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UNITED STATES SECRET EQUALS
BRITISH SECRET AND MOST SECRET

FORMOSA

INTERIM REPORT

FEBRUARY 1944

OFFICE OF THE
ASSISTANT CHIEF OF AIR STAFF, INTELLIGENCE
WASHINGTON, D. C.

UNITED STATES SECRET EQUALS
BRITISH SECRET AND MOST SECRET

United States SECRET
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SECRET

By Authority of The
Commanding General
Army Air Forces

16/2/44 [illegible]
Date Initials

FORMOSA (Taiwan)

(Including the Pescadores Islands)

(Objective Folder Areas 91.3-7)

INTERIM REPORT

This report is supplemental to the published air objective folders on Formosa and the Pescadores Islands and contains considerable new material (including photo reconnaissance coverage) to be incorporated in revisions of the folders.

In accordance with the directive, this report bears a "Secret" classification. Material of lower classification, however, retains its original classification.

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FORMOSA

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8a	Military Storehouses and Main Wharf (Takao)	91.6 Takao	22° 37' N 120° 17' E	IX, II
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9	Railroad Yard and Repair Shops (Takao)	91.6 Takao	22° 38' N 120° 16' E	IX
13	Asano Cement Plant (Takao)	91.6 Takao	22° 39' N 120° 16' E	IX
15a	NW Keelung Wharves	91.3 Taihoku	25° 09' N 121° 44' E	III, II
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23	Sharyo Shipyard	91.3 Taihoku	25° 10' N 121° 45' E	III
27	Hatto Bridges and Tunnels	91.3 Taihoku	25° 07' N 121° 44' E	III, II
28	Shinten River RR Bridge	91.3 Taihoku	25° 02' N 121° 29' E	IV
31	Taihoku RR Terminal	91.3 Taihoku	25° 03' N 121° 31' E	IV
32	Matsuyama RR Shops	91.3 Taihoku	25° 03' N 121° 35' E	IV, II

NUMERICAL LIST OF OBJECTIVES

Target Number	Target Name	Objective Area	Approximate Coordinates	Tab Reference
33	Kyushi Zan Oil Storage	91.3 Taihoku	25° 09' N 121° 44' E	III
35	Hatto Shi Steam Power Plant	91.3 Taihoku	25° 09' N 121° 47' E	III, II
36	Taihoku Transformer Station	91.3 Taihoku	25° 01' N 121° 32' E	IV, II
44	Kinkaseki Copper Works	91.3 Taihoku	25° 07' N 121° 51' E	III, II
47	Jonai District of Taihoku	91.3 Taihoku	25° 03' N 121° 31' E	IV
52	Matsuyama Airport	91.3 Taihoku	25° 04' N 121° 33' E	IV, II
55	Shimo Tamsui RR Bridge (Heito)	91.6 Takao	22° 40' N 120° 26' E	X
56	Toshien Dockyard (Toshien)	91.6 Takao	22° 41' N 120° 16' E	IX, II
57	Heito Airport (Heito)	91.6 Takao	22° 41' N 120° 27' E	X
61	Japan Aluminum Company (Nippon Aruminium K.K.)	91.5 Taiwan East	24° 00' N 121° 37' E	XIII, II
62	Nickel Smelter (Toyo Kinzoku Seiren)	91.5 Taiwan East	24° 00' N 121° 37' E	XIII, II
64	Karenko Wharves	91.5 Taiwan East	24° 00' N 121° 38' E	XIII, II
65	Suo Basin	91.5 Taiwan East	24° 35' N 121° 52' E	XII, II
66	Karenko RR Station and Yards	91.5 Taiwan East	23° 59' N 121° 36' E	XIII
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70	Maruyama Power Plant	91.5 Taiwan East	24° 39' N 121° 40' E	XII, II
82	Jitsugetsutan Power Plant #1 (Monpaitan)	91.4 Taiwan West	23° 51' N 120° 52' E	VI, II
83	Jitsugetsutan Power Plant #2 (Suiriko)	91.4 Taiwan West	23° 49' N 120° 51' E	VI, II

NUMERICAL LIST OF OBJECTIVES

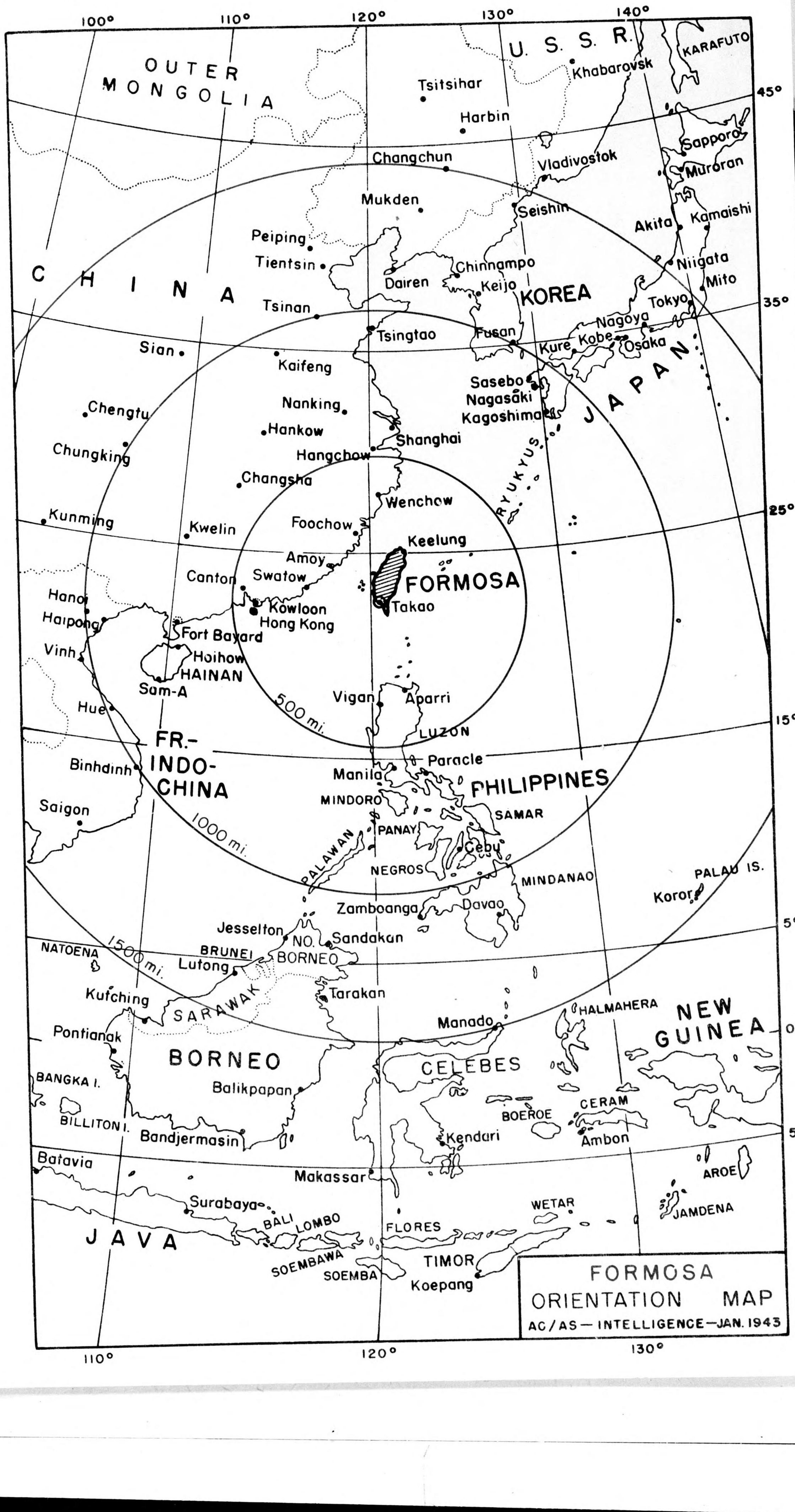
Target Number	Target Name	Objective Area	Approximate Coordinates	Tab Reference
85	Byoritsu Refinery (Nihon Sekiyu K.K.)	91.4 Taiwan West	24° 34' N 120° 49' E	V
86	Kinsui Casing-Head Plant	91.4 Taiwan West	24° 37' N 120° 53' E	V
87	Carbon Black Plant (Kinsui)	91.4 Taiwan West	24° 37' N 120° 53' E	V, II
89	Tainan Salt Works	91.4 Taiwan West	23° 00' N 120° 09' E	VII
90	Nisui Junction and Bridge	91.4 Taiwan West	23° 47' N 120° 38' E	V
91	Taito River Bridges	91.4 Taiwan West	24° 07' N 120° 34' E	V, II
92	Shoka RR Terminal	91.4 Taiwan West	24° 06' N 120° 33' E	V
93	Toyohara Tunnel and Bridge	91.4 Taiwan West	24° 17' N 120° 45' E	V
94	Taian River Bridge (Taiko)	91.4 Taiwan West	24° 25' N 120° 38' E	V, II
95	Chikunan Terminal and Bridges	91.4 Taiwan West	24° 41' N 120° 48' E	V, II
100	Gosei (Niitaka) Harbor	91.4 Taiwan West	24° 15' N 120° 32' E	V, II
103	Taichu Alcohol Plant (Teikoku Seito Kaisha)	91.4 Taiwan West	24° 08' N 120° 42' E	V
104	Kobi Sugar and Alcohol Plant	91.4 Taiwan West	23° 42' N 120° 26' E	V
110	Tainan Magnesium Plant (Minami Nippon K.K.)	91.4 Taiwan West	23° 00' N 120° 09' E	VII
112	Tainan Barracks	91.4 Taiwan West	23° 00' N 120° 12' E	VII
119	Shukkoko Casing-Head Plant	91.4 Taiwan West	24° 25' N 120° 51' E	V, II
145	Ansan Drydock	91.7 Pescadores	23° 33' N 119° 34' E	XIV
146	Ansan Wharves	91.7 Pescadores	23° 33' N 119° 34' E	XIV

NUMERICAL LIST OF OBJECTIVES

Target Number	Target Name	Objective Area	Approximate Coordinates	Tab Reference
147	Bako Harbor	91.7 Pescadores	23° 34' N 119° 33' E	XIV
150	Ansan Oil Stores	91.7 Pescadores	23° 33' N 119° 34' E	XIV
151	Ansan Torpedo and Mine Stores	91.7 Pescadores	23° 33' N 119° 34' E	XIV
152	Ansan Stores	91.7 Pescadores	23° 33' N 119° 34' E	XIV
153	North Fort Magazine	91.7 Pescadores	23° 34' N 119° 35' E	XIV
156	Bako Power Plant	91.7 Pescadores	23° 34' N 119° 34' E	XIV
162	Toko Seaplane Base	91.4 Taiwan West	22° 27' N 120° 27' E	XI
164	Takao Substation	91.6 Takao	22° 39' N 120° 17' E	IX, II
165	Ansan Underground Oil Tanks	91.7 Pescadores	23° 33' N 119° 34' E	XIV
166	Okayama Aircraft Plant	91.4 Taiwan West	22° 48' N 120° 16' E	VIII, II
168	Kyoshito Sugar and Alcohol Plant (Taiwan Semo K)	91.4 Taiwan West	22° 46' N 120° 17' E	VIII
170	Shokai Shipyard	91.3 Taihoku	25° 09' N 121° 45' E	III
171	Nansei Sugar and Alcohol Plant (Meiji Seito Kaisha)	91.4 Taiwan West	23° 24' N 120° 16' E	V
172	Reigaryo Sugar/Alcohol Plant (Takao)	91.6 Takao	22° 34' N 120° 19' E	IX
173	Western Wharf (Takao)	91.6 Takao	22° 37' N 120° 16' E	IX
174	Takao RR Station (Takao)	91.6 Takao	22° 38' N 120° 17' E	IX
175	Reigaryo Shipyard (Takao)	91.6 Takao	22° 37' N 120° 18' E	IX

NUMERICAL LIST OF OBJECTIVES

Target Number	Target Name	Objective Area	Approximate Coordinates	Tab Reference
176	Reigaryo Military Stores (Takao)	91.6 Takao	22° 36' N 120° 19' E	IX
177	North Takao Steam Power Plant	91.6 Takao	22° 38' N 120° 16' E	IX, II
178	Toshien Fuel and Munitions Depot (Toshien)	91.6 Takao	22° 40' N 120° 17' E	IX
179	Hozan Embarkation Camp	91.6 Takao	22° 37' N 120° 21' E	IX
180	Heito Sugar/Alcohol Plant (Taiwan Seito K.K.)	91.6 Takao	22° 39' N 120° 26' E	X
181	Suisha Dam (Lake Jitsugetsutan)	91.4 Taiwan West	22° 39' N 120° 26' E	VI, II


100°
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KARAFUTO
Khabarovsk
OUTER MONGOLIA
Tsitsihar
Harbin
Sapporo
Muroran
Changchun
Vladivostok
Mukden
Seishin
Akita
Kamaishi
Peiping
Tientsin
Chinnampo
Niigata
Mito
Dairen
Keijo
KOREA
Tokyo
CHINA
Tsinan
Nagoya
Tsingtao
Fusan
Kure
Kobe
Osaka
Sian
Kaifeng
Sasebo
Nagasaki
Kagoshima
JAPAN
Nanking
Chengtu
Hankow
Shanghai
Chungking
Hangchow
RYUKYUS
Changsha
Wenchow
Kunming
Kwelin
Foochow
Keelung
Amoy
Canton
Swatow
FORMOSA
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MINDANAO
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Zamboanga
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1500 mi.
NATOENA
BRUNEI
BORNEO
Lufong
Tarakan
Kuching
SARAWAK
HALMAHERA
NEW
GUINEA
Manado
Pontianak
BORNEO
CELEBES
BANGKA I.
Balikpapan
CERAM
BOEROE
BILLITON I.
Bandjermasin
Kendari
Ambon
Batavia
Makassar
AROE
Surabaya
WETAR
JAMDENA
BALI
LOMBO
FLORES
JAVA
SOEMBAWA
TIMOR
SOEMBA
Koepang
FORMOSA
ORIENTATION MAP
AC/AS—INTELLIGENCE—JAN. 1943

FORMOSA

(Including the Pescadores Islands)

General

Formosa, the southern anchor of Japan's inner defense zone, is a multi-purpose base for military operations in the SW Pacific regions and an integrated unit of the Japanese Empire's war economy. In the development of the island's communications, as well as many of its economic activities, military usefulness has been the primary consideration. The extent of the military direction of Formosan activities is indicated by the fact that it has been customary to appoint a high ranking naval officer to the Office of Governor General.

While its primary function has been to spearhead Japan's southward military moves, Formosa has also served as a springboard for economic and political penetration in SE Asia. The government general at Taihoku, the capitol, is the administrative center of the Pescadores, Hainan, the Spratleys, and recently of other territories as well. The Formosan Development Company, a government sponsored corporation, controls much of Formosa's economy and many economic activities in SE Asia. Much of Japan's pan-Asiatic propaganda is broadcast from powerful transmitters at Itahashi and at Hozan.

Many Japanese techniques of assimilation and control of subject peoples were developed in Formosa. The island's mixed population has continued to resent Japanese control and, while generally docile, has been a frequent source of unrest. Of the total population of 5,747,000 in 1938, only about 308,000 were Japanese. About 5 million were either Chinese nationals or descendants of Kwantung and Fukien Chinese. The remainder were aboriginal natives, largely confined to the mountainous eastern half of the island. The Japanese constitute the ruling class, and the Chinese population is rigidly disciplined and controlled.

Formosa's Role in Japan's War Effort

I. STRATEGIC: Formosa is one of the best developed of Japan's permanent bases south of the main islands. Located about 100 miles off the south China coast, about 250 miles from Luzon Island in the Philippines, midway between Tokyo and Saigon and between Shanghai and Hong Kong, it was well suited as a base for Japan's southward expansion and is a valuable link in the supply chain connecting Japan Proper with SE Asia and the SW Pacific. It has become a major staging base, serving as a "funnel" through which troops, supplies and aircraft are moved. Naval and air forces, expeditionary forces and supplies are assembled and embarked here. Numerous army camps and air bases are utilized for last-phase training and as replacement centers for field forces.

The island's position astride north-bound raw materials and south-bound military supply lanes increases the strategic impact of operations against its key objectives -- particularly those in the categories of transportation, shipping, military installations and airports. Attacks against these objectives would not only have some effect on the industrial potential of Japan Proper, but would also be felt in Japanese military capabilities in such distant theaters as SE Asia, the Netherlands Indies and in the SW Pacific islands.

A. Naval: The development of new bases has not greatly lessened Formosa's importance as a base for protecting Japan's southern sea lanes. The island serves as a shield for convoy movements along the China coast and between the Philippines and the main islands. The ports of Takao and Keelung are utilized as convoy control points in an integrated protective system which includes bases in Hainan, the Pescadores, Hong Kong and the Philippines. Keelung is the main port of entry and Takao (together with the nearby roadsteads off Toko and Boryo) the principal port of embarkation. The secondary naval station at Mako in the Pescadores also serves as a control point, although its usefulness has been considerably reduced by the development of new bases and by the threat of the China-based U.S. air forces.

Ship repair and bunkering facilities are available at Keelung, Takao and at Mako. The naval headquarters, formerly located at Mako, has been transferred to Takao, and a new naval base is nearing completion at Toshien, near Takao.

B. Air (See Airport Survey, Tab XV): Reconnaissance conducted during April - November 1943 and January 1944 confirms the establishment of several major operational airbases in Formosa. The largest of these -- Okayama, Einansho, Kagi, Shinchiku, Heito and Toko -- are first-class bases, equipped with all facilities. At this time, reconnaissance is not available for the Matsuyama airport, a major peacetime field, but it is believed that this airport has been improved and still ranks as a major base. Because the significance of Formosan airports is subject to rapid shifts in accordance with changing tactical requirements, they are not designated as numbered targets. Aircraft plants at these airports are, however, listed as targets.

Estimated air strength figures for Formosa have been on the order of 200 (October - December 1943). With the increased pressure being applied by Allied forces against SW Pacific bases and the subsequent increases in Japanese air losses there, a trend toward a greater concentration of air strength in Formosa and South China has been noted. February 1, 1944 strength was estimated at 300 fighters and 200 bombers. Formosa's central location in relation to Japan's outer defenses in the SW Pacific makes possible a rapid shifting of air strength to numerous threatened points in this region.

Formosa's airfields have three primary functions:

(1) Patrol and defense in the Formosa Strait region (Formosa-based patrols are able to operate well into the range of planes based in Japan Proper, China, French Indo-China and the Philippines).

(2) Advanced training bases for last-phase training with operational types

(3) Air staging bases for maintaining and supplying air forces in South China, SE Asia, the NEI and SW Pacific.

A few fields may also serve the fourth function of "branch air depots." These fields, equipped with major maintenance and overhaul facilities, probably do last-phase modification and some minor assembly. Available reconnaissance reveals a previously unreported plant at the Okayama

airport, which appears to be an important assembly or modification plant. Reconnaissance also shows two 520 by 210 ft. "hangars" at Toko -- in addition to smaller hangars and shops -- which may be utilized for minor assembly or last-phase modification of large seaplanes. The existence of a secondary air depot at the Heito airport is also confirmed. Intelligence reports have referred to an aircraft factory at Matsuyama and to a "branch air depot" at Karenko.

In contrast to earlier intelligence, reconnaissance has established only one operational airfield in the Pescadores.

Flying conditions in Formosa are generally poor, except in the Takao area. High winds and heavy cloud, with frequent thunder storms, characterize the mountainous eastern half of the island. Japanese commercial aircraft are known to have avoided flying over the central backbone of the island because of the winds and poor visibility frequently encountered there. Heavy seasonal rains also make airfield maintenance difficult. Fields not equipped with hard-surfaced runways may be rendered non-operational for some time following the heaviest rains.

C. Ground: Because of its strategic location and military control, Formosa has been strongly fortified against sea-borne attack. The inaccessibility of most of the coastline has enabled the Japanese to concentrate defenses at the relatively few points considered advantageous for landings. The east coast is virtually a mountain wall, the only breaks being at Karenko, Taito and Suo. Of these, only Suo gives access to feasible routes leading to other parts of the island, but the narrow bay there is surrounded by hills and is considered very advantageous for defense.

Mud flats, sand bars and non-trafficable soil make landings along most of the west coast impracticable, except at the beaches of Tamsui, Shinchiku and Toko. These beaches have the essential requirements of a reasonably good sea approach, trafficable soil, developed communications and accessibility to other parts of the island. They are all, however, in fortified zones and are backed up by networks of military airports.

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The number and disposition of ground troops on the island has been extremely variable, reflecting not only defense requirements, but also the changeable requirements of training programs and field force replacement and supply. The island's diversified terrain and semi-tropical climate lend themselves to the training of troops for operations in most of the southern theaters. Its strategic location makes it well suited to serve as a concentration and staging base as well as a rest area for field forces.

The five main troop concentration centers are:

(1) Keelung -- Local defense and temporary receiving camps.

(2) Taihoku -- Local defense, training and convalescent camps.

(3) Kagi -- Training camps.

(4) Tainan -- Training and replacement camps and

(5) Takao-Hozan -- Local defense, embarkation and convalescent camps.

Local defense garrisons are also maintained at Taichu, Rokuko, Heito, Taito, Karenko and Mako in the Pescadores. A special police force, estimated to number some 15,000, is garrisoned at many other points (particularly in the mountainous eastern half of the island).

Allied prisoner of war camps are reported to be located at or near Tamazato (at about the center of Taito-Karenko valley in eastern Formosa), Taihoku, Taichu (possibly moved to Hori, near Lake Jitsugetsutan) and Heito (reported abandoned).

II. ECONOMIC: While relatively small and outweighed by military advantages, Formosa's industrial/economic contributions to Japan's war potential are significant in several respects. Several industries, established here to take advantage of shorter-haul raw material movements and as part of a program to decentralize strategic war production, are important. Agriculture, mining and forestry, however, are the principal economic activities. The island is self-sufficient in food, but it remains dependent on sea-borne imports for most of its iron and steel, manufactured products, oil and basic chemicals.

A. Agriculture, Mining and Forestry: Agricultural products produced in quantity, substantial tonnages of which are exported to Japan or to Japanese field forces, are sugar, rice, tropical fruits, tea, sweet potatoes and jute. Of these, rice is probably the most important export item, 1943 exports having been estimated at 600,000 tons. This tonnage is small in comparison with the very large amounts normally available to Japan from SE Asia. However, Japan's tight shipping position has increased the significance of Formosan rice, since the island's central location makes possible relatively short-haul transport to Japan Proper and to some field forces. This is borne out by reports stating that the official price subsidy for Formosan rice was raised in 1943 to increase production. Other agricultural products (grown largely for local consumption) include tobacco, nuts, beans, wheat, flax and sesame. Substantial amounts of salt, estimated to average 160,000 tons annually, are also exported to Japan. The island's fishing fleets provide largely for domestic needs.

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Several types of hardwoods are available. Most of the lumber is used locally for general construction, wooden shipbuilding and paper pulp; little is exported. Formosa normally supplied about 75% of the world's camphor, but only a relatively small percentage of the total output is currently required by Japan's chemical industry.

The principal mineral exports to Japan are:

(1) Copper: About 10,000 tons, or roughly 9% of Japan's current supply, are reported shipped to Japan annually.

(2) Coal: Present production probably amounts to about 2,500,000 tons per year. The great bulk of the output is lower-grade bituminous, of which 40% is consumed locally and the remainder is used as ship bunker fuel or exported.

(3) Manganese: Estimated 1938 production of ore was 38,000 tons.

(4) Sulphur: Small amounts are exported.

Four or five oil and natural gas fields are reported on the island, but their present status is uncertain. These fields are small oil producers, but they are important as sources of large quantities of natural gas which is used extensively as a fuel or processed into gasoline. Of even greater significance, however, is the by-product carbon black production (see below) at the northernmost fields. Production of petroleum products in 1938 (all locally refined) was estimated at 800,000 gals. of gasoline; 750,000 gals. of kerosene; 200,000 gals. of fuel oil; 140,000 gals. of lubricating oil, and about 400,000 gals. of miscellaneous light oils.

B. Industry: From the standpoint of Japan's war economy, Formosa's significant industries are:

(1) Two aluminum plants (at Takao and Karenko), credited with approximately 15% of total Japanese capacity. Bauxite is imported from Bintan Island, near Singapore.

(2) At least one moderately large (at Okayama) and three small aircraft plants doing secondary assembly and/or last-phase modification.

(3) A copper concentrate mill at the Kinkaseki copper mine. The concentrate, copper content of which is about 10,000 tons, is shipped to Japan for refining.

(4) A nickel smelter (at Karenko) processing ore from the Celebes, capable of producing about 10% of Japan's requirements. A manganese smelter is reported near Keelung.

(5) A magnesium plant at Tainan and a reported plant at Takao.

(6) One (possibly two) carbon black plant (at Kinsui) which supplies virtually all of Japan's better-grade black for tires.

(7) About 40 sugar refineries, many of which also produce industrial alcohol. These alcohol plants are believed to supply almost 30% of Japan's alcohol. At least five are equipped to produce substantial quantities of absolute alcohol or butanol.

(8) Four small shipyards, at least three of which have their own marine engine works. These yards are operating at maximum capacity in the production of small boats and standardized wooden cargo vessels.

Other industries which do not contribute directly to the war potential of Japan Proper, but serve to relieve the strain on the Japanese economy by providing for local needs, include several large chemical fertilizer plants (estimated to meet about 80% of the island's requirements); several small textile, bagasse and wood pulp, and machinery plants; two cement plants; at least three casing-head gasoline plants and one (possibly two) oil refinery.

Recent reconnaissance has established the existence of several new plants in Takao city, the significance of which cannot presently be assessed. These include (1) a partially completed iron smelter, (2) an oil or kerosene refinery which appears to be partially dismantled, and (3) several other large, unidentified factories.

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SUMMARY AND EVALUATION OF PRINCIPAL OBJECTIVES

While the pattern of air attack against Formosa will vary with changing war situations, several categories of objectives will probably rate primary consideration under most conditions. The summary below is based on the complete Tabulation of Targets which follows.

Harbor Facilities and Ship Concentrations

Formosa's economic and military potential is dependent on the continuous operation of sea communications, centering primarily at the ports of Takao and Keelung. While Keelung was the leading pre-war port, the principal port of entry and export for commodities and military supplies going to and from Japan, the necessity for convoying shipping has probably forced the diversion of all possible tonnage to Takao. The availability of auxiliary anchorages near Takao (at Mako and Toko-Boryo) makes this port more suitable for convoy control.

The port of Keelung is equipped with extensive storage and loading facilities (Targets 15a and 15c) and has facilities for ship repair and bunkering (Targets 15b and 33). A new harbor at Gosei (Target 100) has been developed to serve the NW coast and to relieve Keelung. It is likely that a considerable amount of tonnage formerly using Keelung will now be found at Gosei.

The port of Takao is congested with military storehouses (Targets 8a and b, and 173) and is equipped for fast loading of convoys and embarkation shipping. Fueling facilities are probably inadequate, however, and it is likely that some of the ships using this port bunker at Mako in the Pescadores (Targets 150 and 165) or at the new Toshien Naval Base just north of Takao (Target 178).

In view of Japan's stringent shipping position, ship concentrations in these ports constitute objectives of even greater significance than do the harbor facilities themselves. Both Keelung and Takao have very limited anchorage space and narrow entrance channels. In the inner harbor of Takao, for example, ships not berthed alongside wharves must be moored two abreast in a line parallel to the main wharves. Reconnaissance has established that as many as 20 ships may be found moored in this manner. Much the same conditions are to be found at Keelung. Successful attacks which resulted in the sinking of ships alongside wharves or at buoys parallel to the wharves may be effective means of at least partially blocking these ports for some time.

Maximum results may be expected from initial attacks delivered in strength, since it is likely that all possible shipping will be dispersed in the outer harbors or nearby anchorages following initial attacks.

The port of Karenko (Target 64) has relatively limited storage and loading facilities; it is used primarily by ships serving the aluminum, nickel and chemical plants there. This port is also vulnerable to partial blocking since it has a very small anchorage space and no outer harbor.

The roadsteads off Tainan, Toseki and Taito and the anchorage and basin at Suo are used by small coastal and fishing vessels and only occasionally by sea-going ships.

Mako Bay is used as a convoy assembly area and a coal/oil bunkering port.

Railroad Facilities

Always operated at near capacity because of the scarcity of good ports which limits coastwise shipping, the single N/S trunk railroad has assumed added significance with the deterioration of Japan's shipping position. The W coast trunk line connects Keelung with Takao. Spurs from this line connect Keelung with Suo on the E coast and Takao with Boryo on the SW coast. A secondary line, not connected with the trunk line, runs between Karenko and Taito on the E coast.

The trunk line is double track only between Keelung and Taihoku, Itahashi and Toen, Shinchiku and Chikunan and between Tainan and Takao. Between Chikunan and Oiwake (near Shoka) the line divides, a slow freight spur leading along the coast and an express line passing along the mountain foothills by way of Taichu. This express route has many short tunnels and bridges. The entire trunk line is vulnerable at several long bridges and sidings. The neutralization of four key points on this line (Targets 27, 91, 69 and 55) would temporarily halt all through railroad traffic. Small shops are located at the principal stations, but only two are equipped for complete maintenance and repair -- one at Matsuyama (Target 32), and another at Takao (Target 9). These are important objectives since virtually all of the rolling stock is manufactured in Japan and it is reported to be deteriorating rapidly.

In addition to these railways, which are government operated, there are numerous narrow gauge private lines connecting sugar mills, coal mines and small towns with the trunk railway. These have relatively little significance.

The western trunk line is of 3 foot 6 inch gauge; the secondary east coast line and several of the spur lines are of 2 foot 6 inch gauge. Total rolling stock was estimated as follows about 1940:

220-400	steam locomotives
600	passenger cars
8,000-12,000	freight cars, mostly open of 10-20 tons capacity
60	refrigerated cars
6	steam powered combination freight and passenger cars
24	gasoline powered combination freight and passenger cars

The busiest stretches along the trunk line are:

Keelung-Taihoku	-- 23 passenger and 4-12 freight cars daily
Shinchiku-Chikunan	-- 16 passenger and 4-12 freight trains daily
Tainan-Takao	-- 17 passenger and 2-8 freight trains daily

War conditions have undoubtedly altered these schedules, but they give some indication of relative expectancy.

The through highway system has been developed primarily for military purposes and only secondarily as a feeder for the railways. A continuous network extends from Keelung to Takao, but there are reported to be several bad stretches which are not suited for heavy traffic. All E-W land communications are dependent on first-class roads along the northern coast and secondary roads and trails in the central and southern parts of the island.

Electric Power

From an economic standpoint one of the principal objectives is the power development at Lake Jitsugetsutan. The Jitsugetsutan power plants Nos. I and II supply half the power available in northern, western and southern Formosa. The project may be neutralized either by breaching the Suisha Dam (Target 181), effective only during the limited period when the lake is full, or by destroying the #1 plant (Target 82).

The interruption of this power supply would seriously curtail aluminum, electro-chemical and copper production near Keelung and Takao and disrupt many military installations. Steam power plants at Keelung (Target 35) and Takao (Target 177) are important local sources of power, the neutralization of which would be profitable. By themselves, however, these plants could not adequately compensate for the loss of Jitsugetsutan power. Primary transformer stations at Takao (Target 164) and Taihoku (Target 36) which control the distribution of Jitsugetsutan power in these districts, are alternate means of at least temporarily cutting this power supply.

The nickel and aluminum plants at Karenko are reported to obtain their power from a series of hydro-electric plants along the Mokka River, SW of the city. Numerous other hydro and steam power plants have been projected at various places on the island, but it is unlikely that they have been constructed.

A final evaluation of the significance of electric power targets is dependent upon the importance attributed to Formosa's industrial/economic contribution to Japan's war potential. Direct military activities which are believed to outweigh the industrial/economic, will probably not be disrupted seriously unless the great bulk of the power supply is curtailed.

Industrial Objectives

16

The principal industrial targets are summarized in the Report Section (Tab I). Outstanding among these are :

(1) Nippon Aluminum Co. (Takao) -- Target 3
An integrated alumina/aluminum plant, credited with about 10% of Japanese capacity.

(2) Japan Aluminum Co. (Karenko) -- Target 61
A reported aluminum reduction plant credited with about 5.7% of Japanese capacity.

(3) Okayama Aircraft Works (Okayama) -- Target 166
A large aircraft plant, probably doing secondary assembly or last-phase modification.

(4) Matsuyama Airport (aircraft plant) -- Target 52
An aircraft assembly plant is reported at or near this airport.

(5) Kinkaseki Copper Works -- Target 44
Copper mine and concentrate mill, credited with about 9% of Japanese-controlled production.

(6) Carbon Black Plant (Kinsui) -- Target 87
Reported to be Japan's principal source of high-grade black, essential for tires.

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TABULATION OF TARGETS

Target Number	Target Name	Coordinates	Comment	Tab Reference	Target Chart
			AIRCRAFT FACTORIES		
	Takao Area (91.6)				
166	Okayama Aircraft Plant	22° 48' N 120° 16' E	Modification or assembly plant adjoining the large and completely equipped Okayama airport	VIII, II	166
162	Toko Seaplane Base	22° 27' N 120° 27' E	Probably modification or secondary assembly plant for large flying boats	XI	162
57	Heito Airport	22° 41' N 120° 27' E	Aircraft factory reported adjoining major airport	X	55
	Taihoku Area (91.3)				
52	Matsuyama Airport	25° 04' N 121° 33' E	Aircraft assembly plant reported adjoining major airport	IV, II	47
			BUILDING MATERIALS		
	Takao Area (91.6)				
13	Asano Cement Plant (Takao)	22° 39' N 120° 16' E	Largest plant, supplies bulk of Formosa's requirements	IX	3, 9

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TABULATION OF TARGETS

Target Number	Target Name	Coordinates	Comment	Tab Reference	Target Chart
			CHEMICAL PLANTS		
	Formosa West (91.4)				
87	Carbon Black Plant (Kinsui)	24° 37' N 120° 53' E	Japan's largest source of better-grade black for tires	V, II	86
103	Taichu Alcohol Plant	24° 08' N 120° 42' E	Annual capacity - 23,700 gal. Can produce absolute alcohol	V	103
104	Kobi Sugar and Alcohol Plant	23° 42' N 120° 26' E	Annual capacity - over 30,000 gals. Can produce absolute alcohol	V	104
171	Nansei Sugar and Alcohol Plant	23° 24' N 120° 16' E	Annual capacity - over 30,000 gals. Can produce absolute alcohol	V	171
	Takao Area (91.6)				
6	Industrial Alcohol Plant (Takao)	22° 37' N 120° 17' E	Annual capacity - over 12,000 gals. absolute alcohol	IX	3, 9
172	Reigaryo Sugar and Alcohol Plant (Takao)	22° 34' N 120° 19' E	New plant, believed to have large absolute alcohol capacity	IX	179

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TABULATION OF TARGETS

Target Number	Target Name	Coordinates	Comment	Tab Reference	Target Chart
			CHEMICAL PLANTS (Cont'd.)		
	Takao Area (91.6) (Cont'd.)				
168	Kyoshito Sugar and Alcohol Plant	22° 46' N 120° 17' E	Annual capacity - over 30,000 gal. Can produce absolute alcohol	VIII	166
180	Heito Sugar and Alcohol Plant	22° 39' N 120° 26' E	Annual capacity - 15,000 gals. Can produce absolute alcohol	X	55
			DEFENSES		
	Formosa West (91.4)				
112	Tainan Barracks	23° 00' N 120° 12' E	Large barracks area	VII	112
	Takao Area (91.6)				
179	Hozan Embarkation Camp	22° 37' N 120° 12' E	Very large military camp	IX	179
176	Reigaryo Military Stores (Takao)	22° 36' N 120° 19' E	Extensive military supply warehouse and munitions storage area	IX	3,9,179

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TABULATION OF TARGETS

Target Number	Target Name	Coordinates	Comment	Tab Reference	Target Chart
			DEFENSES (Cont'd.)		
	Pescadores Ils. (91.7)				
151	Torpedo and Mine Depot (Bako)	23° 33' N 119° 34' E	Revetted munitions depots	XIV	165
153	North Fort Magazine (Bako)	23° 34' N 119° 35' E	Coast defense munitions depots	XIV	165
152	Ansan Naval Base Stores	23° 33' N 119° 34' E	Numerous naval base storage buildings	XIV	165
			ELECTRIC POWER		
	Formosa West (91.4)				
82	Jitsugetsutan Power Plant #1 (Monpaitan)	23° 51' N 120° 52' E	100,000 KW hydroelectric plant; largest in Formosa	VI, II	82
83	Jitsugetustan Power Plant #2 (Suiriko)	23° 49' N 120° 51' E	43,000 KW hydroelectric plant	VI, II	82
181	Suisha Dam (Lake Jitsugetsutan)	23° 52' N 120° 53' E	Earth dam, impounds water for Targets 82 and 83	VI, II	82

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TABULATION OF TARGETS

Target Number	Target Name	Coordinates	Comment	Tab Reference	Target Chart
			ELECTRIC POWER (Cont'd.)		
	Taihoku Area (91.3)				
35	Hatto Shi Steam Power Plant (Keelung)	25° 09' N 121° 47' E	38,000 KW steam plant	III, II	35, 44
36	Taihoku Transformer Station	25° 01' N 121° 32' E	Controls distribution of Jitsugetsutan power in northern Formosa	IV, II	47
	Takao Area (91.6)				
164	Takao Substation	22° 39' N 120° 17' E	Controls distribution of Jitsugetsutan power in SW part of Formosa	IX, II	3, 9, 56
177	North Takao Steam Power Plant	22° 38' N 120° 16' E	13,000 KW capacity (possibly greater)	IX, II	3, 9, 56
	Formosa East (91.5)				
70	Maruyama Power Plant	24° 39' N 121° 40' E	18,000 KW hydroelectric plant, supplies Giran plain and Kinkaseki areas	XII, II	70
	Pescadores Ils. (91.7)				
156	Bako Power Plant	23° 34' N 119° 34' E	Largest power source in Bako (Ansan naval base has auxiliary plant)	XIV	165

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TABULATION OF TARGETS

Target Number	Target Name	Coordinates	Comment	Tab Reference	Target Chart
			HARBOR FACILITIES & WAREHOUSES		
	Taihoku Area (91.3)				
15a	NW Keelung Wharves	25° 09' N 121° 44' E	About 7 three-story warehouses; heavy-duty loading equipment	III, II	15a
15c	SW Keelung Wharves	25° 08' N 121° 44' E	Six large and numerous small warehouses; RR station and freight yard	III, II	15a
	Formosa West (91.4)				
100	Gosei (Niitaka) Harbor	24° 15' N 120° 32' E	Wharf and 6 warehouses (in 1940); other facilities under construction	V, II	100
	Formosa East (91.5)				
64	Karenko Wharves	24° 00' N 121° 38' E	Best equipped port on east coast; about 10 warehouses	XIII, II	64
65	Suo Basin	24° 35' N 121° 52' E	Fishing fleet basin; fuel stores and two warehouses	XII, II	65

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TABULATION OF TARGETS

Target Number	Target Name	Coordinates	Comment	Tab Reference	Target Chart
			HARBOR FACILITIES & WAREHOUSES (Cont'd.)		
	Takao Area (91.6)				
8a	Military Storehouses & Main Wharf (Takao)	22° 37' N 120° 17' E	Wharf berths 8 ships; about 75 warehouses, heavy-duty loading equipment and fueling facilities	IX, II	3, 9
8b	Takao River Wharves	22° 37' N 120° 16' E	Wharf and two berths, with about 9 warehouses	IX, II	3, 9
173	Western Wharf	22° 37' N 120° 16' E	About 30 storehouses; light loading equipment	IX	3, 9
	Pescadores Ils. (91.7)				
146	Ansan Naval Base Wharves (Bako)	23° 33' N 119° 34' E	Three piers and several storehouses	XIV	165
147	Bako Harbor	23° 34' N 119° 33' E	Three piers, large basin and several storehouses	XIV	165

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TABULATION OF TARGETS

Target Number	Target Name	Coordinates	Comment	Tab Reference	Target Chart
			IRON AND STEEL		
	Formosa East (91.5)				
62	Nickel Smelter (Karenko)	24° 00' N 121° 37' E	Reported capacity equal to 10% of total Japanese requirements	XIII, II	64
			NAVAL BASES & SHIPYARDS		
	Taihoku Area (91.3)				
15b	Gyucho Ko Harbor & Dockyard (Keelung)	25° 08' N 121° 44' E	Drydock, patent slip and repair shops. Coal and oil bunkering facilities	III, II	15a
23	Sharyo Shipyard (Keelung)	25° 10' N 121° 45' E	Small yard, reported enlarged to build small wooden cargo ships	III	15a
170	Shokai Shipyard (Keelung)	25° 09' N 121° 45' E	Small yard, reported enlarged to build small wooden cargo ships	III	15a

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TABULATION OF TARGETS

Target Number	Target Name	Coordinates	Comment	Tab Reference	Target Chart
			NAVAL BASES & SHIPYARDS (Cont'd.)		
	Takao Area (91.6)				
7	Kigo Naval Dockyard (Takao)	22° 37' N 120° 16' E	23 slipways and patent slips; marine engine works; builds small boats	IX	3, 9
175	Reigaryo Shipyard (Takao)	22° 37' N 120° 18' E	8 slipways for 150 ft. wooden cargo ships; marine engine works; and 2 patent slips	IX	3, 9
56	Toshien Dockyard	22° 41' N 120° 16' E	Three drydocks; shops and stores under construction	IX, II	56
	Pescadores Ils. (91.7)				
145	Ansan Naval Base Drydock (Bako)	23° 33' N 119° 34' E	400 ft. graving dock and repair shops	XIV	165
			NON-FERROUS METALS		
	Taihoku Area (91.3)				
44	Kinkaseki Copper Works	25° 07' N 121° 51' E	Copper mine and concentrating plant; 10,000 ton annual capacity	III, II	44

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TABULATION OF TARGETS

Target Number	Target Name	Coordinates	Comment	Tab Reference	Target Chart
			NON-FERROUS METALS (Cont'd.)		
	Formosa West (91.4)				
110	Tainan Magnesium Plant	23° 00' N 120° 09' E	Reported magnesium plant, adjoining industrial salt works	VII	112
	Takao Area (91.6)				
3	Nippon Aluminum Co. (Takao)	22° 37' N 120° 17' E	Integrated alumina/aluminum plant; annual capacity 9-15,000 tons	IX, II	3, 9
	Formosa East (91.5)				
61	Japan Aluminum Co. (Karenko)	24° 00' N 121° 37' E	Aluminum plant, reported capacity of about 6,000 tons per year (possibly much greater)	XII, II	64
			PETROLEUM		
	Taihoku Area (91.3)				
33	Kyushi Zan Oil (Keelung)	25° 09' N 121° 44' E	Tank farm and underground depot; ship bunkering facilities.	III	15a

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TABULATION OF TARGETS

Target Number	Target Name	Coordinates	Comment	Tab Reference	Target Chart
			PETROLEUM (Cont'd.)		
	Formosa West (91.4)				
86	Kinsui Casing-Head Plant	24° 41' N 120° 48' E	Daily capacity — 60,000 gals. gasoline	V	86
85	Byoritsu Refinery	24° 34' N 120° 49' E	Annual crude capacity — about 100,000 bbls. Produces gasoline, kerosene and heavy oil	V	(None)
119	Shukkoko Casing-Head Plant	24° 25' N 120° 51' E	Capacity unknown	V, II	119
	Takao Area (91.6)				
4	Mitsubishi Oil Storage	22° 37' N 120° 17' E	At least 6 tanks for ship bunkering	IX	3,9
178	Toshien Fuel and Munitions Depot	22° 40' N 120° 17' E	Two very large underground tanks; underground munitions depot	IX	56

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TABULATION OF TARGETS

Target Number	Target Name	Coordinates	Comment	Tab Reference	Target Chart
			PETROLEUM (Cont'd.)		
	Pescadores Ils. (91.7)				
165	Underground Oil Tanks (Bako)	23° 33' N 119° 34' E	Three very large underground tanks	XIV	165
150	Ansan Naval Base Oil Stores (Bako)	23° 33' N 119° 34' E	Three oil tanks and oil bunkering pier	XIV	165
			R.R. TRANSPORTATION		
	Taihoku Area (91.3)				
27	Hatto Bridges and Tunnels	25° 07' N 121° 44' E	RR and highway bridges on main N/S routes; also RR tunnel	III, II	15a
32	Matsuyama RR Shops	25° 03' N 121° 35' E	Largest in Formosa; equipped with iron foundry	IV, II	47
31	Taihoku RR Terminal	25° 03' N 121° 31' E	RR station, yard and roundhouse	IV	47
28	Shinten River RR Bridge	25° 02' N 121° 29' E	Bridge on only RR connecting Keelung-Taihoku with S. Formosa	IV	47

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TABULATION OF TARGETS

Target Number	Target Name	Coordinates	Comment	Tab Reference	Target Chart
			R.R. TRANSPORTATION (Cont'd.)		
	Formosa West (91.4)				
95	Chikunan Terminal and Bridges	24° 41' N 120° 48' E	Large RR yard, roundhouse and junction on trunk line	V, II	95
94	Taian River Bridge (Taiko)	24° 25' N 120° 38' E	Long, low bridge over wide estuary near coast	V, II	94
91	Taito River Bridges (Shoka)	24° 07' N 120° 34' E	RR junction and 3 parallel bridges for RR, local tramway and highway	V, II	91
92	Shoka RR Terminal	24° 06' N 120° 33' E	Roundhouse, shops and large yard	V	91
93	Toyohara Tunnel and Bridge	24° 17' N 120° 45' E	Tunnel and steep incline leading to bridge	V	93
90	Nisui Junction and Bridge	23° 47' N 120° 38' E	Long RR siding and junction; RR bridge to south	V	90
	Formosa East (91.5)				
68	Dakusui River RR Bridge (Rato)	24° 43' N 121° 46' E	Long, low bridge on trunk line spur to Suo	XII, II	68

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TABULATION OF TARGETS

Target Number	Target Name	Coordinates	Comment	Tab Reference	Target Chart
			R.R. TRANSPORTATION (Cont'd.)		
	Formosa East (91.5) (Cont'd.)				
66	Karenko RR Station & Yards	23° 59' N 121° 36' E	Small shops & numerous storehouses; northern terminal of east coast railway	XIII	64
	Takao Area (91.6)				
9	Railroad Yard and Repair Shops (Takao)	22° 38' N 120° 16' E	Extensive harbor freight yard; large repair shops	IX	9,3
174	Takao RR Station	22° 38' N 120° 17' E	Passenger station; roundhouse and turntable	IX	3,9,56
55	Shimo Tamsui RR Bridge (Heito)	22° 40' N 120° 26' E	5000 ft. steel bridge on main line spur to Heito-Toko area	X	55
			MISCELLANEOUS		
	Taihoku Area (91.3)				
47	Jonai District of Taihoku	25° 03' N 121° 31' E	Civil and military administrative center; many public buildings	IV	47
	Formosa West (91.4)				
89	Tainan Salt Works	23° 00' N 120° 09' E	Processes large quantities of industrial salt for Japan Proper	VII	112

SECRET
(British Secret)

CHINA

EAST CHINA SEA

FORMOSA STRAIT

PACIFIC OCEAN

120°
121°
122°
25°
24°

Hōka-sho
Menka-sho
Kahei-sho

FOR TARGET 27 SEE TAB III

FOR TARGETS 32, 52 SEE TAB IV

FOR TARGETS 15a, 15b, 15c, 23, 33, 35, 170 SEE TAB III

FOR TARGETS 28, 31, 36, 47 SEE TAB IV

FOR INSTALLATIONS IN THIS AREA - "TOEN" (None Listed As Targets) SEE TAB IV

FOR INSTALLATIONS IN THIS AREA (None Listed As Targets) SEE TAB V

FOR TARGETS 85, 86, 87, 95 SEE TAB V

FOR TARGET 119 SEE TAB V

FOR TARGET 94 SEE TAB V

FOR TARGETS 93, 100 SEE TAB V

FOR TARGETS 91, 92, 103 SEE TAB V

FOR TARGETS 90, 104 SEE TAB V

FOR TARGETS 145, 146, 147, 150, 151, 152, 153, 156, 165 SEE TAB XIV

FOR TARGET 144 SEE TAB III

FOR TARGET 68 SEE TAB XII

FOR TARGET 70 SEE TAB XII

FOR TARGET 65 SEE TAB XII

FOR TARGETS 61, 62, 64, 66 SEE TAB XIII

FOR TARGETS 82, 83, 181 SEE TAB VI

91.3

91.4

91.5

Fuki-kaku
Tamagi
KEELUNG (KIIRUN)
Bitō-kaku
TAIHOKU
Sanchō-kaku
Tamsui-ka
Kisan-tō
Shinchiku
Shōkei
Giran
Chikunan
Ratō
Suō
Tsugitaka-yama
Taikō-kei
Gosei
Taichū
Shōka
Rokkō
Heri
KARENKŌ
Seiro-kei
Nisui
Kagi
Niitaka-yama
Hōko-tō
PESCADORES ISLANDS
(HŌKO RETTŌ)
SUIDŌ

FOR TARGET 119 SEE TAB V

FOR TARGET 94 SEE TAB V

FOR TARGETS 93, 100 SEE TAB V

FOR TARGETS 91, 92, 103 SEE TAB V

FOR TARGETS 90, 104 SEE TAB V

FOR TARGETS 145, 146, 147, 150, 151, 152, 153, 156, 165 SEE TAB XIV

FOR TARGETS 81, 62, 64, 66 SEE TAB XIII

FOR TARGETS 82, 83, 181 SEE TAB VI

FOR TARGETS 55, 57, 180 SEE TAB X

FOR TARGET 171 SEE TAB V

FOR TARGETS 89, 110, 112 SEE TAB VII

FOR TARGETS 166, 168 SEE TAB VIII

FOR TARGETS 3, 4, 6, 7, 8a, 8b, 9, 13, 56, 164, 172, 173, 174, 175, 176, 177, 178, 179 SEE TAB IX

FOR TARGET 162 SEE TAB XI

91.4

91.5

91.6

PESCADORES ISLANDS
(HŌKO RETTŌ)

Hōko-tō

FORMOSA STRAIT

SOUTH CHINA SEA

PACIFIC OCEAN

NORTH

Gosei

Taichū

Rokkō

Shōka

Hori

KARENKŌ

Nisui

Kagi

Niitaka-yama
13075

Tsugitaka-yama
12972

Ōmiyama

TAKAO

Heitō

Tōkō

Taitō

Kashō-tō

Böryö

Ryūkyū-sho

24°

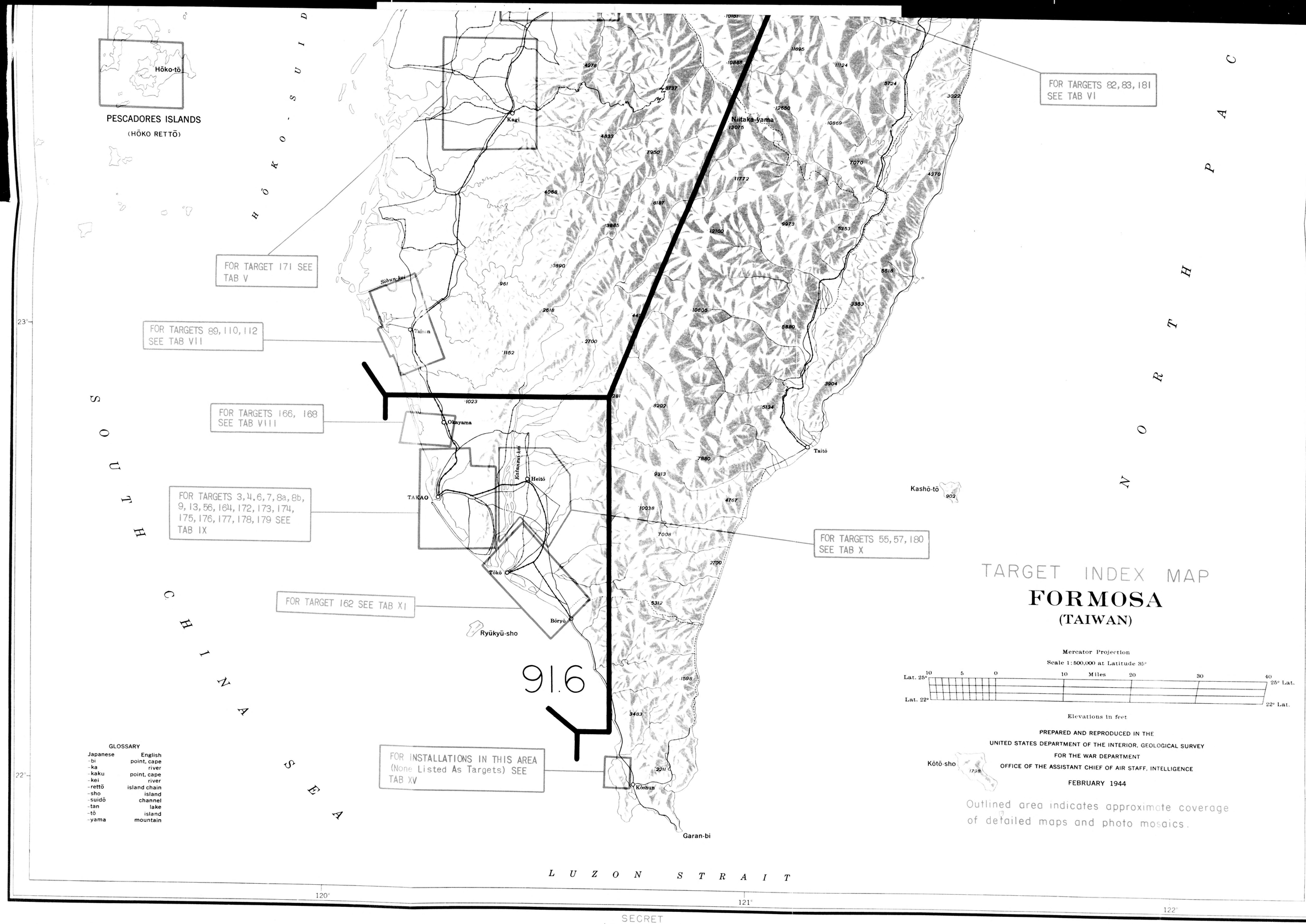
23°

TARGET INDEX MAP

FORMOSA
(TAIWAN)

Mercator Projection
Scale 1:500,000 at Latitude 35°

Lat. 25° 10 5 0 10 Miles 20 30 40 25° Lat.



TARGET INDEX MAP

FORMOSA
(TAIWAN)

Mercator Projection

Scale 1:500,000 at Latitude 35°

Lat. 25° 10 5 0 10 Miles 20 30 40 25° Lat.

Lat. 22° 22° Lat.

Elevations in feet

PREPARED AND REPRODUCED IN THE
UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY
FOR THE WAR DEPARTMENT
OFFICE OF THE ASSISTANT CHIEF OF AIR STAFF, INTELLIGENCE

FEBRUARY 1944

Outlined area indicates approximate coverage of detailed maps and photo mosaics.

SECRET
(British Secret)

KEELUNG AND VICINITY

(No reconnaissance coverage available)

Formosa's largest port, Keelung is also important for its electro-chemical plants. While the necessity for convoying shipping has probably resulted in the diversion of as much tonnage as possible to the Takao area (where several protected anchorages are available for convoy assembly), a substantial number of ships will use Keelung for the following:

Imports: All types of manufactured products (steel, machinery, textiles, etc.), flour, oil, etc. Troops and military supplies.

Exports: Sugar, rice, fruits, lumber, flax and hemp, camphor products, alcohol, coal, sulphur, copper concentrate, etc.

Because of the very limited area of the inner harbor, the port might be blocked for some time as a result of the sinking of several ships alongside wharves or near the channel. Ships of 3-10,000 tons use the inner harbor; larger vessels and most naval craft anchor in the outer harbor. Warehouse capacity considerably exceeds commodity requirements, and it is likely that several storehouses (particularly those at the NW wharves -- Target 15a) are used exclusively for military purposes. Of special significance are the ship repair facilities of the Taiwan Dockyard Company (Target 15b), and the nearby oil storage (Target 33), both located in the arm of Keelung harbor known as Gyucho Ko. Two small shipyards on the east side of the harbor have been expanded recently. They build small fishing boats and have lately begun construction of standardized wooden cargo vessels. It is quite probable that the Taiwan Dockyard Company has been considerably expanded and that wooden vessels are also built there.

Among the industrial plants reported to be located in or near Keelung are carbide, calcium cyanimide and sulphuric acid plants, manganese and ferro-silicon works. Available intelligence indicates that most of these may be located in the valleys to the west of the Keelung wharves but it has not been possible to fix their locations with sufficient certainty to permit the assignment of target numbers. While these plants are significant in terms of Formosa's economy, they make no appreciable direct contribution to the Japanese war effort as a whole.

The Hatto tunnel and bridges (Target 27), just south of Keelung, is a critical point on the trunk line railroad; their neutralization would temporarily isolate Keelung as regards N/S rail transportation.

While the bulk of Keelung's electric power comes from the Jitsugetsutan hydro-electric development by way of a transformer station at Taihoku (see Target 36), a steam power plant (Target 35) at Hatto Shi, about 3 miles east by north of Keelung, is also an important power source -- particularly during the dry season when the hydro-electric supply is at a minimum.

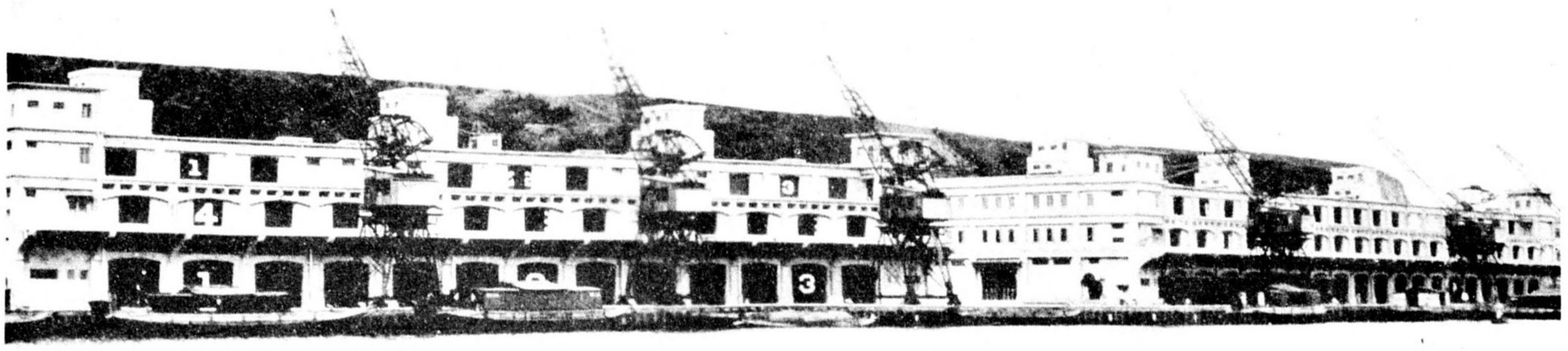
Numerous coal and sulphur mines are located in the hills surrounding Keelung, but they are too small and dispersed to be considered as targets. However, a copper mine and concentrating mill (Target 44) at Kinkaseki, about 8 miles east by south of Keelung is a significant objective. This mine is credited with a production of about 9% of Japan's copper. The concentrating mill is believed to be located near the mine. A large coal mine and a carbide plant are conspicuous at Zuiho, just east of Kinkaseki.

Pre-war intelligence indicated that Keelung was being developed as a secondary naval station and that the small anchorage south of Sharyo Island was to be equipped as a submarine base. It has not been possible to check these reports, but present indications are that Takao has superseded Keelung as a naval port.

TARGET TABULATION

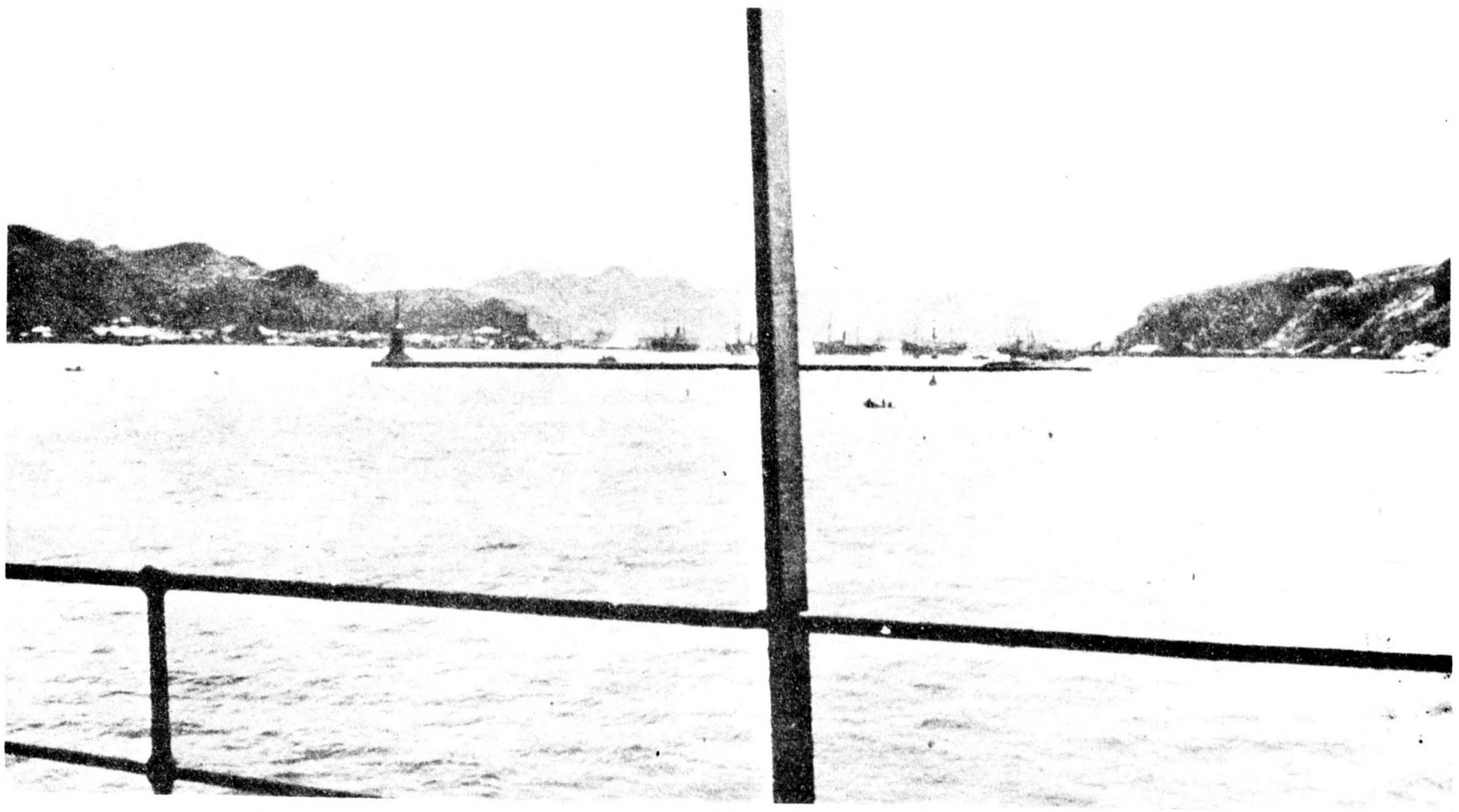
No.	Name	Approximate Coordinates	Description and Significance
15a	NW Keelung Wharves	25° 09' N 121° 44' E	Probable military storage; 5-7 three-story concrete warehouses with fixed cranes on roofs. Ten 3-ton cranes on wharves.
15c	SW Keelung Wharves	25° 08' N 121° 44' E	General cargo wharves for RR trans-shipment. 6 concrete warehouses and several storage sheds. Keelung RR Station & Yards, small repair shops at S end. Several heavy-duty cranes. Small factory district near RR Sta.
15b	Gyucho Ko Harbor and Dockyard	25° 08' N 121° 44' E	S side of anchorage used for coaling. Cableway connects this wharf with coal mines to S. Taiwan Dockyard Co. (372 ft. drydock & 200 ft. patent slip) with complete repair shop at W end. Reported greatly enlarged recently. N side used for oil bunkering.
23	Sharyo Shipyard	25° 10' N 121° 45' E	Small shipyard, constructs fishing boats. Reported enlarged recently to build standardized wooden vessels.
170	Shokai Shipyard	25° 09' N 121° 45' E	Small shipyard, reported enlarged recently to build standardized wooden ships.
33	Kyushi Zan Oil Storage	25° 09' N 121° 44' E	Tank farm at foot of Kyushi hill, reported fed by underground tanks on slope of hill. (Underground tanks, 1 or 2 visible) are also reported on S slope of hill to W of Kyushi hill.
27	Hatto Bridges and Tunnels	25° 07' N 121° 44' E	Two parallel, iron girder RR bridges & a highway bridge, each about 210 ft. long & 40 ft. high. Two short RR tunnels just N of bridges. Keelung-Suo branch line joins trunk line at Hatto junction.
44	Kinkaseki Copper Works	25° 07' N 121° 51' E	Kinkaseki copper concentrating mill, believed located below minehead on slope of mountain, connected to mine-head by cableway lines. Concentrating mill is the vital point. Must be distinguished from many coal mineheads in vicinity. Supplies Japan with 10,000 tons copper per year, or 9% of supply.
35	Hatto Shi Steam Power Plant	25° 09' N 121° 47' E	38,000 KW steam plant, concrete con-structioh. Cableway line connects plant with a coal mine to the south.

VERTICAL PHOTOGRAPH OF EXPERIMENTAL RELIEF MODEL - KEELUNG AND VICINITY



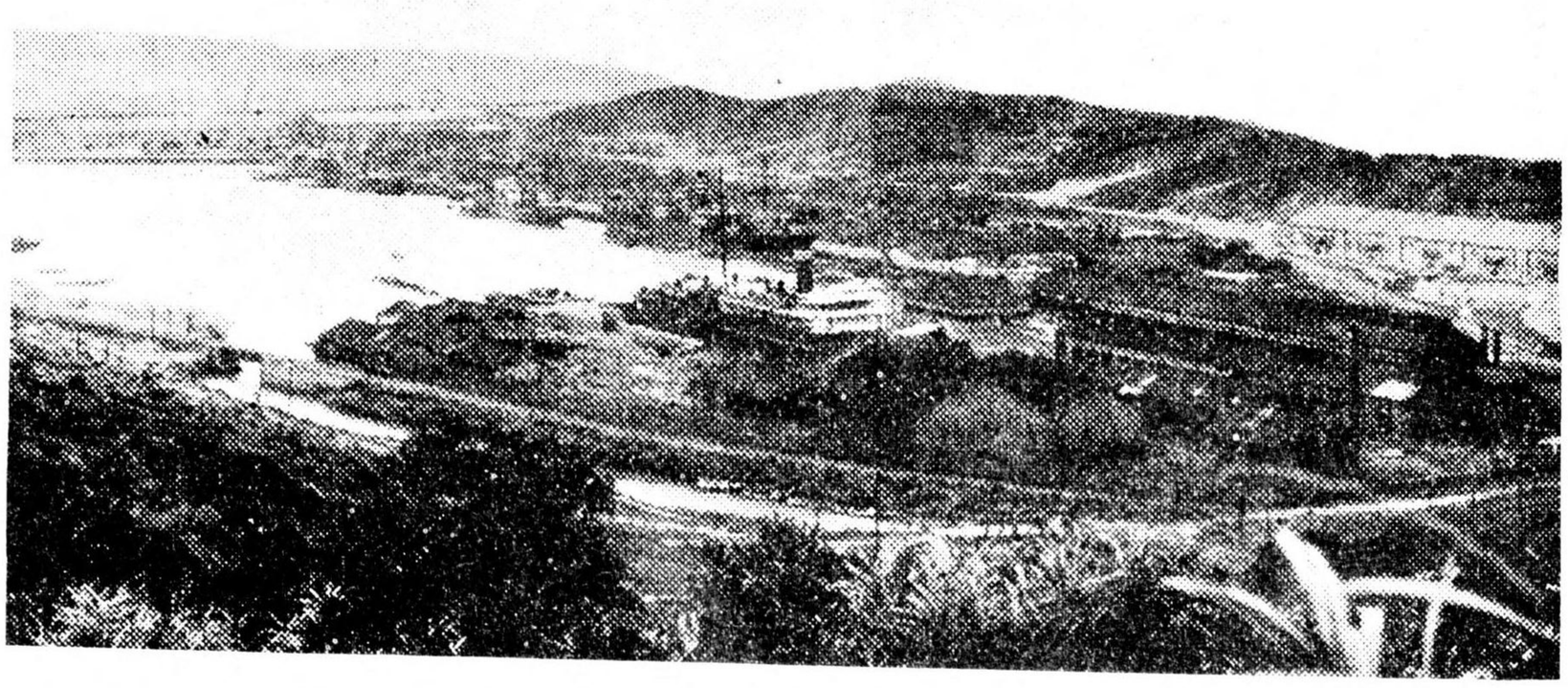
PORTION OF NW KEELUNG WHARVES - TARGET 15a

Looking west at two of the 5-7 three-story concrete warehouses located on this wharf. View has been retouched to alter configuration of ridge.



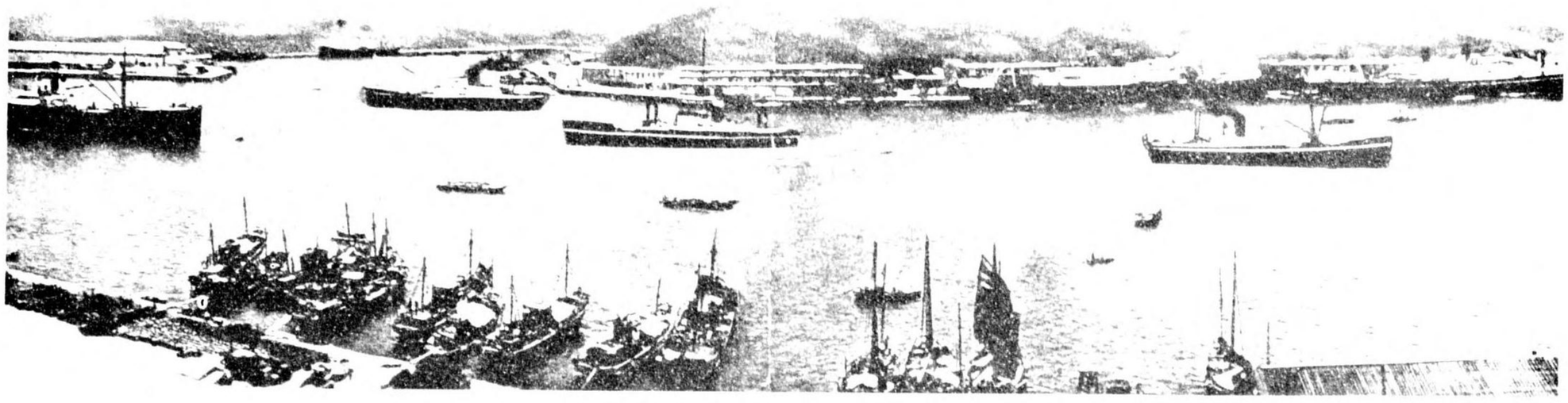
KEELUNG HARBOR

Looking south from outer harbor into the inner harbor. The configuration of the hills in this view is known to be reliable.



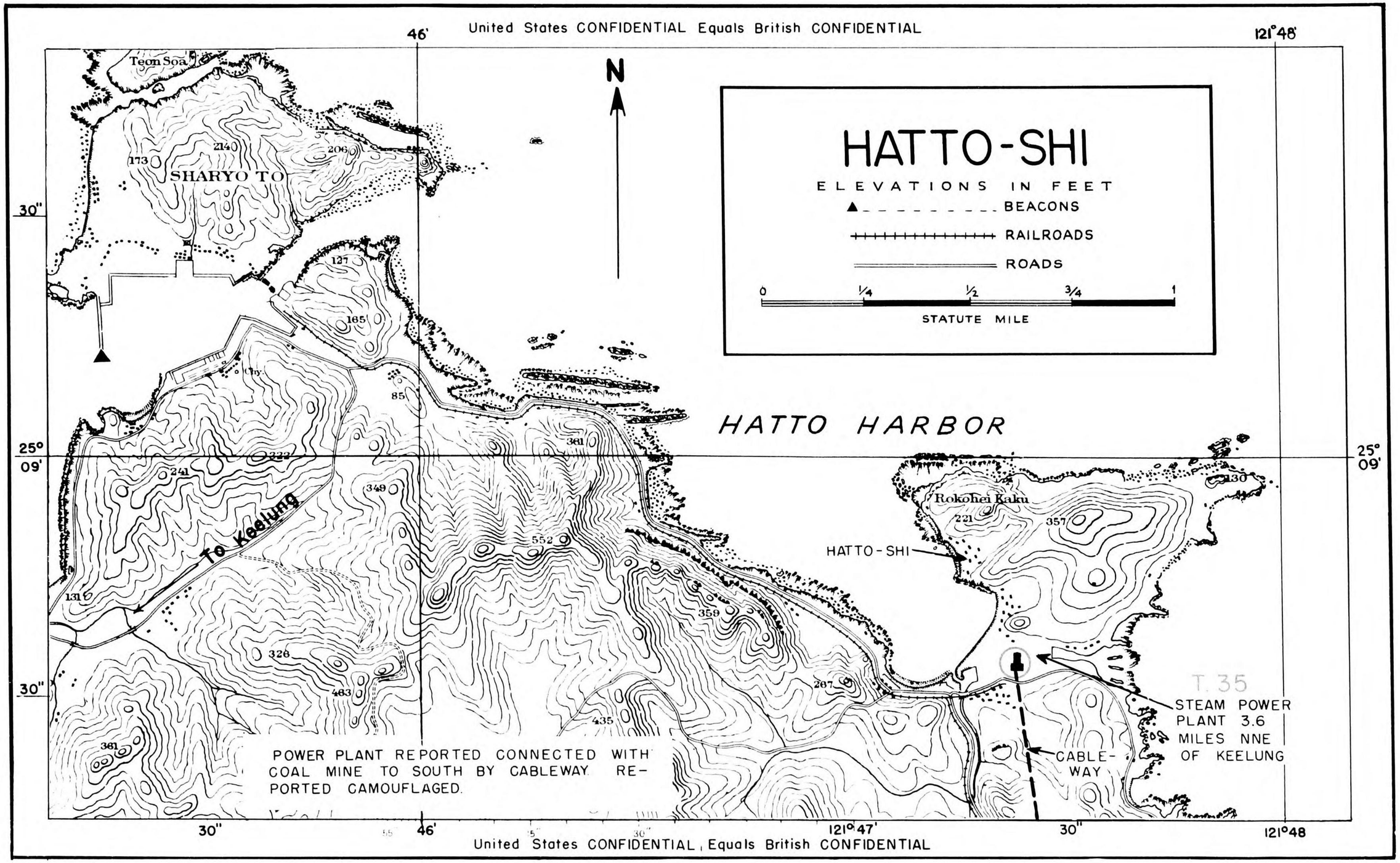
GYUCHO KO HARBOR AND DOCKYARD - TARGET 15b

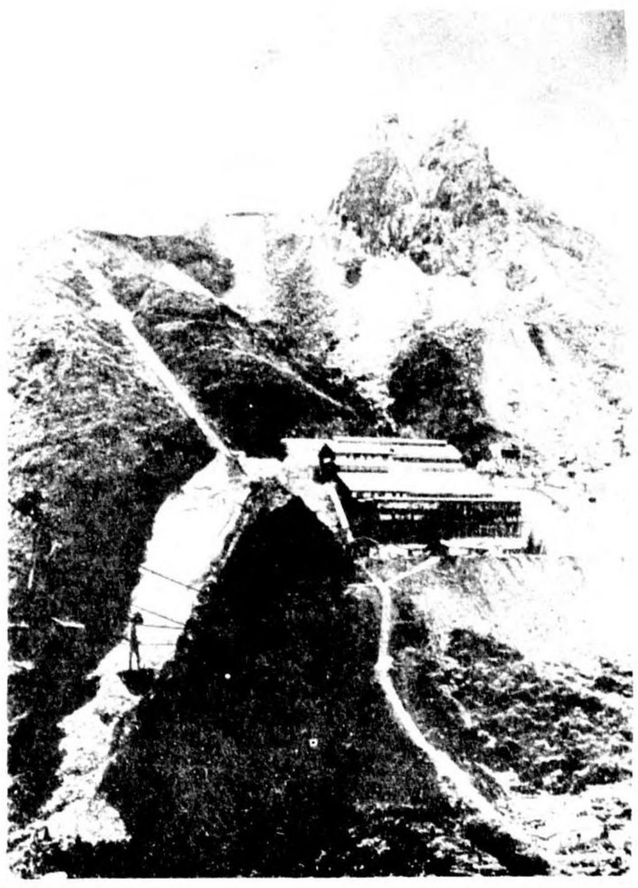
Looking south over drydock and ship repair shops and at coaling wharf in background. View has been retouched to alter configuration of hills.



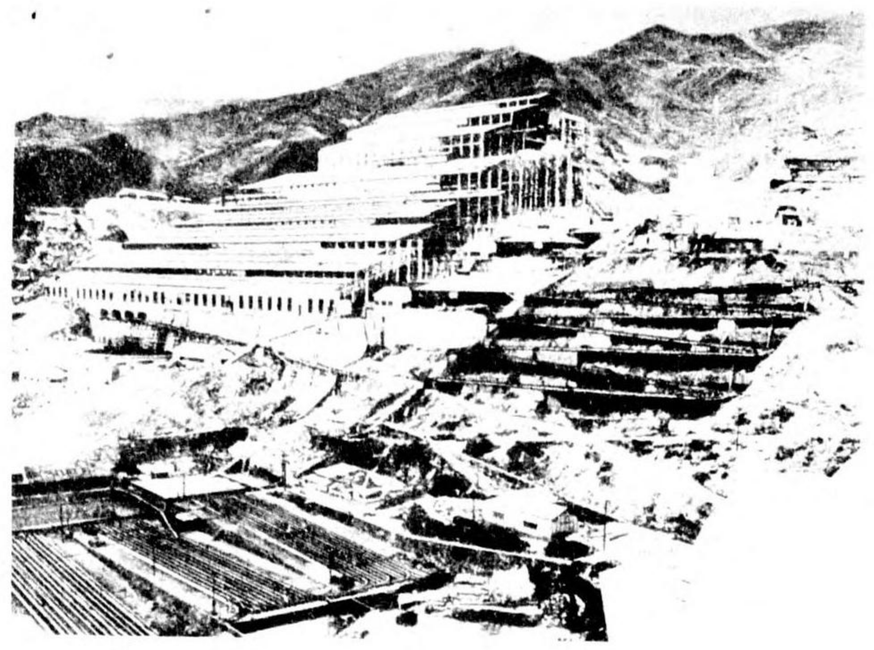
KEELUNG INNER HARBOR

Looking west at part of the SW Wharves (Target 15c) to the left, Gyucho Harbor at center and the NW Wharves (Target 15a) at right. Note that view has been retouched to alter configuration of hills.

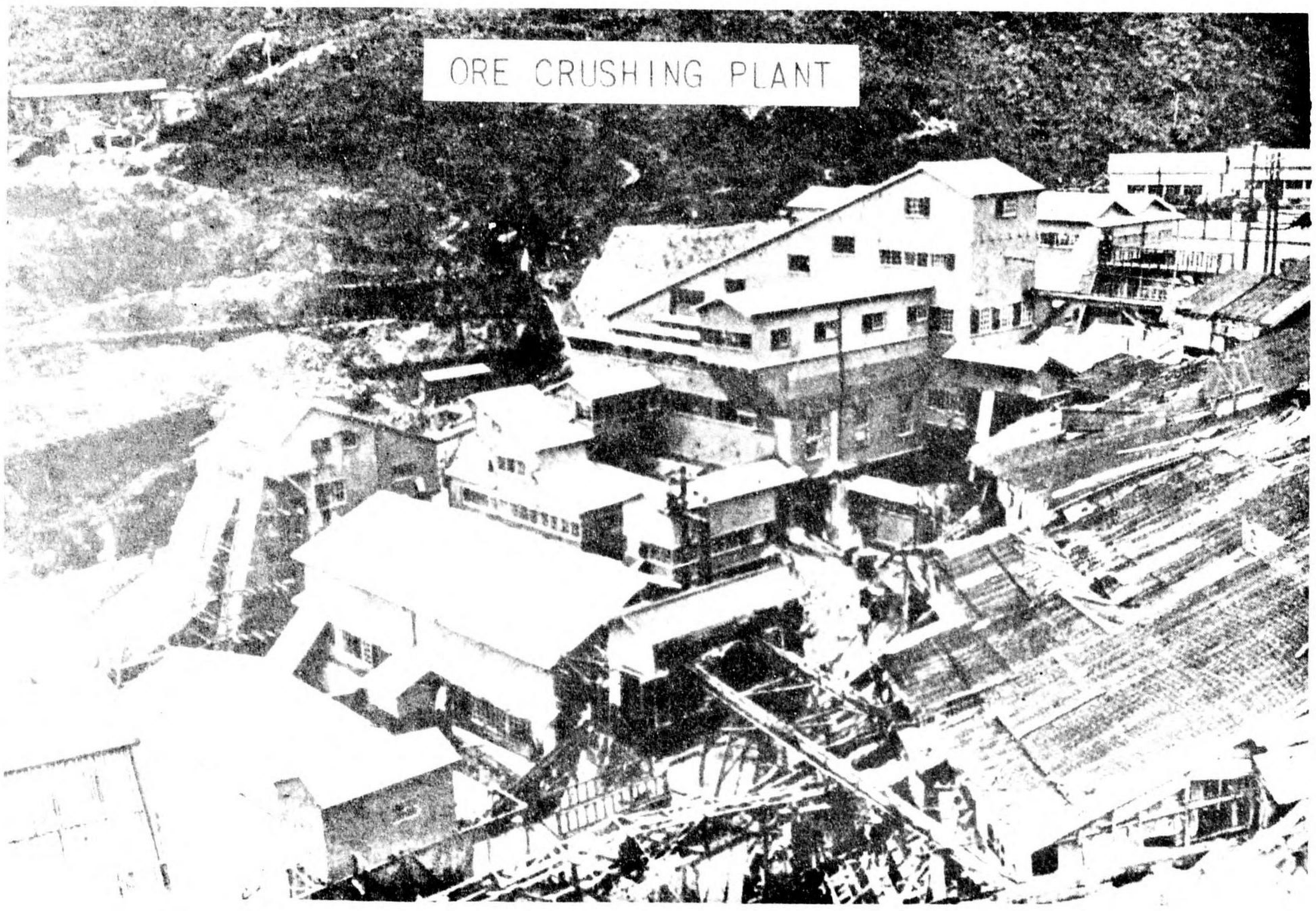

46'
121°48'
N
HATTO-SHI
ELEVATIONS IN FEET
BEACONS
RAILROADS
ROADS
0
1/4
1/2
3/4
1
STATUTE MILE
Teon Soa
SHARYO TO
173
214
206
127
165
85
361
222
241
349
552
131
326
463
435
359
267
361
To Keelung
HATTO HARBOR
Rokohei Kaku
221
357
130
HATTO-SHI
T. 35
STEAM POWER PLANT 3.6 MILES NNE OF KEELUNG
CABLE-WAY
POWER PLANT REPORTED CONNECTED WITH COAL MINE TO SOUTH BY CABLEWAY. REPORTED CAMOUFLAGED.
30"
25° 09'
30"
46'
121°47'
30"
121°48



ORE SELECTING PLANT



COPPER CONCENTRATING PLANT



KINKASEKI COPPER WORKS - TARGET 44

The Kinkaseki mine is reported to supply Japan with about 10,000 tons of copper annually, in addition to some gold. The mine and plant buildings are believed to be located on the south slope of Kinkaseki hill and the above views probably head generally north. The concentrating plant is probably the most effective target.

KEELUNG

ELECTRO-CHEMICAL PLANTS REPORTED IN THIS AREA

RADIO SEARCHLIGHTS AND A.A. GUNS

WHARVES REPORTED UNDER CONSTRUCTION

HARBOR CONST. OFFICE

REPORTED OIL TANKS

T. 33

T. 15b

T. 15a

T. 15c

COALING WHARF

MUNITIONS DEPOT

REPORTED OIL TANKS

MILITARY BARRACKS

SMALL FERTILIZER PLANT

TEN 8" GUNS

INNER HARBOR

GYUCHO KO

OUTER HARBOR

VARIATION 2°10' W (1940)
DECREASING 1' ANNUALLY

T 23

FOUR 10" or 12" GUNS

REPORTED SUBMARINE BASE

W/T TOWERS

TWO 12" GUNS

FISH MARKET

FOUR 10" or 12" GUNS

FOUR 8" GUNS

T. 170

ELEVATIONS IN FEET

▲ BEACONS

RAILROADS

ROADS

Scale in Feet
0 1000 2000 3000 4000 5000

121° 44'
121° 45'
25° 10'
25° 8'

TAIHOKU-TAMSUI DISTRICT

Taihoku, capital and largest city of Formosa, has few significant targets. This is the civil and military administrative nerve center of Formosa and several other Japanese-occupied territories (Hainan, Ryukyu Ils., etc.). The central part of the city (the "Jonai" district - Target 47) is the Japanese residential district and the site of many public buildings. The only known industrial plants in the city are a sugar refinery, a small chemical fertilizer plant, a large camphor processing plant and an experimental "special alloys" plant. None of these are sufficiently important to be listed as targets. The Taihoku Transformer Station (Target 36) controls the distribution of Jitsugetsutan hydro-electric power throughout northern Formosa, and constitutes an alternate means of curtailing this power supply. However, three small hydro-electric plants (not listed as targets) on the Shinten River, south of Taihoku and the Hatto Shi Steam Plant (Target 35) near Keelung have an aggregate capacity of almost 60,000 KW - probably sufficient to operate essential installations at partial capacity at least. The Taihoku RR Terminal (Target 31) and the Shinten River RR Bridge are secondary objectives on the main trunk line.

An extensive barracks area is located just off the SE corner of the Jonai District, but its present status is unknown. Reconnaissance (1 April 1943) reveals a new barracks area at the west end of the Tamsui River highway bridge.

The small suburb of Matsuyama, just east of Taihoku, is the site of Formosa's only complete RR shops and one of the island's largest airports. The RR Shops (Target 32) were reported to employ 1000 workers in peacetime and are equipped to make all repairs to locomotives and rolling stock in addition to some construction. The Matsuyama Airport (52), one of Formosa's three major pre-war fields, is reported to be equipped with complete maintenance facilities. An aircraft assembly plant is reported at the airport.

Tamsui, a shallow port at the mouth of the Tamsui River, is unimportant except for a secondary seaplane station, and a small oil storage; the harbor entrance is heavily silted over and only small vessels can enter.

The town of Toen, about 12 miles SW of Taihoku, is a ceramics center and many of these small plants are conspicuous by their numerous short chimneys. They are not important. Reconnaissance (1 April 1943) reveals a new factory, about 3 miles west of Toen, which has not been identified but which has the appearance of a typical Formosa sugar refinery.

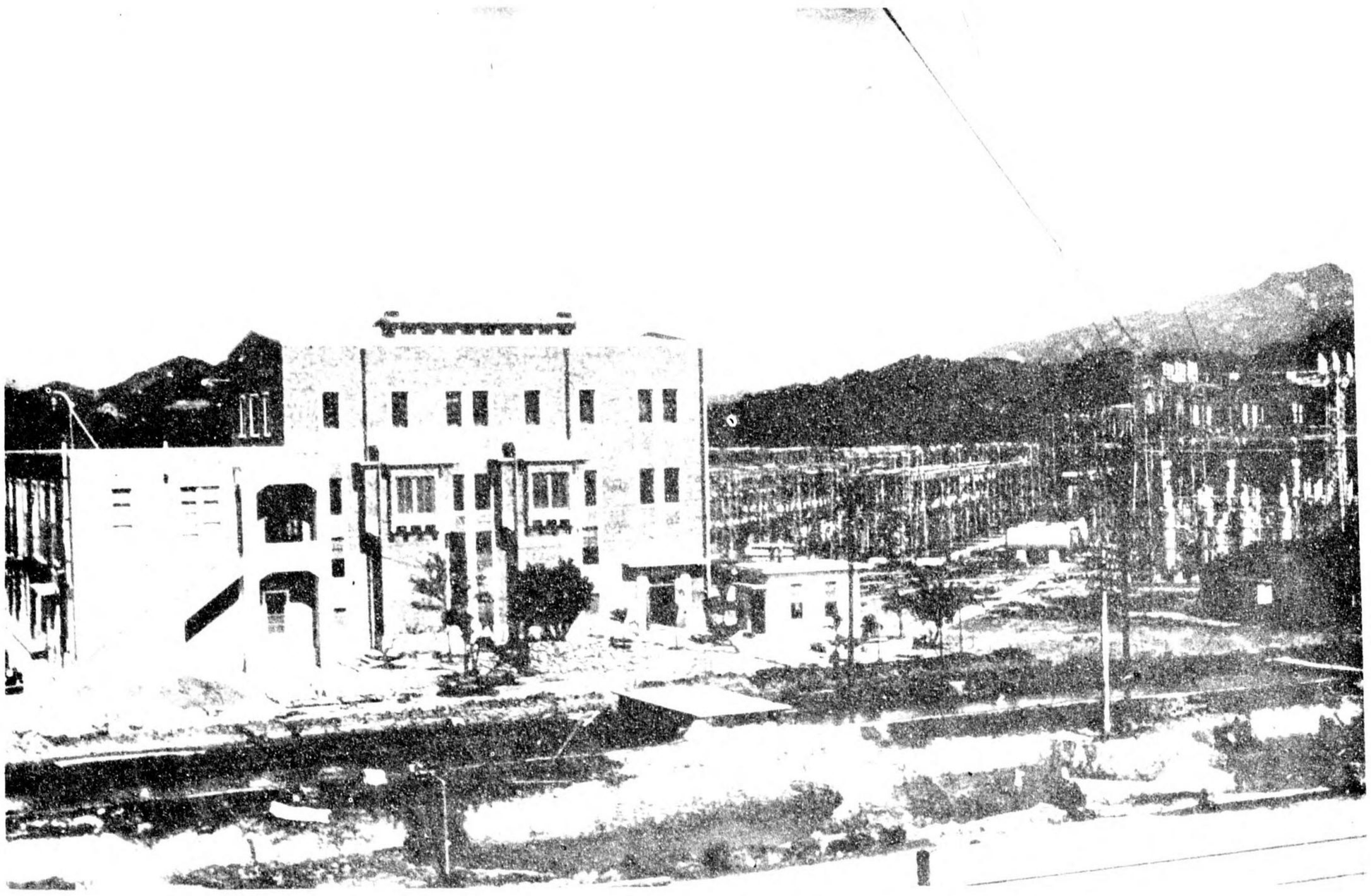
TARGET TABULATION

No.	Name	Approximate Coordinates	Description & Significance
52	Matsuyama Airport	25° 04' N 121° 33' E	See Airport Survey, Tab KV (Aircraft assembly plant reported).
32	Matsuyama RR Shops	25° 03' N 121° 35' E	On SW outskirts of Matsuyama, shops and yards reported to cover 44 acres. Iron foundry and small power plant.

TARGET TABULATION (Cont'd.)

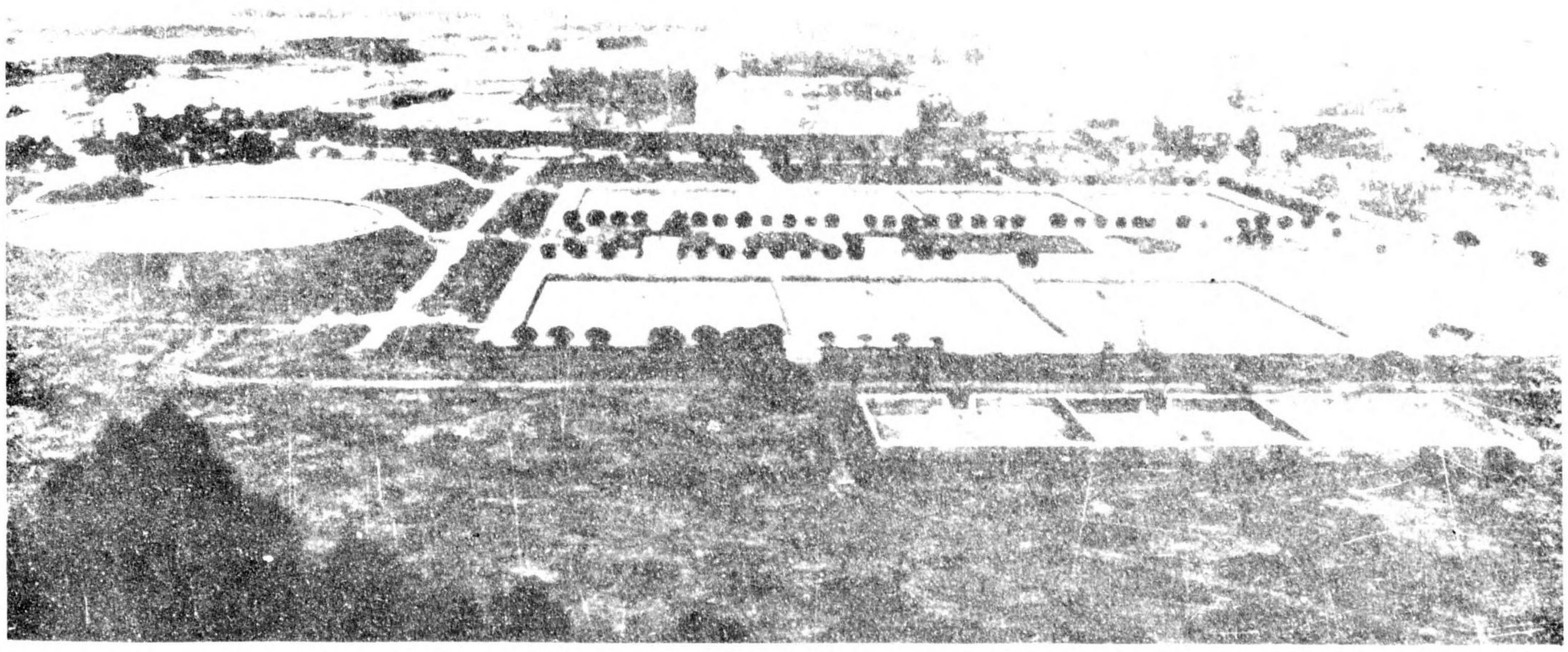
No.	Name	Approximate Coordinates	Description and Significance
31	Taihoku RR Terminal	25° 03' N 121° 31' E	Just N of central Jonai District (Target 47), RR Station, round-house, turntable and warehouses.
28	Shinten River RR Bridge	25° 02' N 121° 29' E	Steel cantilever bridge, 1280 ft. long. On only RR line to south.
47	Jonai District of Taihoku	25° 03' N 121° 31' E	Conspicuous rectangular area outlined by wide parkway. Main Japanese residential district & site of government buildings, military H.Q., Communications and financial offices, etc.
36	Taihoku Transformer Station	25° 01' N 121° 32' E	Transformer station handles Jitsugetsutan power for northern Formosa. Identified by characteristic open-air switchgear and by conspicuous Taihoku water filtering beds to west.

34-3



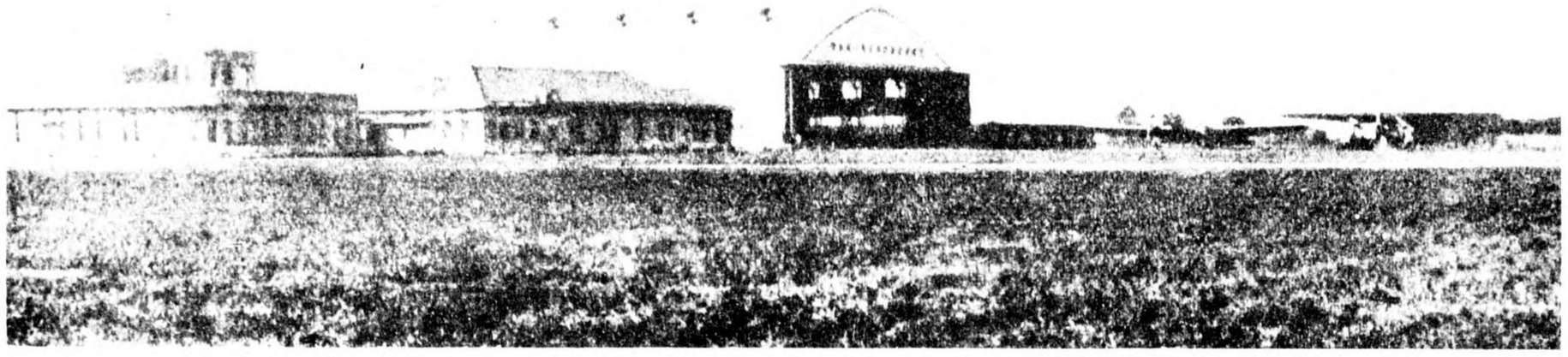
TAIHOKU TRANSFORMER STATION - TARGET 36

Looking SE at transformer station which controls the distribution of Jitsugetsutan hydroelectric power throughout northern Formosa. Located just east of city water works (see below).



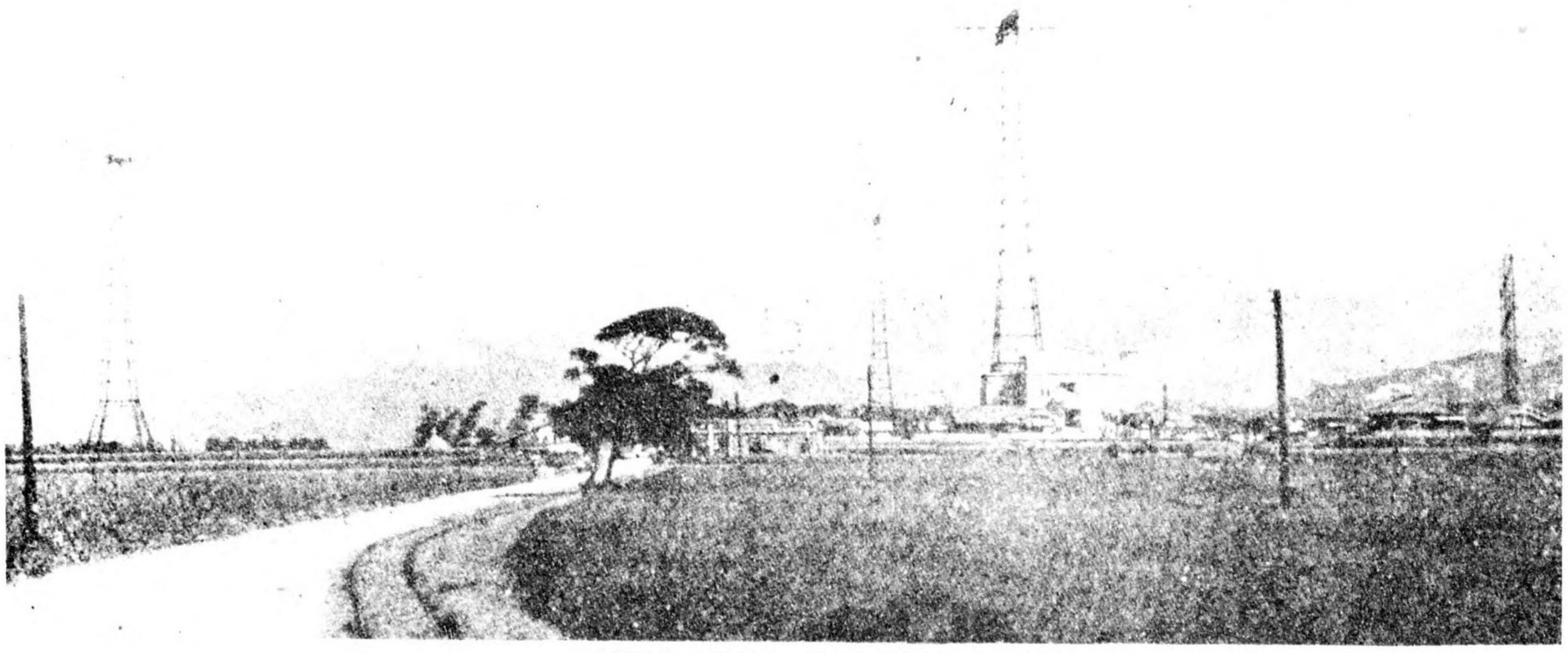
TAIHOKU WATER FILTERING BEDS

Conspicuous landmark located 2 miles SE of center of city and 1/4 mile west of Target 36 (above). Looking NW.



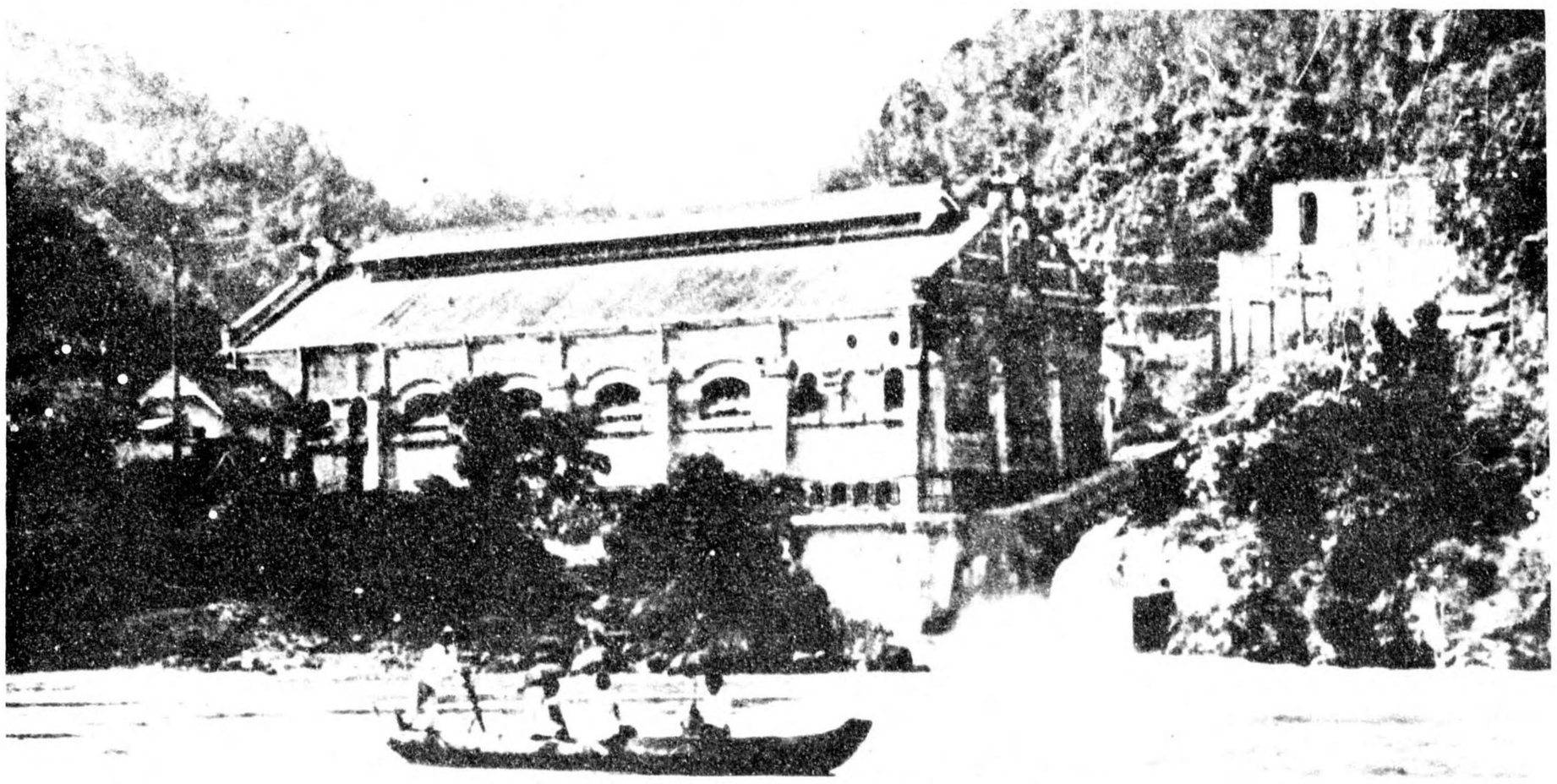
MATSUYAMA AIRPORT - TARGET 52

View published 1939, showing administration building. An aircraft assembly plant is reported at this airport.



ITAHASHI TRANSMITTER

This powerful station is the source of propaganda broadcasts beamed at SE Asia.



SHOSOKO HYDROELECTRIC PLANT

Located about 7 miles south of Taihoku, on Shinten River, this 4,400 KW station is one of three small plants in the secondary Shinten River system which supplies Taihoku and vicinity.

TAIHOKU, FORMOSA

Date: 1 April, 1943

0 2000' 4000' 6000' 8000' 10,000'

APPROXIMATE SCALE

HOKUTO

RACE TRACK

SHIRIN

MATSUYAMA AIRPORT

BARRACKS

PRISON

T. 3

NEW BARRACKS AND STOREHOUSE AREA

SEE MOSAIC "A"

TAMSUI

RADIO TOWERS

TAMSUI RIVER

TAIHOKU

T. 28

MOSAIC-"A"

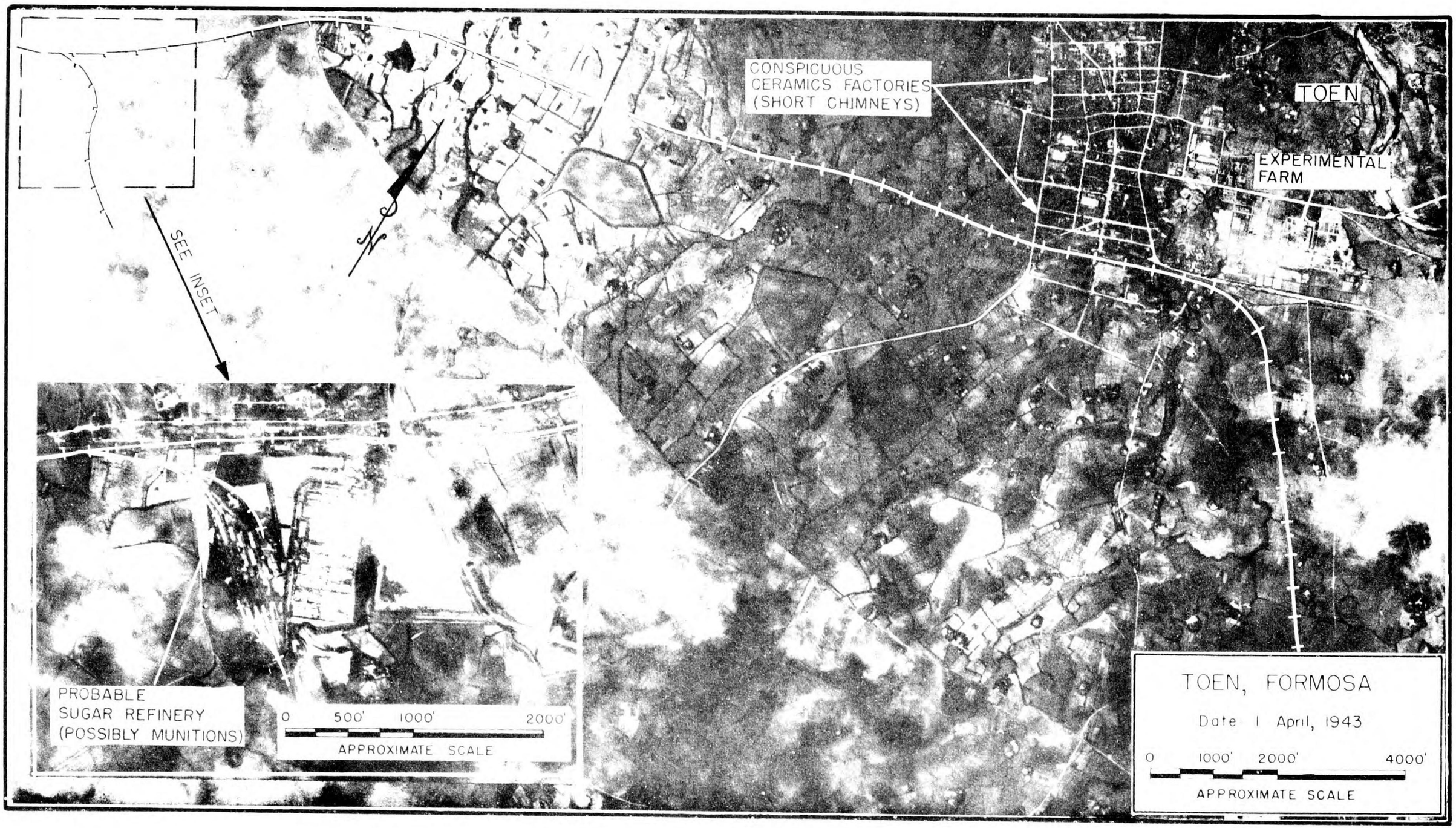
0 1000' 2000'

TAMSUI, FORMOSA

Tamsui Seaplane Station

Date: April 1, 1943

United States CONFIDENTIAL Equals British CONFIDENTIAL



United States CONFIDENTIAL Equals British CONFIDENTIAL

United States CONFIDENTIAL Equals British CONFIDENTIAL

TAIHOKU CITY

RAILROAD

0 1/4 1/2 3/4 1
STATUTE MILES

121°30′ 121°31′ 121°32′

25° 05′ 25° 04′ 25° 03′ 25° 02′ 25° 01′

To Tamsui
Shrine
Keelung River
REPORTED IRON SMELTER
Hospital Area
Maruyama Park
T.52
1/2 MILE
LARGE BARRACKS AREA
School
N
Hospitals
River
2 GAS HOLDERS
T.31
Brewery
To Keelung
1 MILE
T.32
Technical School
School
Hospitals
T.47
BARRACKS
SUGAR REFINERY
Botanical Garden
Prison
School
RR To South
T.28
CAMPHOR PLANT
School
Imperial University
WATER FILTERING BEDS
T.36
350' HILL
X

47

Post Office
Financial District
Taihoku Park
Gendarmerie H.Q.
Taihoku Hospital
Electric Power Co. Office
Governor General's Residence
Communications Office
Schools
Government General
Military H.Q. & Barracks
Court House

121°30′ 121°31′ 121°32′

United States CONFIDENTIAL Equals British CONFIDENTIAL

WEST COAST

SHINCHIKU TO KAGI

The principal objectives in western Formosa are airports, vulnerable points on the trunk railroad line, the natural gas, oil and chemical development at Kinsui and numerous sugar/alcohol plants. (The Lake Jitsugetsutan hydro-electric development is discussed in a separate section). From north to south, the principal target areas are:

(1) SHINCHIKU: (Reconnaissance photos: 1 April & 25 Nov. 1943) -- Shinchiku is a paper, sugar and camphor processing center. An oil research laboratory is also reported here. These are all small installations and are not designated as targets. Available reconnaissance reveals several unidentified industrial plants just east and southeast of Shinchiku which probably include the plants noted. A large sulphate of ammonia (fertilizer) plant (capacity 100,000 tons per year) of the Taiwan Kagaku KK was projected at Chikuto, about 8 miles SE of Shinchiku, but its present status is in doubt. Chikuto is also the site of a small gas/oil field and a casing-head gasoline plant. Shinchiku is more important as a military center, the site of a large and completely equipped airport -- a combination staging base and bomber training school -- and army camps.

(2) CHIKUNAN: One of the critical points on the N-S trunk railroad is the Chikunan junction (Target 95) where the double track line divides. Included in this objective are the Chikunan RR Station, a series of short bridges and the junction itself. Several bridges on each spur, located just south of the junction, constitute alternate targets.

(3) BYORITSU-KINSUI: Kinsui is the site of the largest oil and natural gas production in Formosa. The Kinsui casing-head gasoline plant (Target 86) produces butanol and supplies an adjoining carbon black plant (Target 87) which is believed to produce most of Japan's rubber tire black. (A second carbon black plant is also reported here, but this is not confirmed). While carbon black is vital in the production of rubber tires, it should be noted that:

(1) Carbon black plants, while extremely vulnerable to air attack, are relatively simple installations which can easily be restored and

(2) Japan is probably manufacturing considerable quantities of an inferior grade of carbon black from acetylene, which could be used for tires if necessary.

Unconfirmed reports also mention a nitrogen plant at Kinsui.

Byoritsu, about 5½ miles SW of Kinsui, is reported to be the site of an oil tank farm (fed by pipeline from Kinsui) and of a small oil refinery (Target 85). A minor sugar refinery is located just south of Byoritsu.

Another oil/gas field, also equipped with a casing-head plant, is located at Shukkoko about 7 miles south by west of Kinsui. This objective (Target 119) is believed to be of minor importance, but a final evaluation is dependent on reconnaissance which is required to establish the possible existence of a carbon black plant here. A new refinery of Nippon Oil Company (annual crude capacity - 350,000 bbls.) was projected at Taiko, just SE of Shukkoko. Its present status is in doubt.

35

(4) TAIKO (Not To Be Confused With Village Of Same Name Near Shukkoko): The western spur of the divided trunk railroad crosses the wide estuary of the Taian River via a series of bridges and viaducts (Target 94). The Taiko River is crossed via a long bridge just to the south, offering an alternate objective. It should be noted that the railroad line at this point is only 2 miles in from the coast.

(5) TOYOHARA-TAICHU (Incomplete reconnaissance coverage: 22-23 November 1943): The western (slow freight) spur of the railroad continues southward parallel to the coast at the foot of a long, low ridge. A spur branches westward to the newly-developed port of Gosei, also known as Niitaka, (Target 100). Constructed to relieve the congestion at Keelung, this port may now be a significant ship concentration point.

The eastern spur (fast freight & passengers) approaches the Taiko River through a long curving tunnel, and passes down a steep incline to a high bridge (Target 93) just north of Toyohara. About 5 miles east by south of Toyohara is the Toyohara Airport, a large field with fairly complete facilities. The smaller Taichu Airport is located about 3 miles to the SE. The principal economic activities of this district are agriculture (rice) and forestry; lumber railways and saw mills are conspicuous on the hillsides to the east of Toyohara and Taichu.

Taichu is the site of one of Formosa's largest sugar and alcohol plants (Target 103) which is equipped to produce absolute alcohol.

(6) SHOKA (Reconnaissance 26 November 1943, covers town only): The divided railroad line joins just before crossing the Taito River, two miles NE of Shoka. This is one of the critical points on the trunk line (Target 91), 3 bridges (main N/S highway, local tramway and trunk railway) crossing side by side. A railroad shunting yard equipped with small shops (Target 92) is located in Shoka. A secondary sugar and alcohol plant, not listed as a target, is located about $1\frac{1}{2}$ miles NW of Shoka and a new (unidentified) factory is located just N by E of the RR shops.

(7) KOBI: From Shoka the railroad runs southward along the western side of a low spur of hills and crosses the Dakusui River just below Nisui. A long siding at Nisui, from which a line branches eastward to Lake Jitsugetsutan and the bridge are designated as Target 90. Kobi, about 14 miles SW of Nisui, is the site of the Dai Nihon sugar and alcohol plant (Target 104), one of the largest in Formosa. This plant is equipped to produce both absolute alcohol and butanol.

(8) KAGI: Kagi is the site of several installations which do not warrant listing as numbered targets, but may serve as alternate objectives. The city is the main distributing center for lumber and sugar in the area, and its railroad station is equipped with extensive sidings. A large lumber mill is located along the eastern side of the railway to the north of the city, and a sugar/alcohol plant is located to the south of the city. Extensive military barracks are reported to the east of the city, but their exact location is unknown. The large and well equipped Kagi Airport is located about 3 miles SW of the city. A small sugar/alcohol plant is located at Hokko, about 11 miles NW of Kagi. A primary transformer station of the Jitsugetsutan hydroelectric power development is located at or near Kagi.

An important sugar/alcohol plant (Target 171) which produces absolute alcohol is located at Nansei, about 8 miles SW of Kagi.

The only sizeable installations between Nansei and Tainan are several sugar and alcohol plants, of which the largest are at Shinei and Mato, and a bagasse pulp mill at Shinei.

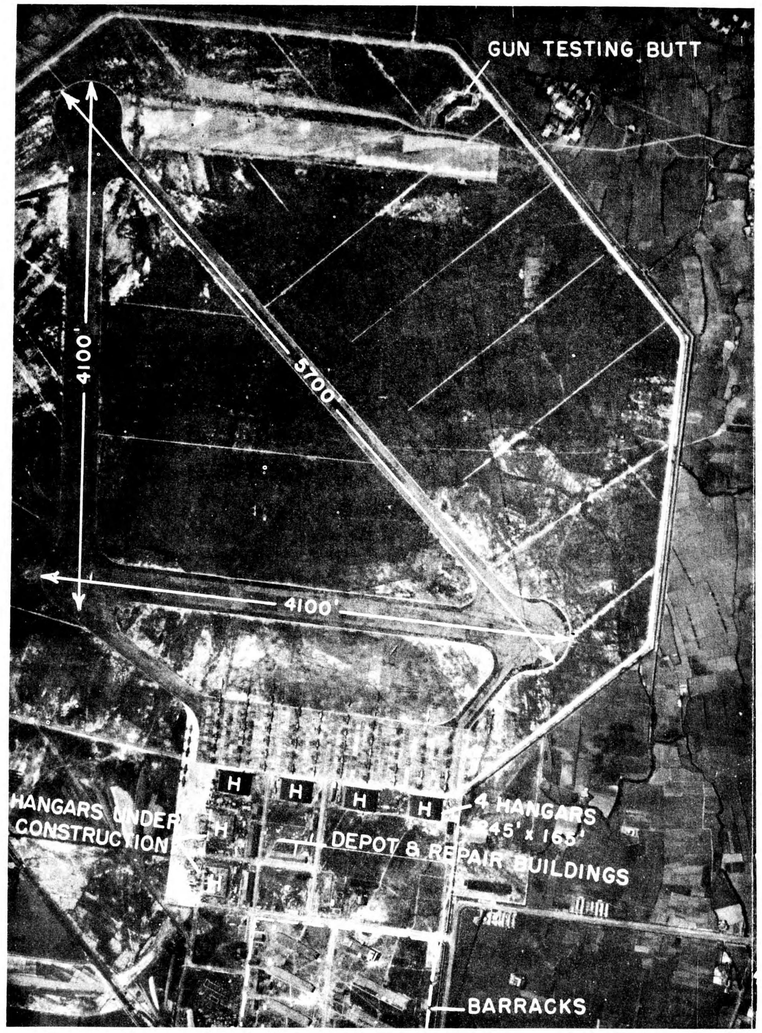
TABULATION OF TARGETS

No.	Name	Approximate Coordinates	Description and Significance
95	Chikunan Terminal and Bridges	24° 41' N 120° 48' E	RR station with about 12 tracks & roundhouse. S of station RR crosses narrow river & line divides.
86	Kinsui Casing-Head Plant	24° 37' N 120° 53' E	Capacity about 60,000 gallons daily of casing-head gasoline & butanol. Oil & natural gas wells near plant. Natural gas piped to Shinchiku, Byoritsu, etc.
87	Carbon Black Plant, Kinsui	24° 37' N 120° 53' E	Located near Target 86 (above), plant reported to produce over 50% of Jap requirements. (A second plant may also be located here). Rows of low, saw-tooth roofs, marked by constant black smoke.
85	Byoritsu Refinery (Nihon Sekiyu KK)	24° 34' N 120° 49' E	Gasoline, kerosene and heavy oil refinery; yearly capacity less than 100,000 bbls. Extensive tank farm reported nearby. Believed near RR, but spot location unknown.
119	Shukkoko Casing-Head Plant	24° 25' N 120° 51' E	Oil and natural gas wells on hillside; casing-head plant in valley. Small capacity.
94	Taian River Bridge (Taiko)	24° 25' N 120° 38' E	5000 ft low bridge, about 2 mi in from coast. Second bridge just to S.
100	Gosei (Niitaka) Harbor	24° 15' N 120° 32' E	Wharf, six warehouses reported in 1940. Additional wharves & warehouses, and two breakwaters were under construction. RR siding.
93	Toyohara Tunnel and Bridge	24° 17' N 120° 45' E	Long, curved tunnel, steep incline & high, 1000 ft steel girder bridge.
103	Taichu Alcohol Plant (Teikoku Seito Kaisha)	24° 08' N 120° 42' E	Annual capacity about 23,700 gals. alcohol (can produce absolute alcohol). Located on RR SE of city. Mil barracks to north.

TABULATION OF TARGETS (Cont'd.)

No.	Name	Approximate Coordinates	Description and Significance
91	Taito River Bridges	24° 07' N 120° 34' E	RR junction N of river. Three parallel bridges for main RR, N/S highway and local tramway line.
92	Shoka RR Terminal	24° 06' N 120° 33' E	Roundhouse, 11 sidings, overhead crossing.
90	Nisui Junction and Bridge	23° 47' N 120° 38' E	Long RR siding at foot of steep hill, RR crosses Dakusui River via concrete girder bridge.
104	Kobi Sugar and Alcohol Plant (Dai Nihon Seito Kaisha)	23° 42' N 120° 26' E	One of three largest absolute alcohol and butanol plants in Formosa. Yearly capacity rated at over 30,000 gals. alcohol.
171	Nansei Sugar and Alcohol Plant (Meiji Seito Kaisha)	23° 24' N 120° 16' E	One of three largest in Formosa, capacity rated at 30,880 gals. alcohol per year. Can produce absolute alcohol. Spot location unknown.

INSET



INSET

SHINCHIKU, FORMOSA

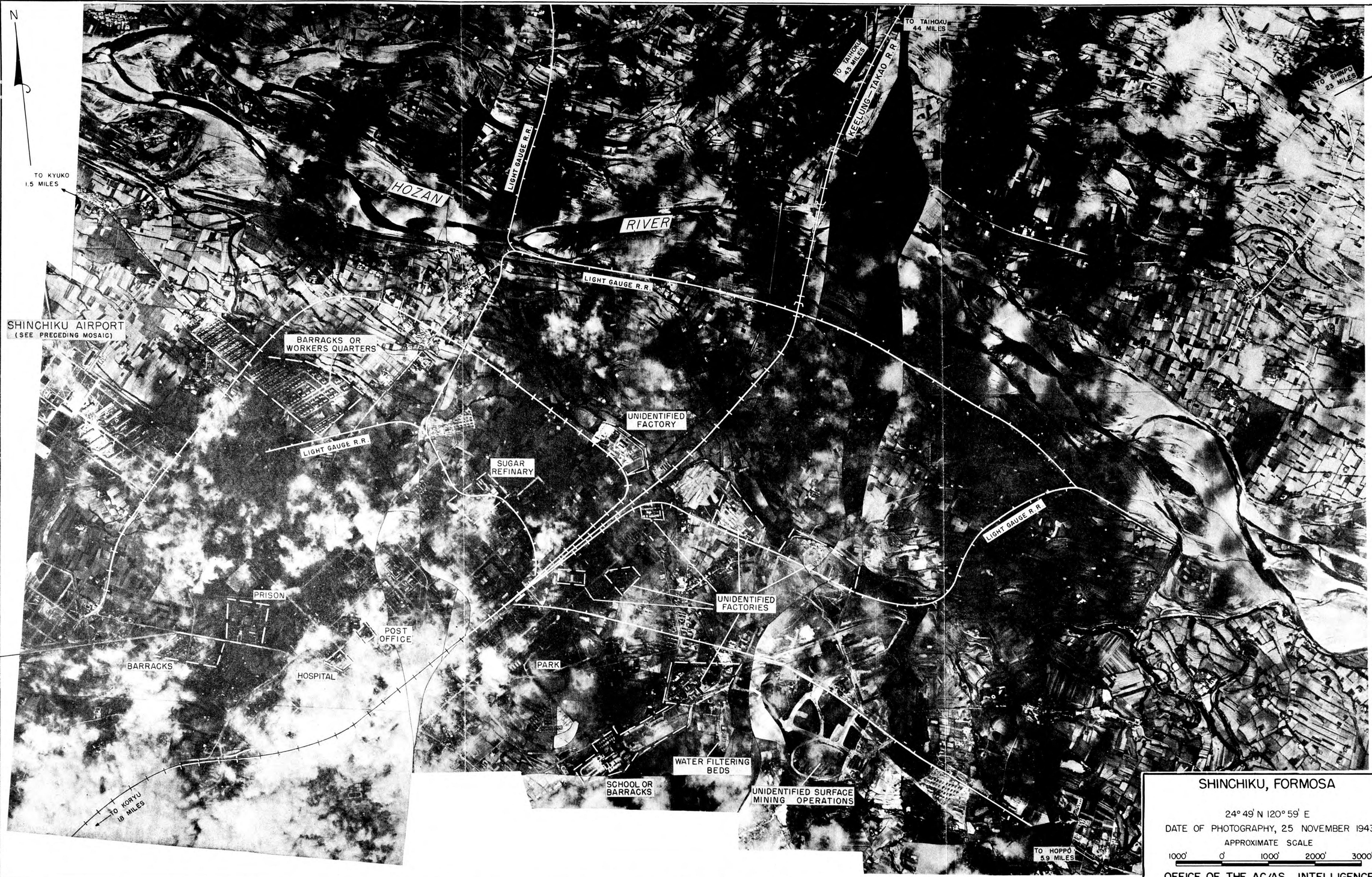
24° 52' N — 120° 59' E

Photos Taken April 1, 1943

APPROXIMATE SCALE

0 2000' 4000' 6000' 8000' 10,000'

OFFICE OF THE AC/AS, INTELLIGENCE



SHINCHIKU, FORMOSA

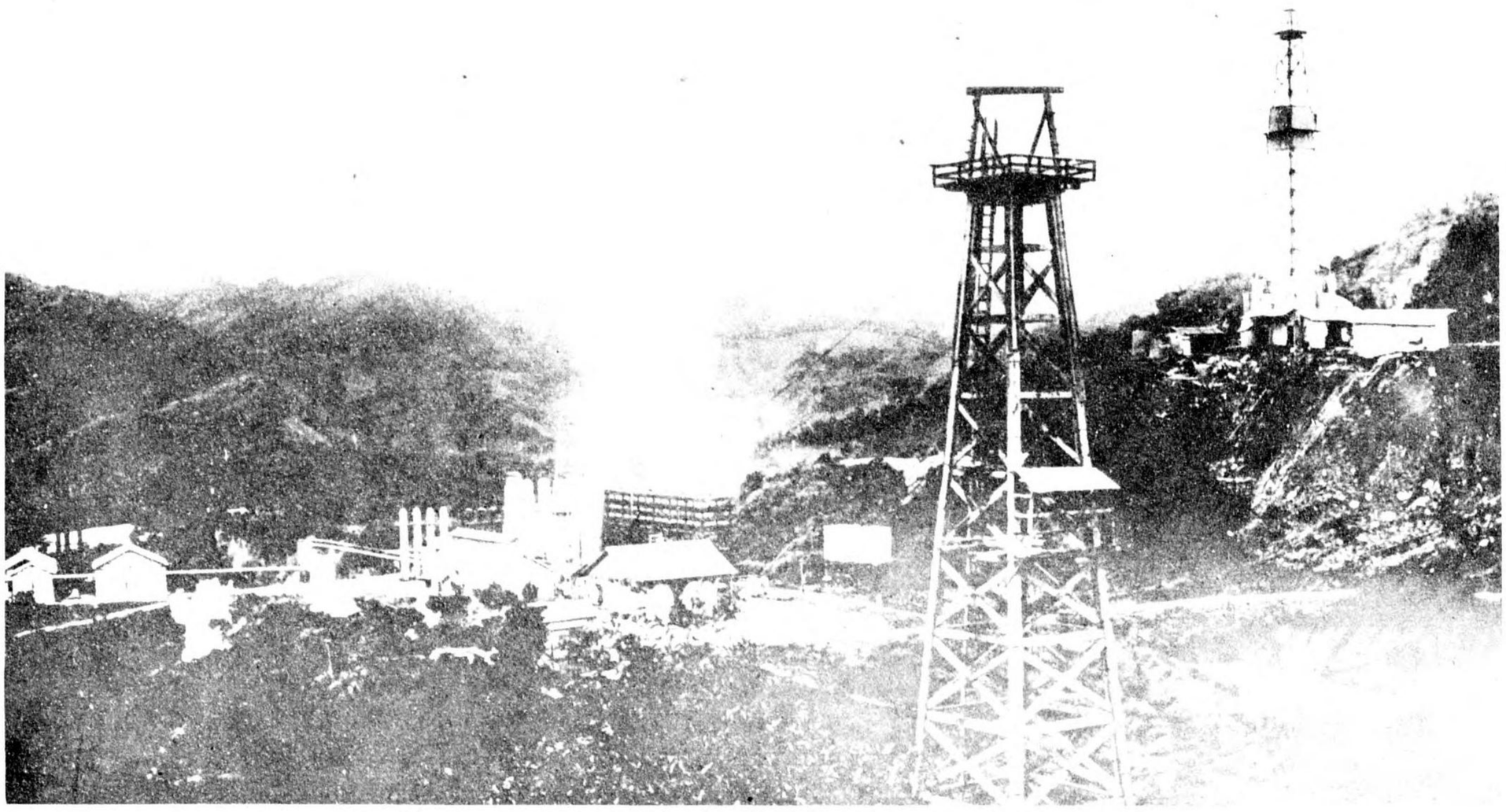
24° 49' N 120° 59' E

DATE OF PHOTOGRAPHY, 25 NOVEMBER 1943

APPROXIMATE SCALE

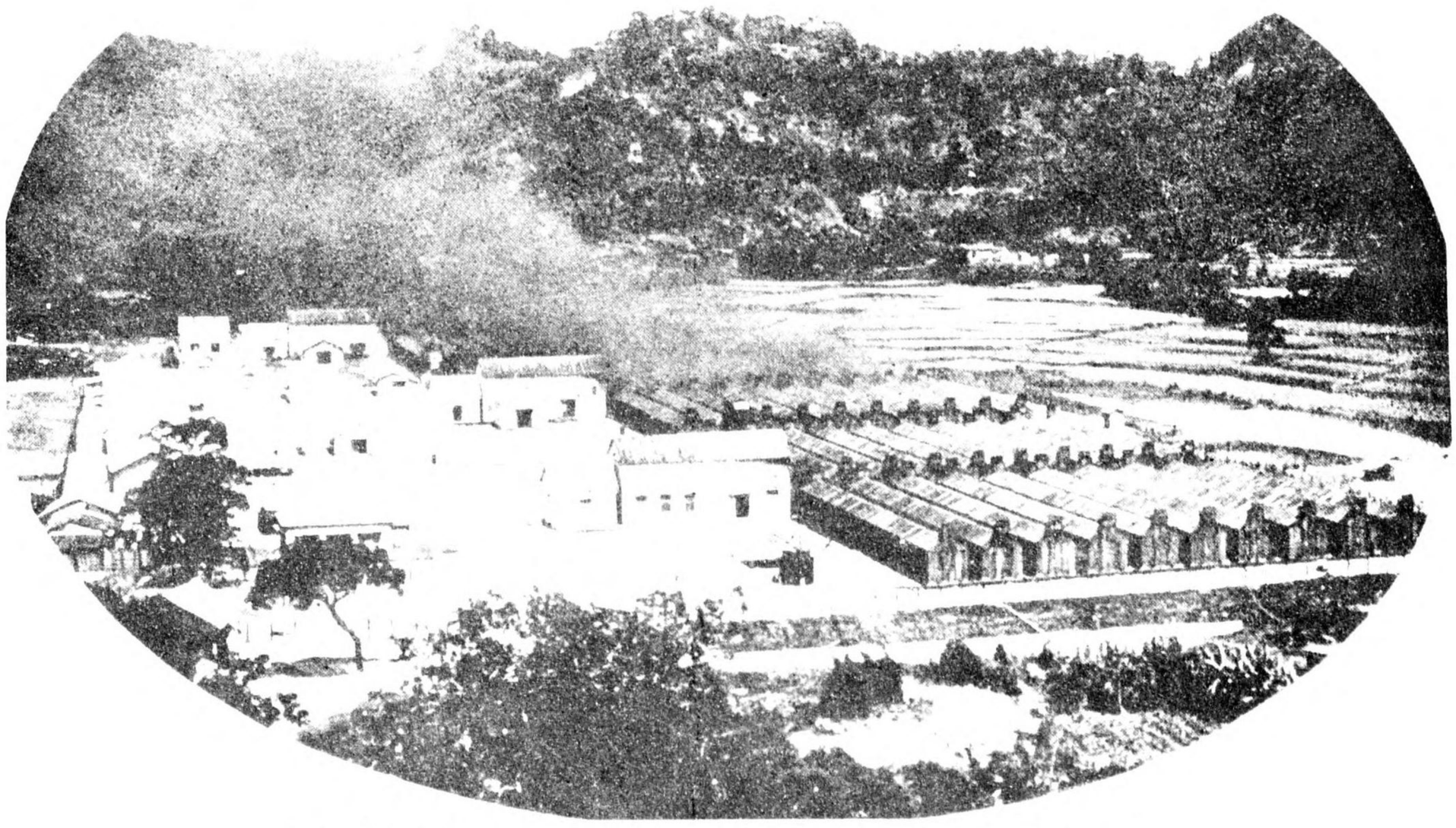
1000' 0' 1000' 2000' 3000'

OFFICE OF THE AC/AS, INTELLIGENCE



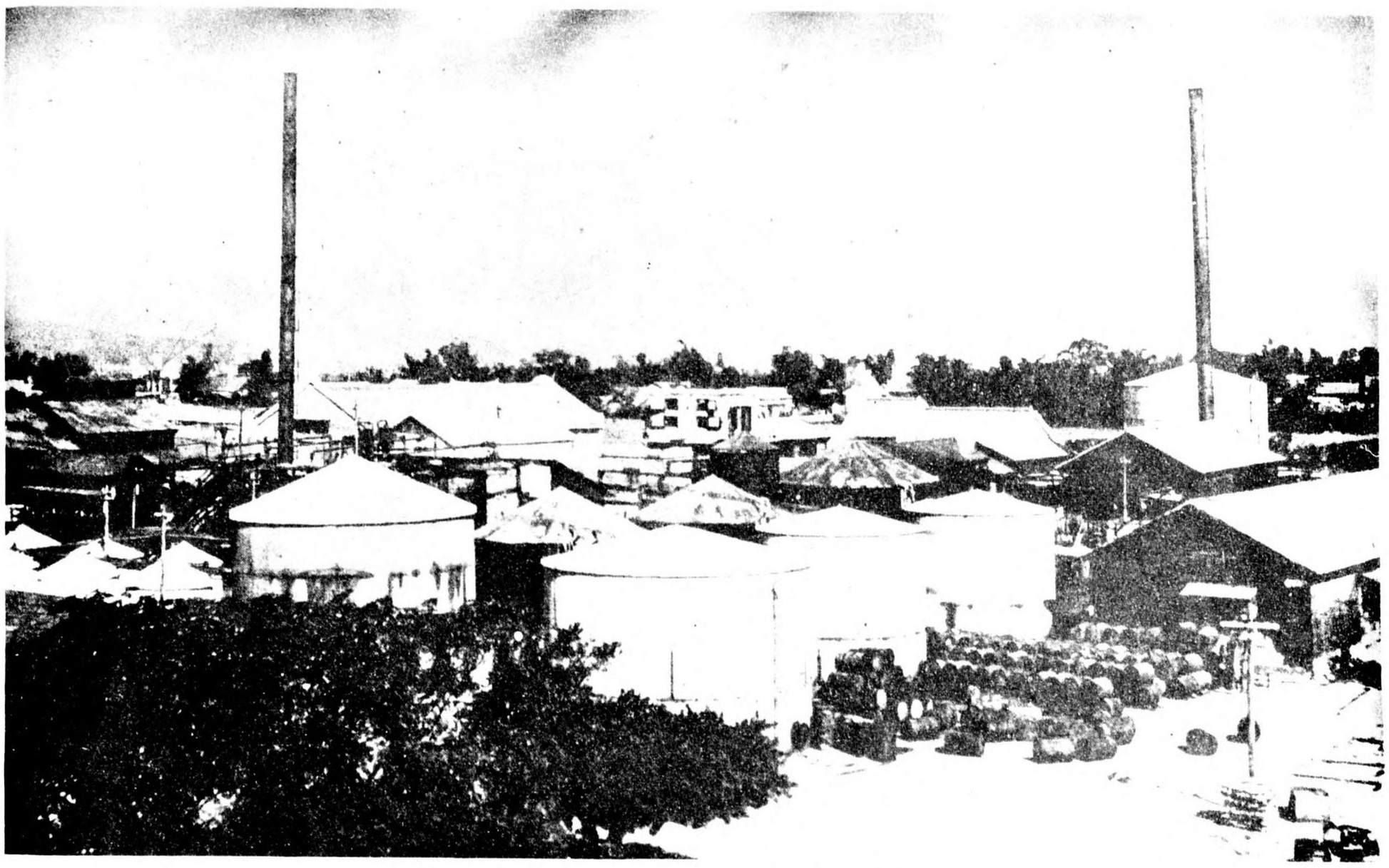
KINSUI CASING-HEAD PLANT - TARGET 86

Rated at 60,000 gals. of gasoline and butanol daily, this is the largest casing-head plant in Formosa. It supplies the nearby carbon black plant (below). Direction unknown.



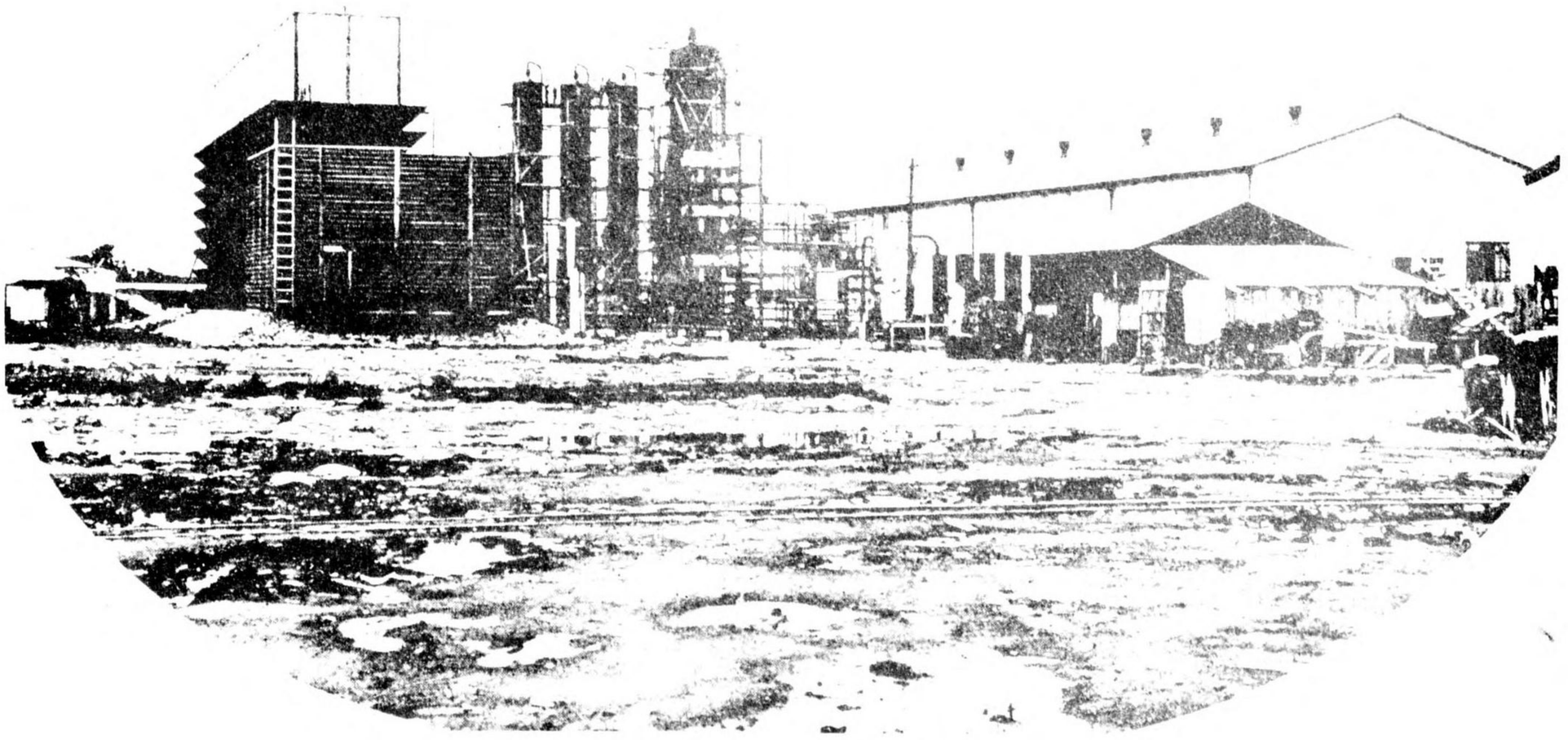
KINSUI CARBON BLACK PLANT - TARGET 87

This is reported to be Japan's principal source of better-grade Black for tires. The plant has been enlarged since this view was taken. Direction unknown.



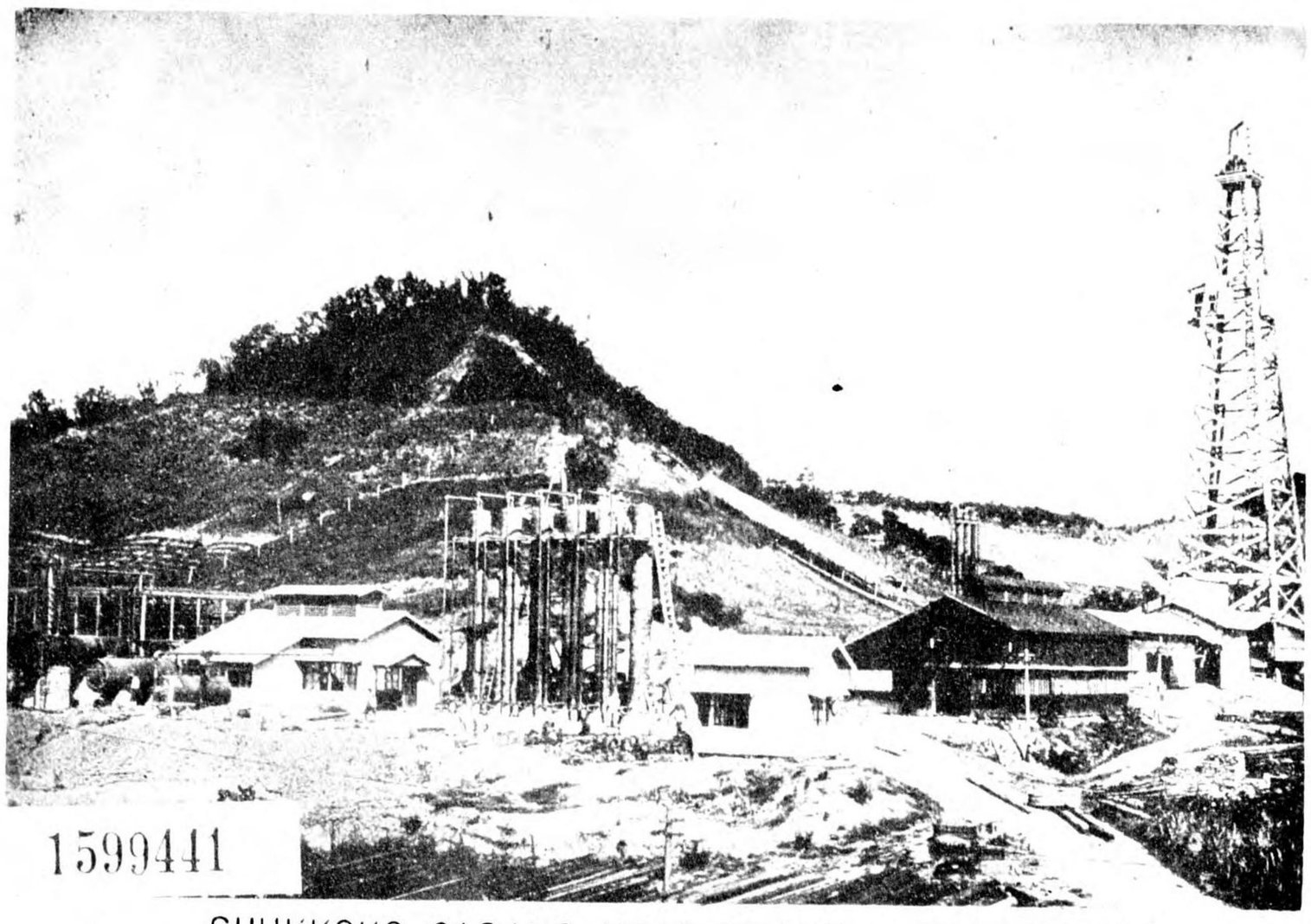
BYORITSU REFINERY - TARGET 85

Old view of kerosene and heavy oil section of the small refinery near Byoritsu. A tank farm is reported along RR near town.



CHIKUTO CASING-HEAD PLANT

View shows small casing-head gasoline plant at Chikuto, near Shinchiku. Plant is too small to warrant consideration as target.



SHUKKOKO CASING-HEAD PLANT - TARGET 119

View shows plant under construction. It has probably been considerably enlarged.

PART OF SHUKKOKO OIL/GAS FIELD

Northern group of wells at the Shukkoko field. A second group is located about 1 mile to the south. A moderately-large oil refinery was projected at Taiko, a small village just SE of the oil field. View looks east.

N

MUD FLATS

CHIKUNAN

T 95

24° 40'

T 87 IS REPORTED LOCATED IN THIS AREA

A NITROGEN PLANT IS ALSO REPORTED IN THIS AREA

OIL WELLS

T 86

OIL TANK FARM REPORTED ALONG RR LINE

T. 85 (EXACT LOCATION UNKNOWN)

BYORITSU

SUGAR REFINERY

CHIKUNAN-BYORITSU DISTRICTS

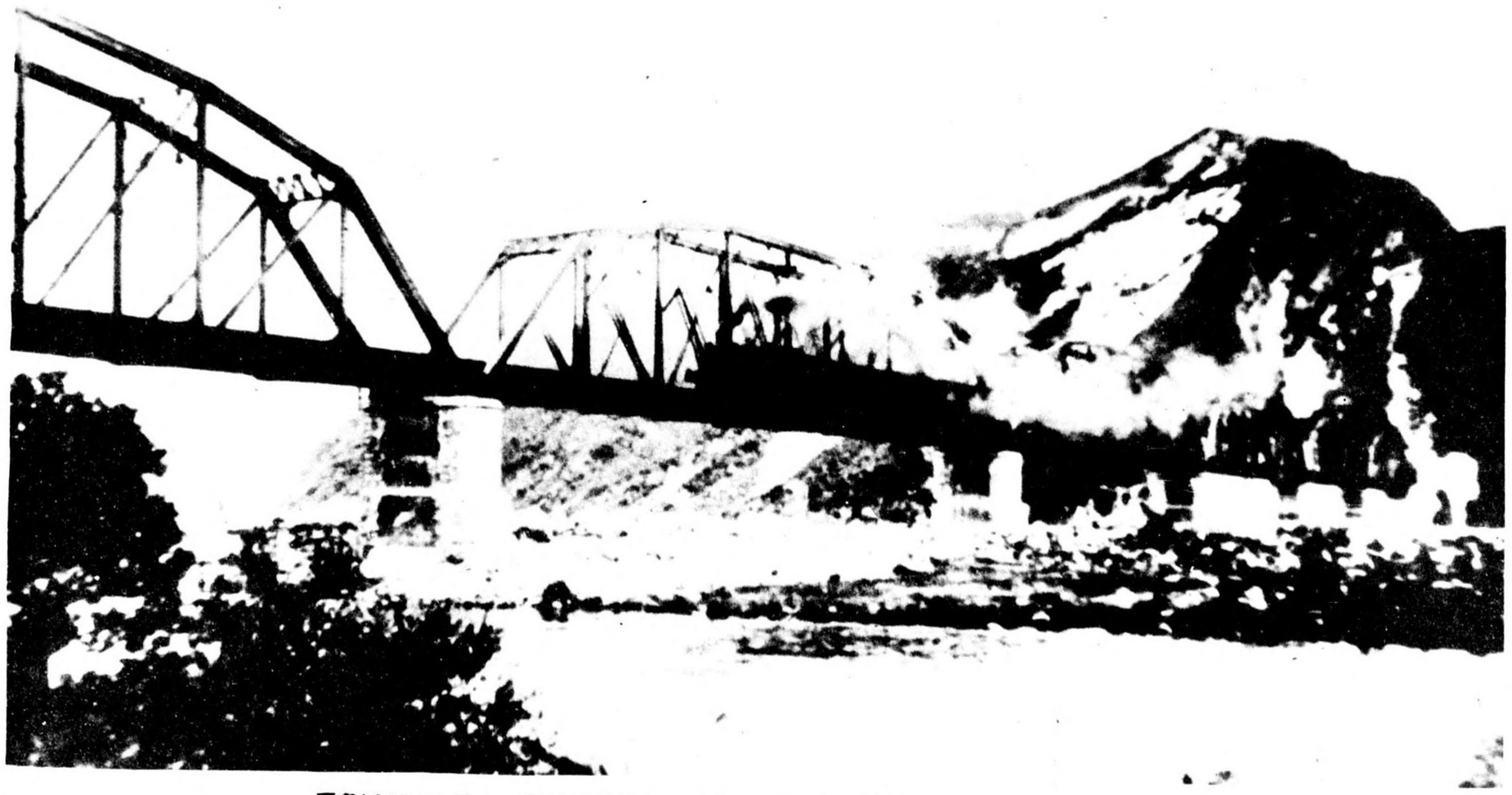
RAILROADS

ROADS

0 1 2 3 4 5

STATUTE MILES

ELEVATIONS IN METERS

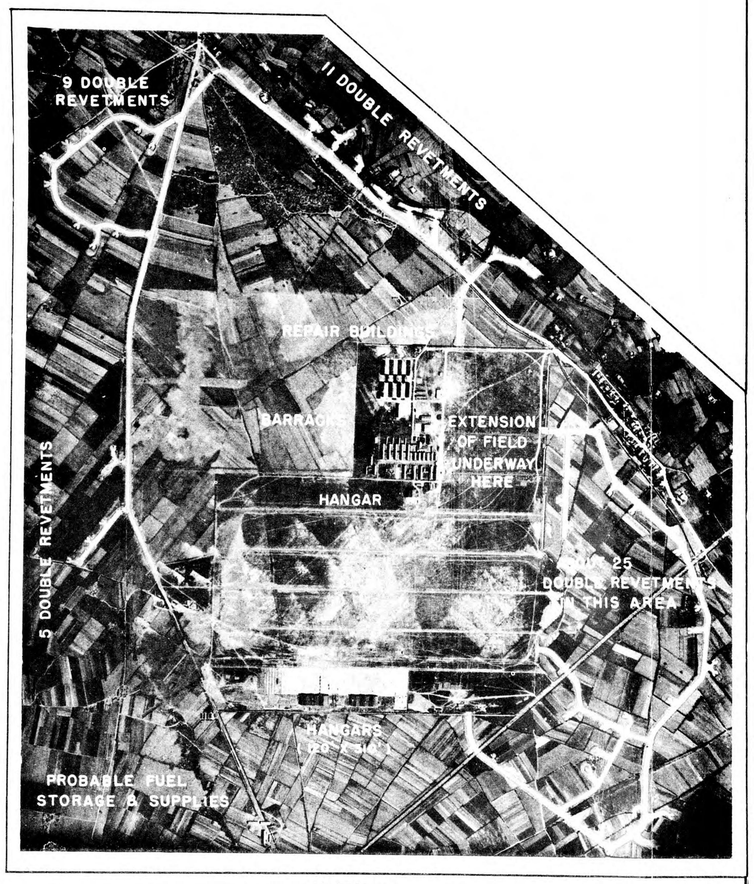


TOYOHARA TUNNEL AND BRIDGE - TARGET 93

Looking NW at bridge over Taiko River, near Toyohara. A steep incline leads into a tunnel which curves westward through hill.

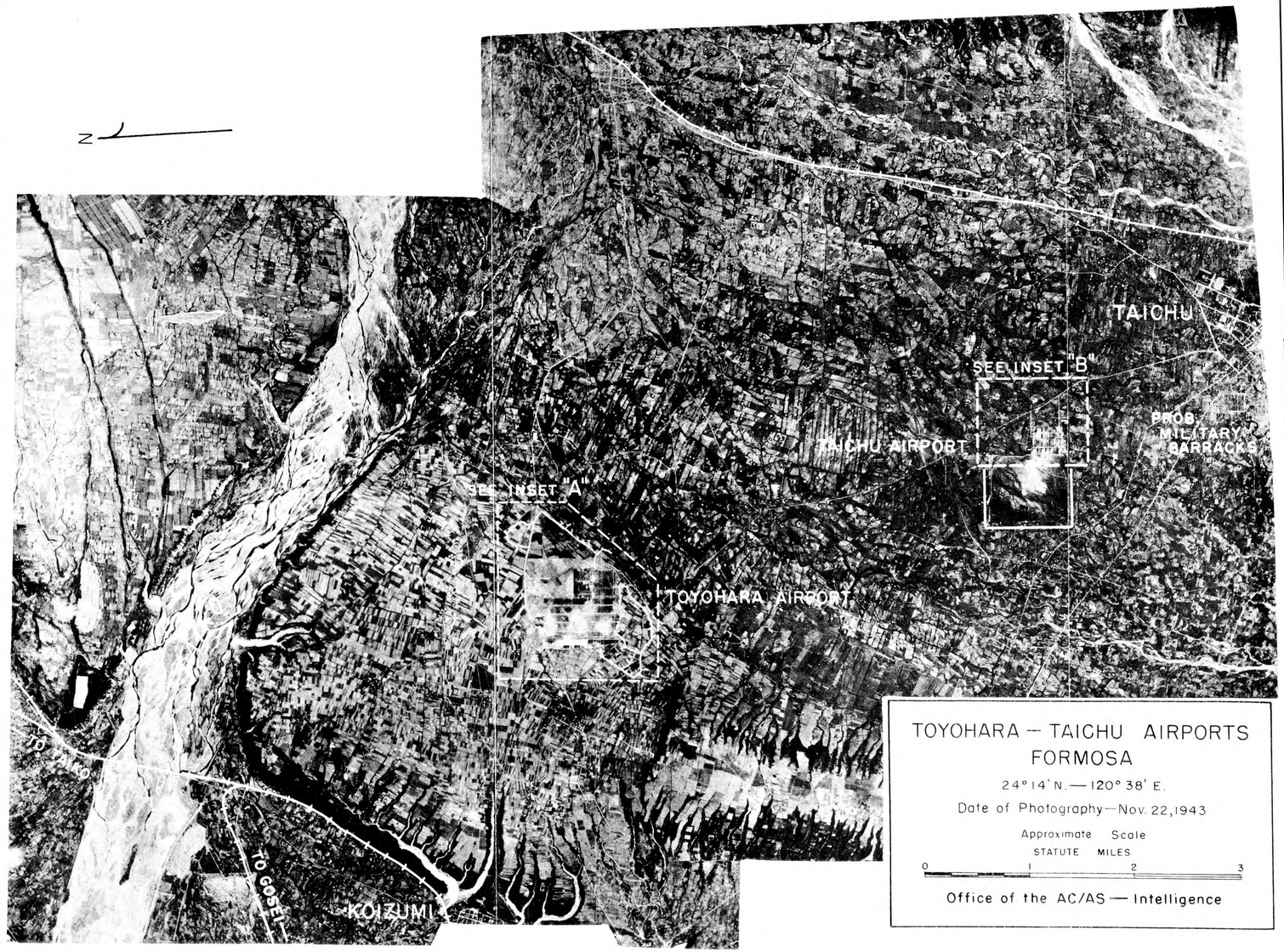
TAIAN RIVER BRIDGE - TARGET 94

Looking NE at 5000 ft. bridge over mouth of Taian River, near Taiko. This bridge is less than 2 miles inland from the coast.



APPROXIMATE
0 1000 2000 3000 4000
SCALE IN FEET

INSET "A"



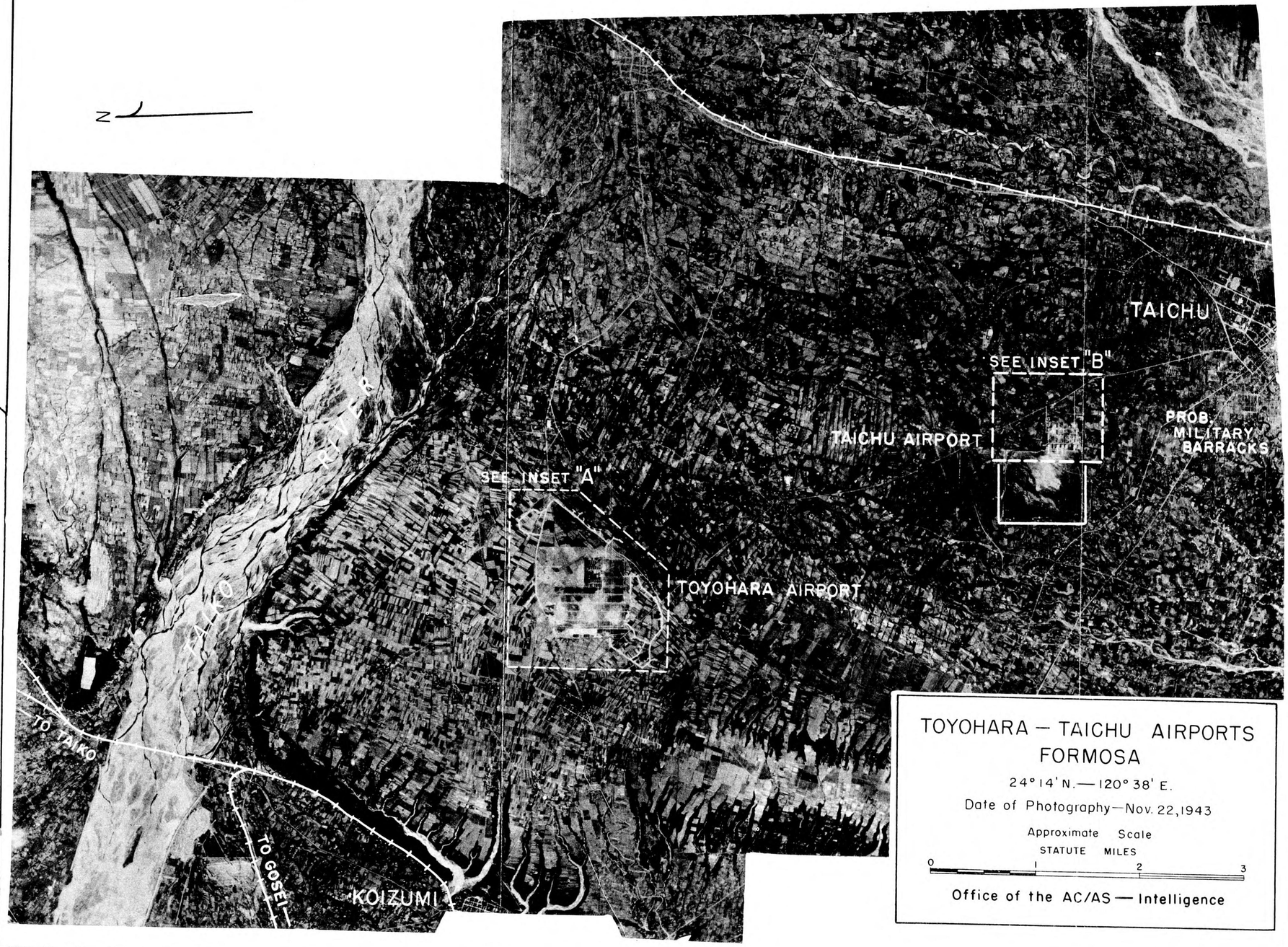
TOYOHARA — TAICHU AIRPORTS
FORMOSA

24° 14' N. — 120° 38' E.

Date of Photography — Nov. 22, 1943

Approximate Scale
STATUTE MILES
0 1 2 3

Office of the AC/AS — Intelligence



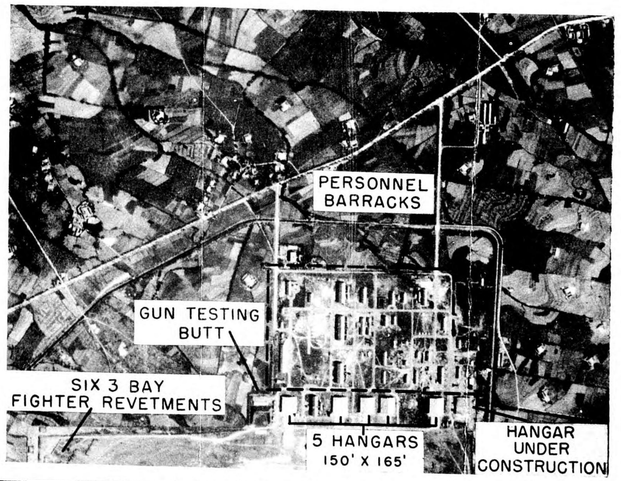
TOYOHARA — TAICHU AIRPORTS
FORMOSA

24° 14' N. — 120° 38' E.

Date of Photography — Nov. 22, 1943

Approximate Scale
STATUTE MILES
0 1 2 3

Office of the AC/AS — Intelligence



APPROXIMATE
0 1000 2000 3000 4000
SCALE IN FEET

INSET "B"

120° 30'

United States CONFIDENTIAL Equals British CONFIDENTIAL

120° 45'

EAST CHINA SEA

N

24° 20'

TAIKO R.

TAIKO

KIYOMIZU

GOSEI

T. 100

TOYOHARA AIRPORT

TAIKO R.

POWER LINES

TUNNEL

T. 93

TOYOHARA

TAIKO-TOYOHARA DISTRICTS

ELEVATIONS IN METERS

RAILROADS

ROADS

1 ½ 0 1 2 3 4

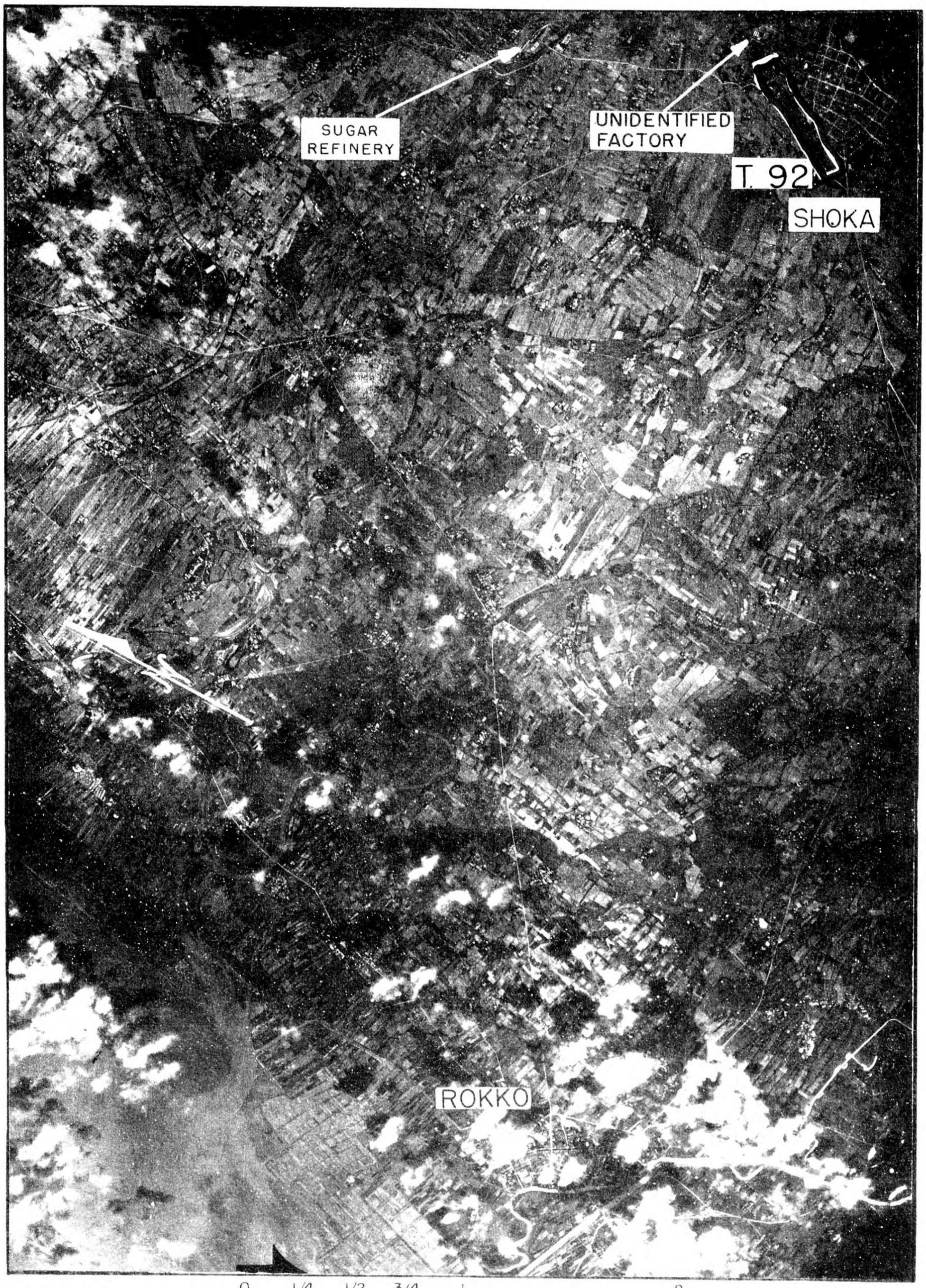
STATUTE MILES

24° 10'

120° 30'

United States CONFIDENTIAL Equals British CONFIDENTIAL

120° 45'

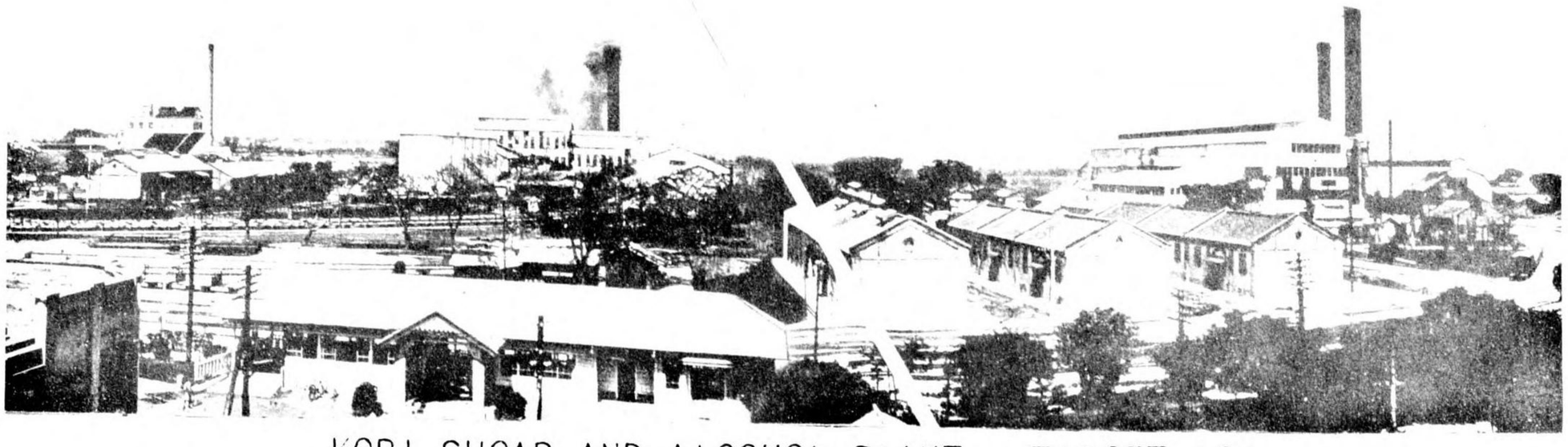


SHOKA, FORMOSA

Date 26 Nov 1943

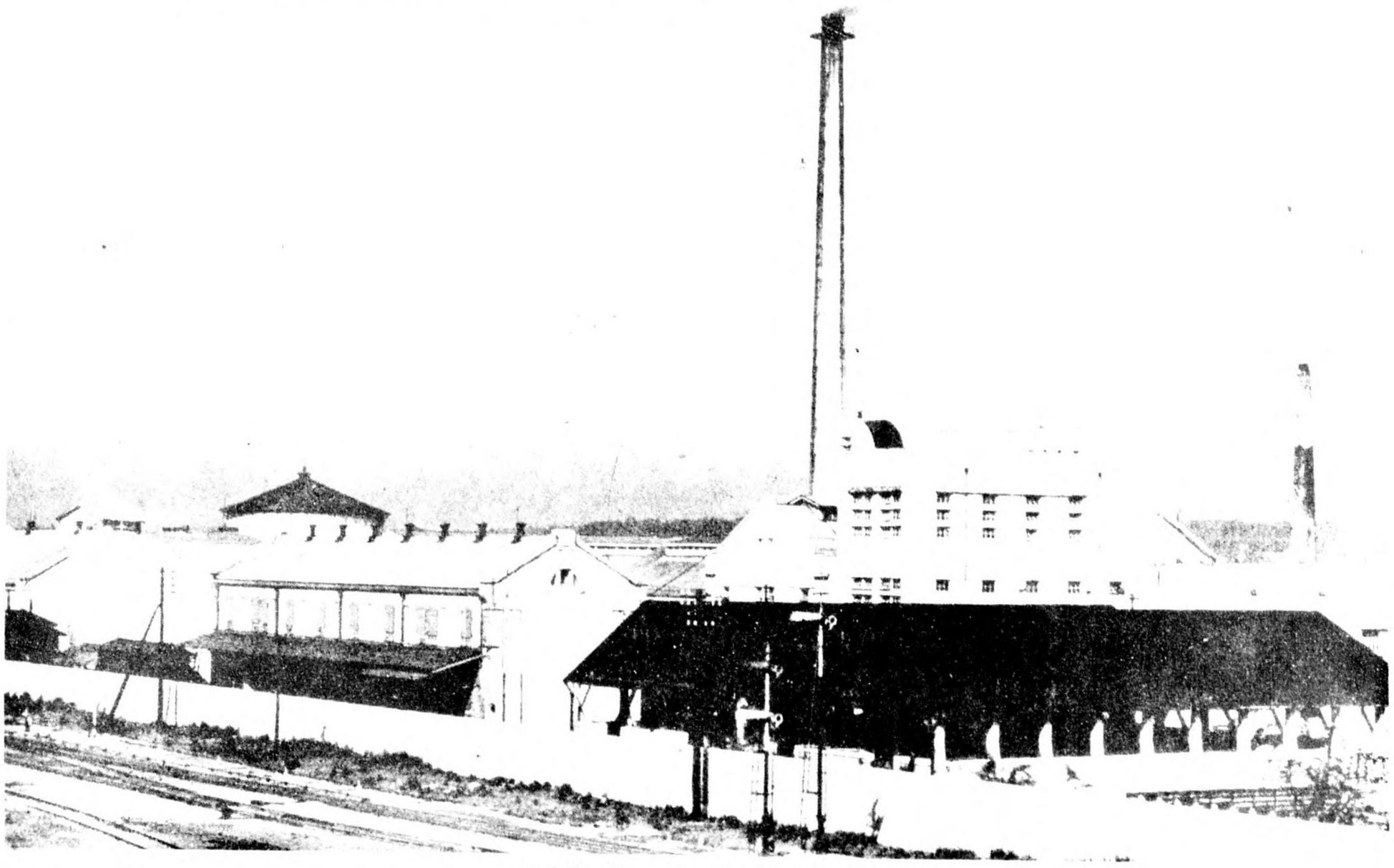
TAITO RIVER BRIDGES - TARGET 91

Looking south at Taito River crossing, showing trunk RR bridge at left, local narrow gauge RR bridge center and main highway bridge at right.



KOBI SUGAR AND ALCOHOL PLANT - TARGET 104

This is one of the three largest absolute alcohol plants in Formosa. Direction unknown.



ALCOHOL PLANT AT KAGI

This small plant is one of several small industrial installations at Kagi which may serve as alternate objectives.

120° 30'
120° 45'
24° 10'
24°

TAICHU AIRPORT
BARRACKS
PARK
LARGE BARRACKS AREA
SAWMILL
TAICHU
LUMBER
RAILWAY
SUGAR REFINERY
PRISON
SUGAR REFINERY
SUGAR REFINERY
TAITO-R
NEW FACTORY (TYPE UNKNOWN)
ROUNDHOUSE AND REPAIR SHOPS
WAREHOUSES
SHOKA
294
486
249
232
256

TAICHU-SHOKA DISTRICTS

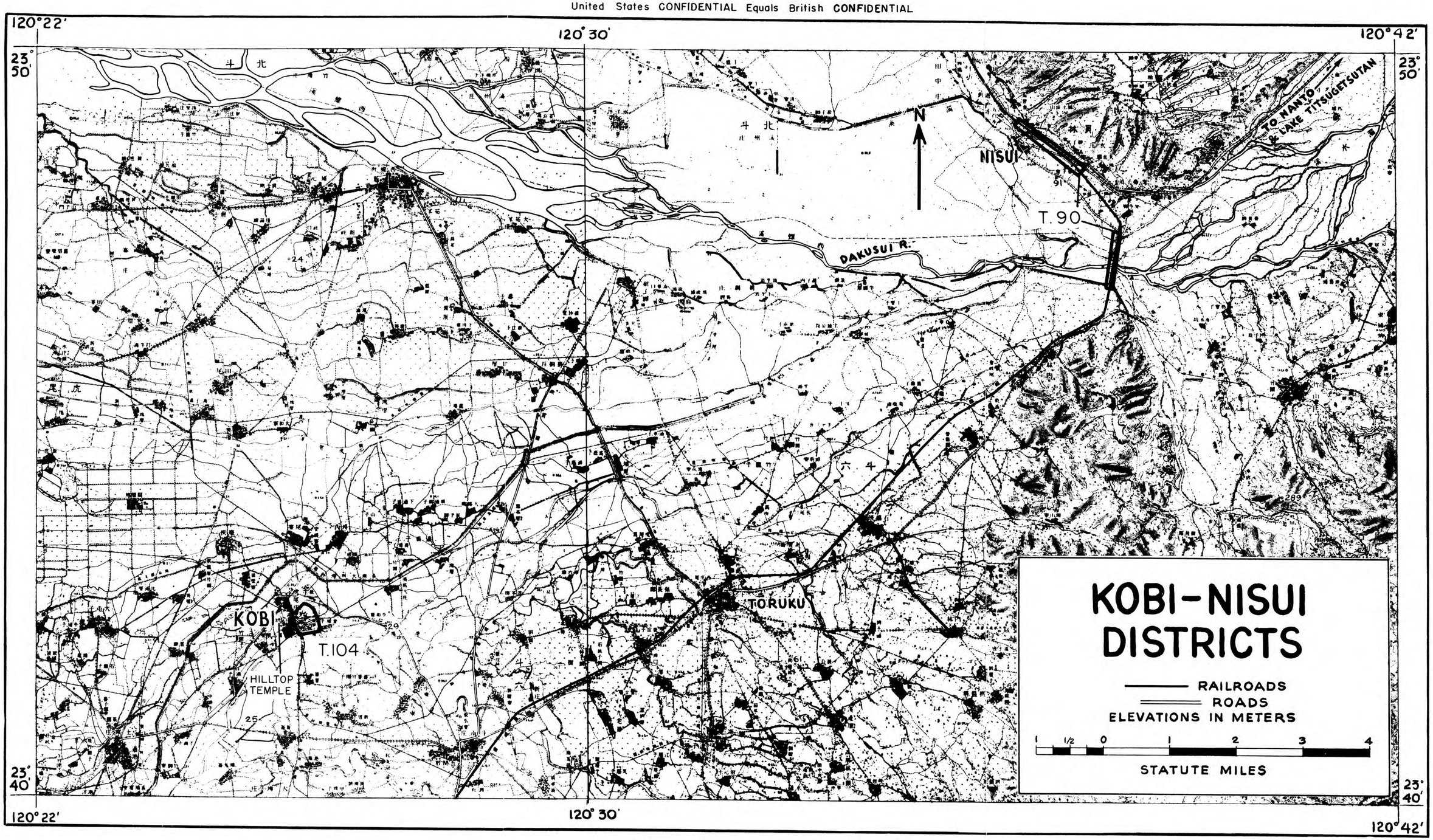
ELEVATIONS IN METERS

RAILROADS

ROADS

1/4 1/2 3/4 0 1 2

STATUTE MILES



KOBI-NISUI DISTRICTS

RAILROADS
ROADS
ELEVATIONS IN METERS

1 1/2 0 1 2 3 4
STATUTE MILES

120°15'

120°30'

23°38'

23°30'

23°23'

SUGAR REFINERY

HOKKO

CONSPICUOUS TREE-LINED ROAD

N

LUMBER MILL

RICE FIELDS

KAGI

SUGAR REFINERY

LARGE BARRACKS

POWER TRANSFORMER

KAGI AIRPORT

NANSEI

HOKKO-KAGI DISTRICTS

RAILROADS

ROADS

ELEVATIONS IN METERS

1 0 1 2 3 4

STATUTE MILES

LAKE JITSUGETSUTAN HYDROELECTRIC DEVELOPMENT

The Jitsugetsutan hydroelectric development comprises a seasonal storage reservoir and two generating stations. Water diverted from the Dakusui River at Bukai, is carried 15 miles SW by tunnel to Lake Jitsugetsutan where two earth dams impound a useable storage of some 4½ billion cubic feet. This is sufficient to assure a year-round power output of 100,000 KW, with a 143,000 KW maximum for 9 months of the year.

The #1 power plant is located on a sharp bend in the Suiri River two miles west of Lake Jitsugetsutan. Water flows by tunnel from the lake to a surge tank on the ridge directly east of and 1000 feet above the power plant. Five penstocks, approximately 2000 feet in length, lead from the surge tank down to the generating station on the river bank. Switchgear and step-up transformers which control the output of both the #1 and #2 stations adjoin the #1 plant on the south.

From the #1 plant water is carried approximately two miles south to the #2 plant, which is located across from Suiriko. A third generating station was projected on the Dakusui River, about 2 miles west of the #2 plant, but there is no evidence that it has been constructed.

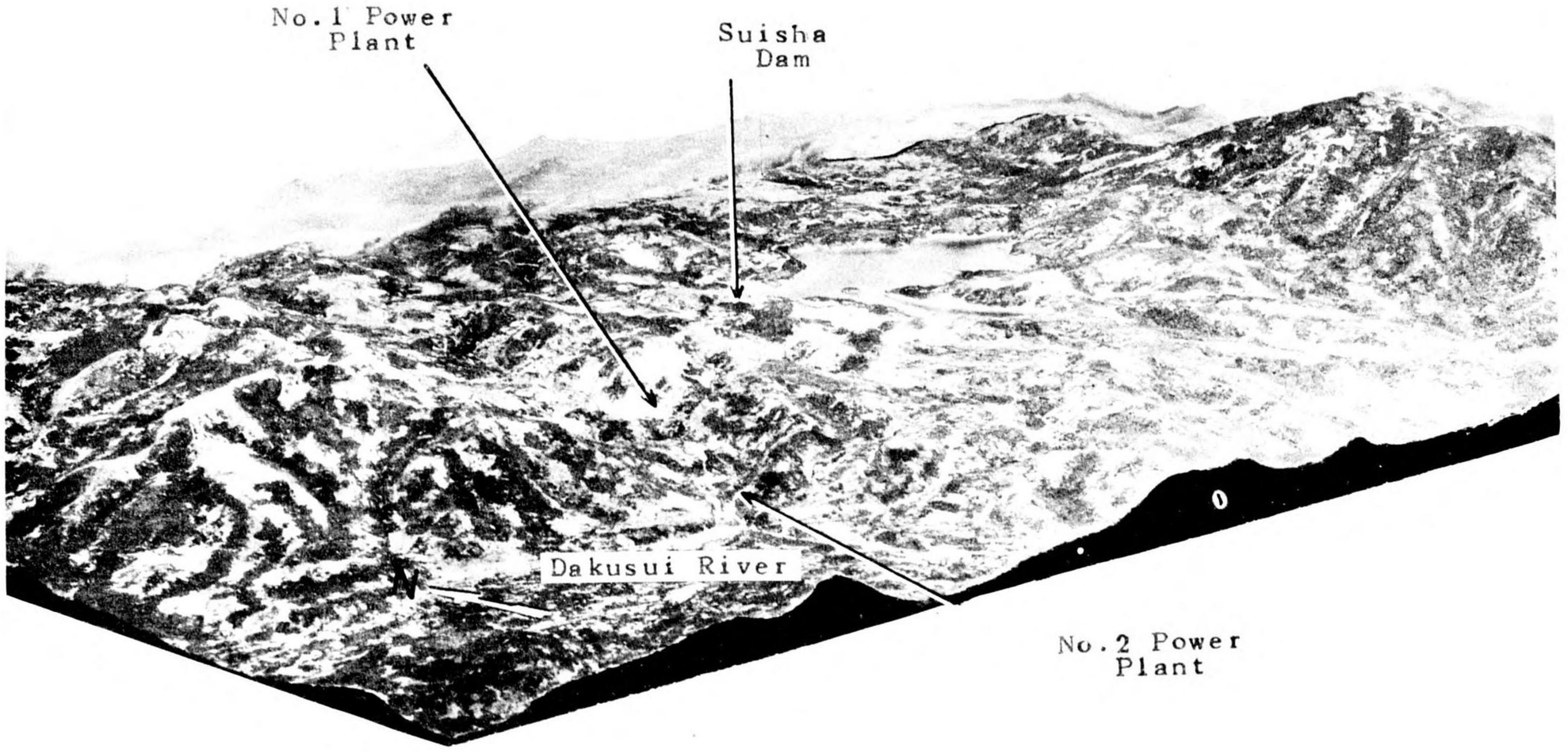
Complete destruction of either the 150 ft. concrete diversion dam on the Dakusui River at Bukai, or the 900 ft. earth dam at the outlet of Jitsugetsutan (Target 181) would halt operations for at least a year. Serious approach difficulties would be involved in attack on the Bukai Dam. Breaching of the main earth dam at Suisha on Lake Jitsugetsutan would be effective only during the few weeks in Autumn (approximately Sept. 15 - Nov. 1) when the lake level is at a maximum.

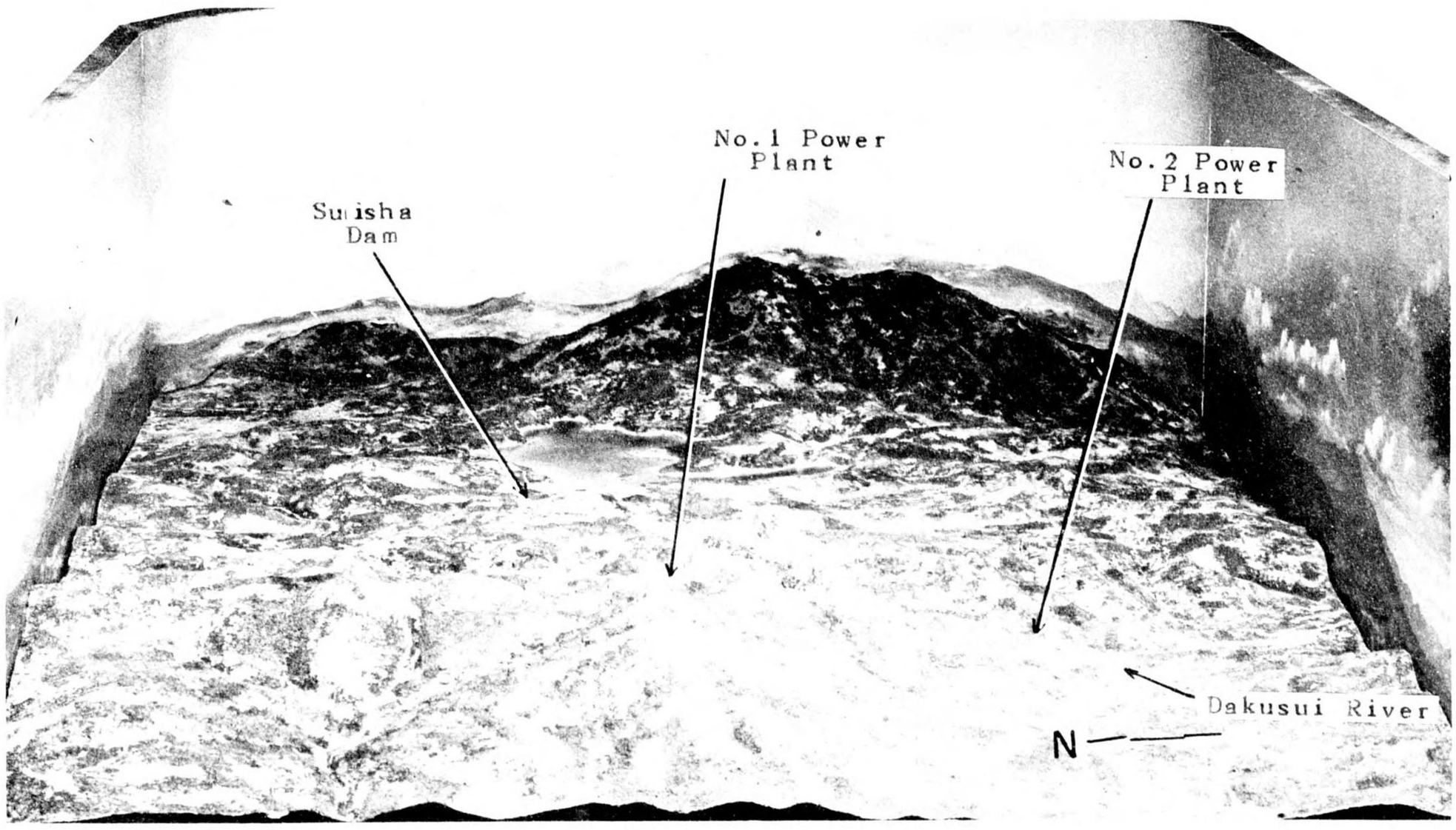
The #1 station (Target 82), with 70% of the project's capacity, is probably the most effective target. The five horizontal turbo-generator sets and other essential equipment in this plant are above ground level and are susceptible to secondary damage even if they do not receive direct hits. Rupture of the penstocks or damage to the switchgear and transformers, which might result from near misses on the station itself, would prove at least temporarily effective in halting the power supply of both the #1 and #2 stations. The #2 station (Target 83), which is considerably smaller, semi-automatic and ordinarily controlled from the #1 station, should be considered only as an alternate objective.

Power from Jitsugetsutan is distributed along all of northern, western and southern Formosa. Primary substations at Taihoku and Takao provide a temporarily effective means of isolating these districts from the Jitsugetsutan power supply. In the case of the Takao district, denial of this power supply would be almost completely effective, since the maximum locally generated power (2 steam plants) amounts at most to about 51,000 KW, and would probably not suffice to meet even minimum demands here. Actually, this local supply may not exceed 13,000 KW since the location of a reported 38,000 KW steam plant cannot be verified by the available reconnaissance coverage. Interruption of the Jitsugetsutan power supply in the Taihoku-Keelung area would not be as important. The total locally generated power in this district amounts to about 70,000-85,000 KW (from small hydro plants on the Shinten River south of Taihoku and at Maruyama near Rato, from a 38,000 KW steam plant near Keelung, and small local generators). This would probably suffice to maintain essential operations at partial capacity at least.

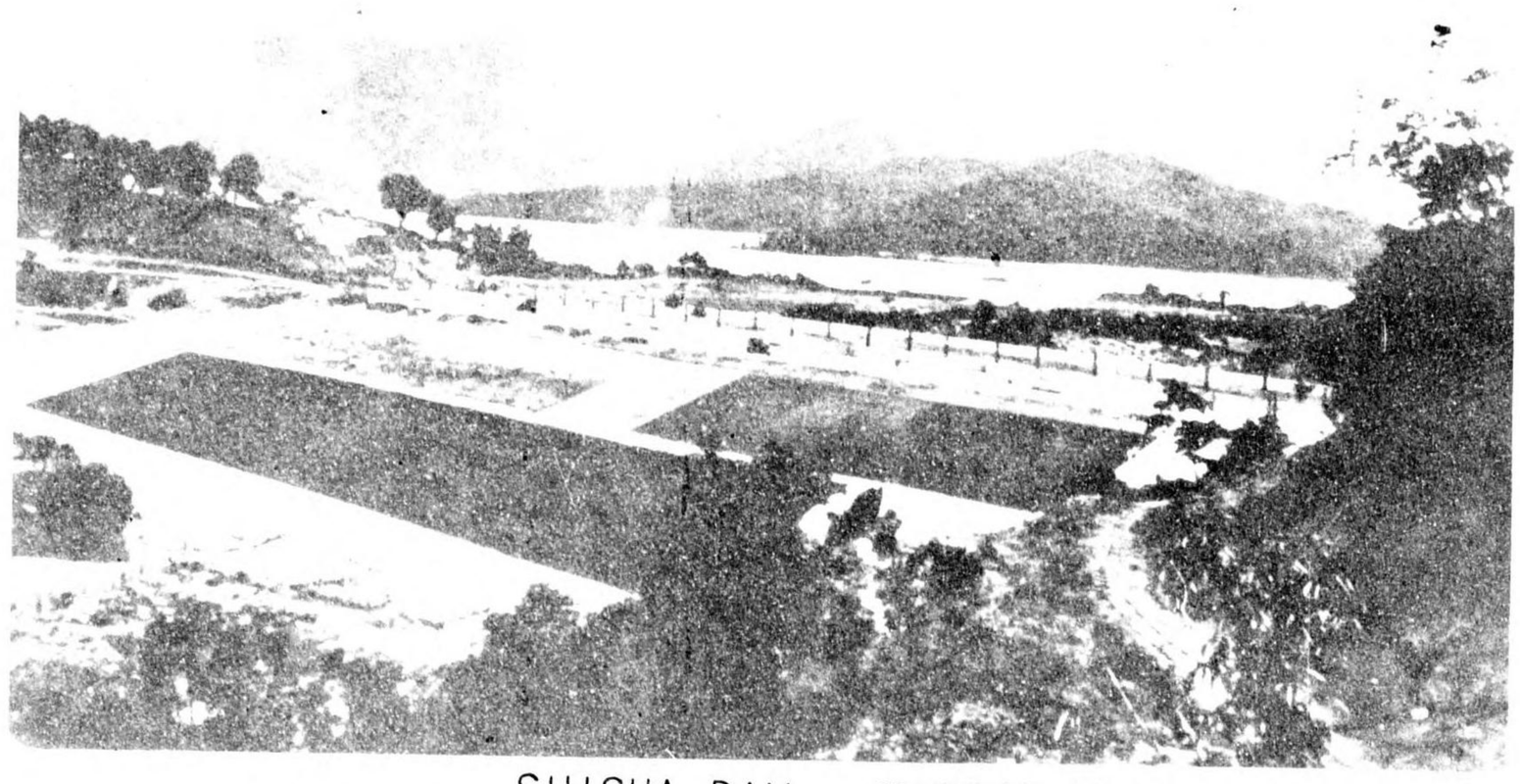
TABULATION OF TARGETS

No.	Name	Approximate Coordinates	Description and Significance
181	Suisha Dam (Lake Jitsugetsutan)	23° 52' N 120° 53' E	Earth dam (probably faced with thin concrete layer), 900 ft. long, 120 ft. high, 20 ft. wide at top; 600 ft. wide at base. Vulnerable when lake level near maximum (Sept. 15 - Nov. 1).
82	Jitsugetsutan Power Plant #1 (Monpaitan)	23° 51' N 120° 52' E	100,000 KW capacity. Reinforced concrete. Structure 80 by 290 ft. houses five 20,000 horizontal turbo-generators, above ground level. Five penstocks to east and switchgear and transformers to south.
83	Jitsugetsutan Power Plant #2 (Suiriko)	23° 49' N 120° 51' E	43,000 KW capacity. Reinforced concrete structure approximately 60 by 100 ft., houses two 22,000 KW vertical generators. Two penstocks lead into plant.



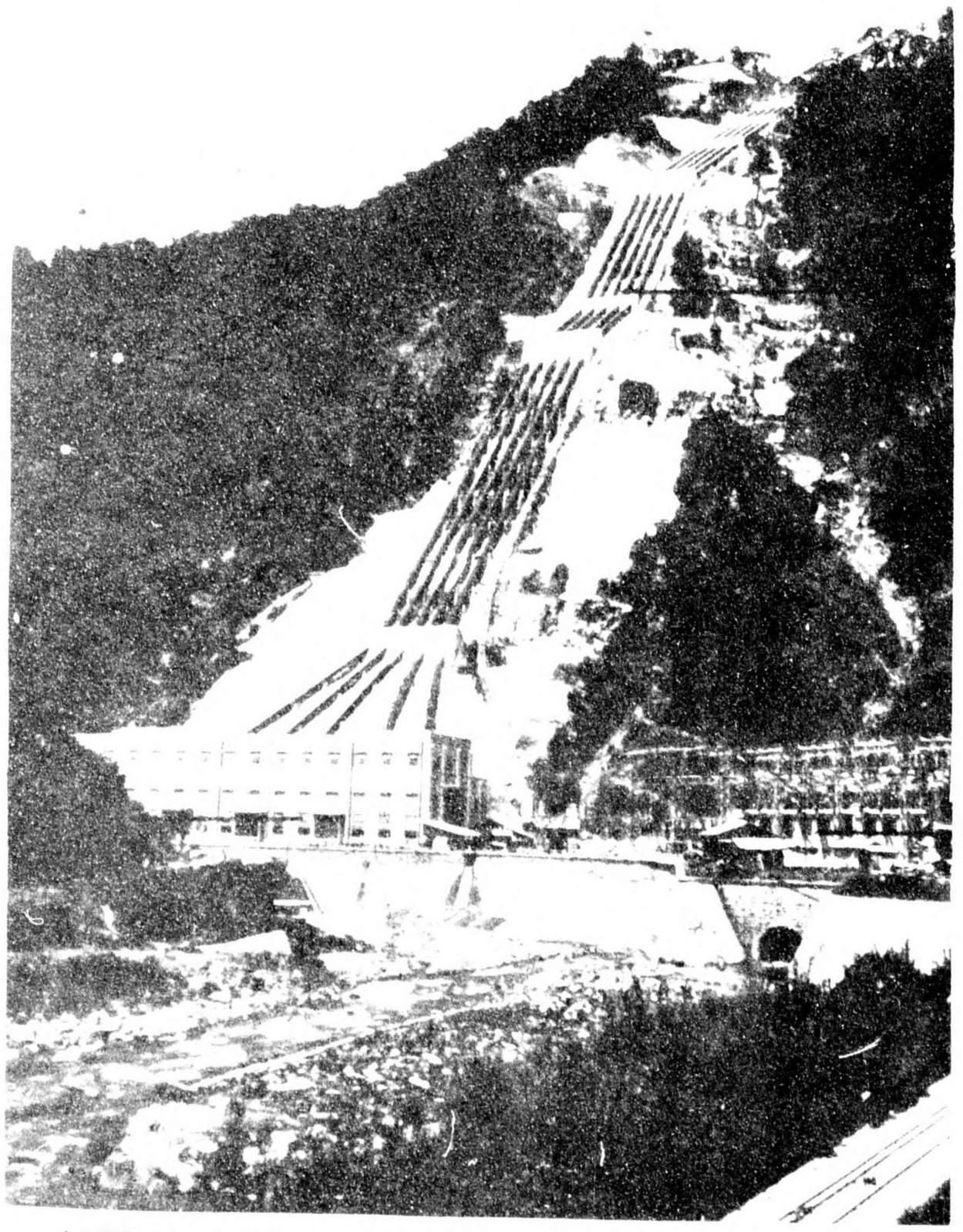


EXPERIMENTAL RELIEF MODEL OF LAKE JITSUGETSUTAN



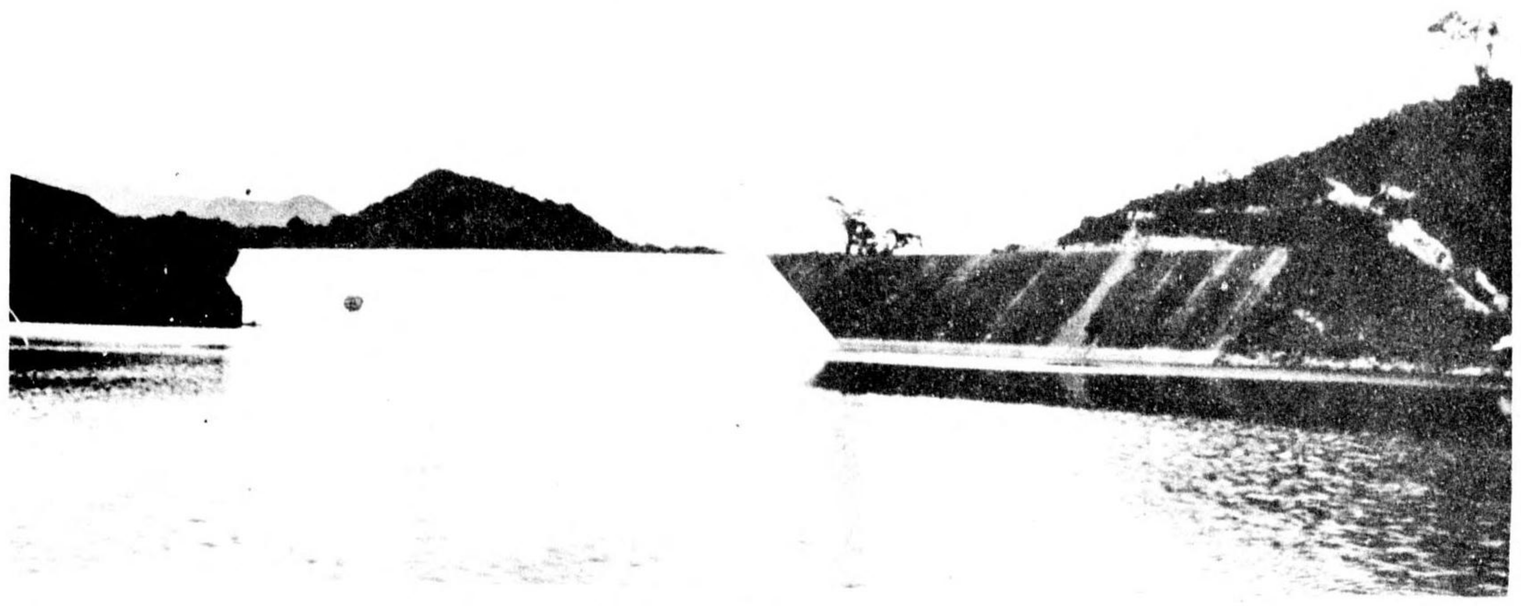
SUISHA DAM - TARGET 181

Looking SE at rolled earth dam under construction. Completed dam rises to approximate height of white cut on ridge at left and is faced on water side with a thin stone or concrete layer. Lake is shown at low water.



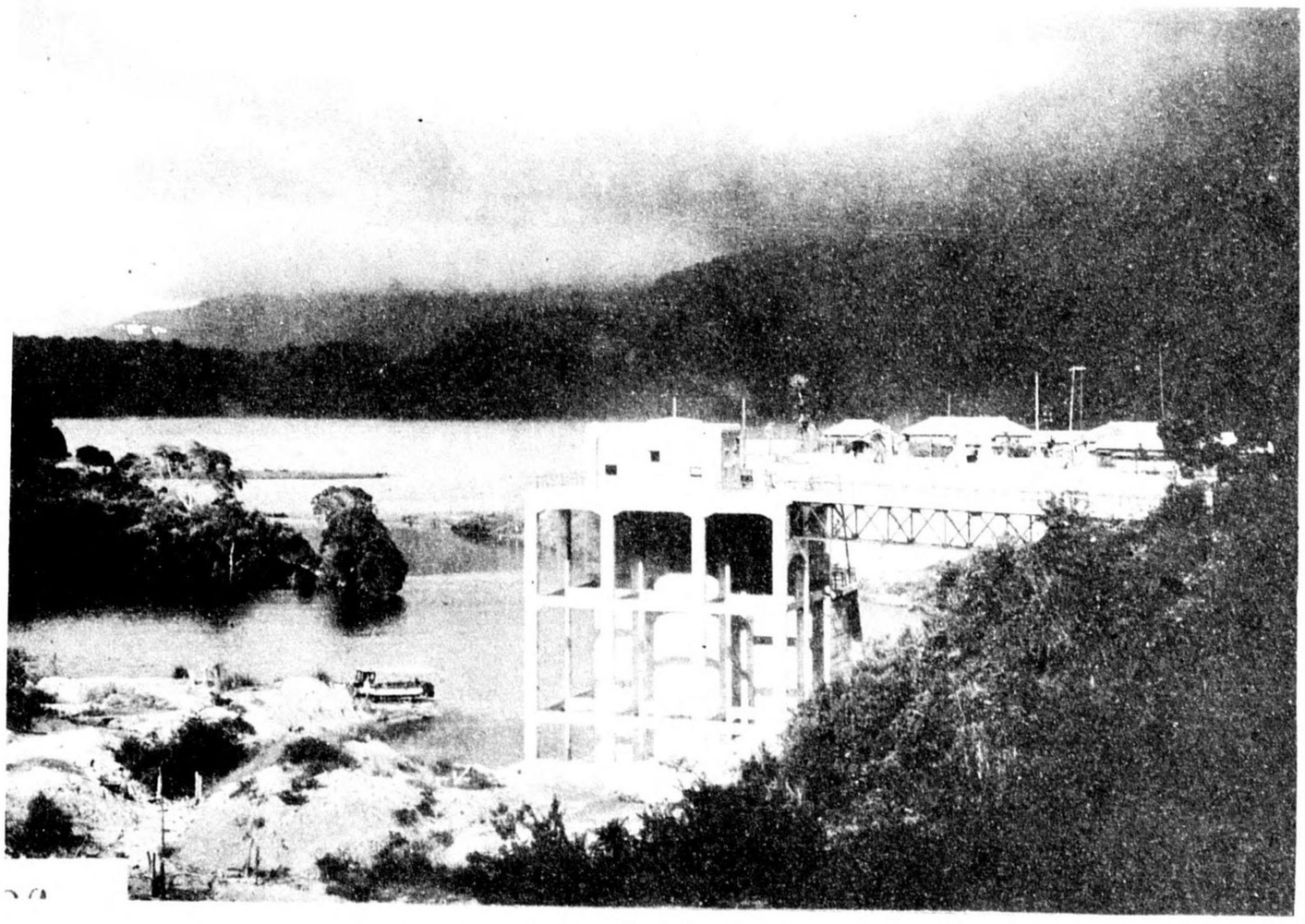
JITSUGETSUTAN POWER PLANT #1 - TARGET 82

Looking E at powerhouse and switchgear. View taken soon after construction and penstocks are now probably covered with brush.



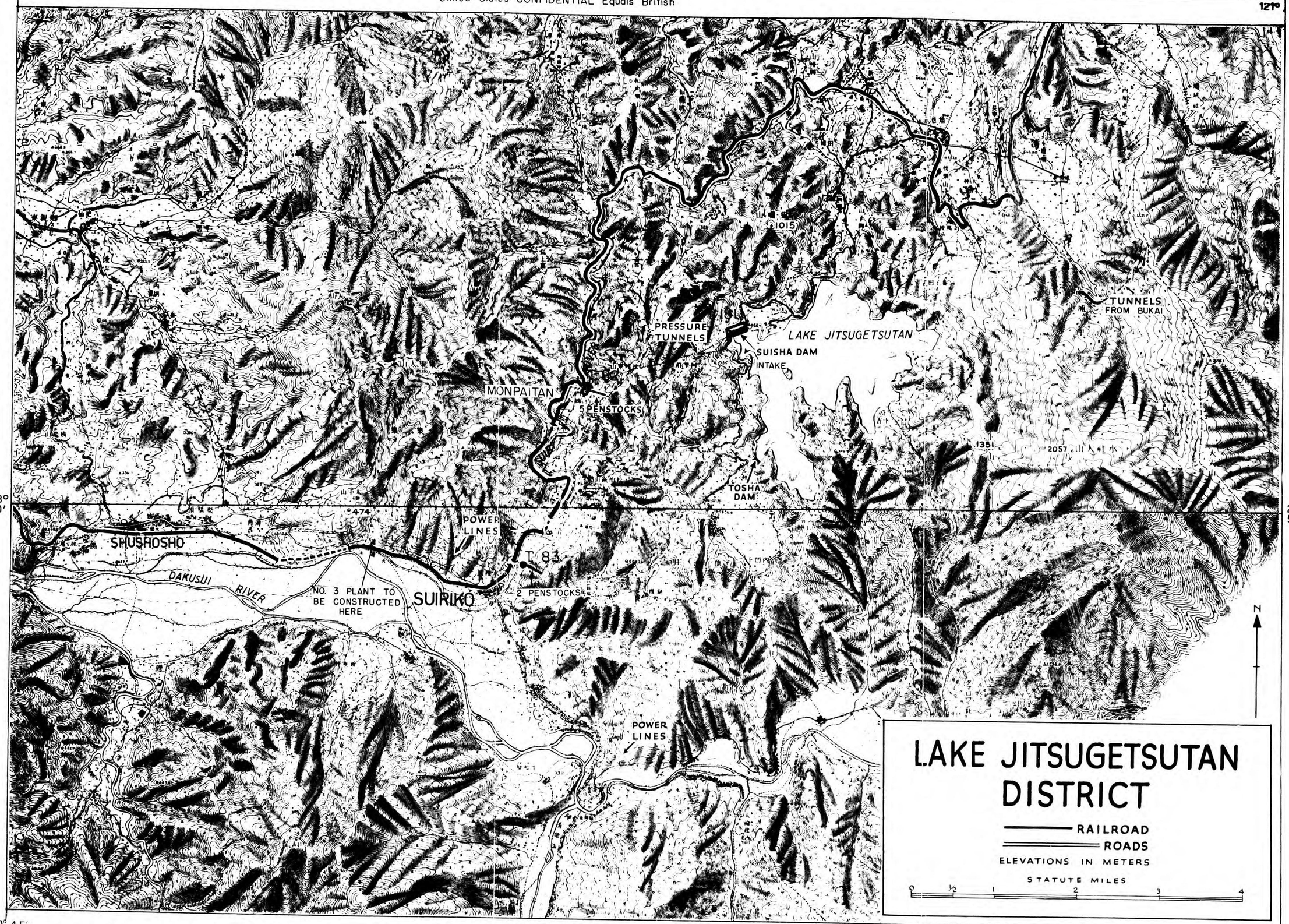
TOSHA DAM

Looking S by W at supplementary Tosha Dam, Lake Jitsugetsutan.



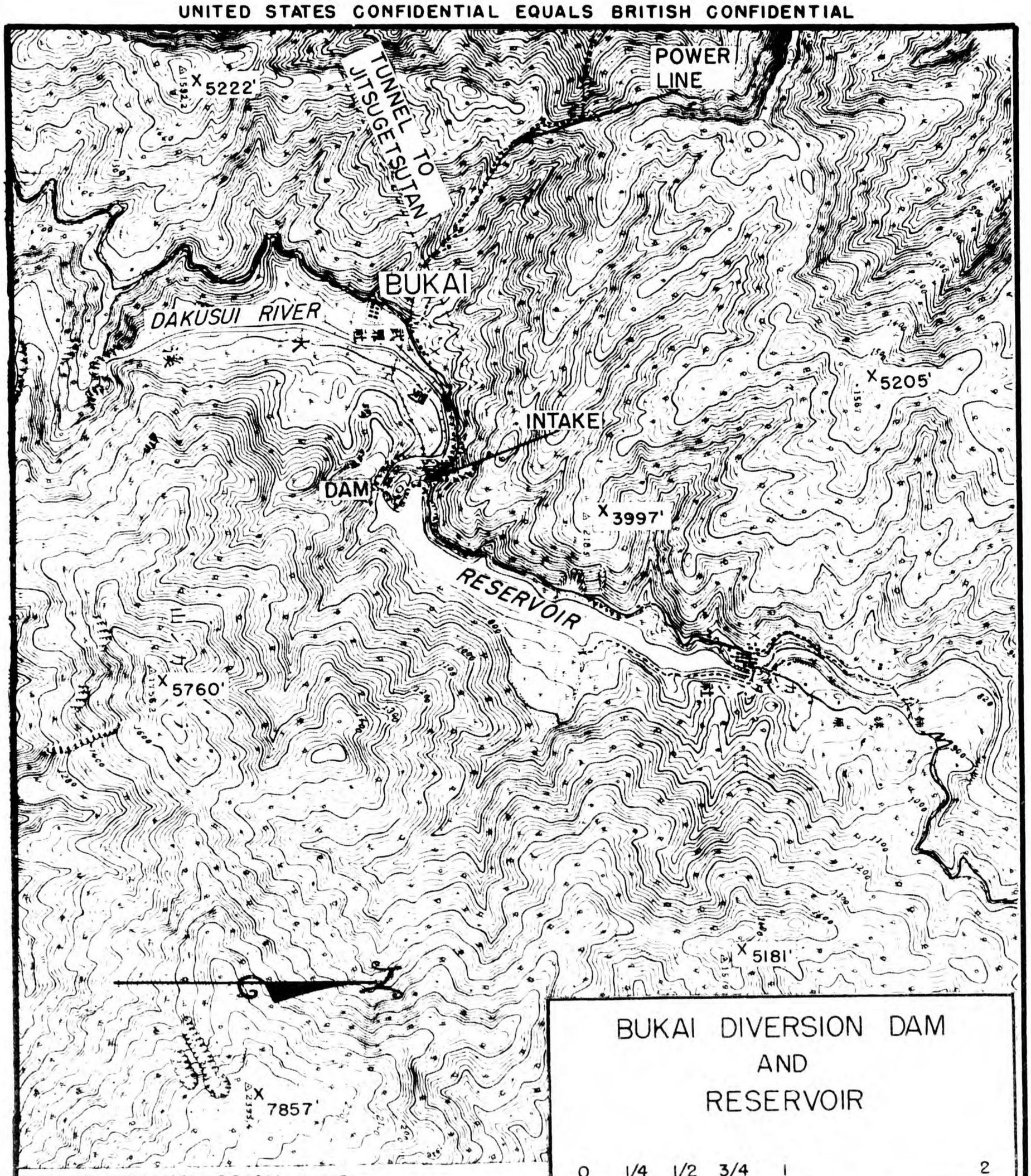
INTAKE TOWER

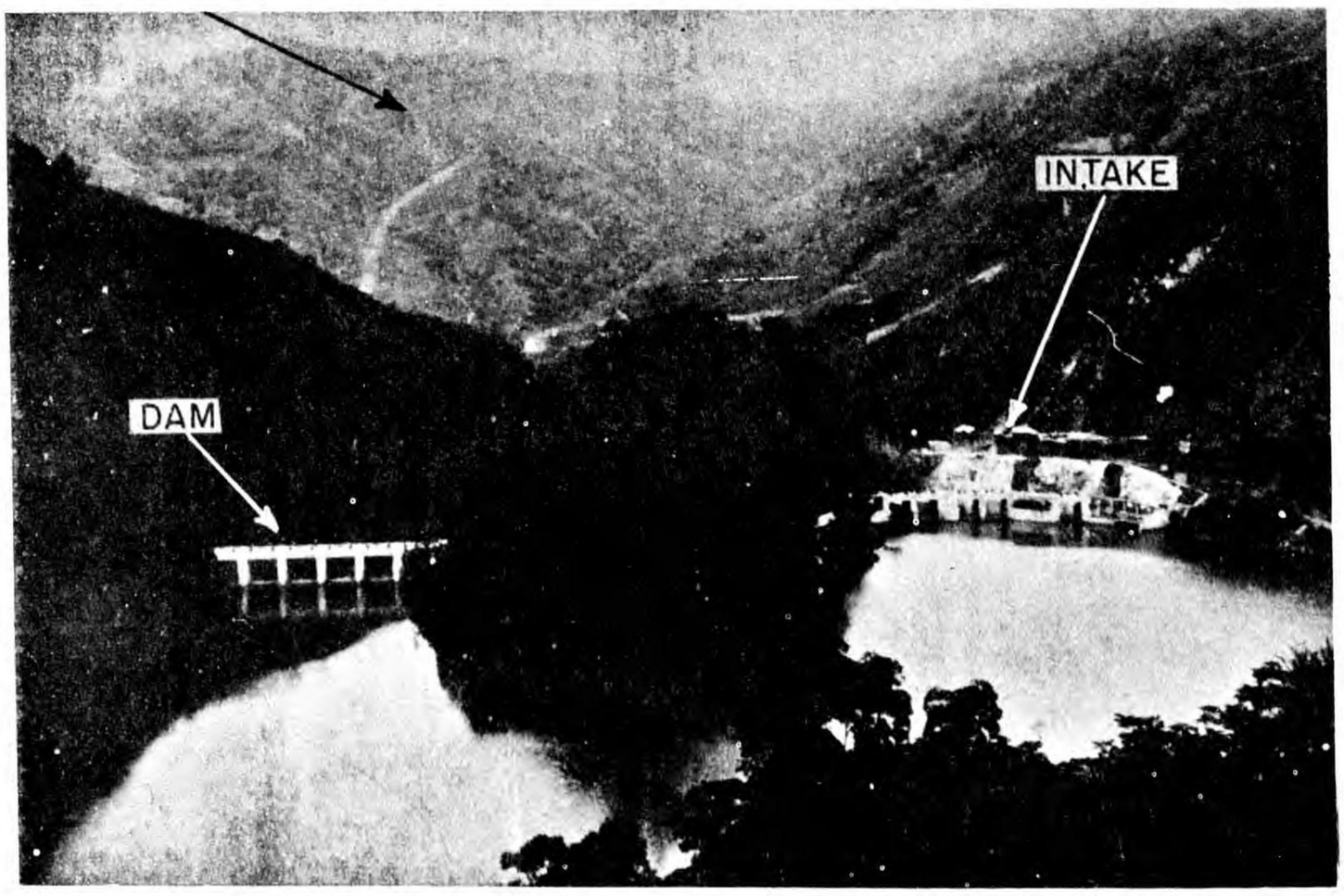
Looking SE at intake tower from which tunnel leads to the surge tank above the #1 power plant. Suisha Dam is off view at left. Lake is shown at low water.



LAKE JITSUGETSUTAN DISTRICT

RAILROAD
ROADS
ELEVATIONS IN METERS
STATUTE MILES
0 ½ 1 2 3 4





Diversion dam, intake and reservoir at Bukai. Water from this reservoir is carried by tunnel to Lake Jitsugetsutan, 15 miles to the SW. Two small hydroelectric plants were projected NE of here, but their present status is unknown.

TAINAN AND VICINITY

(Reconnaissance photo coverage: 7 November 1943)

Formosa's second largest city, Tainan is noted for its schools and commercial houses, but has few industries. The adjoining Tainan Salt and Magnesium Works (Targets 89 and 110) consitute the only industrial objectives of any significance. A large sugar refinery, not designated as a target, is located near the village of Sharoken, about 1 mile SE of the Einansho Airport.

The city is more important as a military center, being the site of an extensive barracks development (Target 112) and training ground. The large and well equipped Einansho Airport is located just to the south.

Tainan is located on the trunk line railroad to Takao, and its railroad facilities include small shops and a few storehouses. The Tainan Canal extends from a barge basin in the city to the port town of Anping. Large ships sometimes lighter off the Anping roadstead, but most of the vessels which call here are small coastal ships.

TARGET TABULATION

No.	Name	Approximate Coordinates	Description and Significance
112	Tainan Barracks	23° 00' N 120° 12' E	Barracks & training grounds, E, N and NW of RR Station. Bldgs occupy about 1 square mi. Several schools in NW & S parts of town may be converted to military use.
110	Tainan Magnesium Plant (Minami Nippon KK)	23° 00' N 120° 09' E	Magnesium works, capacity unknown, operated in conjunction with Tainan Salt Works.
89	Tainan Salt Works	23° 00' N 120° 09' E	Large industrial salt works; extensive salt beds to N & S. Plant bldgs of light construction, but could be easily repaired.

ANPING, FORMOSA

23° 00' N – 120° 09' E

Date 7 Nov 1943

APPROXIMATE SCALE

0 1/4 1/2 3/4 1 2

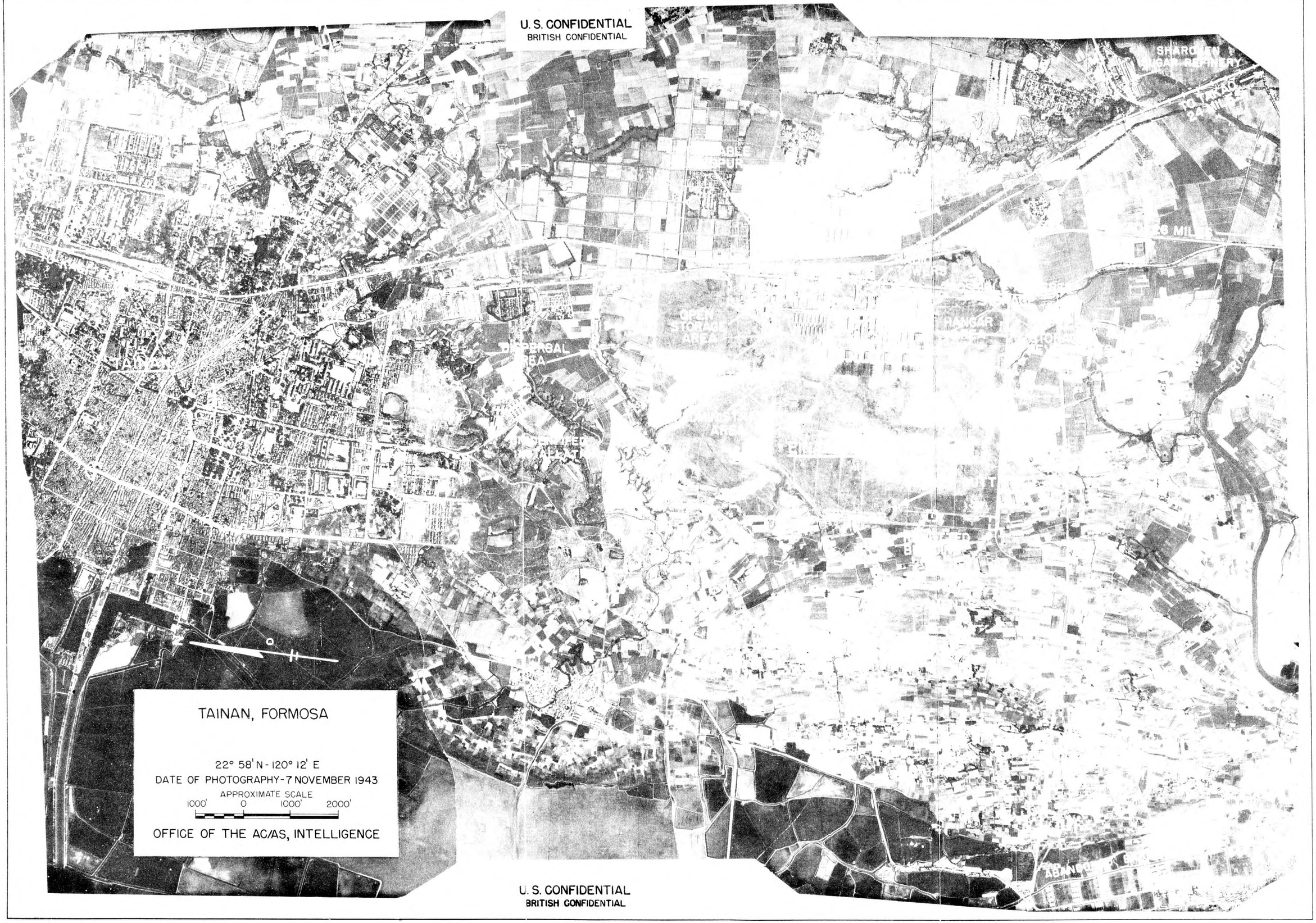
STATUTE MILES

TO SAIKO 10 MI.
TO KAGI 43 MI.
RADIO STATION 3 TOWERS
CAUSEWAY
TO KAGI 39 MI.
LIGHT INDUSTRY (TYPE UNKNOWN)
RACE COURSE
TARGET RANGE
M/G TRENCHES
6 SPAN BRIDGE 380'
2 SPAN BRIDGE 240'
A/A EMPLS W/O GUNS
MILITARY ZONE
SINGLE SPAN BRIDGE 75'
MUNITIONS STORAGE
MUNITIONS STORAGE
AGRICULTURAL EXPERIMENTAL FARM
TURNTABLE
T.112
PROB. A/A BATTERIES
R.R. STATION
R.R. REPAIR SHOPS
TO TAKAO 27 MI.
BRICK PLANT
HOSPITAL
2 SPAN BRIDGE 310'
TO KARI 15 MI.
TO TAKAO 25 MI.
SINGLE SPAN BRIDGE 70'
RADIO STATION 2 TOWERS
SCHOOL DISTRICT AND PROBABLE MILITARY AREA
SCHOOLS-NOW PROB. CONVERTED TO MILITARY BARRACKS
T A I N A N
PROB. MOTOR PARK
PRISON
DAM
SMALL BOAT YARD
REPORTED TEXTILE PLANT
WAREHOUSE AREA
TAINAN CANAL
TO Anping
RADIO STATION 4 TOWERS

TAINAN, FORMOSA

23° 01' N - 120° 12' E
DATE OF PHOTOGRAPHY, 7 NOVEMBER 1943
APPROXIMATE SCALE
1000' 0 1000' 2000' 3000'
OFFICE OF THE AC/AS, INTELLIGENCE

U. S. CONFIDENTIAL
BRITISH CONFIDENTIAL



TAINAN, FORMOSA

22° 58' N - 120° 12' E
DATE OF PHOTOGRAPHY - 7 NOVEMBER 1943
APPROXIMATE SCALE
1000' 0 1000' 2000'

OFFICE OF THE AC/AS, INTELLIGENCE

U. S. CONFIDENTIAL
BRITISH CONFIDENTIAL

OKAYAMA DISTRICT

(Reconnaissance Photo Coverage: 7 November 1943)

The large and completely equipped Okayama Airport together with an adjoining aircraft plant (Target 166) are outstanding among the objectives in Formosa. The field is equipped with extensive dispersal revetments along all sides, numerous shops, storage buildings and large hangars. To the SE, just beyond the administrative buildings, is a group of about 70 buildings which appears to be an aircraft assembly or modification plant. A large housing development is located just E of the plant. In addition, housing facilities are available at Okayama, about 1 mile away. The plant's size indicates that it may have a substantial capacity, particularly for an area outside Japan Proper.

With the exception of 3 hangars and numerous warehouses to the SW, and barracks to the E, all large buildings (including the aircraft works) are clustered within an area measuring 5000 by 2000 feet.

One of Formosa's largest sugar and alcohol plants (Target 168) is located at Kyoshito, about 3 miles south of Okayama.

TABULATION OF TARGETS

No.	Name	Approximate Coordinates	Description and Significance
166	Okayama Aircraft Plant	22° 48' N 120° 16' E	About 70 closely-spaced buildings, occupying 2800 by 1200 feet. Airport administration buildings to west and housing development to east.
168	Kyoshito Sugar & Alcohol Plant (Taiwan Semo K)	22° 46' N 120° 17' E	Plant, marked by long shed-type buildings occupies area of 1500 by 700 feet. Located on Okayama-Takoo RR. Capacity: over 30,000 gallons alcohol per year (part of this is absolute alcohol).

CONFIDENTIAL (British Confidential)

OKAYAMA, FORMOSA
22° 48' N - 120° 16' E
Date 7 Nov 1943

APPROXIMATE SCALE
0 1/4 1/2 3/4 1 2
STATUTE MILES

CONFIDENTIAL (British Confidential)

OKAYAMA, FORMOSA

MOSAIC "A"

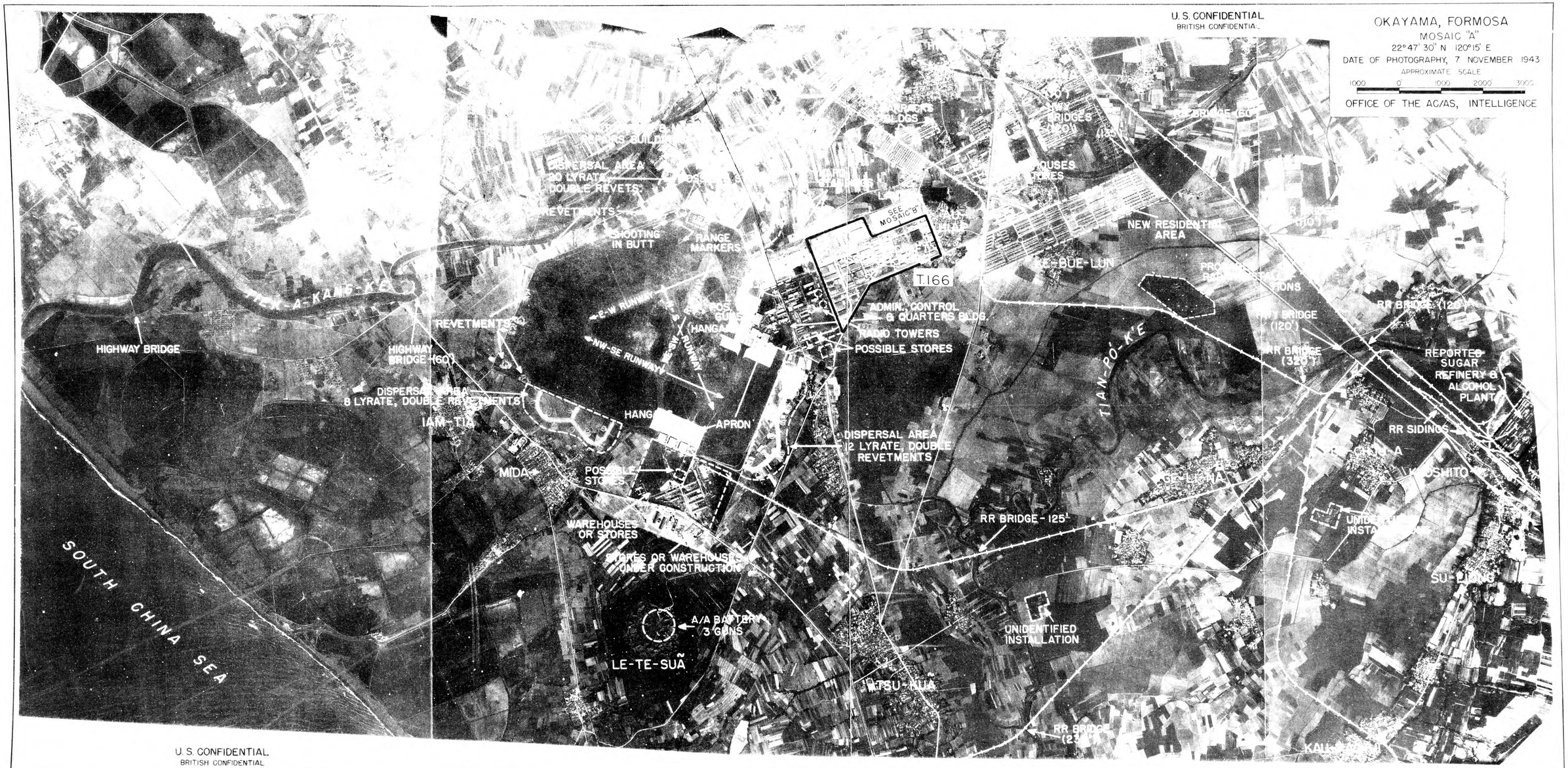
22° 47' 30" N 120° 15' E

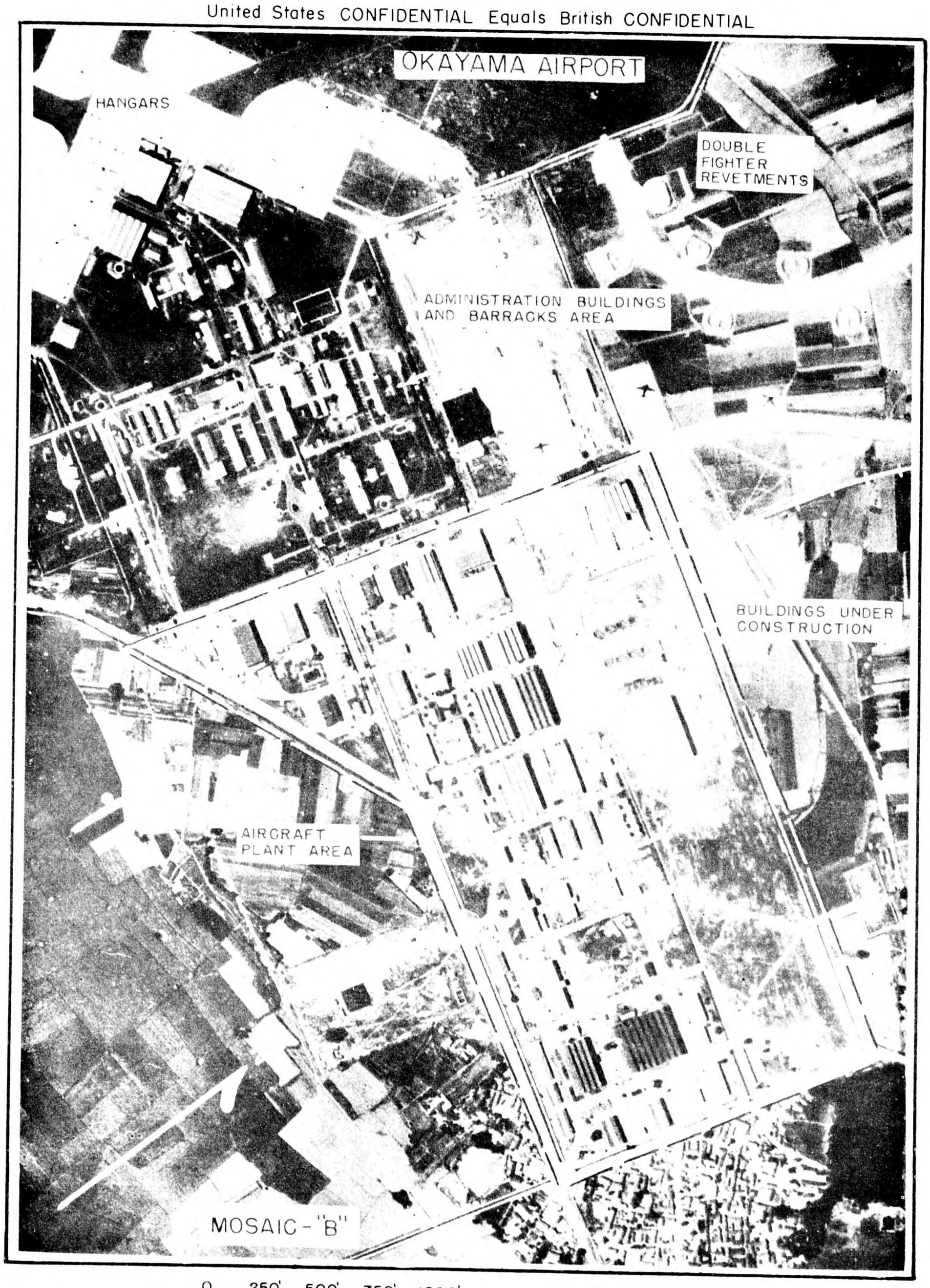
DATE OF PHOTOGRAPHY, 7 NOVEMBER 1943

APPROXIMATE SCALE

1000 0 1000 2000 3000

OFFICE OF THE AC/AS, INTELLIGENCE





0 250' 500' 750' 1000' 2000'

APPROXIMATE SCALE

OKAYAMA AIRCRAFT PLANT - TARGET 166
(Date: 7 Nov. 1943)

General plant layout and building types indicate that this may be a secondary assembly or a modification plant. Production activity is also indicated by extensive barracks and workers' quarters area to the east. Two-engine medium planes are parked near NE end of plant, but revetments on all sides of field are for small fighters. Several reconnaissance reports refer to over 100 fighters and 20-30 medium planes here, possibly indicating that field is primarily a fighter base.

TAKAO-HOZAN DISTRICT

(Reconnaissance Photo Coverage: 7 November 1943)

The Takao-Hozan district, including Toshien, ranks as the primary industrial and military zone in Formosa. Extensive military camps extend in an arc from Toshien, through north Takao to the south of Hozan. Takao is the industrial and transportation center.

TAKAO

1. Industry: Outstanding among Takao's industry is the Nippon Aluminum Company (Target 3), an integrated alumina/aluminum plant credited with about 10% of total Japanese Empire aluminum production. Its southern location has the advantage of short-haul bauxite transportation from Bintan Island near Singapore. Neutralization of this plant would lower significantly Japan's aluminum supply, and contribute to the further deterioration of her already stringent shipping position.

Among the other significant industrial plants revealed by available reconnaissance are: (a) a large cement works (Target 13); (b) a partially completed iron smelter; (c) an incomplete (apparently partly abandoned) oil refinery; (d) at least two chemical fertilizer plants; (e) two marine engine works, and several small machinery plants; (f) two large sugar/alcohol plants (Targets 6 and 172) and (g) at least three large unidentified plants which may include such previously reported plants as the Kokusan Automobile Works, the Minami Nippon K.K. magnesium works, a chlorine plant and a gunpowder plant of Nippon Kayaku Seizo.

The bulk of Takao's power supply is derived from the Lake Jitsugetsutan hydroelectric development by way of the transformer station (Target 164) to the north of the city. This station is an important alternate objective for depriving the Takao area, at least temporarily, of this power supply. A small steam power station, Target 177, in the northern part of the city could not supply sufficient power by itself to meet even the minimum demands of Takao's industries. Reports that a 35,000 KW steam plant had been constructed on the N/S inlet near the entrance to Takao Harbor cannot be verified by available reconnaissance photography.

2. Harbor Facilities: Second only to Keelung in volume of peacetime shipping, Takao has probably equaled -- if not surpassed -- the former as a result of the necessity for convoying shipping. Principal commodities handled are:

Imports:	Exports:
All types of manufactured products (machinery, metal products), textiles, raw sugar (coastal shipments), bauxite, coal (coastal shipments), oil, military supplies.	Refined sugar, salt, cement, alcohol, fruits and fish, lumber. Military supplies and troops.

The port's warehouse capacity greatly exceeds normal commodity requirements, and it is likely that most are used exclusively for military purposes. The main wharves are equipped with modern, heavy-duty loading equipment which permits rapid convoy loading. The extensive railroad yard, equipped with a roundhouse and large repair shops (Target 9) is an integral part of the harbor facilities and constitutes an objective of equal priority. Reconnaissance indicates that this yard is frequently congested with 400-500 RR cars.

Of even greater significance, perhaps, are the ship concentrations themselves. Japan's tight shipping position makes all ship concentrations important, but they assume added importance here because:

(1) this is part of the convoy system which directly supports the southern theaters and

(2) the harbor is so restricted that it might be blocked for some time as a result of the sinking of several ships alongside wharves or in the narrow channel. As indicated by the reconnaissance photographs which follow, ships not berthed alongside wharves must be moored two abreast along the harbor channel.

Although the Kigo Lagoon extends for some 8 miles in a NW/SE direction, only the 3/4 mile wide stretch parallel to the main wharves is useable by large vessels. Ships of 10,000 tons or more can not use the inner harbor and must anchor in the outer harbor, just north of the breakwaters.

Reconnaissance reveals two shipyards (Targets 7 and 175) with a total of about 33 slipways and/or patent slips, ranging in length from 50 to 150 feet. These yards are probably building standardized wooden cargo vessels in addition to smaller fishing boats and patrol craft. A large lumber mill, on the Takao River to the north of the city, probably supplies most of the wood. A graving dock, about 300 feet long is located at the east end of the main wharf. Two patent slips leading into repair sheds south of the Reigaryo Shipyard may be used for repairs to small submarines. A 2000 foot N/S inlet near the entrance to the harbor is used as a base for barges and fishing boats. A small boat basin has been built into the small wharf to the west of the main wharves. This wharf (Target 173), equipped with 30 small storehouses, was utilized in peacetime for the Takao-Pescadores ferry service.

3. Military Installations: Takao city is the center of a strongly fortified zone and numerous A/A and C/D guns are noted on the attached reconnaissance photographs. Revetted and underground munitions depots are located on the Kigo Peninsula, Ape hill and in the Reigaryo area, south of Takao Upper. An especially extensive concentration of military storehouses and munitions depots (Target 176) is located in the Reigaryo district. Several groups of military barracks are located to the south of the railroad station in the northern outskirts of the city. Other military quarters are located in the Reigaryo district.

The large Reigaryo Airport, (also known as the Hozan airport) reported to be a bomber training base, is located about 5 miles SE of the city. A very extensive munitions dump, consisting of about 110 small revetted buildings covering an area of 120 acres, is located about 1/2 mile west by north of this airport. The small Reigaryo seaplane station is located on the Kigo Lagoon, about 2 miles west of the airfield.

4. Incendiary Attack: While Formosan cities are generally not as vulnerable to fire as are typical Japanese cities (because of the higher proportion of brick used in construction), Takao is an exception. Although the city is well-laid out, with numerous secondary firebreaks, the triangular central section (bounded on the south by the main wharf, on the west by the railroad yard and on the east by the Takao River) is predominantly a Japanese residential district with typical Japanese construction and congestion. The southern part of this area is congested

with warehouses (most of easily penetrable wood or sheet metal over steel frame construction) the contents of which are probably combustible. Other areas for incendiary attack are the village and shipyards on the tip of the Kigo Peninsula and the extensive Reigaryo military stores (Target 176).

TOSHIEN

First reported in 1938, a naval base under construction at Toshien appears to be nearing completion. Three 50 by 275 foot drydocks have been completed (Target 56), one of which is being lengthened. Six large basins are being dredged at the north end of the lagoon. Several munitions storages, including a buried fuel and munitions depot (Target 178), have been constructed at the northern end of Ape Hill. A group of 18 fuel tank emplacements is under construction at the foot of a ridge, about $3\frac{1}{2}$ miles NE of the Ape Hill depot. An extensive barracks and workers' quarters district, with some 700 small buildings, is situated just NW of the village of Toshien.

Incomplete reconnaissance coverage precludes a final evaluation, but it is believed that this naval base is not yet operational on a significant scale. Lack of ship activity, unused drydocks and the many evidences of large-scale construction work indicate that the base may not become fully operational for some time. With the decreased use of the Mako Naval Base in the Pescadores and the shift of the base headquarters to Takao, however, the Toshien Naval Base has considerable potential importance.

HOZAN

(See Also 1st Mosaic In Next Section)

The Hozan district is important primarily as a military storage area and a concentration point for troops about to be embarked from Takao. In addition to the main embarkation camp (Target 179), which covers an area of 2 miles by 1800 feet, there are numerous small barracks areas on all sides of the town. Two large supply depots are located east and west of the town and a probable munitions depot is located in a hilly region SE of the embarkation camp. An extensive underground storage area is located in a hilly region, about 4 miles north of Hozan.

The Hozan W/T Station, one of the most powerful transmitters in the Japanese Empire, is south of the Hozan-Heito RR about one mile east of the town. It is reported to comprise a camouflaged station building, one very high center tower (over 200 ft.) and 15-16 smaller towers arranged in a circle about the center tower.

TABULATION OF TARGETS

No.	Name	Approximate Coordinates	Description and Significance
3	Nippon Aluminum Co. (Takao)	22° 37' N 120° 17' E	Large integrated alumina/aluminum plant, credited with 10.5% alumina and 9.5% aluminum in terms of total Jap capacity. Closely-spaced bldgs. Alumina works occupy central part of compound; aluminum pot rooms are on N & E sides with adjacent rectifier units; SW part of compound may be devoted to some kind of fabrication.

TABULATION OF TARGETS (Cont'd.)

No.	Name	Approximate Coordinates	Description and Significance
13	Asano Cement Plant (Takao)	22° 39' N 120° 16' E	Formosa's only large cement works; output important for airport, road and military construction.
6	Industrial Alcohol Plant (Ensuiko Seito K.K.) (Takao)	22° 37' N 120° 17' E	Large alcohol plant, can produce absolute alcohol. Note: The Taiwan Iron Works, which builds and repairs sugar refinery machinery, is located just N of alcohol plant.
172	Reigaryo Sugar/ Alcohol Plant (Takao)	22° 34' N 120° 19' E	New sugar/alcohol plant, appears to have large capacity.
8a	Military Storehouses & Main Wharf (Takao)	22° 37' N 120° 17' E	4,350 ft. main wharf, can berth 8 ships. Equipped with RR spurs, about 5 traveling and 2 fixed cranes; cold storage plant, graving dock & oil pipelines at E end; oil & water tanks at W end. Small boat chamber N of wharf. About 75 storehouses (on main wharf & along small boat chamber), ranging from 50 by 100 ft. to 100 by 300 ft. Most buildings are sheet metal over steel frame; a few are concrete or wood.
8b	Takao River Wharves (Takao)	22° 37' N 120° 19' E	2000 ft. wharf on E side, equipped with two 100 by 300 ft. warehouses. Two berths on W side with 7 warehouses. Probably handle cargoes for Takao industries.
173	Western Wharf (Takao)	22° 37' N 120° 16' E	Small boat basin and about 30 storehouses (ranging from 25 by 100 ft. to 60 by 400 ft.); probably used for fish and general stores of Takao-Pescadores ferry service.
9	Railroad Yard & Repair Shops (Takao)	22° 38' N 120° 16' E	Extensive freight yard serving port area. Roundhouse and sheds at S end; repair shops at N end. Up to 400-500 RR cars may be found in the yard.
174	Takao RR Station (Takao)	22° 38' N 120° 17' E	Main station, with 750 ft. main building at W end, roundhouse and turntable at E end & troop barracks to south.
164	Takao Substation	22° 39' N 120° 17' E	Large transformer station, marked by characteristic open-air switchgear, which controls all power entering Takao from Lake Jitsugetsutan. "L"-shaped transformer house in SE corner.

TABULATION OF TARGETS (Cont'd.)

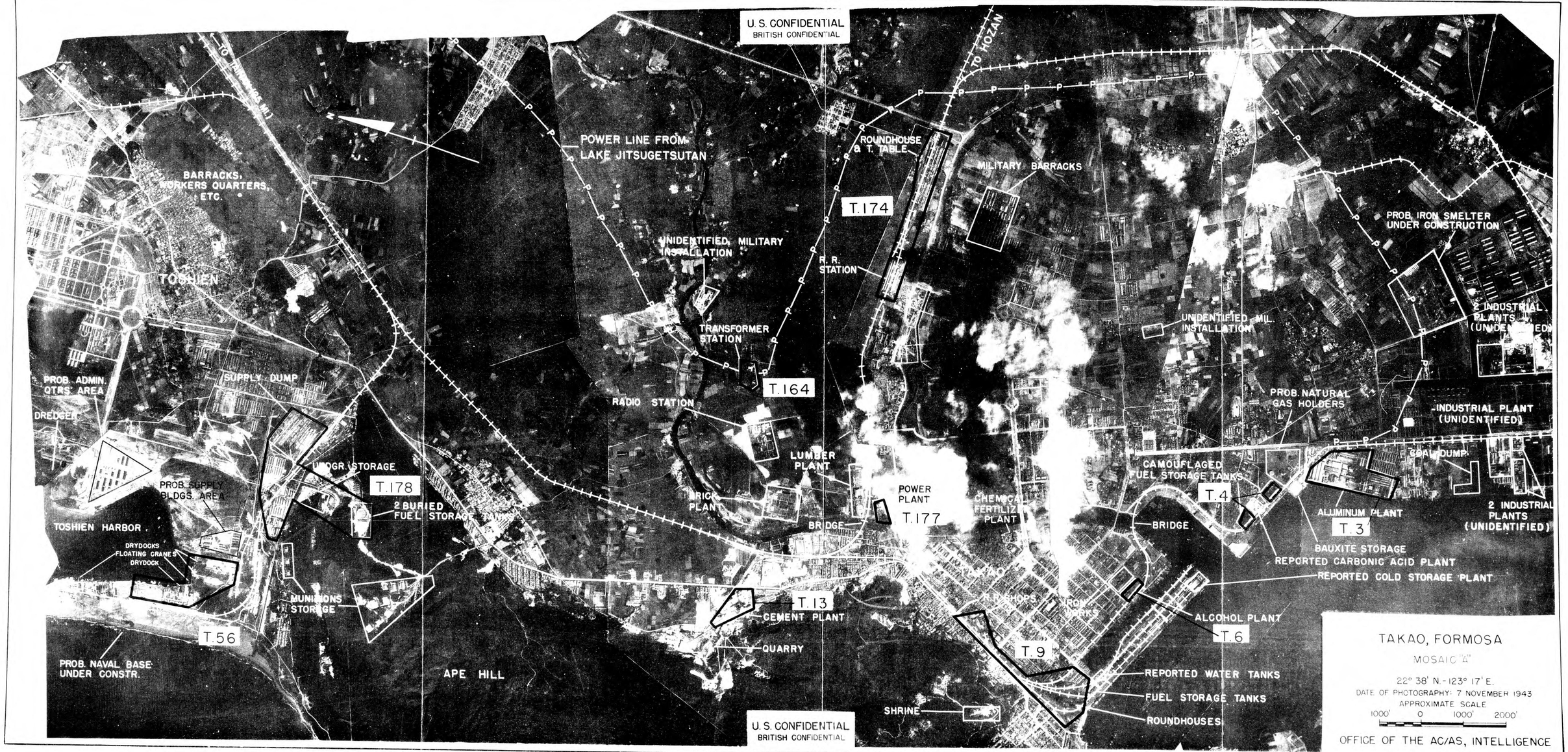
No.	Name	Approximate Coordinates	Description and Significance
177	North Takao Steam Power Plant	22° 38' N 120° 16' E	13,000 KW; construction unknown.
4	Mitsubishi Oil Storage (Takao)	22° 37' N 120° 17' E	Two groups of 3 fuel tanks each, camouflaged. Small carbonic acid plant between tanks. 4 conspicuous tanks, believed to be holders for natural gas piped from gas fields to N, located just E of oil tanks.
7	Kigo Naval Dock-Yard (Takao)	22° 37' N 120° 16' E	Former naval dockyard, now probably building fishing vessels, patrol boats & standardized wooden cargo vessels. 3 slipways (100 to 150 ft.) at small yard near harbor entrance. About 20 slipways & patent slips (50 to 150 ft.) at main yard in central boat basin. Ohba Marine engine works at SE corner of basin. Other shops scattered along waterfront. Note: 10 large warehouses (probably for munitions) at NW corner of new basin being constructed SE of naval dockyard.
175	Reigaryo Shipyard (Takao)	22° 37' N 120° 18' E	New shipyard, equipped with 8 slipways (150 ft.), probably builds standardized wooden cargo vessels. Several large shop buildings (probably include marine engine works) to E of slipways. Two patent slips (to S of slipways) lead into two 75 by 175 ft. repair sheds. These may be used for repairs to small submarines.
176	Reigaryo Military Stores (Takao)	22° 36' N 120° 19' E	Three groups of military supply warehouses & munitions stores; over 230 buildings varying from 35 by 60 ft. to 40 by 350 ft. Bldgs in SW group are very closely spaced & are probably vulnerable to incendiaries. Note: Three large unidentified factories adjoin this target area.
56	Toshien Dockyard (Toshien)	22° 41' N 120° 16' E	Naval dockyard under construction. Three 50 by 275 ft. drydocks completed (one being lengthened), numerous shops, etc. bldgs under construction. Extensive personnel barracks area to E of harbor.
178	Toshien Fuel & Munitions Depot (Toshien)	22° 40' N 120° 17' E	Two 250 ft. diameter buried fuel tanks on N slope of Ape Hill. Underground munitions storage & supply dump at foot of hill. Revetted munitions stores on crest of hill, S of buried tanks.
179	Hozan Embarkation Camp	22° 37' N 120° 21' E	Large mil camp, about 2 mi. N/S by 1800 ft. E-W; probably an embarkation camp. Note: Other barracks areas & storage depots on all sides of town.

TAKAO AREA, FORMOSA
22° 38' N - 120° 19' E
Date: 7 Nov 1943

APPROXIMATE SCALE

0 1/4 1/2 3/4 1 2

STATUTE MILES



TAKAO, FORMOSA

MOSAIC "A"

22° 38' N. - 123° 17' E.

DATE OF PHOTOGRAPHY: 7 NOVEMBER 1943

APPROXIMATE SCALE

1000' 0 1000' 2000'

OFFICE OF THE AC/AS, INTELLIGENCE

TAKAO, FORMOSA

MOSAIC "B"

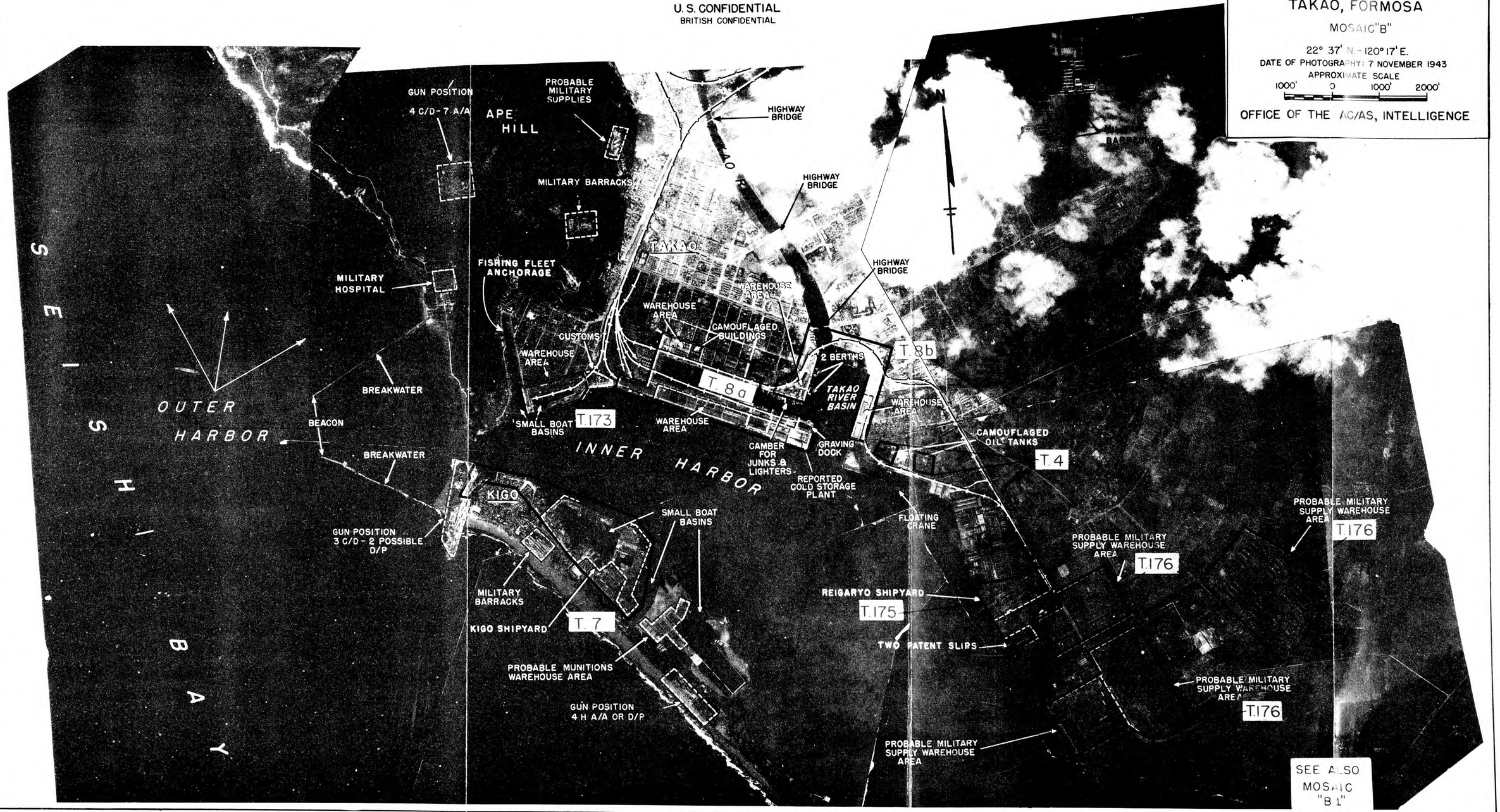
22° 37' N. - 120° 17' E.

DATE OF PHOTOGRAPHY: 7 NOVEMBER 1943

APPROXIMATE SCALE

1000' 0 1000' 2000'

OFFICE OF THE AC/AS, INTELLIGENCE



SEE ALSO MOSAIC "B 1"

NIPPON ALUMINUM CO
T.3

IRON SMELTER
UNDER CONSTRUCTION

UNIDENTIFIED
FACTORY

REIGARYO
SHIPYARD
T.175

REIGARYO
MILITARY
STORES
T.176

UNIDENTIFIED
FACTORY

TWO
UNIDENTIFIED
FACTORIES

LAND BEING
RECLAIMED

UNIDENTIFIED
FACTORY

SEE ALSO MOSAIC—"B-2"

REIGARYO [illegible]
[illegible]
MOSAIC "B-1"
Date 7 Nov 1943

NIPPON ALUMINUM CO. - TARGET 3
(Date: 7 Nov. 1943)

Integrated alumina/aluminum plant, credited with about 10% of total Japanese capacity. The two long buildings at the right are believed to be pot rooms, but they may be a rolling mill. The line A--B indicates a vital part of the target area; the rotary kilns constitute a good aiming point.

By HR-M NARA Date 1/10/91

DENTIAL
FIDENTIAL

T.172

REIGARYO AIRPORT (1 MILE)

UNIDENTIFIED MILITARY INSTALLATION

SUGAR REFINERY & ALCOHOL PLANT

UNIDENTIFIED MILITARY INSTALLATION

TO TOKO

TAIRIMPO

GUN POSITION 4 PROB. C/D OR D/P

REIGARYO SEAPLANE STATION

KIGO LAGOON

N

SEE ALSO MOSAIC "B-1"

U. S. CONFIDENTIAL
BRITISH CONFIDENTIAL

TAKAO, FORMOSA

MOSAIC-"C"

22° 34' N.-120° 19' E.

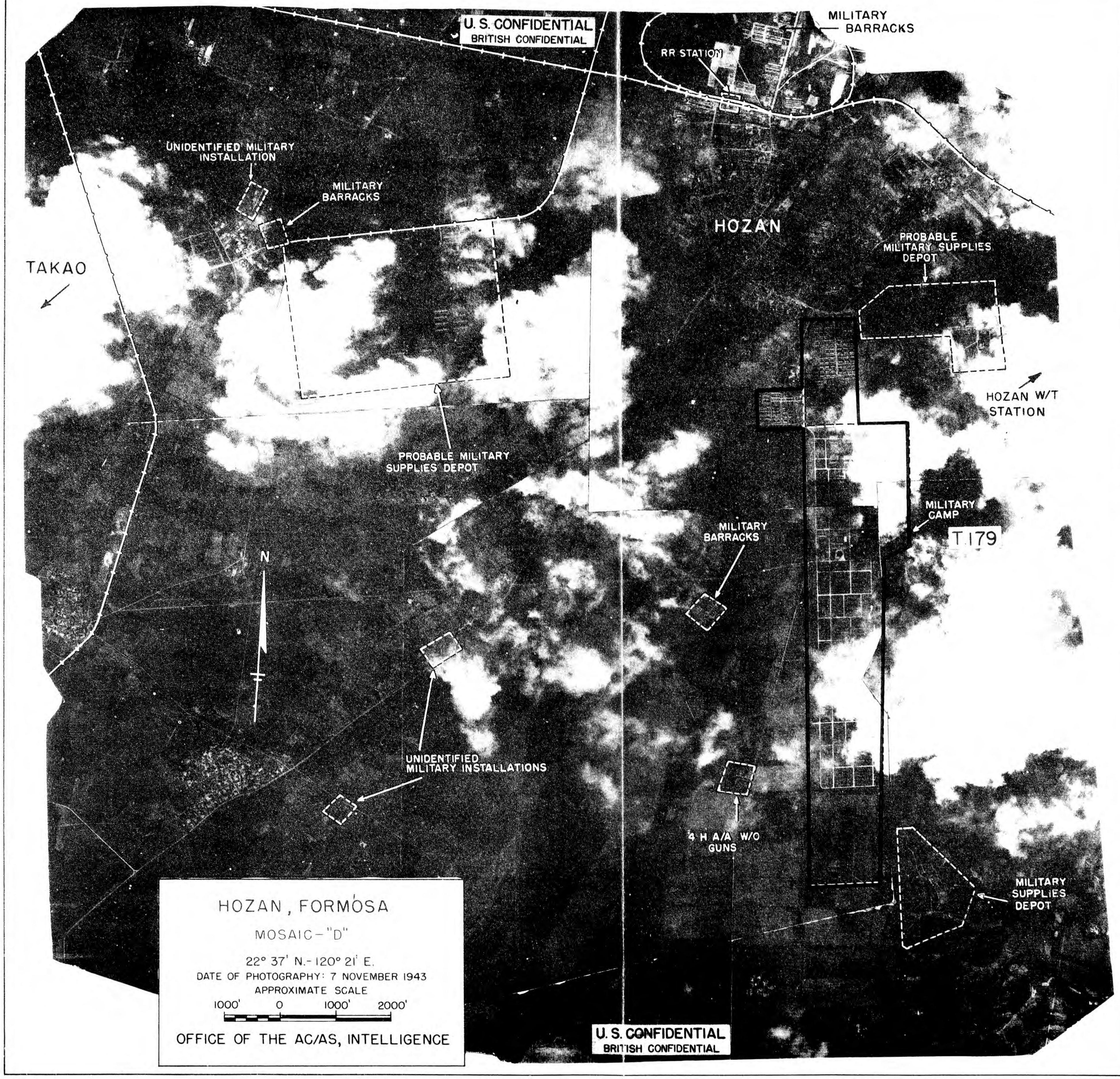
DATE OF PHOTOGRAPHY: 7 NOVEMBER 1943

APPROXIMATE SCALE

1000' 0 1000' 2000'

OFFICE OF THE AC/AS, INTELLIGENCE

U. S. CONFIDENTIAL
BRITISH CONFIDENTIAL



HOZAN, FORMOSA

MOSAIC – "D"

22° 37' N. - 120° 21' E.

DATE OF PHOTOGRAPHY: 7 NOVEMBER 1943

APPROXIMATE SCALE

1000' 0 1000' 2000'

OFFICE OF THE AC/AS, INTELLIGENCE

U. S. CONFIDENTIAL
BRITISH CONFIDENTIAL

HEITO DISTRICT

(Reconnaissance Photo Coverage: 20 and 22 December 1943)

Heito is important primarily as a military zone. The Heito Airport (Target 57) is a large, well-equipped field. Its facilities include a secondary air depot, where some last-phase modification or minor assembly is done. Between the airport and Heito Proper are several groups of barracks and military schools. Other small barracks areas -- occupying converted school compounds -- are scattered throughout the town.

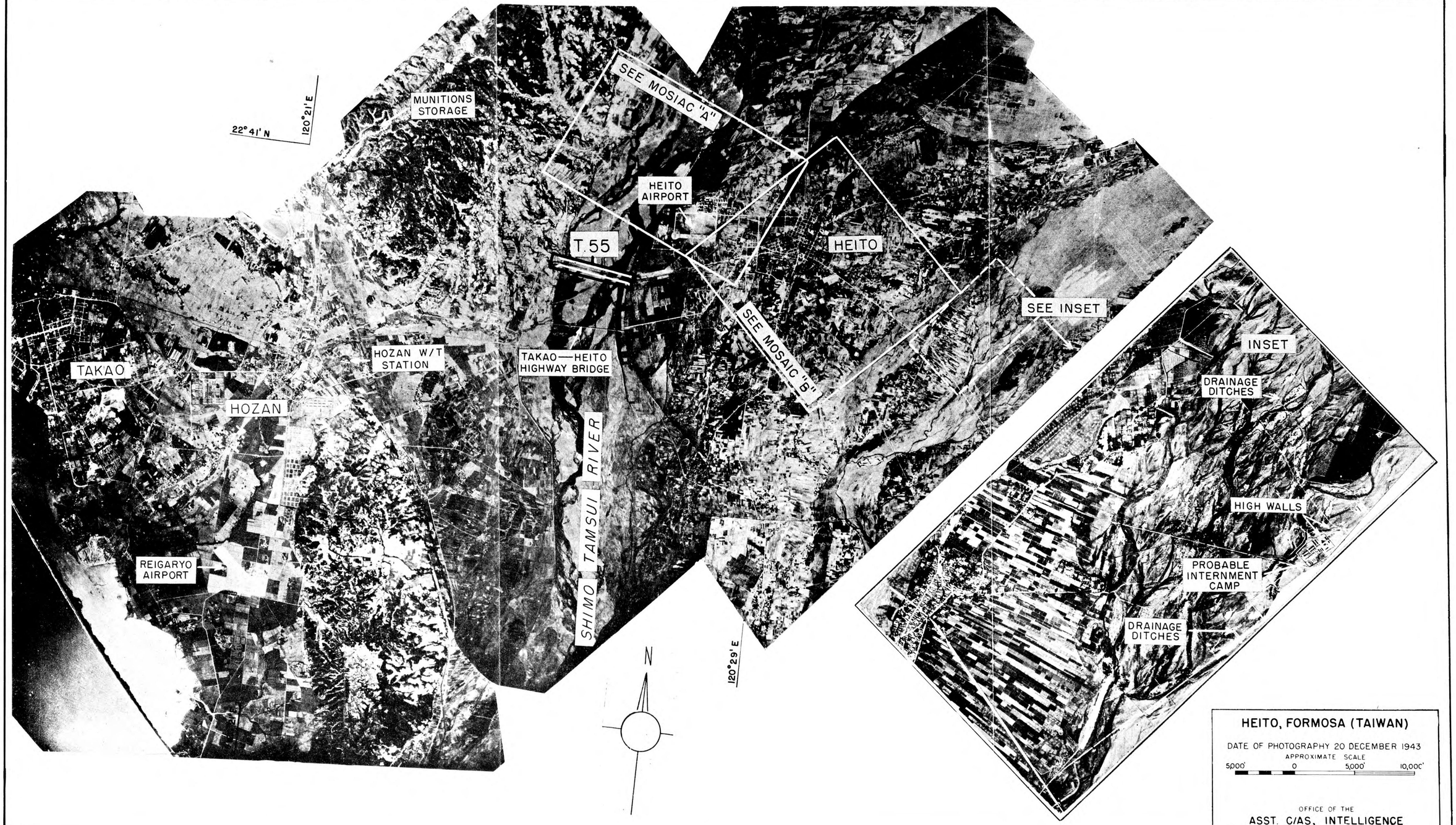
The only significant industry is a large sugar and alcohol plant (Target 180), located to the south of the town. A sizeable factory, not identified, is located at the eastern outskirts of the city and a small brick plant to the south.

A prison-like barracks area, covering some 7 acres, is located about 4 miles east of the town. The camp comprises some 30 buildings in all, and the compound is enclosed by two high walls. While confirming evidence is lacking, it is possible that this may be the Allied prisoner of war camp which has been reported in this vicinity.

The only other significant objective in this vicinity is the 5,000 foot steel girder RR bridge (Target 55) over the Shimo Tamsui River, one of the four critical points on the N/S trunk line.

TARGET TABULATION

No.	Name	Approximate Coordinates	Description and Significance
57	Heito Airport	22° 41' N 120° 27' E	Branch air depot at field. See Airport Survey, Tab XV.
55	Shimo Tamsui RR Bridge	22° 40' N 120° 26' E	5000 ft. steel girder bridge.
180	Heito Sugar and Alcohol Plant (Taiwan Seito K.K.)	22° 39' N 120° 29' E	Credited with 15,000 gal. annual alcohol capacity. Plant buildings occupy area of 2100 ft. by 1500 ft.


22° 41' N
120° 21' E
MUNITIONS STORAGE
SEE MOSIAC "A"
HEITO AIRPORT
T.55
HEITO
SEE MOSIAC "B"
SEE INSET
INSET
DRAINAGE DITCHES
HIGH WALLS
PROBABLE INTERNMENT CAMP
DRAINAGE DITCHES
TAKAO
HOZAN
HOZAN W/T STATION
TAKAO—HEITO HIGHWAY BRIDGE
SHIMO TAMSUI RIVER
REIGARYO AIRPORT
120° 29' E
N
HEITO, FORMOSA (TAIWAN)
DATE OF PHOTOGRAPHY 20 DECEMBER 1943
APPROXIMATE SCALE
5,000' 0 5,000' 10,000'
OFFICE OF THE
ASST. C/AS, INTELLIGENCE
W-991