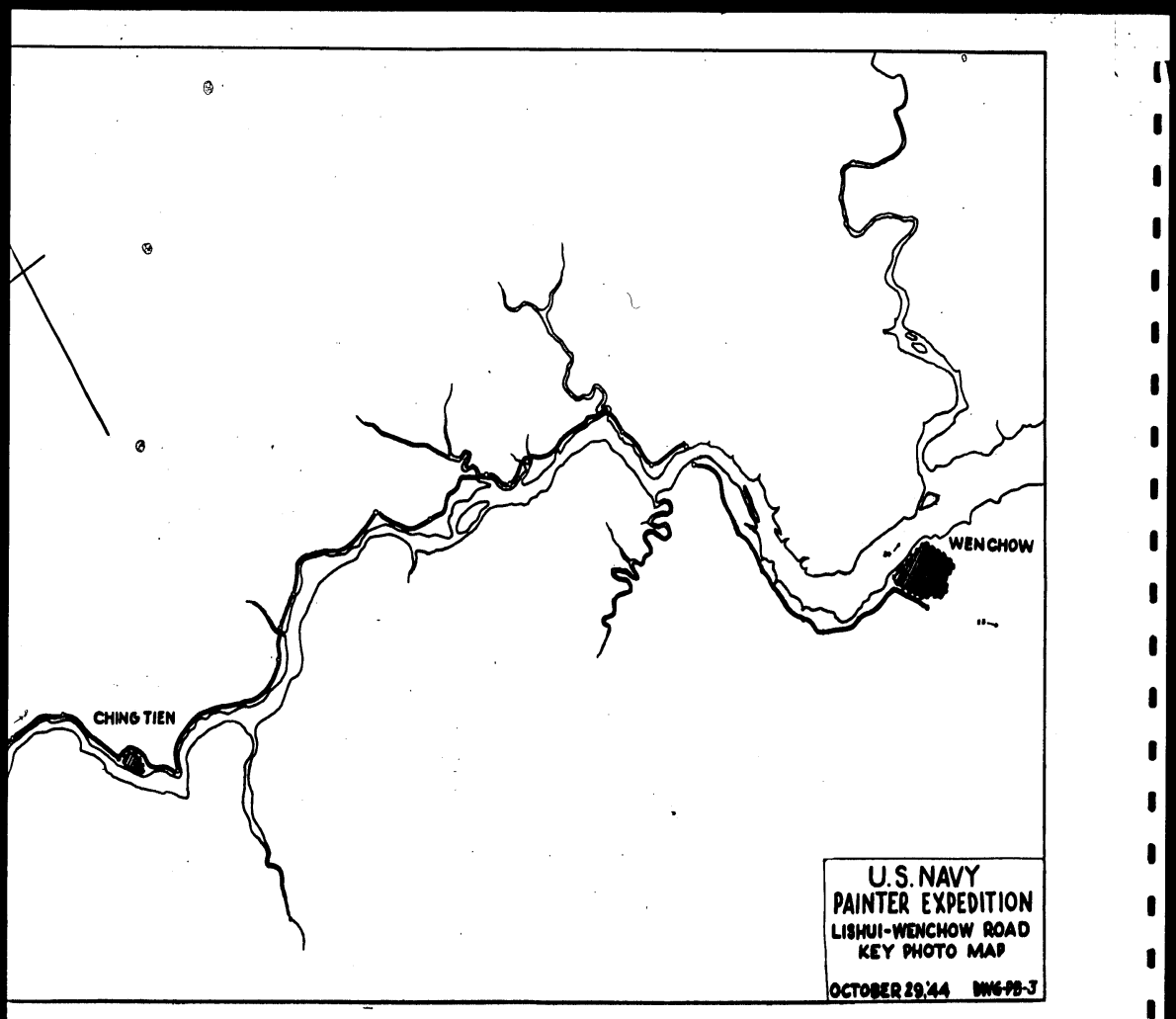
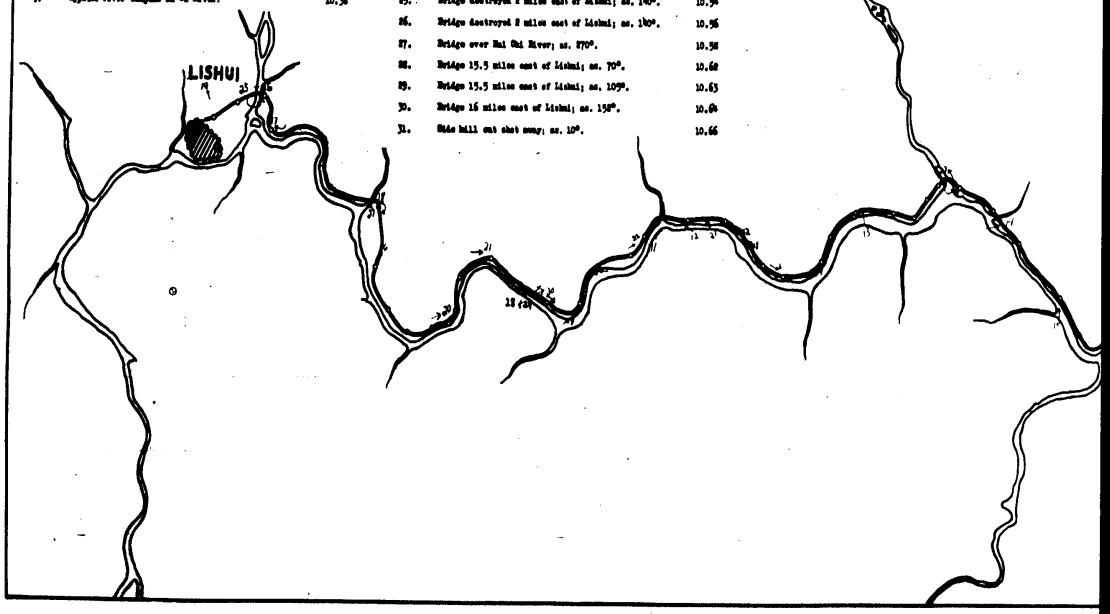

WEN CHOW
CHING TIEN
U.S. NAVY
PAINTER EXPEDITION
LISHUI-WENCHOW ROAD
KEY PHOTO MAP
OCTOBER 29,'44 BWG-PB-3

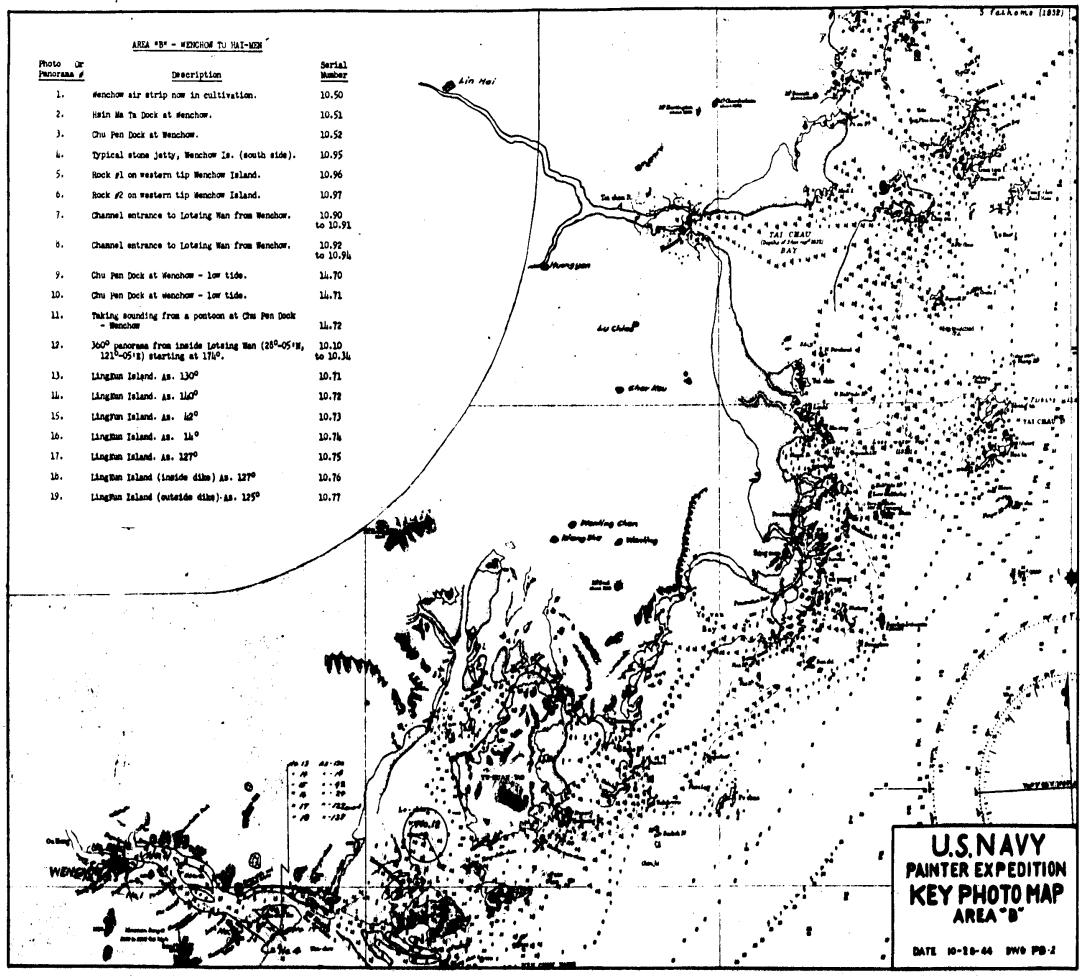
PHOTO INDEX
LISHUI-WENCHOW ROAD

Photo No.	Description	Serial No.
1.	1000 Lin.ft. of sidehill cut in solid rock blasted away leaving only a two foot wide path - (25 miles east of Lishui; az. 165°.	10.01
2.	Masonry bridge with no decking - Fill partially destroyed --29.8 miles east of Lishui; az. 160°.	10.02
3.	Masonry bridge abutments, fill removed behind abutments--stream practically dry--26 miles east of Lishui; az.146°.	10.03
4.	Side hill cut approx. 1000 ft. long, shot away--Note the original ground slope. 25 miles east of Lishui; az.137°.	10.04
5.	Gravel bed in tributary stream to Wu River (formerly crossed by wooden trestle bridge 500 ft. long; now destroyed by flood). 34½ miles east of Lishui; az. 10°.	10.05
6.	Same view as #5, showing eastern abutment to destroyed Masonry bridge. 34½ miles east of Lishui; az. 90°.	10.06
7.	View of same masonry bridge as #6, also showing the broad alluvial valley traversed by tributary to Wu River. 34½ miles east of Lishui; az. 350°.	10.07
8.	Demolished masonry bridge over Hai Chi Creek. 42 miles east of Lishui; az. 90°.	10.08
9.	Typical river campans on Wu River.	10.38
10.	Sampan boatmen; steep mountain sides adjacent to Wu River.	10.39
11.	Showing stretch of road along Wu River.	10.40
12.	Alternate sidehill cut and fill of road along Wu River.	10.41
13.	Typical country through which the Wu River flows.	10.42
14.	Typical country through which Wu River flows.	10.45
15.	Sampans on Wu River.	10.46
16.	Typical alignment of road through valley.	14.88
17.	Typical alignment in hills.	14.91
18.	Typical curve and cut bank.	14.94
19.	Two feet depth of water table in bomb hole on Lishui Airfield.	14.99
20.	Retaining wall and fill shot away.	15.00
21.	Retaining wall shot away - vertical banks (in cuts).	15.02
22.	Landslide in through cut, approx. 19 miles east of Lishui.	15.03
23.	Former Airfield at Wenzhou now in cultivation.	10.30
24.	Gun Pen Rock (Pantoon) at Wenzhou - Low tide.	14.71
25.	Bridge destroyed 2 miles east of Lishui; az. 140°.	10.94
26.	Bridge destroyed 2 miles east of Lishui; az. 140°.	10.95
27.	Bridge over Hai Chi River; az. 270°.	10.98
28.	Bridge 15.5 miles east of Lishui; az. 70°.	10.62
29.	Bridge 15.5 miles east of Lishui; az. 109°.	10.63
30.	Bridge 16 miles east of Lishui; az. 158°.	10.64
31.	Side hill cut shot away; az. 10°.	10.66



AREA "B" - WENCHOW TO HAI-MEN

Photo Or Panorama #	Description	Serial Number
1.	Wenchow air strip now in cultivation.	10.50
2.	Hsin Ma Ta Dock at Wenchow.	10.51
3.	Chu Pen Dock at Wenchow.	10.52
4.	Typical stone jetty, Wenchow Is. (south side).	10.95
5.	Rock #1 on western tip Wenchow Island.	10.96
6.	Rock #2 on western tip Wenchow Island.	10.97
7.	Channel entrance to Loteing Wan from Wenchow.	10.90 to 10.91
8.	Channel entrance to Loteing Wan from Wenchow.	10.92 to 10.94
9.	Chu Pen Dock at Wenchow - low tide.	14.70
10.	Chu Pen Dock at Wenchow - low tide.	14.71
11.	Taking sounding from a pontoon at Chu Pen Dock - Wenchow	14.72
12.	360° panorama from inside Loteing Wan (28°-05'N, 121°-05'E) starting at 174°.	10.10 to 10.34
13.	Lingkun Island. As. 130°	10.71
14.	Lingkun Island. As. 146°	10.72
15.	Lingkun Island. As. 42°	10.73
16.	Lingkun Island. As. 14°	10.74
17.	Lingkun Island. As. 127°	10.75
18.	Lingkun Island (inside dike) As. 127°	10.76
19.	Lingkun Island (outside dike) As. 125°	10.77



SEC. II - WENCHOW TO HAI-MEN (CONTINUED)

5. Beaches and Landing Areas.

(a) Beaches in this area are nearly all composed of mud, except where the rocky steep-to shores extend into the water. Extensive mud flats, drying at low tide, are prevalent and all work must be coordinated with the tides. Wenchow has a substantial retaining wall along its waterfront and at least one suitable pontoon wharf. Depths alongside at L.W. are 12 feet. (see Photos) The area for the proposed naval base is usable as a beach at nearly all tides as it has deep water just offshore. The beaches at Wenchow Tao are usable at high tides and several stone jetties have been extended out, so that landing craft could approach at low water.

(b) At Hai-men the beaches along the river are steep and landings, at H.W., can be effected on the dikes. Here again several pontoons are available.

(c) The head of Lo-ch'ing Bay dries at L.W. and is usable only at H.W. There is a small channel at Kiangsha that could be dredged to allow landing craft to approach the proposed ramp at all tides.

6. Ease of Military Occupation and Defense.

(a) Ease of Occupation

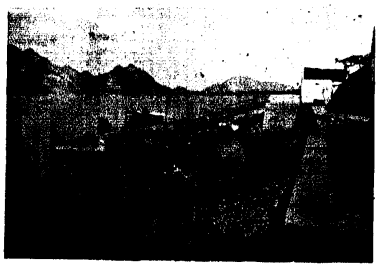
(1) The enemy holds the port of Wenchow with a reported strength of 10,000 (Oct. 28). As shown in the CAF, G-2 Report (see Section III-D), this city is linked by an enemy supply line to the Chin-hua (Kinhwa) area where there are a reported 12,000 (Oct. 28) enemy troops. This supply line is weak as it uses only native trails over the mountains; the highway from Li-shui being completely destroyed, no artillery of any large caliber can readily be brought over these trails, although foot infantry may be employed.

(2) The port of Hai-men and the area between Wenchow and Hai-men is in Chinese hands (as of Oct. 28). It can be occupied at any time without difficulty from the sea, troops disembarking both at Lo-ch'ing Bay and Hai-men. From Hai-men, troops may also proceed by river route to Lin-hai and occupy the airfield sites to the northwest.

(b) Ease of Defense

(1) The enemy cannot readily reinforce either Wenchow nor attack Lin-hai from Pa-Mao (his northern line). As pointed out above, the Wenchow area is not readily reinforced from land, but defenses must be set up in the passes to prevent even such reinforcements. The coastal road from Lin-hai to Wenchow should be completed as rapidly as possible for a perimeter defense and supply route. From Pa-Mao to Lin-hai (about 95 miles by road) the highway is destroyed and would prevent rapid movement of enemy troops from the Chin-hua area. Except for these north and south gateways, the area to the westward of AREA "B" is quite mountainous--no roads exist except mountain footpaths.

(2) As the Area is large, the transportation system should be rapidly repaired so that motorized equipment and artillery could be deployed as required for the defense of the area. An estimate of the troops required to repair the destroyed road from Chai-tzou to Wenchow has not been included under Paragraph 4. It is recommended that engineer troops attached to the defense forces repair this road; 4 battalions of combat engineers equipped for road building will be necessary.



Ph.71 Gun Pen Rock (Pentoon) at Wenchow. (Low Tide)

7. Construction Effort and Time Element.

(a) The development of AREA "B" offers no unusual construction problems. Extended wet weather would delay construction due to the flat terrain, extensive rice paddies and canals.

(b) All areas must be adequately drained before heavy equipment can be advantageously employed. The canals are all on the same level and can easily be blocked by filling. After the rice paddy soil is dry it becomes stable and will support heavy loads. It will be necessary for the runways, taxiways and hardstands in the airbases near Wenchow and on the island in the river to be raised approximately 3 feet above the present ground surface. A raise of 2 feet is considered sufficient for the remaining airbases and roads.

(c) The rate of construction of airbases will be determined primarily by the rate at which stone may be crushed for surfacing, and it is recommended that crusher units that are brought in be not less than 60 cu.yds. per hour capacity. Scraper pans of 12 cu.yd. capacity and 1½ cu.yd. draglines will be suitable for work on the airbases. Euclids and trucks will be necessary for the transportation of crushed stone. (See Supplementary Data, III-I.)

(d) It is estimated that the comparatively small naval facilities proposed in this Area could be put into use by 4 construction battalions within 190 days.

(e) Summary of construction troops necessary:

(1)	Naval base including 1000' of wharf, 6 LCT ramps, 1 amphibious craft area and other minor features	4 battalions
(2)	Four Airbases (12 runways)	12 battalions
(3)	Rehabilitate 40 mi.of road	2 battalions
(4)	Construct 25 mi.of new road	1 battalion
	Total	19 battalions

8. Resources, Facilities and Labor.

(a) Rock and sand are found in abundance within easy hauling distances. The sand must come from streams beds and will have to be transported for an average haul of 10 miles from the various sites.

(b) There is no timber available in any part of this area. Poor quality native brick is made in small local brick kilns.

(c) All materials except sand and stone must be brought in by the landing forces.

(d) The area is thickly populated and it is estimated that approximately 150,000 unskilled laborers will be available. Skilled craftsmen are limited, and none are familiar with the use of mechanical equipment.

(e) There are no power plants except small steam plants that provide electric lights for Wenchow, Hai-men and Lin-hai. The existing Chinese telephone and telegraph facilities cannot be relied upon for communications, but the existing poles may be used for stringing new lines.

(f) Innumerable canal boats are to be had and may be utilized to an advantage in the transportation of sand and stone in the canal areas.

SEC. II - C. AREA "C" NAMKWAN HARBOR

C. AREA "C" - NAMKWAN HARBOR

General.

Namkwan Harbor (27°-10'N, 120°-26'E) is a deep clear water harbor extending inland in a westerly direction approximately 15 miles from the coast. The harbor for the first five miles averages about 3/4 of a mile wide, with depths from 6 to 20 fathoms. Only one or two shoal patches are evident, and they could be buoyed readily. (See H.O.3208) The area is landlocked and affords excellent protection in all winds. The shores are steep-to. Fu-ting, at the head of the harbor, is a small prosperous city of about 15,000 population.

1. Fleet Anchorage.

The area is suitable for a minor fleet anchorage where medium-sized task forces could anchor in well-protected deep water. It is probably best suited for PT, Destroyer, or Submarine bases. The area northwest of Kinzho Island is deep but probably too constricted for extensive use as an anchorage. Currents are not excessive; they appear to be two to three knots maximum.

2. Fleet Base.

Limited fleet base facilities could be constructed along the shores in several narrow valleys, providing fuel oil, fresh water, and supplies. The water is deep enough for the operation of floating docks and areas exist ashore for the auxiliary installations. No good landing beaches are available, but the small villages along the Sound all have stone jetties suitable for landing craft at all tides.

3. Air Bases.

No sites suitable for airbases exist in this area.

4. Supply and Base for Interior China Operations.

No feasible routes for supply to the interior exist in this area. The coastal road from Wenchow, now destroyed, was once nearly completed to Fu-ting at the head of the Sound, but the road has no connection with an inland route until it reaches Yung-chia (Wenchow) to the north.

5. Beaches and Landing Areas.

There are no good beaches. Landings would be limited to small jetties in the villages and/or on the banks at H.W.

6. Ease of Military Occupation and Defense.

(a) The area is not held by the enemy (as of 28 October). A few puppet troops occupy some of the small islands outside the entrance to the harbor, but they would present no problem.

(b) Ease of Defense: The area is almost isolated from the interior and its defense from land attacks should not require large forces. The road from Jui-an to the north is in such a state of destruction as to completely discount it as a traffic lane unless rebuilt. Light infantry only could make their way down from Yung-chia (Wenchow) on foot using the paths, which also have been partially destroyed. The country is mountainous in character.

7. Construction Effort and Time Element.

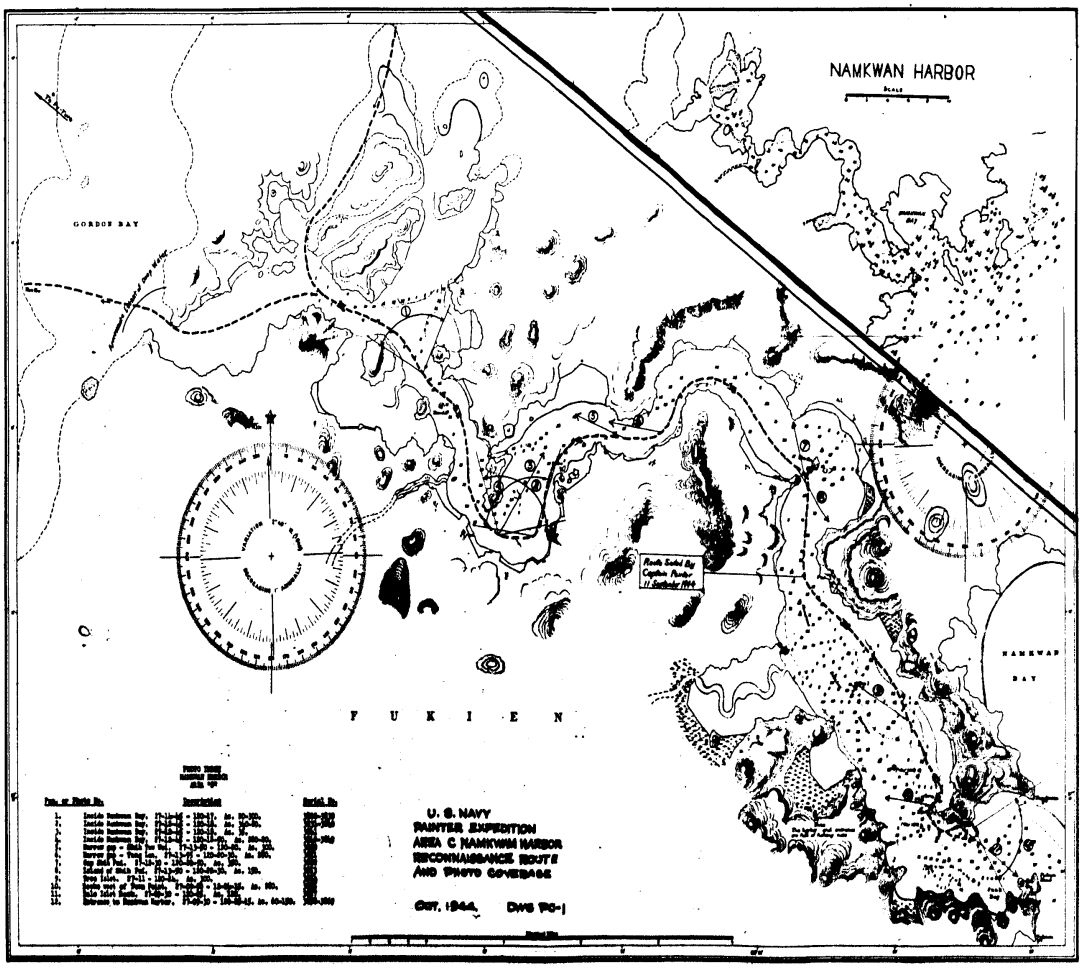
No detailed plan is being proposed for this fleet base. Two construction battalions should construct a minor fleet base here in about 4 months.

8. Resources, Facilities and Labor.

No local resources are available. Local labor in small numbers is available.

38.58-38.69. Showing Entrance to Namkwan Harbor.

38.42-38.49. Showing Inner Anchorage, Namkwan Harbor.


NAMKWAN HARBOR
GORDON BAY
F U K I E N
NAMKWAN BAY
U. S. NAVY
PAINTER EXPEDITION
AREA C NAMKWAN HARBOR
RECONNAISSANCE ROUTE
AND PHOTO COVERAGE
OCT. 1944. DWG PC-1

D. AREA "D" - SAMSA INLET

General.

(a) The Area comprises Samsa Inlet (also known as San-tu-ao) and such surrounding land area as is considered necessary for its defense. This area, of approximately 1100 square miles, is located on the China Coast between latitudes 26°-55' North and 26°-20' North.

(b) Charts (H.O. 2556 and 2557) were used during the reconnaissance. These charts were checked on the site for accuracy and are believed to be the most reliable maps published covering this Area. A.M.S. Maps, Series L783, 1:50,000 scale, Fukian Province, are available for the south shore of the Inlet only. Available Chinese maps are not reliable.

(c) No satisfactory aerial photo coverage of the area existed at the time of the preparation of this report. Aerial coverage is scheduled to be flown by the 14th U.S.A.A.F.

(d) Samsa Inlet is a body of water forming an extensive basin which is entered from the southeast by a deep channel approximately 1½ miles wide. This basin, although broken by numerous islands, bays, and foul ground, nonetheless affords in its central section a good fleet anchorage. The shores of the inlet are generally hilly and steep-to, rising to mountain ranges in the interior. The land adjacent to the shore is terraced and extensively cultivated. However, the rugged character of the shore is sufficiently modified within those areas designated on the adjoining drawings to make the construction of the following proposed installations feasible.

1. Fleet Anchorage.

The proposed fleet anchorage occupies the central portion of Samsa Inlet, lying directly north of the entrance channel. This water, roughly 18 square miles in area, affords anchorage in depths from 7 to 30 fathoms. Readily accessible in all weather, it provides good holding ground free from navigational hazards. Here deep draft vessels are protected from the typhoons to be expected from July to October. Mariners report that with strong northeast winds, a heavy sea rolls in through the entrance channel; that with the outgoing current, there are heavy tide rips; and that with east winds and a strong outgoing current, deep draft vessels become tide-ridden.

1A. South shore Pt. Stevens Santuao Supply Dock Site with Texaco On-dock, looking East. 35.17

13. Custom House Area S/W Santuao Is. looking north from Jetty. 35.15

2. Fleet Base.

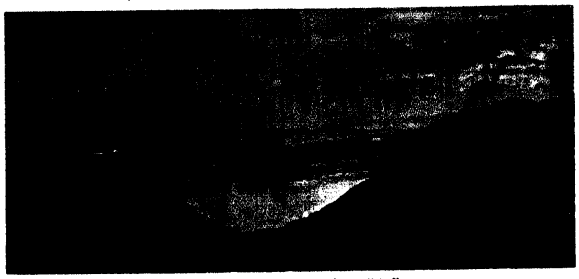
(a) Due to the scattered nature of available building sites within the area, the fleet base proposed for Samsa Inlet has necessarily been divided into four widely separated areas.

(b) San-tu-ao Island area: The southwest section of Samis Island has good anchorage and suitable construction sites, and will accommodate administration, receiving ship, communications, the Port Director, a MTB base, storage facilities, a 1000 bed hospital, and a detachment of defense troops. These installations are shown on the accompanying drawing. The rugged nature of the remainder of the island is unsuited for construction sites.

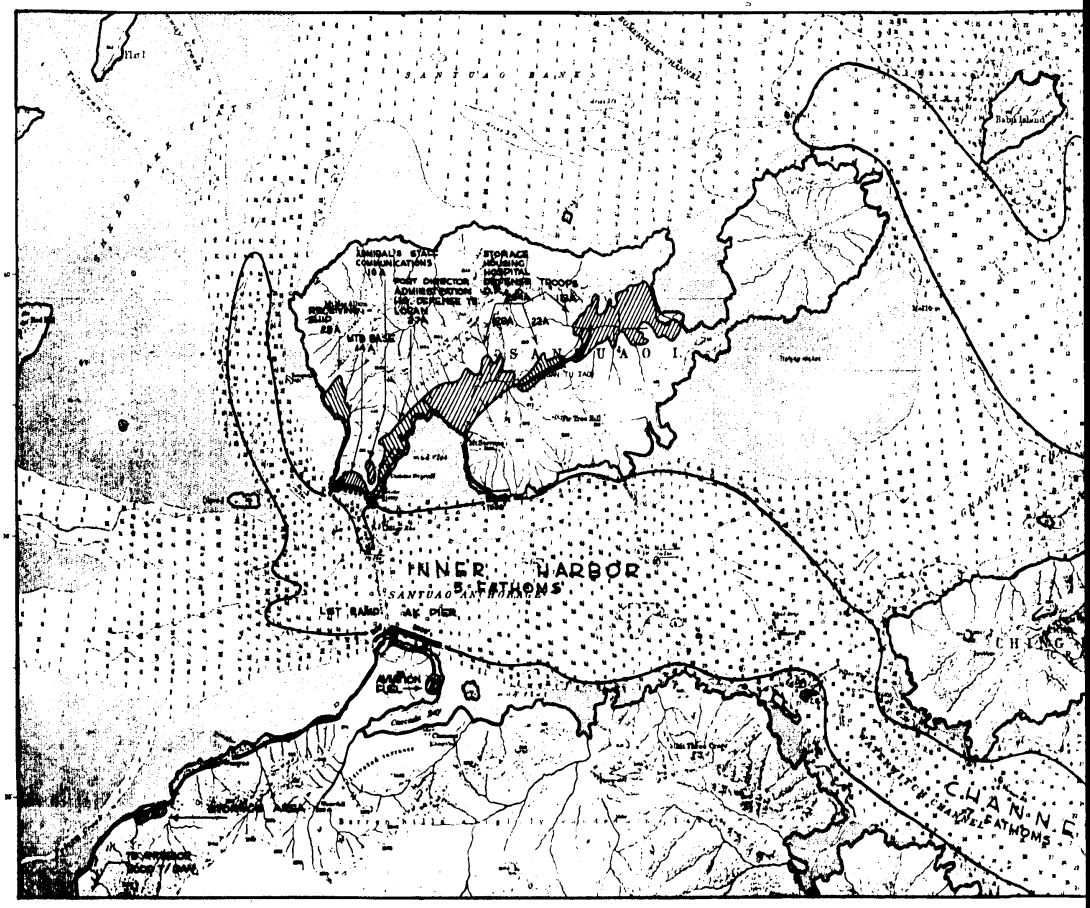
(1) The administration area and the Port Director are located along the flat shore adjacent to San-tu-ao village on ground occupied by destroyed Custom Houses. This group would be served by the present stone jetty and quay. The receiving ship area is located in a cove on the west shore somewhat removed from the administration group. Radio communications have been located on elevated ground, slightly removed from the administrative group. The storage and personnel housing areas lie in the flat valley running inland from the village of San-tu-ao. This valley rises to a gap near the middle of the island which would permit a connecting road to a similar cultivated flat on the northeast coast. Here a 1000-bed hospital and additional personnel housing could be accommodated. The D.F. installations could be located on the heights overlooking the storage area.

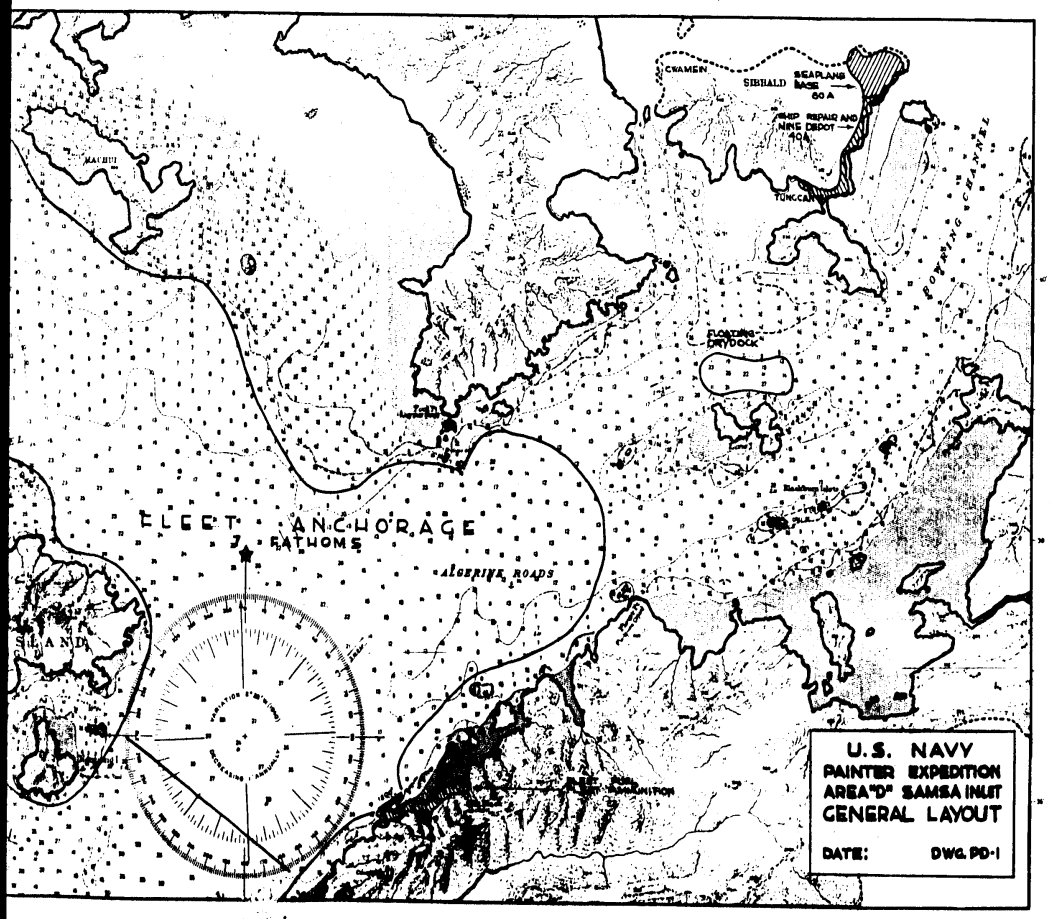
(2) A 1,200 foot supply dock is proposed in 8 fathoms of water on the south shore of Mount Stevens Peninsula near the present Texaco and Standard Oil installations. This dock would be connected to the supply area one half mile distant by a road along the coast. A finger dock for personnel could be located at King Point on the extreme southwest tip of the Island. This dock would serve the receiving ship area immediately north as well as the MTB base and administrative group. The existing stone jetty located at the proposed administrative area is in good condition and is adequate for light draft craft.

(c) Tungchung Peninsula area: Tungchung Peninsula, although generally too rough for good construction sites, has numerous coves which could accommodate a fleet fuel tank farm and ammunition dumps. These installations would then be conveniently located to both the fleet anchorage and the entrance channel. To serve this area, a 1200 foot dock, which could handle deep draft vessels, is feasible at the foot of Mount Black as shown on the map. The tank farm and ammunition dumps can be well dispersed in the natural revetments afforded by the deep recesses in the shore line.



J. Entrance to Samsa Inlet, looking S/E. 39.20-39.21.


INNER HARBOR
5 FATHOMS
SANTOAO BAY
SANTOAO
CHANNEL
5 FATHOMS


CWAMEN
SIBHALD
SEAPLANE BASE 60 A
SHIP REPAIR AND MINE DEPOT 99
TUNGCAR
FLOATING DRYDOCK
FLEET ANCHORAGE
7 FATHOMS
ALGERINE ROADS
U.S. NAVY
PAINTER EXPEDITION
AREA "D" SAMSA INLET
GENERAL LAYOUT
DATE:
DWG. PD-1

SEC. II - SAMSA (CONTINUED)

(d) Sibbald Island area: Situated on the east coast of Sibbald Island are acceptable building sites in the areas which have easy access to the deep water of Bowring Channel. Ship repair facilities, mine depot, and a seaplane base (discussed under "Air Bases") are proposed at this location. Floating dry docks could be operated nearby in the deep water directly north of Low Island. In this location the floating docks could be removed from the ship traffic lane through Algerine Roads and yet be adjacent to both ship repair facilities and fleet anchorage.

(e) Cone Island area: Cone Island (although deficient in good building sites) because of its commanding position within the entrance channel, is suitable for the H.E.D.P., net depot, and Sono Buoy. These small installations with required dockage would be supplied from the main base on San-tu-ao Island.

(f) In general, the rest of the coastal slopes surrounding the inlet are too rugged in character for good building sites. Although good sites exist in the western section, the difficulties of road construction and extensive dredging required for navigation, forbid their recommendation except as airbase and bivouac sites. Several small sand beaches with adjacent building sites are available in the vicinity of Foul Point on the north shore of Algerine Roads; but dredging through the mud flats would be required to make these sites accessible to any craft other than LCTs operating at mid-tide. The mine depot and ship repair units were planned on Sibbald Island rather than at Foul Point because of better water. In addition, it was considered desirable to group these installations for administrative reasons with the seaplane base which would logically be located on this island.

3. Air Bases.

(a) Suitable areas for airfields are limited in the Samsa Area. Four areas are feasible--three for airfield construction and one for a seaplane base.

(b) Hsia-pu Air Base: This site is in a river valley located at the northwest end of Funing Bay. It is near the coast approximately 6 miles north of Samsa Basin. The site will accomodate two 6,000 ft. runways with the facilities necessary to operate 100 heavy bombers. The parallel runways would be oriented with the valley, northwest - southeast. Although this orientation is at right angles to the prevailing winds it is presumed that the flanking ridges of the valley would tend locally to channelise the air currents in line with the axis of the runways. Clear approaches exist both to the northwest and southeast. All facilities and an estimated 6,000 personnel could be accommodated at this site. Supplies would be landed on the shore by LCTs from AKs anchored in the area outlined on the drawing. Bulk fuel would be handled by a pipe line built out from a tank farm on shore. Storage for one million gallons of aviation gas could be provided; and from the tank farm, a second pipe line can be constructed to the airfield site.

(c) Spider Island Airfield: This site is located east of Ning-te in the western section of Samsa Inlet south of the town of Tungwan. At this location, an airfield could be constructed easily in the broad, flat cultivated valley. Two 4,000 foot paved runways, oriented northeast - southwest in line with the prevailing winds, are proposed here. This field could accommodate 100 carrier-based fighters and an estimated 5,000 personnel. The site itself could be expanded into a heavy bomber installation but this is not recommended due to existing operational hazards. Across both northeast and southwest approaches lie 3,000 ft. ridges which create prohibitive heavy bomber glide angles into the field. Materiel storage, personnel housing as well as a troop bivouac area could be situated in this valley to the north of the strip. Supply of this airfield could be accomplished by LCTs, operating on the tide directly to the site from the Apex Point docks.

(d) Pagoda Creek Airfield: This airfield is located on the gently-rolling cultivated ground at the extreme western end of Samsa Inlet, immediately south of the town of Ning-te. This site is less desirable than the Spider Island location because of existing operation hazards and the heavy cut and fill required in the runway construction. A single 4,000 foot runway, lying northwest - southeast, would parallel the shore line on the east and the 3,000 ft. ridge on the west. The south approach is clear. The north approach is compromised by enclosing hills. This approach could be made through a narrow gap and would be feasible only in good weather. This field could accommodate 80 carrier-based fighters and an estimated 900 personnel. It would be supplied by LCTs operating on the tide from the Apex Point Docks.

(e) Sibbald Island Seaplane Base: This proposed installation is located on the land-locked water of Samsa Basin situated in the northeastern section of Samsa Inlet. The basin, approximately 7 miles north and south by 4 miles east and west, affords a 5-mile reach of water oriented with the prevailing winds. The water of the basin is free of obstructions and should be relatively quiet. The northeast approach would be over the low-lying, narrow neck separating the basin from Funing Bay. The southern approach would be over Algerine Roads and around the western side of Sibbald Island. Other approaches are not to be recommended because of the hills lying to the north, west, and east, rising to 2,000 foot elevations. Facilities to service 50 seaplanes with an estimated 500 personnel could be accommodated on the north shore of Sibbald Island. Supply of this site would be by LCTs from the Apex Point Docks.

(f) A central storage point for the supply of all these air bases is proposed at the Apex Point warehouse area. This site, as indicated on the map, is situated on the south shore of Samsa Inlet on the nearest suitable ground west of the main supply docks. Aviation gas storage totaling one million gallons is proposed on Apex Peninsula River, immediately east of the supply docks and situated far enough around the Point to protect the docks from possible explosion.

4. Supplies and Base for Interior China Operations.

The construction of a dock area is contemplated to provide a flow of 9,000 tons daily to interior China. This is proposed on the mainland at Apex Point across the Inner Harbor from the San-tu-ao Island fleet base. At this location a 3,000 foot dock in 5 fathoms of water is proposed to accommodate the unloading of 6 AKs. Adjoining this installation on the west, a ramp 600 feet wide to handle the unloading of LSTs is feasible. From these docks 2,500 tons a day could be handled. The warehouse area for this supply is located along the coast road approximately 3 miles west of Apex Point. It is estimated that an area of 18 acres will accommodate the supply for interior China, the defense troops in the area, and the nearby airfields. It is proposed to locate the truck motor pool and bivouac area at Peloom, 7 miles west of Apex Point.

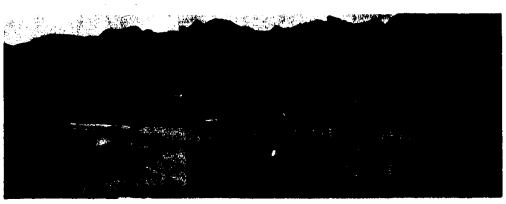
5. Beaches and Landing Areas.

(a) There are no beaches in the Samsa Inlet area which normally would be classified as landing beaches. The outer regions of the sound are steep-to and deep water is very near the shore line in most cases. Several villages have ramps or jetties suitable for junk traffic and therefore usable by landing craft. The upper reaches of the inlet are shoal with wide drying mud flats at low tide. Ning-te city is served by a shallow channel which is navigable in all but the lowest tides, and several jetties near the city are extensively used. Wan Yao and other villages have similar facilities. San-tu-ao Island offers several jetties and small docks for landings.

(b) At high tides landings may be made almost anywhere there is access ashore.

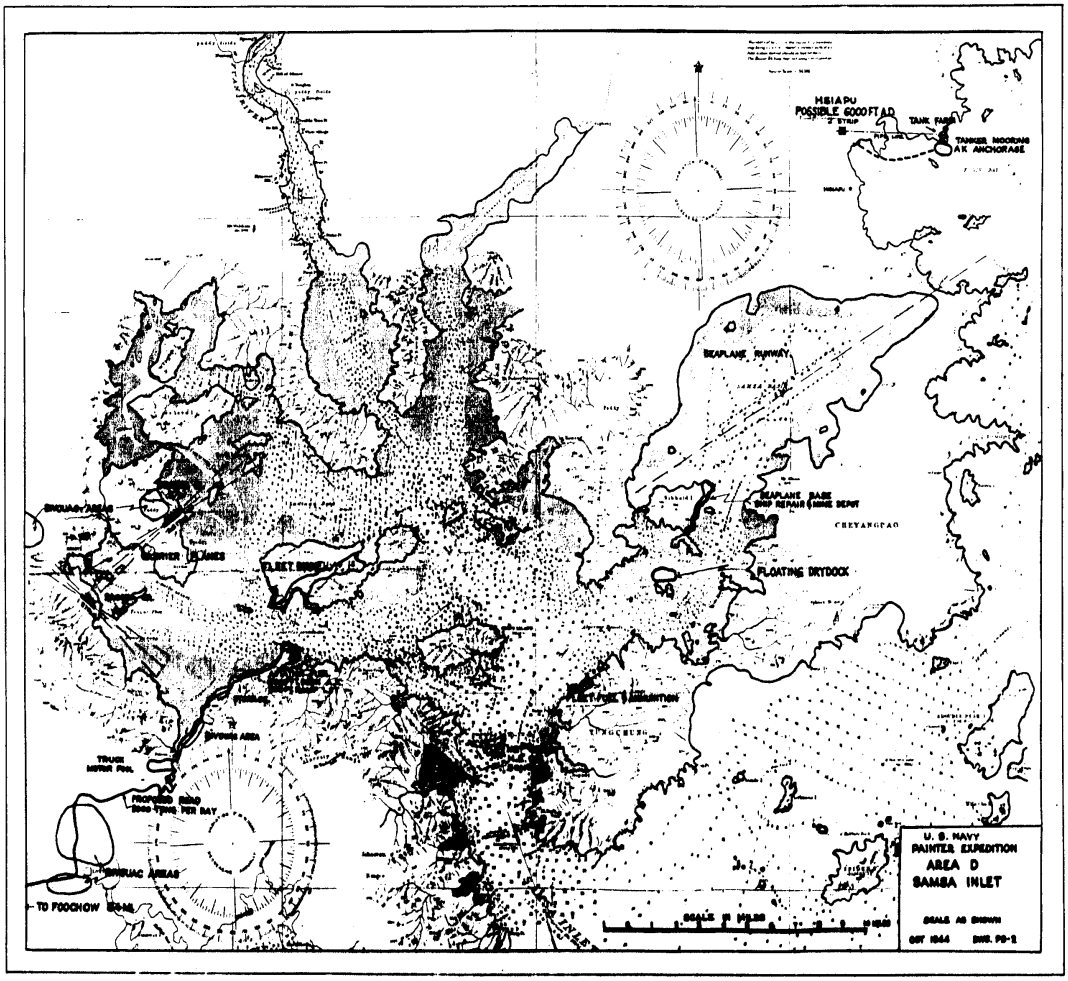
6. Ease of Military Occupation and Defense.

(a) Ease of Occupation



10. Peloom village Bivouac Area and mountain route to Layuan - looking E/N. 34.61-34.69

9. Summit road location - looking E/S to Samsa Inlet. 34.66-34.63


HSIAPU
POSSIBLE GOOFTAD
TANK FARM
TANKER MOORING
AK ANCHORAGE
SEAPLANE RUNWAY
SEAPLANE BASE
FLOATING DRYDOCK
U. S. NAVY
PAINTER EXPEDITION
AREA D
SAMBA INLET
SCALE AS SHOWN
OCT 1944 DWG. PD-2

SEC. II - SAMSA (CONTINUED)

(1) Samsa Inlet is for the greater part in friendly Chinese hands (as of 28 Oct.). Puppets, with headquarters at Ching Island (in the Sound) might be said to be in control of the navigable waters as they operate motor launches on indifferent patrols, extracting tributes from the traders and fishermen who proceed outside the Inlet. The puppet motor launches (reported up to 30 in number but believed to be only 5 to 10 maximum) are equipped with machine guns and have armed riflemen aboard. They deal with the Japanese for arms and ammunition and with the Chinese when the opportunity for gain is present. They should not be considered a potent force in the occupation of the area.

(2) Aside from Ching Island and puppet agents, there are no enemy forces on San-tu-ao Island or on the mainland (as of 28 Oct.).

(b) Base of Defense

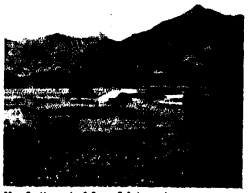
(1) The area is readily defendable from both sea, land and air; it may be rated as the most isolated port on the China Coast. The shore at the entrance is rugged and coastal guns could be placed at an advantage. AA guns could also be well-dispersed with a good field of fire. The two proposed CV airfields should offer fighter protection for units of the fleet at anchor.

(2) The nearest Japanese troops ashore are in the Lien-chiang - Foochow area (reported as 10,000 in strength on 28 Oct.). The road from Lo-yuan to Foochow was never completed for motor traffic, and since 1941 has been destroyed. From Lo-yuan to Falcon it was never constructed; the area is mountainous and readily defendable against infantry troops moved on foot from the Foochow Area. The Bay of Lo-yuan is a southern barrier; the shores on both the north and south are very hilly and no roads (only steep paths) exist in this area.

(3) The areas to the west and north are rugged and no transportation system exists. Traffic is maintained by coolie carrier and both trail and native junk is utilized. There are no enemy troops on the perimeter of any of this territory (as of 28 Oct.) and movements towards San-tu-ao from these directions would be very slow.

(4) If the Area is extended to include Hsia-pu (Funing), the same general conditions exist except that there is some native traffic down the river at Hsia-pu (very shallow water) and a single foot path from the north. Bridges and vulnerable positions on this foot path have been destroyed; it is used very little even by the native farmers. The country is sparsely populated, being of rugged terrain.

12. Looking east to Apex Point at low tide. 34.75



11. South coast of Samsa Inlet warehouse area 3 miles west of Apex Point looking E/E. 34.70.

(5) A road was started between Fu-an and Suyang but never completed. Puppets are reported to occupy the village of Sansha, northeast of Hsia-pu. They might be more correctly referred to as pirates who traffic with the enemy in order to operate.

7. Construction Effort and Time Element.

(a) The Samsa Area offers no unusual construction problems.

(b) With the exception of the stone jetty at San-tu-ao Island and a few of the existing buildings which could be converted, all facilities required by a fleet base will have to be constructed. The airfields and facilities required for their operation will have to be built and in order to supply the three airbases, sustain 2,000 tons daily to interior China, and supply the defense troops and operating personnel, it will be necessary to construct a road system, docks, dolphins, pipe lines, housing and operating facilities.

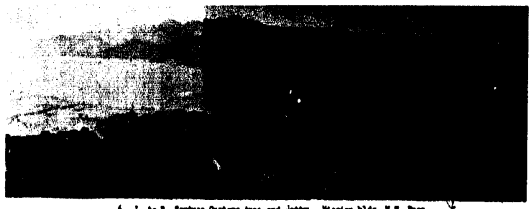
(c) It is estimated that 15 construction battalions (or equivalent) will be required to construct necessary facilities including fleet base, docks, airfields, roads, bivouac areas, and do the necessary dredging--in a period of 180 days. A subdivision of work is listed below:

	Battalions
(1) Three airbases(6 strips)	4
(2) Fleet base	6
(3) Supply and Roads (Within Samsa Inlet Area)	4
(4) Unloading supplies	1
Total	15

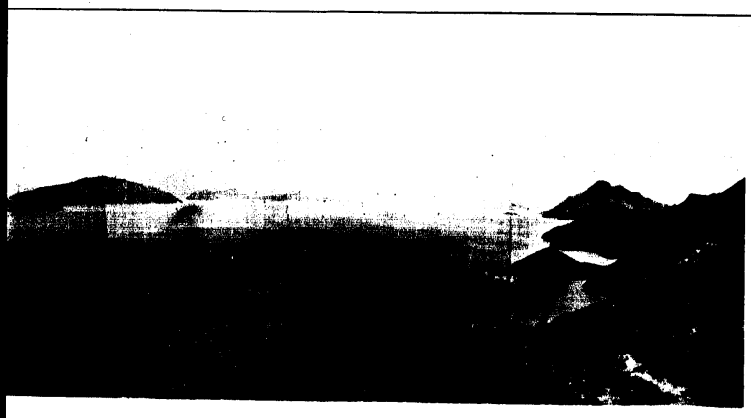
8. Resources, Facilities and Labor.

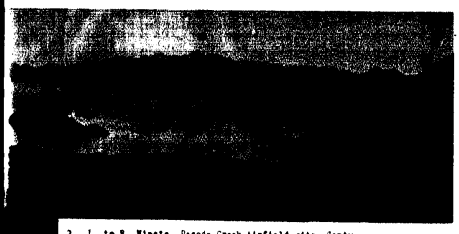
(a) Throughout the area, deposits of sand, stone and gravel are plentiful. Cement, lime, brick and timber are not available. All construction materials with the exception of aggregate and sand will have to be brought in from outside China. Agricultural resources above local requirements are poor, and little food for supplemental rations could be obtained. No usable roads exist in the area. Water supply can be obtained from wells and streams, but purification units are needed as no water is safe for drinking purposes. The telephone and telegraph lines are inadequate to meet military or construction requirements. No power plants or lines are in the area.

(b) An estimated number of 6,000 unskilled laborers are available. No skilled labor is available.



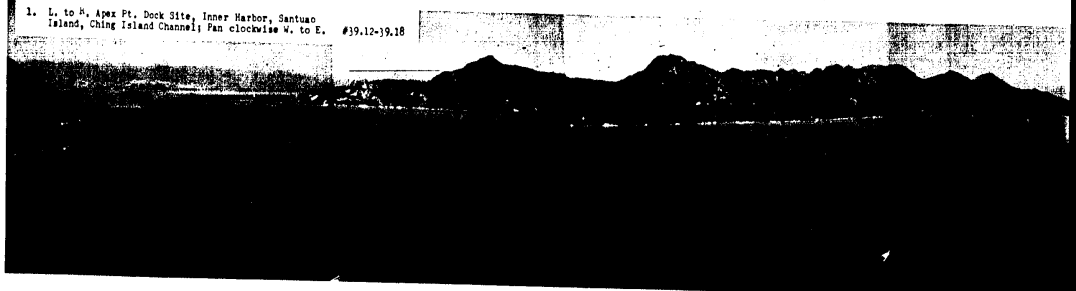
6. L. to R. Sentosa Chatema Area and Jetty. Mission bldg. H.T. Base Area - Inner Harbor with Apex Point in background - Fan elevation E/E to S/E. 34.93-34-97



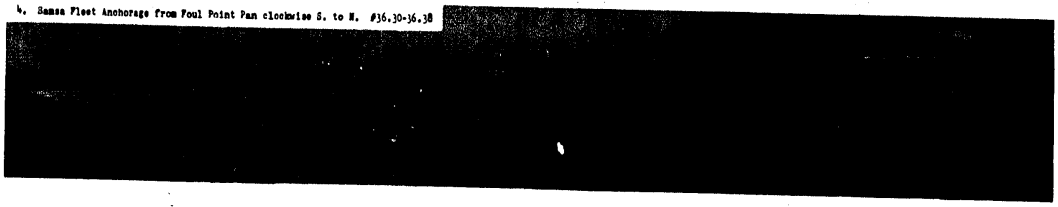


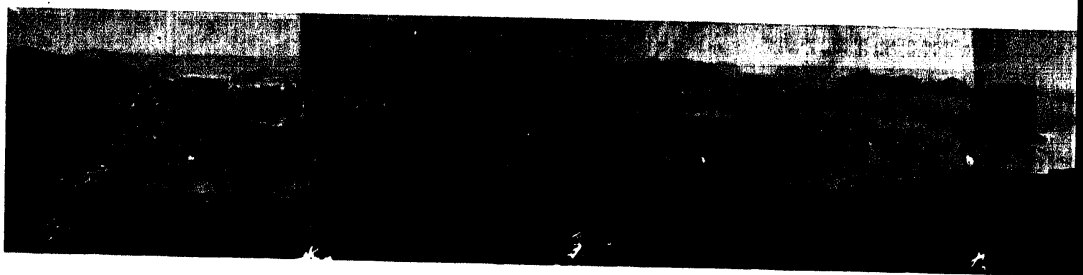
2. L. to R. Wingte, Pagoda Creek Airfield site, Santu Island in background, Pan clockwise N. to 3. #38.92-38.99

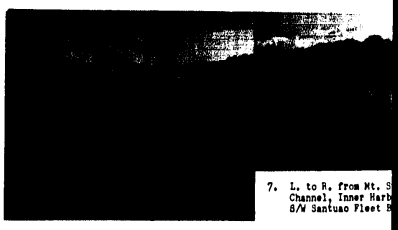
1. L. to H. Apex Pt. Dock Site, Inner Harbor, Santuao Island, Ching Island Channel; Pan clockwise W. to E. #39.12-39.18



4. Samsa Fleet Anchorage from Foul Point Pan clockwise S. to N. #36.30-36.38





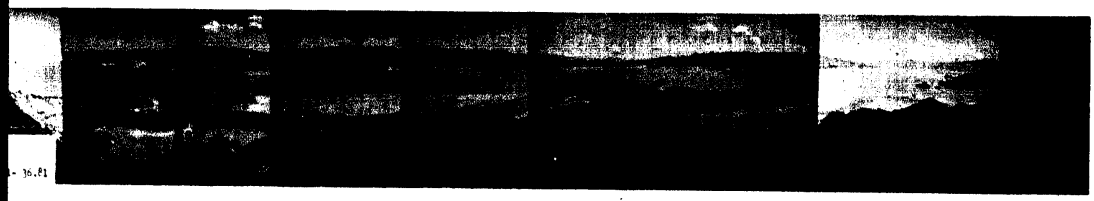


7. L. to R. from Mt. S
Channel, Inner Harb
S/W Santuao Fleet B

5. L. to R. Samsa Basin, Bowring Channel, Algerine Roads, Sibbald Island Seaplane Base, Ship Repair & Mine Depot sites in foreground. Pan clockwise N/W to S/W. #36.7

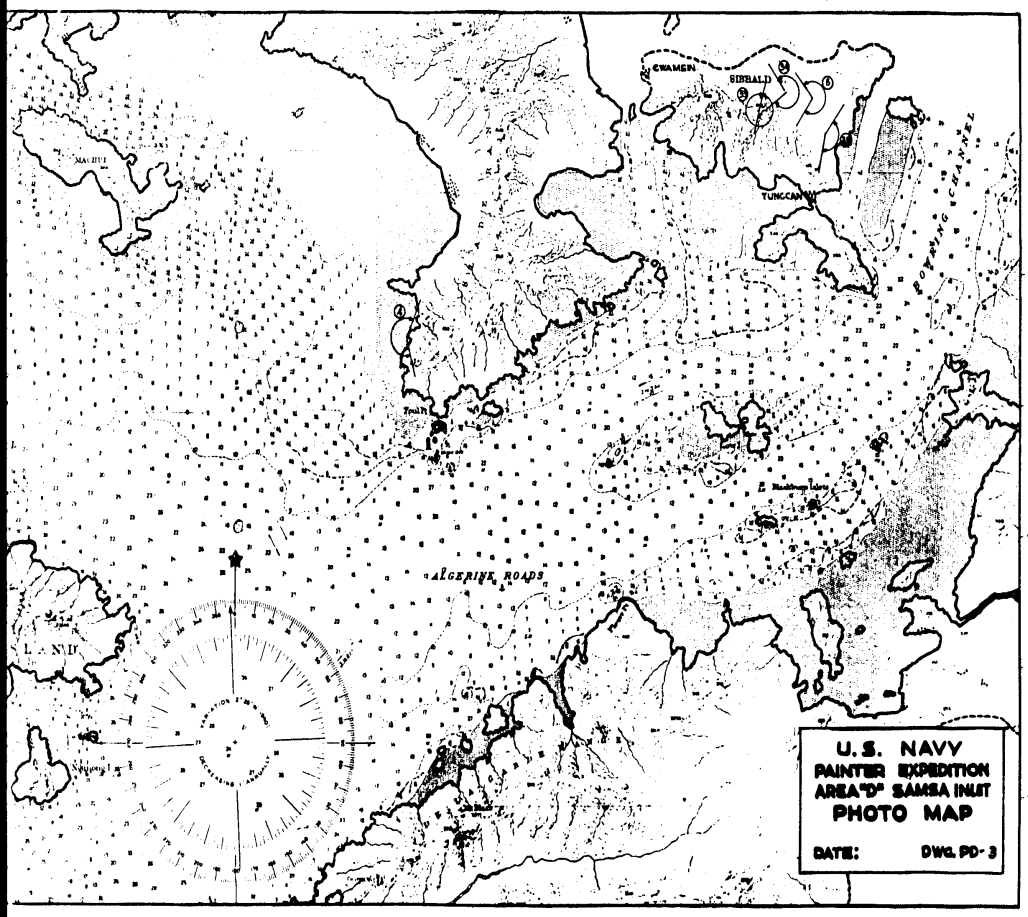
SEC. II - SAMSA (CONTINUED)

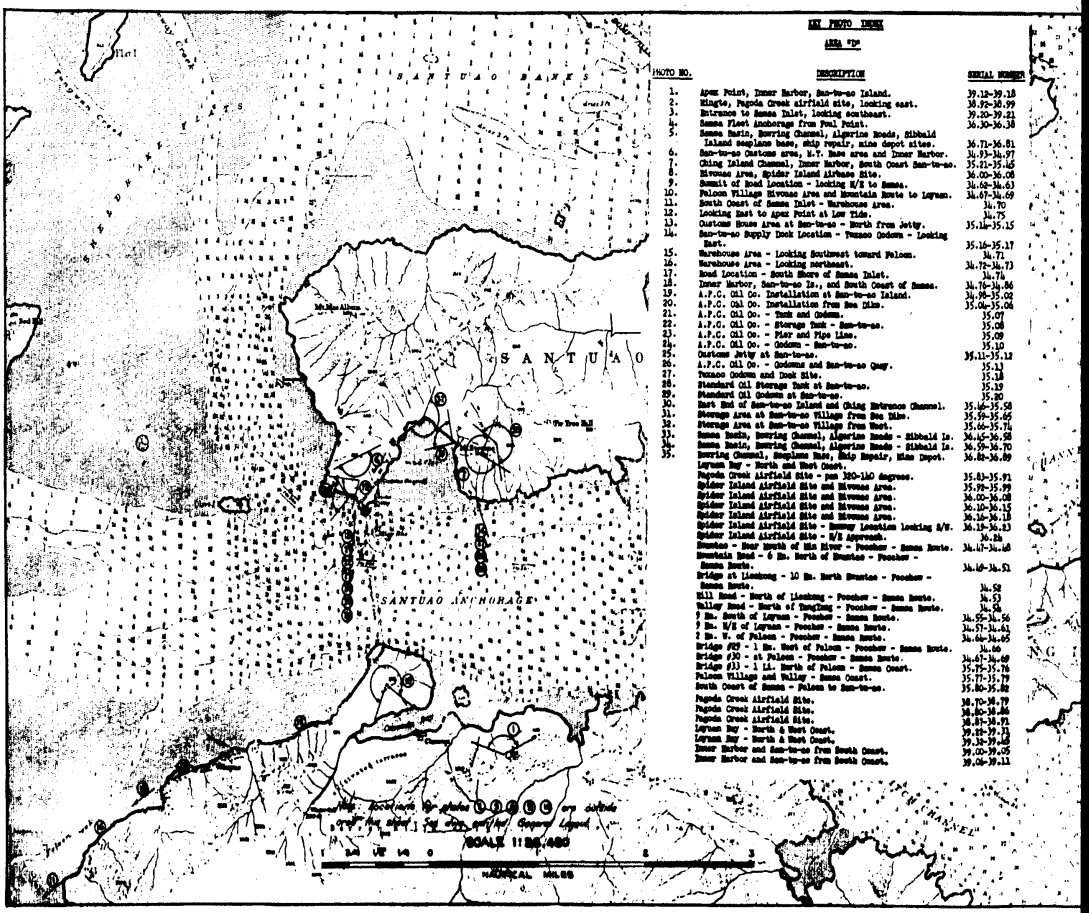
tevens, Santuao Island, Ching Island
or, Apex Point & Coast to Feloon.
se site, village & storage area. #35.21-35.45



- 36.81

8. L. to R. Tungvan village, Bivouac Area, Spider Island Airbase Site. Pan clockwise W. to S. #36.00-36.08


CWAMEN
SIBBALD
TUNGCANNA
ALGERINE ROADS
U.S. NAVY
PAINTER EXPEDITION
AREA "D" SAMSA INLET
PHOTO MAP
DATE:
DWG. PD-3



KEY PHOTO INDEX

AREA "D"

PHOTO NO.	DESCRIPTION	SERIAL NUMBER
1.	Apex Point, Inner Harbor, San-to-ao Island.	39.12-39.18
2.	Ringte, Pagoda Creek airfield site, looking east.	38.92-38.99
3.	Entrance to Samsa Inlet, looking southeast.	39.20-39.21
4.	Samsa Fleet Anchorage from Fwai Point.	36.20-36.38
5.	Samsa Basin, Entering Channel, Algerine Roads, Sibbald Island seaplane base, ship repair, mine depot sites.	36.71-36.81
6.	San-to-ao Customs area, N.T. Base area and Inner Harbor.	34.93-34.97
7.	Ching Island Channel, Inner Harbor, South Coast San-to-ao.	35.21-35.45
8.	Mivonae Area, Spider Island Airbase Site.	36.00-36.08
9.	Summit of Road Location - looking N/E to Samsa.	34.62-34.63
10.	Falcon Village Mivonae Area and Mountain Route to Lqruan.	34.67-34.69
11.	South Coast of Samsa Inlet - Warehouse Area.	34.70
12.	Looking East to apex Point at Low Tide.	34.75
13.	Customs House Area at San-to-ao - North from Jetty.	35.14-35.15
14.	San-to-ao Supply Dock Location - Tenaco Godown - Looking East.	35.16-35.17
15.	Warehouse Area - Looking Southwest toward Falcon.	34.71
16.	Warehouse Area - Looking northeast.	34.72-34.73
17.	Road Location - South Shore of Samsa Inlet.	34.74
18.	Inner Harbor, San-to-ao Is., and South Coast of Samsa.	34.76-34.86
19.	A.P.C. Oil Co. Installation at San-to-ao Island.	34.98-35.02
20.	A.P.C. Oil Co. Installation from Sea Line.	35.04-35.06
21.	A.P.C. Oil Co. - Tank and Godown.	35.07
22.	A.P.C. Oil Co. - Storage Tank - San-to-ao.	35.08
23.	A.P.C. Oil Co. - Pier and Pipe Line.	35.09
24.	A.P.C. Oil Co. - Godown - San-to-ao.	35.10
25.	Customs Jetty at San-to-ao.	35.11-35.12
26.	A.P.C. Oil Co. - Godowns and San-to-ao Quay.	35.13
27.	Tenaco Godown and Dock Site.	35.18
28.	Standard Oil Storage Tank at San-to-ao.	35.19
29.	Standard Oil Godown at San-to-ao.	35.20
30.	West End of San-to-ao Island and Ching Entrance Channel.	35.46-35.58
31.	Storage Area at San-to-ao Village from Sea Line.	35.59-35.65
32.	Storage Area at San-to-ao Village from West.	35.66-35.74
33.	Samsa Basin, Entering Channel, Algerine Roads - Sibbald Is.	36.46-36.58
34.	Samsa Basin, Entering Channel, Algerine Roads - Sibbald Is.	36.59-36.70
35.	Entering Channel, Seaplane Base, Ship Repair, Mine Depot.	36.82-36.89
	Lqruan Bay - North and West Coast.	
	Pagoda Creek Airfield Site - run 190-140 degrees.	35.83-35.91
	Spider Island Airfield Site and Mivonae Area.	35.99-35.99
	Spider Island Airfield Site and Mivonae Area.	36.00-36.08
	Spider Island Airfield Site and Mivonae Area.	36.10-36.15
	Spider Island Airfield Site and Mivonae Area.	36.16-36.18
	Spider Island Airfield Site - Runway Location looking S/W.	36.19-36.23
	Spider Island Airfield Site - W/E Approach.	36.24
	Samsa - Near mouth of Min River - Foochow - Samsa Route.	34.47-34.48
	Mountain Road - 6 Mi. North of Foochow - Foochow - Samsa Route.	34.49-34.51
	Bridge at Liusheng - 10 Mi. North Station - Foochow - Samsa Route.	34.52
	Hill Road - North of Liusheng - Foochow - Samsa Route.	34.53
	Valley Road - North of Yangtang - Foochow - Samsa Route.	34.54
	9 Mi. South of Lqruan - Foochow - Samsa Route.	34.55-34.56
	8 Mi. W/S of Lqruan - Foochow - Samsa Route.	34.57-34.61
	7 Mi. W. of Falcon - Foochow - Samsa Route.	34.64-34.65
	Bridge #37 - 1 Mi. West of Falcon - Foochow - Samsa Route.	34.66
	Bridge #36 - at Falcon - Foochow - Samsa Route.	34.67-34.68
	Bridge #33 - 1 Lt. North of Falcon - Samsa Coast.	35.75-35.76
	Falcon Village and Valley - Samsa Coast.	35.77-35.79
	South Coast of Samsa - Falcon to San-to-ao.	35.80-35.82
	Pagoda Creek Airfield Site.	38.70-38.79
	Pagoda Creek Airfield Site.	38.80-38.86
	Pagoda Creek Airfield Site.	38.87-38.91
	Lqruan Bay - South & West Coast.	39.12-39.13
	Lqruan Bay - North & West Coast.	39.14-39.16
	Inner Harbor and San-to-ao from South Coast.	39.00-39.05
	Inner Harbor and San-to-ao from South Coast.	39.06-39.11

SEC. II - E. AREA "E" LUNGTIEN PENINSULA

E. AREA "E" - LUNGTIEN PENINSULA

General.

The T-shaped area, comprising Lungtien Peninsula and the narrow coastal strip bounded by mountains to the north and west, is generally hilly with some low coastal flats. In particular, certain parts of the terrain on the Peninsula offer excellent sites for constructing and supplying two VLR airfields and a large storage and bivouac area. Deep water and terrain across Hai-t'an Strait at Sung-hsia (25°-45'N, 119°-33'E) are favorable for anchorage of several cargo ships, a landing beach, and a storage area. Other portions of the area along the west boundary are suitable for constructing and supplying two VHR airfields and for bivouacking troops.

1. Ship Anchorage.

Deep water, immediately offshore south of Sung-hsia and adjacent to Chihhou Island, affords anchorage and protection from moderate typhoons for several ships of 5,000 ton class. Ships entering this area must have pilots, since reefs are known to exist near the channel entrance. Supplies for all activities and personnel in the area could be imported to and distributed from Sung-hsia, where there is adequate storage area. The mean tidal range at Sung-hsia is 15 feet.

2. Fleet Base.

This area is not suitable for a fleet base.

3. Air Bases.

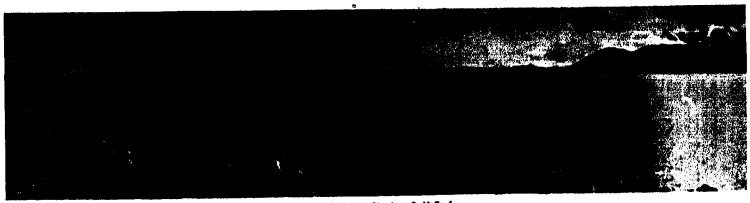
(a) The narrow neck of land on Lungtien Peninsula is well suited for the construction and operation of two VLR airfields, each with two runways. Runway glide angles and approach zones meet standard requirements, and construction would be comparatively easy to accomplish. The terrain at the lower site is flat and has loamy soil; the terrain at the other site is relatively flat and has soil of sandy clay. Both sites have easy access to such construction materials as granite rock, decomposed granite, and sand in the adjacent hilly ground and along the coast. There is a large well-drained area nearby of approximately 80 square miles for bivouacking troops, storage of fuel, and dispersal of ammunition and bombs.

(b) The terrain near Fu-ch'ing (25 -47'N, 119 -22'E) and Kiangkow is suited for construction of two VHR dual-runway airfields. The sites are fairly level and have sandy soil with good drainage qualities. There is an unlimited supply of hard granite rock, river gravel and sand for use in surfacing the runways and taxiways.

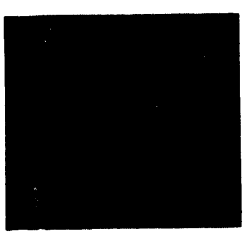
(c) During early stages of occupation, all supplies, materials and equipment could be transported by water in light craft to each of the sites from a possible supply depot at Sung-hsia. The perimeter road has been destroyed since 1937, and the restoration of this road would require approximately 45 days.

4. Supply and Base for Interior China Operations.

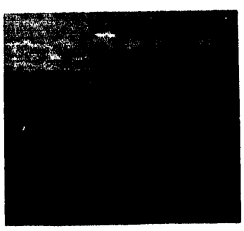
A base for supply to interior China would not be feasible in this area, since the area has no port.

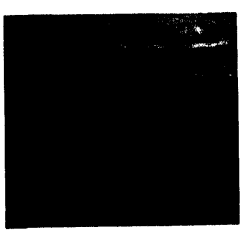


4. L. to R. Haitan Island, Haitan Strait, Road Road (Sungsia Point) from Island off Sungsia looking S/W. 32.12-32.15

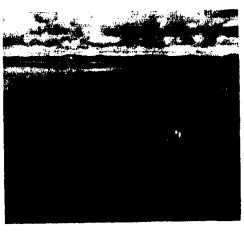


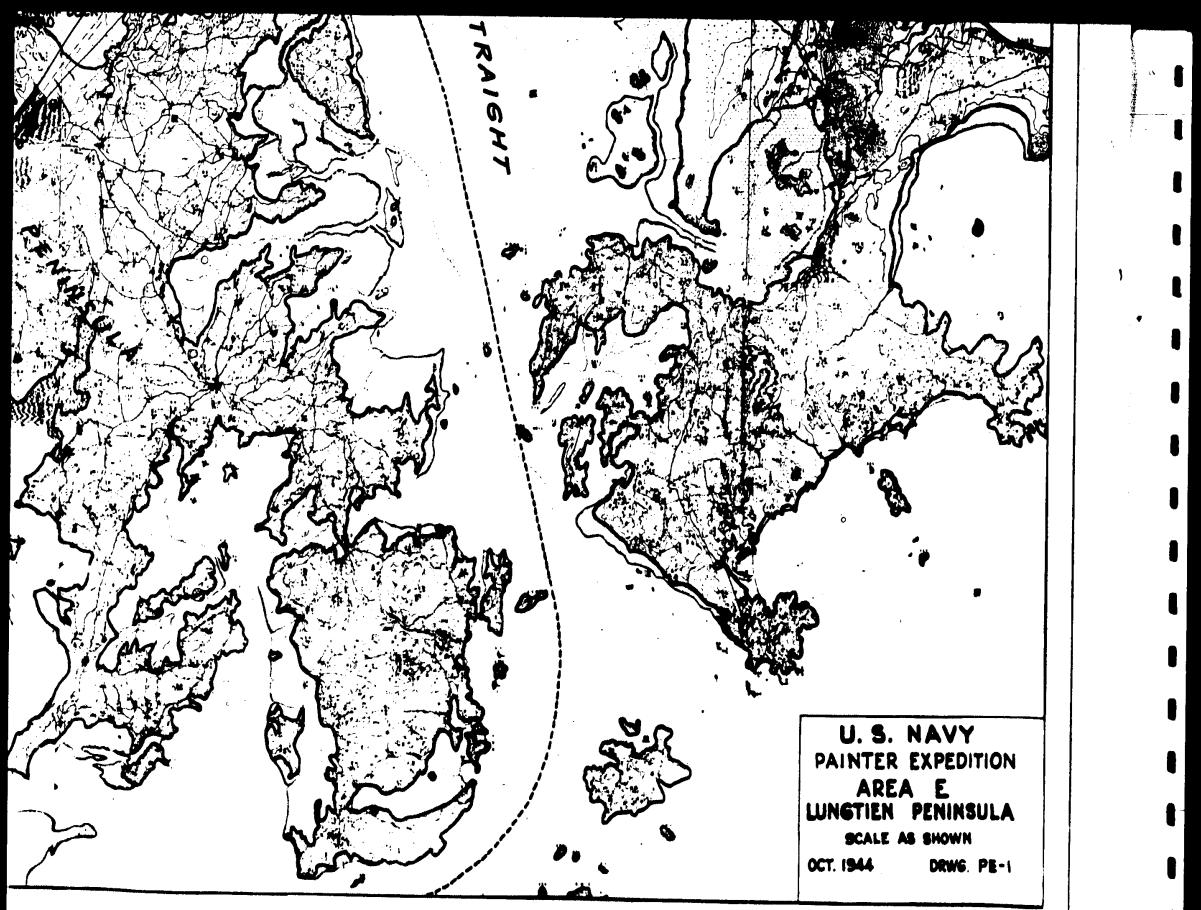
9. Airfield site 2 miles west of Kiangkow - looking west. 33.49



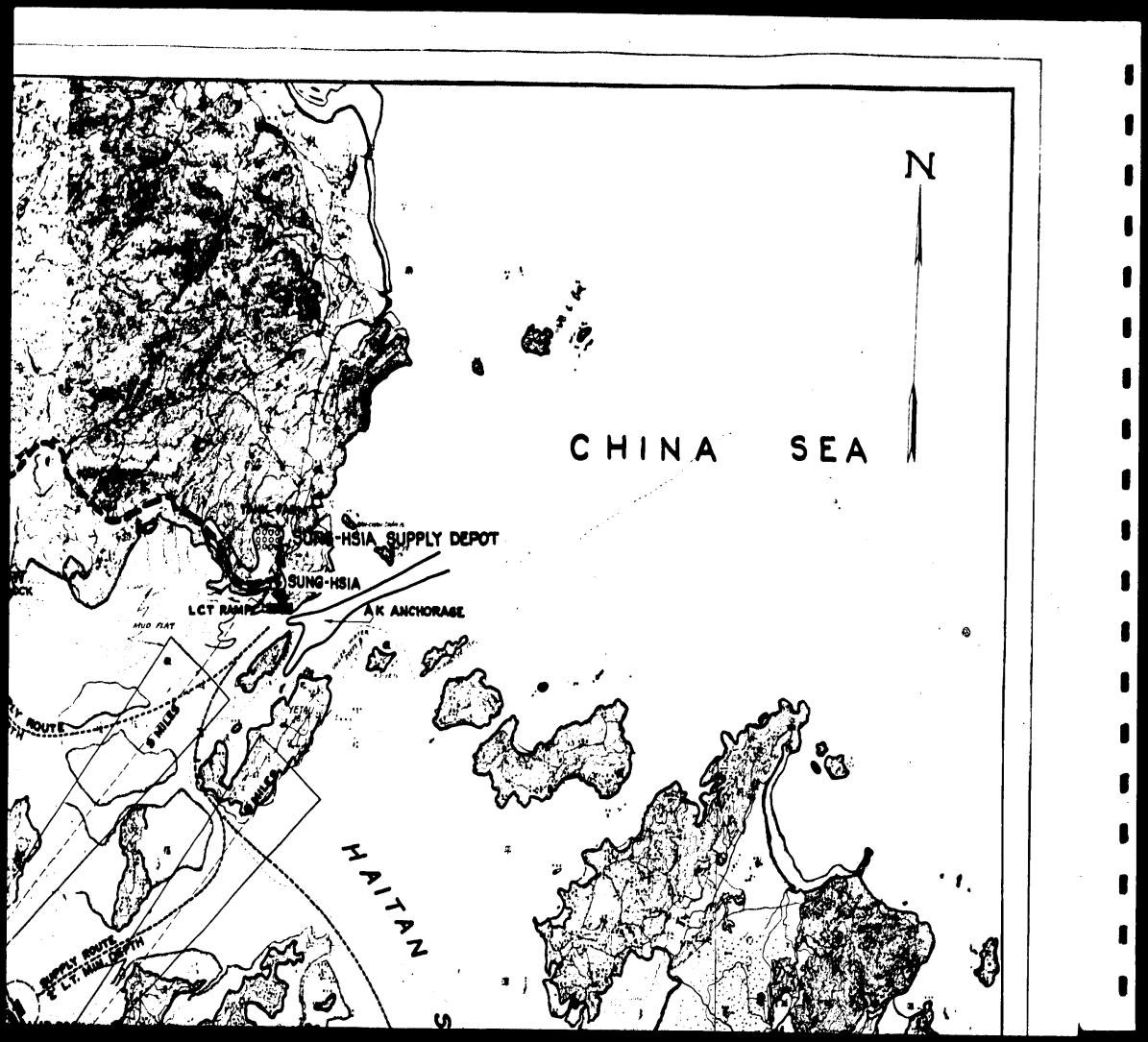


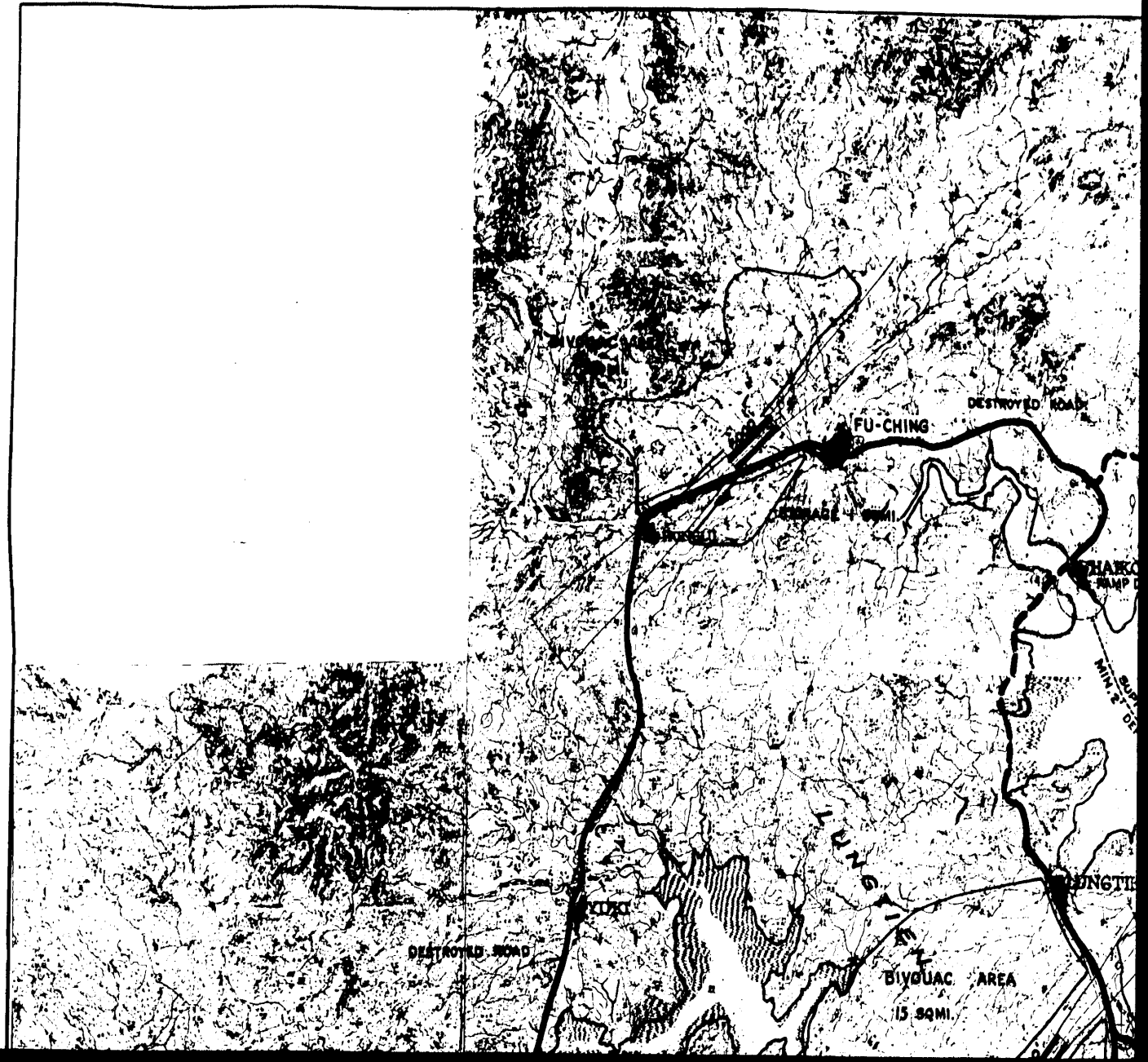
8. Beach Airfield site at Kantow. Pan. clockwise S/W to S/E. 32.40-32.42




TRAIGHT
PENINSULA
U. S. NAVY
PAINTER EXPEDITION
AREA E
LUNGTIEN PENINSULA
SCALE AS SHOWN
OCT. 1944
DRWG. PE-1

CONFIDENTIAL


N
CHINA SEA
SUNG-HSIA SUPPLY DEPOT
SUNG-HSIA
LCT RAMP
AK ANCHORAGE
MUD FLAT
ROUTE
MILES
HAITAN
SUPPLY ROUTE
LT. MIN. DEPTH


FU-CHING
DESTROYED ROAD
DESTROYED ROAD
BIVOUAC AREA
15 SQ MI.

SEC. II - LUNGTIEN (CONTINUED)

5. <u>Beaches and Landing Areas.</u>

Sung-hsia beach, of well-compacted sand, is approximately 4,000 feet in length and averages 400 feet in width at low tide. It is suitable for landing operations and for the construction of docks and ramps for light craft drawing up to 4 feet of water. The terrain immediately behind the beach is mountainous, which could be utilized for the installation and quick operation of anti-aircraft and heavy guns. The rolling terrain to the west of the beach is adaptable for the construction of a supply depot from which materials and equipment could be transported in light craft to other possible installations, near Haikow, Kantao or Kiangkow.

6. <u>Ease of Military Occupation and Defense.</u>

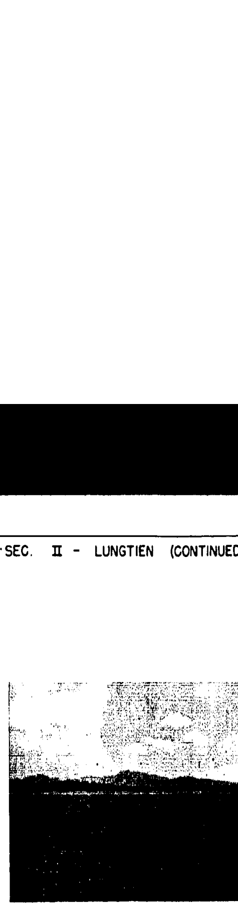
(a) Ease of Occupation

(1) Lungtien Peninsula is readily accessible to assault from the sea using Sung-hsia beach as outlined above. The area was not occupied by the enemy as of 24 Sept. 1944 and, in common with some other sections of eastern China, is loosely governed by the Central Government. Troops holding the area are for the most part police and provincial units. These forces are sufficient to maintain peace and order in the area.

(2) Intelligence reports indicate enemy activity in this area on Sept. 27th, and 500 puppets are reported at P'u-tien. The areas under the control of the enemy are usually limited to one or two towns where he can garrison his troops and control the police. These small forces would present no problem in taking this Area.

(b) Ease of Defense

(1) AREA "E" is shown to include a perimeter road (now destroyed) which should be repaired as rapidly as possible for defense purposes. Excluding the possibility of the enemy reinforcing from the sea, the nearest concentration of Japanese troops is in the Foochow area (reported as 10,000 on 28 October 1944). This force is too small to hold Foochow and send a sizeable force south. There are approximately 60 miles of destroyed road from Foochow to Fu-ch'ing, and although motorized equipment cannot be used on these roads, infantry could move on foot against Fu-ch'ing.



10. Airfield site 2 miles west of Kiangkow - looking east. 33,50.

(2) If the Japanese lighten their Foochow defenses to any great extent the 80th Chinese Division, which has retired from the city, would probably retake it. The Chinese troops in eastern China have no method of replenishing military supplies (including ammunition), and usually engage the enemy only when conditions are favorable.

(3) The terrain around Lungtien Peninsula is suitable for defense, and light motorized equipment and artillery could be used defensively.

7. <u>Construction Effort and Time Element.</u>

(a) Construction involves the following facilities, none of which present any unusual problems:

(1) Restoration of approximately 50 miles of destroyed perimeter roadway and construction of 20 miles of new roads.

(2) Construction of two VLR and two VBH airfields together with all necessary facilities, each site providing two parallel runways.

(3) All required facilities for two storage and two bivouac areas.

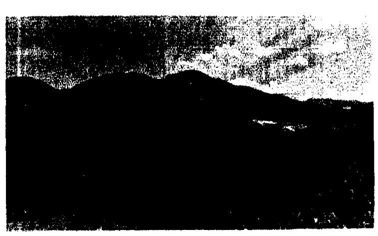
(4) Construction of 1800 feet of docks and ramps for light craft.

(b) It is estimated that 15 construction battalions will require 45 days to place in operation all facilities listed above.

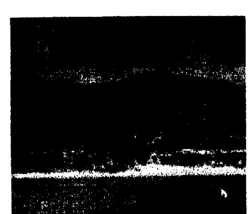
8. <u>Resources, Facilities and Labor.</u>

(a) There is an unlimited supply of hard granite rock, decomposed granite, river gravel and sand. Brick and lime in limited quantities can be produced in the several villages. Cement, timber and electric power are not available. All skilled labor, equipment, supplies, accessories and materials (except rock, gravel and sand) must be imported. There being no large cities in this area, it would also be necessary to import unskilled labor. A minimum of 10,000, however, would be available locally for unloading, etc.

[illegible]

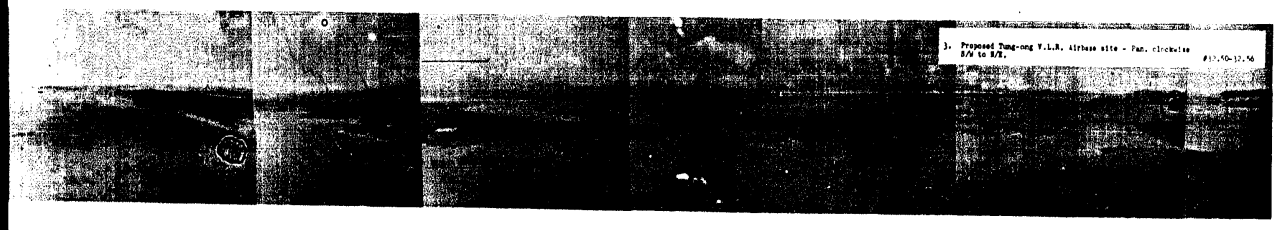


7. Bivouac Area and road location 1 mile west of Sungsia - looking East. [illegible]



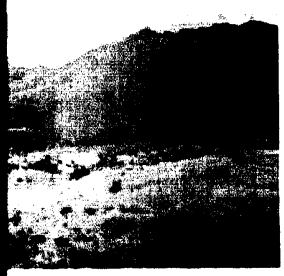
[illegible] N/E. [illegible]

SEC. II - LUNGTIEN (CONTINUED)

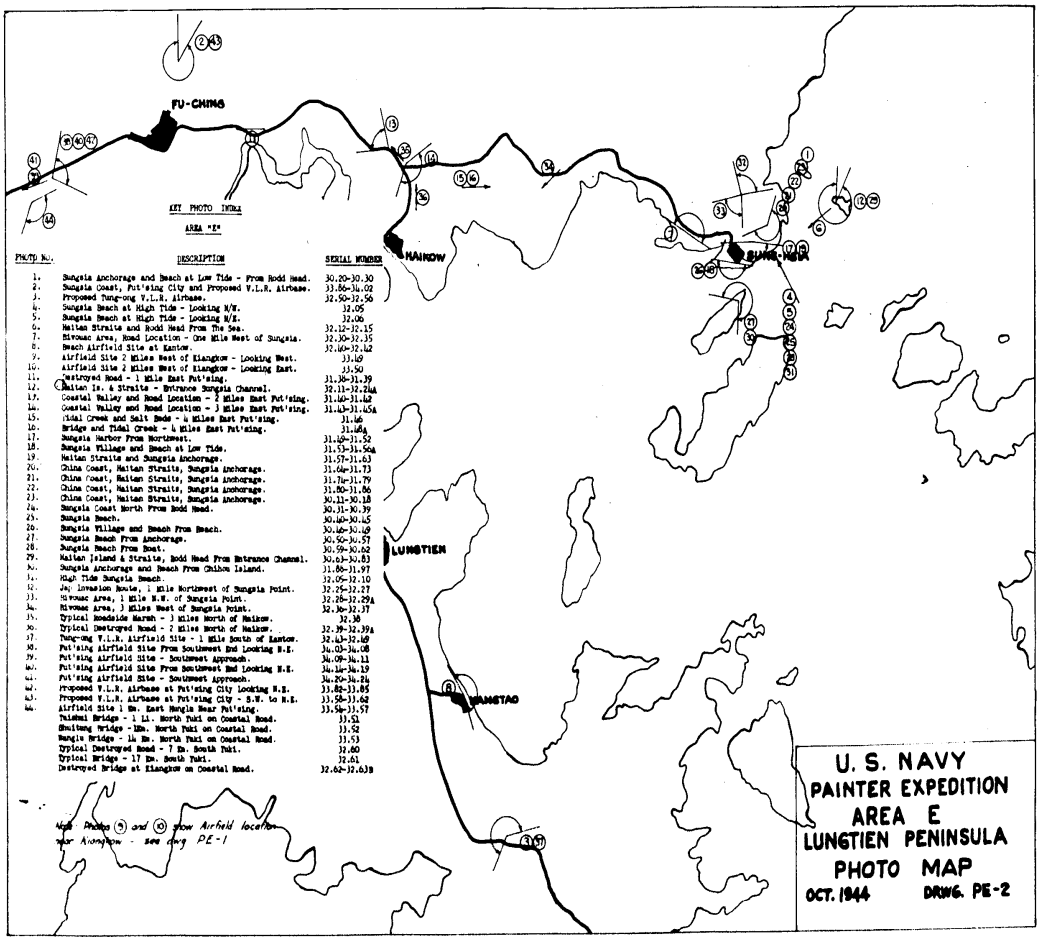


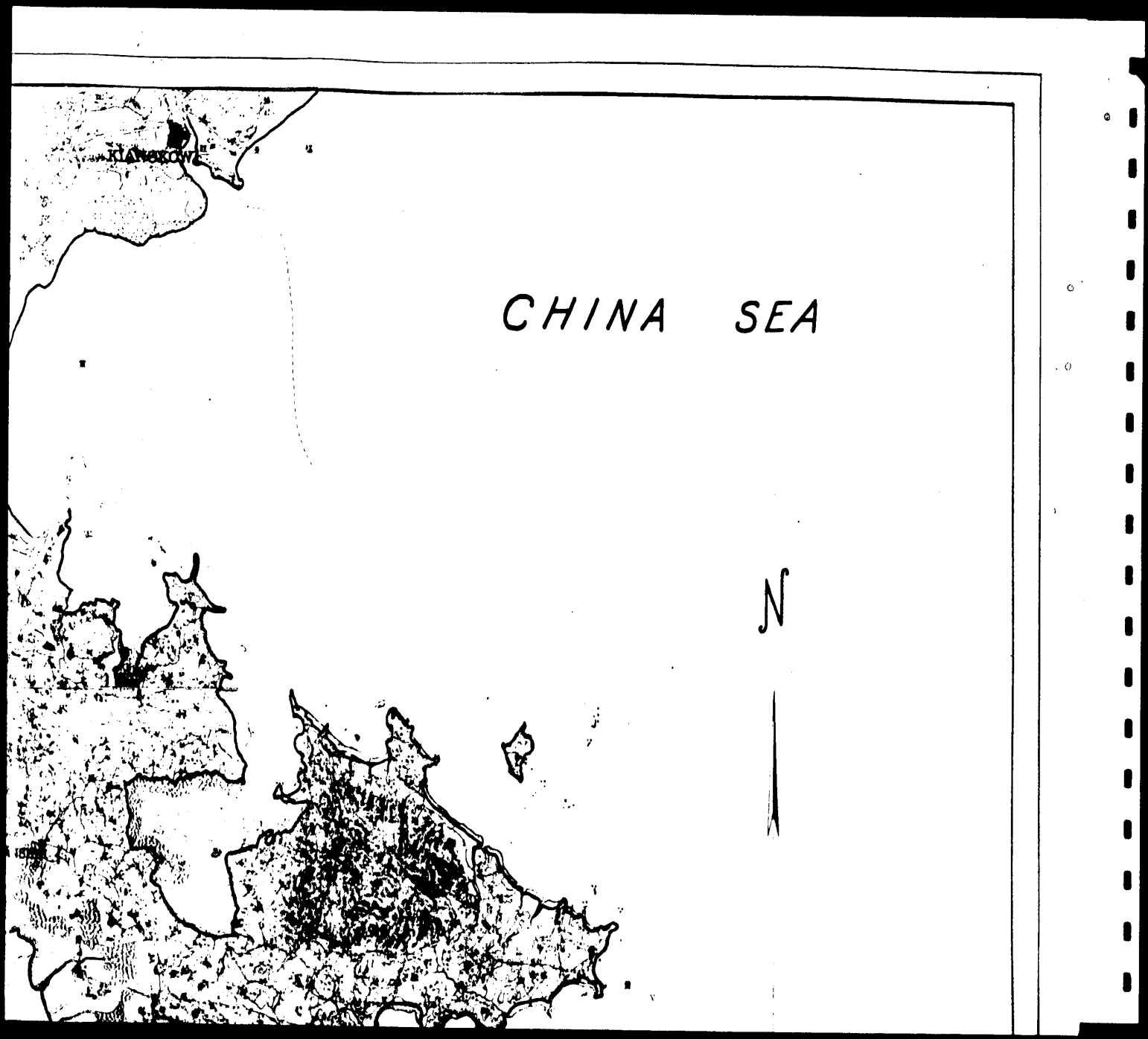
3. Proposed Tung-ong V.L.R. Airbase site - Pan. circle/as R/W to R/R. #13,40-12.46

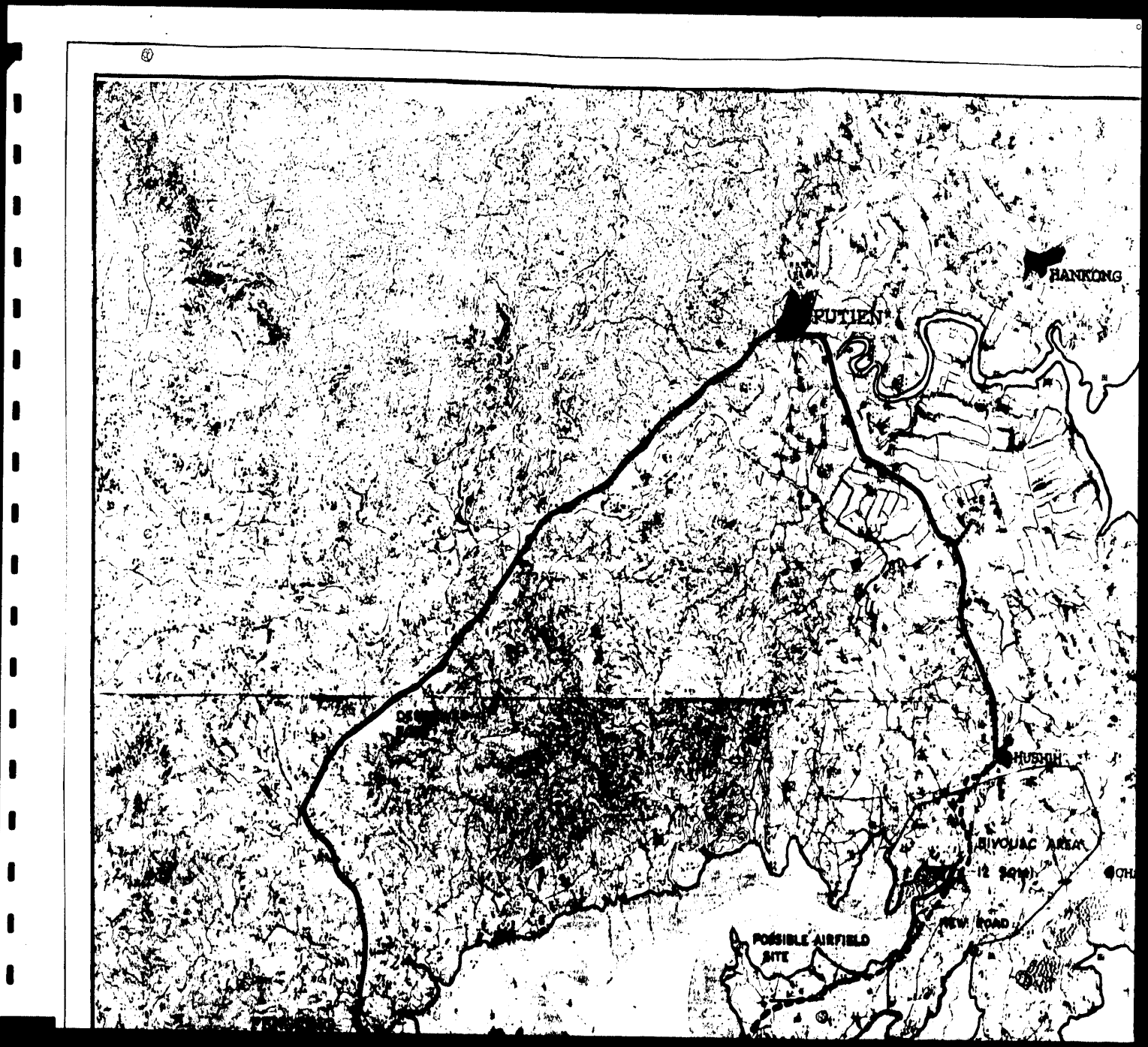
2. L. to R. from Hilltop north of Puteing - Jungsia Coast and Haitan Bay - Puteing City, valley site of proposed T.L.R. Airbase. Pan clockwise S/E to S/E (360 degrees) #11.86-34.02

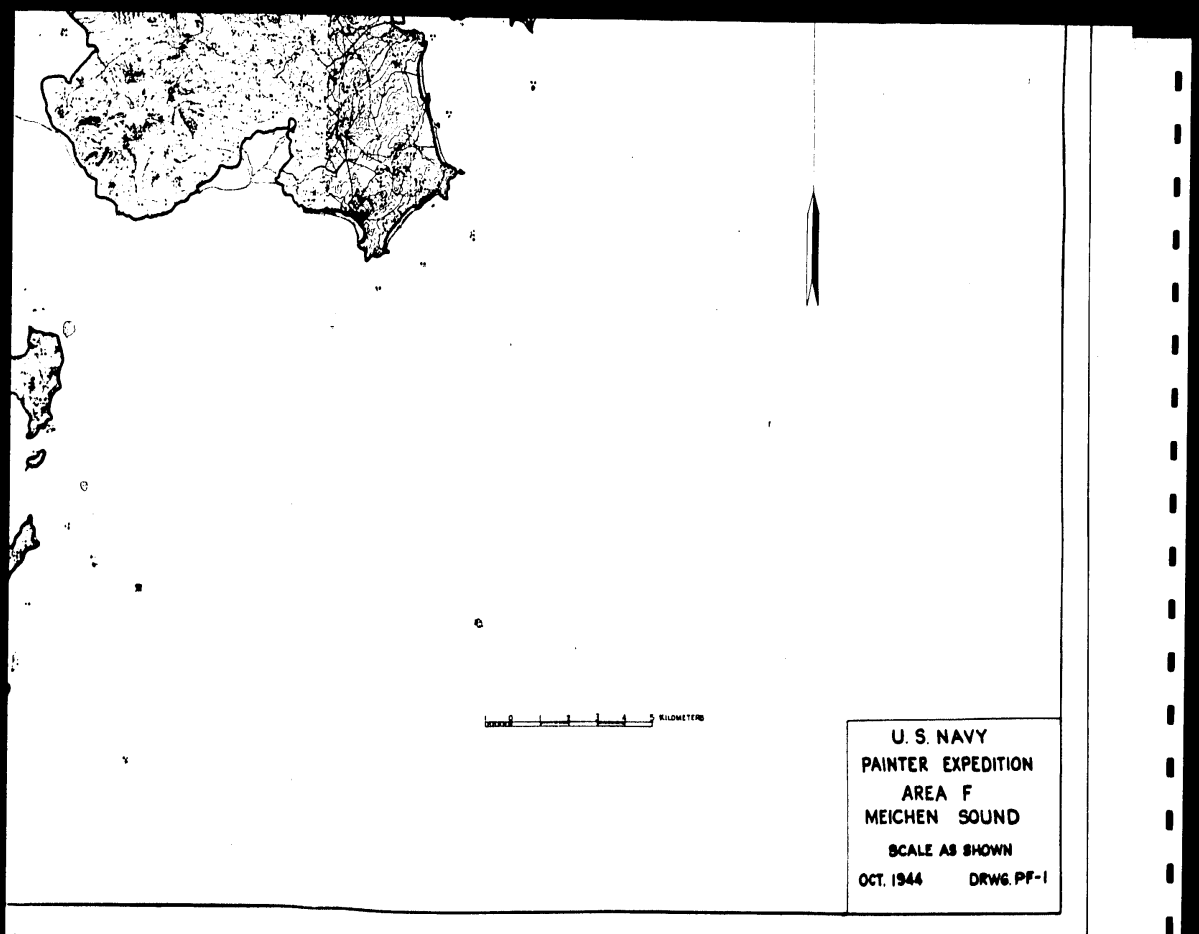


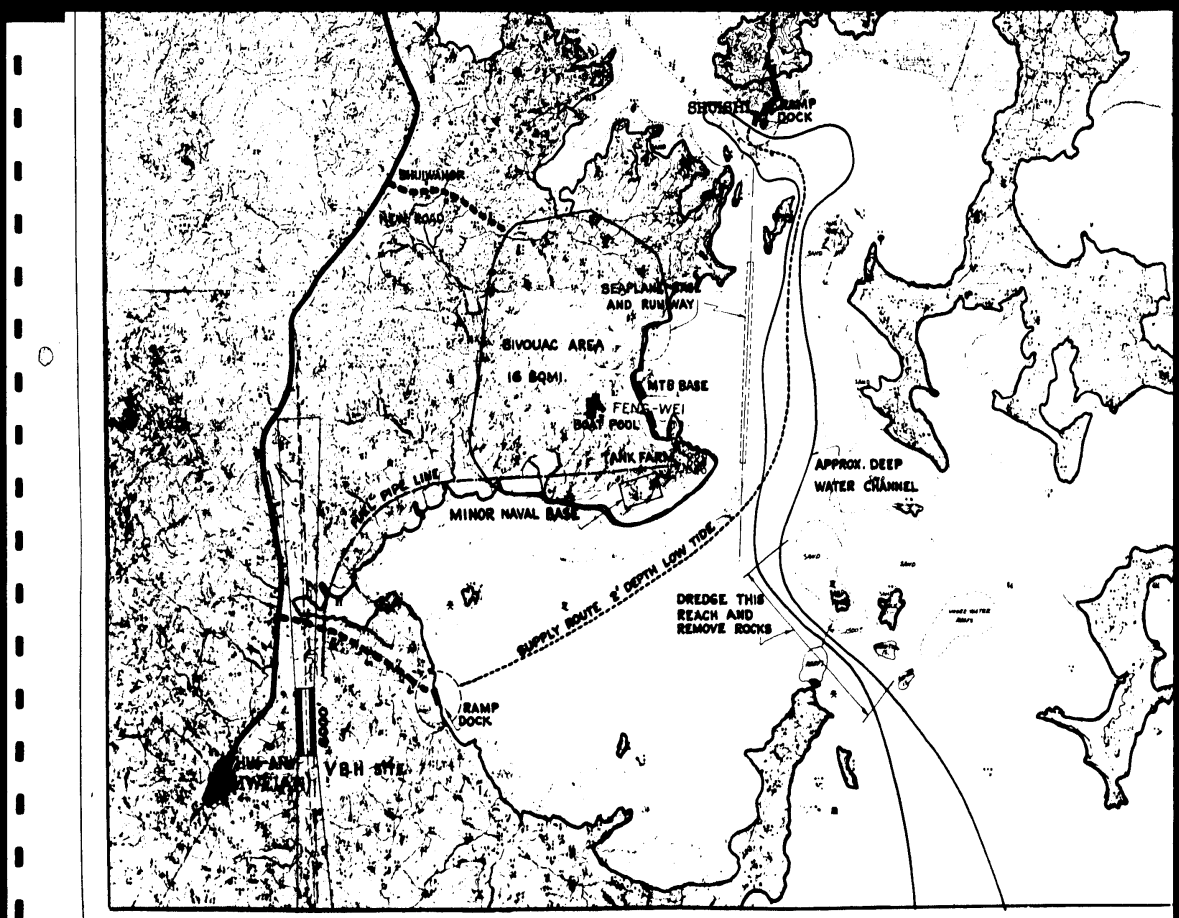
To R. ...ow N-rn ani China Coast, Haitan Island, Jungsia ...rvage ani beach at low tide - from Reid Head (Jungsia Point) ...clockwise E. to W. #10.90-30.90




CHINA SEA
N


HANKONG
PUTIEN
HUSUIH
BIVOUAC AREA
12 SQ MI
POSSIBLE AIRFIELD SITE
NEW ROAD


0 1 2 3 4 5 KILOMETERS
U. S. NAVY
PAINTER EXPEDITION
AREA F
MEICHEN SOUND
SCALE AS SHOWN
OCT. 1944 DRWG. PF-1


RAMP DOCK
BRIDGE
ROAD
SEAPLANE RAMP AND RUNWAY
BIVOUAC AREA
16 SQMI.
MTB BASE
FENG-WEI
BOAT POOL
TANK FARM
OIL PIPE LINE
MINOR NAVAL BASE
APPROX. DEEP WATER CHANNEL
DREDGE THIS REACH AND REMOVE ROCKS
SUPPLY ROUTE 6' DEPTH LOW TIDE
RAMP DOCK
VB-H SITE

SEC. II - F AREA "F" MEICHEN SOUND

F. AREA "F" - MEICHEN SOUND

General.

The favorable geographic features include Meichen Sound, with its deep water, from the China Sea to Shuishi Point; and the adjacent terrain of gentle rolling hills with some low coastal flats. This area could be adapted for use as a minor fleet anchorage and naval base involving destroyers, submarines, seaplanes, PT boats, cargo ships, air base and bivouacking of troops. The area also offers good possibilities for future expansion of these facilities.

1. Fleet Anchorage.

Deep water within an area of approximately 6 square miles ranging up to 10 fathoms at Shuishi Point provides good ship anchorage and protection from typhoons. It will be necessary to dredge the 3 fathom signal area at the entrance to provide access to the deep water inside. At the present time vessels entering and leaving Meichen Sound must have pilots due to rocks and constantly shifting sands within a short reach near the south of the channel. Relatively little dredging and removal of some reefs would be required to enlarge the channel and produce a more satisfactory and permanent approach. Supplies and equipment for the area activities could be imported to Shuishi and from this point transferred to light craft and distributed as required. The mean tidal range within Meichen Sound is 14 feet.

2. Fleet Base.

This area is not suitable for the operation of a major fleet base.

3. Air Bases.

(a) The flat coastal strip of land immediately north and east of Hui-an (25°-05'N, 118°-47'E) is suitable for construction and operation of a heavy bomber airfield with parallel dual runways. Approach zones and glide angle meet standard requirements and actual construction would be comparatively easy to accomplish. Although the site is in rice cultivation, it is of sandy-loamy material and there is an abundance of rock, river gravel and sand available in nearby hills and streams. Explosives, fuel and other supplies could be dispersed in the adjacent hilly ground. Adequate space is available for construction of administrative, operation and housing facilities.

(b) North of Shuishi (25°-07'N, 118°-57'E) there is another possible site for an airfield which can be constructed to meet standard requirements.

(c) During early stages of construction, and until such time as the destroyed perimeter roadway can be restored, all materials, supplies, and equipment could be furnished the airbase and other installations by shallow-draft vessels operating in Meichen Sound.

4. Supply and Base for Interior China Operations.

There is no feasible route from this Area.

5. Beaches and Landing Areas.

Several good beaches exist in this Area, one about two miles long just north of Feng-wei (on the west shore); and another just north of the temple at Shuishi. These beaches are of sand and are usable in all but the lowest tides. (See photos.)

6. Ease of Military Occupation and Defense.

(a) The Area is in Chinese hands (as of 28 Oct.) except for a few puppets in outlying areas. It presents no problem in occupation.

(b) The Japanese are reported in (see Intelligense Map P3-2) Fu-eh'ing and Foochow. In order to move against Meichen Sound in any strength from overland, they would of necessity have to repair the destroyed road shown on Drawing No. F-2. As of 28 October 1944, no Japanese troops appear available in the areas for such an attack.

7. Construction Effort and Time Element.

(a) Construction involves the following facilities, none of which present any unusual problems:

(1) Restoration of approximately 60 miles of destroyed perimeter roadway and constructing 20 miles of new roads.

(2) Construction of one VBH airfield with all necessary appurtenances.

(3) Dredging approximately 500,000 cubic yards of sand and silt, and removal of approximately 10,000 cubic yards of rock.

(4) Construction of a minor naval base including docks, tank farm, fuel pipe line, storage, etc.

(5) All facilities required for bivouac areas.

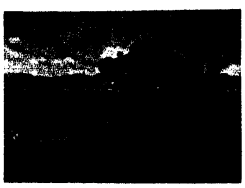
(b) It is estimated that fourteen (14) construction battalions will require 45 days to place in operation all of the above-listed facilities.

8. Resources, Facilities and Labor.

(a) There is an unlimited supply of hard granite rock, decomposed granite, river gravel and sand. Brick and lime in limited quantities can be produced in the several villages. Cement, timber and electric power are not available.

(b) All skilled labor, equipment, supplies, accessories and materials (except rock, gravel and sand) must be imported. There being no large cities in this area, it would be necessary to import unskilled labor. A minimum of 10,000 however, would be available locally for unloading, etc.

3. Looking west from Meichen Sound - beach and bivouac area. 36.93.



5. Looking north from Shuishi Anchorage, Shuishi Point. 33.01

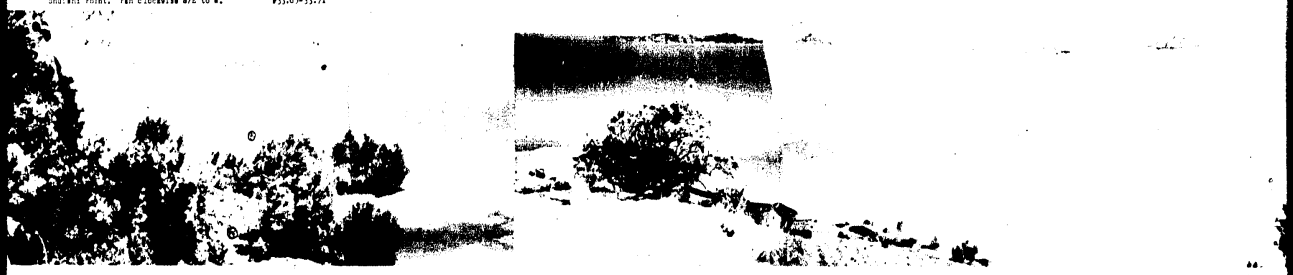
7. Looking west from Meichen Sound - Beach and Bivouac Area. 37.35

4. Looking S'E from Meichen Sound. Tatao Island and Entrance Channel. 37.94

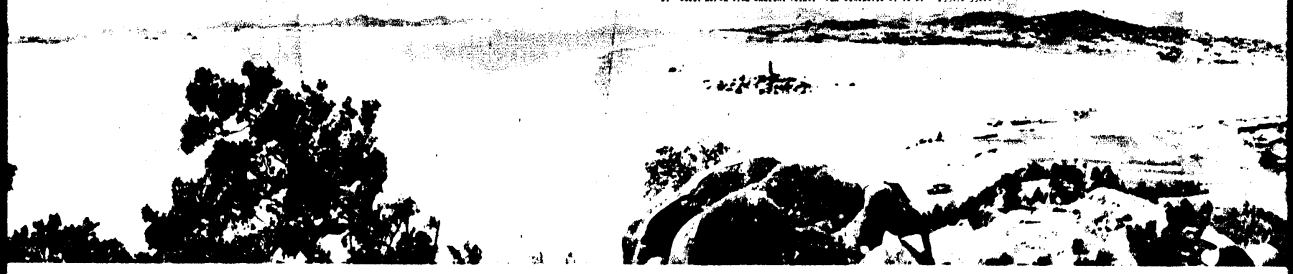
6. Destroyed Highway Bridge west of Futien at Fengsi looking west. 33.30

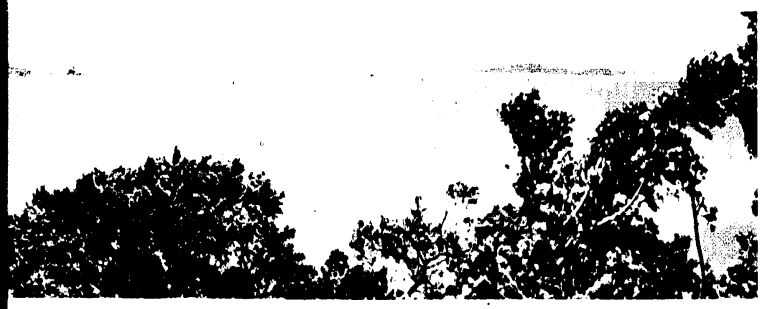
SEC. II - MEICHEN (CONTINUED)

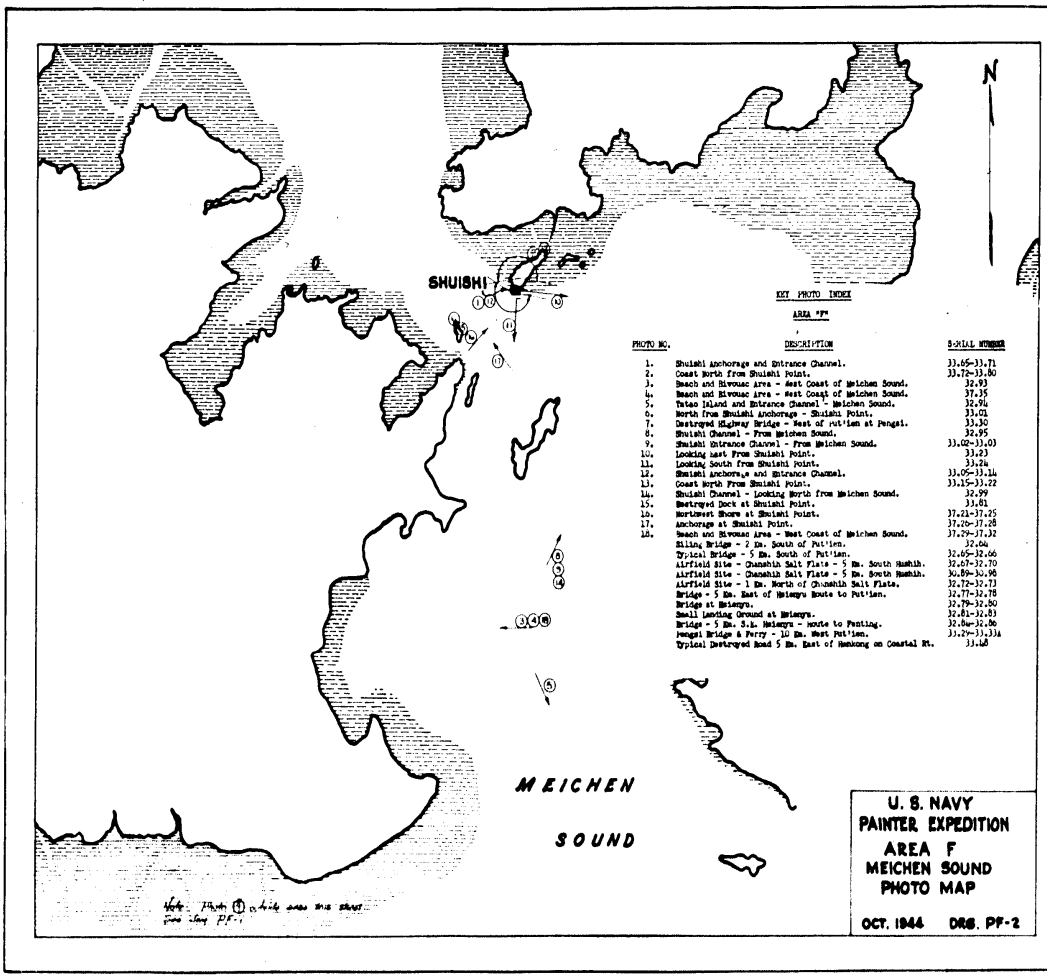
1. Shulshi Anchorage and Entrance Channel from Shulshi Point. Pan clockwise S/E to W. #33.65-33.71

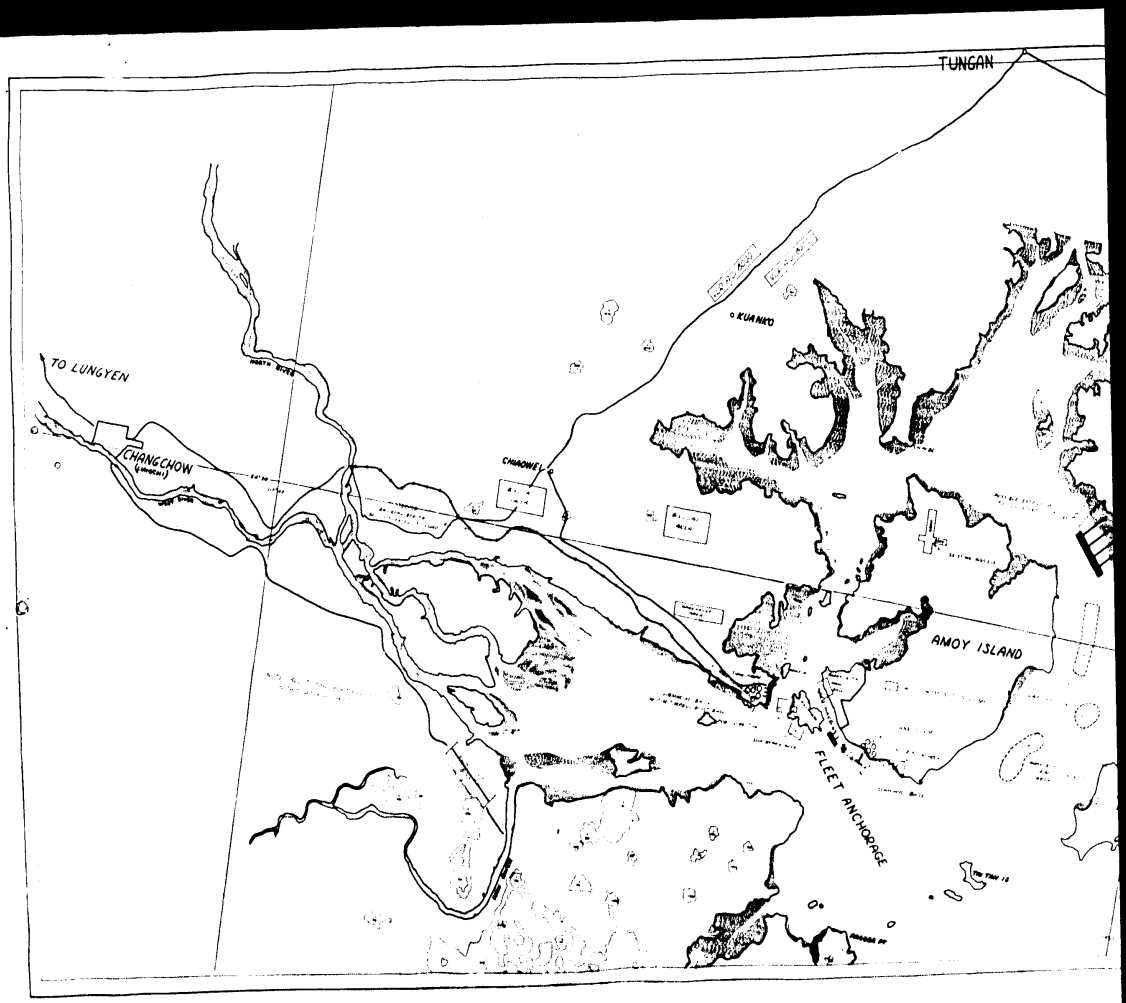


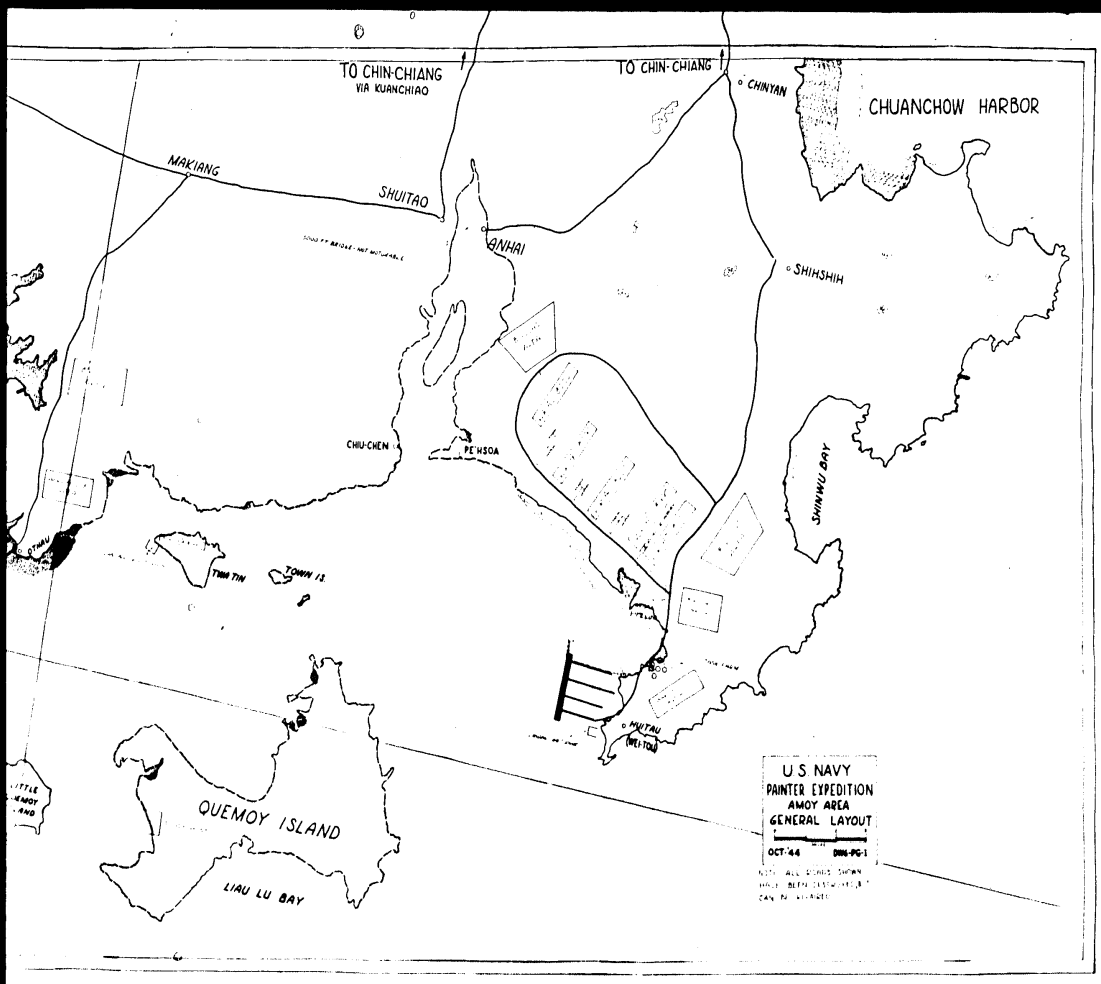
2. Coast north from Shulshi Point. Pan Clockwise W. to E. #33.72-33.80








TUNGAN
TO LUNGYEN
CHANGCHOW
KUANKO
AMOY ISLAND
FLEET ANCHORAGE



SEC. II - G. AREA "G" AMOY

G. AREA "G" - AMOY (ASU-MING)

General.

(a) The area surrounding Amoy Island with its deep water and natural line of breakwaters (that give it good protection from the open sea) makes it well suited for a major fleet base; and for supply operations for the Fleet. The harbor encompasses sites suitable for constructing installations to handle large quantities of supplies for China; access routes to the interior is the limiting factor. The harbor consists of an outer harbor lying off the southern end of Amoy; and the inner harbor, the principal portion of which lies between Amoy and the island of Kulangsu on the west. Deep water in the harbors, numerous high-tide sandy beaches on Amoy, Kulangsu, the Quemoys and in the immediate vicinity of the mainland afford good sites for landing operations, docks and amphibious bases.

(b) The low coastal plain paralleling the coast contributes good storage areas, airfield sites and ample room for bivouacking troops. The type of soil found in this area is favorable for construction. Terrain on portions of the islands and that adjacent to the coastal plain is hilly or mountainous, which provides protection from winds, aids in security in the defense of the area, and will furnish materials for construction purposes. There is, however, adequate space for dispersal, bivouac and staging areas for large numbers of troops.

1. Fleet Anchorage.

The outer harbor, about 5 miles long and 2 miles wide with a depth ranging from 6 to 14 fathoms, furnishes good anchorage and has excellent holding ground. Practically the entire area of the inner harbor surrounding Kulangsu Island affords good anchorage, although there are limitations in the section between Kulangsu and Amoy due to rocks. During high tide vessels drawing deep water can navigate around the north end of Kulangsu from the west side and return down the east side. Little dredging would be required to make this short section a permanent deep water channel. Harbor security can be obtained by laying anti-submarine nets from Pagoda Point on the mainland to Tai Tan Island and connecting with the small islands between these two points. Tides in the inner harbor have a mean range of 11.4' and a Spring range of 15.0'.

#2642 Airfield site along coastal highway near Sunkau.

2. Fleet Base.

(a) Kulangsu and the city of Amoy have areas that are suitable for administration, communications, hospitals, receiving ship and port director. Small bays along the coast line of these areas have sites available for construction of facilities for ship repair, floating dry docks, motor torpedo boat base, submarine base, bunker fuel storage, ammunition dumps, landing craft ramps and boat pool.

(b) Existing facilities on Amoy Island include numerous quays adjacent to large warehouse areas. However, depths of water alongside these quays is only sufficient for barge or landing craft operations. It is estimated there were formerly 700 ton-ton barges available for ship to shore unloading operations. However, the construction of a 1800' deep water dock near the inner harbor as shown on Drawing No. FO-2 appears feasible. This would permit direct handling of cargo to warehouses.

(c) There are flat sandy areas for dispersal or staging of troops, and the hilly regions could be utilized for ammunition and bomb storage. Amoy has a network of existing roads that connect to the present airfield and all parts of the island. It has dams and a water purification plant; it is assumed these may be utilized.

(d) The presence of numerous antennae towers on Amoy and Kulangsu indicate considerable radio communications. Prior to the Japanese invasion, Amoy had a local telephone system and an electric power plant with a capacity of 2,500 K.W. Kulangsu had a power plant with a capacity of 395 K.W. and two communications cables operated with connections to Hong Kong and Saigon. The power plants still appear to be in operation.

3. Air Bases.

(a) The existing 4,200' surfaced runway on the northwest corner of Amoy Island is suitable for carrier-based aircraft and appears capable of expansion. This airbase has never been extensively used by the enemy, but has been kept in operative condition.

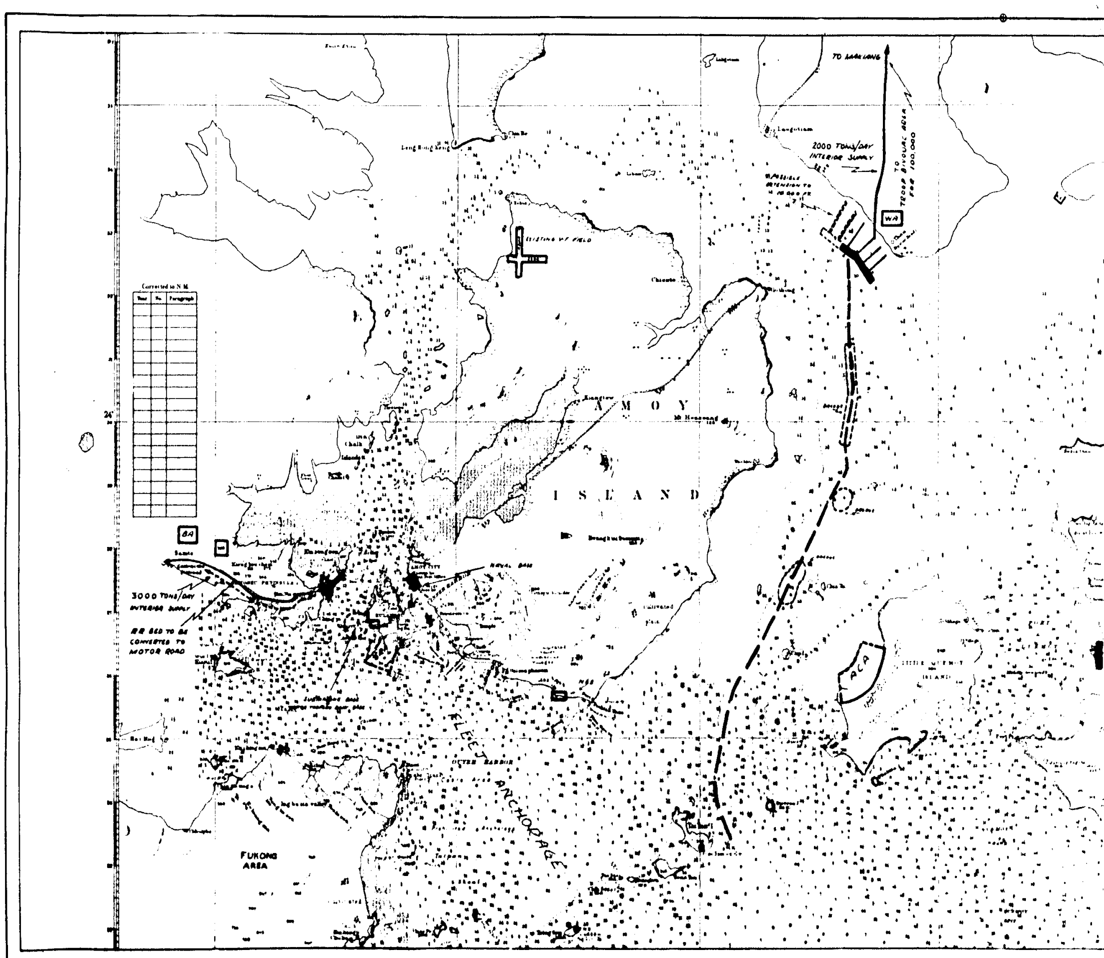
(b) Within a maximum radius of 30 miles from Amoy eight VLR airfields can be constructed. The site areas are approximately level and have sandy soil with good drainage qualities. In the nearby hills good granite rock is available for surfacing. There are adequate areas to meet all administrative, personnel and bivouac requirements, while the adjacent hilly terrain furnishes excellent sites for the dispersal of ammunition and bomb storage.

(c) Basic supplies for the airfields and personnel in the northern area would be a short haul from a 3000' dock proposed for construction at Huitau. Gasoline for these fields would be from tankers coming to the Huitau dock and pumped by pipe line to a proposed tank farm in the area. Supplies to fields in the southern or Fukong area would be from docks constructed off Sungsu Peninsula. These supplies could be transferred by road to the sites or transshipped by landing craft to beaches adjacent to the airfield sites.

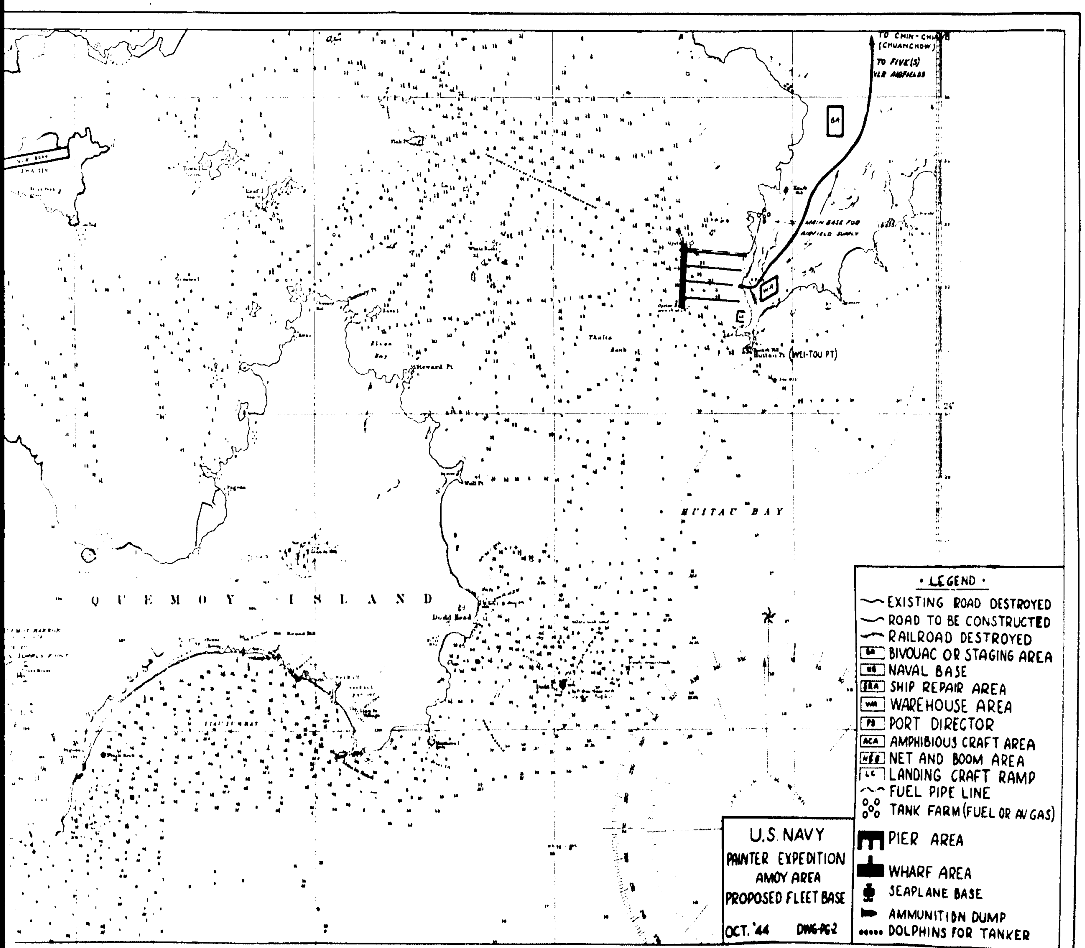
(d) The Japanese are now using a seaplane base in the inner harbor on the west coast of Amoy Island; additional facilities could be constructed. This section has a good sandy beach and would be adequate to meet all requirements. By air, all fields would be approximately 460 nautical miles from Shanghai and 1,560 nautical miles from Tokyo.

(e) It is reported that a small landing ground site existed on Quemoy Island prior to hostilities in this area. A ground reconnaissance of this island was not practicable, but it is believed that sites for one or more fields for carrier-based planes exist.

#7960-41 Airfield site on Yuntin Island. Note sandy loam soil.



TO SARKIANG
2000 TONS/DAY
INTERIOR SUPPLY
TO TROOP BIVOUAC AREA FOR 100,000
WA
EXISTING A/F FIELD
A M O Y
I S L A N D
Corrected to N.M.
BA
3000 TONS/DAY
INTERIOR SUPPLY
RR BED TO BE
CONVERTED TO
MOTOR ROAD
NAVAL BASE
FLEET ANCHORAGE
OUTER HARBOR
FUKONG
AREA



(CHUANCHOW)
TO FIVE(5)
BA
(WEI-TOU PT)
QUEMOY ISLAND
· LEGEND ·
EXISTING ROAD DESTROYED
ROAD TO BE CONSTRUCTED
RAILROAD DESTROYED
BA BIVOUAC OR STAGING AREA
NB NAVAL BASE
SRA SHIP REPAIR AREA
WH WAREHOUSE AREA
PD PORT DIRECTOR
ACA AMPHIBIOUS CRAFT AREA
N&B NET AND BOOM AREA
LC LANDING CRAFT RAMP
FUEL PIPE LINE
TANK FARM (FUEL OR AV GAS)
PIER AREA
WHARF AREA
SEAPLANE BASE
AMMUNITION DUMP
DOLPHINS FOR TANKER
U.S. NAVY
PAINTER EXPEDITION
AMOY AREA
PROPOSED FLEET BASE
OCT. '44
DWG-PG2

SEC. II - AMOY (CONTINUED)

4. Supply and Base for Interior China Operations.

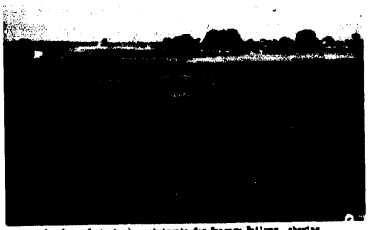
The construction of a 3,600' dock at Sungau and a 5,400' dock at Othau is contemplated to allow a flow of 5,000 tons daily to interior China. This will require unloading six ships at the rate of 500 tons per day at Othau and four ships per day at the same rate on the Sungau dock. These areas have ample space for bivouac sites, motor repair shops and warehouse facilities necessary to maintain the required level of supply. In order to have the tonnage quota reach interior China, it is necessary to have 500 four-ton capacity trucks leave the Sungau area daily and move over the Lung-chi (Changchow) - Lungyen route. From the Othau area, 500 trucks traveling over the Yung-chun - T'a-t'ien route and 419 up the coastal road would be required. At present, the first 65 miles of the Sungau - Lung-chi route, the first 160 miles of the Othau - T'a-t'ien route and the entire coastal route to Foochow are destroyed. Time for the restoration of these routes is included in estimates for construction required for entire Amoy Area under paragraph 7 below.

5. Beaches and Landing Areas.

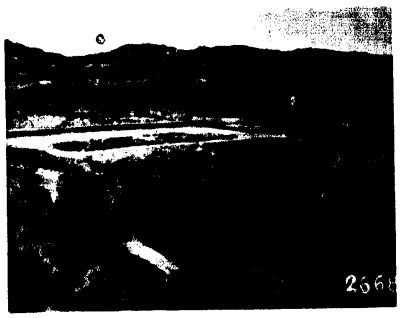
(a) Intelligence reports indicate an increase in numbers of the enemy occupying Amoy, Little and Big Quemoy Islands, which may indicate that a higher percentage of the beaches are defended. None of the beaches are extensively used by the enemy for supply at present, except where jetties or small wharves have previously been constructed.

(b) Under this heading the natural features of the beaches will be treated; defense installations are covered in the occupational plan. In the Inner harbor itself there are many small boat landings, but it is assumed that direct landings on these facilities is impracticable in the assault stages. A study of beach gradients and the contiguous shores is shown. It was made by the photo detachment of the 14th USAAF from studies of aerial photographs and hydrographic charts.

(c) Amoy Island--It is believed that the best beaches on Amoy Island are along the south shore numbered 2, 3, 4 and 5 on the Amoy beach study noted above. Beaches 6, 7 and 8 appear shoal and should only be approached at the higher tides. The elevation of the land contiguous with this coastline is estimated at average of 10' above H.W. Gothong Point, on the NE point of the island, is rocky and steep with deep water just off the point. A rather abrupt bank from 24°-29'N to 24°-32'N (estimated from 20 to 30 feet high) is just inshore of the beaches on this coast. Small streams have eroded channels through the loamy soil and as these are dry except during rain storms, assault troops might use them for cover. From Gothong Point on the north coast to the point NW of the airfield (Beach numbers from 9 to 17) the water is generally shallow at low tides and the elevation of the island is probably 20' to 30' above H.W. The beaches are generally sandy and usable in the high water ranges. Rocks are in evidence along all beaches and care should be exercised in approaching at any tide. Beaches along the northwest coastline, numbers 18 to 21 inclusive, are not recommended. Beaches 22 and 26 on Kulangsu are small but appear usable. The terrain ashore on the island of Amoy is largely in sweet potato and peanut cultivation; in general it is dry and capable of supporting motorised equipment and troops. Photos taken offshore by junk, along with vertical-panoramas from the mainland (see overleys) and oblique aerial coverage should be further studied by the troops assigned the assault task.



#7716 Typical stone abutments for Sungau Railway, showing manner in which roadbed has been destroyed.



#2666 Typical concrete bridge. Fall in the type found throughout coastal plain.

#9815 Typical bridge destruction, with piers destroyed and spans dropped.

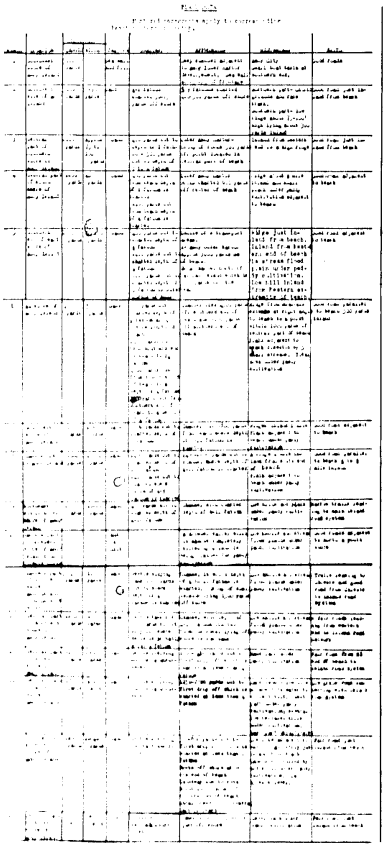
(d) Under CONCLUSIONS it will be noted that beaches are comparatively safe for operations for a five hour period--2½ hrs. preceding and 2½ hrs. after H.W. both at neaps and springs.

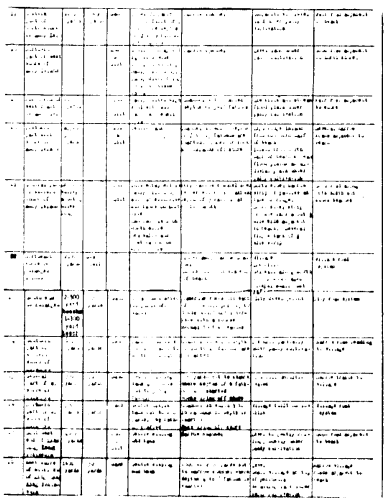
(e) Under Quemoy, the best beaches appear to be those in Lisuhu Bay, numbers 5 through 9, with those to the east probably safer at the lower tides. Beach #10 on the east coast appears usable with access to the interior of the island up the stream route to the west. Beaches #11, 12 and 14 may have no ready access to the interior. Beaches #13 and 15 are probably usable. Rocks are quite evident along this coast. Beaches #16 to 18 are questionable, as are #19 to 22 except at the jetty used by local craft. Beaches #1 to 4 have good water for landing craft offshore and a steep gradient, but inshore the banks are fairly steep, although cultivated and probably negotiable by foot troops. The beaches will probably be rough in the monsoons. Little Quemoy beaches #23 and 24 are protected and appear satisfactory for use; the country inland is apparently cultivated in potatoes and peanuts.

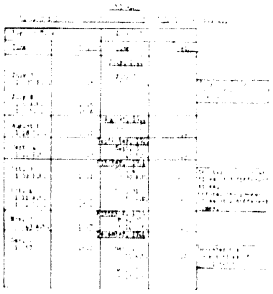
(f) On the mainland the beaches at Wei-t'ou should be suitable for LSTs (limited to #1; see photo). Othau and Sungaue (Standard Oil) should also handle LSTs at high tides. These beaches should be satisfactory at L.W. for small landing craft and possibly LCTs.

(g) Beaches at Shenhu Bay are sand and the H.W. gradient is steep. The beach shoals rapidly at L.W., but is usable due to the firm quality of the sand (see photos).

NOTE: Shenhu Bay (24°-40'N, 118°-40'E) is variously spelled Shenhu, Shin Wu, Shen Wu and Chimmo.



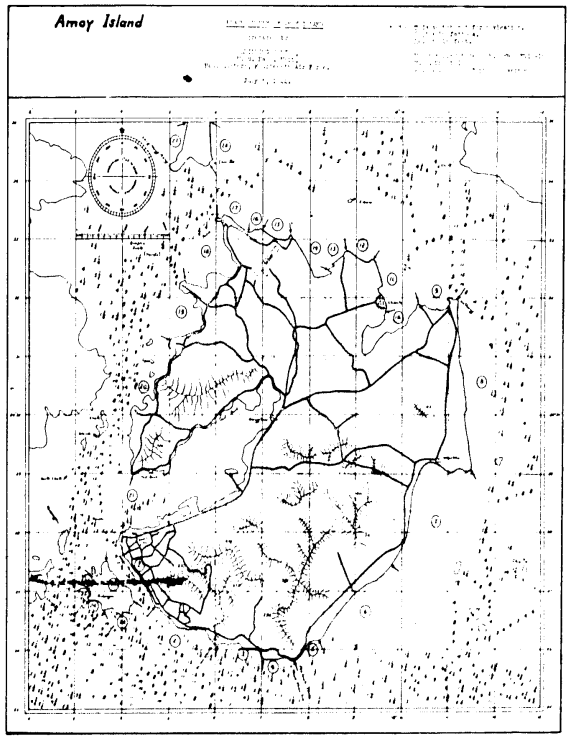


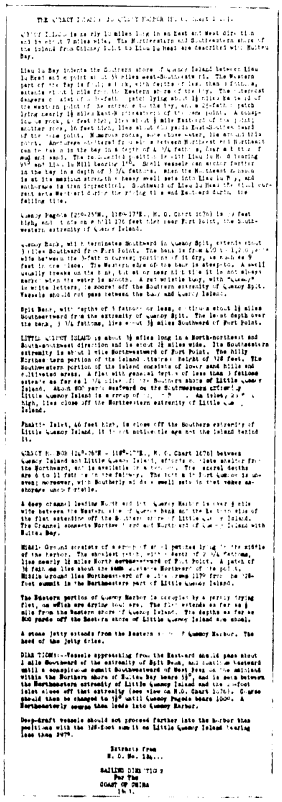


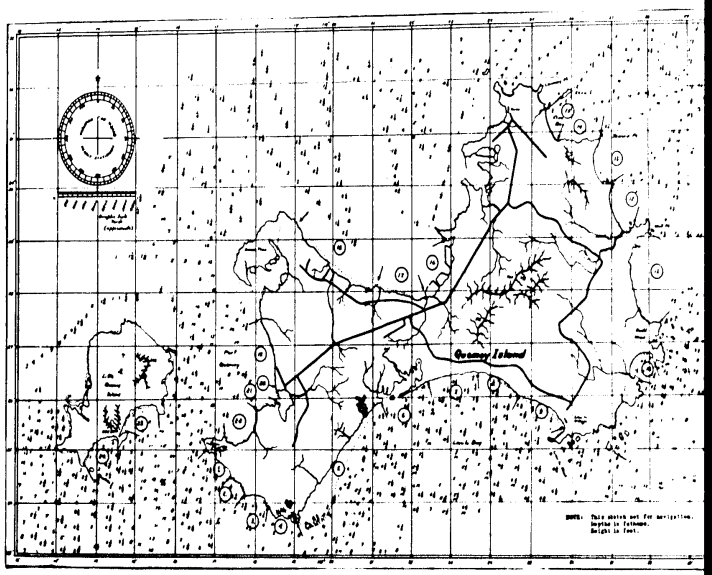
Note: Tides are of the greatest importance in any consideration of landing beaches. Control may be exercised with high tides, and dangerous during low tide, or tide rates. Most of the data presented here was derived from photographs taken during a stage of high tide, therefore the width of the beach given is only true for time of equal tide.

The chief function of this survey is to supplement existing hydrographic material, and aid in the location of possible landing beaches. When definite beaches have been selected, detailed studies can be made with emphasis placed on tide fluctuations.

All depths given on U. S. Charts are mean low-water depths.







No.	Location	Length	Average Width at [illegible]	Nature of [illegible]	Approx. Gradient at High Tide	Approx. Width at Low Tide	Extent of [illegible]	Approx. Gradient at Low Tide	Character of Area Immediately Adjacent to Beach	Character of Area Inland from Beach	Anchorage	Exits
1.	[illegible] of Quemoy Is.	[illegible] yds	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Low ... Paddies and ... to Beach, under paddy cultivation.	Inland from ridge is a plain under paddy cultivation.	Channel between S.E. Pen. of Quemoy Is. & [illegible] Is., [illegible] fathoms [illegible].	No roads visible
2.	Central part of S.E. Pen. of Quemoy Is.	1,000 yds	50 yds.	Sand	Steep, wave cut beach	[illegible] yds.	Silt & sand.	400 yds out from low tide line, depth of 2 fathoms charted.	Rounded ridge, [illegible] high adjacent to [illegible] of beach. [illegible] hills adjacent to N. [illegible] beach	Low rounded hills and stream flood plains, under paddy cultivation.	Channel between Quemoy & Quemoy Mainland.	No roads visible
3.	Western end of the S.E. Pen. of Quemoy Is.	1,500 yds	60 yds.	Sand	Steep. Rises 30-40 feet [illegible] yds. [illegible] cut beach	[illegible]	Silt & sand.	400 [illegible] out from low tide [illegible] depth of 2 fathoms charted.	Rounded hills 100 to 160 ft. in height. Under paddy cultivation.	Low rounded ridges & stream flood plains. Under paddy cultivation. Appears to be remains of an old [illegible].	Good water, 7 to 18 fathoms charted.	No roads visible
4.	Southern [illegible] of the S.E. Pen. of Quemoy Is.	1000 yds		Wave cut rock ridges [illegible]. Cliff line.	Very steep				Terraced slopes.	Numerous terraced ridges & stream flood plains, under paddy cultivation.	Good water, 7 to 18 fathoms charted.	No roads visible.
5.	Eastern [illegible] of Liao lo Bay.	4500 yds	250 to 800 yds wide.	Low sandy shelf, with numerous [illegible].	[illegible] shelf prob. flooded at high tide. [illegible] flat.	400 to 1600 yds.	Extension of rock littered shelf		Rocky, low, sandy shelf. Width varies fr a 1000 yds on N. end to 800 yds on S. end.	Low, alluvial plain, with numerous small [illegible].	Liao lo Bay.	No roads visible
6.	N. shore Liao lo Bay.	2,000 yds	100 yds.	Silty sand.	Moderate [illegible] slope appears to be present.	1,0[illegible] yds.	Silt.	Gentle bank off beach. 300 yds out to depth of 3 fathoms.	[illegible] drainage basin [illegible] by 3 streams. Low & [illegible].	Inland from low basin. Plain under paddy cultivation.	Liao lo Bay.	No roads visible
7.	Northern shore of Liao lo Bay.	2500 yds	60 yds.	Sand	Moderate low [illegible] slope present.	100 yds.	Sand.	Bank extends out 800 yds to charted depth of 2 fathoms.	Plain under paddy cultivation.		Liao lo Bay	No roads visible
8.	Western part of N. shore [illegible] Liao lo Bay.	2500 yds	75 yds.	Sand.	Gentle	250 yds. Rock present.	Silt; rocks present on [illegible] half of beach.	Gentle.	Low bluff.	Sand hill [illegible] high, about [illegible] inland from [illegible] of beach. Series of low ridges inland from the [illegible] of beach.	Liao lo Bay	[illegible] road about 400 yds inland from beach.
9.	Western shore of Liao lo Bay.	2000 yds	100 yds.	Sand	Moderate [illegible] beach.	300 yds [illegible] beach.	Silt.	Gentle [illegible] to depth of 3 [illegible] fathoms.	Uncultivated stream flood plain, low, poorly drained.	[illegible] cultivated stream flood plains.	Liao lo Bay	[illegible] road 2000 yds inland
10.	Southern end of W. shore of Quemoy Island.	1,500 yds	100 yds	Sand. Large rock present in central part of beach.	Steep. Wave cut beach.	100 yds.	Silt [illegible]	Gentle.	High rock bluffs present at each end of beach. Uncultivated [illegible] flood plain [illegible]. Plain under cultivation adjacent to [illegible].	Plain under paddy cultivation.	Good water, 7 to 18 fathoms charted.	[illegible] road 1000 yds inland
11.	Central part of W. shore of Quemoy Is.	3000 yds	150 yds	Sand & Silt.	Gentle	300 yds.	Silt.	Gentle bank present. Scattered rocks also present in [illegible].	Inland from N. half of beach uncultivated stream flood plain, low & poorly drained. May flood at high tide. Inland from S. half of beach, several low [illegible].	Inland from S. half of beach uncultivated stream flood plains. Inland from N. half of beach, low [illegible] & plains under paddy cultivation.	Western part of [illegible] Bay, partially surveyed.	[illegible] road [illegible] yds inland
12.	Central part of N. shore of Quemoy Is.	3000 yds	150 yds	Sand	Gentle	300 yds	Silt	Bank present with scattered rocks.	Uncultivated stream flood plains.	Uncultivated stream flood plains poorly drained & probably floods at high tide. Low [illegible] 1000 yds inland.	N.E. part of [illegible] Bay partially surveyed.	No roads visible.
13.	[illegible] end of N. shore of Quemoy Is.	1000 yds	75 yds	Sand	[illegible] cut beach.	300 yds.	Silt.	Gentle.	Level land under paddy cultivation.	Uncultivated plain under paddy cultivation. High [illegible] 1000 yds inland.	North [illegible] Bay.	No roads visible
14.	[illegible] shore of [illegible]	[illegible] yds		[illegible]					[illegible] bluffs.	High [illegible] 700 yds inland	[illegible] Bay.	No roads visible
15.	[illegible] shore of [illegible]	1,500 yds	75 yds.	Sand	[illegible] cut beach.	[illegible] yds.	Silt.	Gentle.	Level land under paddy cultivation.	Plain under paddy cultivation.	[illegible] Bay.	[illegible]
16.	Central part of the N. shore of Quemoy Is.	2500 yds	Has been 400-500 yds wide, last prob. flooded during high tide.	Silt.	Gentle.	500-1000 yds	Silt.	Almost level.	[illegible] have been built to claim land. May be salt pan.	Narrow plain [illegible]-800 yds wide under paddy cultivation & a series of uncultivated ridges inland from this plain.	Bay with charted depths from 1 3/4 to 4 fathoms.	Good road 300 yds inland.
17.	Central part of the N. shore of Quemoy Is.	2,500 yds	30 yds.	Silt	Gentle.	100 yds.	Silt.	Gentle bank present along whole beach.	Level land under paddy cultivation.	Plain under paddy cultivation.	Bay with charted depths from 1 3/4 to 4 fathoms.	Good road, 400 yds inland.
18.	West end of the North shore of Quemoy Is.	2500 yds	50 yds	Sand	Gentle.	100 yds.	Silt.	Gentle bank present.	Level land, narrow strip adjacent to beach. Not under cultivation.	Plain under paddy cultivation.	Bay with charted depths from 1 3/4 to 4 fathoms.	Low grade road parallel to beach.
19.	[illegible] of the Port of Quemoy.	3000 yds	20-30 yds.	Sand	Moderate	100 yds and bank & oyster deposits.	Silt.	Gentle oyster beds charted.	Level land under paddy cultivation.	Plain under paddy cultivation. Village inland from S. shore.	Port of Quemoy.	Good road at village to N. network
20.	[illegible] of Port of Quemoy.			Silt	Gentle	[illegible] estuary drains at low tide.	Silt	Gentle	Level land under paddy cultivation.	Plain under paddy cultivation.	Port of Quemoy.	Good road adjacent [illegible]
21.	South side of the port of Quemoy.	1500 yds	20-40 yds	Sand	Gentle	50 yds.	Silt.	Gentle and bank.	Level land under paddy cultivation.	Plain under paddy cultivation.	Port of Quemoy.	[illegible] road [illegible]
22.	[illegible] of the [illegible] of Quemoy Is.	[illegible] yds	40 yds	Sand	Gentle	75 yds.	Silt, [illegible] and oyster beds	Very gentle [illegible]	Rice paddies	Plain under paddy cultivation.	Port of Quemoy middle grounds.	Main roads 500 yds inland.

NOTE: Tides are of the greatest importance in any consideration of landing operations, because any one coincident with high tide, and an advantageous earlier low tide, & vice versa. Each of the data presented here was derived from photographs taken during a stage of high tide, therefore the width of the beach given is only true for times of equal tide.

The chief function of this survey is to supplement existing hydrographic material, and aid in the location of possible landing beaches. When suitable beaches have been selected, detailed studies can be made with emphasis placed on tide fluctuation.

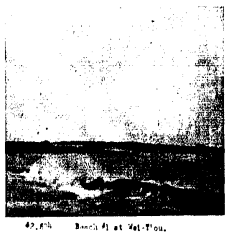
All depths given on H. O. Charts are lowest low-water depths.

QUEMOY AREA

HIGHEST & LOWEST TIDE FOR EACH MONTH: July 1944 - Dec. 1944

Highest Tide		Lowest Tide		
Time	Height	Time	Height	
July, 1944				
July 7 12:37 P.M.	16.6	July 7 7:27 P.M.	0.5	July has 3 highest tides of equal height
July 8 1:33 A.M. 1:20 P.M.	16.6 16.6			
August, 1944				
August 6 1:18 P.M.	17.1	August 5 7:12 P.M.	0.9	
September, 1944				
Sept. 4 1:12 P.M.	17.3	Sept. 3 6:43 P.M.	0.9	
October, 1944				
Oct. 3 1:02	17.1	Oct. 4 7:30 A.M.	0.9	October has highest tides at 3 different times.
Oct. 4 1:13 A.M. 1:42 P.M.	17.1 17.1	Oct. 31 5:52 A.M.	0.9	October has lowest tides at 2 different times.
November, 1944				
Nov. 2 12:43	16.7	Nov. 30 6:14 A.M.		
December, 1944				
Dec. 2 12:57	16.0	Dec. 1 6:33 A.M.	0.2	December has 2 lowest tides of equal height
		Dec. 30 6:42 A.M.	0.2	

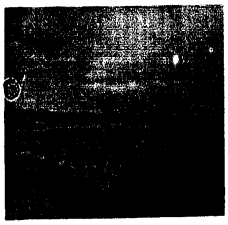
SEC. II - AMOY (CONTINUED)



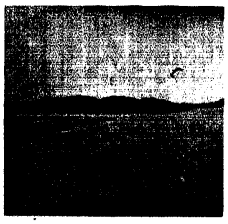
#2,8[illegible] Beach #1 at Wai-T'ou.

#2,482 Beach #1 at Wai-T'ou.

#2,801 Beach #1 at Wai-T'ou.

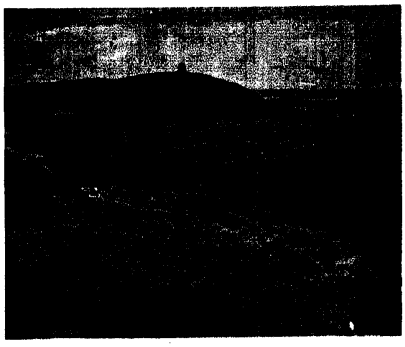


#2,8[illegible] Beach #2 at Wai-T'ou.



#2,815 Steep gradient of beach at H.W.; 12' rise in 40 feet; hard-packed sand. Pai-hsia, opposite Chiu-chou.

#2,806 Beach #2 at Wai-T'ou.



#2,[illegible]82 Beach #1 at Wai-T'ou.

#2,819 Same beach as above at spring L.L.W. Over 1 mile of shoal beach.

Extracts from
H.O. No. 124
SAILING DIRECTIONS
For the
COAST OF CHINA
1943

Prepared by

SHIPPING CENTER
U.S. Naval Unit
Headquarters, Fourteenth Air Force

Coast between Chimmo Bay and Chuanchow Hbr.

[illegible] (H.O. Chart 3177) [illegible] The intervening coast [illegible]

[illegible] Point lies about [illegible] southeastward of Junk Head.

[illegible]-bell Islet lies about [illegible] miles south- [illegible] and is marked by a [illegible]-shaped [illegible] an obstruction was reported [illegible] miles southward [illegible]

Fairy R[illegible] about 600 yards east-southeastward of Junk Head. [illegible]

Highest and lowest tides for each month: Sept. – Dec. 1944

Highest Tide			Lowest Tide	
Time	Height		Time	Lowest
		September		
Sept. 4 01:20pm	16.9		Sept. 3 07:02pm	-0.5
		October		
Oct. 3 [illegible]	16.7		Oct. 4 07:30am	-0.5
Oct. 4 01:15am	16.7		Oct. 31 06:00am	-0.5
Oct. 4 01:30pm	16.7			
		November		
Nov. 2 12:51am	16.3		Nov. 30 06:22am	-1.6
		December		
Dec. 2 01:25am	15.6		Dec. 1 07:05am	-1.6
			Dec. 30 06:50am	-1.6

Time Meridian 135° E.

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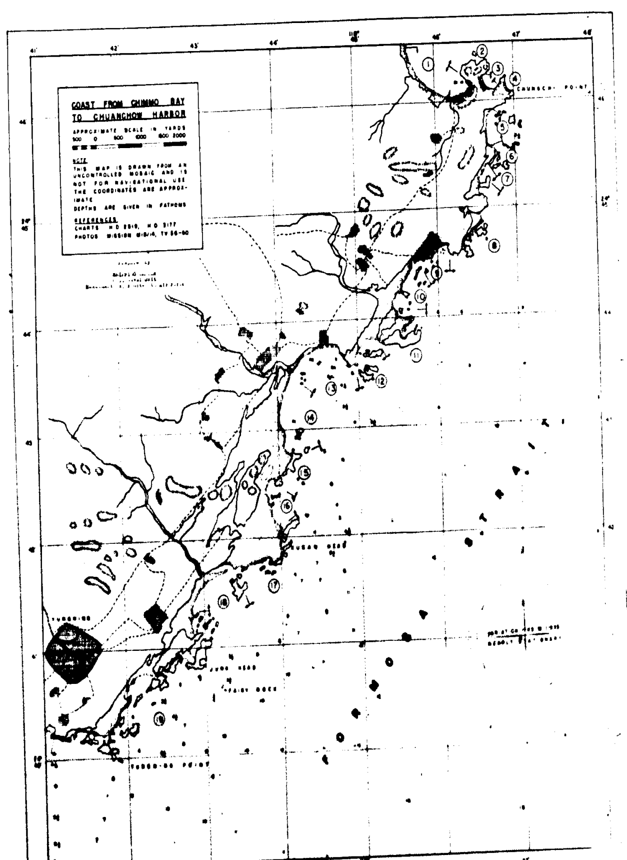
The chief function of this survey is to supplement existing hydrographic material, and aid in the location of possible landing beaches. When definite beaches have been selected, detailed studies can be made with emphasis placed on tide fluctuation.

All depths given on H. O. Charts are lowest low-water depths.



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COAST BETWEEN CHIMMO BAY & CHUANCHOW HARBOR

Source of Data:

Photo Coverage: M10/14 (TT 40-60)
H.O. Publication: No. 124
H.O. Chart: No. 2419
No. 3177

No.	Location	Length	Approx. width at high tide	Nature of inner beach	Gradient at high tide	Approx. width at low tide	Texture of Outer Beach	Gradient at Low tide	Char. of shore immediately adjacent to beach	Char. of area inland from beach	Approaches	Exits
1.	N. side of Chung Chi Point	1500 yds	130 yds at N. end, 30 yds at S. end.	Sand	Mud; wave built	350 yds	Silt and sand. Numerous rocks off extreme Southern end of beach	Gentle	Northern part partially cultivated. Extensive flood plain. Southern part has village present along beach	Northern part stream flood plain under paddy cultivation. Southern part uncultivated ridge parallel to beach. Appears to be about 120' high.	Outer Chuan Chow Harbor.	Trail leading South from village.
2.	W. part of Chung Chi Point		Rocky promontory extending 500 yds into sea	Rock	Steep wave cut bluffs			Depths of 6 fathoms charted 250 yds off promontory	Steep ridge	Uncultivated ridge	Outer Chuan Chow Harbor.	None visible
3.	Chung Chi Point	400 yds	40 yds	Sand	Moderate	150 yds	Silt and sand	Gentle. 21 fathoms charted 400 yds off beach	Village adjacent to Northern part. Southern part level and uncultivated	Uncultivated ridge inland from Northern part. Plain under paddy cultivation inland from Southern part.	Outer Chuan Chow Harbor.	None visible.
4.		Rocky promontory extending 500 yds into the sea	Rock	Steep wave cut bluffs				6 fathoms charted 400 yds off beach	Uncultivated ridge 400 yds wide.	Uncultivated ridge 400 yds wide.	Outer Chuan Chow Harbor.	None visible.
5.	South of Chung Chi Point	700 yds	160 yds	Sand	Gentle	110 yds	Silt and sand	Gentle. Numerous rocks and small islands off beach.	Level and uncultivated.	Plain under paddy cultivation.	Formosa Strait	None visible.
6.		400 yds	Numerous small is. and rocks adjacent to shore				—		Uncultivated knoll.	Low knoll and stream flood plain under paddy cultivation.	Formosa Strait	None visible.
7.		200 yds	50 yds	Sand	Steep	150 yds	Silt and sand. Numerous small islands and rocks off shore	Gentle	Uncultivated knoll at Northern part. Stream flood plain under paddy cultivation at Southern part	Knolls and stream flood plain under paddy cultivation.		None visible
8.		1800 yds	This section of shore composed of 4 small rock promontories and four rocky coves				Numerous rocks lying off shore				Formosa Strait	
9.		700 yds	30 yds	Sand	Steep	110 yds	Silt and sand. Numerous rocks lying off shore.	Gentle	Village present along entire length of beach	Village built on area of low knolls	Formosa Strait	Trail leading Westward from village. Joins coastal road 300 yds inland.
10.		1800 yds	75 yds at Northern end, 150 yds at Southern end	Sand	Gentle	500 yds at N. end, 800 yds at S. end	Silt and sand with numerous large rocks present	Gentle	Level uncultivated sand	Stream flood plain under paddy cultivation. Numerous steep uncultivated ridges inland from Northern end of beach	Formosa Strait	Trail leading from beach 700 yds inland to village
11.			Steep rocky bluffs	rocky					Uncultivated rocky promontory	Plain under paddy cultivation	Formosa Strait	None visible
12.		700 yds	150 yds	sand	Moderate to steep	250 yds	Silt and sand. Entrance to this cove is almost entirely blocked by small islands and rocks		Uncultivated sand	Knolls and stream flood plain under paddy cultivation	Formosa Strait	None visible
13.		1400 yds	60 yds	Sand	Steep	400 yds	Silt and sand. Rock present. Numerous rocks present off shore	Gentle	Rolling ground under paddy cultivation.	Wooded knolls and stream flood plain under paddy cultivation	Formosa Strait	Trails North and South from village adjacent to beach.
14.		1100 yds	150 yds at Northern end. 1000 yds at Southern end.	Sand	Gentle	500 yds at N. end. 1200 yds at S. end.	Silt and sand; Numerous large and small rocks present off shore	Gentle	Level, uncultivated sand	Low rounded knolls and stream flood plain under paddy cultivation	Formosa Strait	Village located 700 yds inland and trails leading North, East and South from this village
15.		800 yds		Numerous rock knobs	Steep		Numerous large and small rocks present		Uncultivated rock knobs.	Uncultivated ridge and level sand	Formosa Strait	None visible
16.	North side of [illegible] Head	800 yds	100 yds	Sand	Gentle	300 yds	Silt and sand with rocks present. Numerous rocks lying off shore		Level uncultivated sand	Rocky knolls and sand plain partially uncultivated	Formosa Strait	None visible
17.	[illegible] Head	1500 yds	[illegible] yds	Rock knobs and boulders. Very small areas of sand beach present			Silt, sand and rocks. Numerous rocks off shore		[illegible]	Stream flood plain and rock knolls partially under paddy cultivation	Formosa Strait	Trail leading South to [illegible]
18.	Area between [illegible] and [illegible] Head	1000 yds	100 yds	Rocky sand beach	Moderate	700 yds	Silt and sand; boulders appear to be present	Gentle	Level, sand and boulders	Stream flood plain under paddy cultivation	Formosa Strait	Trail 700 yds inland leading South to [illegible]
19.	From [illegible] Head South to [illegible] Point	1300 yds	50 to 150 yds	Sand with numerous boulders and rocks		200 to 400 yds	Silt and sand with numerous rocks and boulders present	—	Level uncultivated sand	Stream flood plain under paddy cultivation	Formosa Strait	[illegible] 1000 yds inland; trails leading North, East and South

Extracts from
H.O. No. 124
SAILING DIRECTIONS
For the
COAST OF CHINA
1943

Prepared by

SHIPPING CENTER
U.S. Naval Unit
Headquarters, Fourteenth Air Force

[illegible] ([illegible]) BAY ([illegible]°[illegible]'N., 118

[illegible] ([illegible]) BAY (24°[illegible]'N., 118°41'E., H.O. Chart 2919) [illegible] the coast between Yungning Point and Shenhu Point, about 2 3/4 miles south-southwestward. The bay is unsafe during the southwest monsoon.

The shores of the bay are barren. Yungning, a walled town, lies just within Yungning Point. A flat islet about 15 feet high lies close off Yungning Point. A drying rock lies about 600 yards westward of the islet. Kusau Hill, 700 feet high and with a pagoda on its summit, is conspicuous. The hill is within the northern shore of the bay in a position about 3 3/4 miles north-northwestward of Yungning Point. Close northeastward of Kusau Hill, separated from it by a deep gap or valley, is another hill of about the same elevation; the latter hill has two peaks. Shoulder Peak, about 6 3/4 miles northwestward of Yungning Point, is a useful mark.

A spit with a depth of 1½ fathoms at its outer end, extends about 1½ miles north-northeastward from Shenhu (Chimmo) Point. Pa [illegible] Islet and Sour Islet lie on this spit. The southern of the two Chimmo Rocks, which lie close together and dry, lies about ½ mile northward of Sour Islet. A 3-fathom patch lies about 1½ miles northwestward of Sour Islet.

Shoulder Peak bearing 311° leads into Shenhu Bay between Chimmo Rocks and Yungning Point.

CHIMMO BAY AND VICINITY

Highest and lowest tides for each month: Sept. - Dec. 1944

Highest Tide: Time	Highest Tide: Height	Month	Lowest Tide: Time	Lowest Tide: Height
Sept. 4 01:20pm	16.9	September	Sept. 3 07:02pm	-0.5
Oct. 3 01:10pm	16.7	October	Oct. 4 07:30am	-0.5
Oct. 4 01:19am	16.7		Oct. 31 06:00am	-0.5
Oct. 4 01:52pm	16.7			
Nov. 2 12:51am	16.3	November	Nov. 30 06:20am	-1.4
Dec. 2 01:05am	15.6	December	Dec. 1 07:05pm	-1.6
			Dec. 30 06:50am	-1.6

Time Meridian 135° E.

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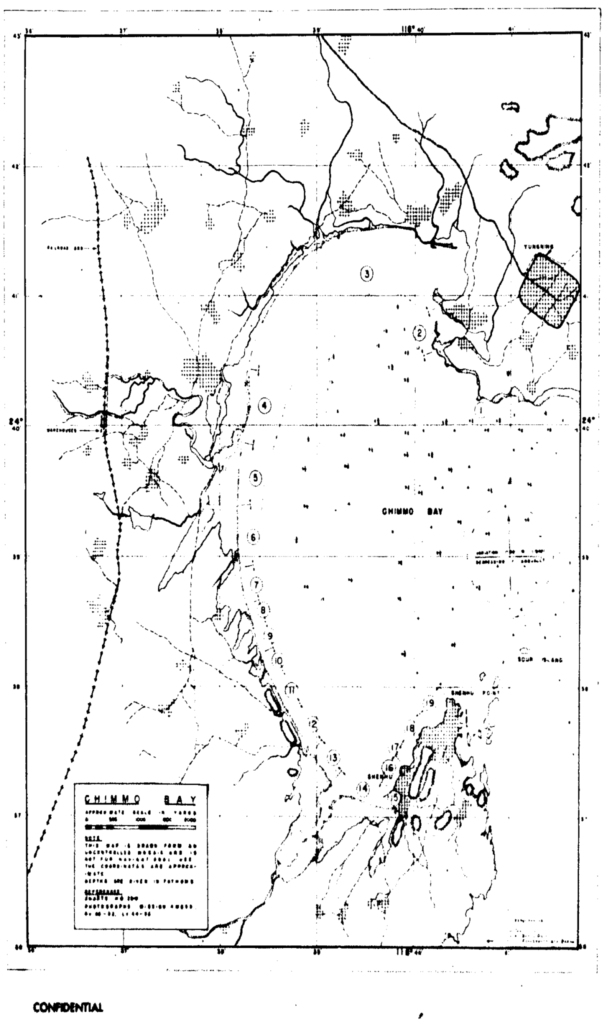
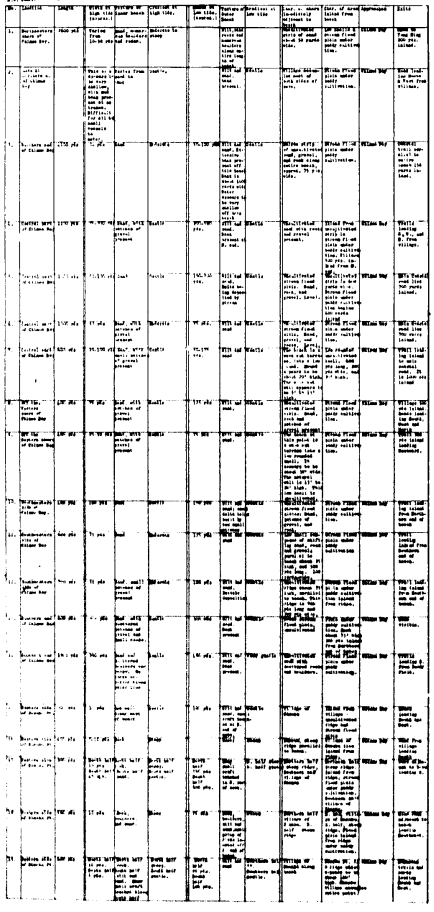
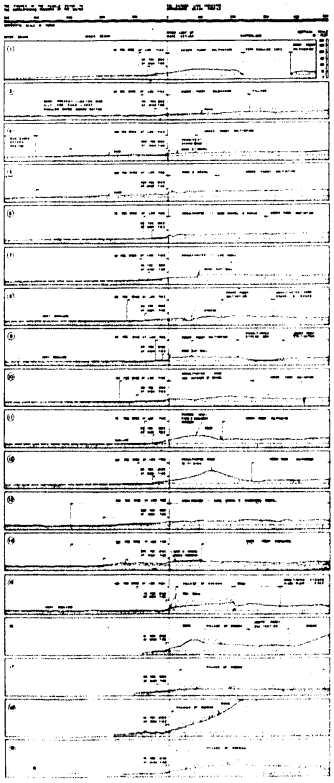


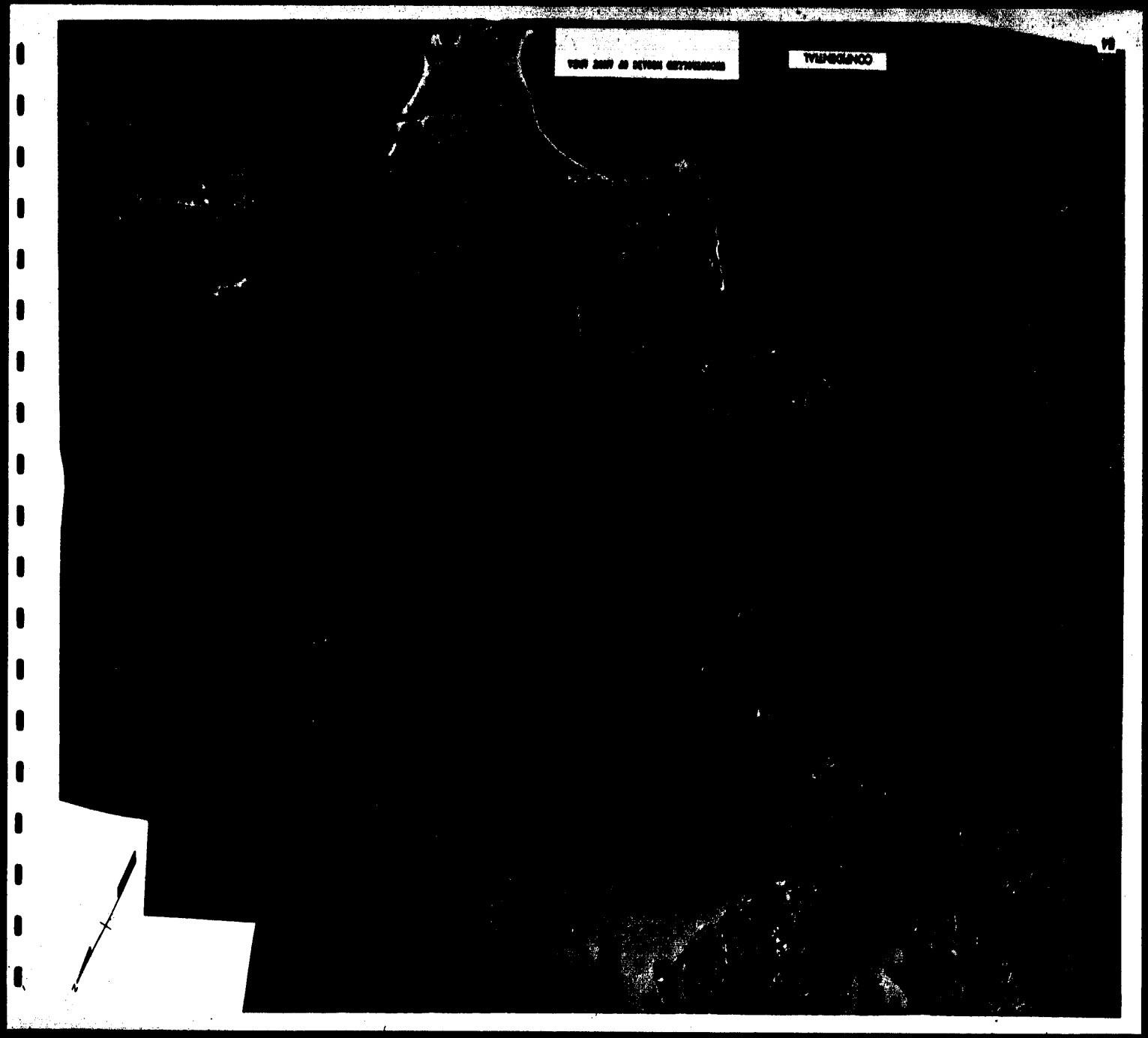
CONFIDENTIAL

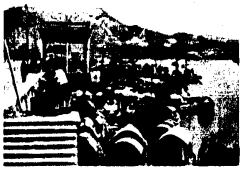
CHIMMO BAY

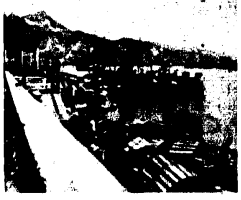


CROSS SECTIONS OF BEACHES OF CHIMMO BAY AREA









Typical small craft landing facilities. Picture at Pooshow, similar to Amoy Inner Harbor.

6. Ease of Military Occupation and Defense.

(a) Ease of Occupation

(1) Parts of this Area, especially the Islands of Amoy, Little Quemoy and Big Quemoy, are not substantially different from many of the Pacific Islands taken from the Japanese by assault with U.S. Forces in recent operations. The principal differences are:

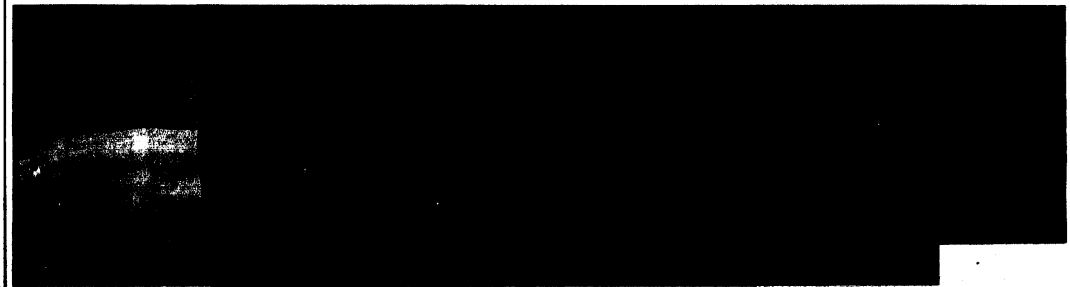
a. Higher tidal range. (See Sect.III-H.)
b. More landing beaches than the usual coralline island formation.
c. An unoccupied mainland (as of 20 Oct.) just adjacent to the Islands. This mainland is suitable for landing operations.

(2) Latest intelligence information (20 Oct.) indicates an approximate 30,000 enemy troops on the Islands alone, with no enemy forces ashore on the mainland. However, as noted in CONCLUSIONS (I-G-8-(f)), it is likely that a landing by the Japanese will be effected on the mainland, especially if additional forces are landed on the Islands. An intelligence overlay is attached covering the estimated enemy installations (See Overlay No. PG-6). From visual sightings on photographs it does not appear that underwater obstacles are installed, but single barbed-wire fences are erected along some of the areas near the H.W. beach line.

(3) In the event a direct assault on the Islands is not considered feasible, unopposed landings could be made (assuming enemy positions and strengths as of 20 Oct.) on the mainland at several places, most of which are covered in the beach studies. Enemy artillery, if not removed, might shell attempted landings on Chiao Point, but the beach areas are suitable for landings, and counter-artillery could be set up. Hwaan Bay is far enough to the north to be out of range of any artillery on Quemoy Island and is suitable for landings. Further beach landings can be made at Kuanyu, approximately 30 miles north of Wei-t'ou Point. Forces landed at either of these areas could move south over fairly good terrain to the Amoy area. Roads are destroyed, but pioneer troops could rapidly rehabilitate them for single lane emergency motor traffic.

(4) Southwest of Amoy at Lat. 24°-05'N and Long. 117°-44'E, is a sandy beach 8 miles long with a good gradient, which would also be suitable for large scale operations. About 20 miles of destroyed road would have to be repaired to reach Lung-shi (Changchow) and the Amoy perimeter.

(5) The beach at Chiu-shan (24°-04'N, 117°-48'E) is suitable for LSTs, but the approach is shoal at L.W. LSTs, however, could use the beach at all tides. The open country to the east (hilly only adjacent to the beach) offers a wide dispersal of troops and a route to Lung-shi, Ma-chiang and Hsiao. The spit at Pei-hsia (Chinese for "white sand") is over one mile long and about 1200 ft. wide. The beach at higher tides is quite steep and of very fine sand. The crest is about 10 ft. above H.W. level and could be turned into a VF field in a very short time using mat for surfacing. This landing might be considered feasible if the airfield on Amoy was by-passed in the initial stages. The beach is very long and ideal at high tides. At low water it is not sandy, but dries about one mile from shore.



[illegible] Note in this sand beach at low tide.

(6) Except as noted, the following intelligence information relating to Amoy was obtained by Chinese agents for Naval Intelligence and is believed correct. It is dated 17 October 1944 and amended to 1 November. The coordinates refer to those shown on Drawing No. PO-4.

AMOY AND KULANGSU ISLANDS

(aa) Contrary to other intelligence information given in this report, it is believed there were not more than 6000 Japanese* soldiers in the Amoy Area as of November 1. This total includes 4000 new arrivals from Central China, which are poorly equipped labor battalions. A large number of these new arrivals were observed to be sick and in poor physical condition when they disembarked at Amoy City.

(bb) Docks and Warehouses

Butterfield and Swire Floating Wharf (7.4 - E.5) is opposite Kulangsu Jetty in the Inner Harbor. East Asia Wharf (7.2 - E.8)(Tung Ya) is just southeast of B.&S. Wharf (also floating type), and extends out from the shore line. The Civilian Wharf is northwest of B.&S., and is for smaller craft and civilian use. The Japanese Military use the B.&S. Wharf and the East Asia Wharf for their supplies; all nearby buildings and the wharves are fenced off and civilians excluded. Large stores of ammunition and bombs are reported in the B.&S. warehouses, and on 18 October a large quantity of this ammunition was moved from the warehouse to the Japanese Hospital on Kulangsu, south of the British Consulate Building. The motor pool and tank storage is at the northwest end of the city of Amoy (8.6 - E.1), where 40 trucks and several tanks were counted as of Sept. 30, 1944.

(cc) Ground Defenses and Installations

1 - The three strategic points on Amoy Island are Tiger Head (7.2 - E.9), Lu Chu (12 - L) and Amoy University (6 - G.2). Lu Chu is at the junction of the [illegible] - Gothong and Amoy City highways. Between 50 and 100 men are stationed there with trucks and tanks. This post is equipped with a field gun, 2 machine guns and an observation tower.

2 - At Amoy University (6 - G.2) there are several hundred Japs housed and under training. The [illegible] building southeast of the athletic field is used for Navy bomb and ammunition storage.(The first floor only, as the second floor was destroyed by Jap bombing when they took the Island in 1938.) Both the men's and the women's dormitories now house Japanese troops. 3 AA guns in sandbagged positions are set up in the area.

3 - Tiger Head Hill (7.2 - E.9) is used as Naval Headquarters and for instrument storage. Two barracks buildings are on the seaward side of Tiger Head. A radio station with 4 antennae towers (using city power) and the central telegraph, telephone and signal stations for the Island are located at the Jap Consulate quarters (8.4 - E.3). There are large underground storage facilities in the [illegible] Mountains just back of Tiger Head Hill. The defenses consist of trenches and bomb-proof storage facilities in solid rock, excavated in the side of the mountain.

4 - A system of trenches 20' wide by 10' deep is being constructed and paved, located:

a. From Gothong (15.5 - Q) through [illegible] (10.9 - P.5) to [illegible] (5 - J)
b. From [illegible] (13.3 - [illegible]) to [illegible] (10.5 - G.8)
c. From [illegible] (9 - E.1) to [illegible] (9.3 - [illegible]) and following the coast to connect with the "L" trench at [illegible] (12.8 - E.4)

5 - Detailed notes on defense points:

Gothong (15.5 - Q)—A small fort with 17 soldiers, 1 field gun, 2 machine guns and 1 motor car. Many observation points are reported in nearby villages.
Kokia (18.8 - N.8)—A small fort with approximately 30 soldiers, 1 field gun, 1 light machine gun and 3 AA guns.
Nin Tau Mt.(12 - E.6)—A small fort on this mountain known as Cow's Head Hill. Approx. 15 soldiers and 2 machine guns.
City of Amoy—Several AA guns on roof tops along the Bund and especially around the B.&S. docks. One AA gun near Amoy Water Works dam.
Chei Shang village (15.4 - G.8) and Chun Tau village (15.5 - N.5) each quarter 15 soldiers equipped with [illegible] machine guns.
Ho Lea (13.6 - G.4), Chei Shang (15.4 - G.8) [illegible] Shang Ho (14.0 - G.2) are other observation points with towers.

6 - At Lu Chu (12 - L) large quantities of ammunition are stored in a newly-constructed large red building south of the barracks.

7 - Newly-arrived soldiers totalling 2000 are quartered in the New World Theater, the [illegible] Theater, Koshan Airfield, and a school building (8.3 - F.4) at the SW corner of Chung Shan Park in the city of Amoy.

(dd) Airfields

1 - Koshan Field (16.5 - J)—The area of the field is 1 mile square, and is surrounded by barbed wire. Beyond the wire is a trench 10' deep and 20' wide for armored cars. The trench begins from the [illegible] Bus Station to [illegible] and then divides two ways; one from the bus station to [illegible] village, and the other along the new road from [illegible] village to the field. The "hangars" are U-shaped earthen revetments, [illegible], camouflaged with nets, tree branches and wire. They house approximately 50 planes and are built for one plane each. 3000 coolies have been working on these hangars since March, 1944; the coolies are kept on the premises at all times. The hangars are 50 meters apart and are 500 meters from the wire fence, which is heavily guarded. An office building is near the center of the field; two buildings with underground cellars for storing ammunition are on the east side of the field; and two low barracks buildings are located on the west side. In front of the temple northwest of the airfield is one AA gun and two AA machine guns.

2 - Chung [illegible] Airfield, with a hangar capacity of 5 planes and a barracks, is east of the fort (5.1 - E.4). It was constructed by approximately 300 coolies since November, 1943. The runway is short and the field not used much. This field cannot be identified on aerial photos.

3 - A small seaplane hangar (6 - F.7) is located on the shore in the Inner Harbor.

(ee) Power Plants—The power plant for the City of Amoy and [illegible] is located in the Inner Harbor (6.4 - F.4) and is equipped with one coal and one oil burning boiler. There is no evidence of additional plants. The Kulangsu Power Plant on the [illegible] of the two points on the north end of the island is not being used due to fuel shortage. Reports indicate this plant is being held in reserve.

(ff) There are no military defenses at present on Kulangsu except on Camel Rock, since all other AA guns were removed to Amoy recently. Barbed wire encircles the power plant and some of the [illegible]. A commercial radio station is located on Kulangsu.

(gg) Four small patrol boats (approximately 60 feet long), each with two machine guns and manned by 20 men, are stationed as follows: one along the Bund, one in front of Tiger Head, one in front of Amoy University, and one near Kulangsu beach on the south shore. They patrol chiefly at night.

QUEMOY ISLAND

(hh) In the week ending 18 October 1944, 2000 Japanese troops (of the 4000 brought into the Amoy area from Central China) were removed to Quemoy. They are labor troops. Many AA gun positions are being constructed, but to date no information has been received as to location. Many tanks and armored cars are now being shipped from Amoy to Quemoy Island.

LITTLE QUEMOY ISLAND

(ii) No military activity or installations have been noted on Little Quemoy as of 18 October 1944.

(jj) Personal observations made by Lt. A.P. [illegible], USNR, from [illegible] Fort ([illegible]), Oct. [illegible], 1944.

1 - Heavy AA fire from points all over Amoy Island on 24 Oct. during raid by P-40s and P-51s—a solid curtain of bursting AA shells during entire raid. Also AA guns on Camel Rock (Kulangsu).

2 - Heavy shipping, averaging 35 per day, between Amoy and Formosa is being carried on by 60-ft. junks. They each carry 10 tons, are Formosan ships with 3 sails, are painted white, and have a comparatively low bow and stern. During attack they drop sails and feign fishing.

3 - A small fleet of 15 Japanese ships were lying in the Outer Harbor on 26 October (1 cruiser, 6 destroyers, 3 transports and 5 cargo ships). The entire Jap convoy weighed anchor at 1630 and steamed [illegible]. At 1830 heavy gunfire and explosions were heard out to sea in the direction which the Jap convoy had steamed. This action continued for 18 minutes.

4 - The patrol boats reported in paragraph (gg) above are now camouflaged and tied up at the same locations as previously described. The Japs are using junks to cover their patrol routes around the island since the recent bombings. They were observed to challenge every junk as it sailed out of the harbor and rounded [illegible] Fort.

5 - Much blasting on Amoy can be heard throughout the day.

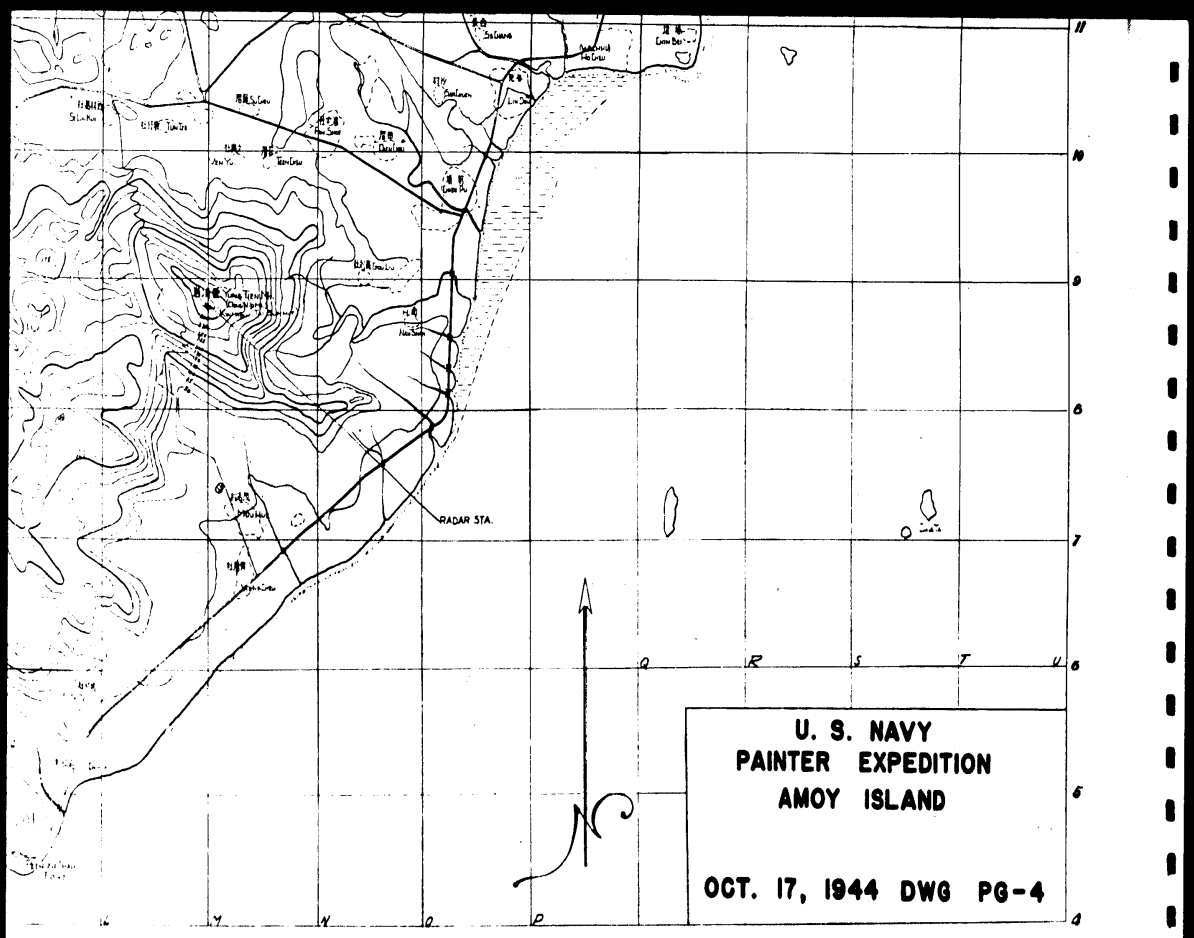
6 - A Radar station of the "[illegible]" type is located on a high mountain ([illegible])([illegible]). The peak is named both [illegible] Summit and [illegible]. This installation was formerly located on Tiger Head Hill.

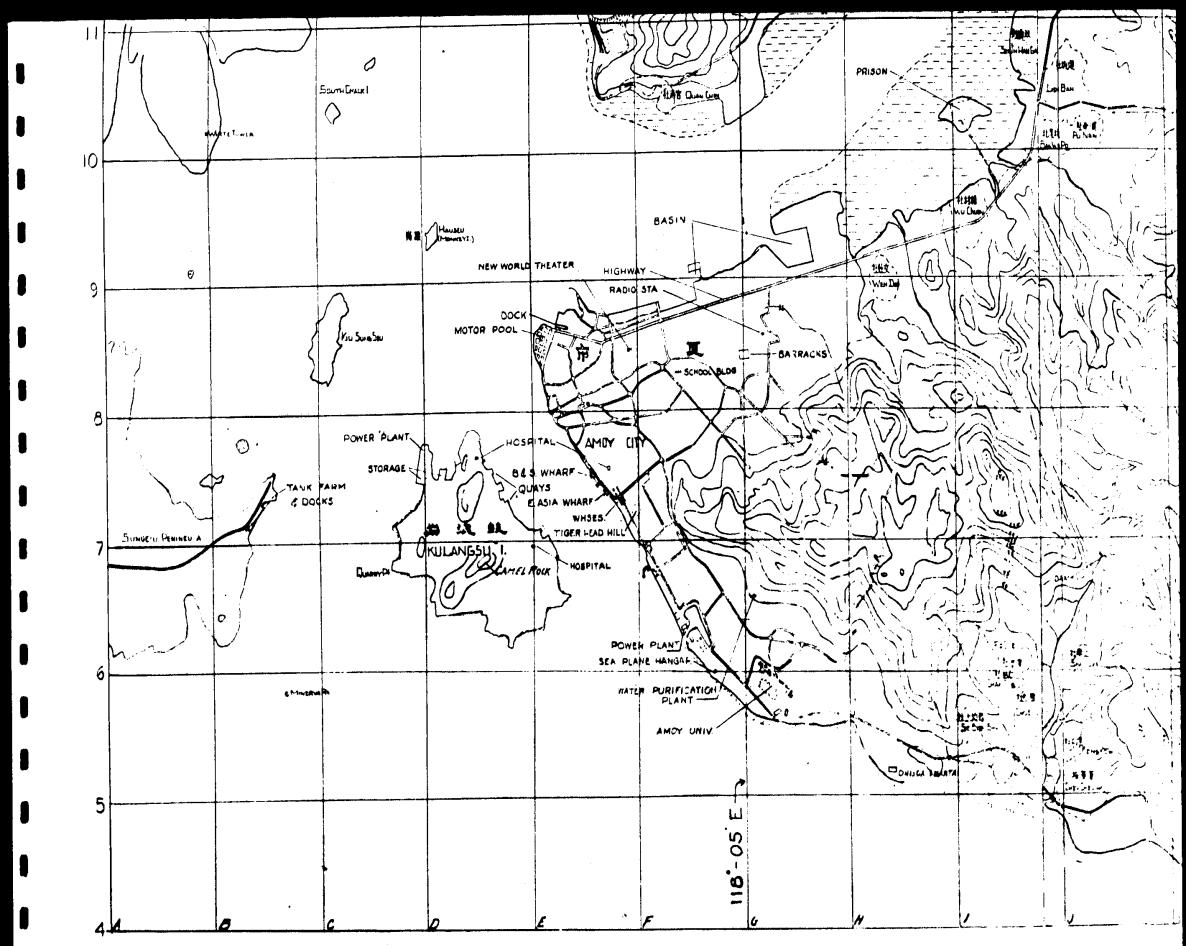
(b) Ease of Defense

(1) Enemy reinforcements from the interior and land counterattacks appear unlikely in the early stages. The nearest enemy troop concentration on the mainland is at Swatow (13,000 on Oct.20), and there is no land communication route between these areas at present. See Section III-D for possible enemy reinforcements from other concentrations.

(2) It appears that the area is fairly well isolated from the interior. However, the reconstruction of the interior highway system opens such routes both ways. It is obvious that at such time these routes will have to be guarded against enemy attack.

*NOTE: It must be noted that this figure is furnished by local Chinese agents. [illegible] Army Intelligence estimates [illegible] troops in Amoy Area.


RADAR STA.
U. S. NAVY
PAINTER EXPEDITION
AMOY ISLAND
OCT. 17, 1944 DWG PG-4



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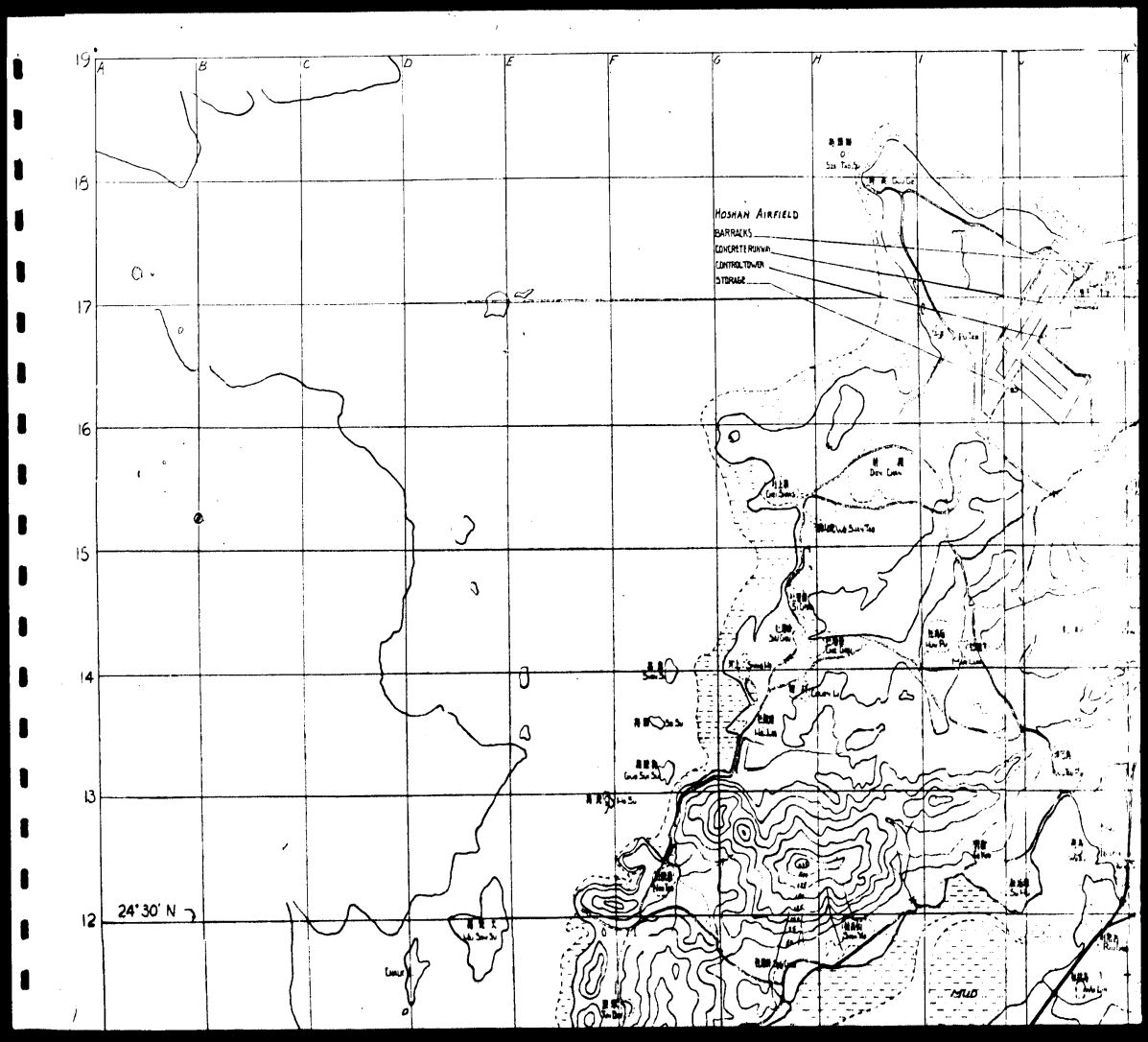
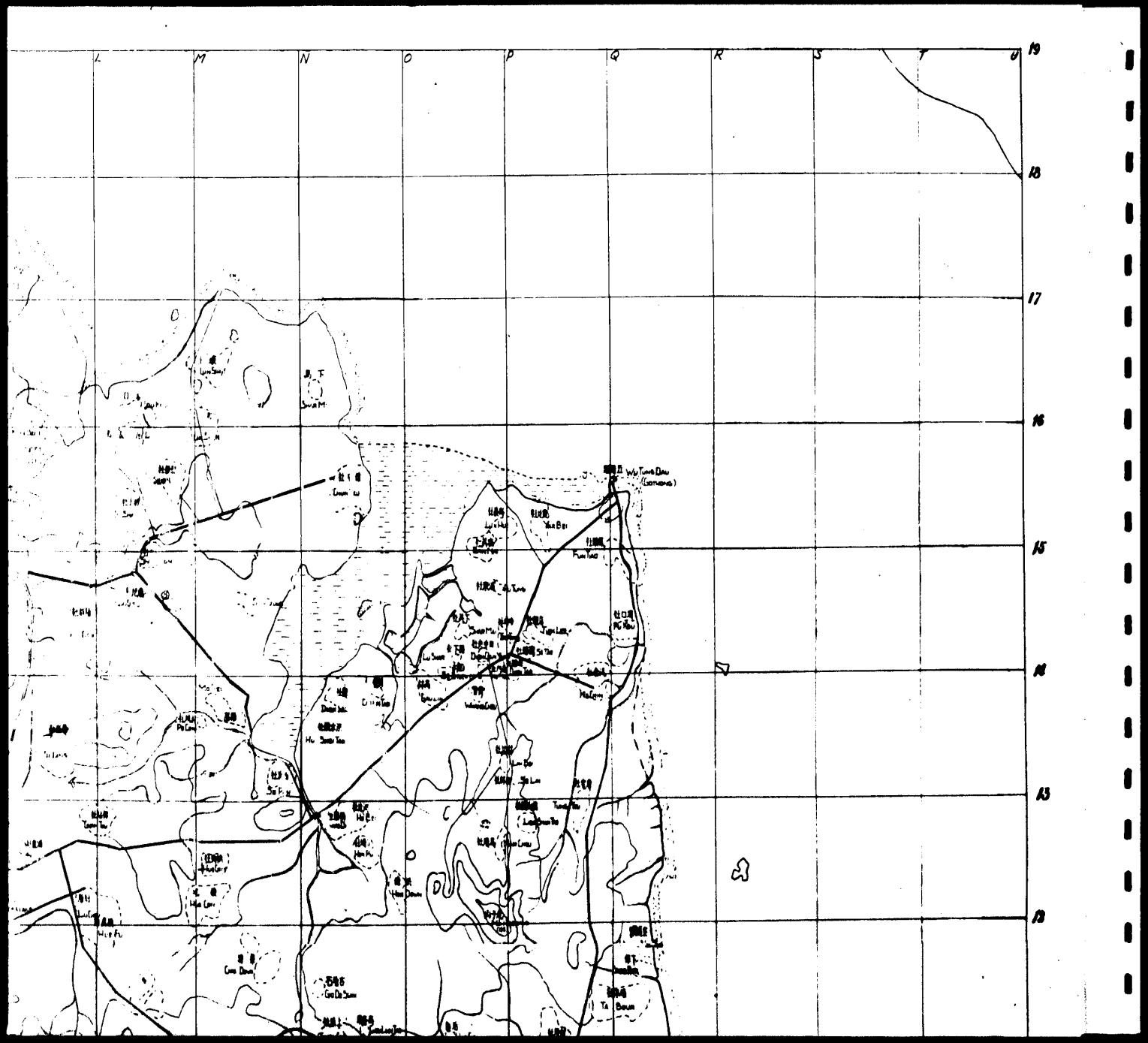

HOSHAN AIRFIELD
BARRACKS
CONCRETE RUNWAY
CONTROL TOWER
STORAGE
24° 30' N
MUD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SEC. II - AMOY (CONTINUED)

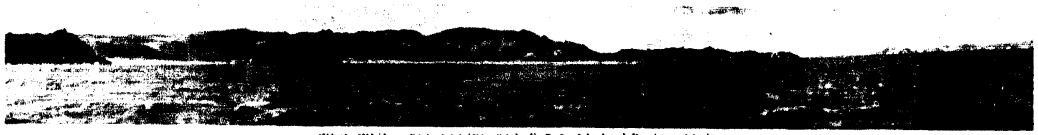
NOTE: All pictures were taken from a moving junk from 1 to 3 miles offshore.

#211.66 - 211.67 Dodd Head on E. Coast of Quemoy I., Lialu Hill in background; Az. 260°.

#211.84 - 211.86 Lialu Head on S.E. Coast Quemoy I., Lialu Hill in background; Az. 330°.

#210.84, #210.92 and #210.94 West half of Lialu Bay and S.W. Coast Quemoy I. in foreground; Az. 300°.

#211.07, #211.08, #211.11 and #211.17 S.W. Coast Quemoy I.; Little Quemoy I. on left center; and Amoy I. on extreme left; Az. 300° - 330°.



#212.19, #212.41 and #212.44 Chinhe Point (China Mainland), Wu Tou Island on left and Amoy Island in background; Az. 290° - 350°.