Confidential

~~Register No.~~

H. O. No. 184

NAVAL AIR PILOT

PACIFIC ISLANDS

PREPARED BY THE HYDROGRAPHIC OFFICE UNDER THE AUTHORITY OF THE SECRETARY OF THE NAVY

JANUARY 1936

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WASHINGTON 1935

NOTICE

HYDROGRAPHIC OFFICE,
Washington, D. C., May 21, 1935.

From: Hydrographer.
To: All holders of this publication.
Subject: Promulgating letter for Naval Air Pilot (H. O. Pub. 184).
References: (*a*) U. S. Navy Regulations.
(*b*) RPS 4.

1. Naval Air Pilot (H. O. Pub. 184) is hereby issued to the naval service.

2. H. O. Pub. 184 is a confidential publication and it shall be handled, safeguarded, and transported in accordance with instructions contained in references (*a*) and (*b*).

3. The accountability for this publication shall be quarterly, and shall be direct and only to the Chief of Naval Operations (Registered Publication Section).

4. Authority is hereby granted for this publication to be carried for use in aircraft.

W. R. GHERARDI.

Approved:
WILLIAM D. LEAHY,
Chief of Bureau of Navigation.

PREFACE

Hydrographic Office Publication No. 184.—CONFIDENTIAL NAVAL AIR PILOT OF THE PACIFIC ISLANDS—is designed to furnish information of assistance in the navigation of aircraft in the aforementioned area. Of no less importance, it will provide force, division, and ship commanders with timely data which may have a direct bearing on fleet plans and fleet movements.

The publication is divided into three parts and contains information on aircraft facilities and such other specific data as are considered of value.

PART I contains general information concerning meteorological conditions.

PART II contains detailed information and sketches of seaplane anchorages, and landing fields, arranged in alphabetical order by island groups.

PART III contains photographs of seaplane anchorages, landing fields, landmarks, and other aids to air navigation.

The information contained herein has been compiled from the most authentic and reliable sources available.

The paragraphs on ship passages and tender anchorages at the harbors listed in part II is merely for the convenience of tenders operating with aircraft and does not take the place of Sailing Directions or Coast Pilots.

The geographical positions (coordinates) which are given throughout the text are approximate.

Distances are expressed in nautical miles.

For air line distances within the area covered by this publication refer to Hydrographic Office Chart No. 5050–V27, Strategic Air Chart of the Pacific Ocean.

Every opportunity should be taken to check and add to the information contained in this publication; aviators and others are requested to notify the HYDROGRAPHIC OFFICE, NAVY DEPARTMENT, WASHINGTON, D. C., direct, of any errors they may discover, or any additional matter which they consider should be inserted.

CONTENTS

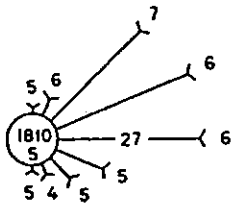
DESCRIPTION OF WIND ROSES IN UPPER AIR AND SURFACE CHARTS

The following description applies to all wind roses, wherever used in this publication.

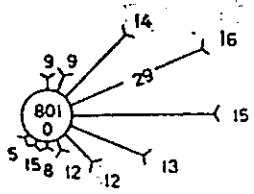
In Part I, Charts of the average winds in the upper air (Charts 29 to 32 inclusive) display roses for specific levels, i.e. surface, 1600 feet, 3300 feet, 6600 feet, and 9800 feet. These roses are shown in different colors, blue, violet, brown, red, green, respectively. The surface observations in these cases were taken at the same places and times as the pilot balloon observations on which upper air wind roses are based.

In Part II, surface wind roses also appear, but these are based upon all available ships' observations, massed by 5° squares and adjusted to represent as closely at possible the average condition for the area in which each set of roses appears.

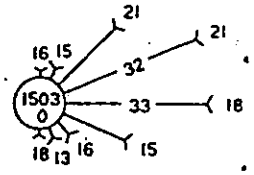
The arrows fly *with* the wind and their length, measured on the attached scale, from the outside of the circle, gives the percentage of times the wind was observed to blow from or near the given point. The figures at the beginning of the arrows show the average speed in knots. In the center of the circles, the upper figures givethe number of observations upon which the roses were constructed and the lower figures give the percentage of calms and winds of less than 1 knot. Where the percentage of frequency of the winds was less than 2 percent no arrow is shown. In some instances the full length of the arrow could not be shown and the line was therefore, broken and the total percentage given between the broken lines.



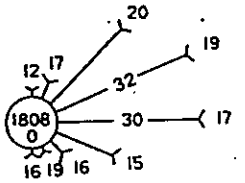
Wind Rose at 9800 Feet.—For example:
The attached wind rose, green in color, should be interpreted thus; with reference to scale of wind percentages below: In each 100 observations there will be found 1 from N, with an average speed of wind from that direction of 5 knots; 3 from NNE, average speed 6 knots; 22 from NE, 7 knots; 25 from ENE, 6 knots; 27 from E, 6 knots; 9 from ESE, 5 knots; 5 from SE, 5 knots; 2 from SSE, 4 knots; 1 from S, 5 knots; 1810 observations; percentage of calms 5.



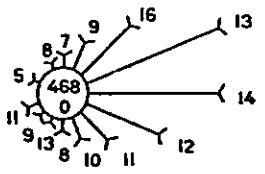
Wind Rose at 6600 Feet, red in color.



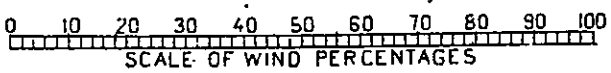
Wind Rose at 3300 Feet, brown in color.



Wind Rose at 1600 Feet, Violet in color.



Wind Rose at Surface, blue in color.



SYMBOLS

Seaplane Anchorages

Class I. Seaplane base with ramp, beach, and handling facilities

Class II. Anchorage with ordinary harbor facilities

Class III. Protected emergency or potential anchorage

Tender anchorage

Army or Navy Field

Commercial or Territorial Field

Emergency Field

Landmark light beacon

Airport light beacon

Obstruction (numerals indicate height above ground in feet) 250

Prominent Peak (numerals indicate height above ground in feet) 3,000

Railroad

Cities underlined have name painted on prominent roof HILO

Lighthouse

Main highway

Secondary highway

SYMBOLS

Seaplane Anchorages

Class I. Seaplane base with ramp, beach, and handling facilities

Class II. Anchorage with ordinary harbor facilities

Class III. Protected emergency or potential anchorage

Tender anchorage

Army or Navy Field

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Prominent Peak (numerals indicate height above ground in feet) 3,000

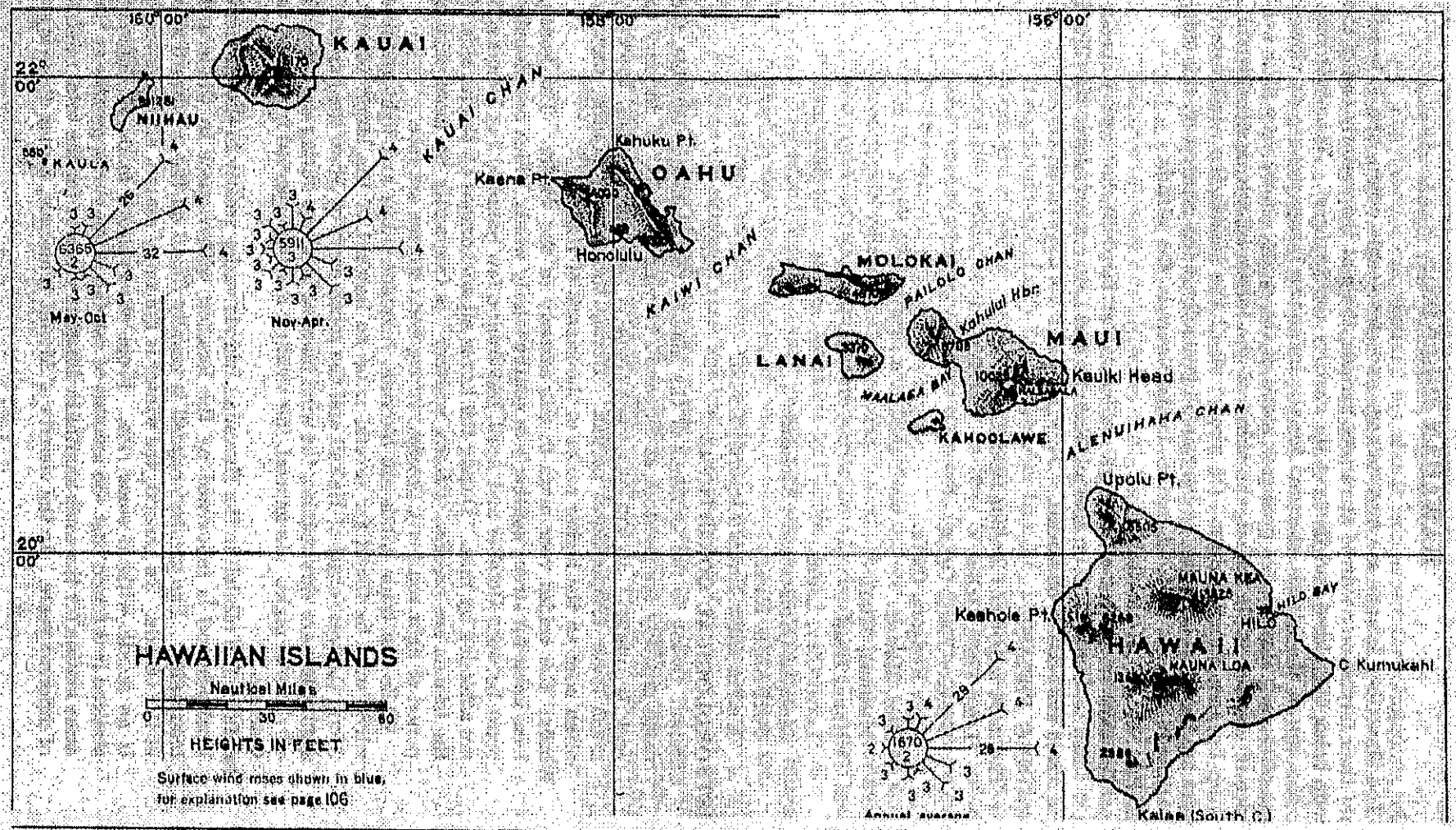
Railroad

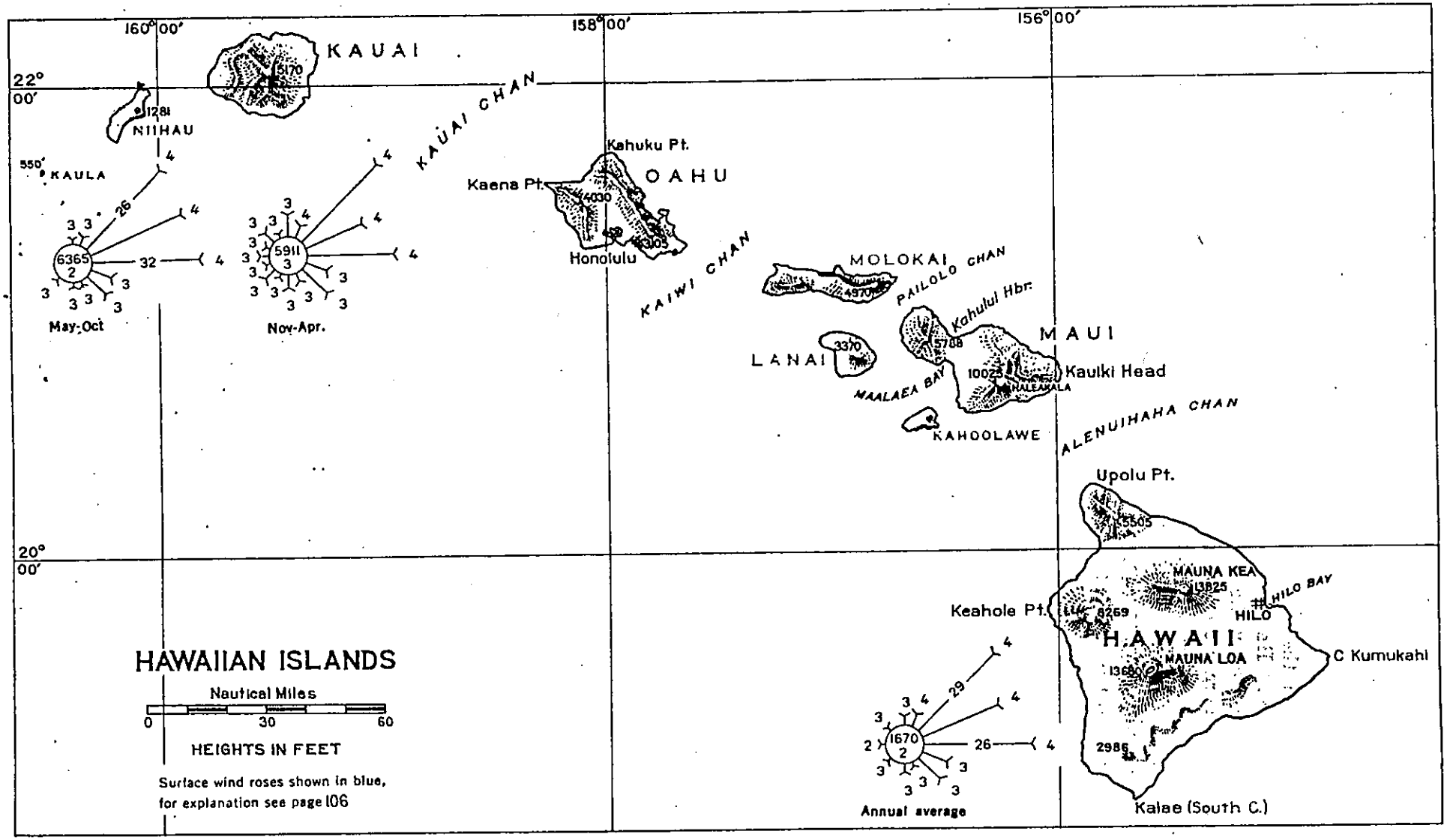
Cities underlined have name painted on prominent roof HILO

Lighthouse

Main highway

Secondary highway


160° 00'
158° 00'
156° 00'
22° 00'
20° 00'
KAUAI
NIIHAU
KAULA
KAUAI CHAN
Kahuku Pt.
Kaena Pt.
OAHU
Honolulu
KAIWI CHAN
MOLOKAI
PAILOLO CHAN
Kahului Hbr
MAUI
LANAI
Kaulki Head
MAALAEA BAY
KAHOOLAWE
ALENUIHAHA CHAN
Upolu Pt.
MAUNA KEA
HILO BAY
Keahole Pt.
HILO
HAWAII
MAUNA LOA
C. Kumukahi
Kalae (South C.)
May-Oct
Nov-Apr.
Annual average
HAWAIIAN ISLANDS
Nautical Miles
0
30
60
HEIGHTS IN FEET
Surface wind roses shown in blue,
for explanation see page 106


160° 00′
158° 00′
156° 00′
22° 00′
20° 00′
KAUAI
5170
1281
NIIHAU
KAULA
KAUAI CHAN
Kahuku Pt.
Kaena Pt.
OAHU
4030
3105
Honolulu
KAIWI CHAN
MOLOKAI
4970
PAILOLO CHAN
Kahului Hbr.
5788
MAUI
LANAI
3370
10023
Kaulki Head
HALEAKALA
MAALAEA BAY
KAHOOLAWE
ALENUIHAHA CHAN
Upolu Pt.
5505
MAUNA KEA
13825
HILO BAY
HILO
Keahole Pt.
8269
HAWAII
MAUNA LOA
13680
C Kumukahi
2985
Kalae (South C.)
6365
5911
1670
May-Oct
Nov-Apr
Annual average
HAWAIIAN ISLANDS
Nautical Miles
0
30
60
HEIGHTS IN FEET
Surface wind roses shown in blue,
for explanation see page 106

HAWAIIAN ISLANDS

The Hawaiian Islands are mountainous and of volcanic origin, and it is said that their formation occurred at various periods, those at the westerly end of the group being the oldest and those at the easterly the youngest. This difference in the age of the islands accounts for the difference in appearance as viewed from offshore. Hawaii, the youngest island of the group, shows very little evidence of erosion, while Kauai, the oldest of the larger islands, is considerably cut up by gorges and ravines. On almost all of the islands the northeasterly slopes are the most irregular, as the rainfall generally is the greatest on this side, resulting in torrents that cut ravines in the slopes of the islands.

SEAPLANE ANCHORAGES

The most important anchorages are located at Pearl Harbor and Kaneohe Bay on Oahu; Hilo, on Hawaii; Kahului and Lahaina, on Maui; Nawiliwili and Port Allen, on Kauai.

LANDING FIELDS

The most important landing fields are:

Luke Field, Oahu.
Wheeler Field, Oahu.
John Rodgers, Oahu.
Hilo, Hawaii.
Maalaea, Maui.
Hana, Maui.
Lanai City, Lanai.
Molokai (Homestead), Molokai.
Port Allen, Kauai.
Wailua (New Kauai Airport), Kauai.

METEOROLOGICAL CONDITIONS

Climate: Owing to the locations of the islands, the climate is equable, the mean monthly temperature at Honolulu varying from 71° in January to 78.4° in August. In the higher elevations of the larger islands, however, much lower temperatures prevail. During the winter months, snow is often seen on the higher peaks of the islands of Hawaii.

Winds: The trades veer more to the easterly in the winter. The konas, local name for strong southerly or southwesterly winds, which occasionally occur between October and April, last from a few hours to 2 or 3 days and are attended by rain. During the konas all anchorages on the lee side of the islands are unsafe. "Kona weather" is frequently no more than a period of light southerly breezes; strong kona storms are rare.

While the trade winds are blowing, frequent calms and light variable winds may be found for several miles to leeward of the larger islands. Along the west coast of Hawaii and the south coast of Maui the land and sea breezes are very regular, the wind blowing on shore during the day and off shore at night. In general, fair weather may be expected from May to October.

Rainfall: The rainfall in the Hawaiian Islands varies greatly in the different localities and is influenced by the location with respect to winds and mountains. The greatest rainfall is usually found on the windward side of the islands. In general, the winter is the rainy season, although there is no month without some rain. From observations made at different stations it is found that the amount of rainfall often varies greatly at the same station for the same months in different years or for the total rainfall of different years. In the vicinity of Mount Waialeale, Kauai, there is an

annual rainfall of over 400 inches, while the island of Kahoolawe receives scarcely enough rain to support vegetation.

Fog does not occur around the islands, and except for rain squalls, mist, and haze, there is no thick weather. The mountains on the islands, however, are often obscured by clouds.

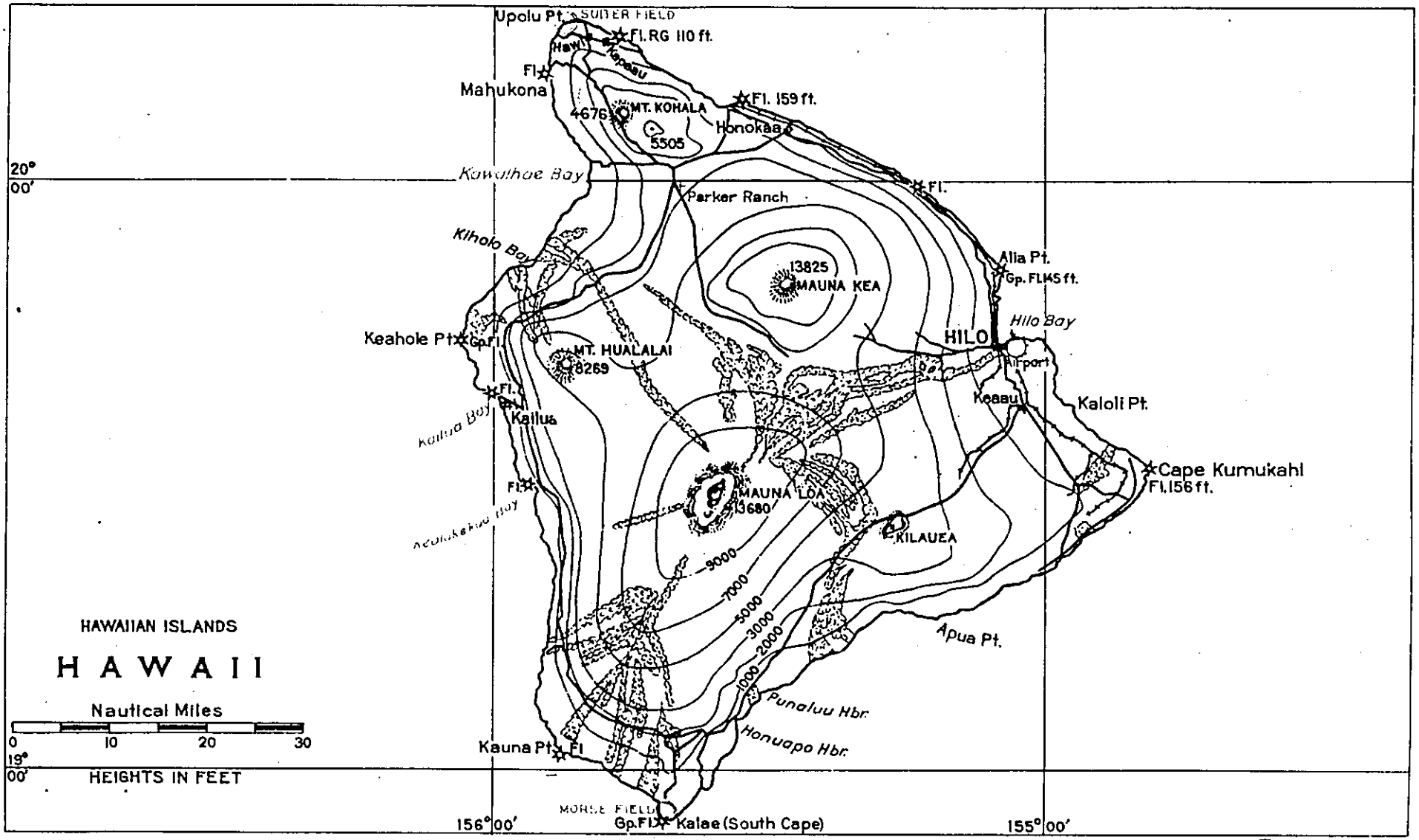
Wind roses (see chartlet): In the part of this area to northward of the twentieth parallel there are two fairly well defined seasons, with the northeast trade strongly dominant from May to October, when the wind hardly ever blows from westerly directions and is more than 80 percent of the time between east and northeast. From November to April, however, while northeast to east winds continue strongly predominant, changes to all other points of the compass occur with considerable frequency under the influence of winter disturbances at higher latitudes.

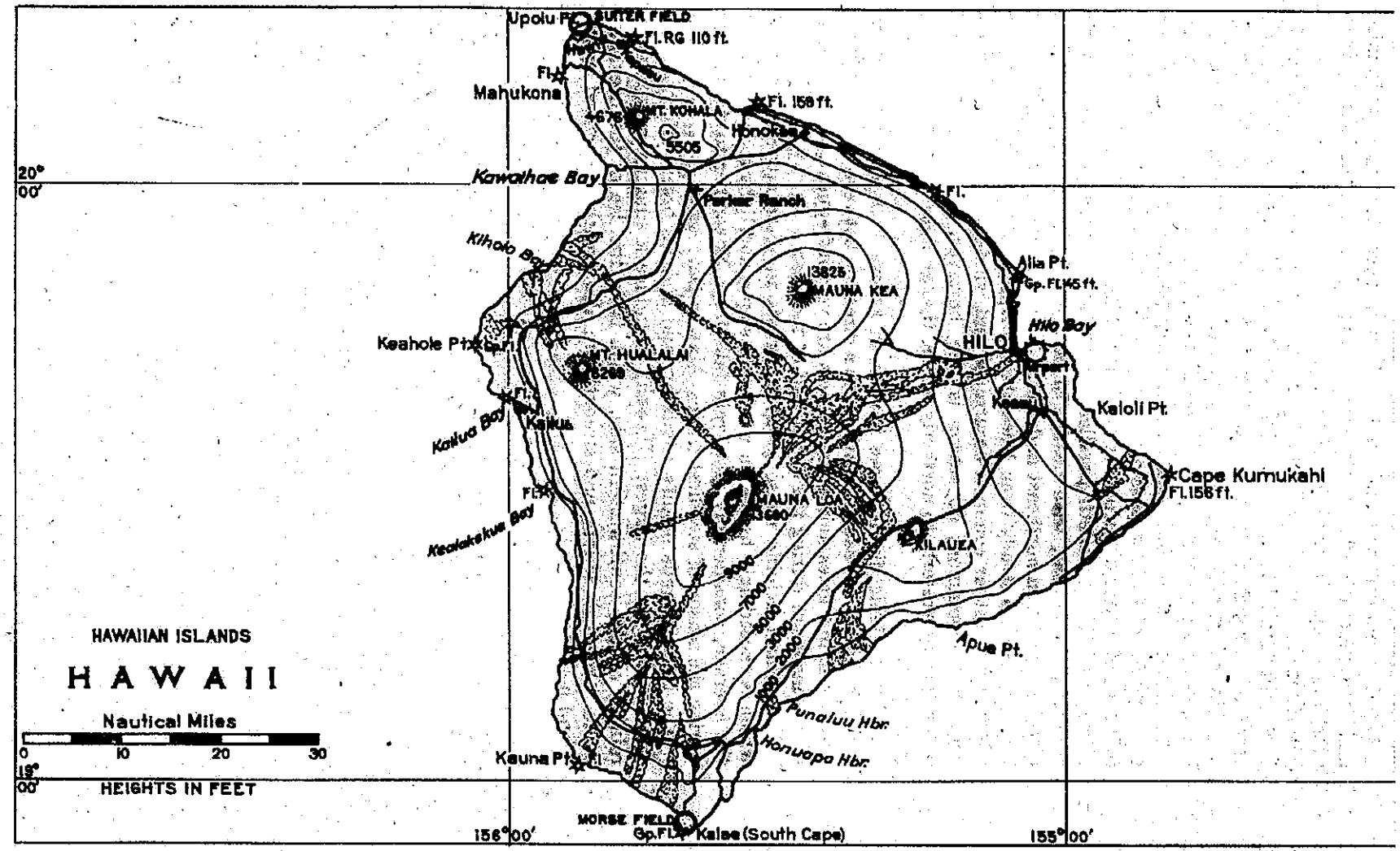
South of the twentieth parallel the northeast trade prevails strongly throughout the year, with nearly 75 percent of all air movement from directions between northeast and east. The trade in this part of the area is somewhat less steady from December to April, when south to southeast winds are of rather common occurrence and winds with westerly components not uncommon; no season is free, however, from the occasional occurrence of westerly to northerly winds, though these are rare from June to August.

A few cyclonic disturbances have been known to form near or move through this region, usually traveling in a direction between west-northwest and north, but gales and severe storms are very infrequent. A few thunderstorms occur during the cooler half of the year.

The island heights cause great contrasts in distribution of rainfall, which is exceedingly heavy on windward slopes and light to leeward. In the average, considerably more rain falls from November to April, than during the season of steadiest trades, May to October.

The larger islands modify winds by land and sea breeze effects, which are sufficient on the largest (Hawaii) to induce a summer maximum of rainfall on the southwestern side, which is in the lee of the prevailing trade. Wind directions and strength are also greatly influenced by the island heights.


Upolu Pt.
SUTER FIELD
Fl. RG 110 ft.
Hawi
Kapaau
Fl.
Mahukona
4676
MT. KOHALA
5505
Fl. 159 ft.
Honokaa
20°
00'
Kawaihae Bay
Parker Ranch
Fl.
Kiholo Bay
13825
MAUNA KEA
Alia Pt.
Gp. Fl 145 ft.
Hilo Bay
HILO
Airport
Keahole Pt.
Gp. Fl.
MT. HUALALAI
8269
Keaau
Kaloli Pt.
Fl.
Kailua
Kailua Bay
Cape Kumukahi
Fl. 156 ft.
Fl.
MAUNA LOA
13680
KILAUEA
9000
7000
5000
3000
2000
1000
Apua Pt.
Punaluu Hbr.
Honuapo Hbr.
Kauna Pt. Fl
19°
00'
HEIGHTS IN FEET
MORSE FIELD
Gp. Fl.
Kalae (South Cape)
156° 00'
155° 00'
HAWAIIAN ISLANDS
HAWAII
Nautical Miles
0
10
20
30


HAWAIIAN ISLANDS
HAWAII
Nautical Miles
0 10 20 30
HEIGHTS IN FEET
20° 00'
19° 00'
156° 00'
155° 00'
Upolu Pt.
SUTTER FIELD
Fl. RG 110 ft.
Mahukona
Fl.
MT. KOHALA
5505
Fl. 156 ft.
Honokaa
Kawaihae Bay
Parker Ranch
Kiholo Bay
Keahole Pt.
Gp. Fl.
MT. HUALALAI
8269
Kailua
Kailua Bay
Kealakekua Bay
MAUNA KEA
13825
MAUNA LOA
13680
HILO
Hilo Bay
Alia Pt.
Gp. Fl. 45 ft.
Kaloli Pt.
Cape Kumukahi
Fl. 156 ft.
KILAUEA
Apua Pt.
Punaluu Hbr.
Honuapo Hbr.
Kauna Pt.
Fl.
MORSE FIELD
Gp. Fl.
Kalae (South Cape)

HAWAII

Hawaii, the largest of the islands, is irregular in shape, resembling a triangle, and has a greatest length of 83 miles north and south and a greatest width of 73 miles. The island is dominated by two principal peaks, Mauna Loa 13,675 feet high and Mauna Kea 13,825 feet high, from the summits of which the land slopes gradually to the coast, with occasional cinder cones and lesser peaks intervening. In the central western part of the island Mount Hualalai rises to an altitude of 8,269 feet, while in the northwestern part Mount Kohala elevation 5,505 feet dominates the Kohala Peninsula. The only active volcanoes in the Hawaiian group, Mauna Loa and Kilauea, are located on this island. Hilo is the most important town on Hawaii; Kailua Village is next in importance.

SEAPLANE ANCHORAGES:

Hilo (19°44′ N., 155°04′ W.) sketch and description on pages 202–204; photograph on page 619.

Kailua (19°38′ N., 156°00′ W.) sketch and description on pages 205, 206.

Kawaihae (20°02′N., 155°50′ W.) sketch and description on pages 209, 210.

Kealakekua Bay (19°29′ N., 155°56′ W.) sketch and description on pages 211, 212.

LANDING FIELDS

Hilo Airport (19°44′ N., 155°04′ W.) sketch and description on pages 202, 204; photograph on page 620.

Kalae—South Cape, Morse Field (18°55′ N., 155°41′ W.) sketch and description on pages 207, 208; photograph on page 621.

Upolu Point, Suiter Field (20°16′ N., 155°52′ W.) sketch and description on pages 213, 214; photograph on page 622.

COMMUNICATIONS

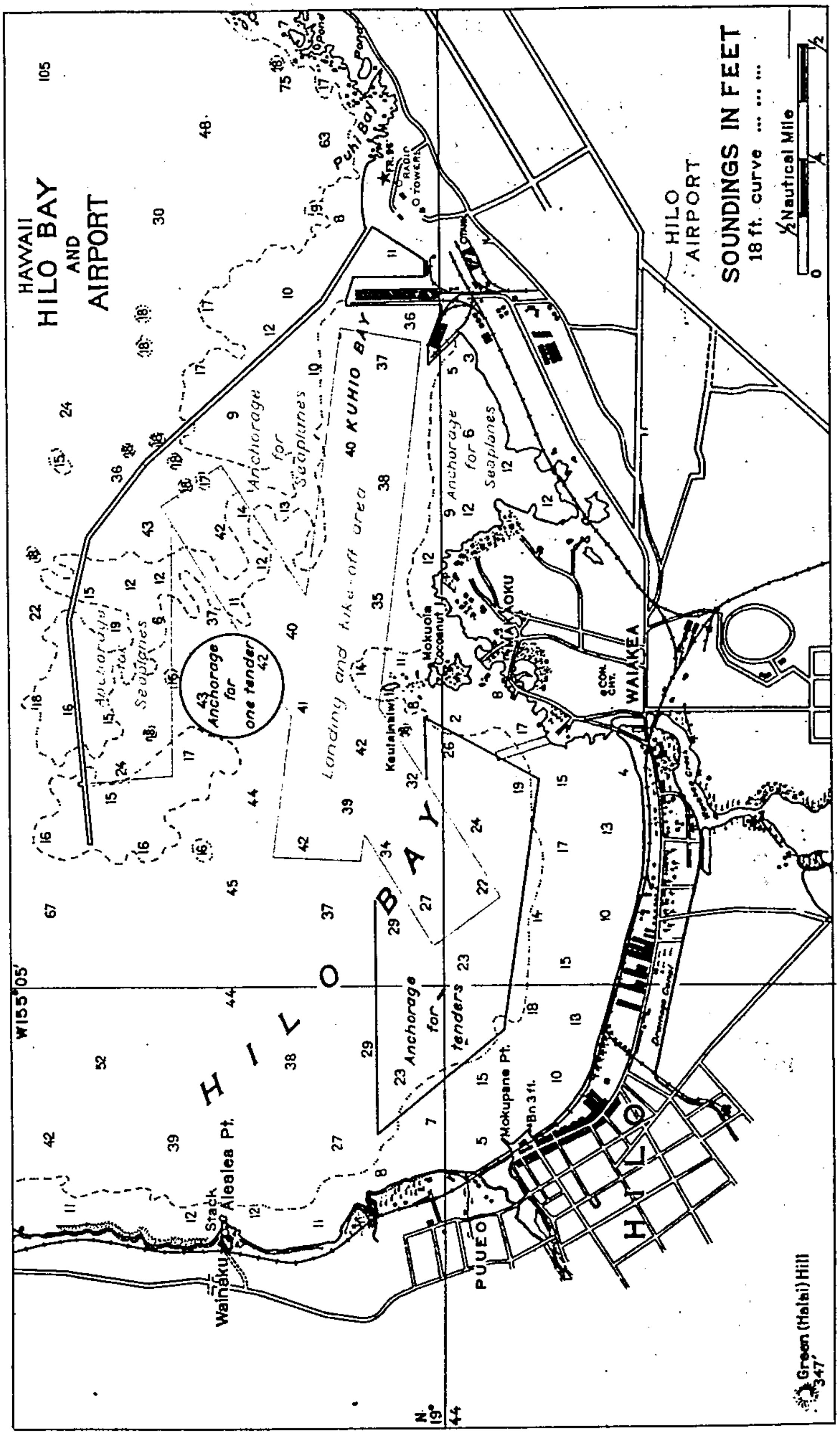
Automobile highway entirely around island. Telephone to all parts of the island. Radio and radiotelephone to the other islands and the United States.

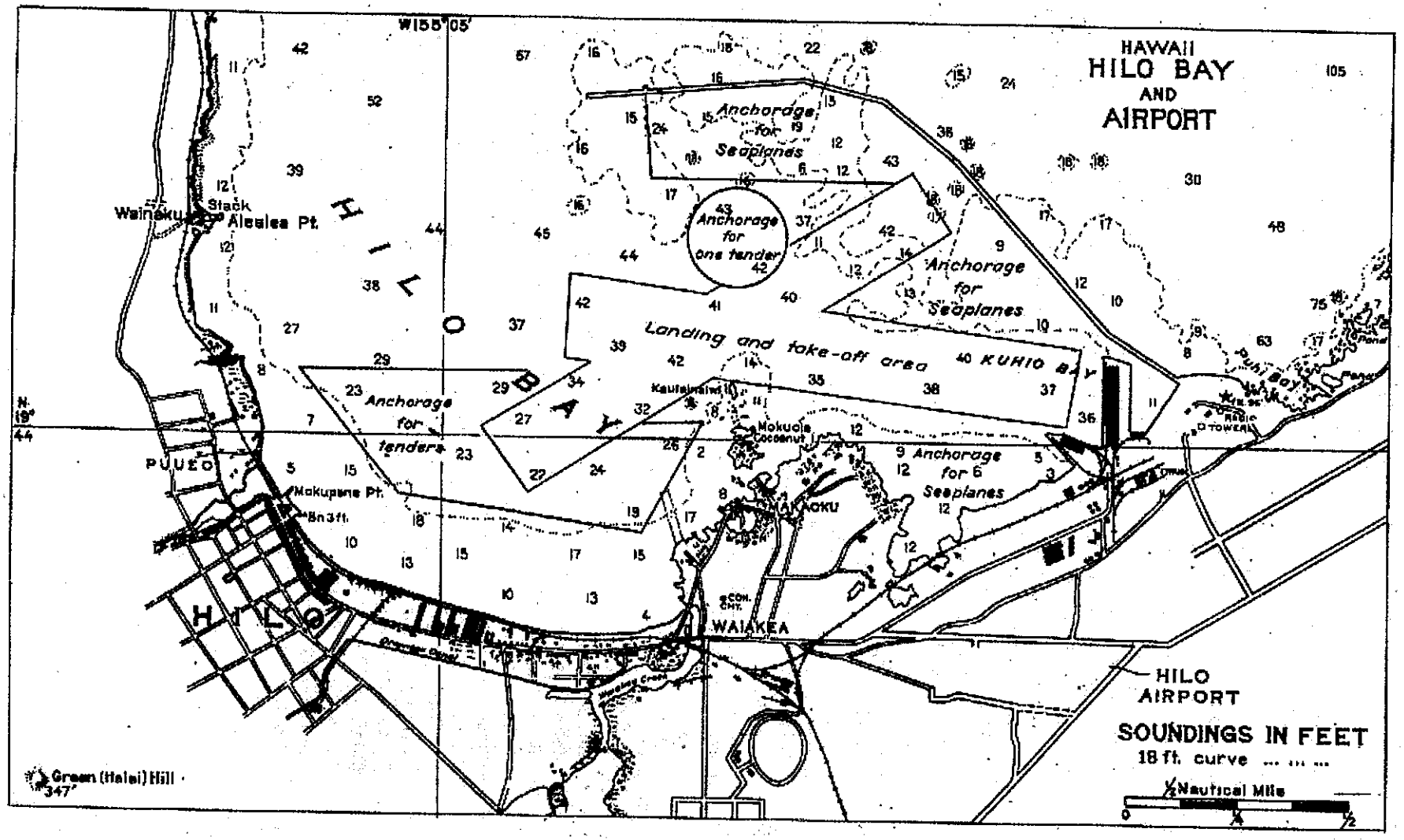
METEOROLOGICAL CONDITIONS

Winds: The easterly trade winds seem to divide at Cape Kumukahi, part following the coast northwestward around Upolu Point, where it loses its force, the other part following the southeast coast around Kalae, where it loses its force. On the west coast of Hawaii except at Mahukona, the sea breeze sets in about 0900 and continues until after sundown, when the land breeze then springs up.

During the trades the Hamakua coast (northeast) is frequently clouded over in the early morning, with clear weather a mile or two offshore; but when the breeze picks up, about 0900, the clouds are driven inland.

Rainfall: The rainfall of the island of Hawaii varies greatly in different localities. The largest amount is found along the windward side. There is moderate rainfall on the Kona district highlands, while a little reaches the Kau district and the west coast.


HAWAII
HILO BAY
AND
AIRPORT
SOUNDINGS IN FEET
18 ft. curve
½ Nautical Mile
HILO
AIRPORT
Puhi Bay
RADIO
TOWERS
KUHIO BAY
Anchorage
for
Seaplanes
Anchorage
for 6
Seaplanes
Landing and take-off area
Anchorage
for
one tender
Anchorage
for
tenders
HILO BAY
Mokuola
(Cocoanut I.)
WAIAKEA
PUUEO
HILO
Wainaku
Alealea Pt.
Stack
Hokupane Pt.
Bn 3 ft.
Green (Halai) Hill
347'
W155°05'
N
19°
44'


HAWAII
HILO BAY
AND
AIRPORT
W155°05'
N19°44
HILO
BAY
KUHIO BAY
Anchorage for Seaplanes
Anchorage for one tender
Anchorage for Seaplanes
Landing and take-off area
Anchorage for tenders
Anchorage for 6 Seaplanes
Waiakea Pt.
Stack
Alealea Pt.
Mokupapa Pt.
Bn 3 ft.
Mokuola Coconut
MAKAOKU
WAIAKEA
PUUEO
HILO
HILO AIRPORT
Green (Halai) Hill
347°
SOUNDINGS IN FEET
18 ft. curve
½ Nautical Mile
0
½

HILO BAY

HAWAII—HAWAIIAN ISLANDS

SEAPLANE ANCHORAGE

(Lat. 19°44′30″ N., long. 155°04′00″ W.)

DESCRIPTION

Location: Within the harbor under the lee of the breakwater. **Depths:** 6 to 46 feet. **Tidal range:** 1.6 feet. **Character of bottom:** Hard. **Currents:** Weak. **Shelter:** Protected anchorage for about 50 VP–type seaplanes is available under all conditions of wind and weather.

LANDING AND TAKE-OFF AREA

Location: Hilo Bay. **Area:** NE./SW., 1 mile; E./W., 1 mile. **Shelter:** There is sufficient room under normal full load conditions for both day and night operations. Take-off under overload conditions for long distance flights is questionable. Outer bay is exposed to the northeast trades. **Obstructions:** Harbor buoys. Ground swells in entrance to harbor. No high hills in the immediate vicinity of the harbor which interfere with landing and take-off. Large fleet of fishing sampans operates in the outer bay; the movements of these boats are uncertain.

FACILITIES

Limited quantities of aviation gasoline and oil available, by making advance arrangements with the harbor authorities through the commandant; fourteenth naval district machine shops are available where minor repairs could be made. No drydocks or large marine railways. **Beach:** No seaplane beach available. Planes must be serviced by boats or from a tender. **Communications:** Radio station, call letters KLN. United States Navy radio station, call letters, NPH inoperative.

GENERAL INFORMATION

Aspect: The westerly shore of Hilo Bay is bluff, while the southerly and easterly shores are low.

Landmarks: Sugar mill at Alealea Point, painted gray and has one large ~~black~~ stack; number of electric lights when in operation at night. High concrete stack of the Hilo electric plant at Waiakea. Two radio towers 500 yards east of the wharves. Green (Halai) Hill, 347 feet high 1 mile southwest of Hilo is the highest point in the vicinity.

Tender anchorage: Anchorage can be had anywhere under the lee of the breakwater in up to 7 fathoms. Good anchorage in from 4 to 6 fathoms with good holding ground is from ¼ to ¾ mile westward from Kaulainaiwi Island. For deep-draft vessels the usual anchorage is ⅜ mile east of Alealea Point, in 7 to 8 fathoms. In 1933 the channel leading to the wharves in Kuhio Bay had a depth of 36 feet. The two large well-equipped wharves have depths of 27 to 36 feet alongside.

Importance: Good advance base for the operation of about 50 VP-type seaplanes. Hilo is the second in commercial importance and population of the cities of the Hawaiian Islands.

Meteorological conditions: Prevailing winds, northeast trades. At night a gentle breeze generally comes off the land.

Practically any schedule of operations can be carried out between the first of April and the middle of November. Between the middle of November and the end of March, frequent interruptions or delays in aircraft operation schedules may be expected; these delays normally should not last more than 2 or 3 days.

144508—35——14

See H.O. Doc. A10-1/EC 11(377915) - July 3, 1940

METEOROLOGICAL TABLE

Weather element	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Temperature (° F.)													
Mean monthly	69.7	69.2	69.8	70.6	72.2	73	73.9	74.8	74.4	74	72.6	70.8	72.1
Mean maximum	77.4	77.2	77	77.6	79.6	80.1	80.9	82.2	82.1	81.5	79.9	78.4	79.5
Mean minimum	62.1	61.6	62.6	63.7	64.8	65.9	66.8	67.5	66.7	66.4	65.2	63.3	64.7
Highest recorded	88	86	88	89	89	89	90	91	89	88	90	89	91
Lowest recorded	54	53	56	59	51	60	61	60	60	60	59	53	51
Precipitation													
Monthly amount, inches	9.93	11.47	15.14	13.44	10.08	8.11	10.77	12.32	10.81	11.05	14.64	11.67	139.43
Number of days with 0.01 inch or more	18	16	23	26	24	24	27	24	25	24	24	24	279
Winds													
Prevailing direction	N.	NE.	NE.	NE.	E.	NE.	NE.	N.	NE.	NE.	NE.	N.	NE.

HILO AIRPORT

(Lat. 19°44′ N., long. 155°04′ W.)

DESCRIPTION

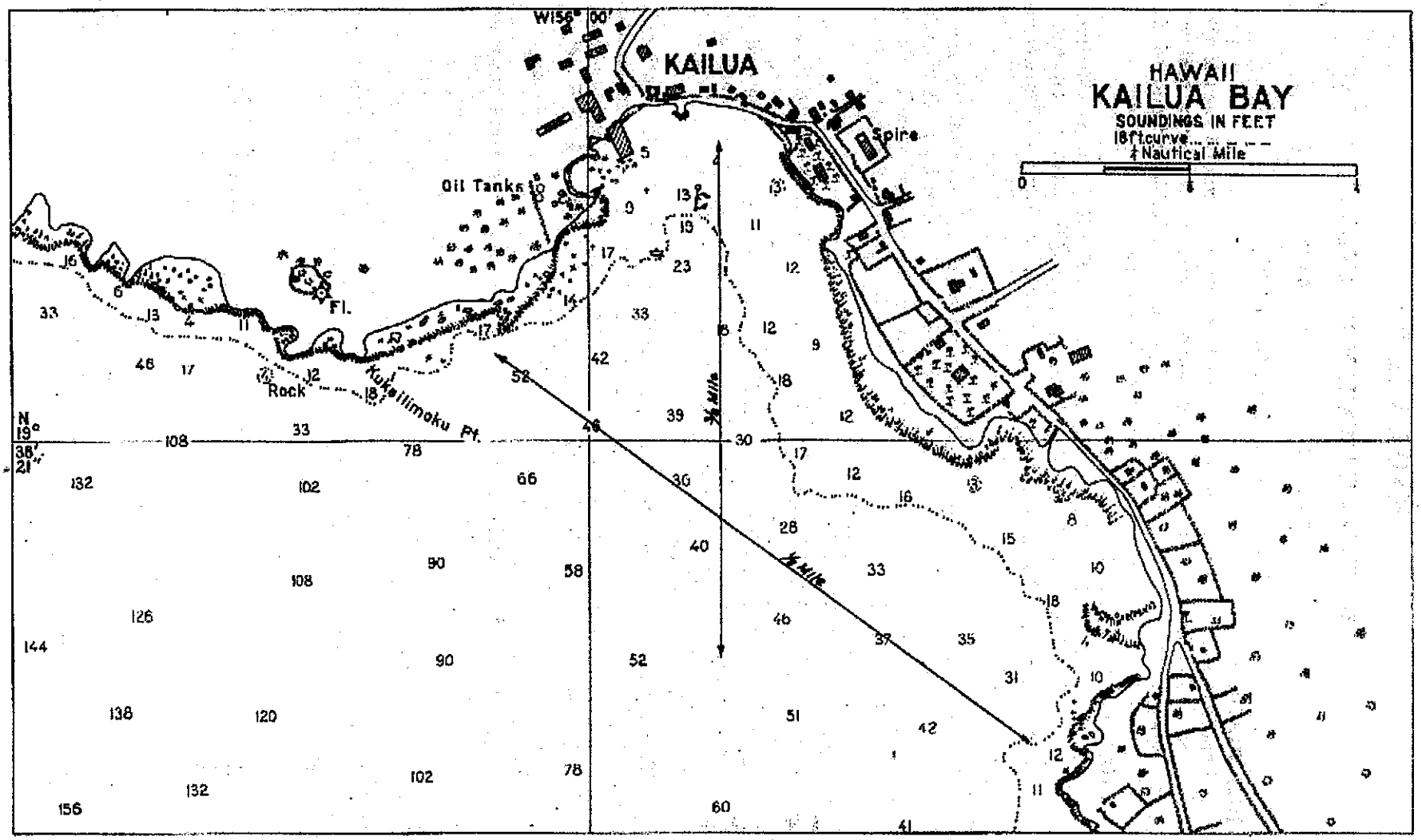
Location: Territorial airport located 1½ miles east of Hilo, adjacent to the highway. **Altitude:** 15 feet. **Dimensions:** Size, 3,000 by 2,000 feet. Landings and take-offs can be made in almost any direction. **Surface:** Level coral. **Drainage:** Natural, good. **Marking:** "INTER-ISLAND AIRWAYS" on roof of building, adjacent to hangar; landing tee at west end; wind cone on hangar. **Lighting:** None. **Obstructions:** Telephone wires in general vicinity; buildings on south side; clear approaches.

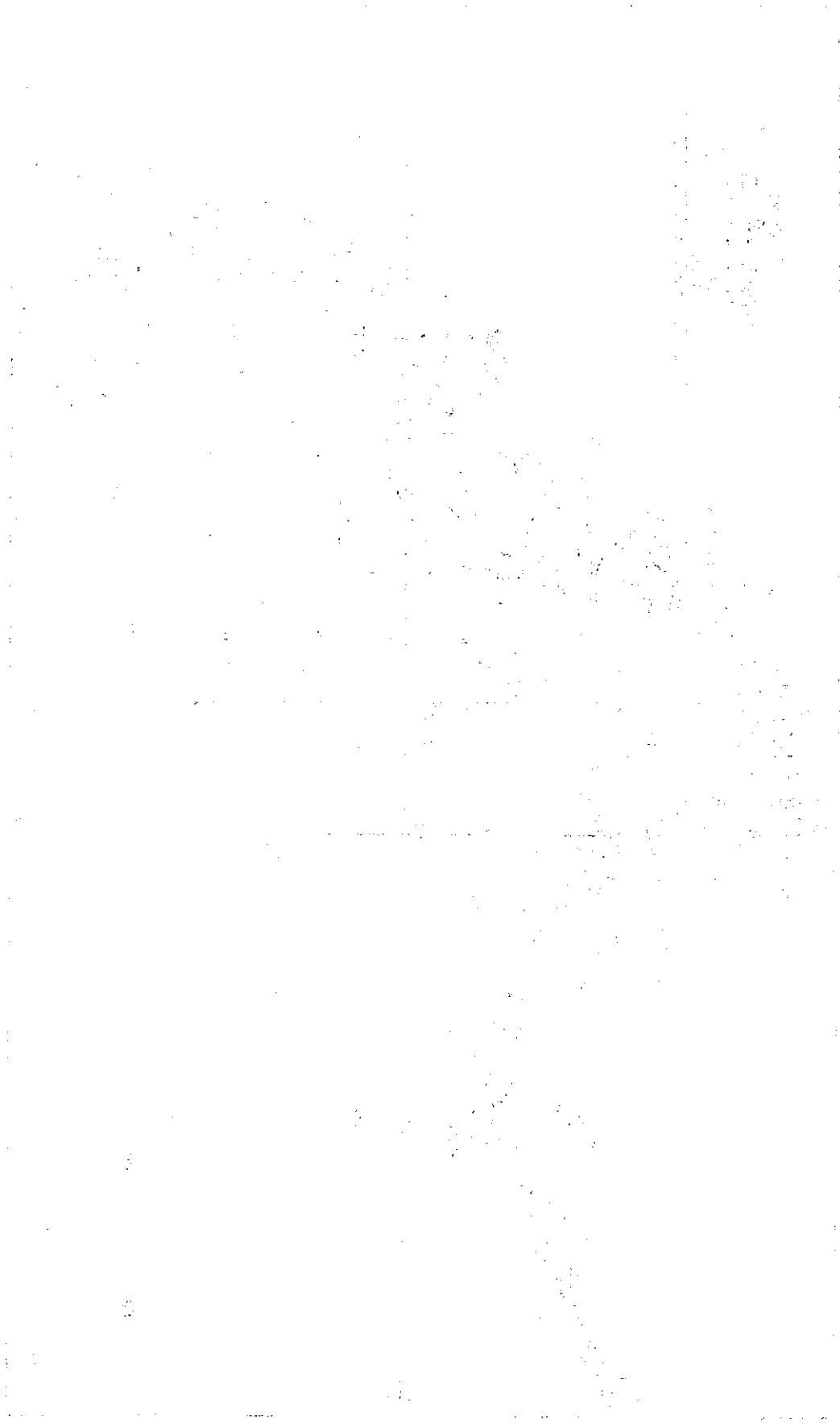
FACILITIES

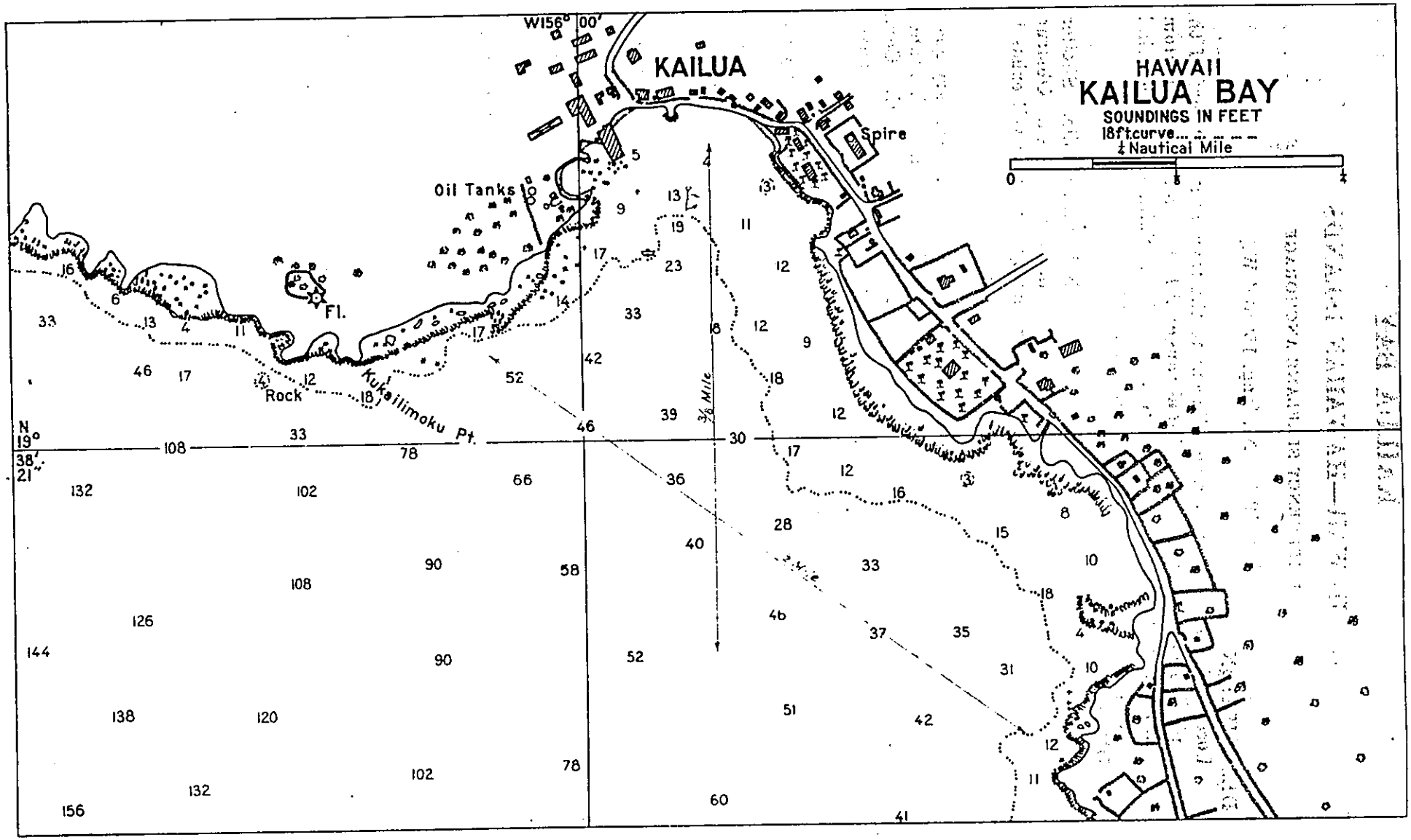
Specification fuel and oil. Hangar, steel construction 100 by 100 feet with 20-foot clearance (1934). Minor repairs. **Communications:** Radio and telephone. Bus transportation to city.

GENERAL INFORMATION

Remarks: Excellent field, hard surface and fast. Used by the "Inter-Island Airways."


HAWAII
KAILUA BAY
SOUNDINGS IN FEET
18ft curve
1 Nautical Mile
KAILUA
Oil Tanks
Spire
Fl.
Rock
Kukeiilimoku Pt.
½ Mile
½ Mile
W156° 00'
N 19° 36' 21"




W156° 00'
KAILUA
HAWAII
KAILUA BAY
SOUNDINGS IN FEET
18ft curve
¼ Nautical Mile
0
Spire
Oil Tanks
Fl.
Rock
Kukailimoku Pt.
3/8 Mile
N 19° 38' 21"

KAILUA BAY

HAWAII—HAWAIIAN ISLANDS

EMERGENCY SEAPLANE ANCHORAGE

(Lat. 19°38′ N., long. 156°00′ W.)

DESCRIPTION

Location: Restricted anchorage adjacent to the town southeastward of the pier. **Depths:** 3 to 18 feet. **Tidal range:** 2 feet. **Character of bottom:** Rocky. **Currents:** Weak. **Shelter:** Open bay. Suitable in trade winds only. Dangerous in south or southwesterly winds.

LANDING AND TAKE-OFF AREA

Location: Kailua Bay. **Area:** N./S., ⅜ mile; NW./SE., ½ mile. **Shelter:** Fair in trade winds. Long take-offs must be made in open sea. **Obstructions:** Rocks and reefs close ashore. Frequently a heavy swell exists in the bay.

FACILITIES

Provisions and water can be obtained in limited quantities. Ordinary gasoline and some ship chandlery may be obtained. Standard Oil branch warehouse is located here. **Beach:** Sand beach west of wharf. **Communications:** Telephone. Local steamer calls regular. There is a paved highway to the main road at Holualoa.

GENERAL INFORMATION

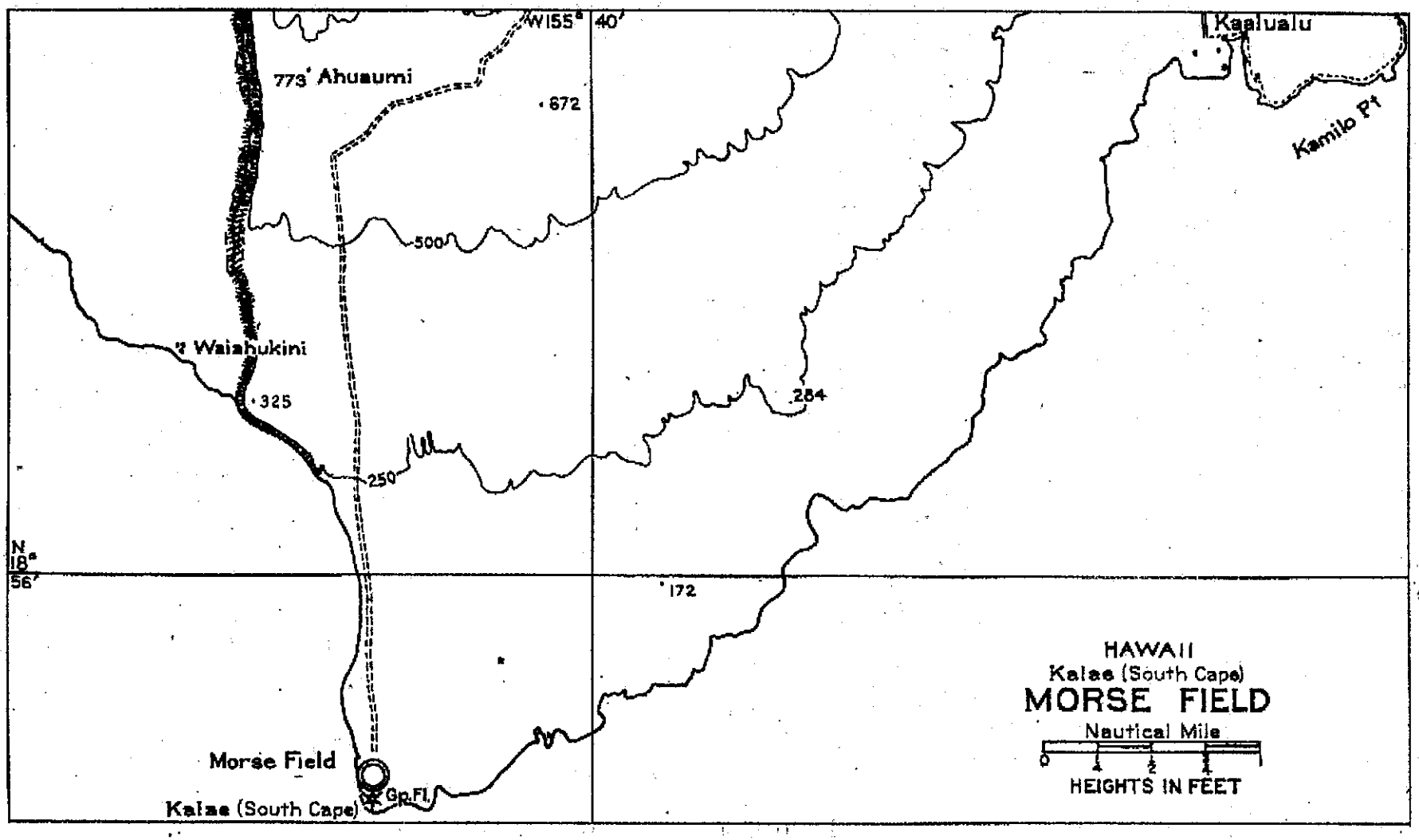
Aspect: Kailua Bay is a small indentation in the coast at the southerly end of a flat plain.

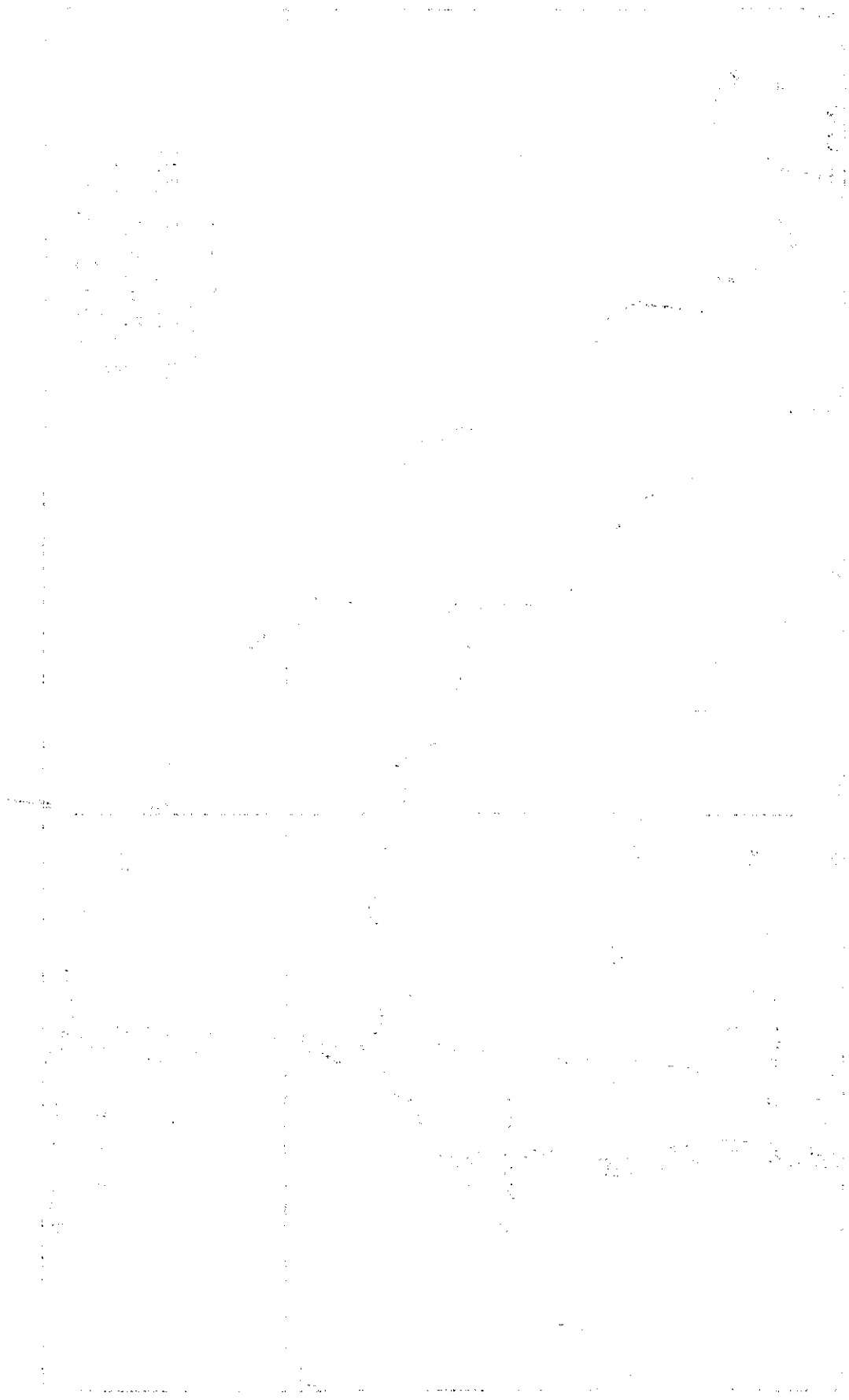
Landmarks: Church with red steeple stands about 350 yards due east of the wharf. Shed of the wharf and two oil tanks 130 yards westward. Kona Inn, a long grayish building, is situated near the beach on the eastern side of the bay.

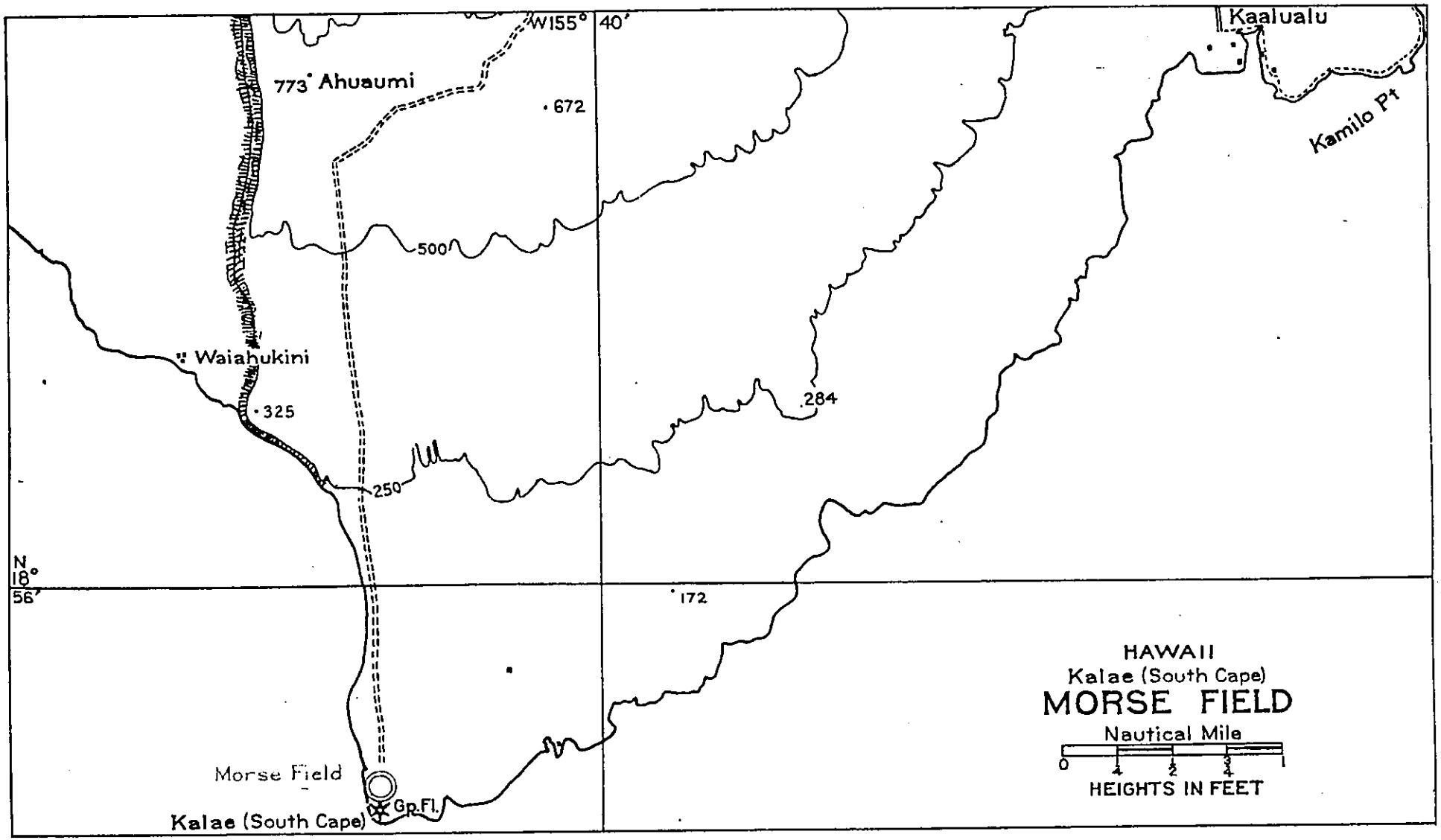
Tender anchorage: The bay affords good anchorage except during south and southwesterly winds. When off the entrance to the bay, head for the red-roofed church on a 33° course and anchor in 10 fathoms sandy bottom. Passengers and freight are landed at the wharf, having 3 to 5 feet of water along the eastern side, from ships' boats.

Boat landing: At the wharf.

Importance: Kailua village, next to Hilo, is the most important town on Hawaii.


W155°
40'
773' Ahuaumi
672
Kaalualu
Kamilo Pt
500
Waiahukini
325
284
250
N19°
56'
172
Morse Field
Kalae (South Cape)
Gp.Fl.
HAWAII
Kalae (South Cape)
MORSE FIELD
Nautical Mile
0
1/4
1/2
1
HEIGHTS IN FEET




W155°
40'
N
18°
56'
773' Ahuaumi
672
500
Waiahukini
325
250
284
172
Kaalualu
Kamilo Pt
Morse Field
Kalae (South Cape)
Gp. Fl.
HAWAII
Kalae (South Cape)
MORSE FIELD
Nautical Mile
0
1/4
1/2
3/4
1
HEIGHTS IN FEET

KALAE (SOUTH CAPE)

HAWAII—HAWAIIAN ISLANDS

MORSE FIELD

(Lat. 18°55′ N., long. 155°41′ W.)

DESCRIPTION

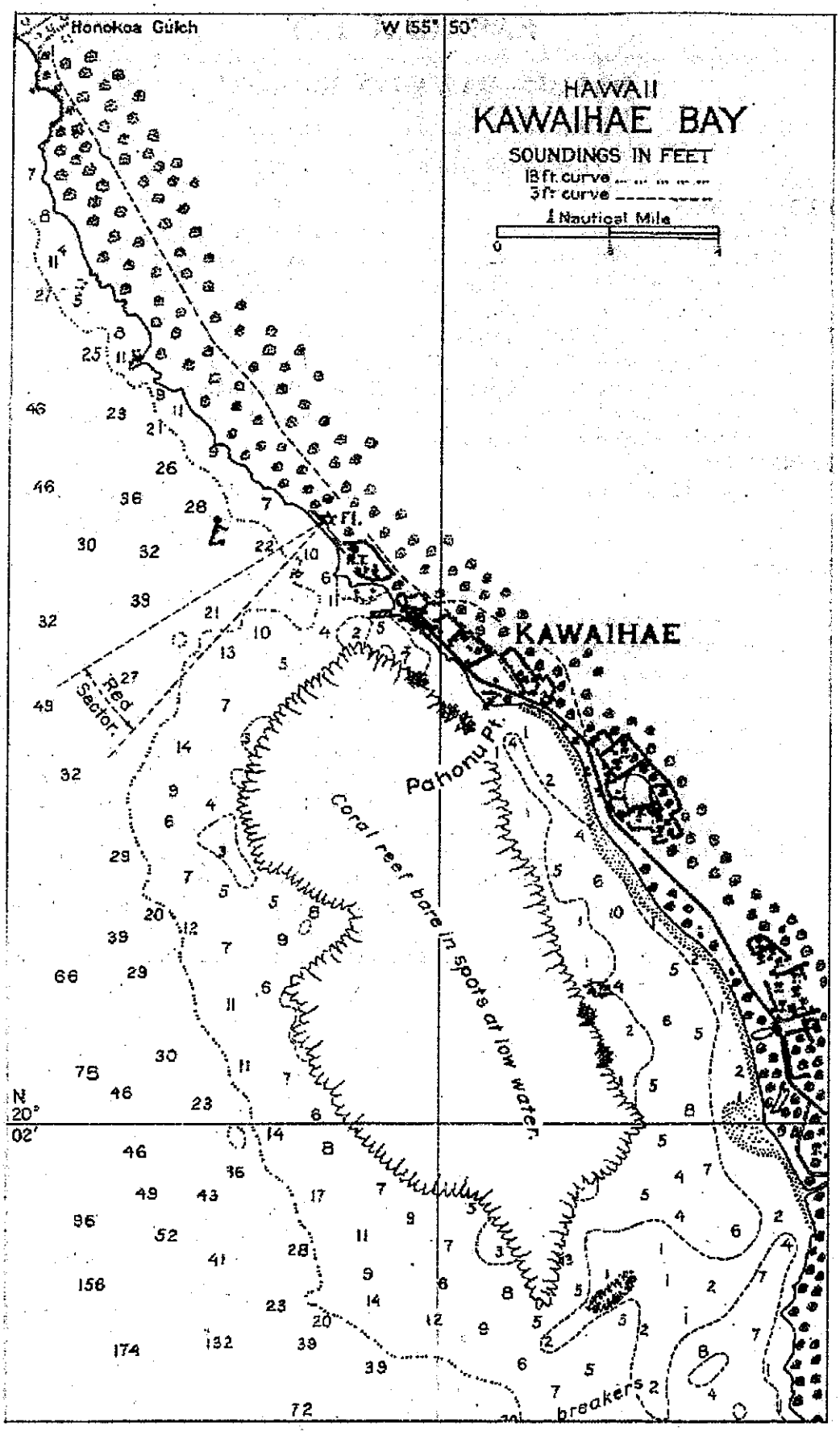
Location: Morse Field, a United States Army auxiliary field, located near the lighthouse at the southwestern point of Hawaii. **Altitude:** 50 feet. **Dimensions:** Size, 2,100 by 2,100 feet. **Surface:** Level rolling sod. **Drainage:** Natural. **Marking:** Landing tee at edge of field. **Lighting:** None. **Obstructions:** Approaches clear.

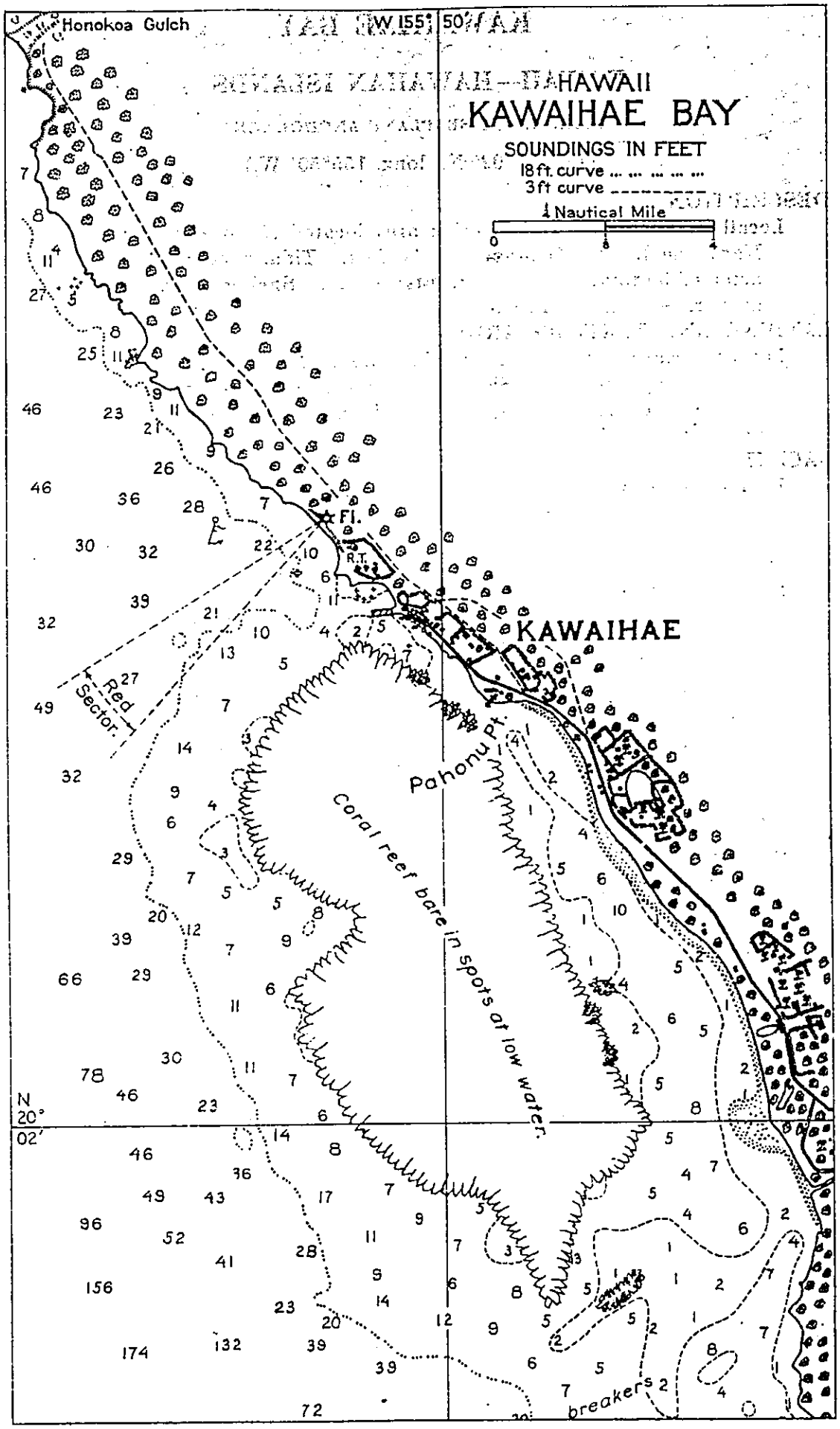
FACILITIES

None. Excellent emergency field where a large number of planes can operate. **Communications:** Transportation via dirt roads.

GENERAL INFORMATION

Landmarks: Kalae (South Cape) is a low, grass-covered point marked by a lighthouse. The southeasterly shore is low, while the shore on the westerly side begins with a low bluff at the point and rises gently for a distance of 2 miles to the northward to a height of 335 feet, where it leaves the shore and trends inland for several miles, increasing in height and forming Mamalu Pali, a remarkable cliff when seen from the westward.


Honokoa Gulch
W 155° 50'
HAWAII
KAWAIHAE BAY
SOUNDINGS IN FEET
18 ft. curve
30 ft. curve
1 Nautical Mile
Fl.
KAWAIHAE
Red Sector
Pahonu Pt.
Coral reef bare in spots at low water.
breakers
N 20° 02'


Honokoa Gulch
W 155° 50'
HAWAII
KAWAIHAE BAY
SOUNDINGS IN FEET
18 ft. curve
3 ft curve
1 Nautical Mile
0
2
4
Fl.
R.T.
KAWAIHAE
Red Sector
Pahonu Pt.
Coral reef bare in spots at low water.
breakers
N 20° 02'

KAWAIHAE BAY

HAWAII—HAWAIIAN ISLANDS

EMERGENCY SEAPLANE ANCHORAGE

(Lat. 20°02′ N., long. 155°50′ W.)

DESCRIPTION

Location: Anchorage and mooring area located about ¼ mile west of the Kawaihae Light. **Depths:** 6 to 30 feet. **Tidal range:** 2.1 feet. **Character of bottom:** Coral. **Currents:** Weak. **Shelter:** Small lee; suitable anchorage for about 12 planes.

LANDING AND TAKE-OFF AREA

Location: Kawaihae Bay. **Area:** Unlimited. Landing and take-offs can be made in any direction. **Shelter:** Small lee. **Obstructions:** Extensive reef ½ mile wide and 1½ miles long, bare in spots, and the sea generally does not break over it during offshore winds.

FACILITIES

Provisions and water can be obtained in limited quantities. **Beach:** White sand beaches scattered along shore. **Communications:** Local steamers several times monthly.

GENERAL INFORMATION

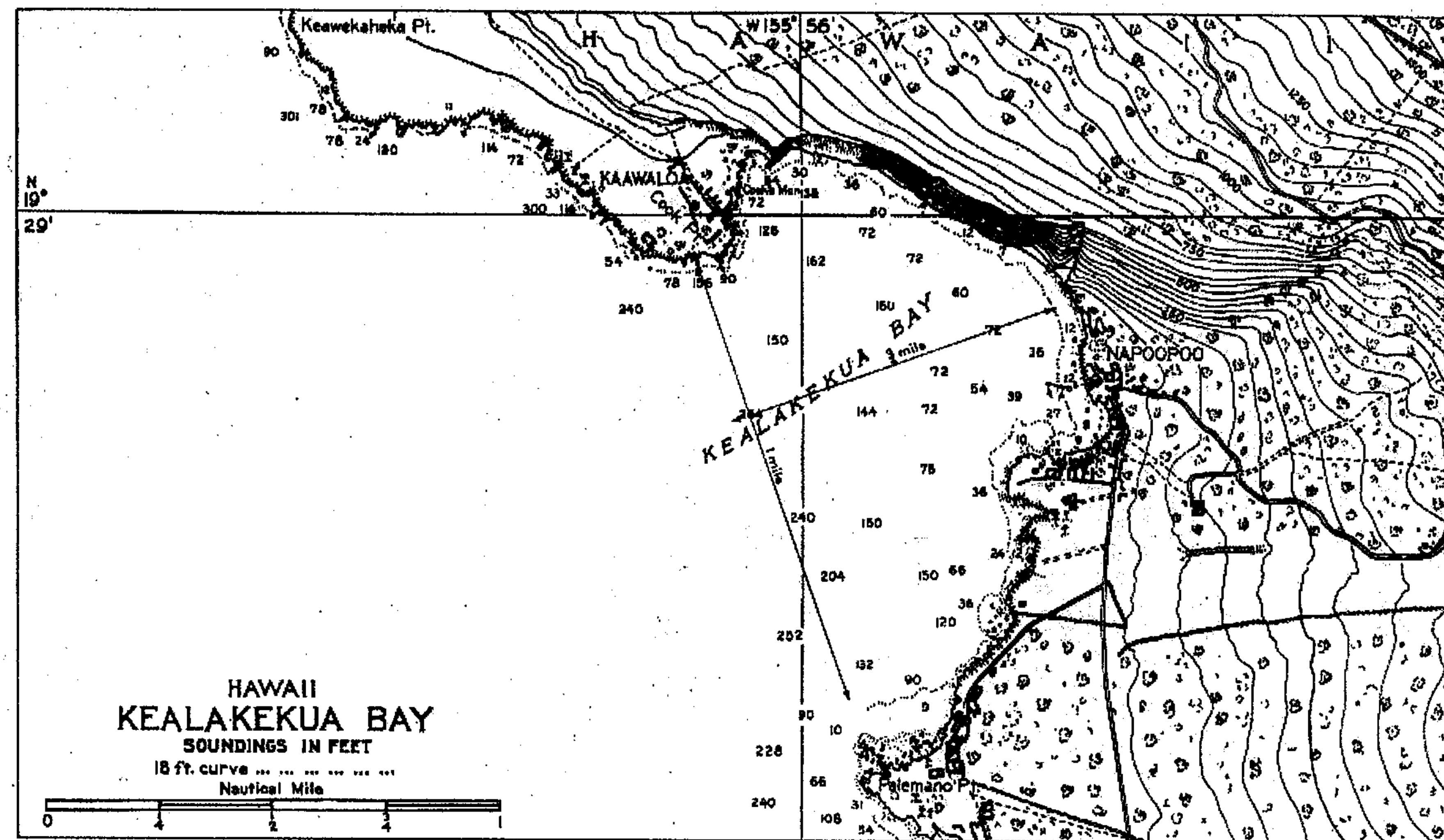
Aspect: The shore Kawaihae Bay is rocky with stretches of sand beach and has a thick growth of algaroba trees.

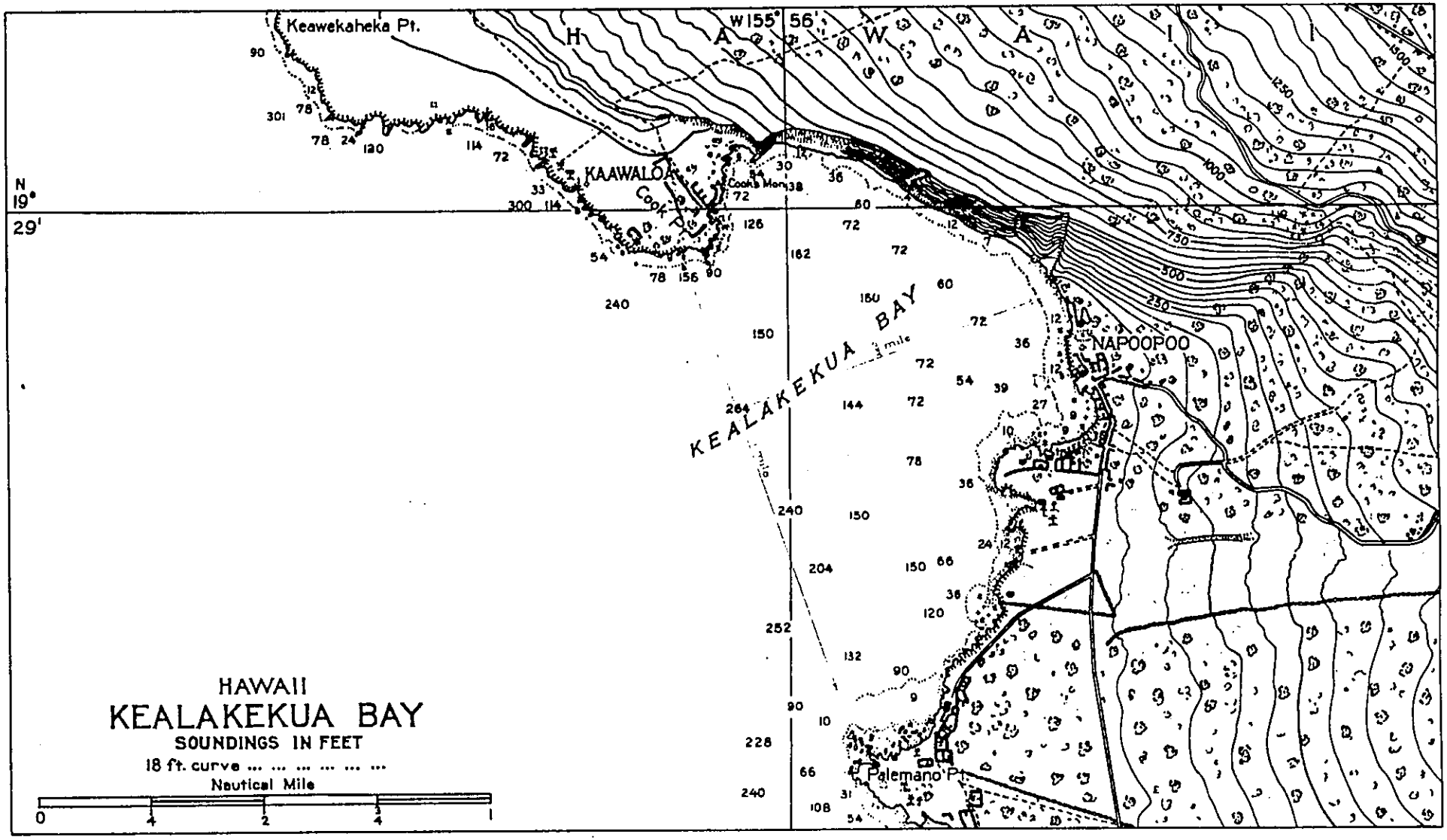
Landmarks: Honokoa Gulch, the deep, heavily wooded mouth of which is about ½ mile north of village. White pyramidal light tower. Galvanized iron roof of the landing shed. Two silver-colored oil tanks 200 yards northward of the landing. Radio tower.

Tender anchorage: Good anchorage, except during southwesterly weather, can be had between the light and Honokoa Gulch, about ⅜ mile offshore and in 8 to 15 fathoms. Local steamers anchor about 200 yards westward of the landing and run stern lines inshore to mooring buoys.

Boat landing: Small boats seeking anchorage behind reef, head for the landing, and when close, pass through the narrow channel to southward. In southwesterly weather there are breakers across the channel leading to the landing.

Importance: Forced landings, when quick repairs can be made, could be made here in moderate weather.


HAWAII
KEALAKEKUA BAY
SOUNDINGS IN FEET
18 ft. curve
Nautical Mile
NAPOOPOO
KAAWALOA
Cook Pt.
Keawekaheka Pt.
Palemano Pt.
KEALAKEKUA BAY
W 155° 56'
N 19° 29'


Keawekaheka Pt.
W155° 56'
HAWAII
N 19° 29'
KAAWALOA
Cook Mon.
Cook Pt.
KEALAKEKUA BAY
NAPOOPOO
Palemano Pt.
HAWAII
KEALAKEKUA BAY
SOUNDINGS IN FEET
18 ft. curve ... ...
Nautical Mile
0
1/4
1/2
3/4
1

KEALAKEKUA BAY

HAWAII—HAWAIIAN ISLANDS

EMERGENCY SEAPLANE ANCHORAGE

(Lat. 19°29′ N., long. 155°56′ W.)

DESCRIPTION

Location: Within the bay adjacent to Napoopoo village. In choosing an anchorage it is well to remember that there is a sea breeze in the daytime, shifting to a land breeze at night. **Depths:** 6 to 60 feet. **Tidal range:** 1.4 feet. **Character of bottom:** Coral and sand; fair holding ground. **Currents:** Weak. **Shelter:** Small lee, good anchorage and shelter only during the northeast trades for about six planes.

LANDING AND TAKE-OFF AREA

Location: Kealakekua Bay. **Area:** Indents coast ENE./WSW. ¾ mile; NNW./SSE., 1 mile. **Shelter:** Small lee. Long take-offs must be made in open sea. **Obstructions:** Frequently a heavy swell exists in the bay. Precipitous cliff between 400 and 600 feet high and about ½ mile long on northeast side.

FACILITIES

Provisions can be obtained in limited quantities at the village of Napoopoo. Fresh water is scarce. Ordinary gasoline and some ship chandlery may be obtained. **Beach:** Sand beach at north and south end of village. **Communications:** Telephone. Local steamer calls regular.

GENERAL INFORMATION

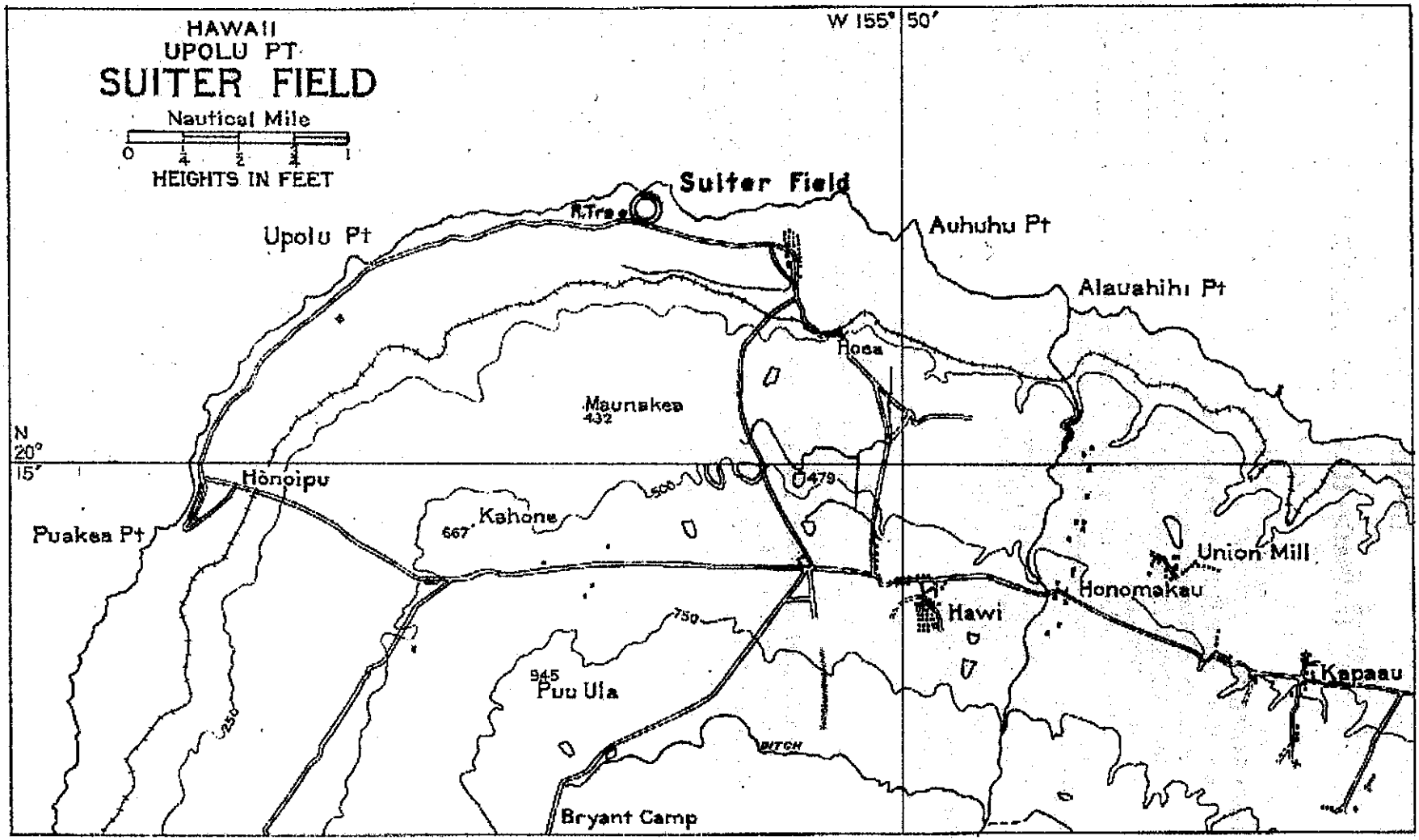
Aspect: The shore of Kealakekua Bay is low, except on the northeast side. The village of Napoopoo consists of a few houses scattered among the coconut trees.

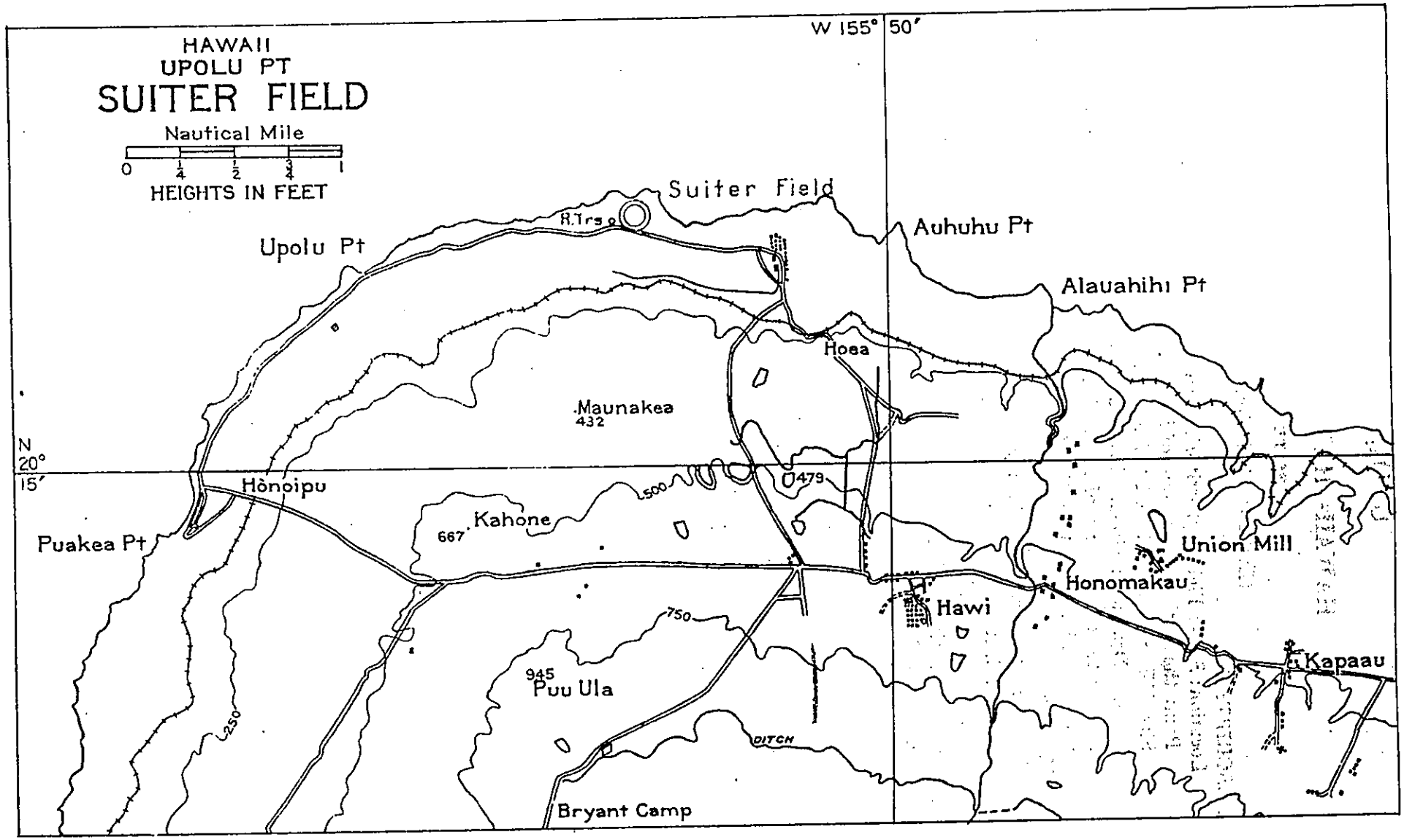
Landmarks: White church with spire.

Tender anchorage: Good anchorage with fair holding ground can be found in 12 to 18 fathoms, with the south end of the cliff bearing 55°, and Cooks Monument bearing 314°.

Boat landing: The landing, with about 4 feet of water, is in the middle of the village alongside of a low shed; during a heavy swell it is best to land on the sand beach at the north end of the village.

Importance: Reported to be the best anchorage on the west coast of Hawaii. Forced landings, when quick repairs can be made, could be made here in moderate weather.


HAWAII
UPOLU PT
SUITER FIELD
Nautical Mile
0 1/4 1/2 3/4 1
HEIGHTS IN FEET
W 155° 50'
N 20° 15'
Suiter Field
R.Tree
Upolu Pt
Auhuhu Pt
Alauahihi Pt
Hoea
Maunakea
432
Hōnoipu
479
500
Puakea Pt
667
Kahone
Union Mill
Honomakau
Hawi
750
945
Puu Ula
Kapaau
250
DITCH
Bryant Camp


HAWAII
UPOLU PT
SUITER FIELD
Nautical Mile
0 1/4 1/2 3/4 1
HEIGHTS IN FEET
W 155° 50'
N 20° 15'
Suiter Field
R.Trig
Upolu Pt
Auhuhu Pt
Alauahihi Pt
Hoea
Maunakea
432
Hònoipu
1500
479
Kahone
667
Puakea Pt
Union Mill
Honomakau
Hawi
750
Kapaau
945
Puu Ula
250
DITCH
Bryant Camp

UPOLU POINT

HAWAII—HAWAIIAN ISLANDS

SUITER FIELD

(Lat. 20°16′ N., long. 155°52′ W.)

DESCRIPTION

Location: Suiter Field, a Territorial airport located on the east side of Upolu Point, the northernmost point of Hawaii. **Altitude:** 50 feet. **Dimensions:** Size, NE./SW., 9,000 by 4,200 feet. **Surface:** Sod with slight slope toward ocean. **Drainage:** Good. **Marking:** Wind cone between radio towers; landing tee at each end of field. **Lighting:** None. **Obstructions:** Radio towers and buildings to southwest; depression at east end of field.

FACILITIES

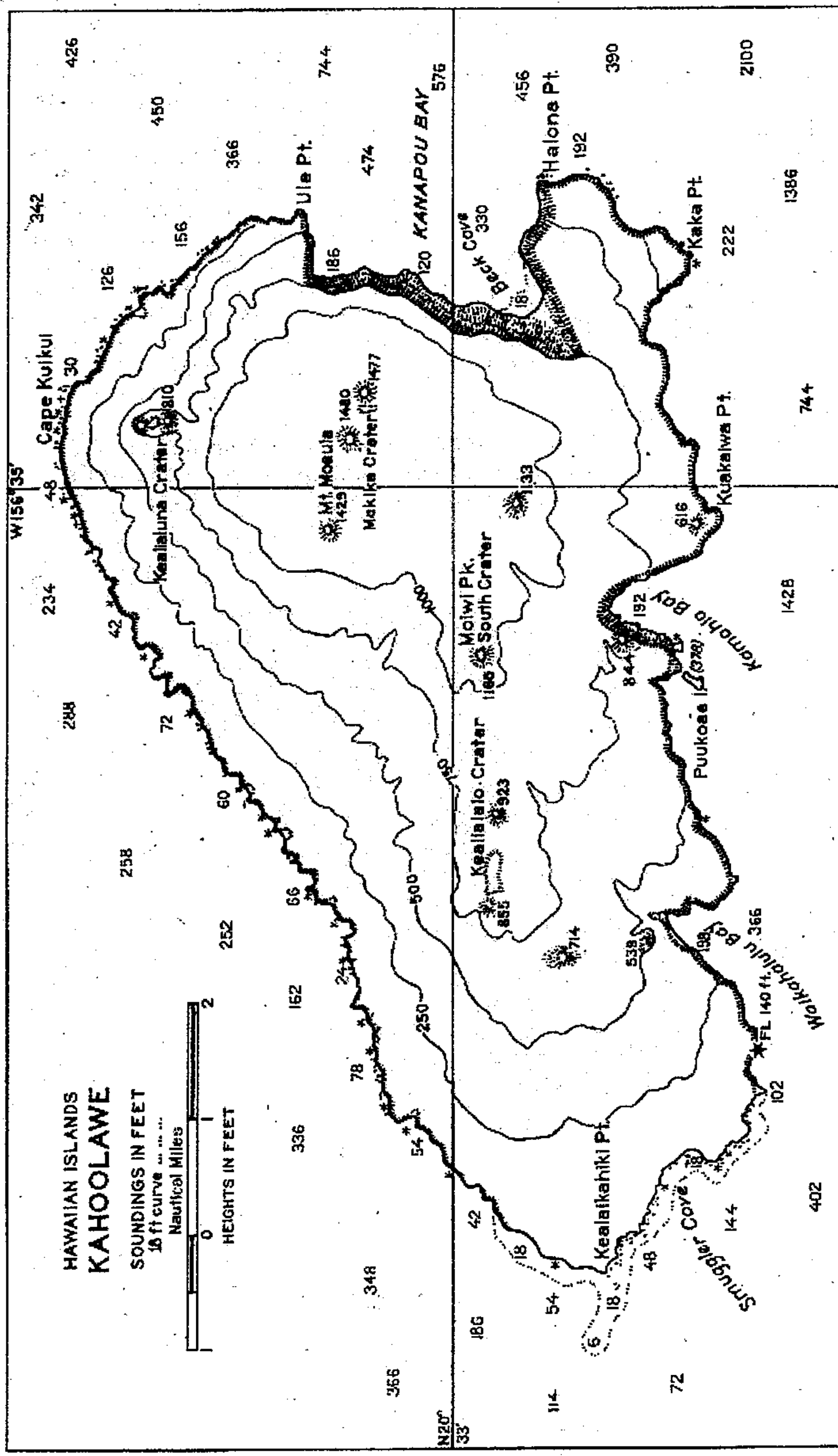
United States Army has barracks, storehouse, and underground gasoline and oil installations. Minor repairs. No hangars. **Communications:** Telephone. Train to Hoea.

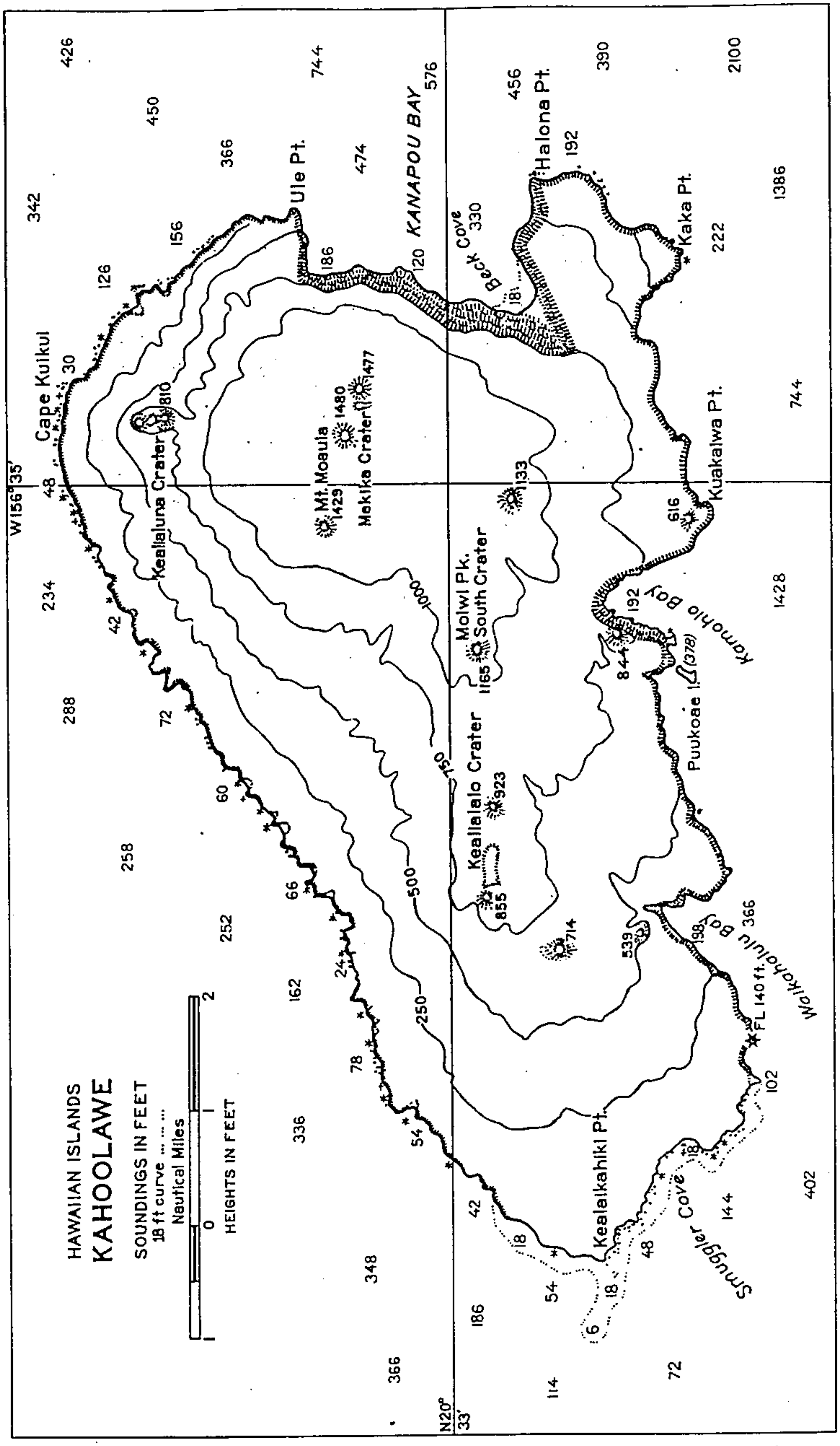
GENERAL INFORMATION

Landmarks: Radio towers. Abandoned gray mill stack at Hawi, midway between Upolu and Kauhola Points and 1 mile inland. The country back of Upolu Point is covered with sugar cane and among the clumps of trees the camps and villages are located. These camps are high up on the bluffs and at night the lights are visible.

Meteorological conditions: Prevailing winds, east. Heaviest winds, 30 to 40 miles per hour. Fog, none.

Remarks: Used as an intermediate field by the United States Army Air Corps and commercial planes. Field is dangerous on account of gusty wind caused by cliffs. Land over tee.


HAWAIIAN ISLANDS
KAHOOLAWE
SOUNDINGS IN FEET
18 ft curve
Nautical Miles
HEIGHTS IN FEET
Cape Kuikui
Ule Pt.
KANAPOU BAY
Beck Cove
Halona Pt.
Kaka Pt.
Kuakaiwa Pt.
Kamohio Bay
Puukoae I.
Waikahalulu Bay
FL 140 ft.
Smuggler Cove
Kealaikahiki Pt.
Kealialuna Crater
Mt. Moaula
Makika Crater
Moiwi Pk.
South Crater
Kealialalo Crater
W156°35'
N20°33'

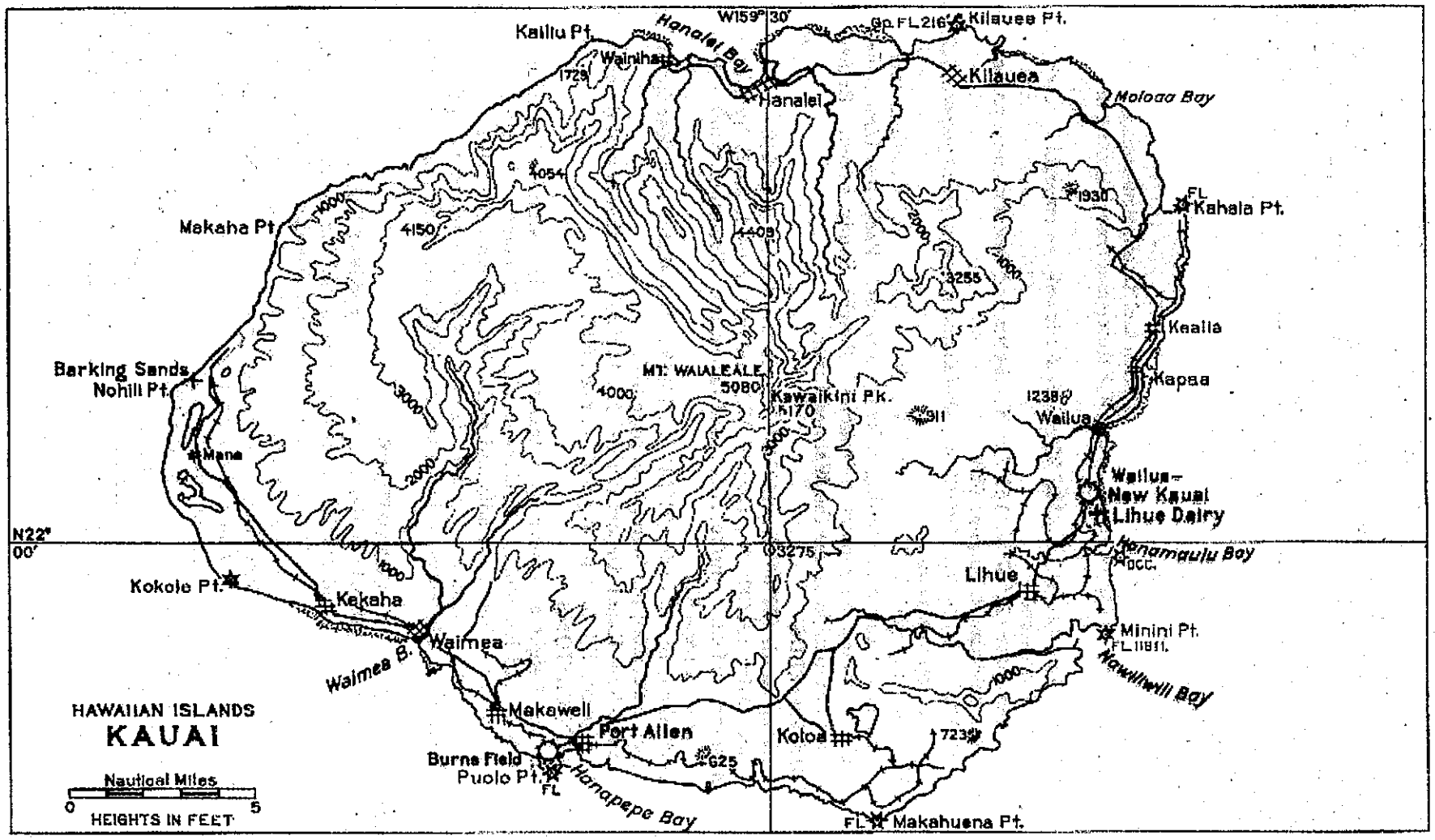

HAWAIIAN ISLANDS
KAHOOLAWE
SOUNDINGS IN FEET
18 ft curve
Nautical Miles
HEIGHTS IN FEET
Cape Kuikui
Ule Pt.
KANAPOU BAY
Beck Cove
Halona Pt.
Kaka Pt.
Kuakaiwa Pt.
Kamohio Bay
Puukoae I.
Waikahalulu Bay
FL 140 ft.
Kealaikahiki Pt.
Smuggler Cove
Kealaluna Crater
Mt. Moaula
Makika Crater
Moiwi Pk.
South Crater
Keallalalo Crater
W156°35'
N20°33'

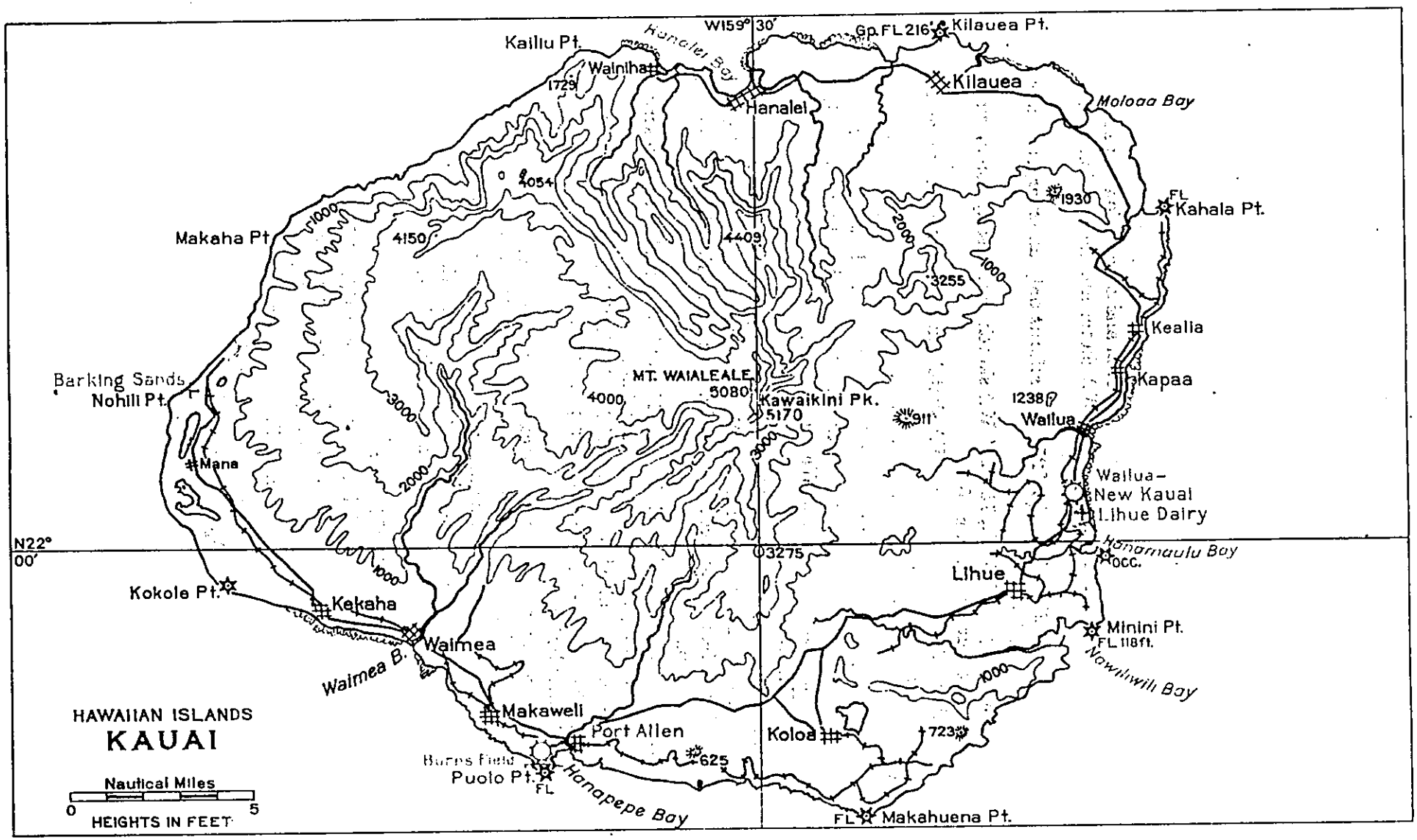
KAHOOLAWE

Kahoolawe, with an area of 69 square miles, is eighth in size of the islands, and lies 6 miles southwestward of Maui. It is about 10 miles long and 6 miles wide, and from a distance has an even, unbroken appearance. The high cliffs on the eastern and southern sides are almost black, while the soil of the mountain tops and the gentle slopes of the northern and western sides are reddish in color. There is scarcely any rainfall, and the huge clouds of red dust which trail to leeward during strong winds can be seen for many miles. There are no permanent inhabitants, although cattlemen and fishermen camp on the island at times. The island supports a few cattle and sheep, but there is no cultivation. Mount Moaula, a brown dome 1,429 feet high, near the easterly end of the island, is the most prominent landmark. From Cape Kuikui, the most northerly point of the island, to Kanapou Bay the coast is rocky and the bluffs gradually increase to cliffs several hundred feet high at the bay.

SEAPLANE ANCHORAGE

Smuggler Cove (20°31′ N., 156°41′ W.) the westernmost point of the island affords the best area for emergency landings except during westerly or southerly weather. **Facilities:** None; beach is coral strewn.


W159° 30'
Kailiu Pt.
Hanalei Bay
Wainiha
1729
Hanalei
Gp. FL216'
Kilauea Pt.
Kilauea
Moloaa Bay
4054
4150
4409
1930
FL
Kahala Pt.
Makaha Pt
3255
Kealia
Barking Sands
Nohili Pt.
MT. WAIALEALE
5080
Kawaikini Pk.
5170
1238
Kapaa
911
Wailua
Mana
Wailua-
New Kauai
Lihue Dairy
N22° 00'
3275
Honamaulu Bay
Lihue
Kokole Pt.
Kekaha
Waimea
Waimea B.
Minini Pt.
FL 1185'
Nawiliwili Bay
HAWAIIAN ISLANDS
KAUAI
Makaweli
Fort Allen
Koloa
723
Burns Field
Puolo Pt.
FL
625
Hanapepe Bay
FL
Makahuena Pt.
Nautical Miles
0
5
HEIGHTS IN FEET


W159° 30'
Kailiu Pt.
Hanalei Bay
Wainiha
1729
Hanalei
Gp. FL 216'
Kilauea Pt.
Kilauea
Moloaa Bay
4054
1930
FL
Kahala Pt.
Makaha Pt
1000
4150
4409
2000
1000
3255
Kealia
Barking Sands
Nohili Pt.
MT. WAIALEALE
5080
Kawaikini Pk.
5170
4000
911
1238
Wailua
Kapaa
3000
Mana
2000
Wailua-
New Kauai
Lihue Dairy
N22°
00'
3275
Hanamaulu Bay
occ.
Lihue
1000
Kokole Pt.
Kekaha
Waimea
Waimea B.
Minini Pt.
FL 118ft.
Nawiliwili Bay
1000
Makaweli
Port Allen
Koloa
723
625
Burns Field
Puolo Pt.
FL
Hanapepe Bay
FL
Makahuena Pt.
HAWAIIAN ISLANDS
KAUAI
Nautical Miles
0
5
HEIGHTS IN FEET

KAUAI

Kauai, the fourth in size of the islands, lies about 64 miles west-northwest of Oahu. It is nearly circular in shape, about 23 miles in diameter, and slopes from the central mountain mass of Kawaikini, which has a greatest elevation of 5,170 feet. On the westerly and northerly sides the mountains slope in steep and jagged ridges, and on the easterly and southerly sides in gentle slopes, which are much cut up by gulches. The peaks and highlands are nearly always clouded over, making the island itself difficult to see from any great distance. Port Allen is the most important town on Kauai.

SEAPLANE ANCHORAGES

Hanalei Bay (22°13′ N., 159°31′ W.) sketch and description on pages 220,221.

Hanamaulu Bay (22°00′ N., 159° 20′ W.) sketch and description on pages 222, 223.

Kilauea Point (22°14′ N., 159°25′ W.) affords only an emergency anchorage in good weather.

Nawiliwili Bay (21°57′N., 159°21′ W.) sketch and description on pages 224–226; photograph on page 623.

Port Allen (21°54′ N., 159°36′ W.) sketch and description on pages 227,228; photograph on page 624.

Waimea Bay (21°57′ N., 159°40′ W.) is an open bight affording excellent emergency anchorage during ordinary weather. **Facilities:** Limited provisions; wharf; no repairs; telephone. **Beach:** Sandy beach. **Remarks:** Not practicable to use the Waimea River.

LANDING FIELDS

Barking Sands (22°05′ N., 159°46′ W.) description on page 219.

Lihue Dairy (22°00′ N., 159°20′ W.) emergency field, 3,600 by 900 feet. **Altitude:** 10 feet. **Surface:** Sod, used as pasture. **Facilities:** None. Photograph on page 625.

Port Allen, Burns Field (21°54′ N., 159°36′ W.) sketch and description on pages 229,230; photograph on page 624.

Wailua-New Kauai Airport (22°01′ N., 159°20′ W.) sketch and description on pages 231,232; photograph on page 625.

COMMUNICATIONS

Regular freight and passenger steamer service is maintained between the island and Honolulu. Airplane service with Honolulu. Telephone to all parts of the island. Radio and radiotelephone with the other islands and with the mainland. A good highway skirts the island except for the northwest side between Haena and Nohili Points, where there are no roads whatever.

METEOROLOGICAL CONDITIONS

Winds: The trade winds divide on the easterly side of Kauai, part following the northerly and part the southerly coasts, uniting again some distance west of the island. On the west side, between Mana and Mahaka Points, calm or light variable airs prevail. A moderate southwest wind is sometimes felt at Waimea Anchorage, while a strong east wind is blowing about 2 miles offshore. Along the northerly and southerly shores, the early morning trade wind is usually light until about 0900.

Rainfall: The weather side of the island is noted for its frequent heavy rainfalls, which reach a maximum yearly average of about 430 inches in the vicinity of Mount Waialeale. The lower slopes, however, have much less rain, and along the southerly side the fall seldom exceeds 20 inches.

BARKING SANDS

KAUAI—HAWAIIAN ISLANDS

EMERGENCY FIELD

(Lat. 22°05′ N., long. 159°46′ W.)

DESCRIPTION

Location: Emergency field located on the west coast of Kauai just north of Nohili Point and 14 miles northwest of Port Allen. **Altitude:** 10 feet. **Dimensions:** Size, 4,800 by 900 feet. **Surface:** Sand with slight slope. **Drainage:** Natural. **Marking:** None. **Lighting:** None. **Obstructions:** Trees on east side. Young algerobas trees would have to be cleared from field.

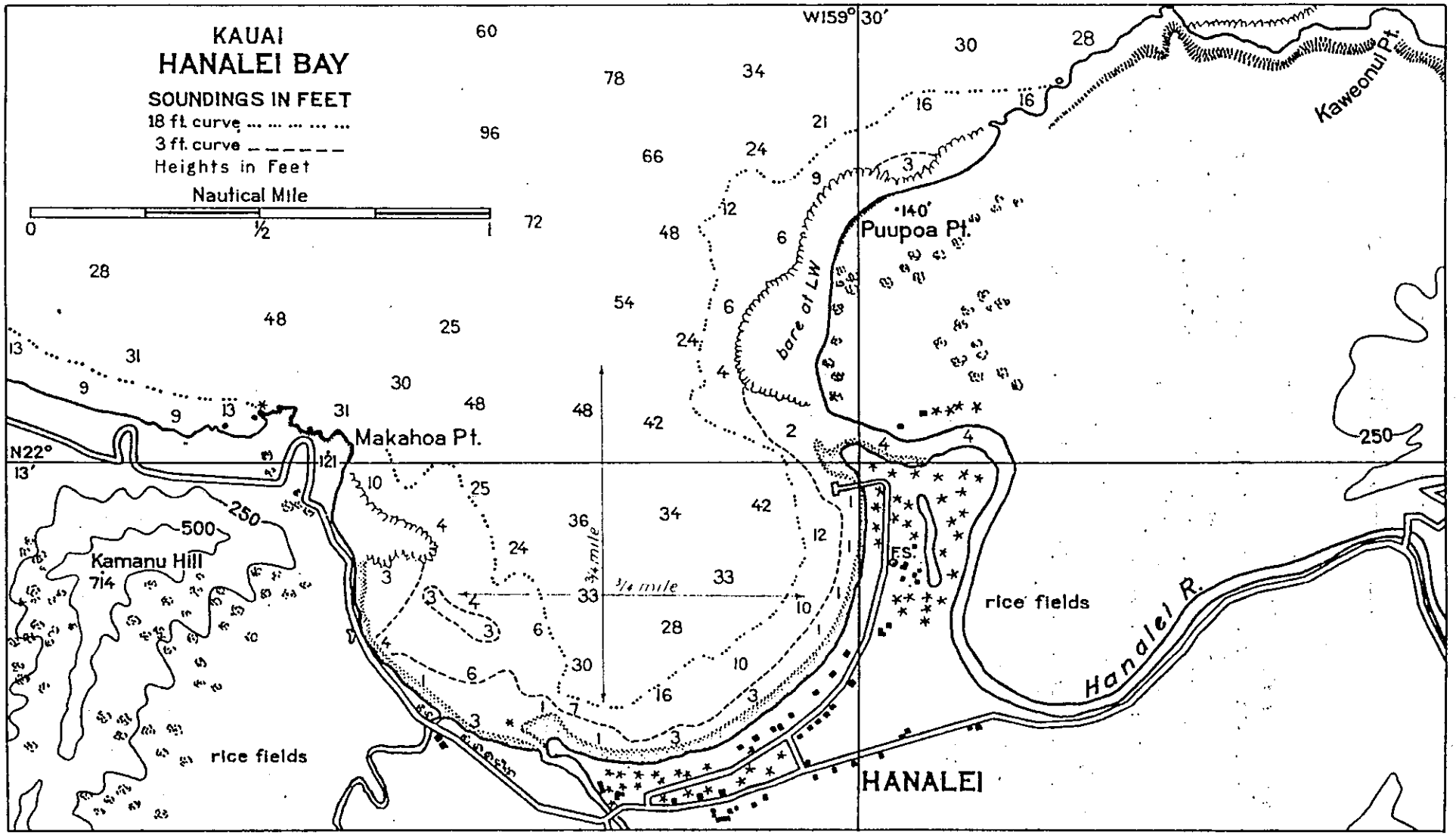
FACILITIES

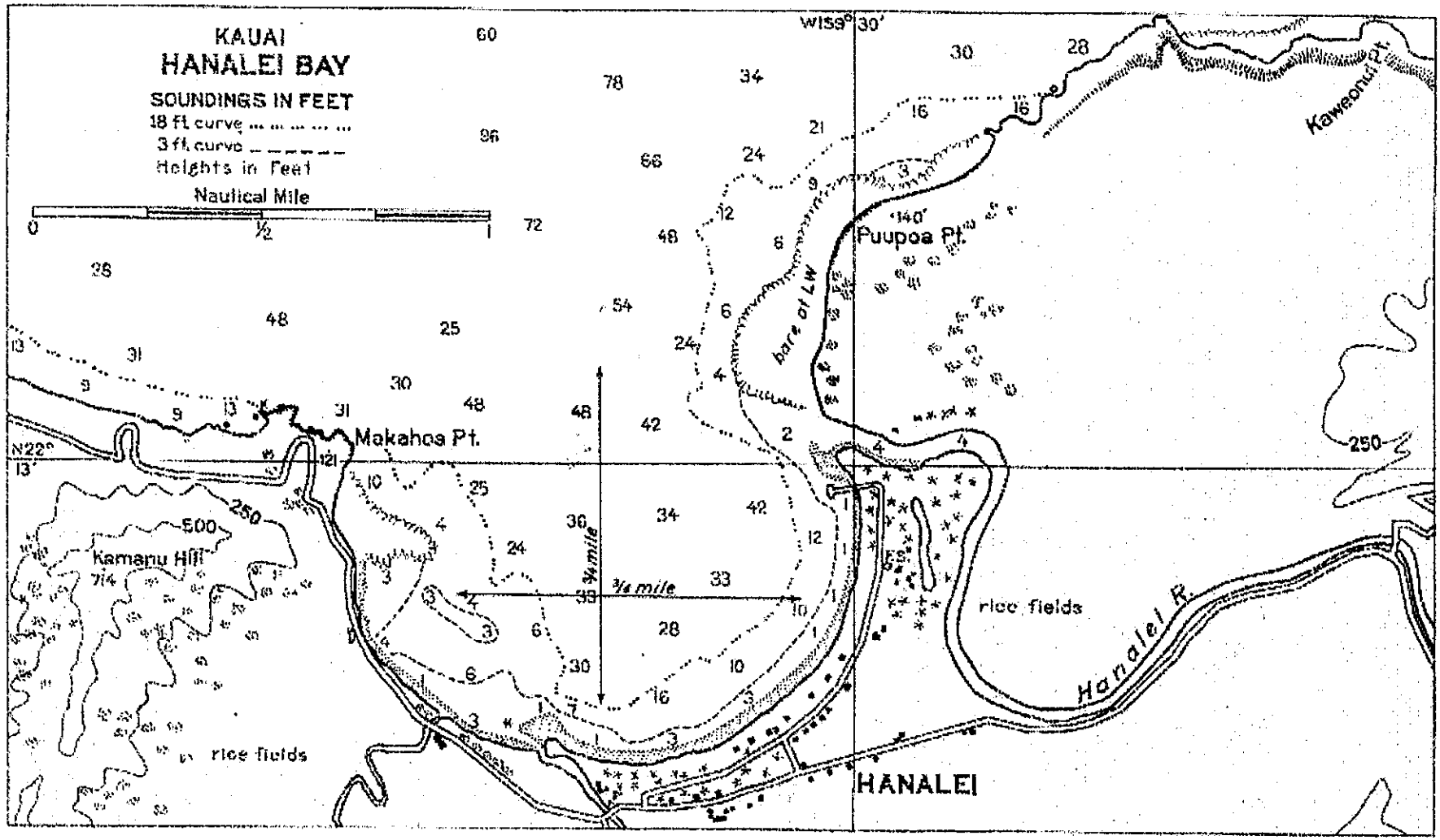
None. Telephone at Mana, 2 miles south of field.

GENERAL INFORMATION

Landmarks: Nohili Dune, 100 feet high, the highest and most southerly of a chain of sand dunes extending along the coast for 2½ miles northeastward from Nohili Point.

Remarks: Field could be made suitable as an intermediate field.


KAUAI
HANALEI BAY
SOUNDINGS IN FEET
18 ft. curve
3 ft. curve
Heights in Feet
Nautical Mile
0
½
1
W159° 30′
N22° 13′
Makahoa Pt.
Puupoa Pt.
Kaweonui Pt.
bare at LW
Kamanu Hill
714
500
250
rice fields
rice fields
Hanalei R.
HANALEI
FS
¾ mile
¾ mile


KAUAI
HANALEI BAY
SOUNDINGS IN FEET
18 ft. curve
3 ft. curve
Heights in Feet
Nautical Mile
0
½
1
159°30'
N22°13'
Makahoa Pt.
Puupoa Pt.
"140"
bare at LW
Kaweonui R.
Kamanu Hill
714
500
250
¾ mile
¾ mile
rice fields
rice fields
Hanalei R.
HANALEI

HANALEI BAY

KAUAI—HAWAIIAN ISLANDS

EMERGENCY SEAPLANE ANCHORAGE

(Lat. 22°13′ N., long. 159°31′ W.)

DESCRIPTION

Location: Anchorage in Hanalei Bay is impracticable except when unusually calm conditions prevail. **Depths:** 3 to 30 feet. **Tidal range:** 1.3 feet. **Character of bottom:** Sand and coral. **Shelter:** Offers no protection from north and northwest winds and sea. Swells run unbroken into the bay and form a heavy surf on the sand beach at the inner end.

LANDING AND TAKE-OFF AREA

Location: Hanalei Bay or open sea. **Area:** Hanalei Bay. N./S. ¾ mile; E./W., ¾ mile. Long take-offs would have to be made in the open sea. **Shelter:** None. **Obstructions:** Coral reef 300 to 700 yards wide, fringes the shore on both sides. During northerly or southwesterly gales the sea breaks across the entrance to the bay.

FACILITIES

Provisions and water can be obtained in limited quantities. **Communications:** Telephone. No vessels call here regularly.

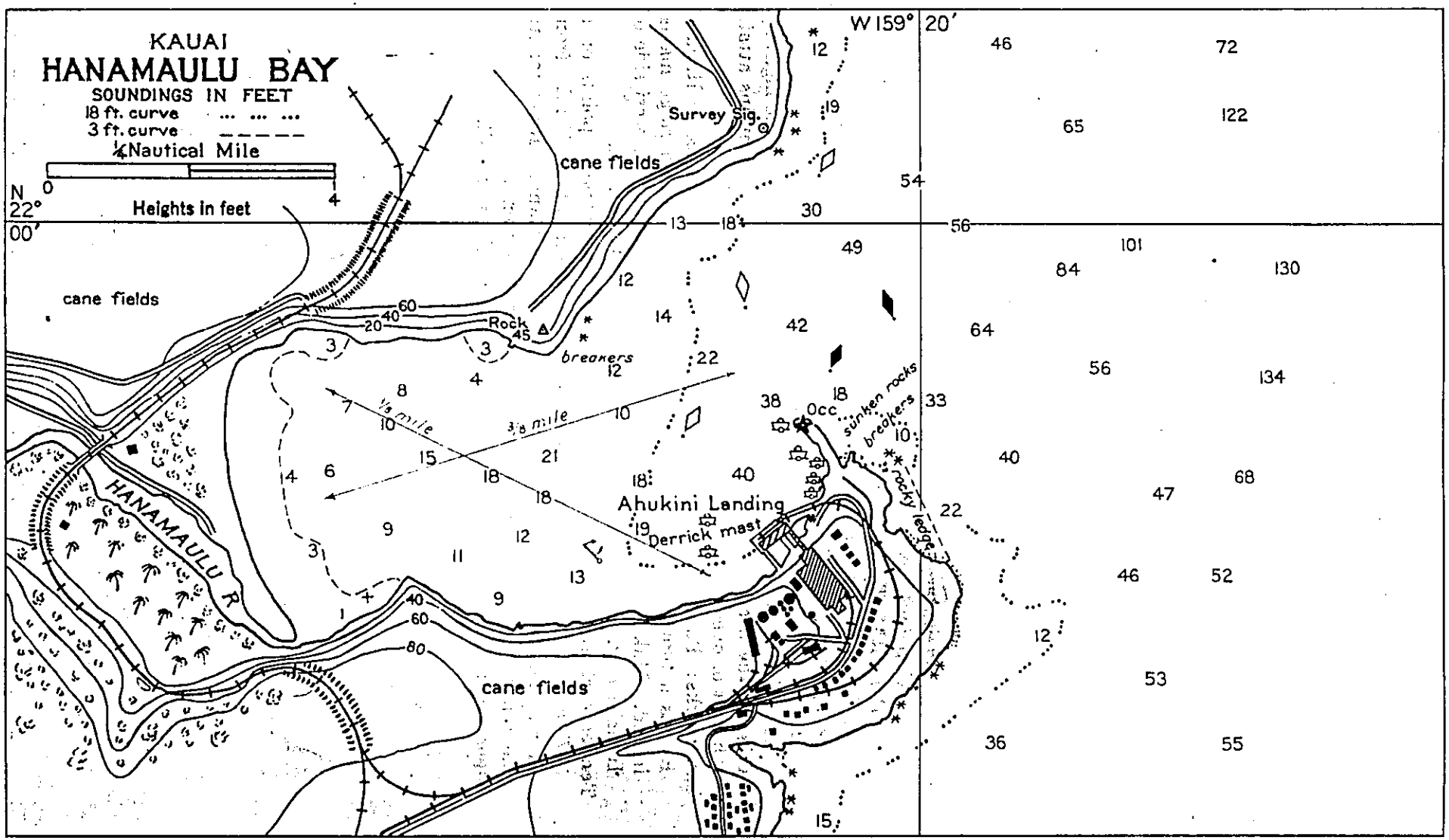
GENERAL INFORMATION

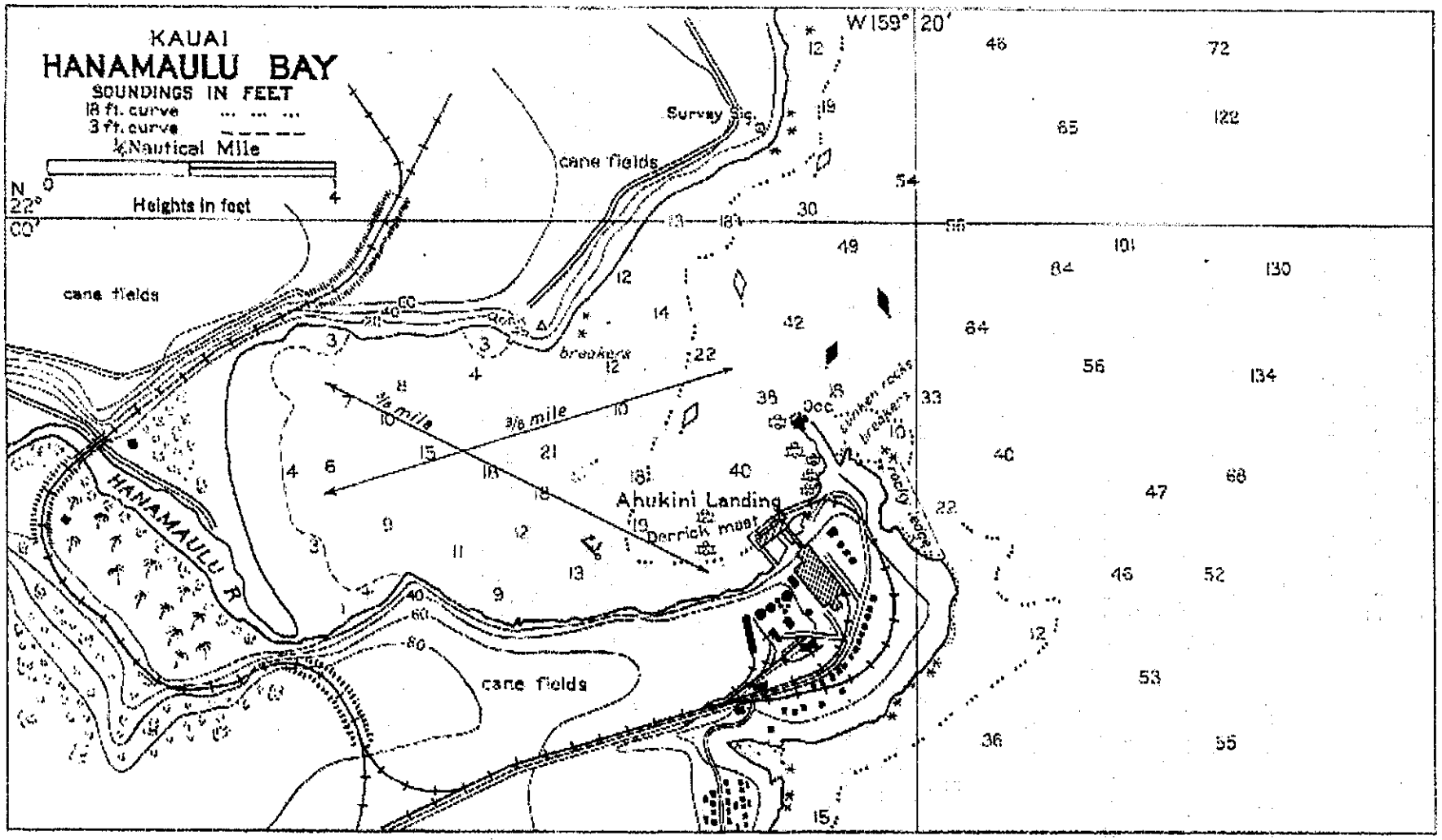
Aspect: Hanalei Bay is about 1 mile wide and indents the coast about the same distance. Along the sandy beach at the head of the bay are clumps of ironwood and coconut trees and a few houses. The village consists of a scattering of houses around the shores of the bay and along the highway close to the head of the bay. Three miles inland the mountains attain a height of over 4,000 feet.

Landmarks: Puupoa Point, on the eastern side of the entrance to Hanalei Bay is a bluff about 50 feet high, back of which a green ridge makes inland. Makahoa Point is a black, rocky point forming the west side of Hanalei Bay. Back of the point is a green hill 714 feet high.

Tender anchorage: Enter midway between the two entrance points on a 157° course and anchor in 6 fathoms, sandy bottom about ½ mile from shore. The wharf situated 200 yards south of the Hanalei River mouth has 6 feet of water on the southerly side of its outer end.

Importance: Emergency anchorage when calm conditions prevail.


KAUAI
HANAMAULU BAY
SOUNDINGS IN FEET
18 ft. curve
3 ft. curve
¼ Nautical Mile
0
4
Heights in feet
N 22° 00'
W 159° 20'
Survey Sig.
cane fields
cane fields
cane fields
Rock
breakers
sunken rocks
breakers
rocky ledge
Occ
Ahukini Landing
Derrick mast
HANAMAULU R
⅛ mile
⅜ mile


KAUAI
HANAMAULU BAY
SOUNDINGS IN FEET
18 ft. curve
3 ft. curve
½ Nautical Mile
0
1
Heights in feet
N 22° 00'
W159° 20'
cane fields
Survey Sig.
breakers
3/8 mile
3/8 mile
Ahukini Landing
Derrick mast
Dec.
sunken rocks
breakers
HANAMAULU R.
cane fields
cane fields

PORT ALLEN

KAUAI—HAWAIIAN ISLANDS

BURNS FIELD

(Lat. 21°54′ N., long. 159°36′ W.)

DESCRIPTION

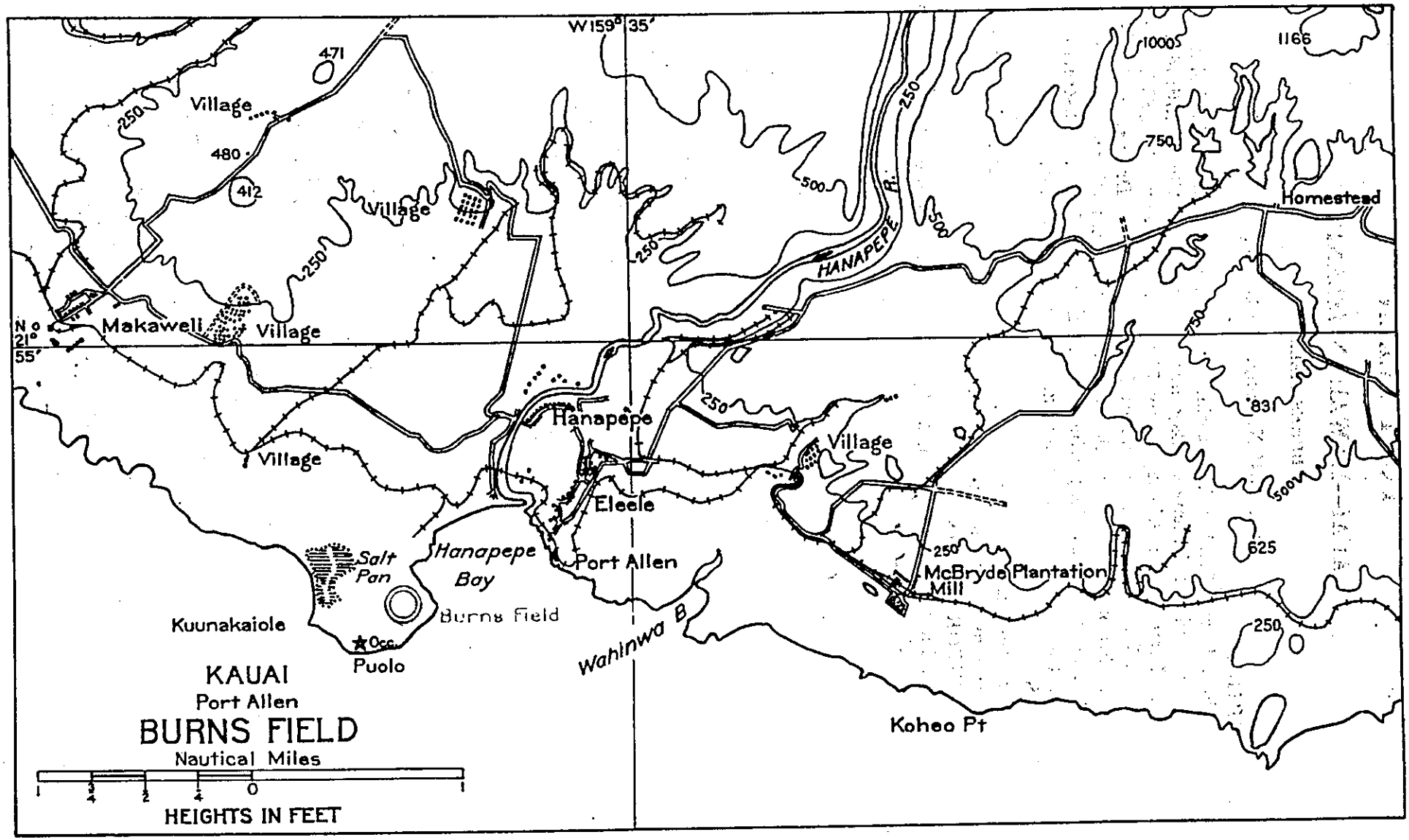
Location: Burns Field a Territorial airport located on Puolo Point the westerly side of Hanapepe Bay across from Port Allen. **Altitude:** 15 feet. **Dimensions:** Size, 2,100 by 750 feet. Runways, NE./SW., 2,000 feet; E./W., 1,800 feet. **Surface:** Level hard dirt. **Drainage:** Natural, good. **Marking:** White circle; name "PORT ALLEN" on building in Port Allen; landing tee; wind cone. **Lighting:** None. **Obstructions:** Radio tower on northeast side; light tower to southwest.

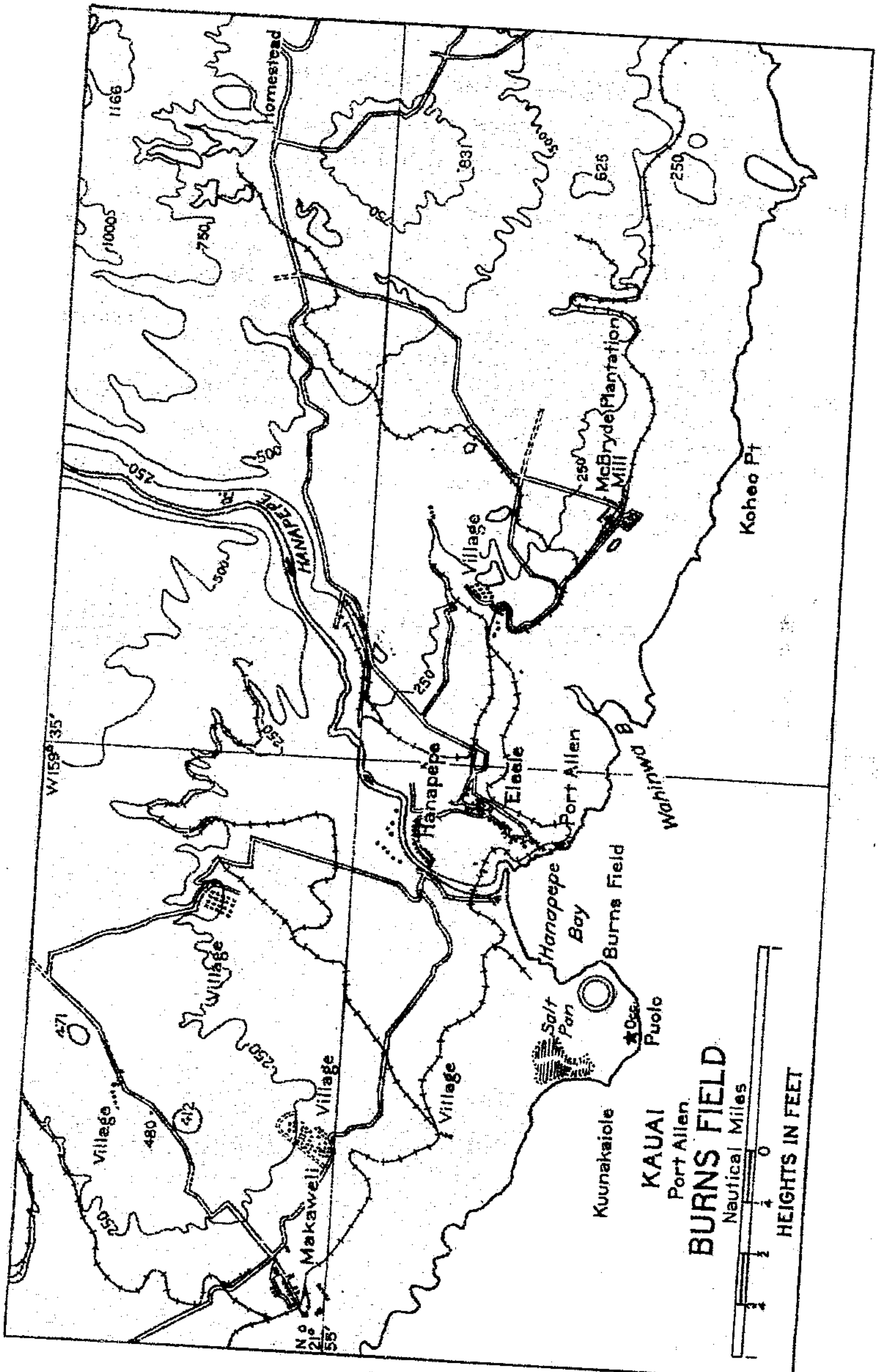
FACILITIES

United States Army specification fuel, oil, and mechanics available. **Communications:** Radio and telephone.

GENERAL INFORMATION

Remarks: Field is extensively used by United States Army Air Corps and the Inter-Island Airways.


W159° 35'
N 21° 55'
471
Village
480
412
Village
250
Makaweli
Village
Village
Hanapepe
Village
Eleele
Salt Pan
Hanapepe Bay
Port Allen
Burns Field
Kuunakaiole
Puolo
Wahinwa B
HANAPEPE R.
500
750
1000
1166
Homestead
831
625
McBryde Plantation Mill
Koheo Pt
KAUAI
Port Allen
BURNS FIELD
Nautical Miles
HEIGHTS IN FEET


KAUAI
Port Allen
BURNS FIELD
Nautical Miles
HEIGHTS IN FEET
Homestead
McBryde Plantation
Mill
Koheo Pt
HANAPEPE R.
Village
Eleele
Port Allen
Wahiawa B
Hanapepe
Hanapepe Bay
Burns Field
Salt Pan
Puolo
Kuunakaiole
Makaweli
W159° 35'
N 21° 55'

PORT ALLEN

KAUAI—HAWAIIAN ISLANDS

EMERGENCY SEAPLANE ANCHORAGE

(Lat. 21°54′ N., long. 159°36′ W.)

DESCRIPTION

Location: Hanapepe Bay, adjacent to Port Allen. **Depths:** 6 to 18 feet. **Tidal range:** 1.1 feet. **Character of bottom:** Sand and rocks. **Currents:** Weak, westerly. **Shelter:** Affords shelter during the trades with fair holding ground under normal conditions.

LANDING AND TAKE-OFF AREA

Location: Hanapepe Bay or open sea. **Area:** Hanapepe Bay, N./S., ½ mile; E./W., ⅜ mile. **Shelter:** Practically an open roadstead. **Obstructions:** Breakwater under construction. Buoys. Swells usually off entrance. Breakers on west side of bay.

FACILITIES

Provisions can be obtained on several days' notice. No repair facilities. Numerous lighters and towing launches. **Beach:** Sandy beach at head of bay, continuous surf. **Communications:** Telephone. Steamers make regular calls.

GENERAL INFORMATION

Aspect: The shores of Hanapepe Bay are low rocky bluffs except at its head.

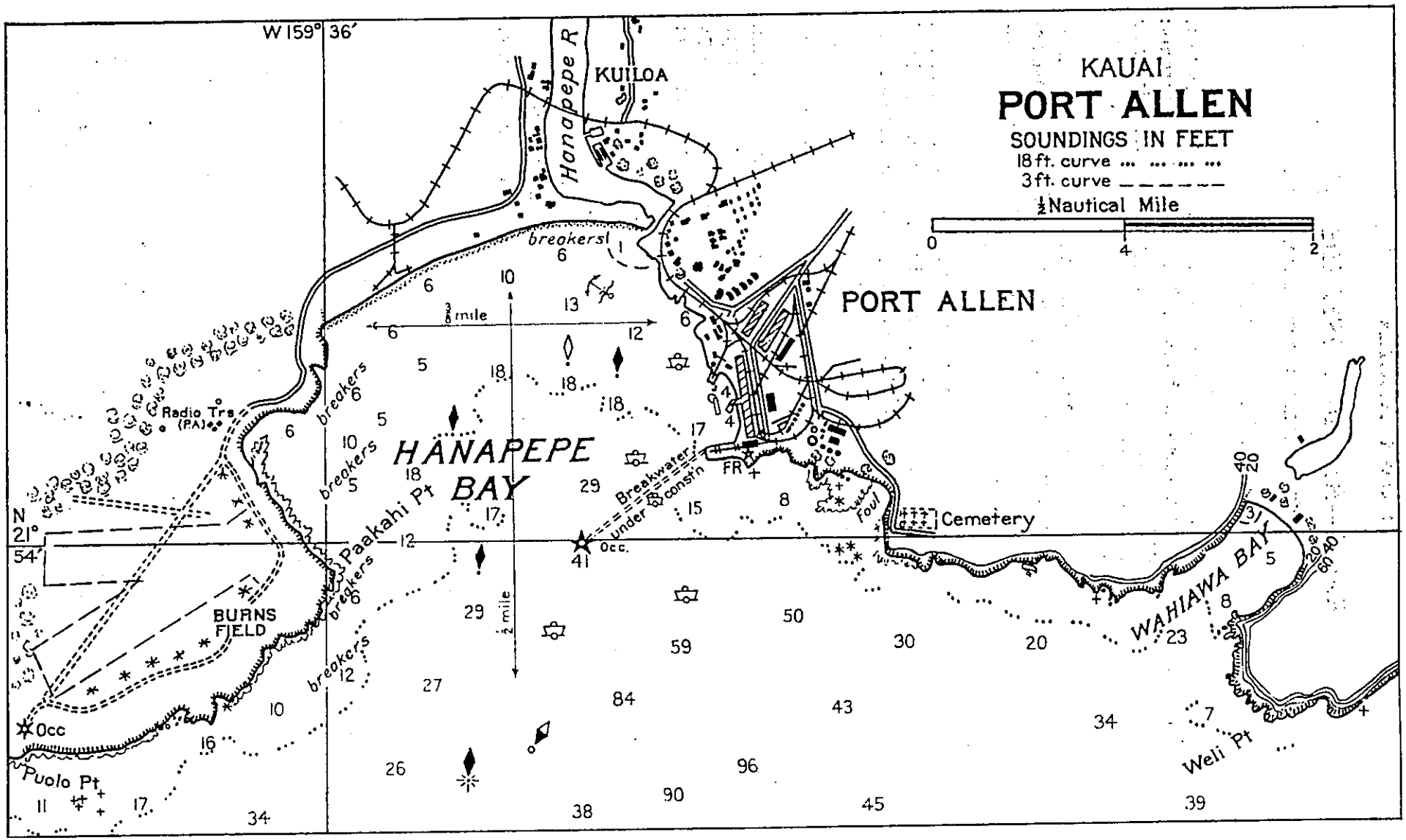
Landmarks: Eastern side of bay is marked by three large and three small white oil tanks, several large warehouses, and a flagpole near the inshore end of the breakwater. Radio towers ½ mile northeast of Hanapepe Light. Conspicuous gray stack and buildings of mill 1¾ miles east of Hanapepe Bay, the lights of which are a good nightmark.

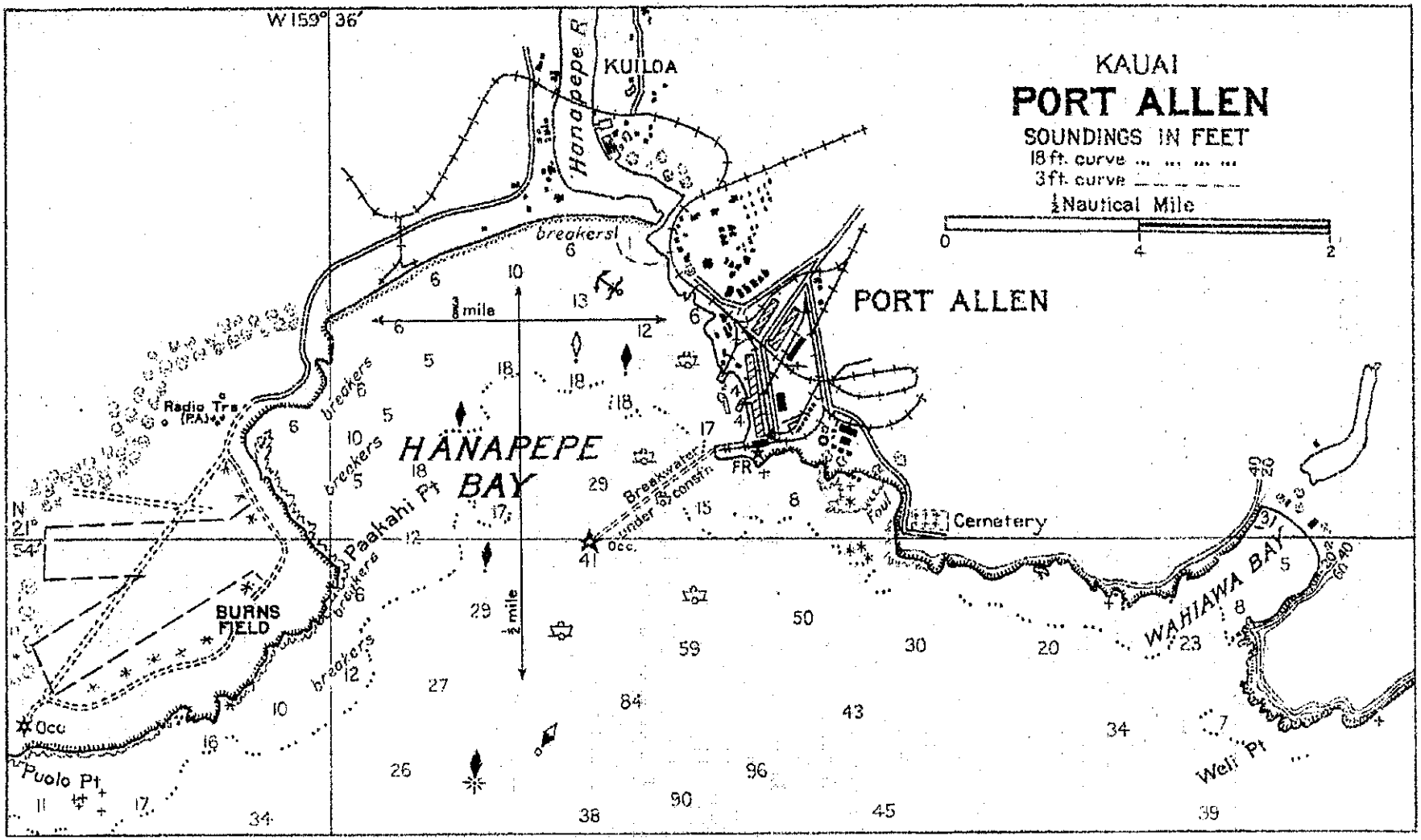
Tender anchorages: Vessels usually make fast to mooring buoys. There are no wharves for large vessels.

Boat landing: The landing is on the easterly side of the bay just inside the breakwater.

Health: There is a quarantine officer and a privately owned hospital.

Importance: Best point on the south coast of Kauai for emergency use. Port Allen is the shipping center of the south coast.


KAUAI
PORT ALLEN
SOUNDINGS IN FEET
18 ft. curve
3 ft. curve
½ Nautical Mile
0
4
2
W 159° 36'
N 21° 54'
Hanapepe R
KUILOA
PORT ALLEN
HANAPEPE BAY
Paakahi Pt
Radio Tr
(PA)
BURNS FIELD
Occ
Puolo Pt
Breakwater
under constn
Occ.
FR
Cemetery
foul
WAHIAWA BAY
Weli Pt
breakers
breakers!
⅜ mile
½ mile


KAUAI
PORT ALLEN
SOUNDINGS IN FEET
18 ft. curve
3 ft. curve
½ Nautical Mile
0
4
2
W 159° 36'
N 21° 54'
KUILOA
Hanapepe R.
breakers!
PORT ALLEN
HANAPEPE BAY
Radio Trs (PA)
breakers
Paakahi Pt
Breakwater under construction
FR
Cemetery
Foul
WAHIAWA BAY
BURNS FIELD
Occ
Puolo Pt
Weli Pt
½ mile
⅜ mile

Recommendations: Commander aircraft base force in February 1934 reports that this base is not considered to be a desirable one from which to operate patrol planes in war. Fully loaded planes can take-off under favorable conditions. However, the wind tends to be light and variable in the early morning and occasionally is adverse later in the day. Under these conditions it is very likely that planes based here would be unable to carry out their missions through inability to get off.

Meteorological conditions: Local condition, due to the influence of the surrounding mountains, wind conditions within the bay are not always indicative of conditions outside. Flying conditions outside may be excellent while conditions for landing and take-off are unfavorable because of wind direction.

METEOROLOGICAL TABLE

[Lihue, elevation 200 feet]

Weather element	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Temperature (° F.)													
Mean monthly	68.2	68	69	70.7	72.7	74.9	76	76.5	76.3	74.6	72.3	70.3	72.5
Mean maximum	76.5	76.7	76.8	77.9	79.9	81.7	83	83.3	83.5	82.1	79.8	77.7	79.9
Highest recorded	59.9	59.3	61.3	63.5	65.6	68.1	68.9	69.6	69.2	67.2	64.8	62.8	65
Lowest recorded	84	84	84	84	87	88	91	88	88	89	86	84	91
	47	47	48	51	54	62	59	58	62	57	51	50	47
Precipitation													
Monthly amount, inches	6.72	3.77	7.66	3.85	3.70	2.80	2.73	3.41	5.17	3.64	5.28	6.38	55.11
Number of days with 0.01 inch or more	19	16	18	18	19	21	22	22	22	22	21	22	242
Winds													
Prevailing direction	NE.	NE.	NE.	NE.	NE.	NE.	NE.	E.	NE.	NE.	NE.	NE.	NE.

NAWILIWILI BAY

KAUAI—HAWAIIAN ISLANDS

SEAPLANE ANCHORAGE

(Lat. 21°57′ N., long. 159°21′ W.)

DESCRIPTION

Location: Nawiliwili Harbor, adjacent to the north shore. **Depth:** 6 to 37 feet. **Tidal range:** 1.2 feet. **Character of bottom:** Sand and coral. **Currents:** Weak. **Shelter:** Good under any wind conditions for about 9 VP-type seaplanes.

LANDING AND TAKE-OFF AREA

Location: Nawiliwili Harbor. **Area:** Less than a mile in any direction. **Shelter:** Landing conditions for patrol planes, inside breakwater, are satisfactory and it is believed a safe landing can be made with wind from any direction. Take-off conditions are generally unsatisfactory due to the short run available and the limited arc through which a plane can be headed for a take-off.

With a strong trade wind from any direction between 0° and 90°, and a velocity of 20 knots or above, a fully loaded patrol plane can make a satisfactory take-off. With light winds, and blowing from directions other than those mentioned above, take-off conditions become comparatively unsatisfactory to a point where it becomes dangerous to attempt a take-off. It has been reported that during January and February with a trade wind blowing, the wind in the harbor was generally in a reverse direction until about 1000 each day unless the trade wind was exceptionally strong. This condition would prohibit operation of planes early in the day with heavy loads.

Light winds from southwest to west require down wind take-off; fully loaded planes would probably be unable to get off. With a strong wind from this direction, the take-off is hazardous on account of hills. **Obstructions:** Rocky bluff along shore. Harbor buoys.

FACILITIES

Aviation gasoline and oil are not commercially available. Provisions are available to the extent required by any patrol plane detachment that could be accommodated in this harbor. No repair facilities available locally. Beach suitable for hauling out seaplanes. **Communications:** Telephone. Local steamers.

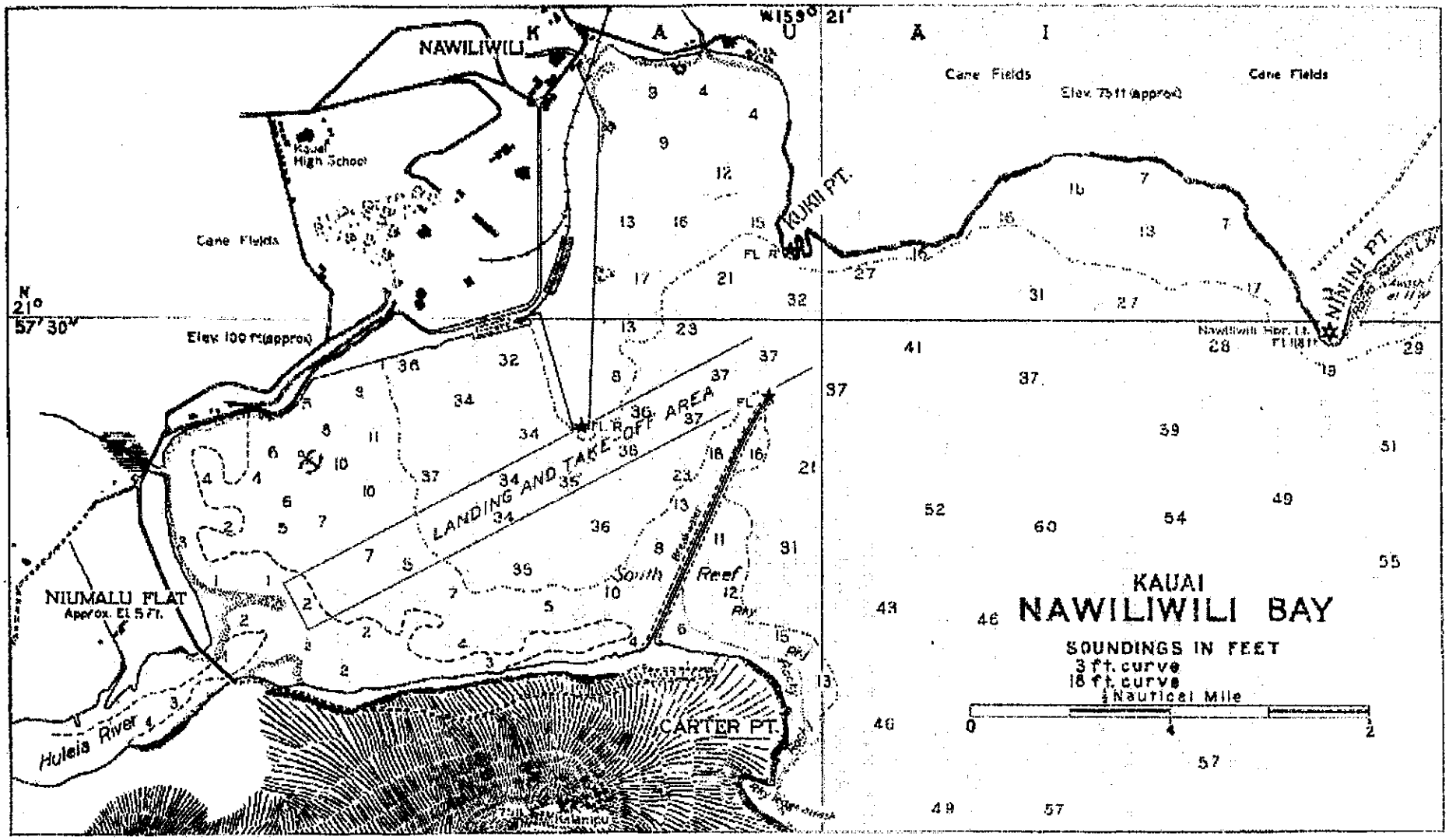
GENERAL INFORMATION

Aspect: The shore of the bay consists of rocky bluffs except at the mouth of the Huleia River and in the northerly part near Nawiliwili village.

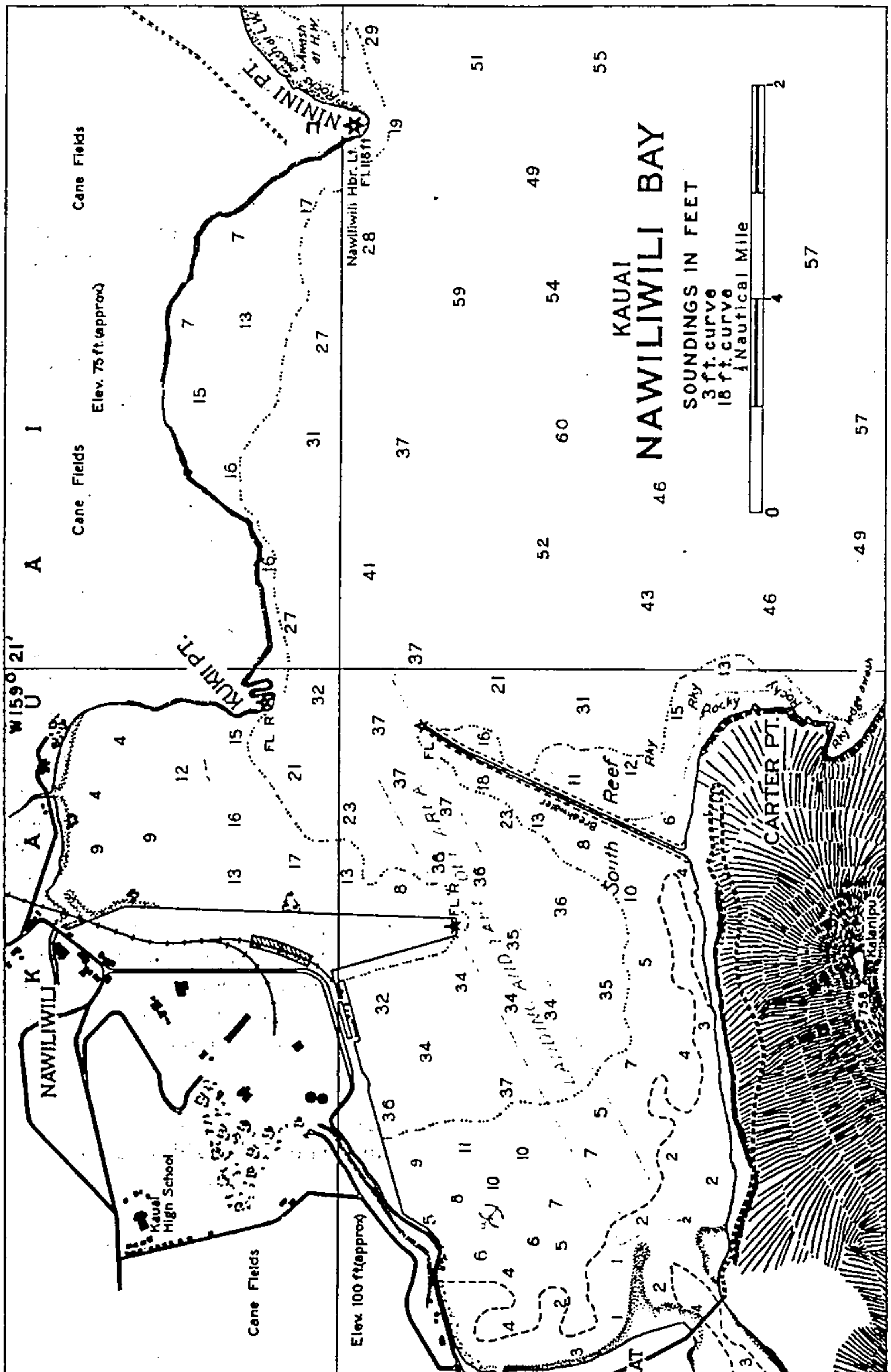
Landmarks: The bay may be easily recognized by the marked contrast between the prominent high jagged mountainous coast south of the entrance to the harbor and the low land in the vicinity of the Huleia River. Haupu Peak, 2,280 feet high.

Tender anchorage: Ships drawing 28 feet of water can moor alongside the 900-foot wharf. Vessels in the lee of the breakwater may have to leave the inside anchorage on steamer days to clear the channel to the wharf and go outside, where there is a partially sheltered anchorage between Ninini and Kukii Points.

Importance: Nawiliwili Bay affords the only sheltered harbor on Kauai Island.


NAWILIWILI
Kauai High School
Cane Fields
Elev 100 ft (approx)
Cane Fields
Elev 751 ft (approx)
Cane Fields
KUKII PT.
NIIHINI PT.
N 21° 57' 30"
W159° 21'
K A U A I
LANDING AND TAKE-OFF AREA
FL R
South Reef
Rky
NIUMALU FLAT
Approx. El 5 Ft.
Huleia River
CARTER PT.
KAUAI
NAWILIWILI BAY
SOUNDINGS IN FEET
3 ft. curve
18 ft. curve
½ Nautical Mile
0
4
2

[224]


KAUAI
NAWILIWILI BAY
SOUNDINGS IN FEET
3 ft. curve
18 ft. curve
1 Nautical Mile
Cane Fields
Cane Fields
Cane Fields
Elev. 75 ft. (approx)
Elev. 100 ft. (approx)
NAWILIWILI
Kauai High School
NININI PT.
Nawiliwili Hbr. Lt.
KUKII PT.
CARTER PT.
South Reef
NIUMALU FLAT
Approx. El. 5 Ft.
Huleia River
K A U A I
W 159° 21'
N 21° 57' 30"

HANAMAULU BAY

KAUAI—HAWAIIAN ISLANDS

EMERGENCY SEAPLANE ANCHORAGE

(Lat. 22°00′ N., long. 159°20′ W.)

DESCRIPTION

Location: Anchor at least 100 yards off the beach. **Depths:** 3 to 20 feet. **Tidal range:** 1.2 feet. **Character of bottom:** Sand and coral. **Currents:** Weak. **Shelter:** Small open harbor, unprotected except for short breakwater. Harbor is untenable during stormy weather.

LANDING AND TAKE-OFF AREA

Location: Hanamaulu Bay or open sea. **Area:** Hanamaulu ENE./WSW., ⅜ mile; NW./SE., ⅜ mile. Long take-offs must be made in open sea. **Shelter:** Open harbor; hazardous to land large seaplanes inside. Moderate swell is prevailing at all times. **Obstructions:** Buoys. Breakers off north point.

FACILITIES

General stores at Lihue 2 miles inland. Water, ordinary gasoline fuel oil is available at the dock. **Beach:** Beaching is practicable except during stormy weather.

GENERAL INFORMATION

Aspect: Hanamaulu Bay is ¼ mile wide and indents the coast ½ mile. The shores are low rocky bluffs about 40 feet high except for the white sand beach at the head of the bay.

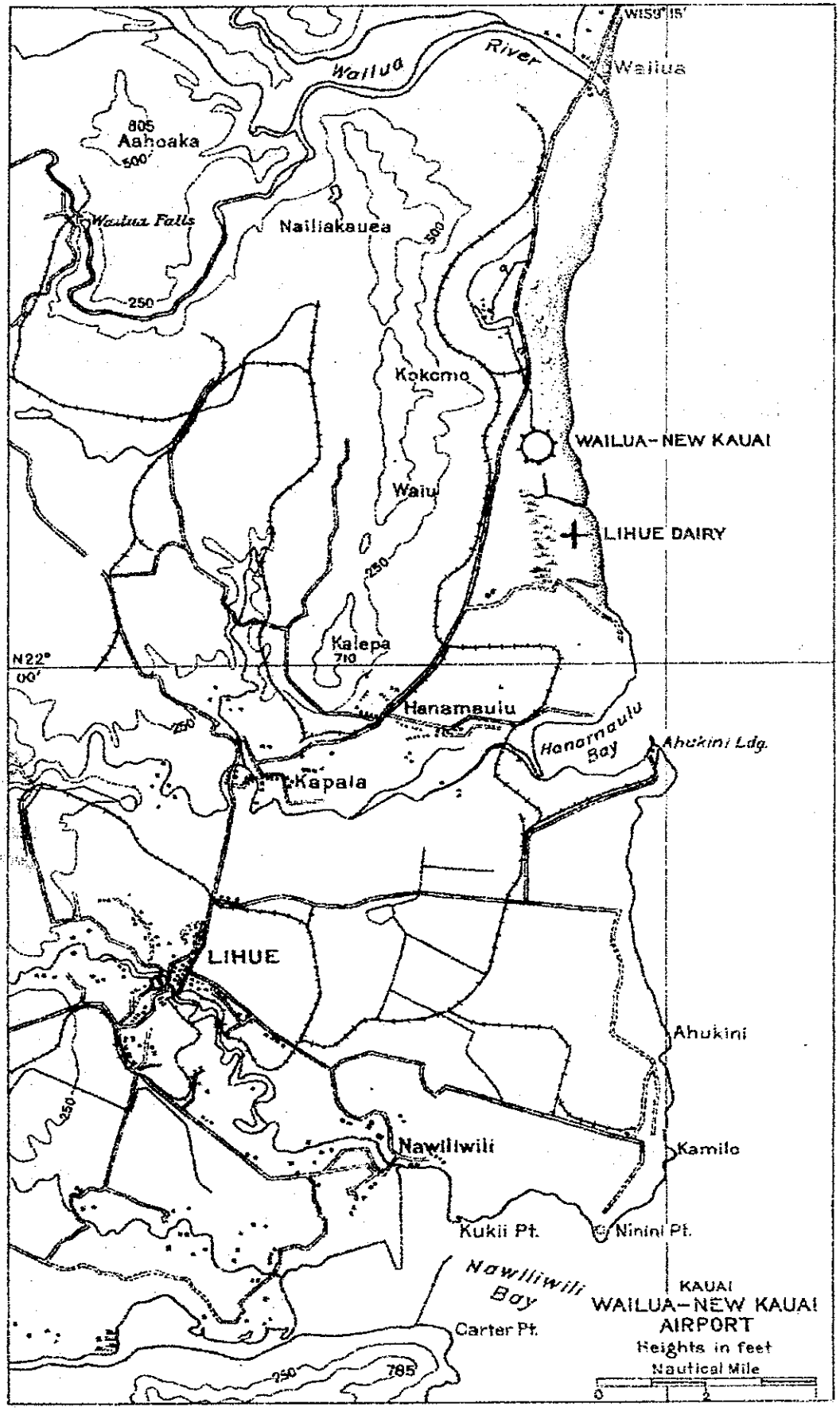
Landmarks: Kalepa Ridge is 1 mile inland and parallels the coast from Wailua to Hanamaulu. The southern end, which is 710 feet high, is marked by white radiotelephone buildings high up on the seaward face of the ridge, 1½ miles west-northwestward of the bay. Just southward of Kalepa Ridge and 1 mile inland is a mill settlement, the lights of which are prominent at night. Several oil tanks, a large warehouse, and a wharf at Ahukini Landing.

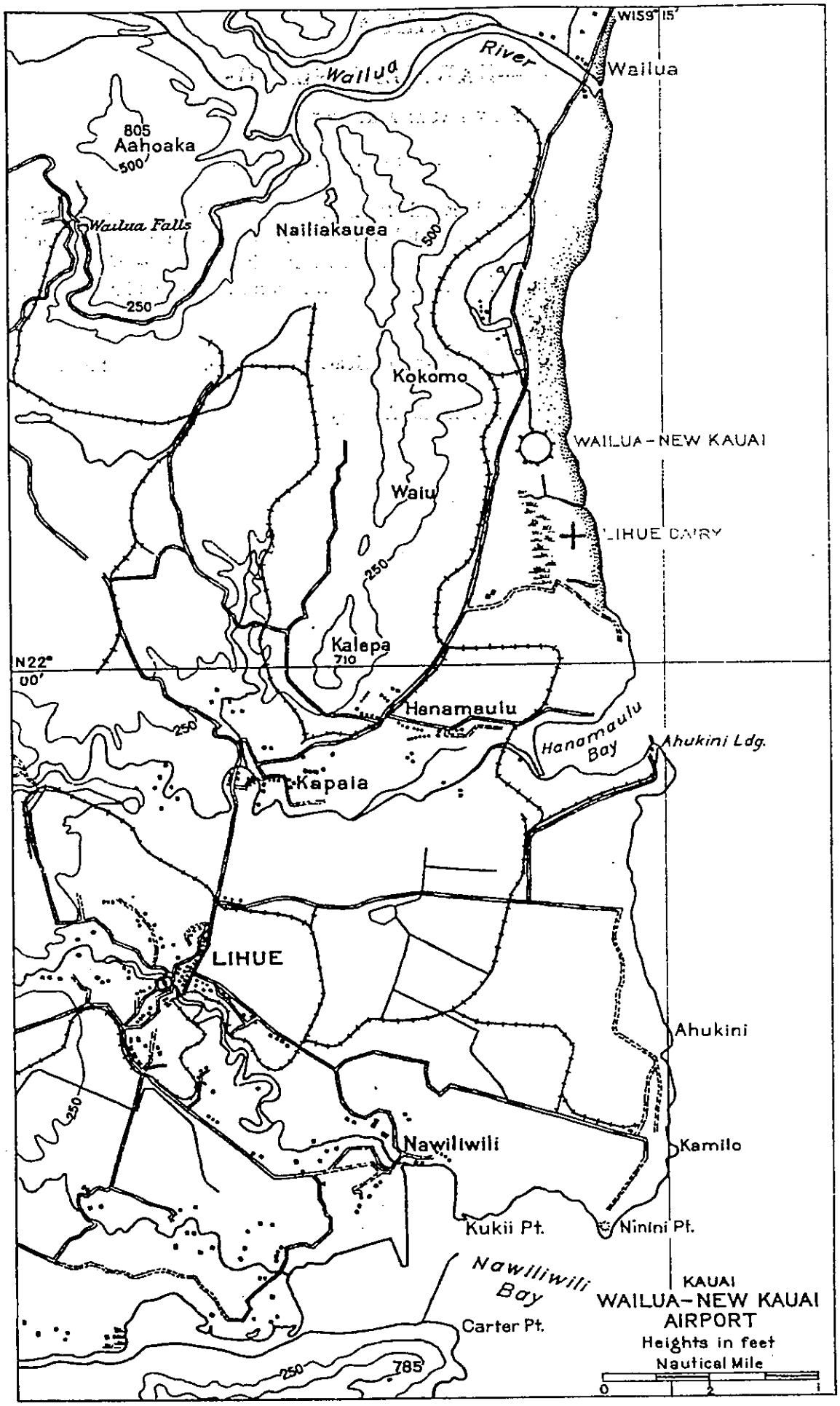
Tender anchorage: Only the outer third of the bay has deep water. The wharf is 210 feet long and has depths from 38 feet at its southwesterly to 25 feet at the northeasterly end. Vessels coming alongside drop their port anchor after rounding the breakwater, run out lines to bow and stern mooring buoys, and make fast to the wharf starboard side to. There is a heavy surge at the wharf during rough weather.

Health: Hospital located at Lihue.

Importance: Emergency seaplane anchorage.

Remarks: Planes could be hoisted out from a tender alongside of dock. Not practicable to use Hanamaulu River.


W159°15'
Wailua River
Wailua
805
Aahoaka
500'
Wailua Falls
Nailiakauea
500
250
Kokomo
WAILUA-NEW KAUAI
Waiu
LIHUE DAIRY
250
Kalepa
710
N22°
00'
Hanamaulu
250
Hanamaulu Bay
Ahukini Ldg.
Kapala
LIHUE
Ahukini
250
Nawiliwili
Kamilo
Kukii Pt.
Ninini Pt.
Nawiliwili Bay
Carter Pt.
250
785
KAUAI
WAILUA-NEW KAUAI AIRPORT
Heights in feet
Nautical Mile
0
2


W159° 15'
Wailua River
Wailua
805
Aahoaka
500
Wailua Falls
Nailiakauea
500
250
Kokomo
WAILUA - NEW KAUAI
Waiu
LIHUE DAIRY
250
Kalepa
710
N22°
00'
Hanamaulu
Hanamaulu Bay
Ahukini Ldg.
250
Kapaia
LIHUE
Ahukini
250
Nawiliwili
Kamilo
Kukii Pt.
Ninini Pt.
Nawiliwili Bay
Carter Pt.
250
785
KAUAI
WAILUA-NEW KAUAI AIRPORT
Heights in feet
Nautical Mile
0
2
1

WAILUA

KAUAI—HAWAIIAN ISLANDS

NEW KAUAI AIRPORT

(Lat. 22°01′ N., long. 159°20′ W.)

DESCRIPTION

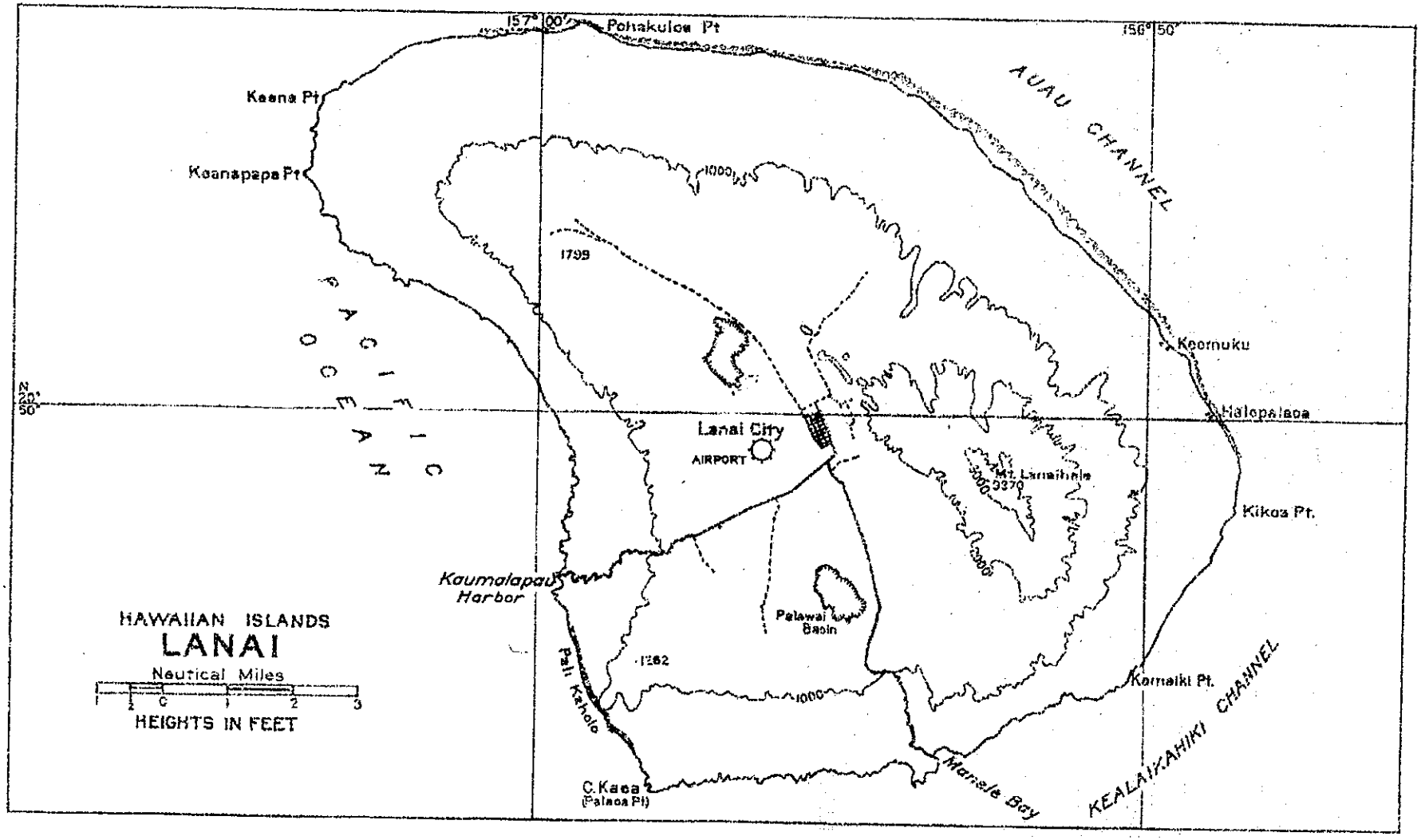
Location: Territorial airport located 2¼ miles south of Wailua and 1 mile north of Hanamaulu Bay. **Altitude:** 10 feet. **Dimensions:** Size, 2,400 by 2,000 feet. Landing may be made in any direction. **Surface:** Sod. **Drainage:** Natural, good. **Marking:** Wind cones. **Lighting:** None. **Obstructions:** None.

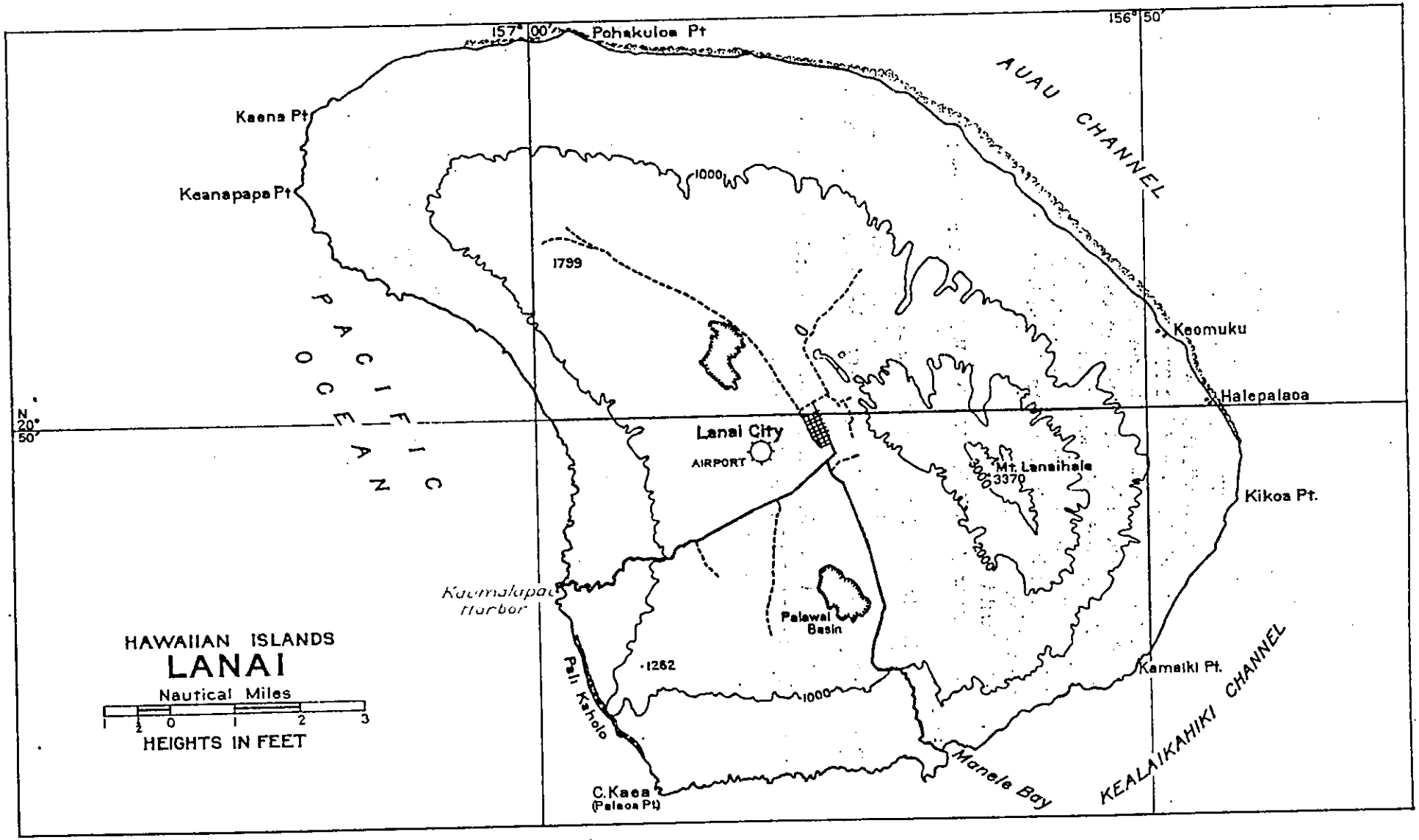
FACILITIES

None. Rest house on field. **Communications:** Telephone on field.

GENERAL INFORMATION

Remarks: Used by the Inter-Islands Airways.


157° 00'
Pohakuloa Pt
156° 50'
Keena Pt
Keanapapa Pt
AUAU CHANNEL
1000
1799
PACIFIC OCEAN
Keomuku
20° 50'
Halepalaoa
Lanai City
AIRPORT
Mt. Lanaihale
3370
3000
Kikoa Pt.
Kaumalapau Harbor
Palawai Basin
1262
1000
Pali Kahola
Kamaiki Pt.
KEALAIKAHIKI CHANNEL
C. Kaea
(Palaoa Pt)
Manele Bay
HAWAIIAN ISLANDS
LANAI
Nautical Miles
1 0 1 2 3
HEIGHTS IN FEET


157° 00'
Pohakuloa Pt
156° 50'
AUAU CHANNEL
Kaena Pt
Keanapapa Pt
1000
1799
PACIFIC OCEAN
Keomuku
Halepalaoa
N. 20° 50'
Lanai City
AIRPORT
Mt. Lanaihale
3000
3370
Kikoa Pt.
2000
Kaumalapau Harbor
Palawai Basin
1262
Kamaiki Pt.
1000
Pali Kaholo
Manele Bay
KEALAIKAHIKI CHANNEL
C. Kaea
(Palaoa Pt)
HAWAIIAN ISLANDS
LANAI
Nautical Miles
½ 0 1 2 3
HEIGHTS IN FEET

LANAI

Lanai, the sixth in size of the islands, lies about 8 miles westward of Maui and the same distance southward of the easterly end of Molokai. It is about 15 miles long in a northwesterly direction and about 10 miles wide near its southeasterly end, gradually narrowing toward its northwesterly end. The highest point is Mount Lanaihale, 3,370 feet high, located 3½ miles inland from the southeastern side of the island. The slopes on the easterly side of the mountain are steep and cut up by gulches,while those on the westerly side are more gradual, terminating in a rolling plain between the 1,000- and 2,000-foot levels. There is but little rainfall, and, in general, the island presents a barren appearance. The central portion of the island is covered with extensive pineapple fields which, being on a high plain, are not easily seen from the sea.

Pineapple cultivation is the principal occupation, although some livestock is raised. Lanai City, built in the center of the island by the pineapple company, is the only large village.

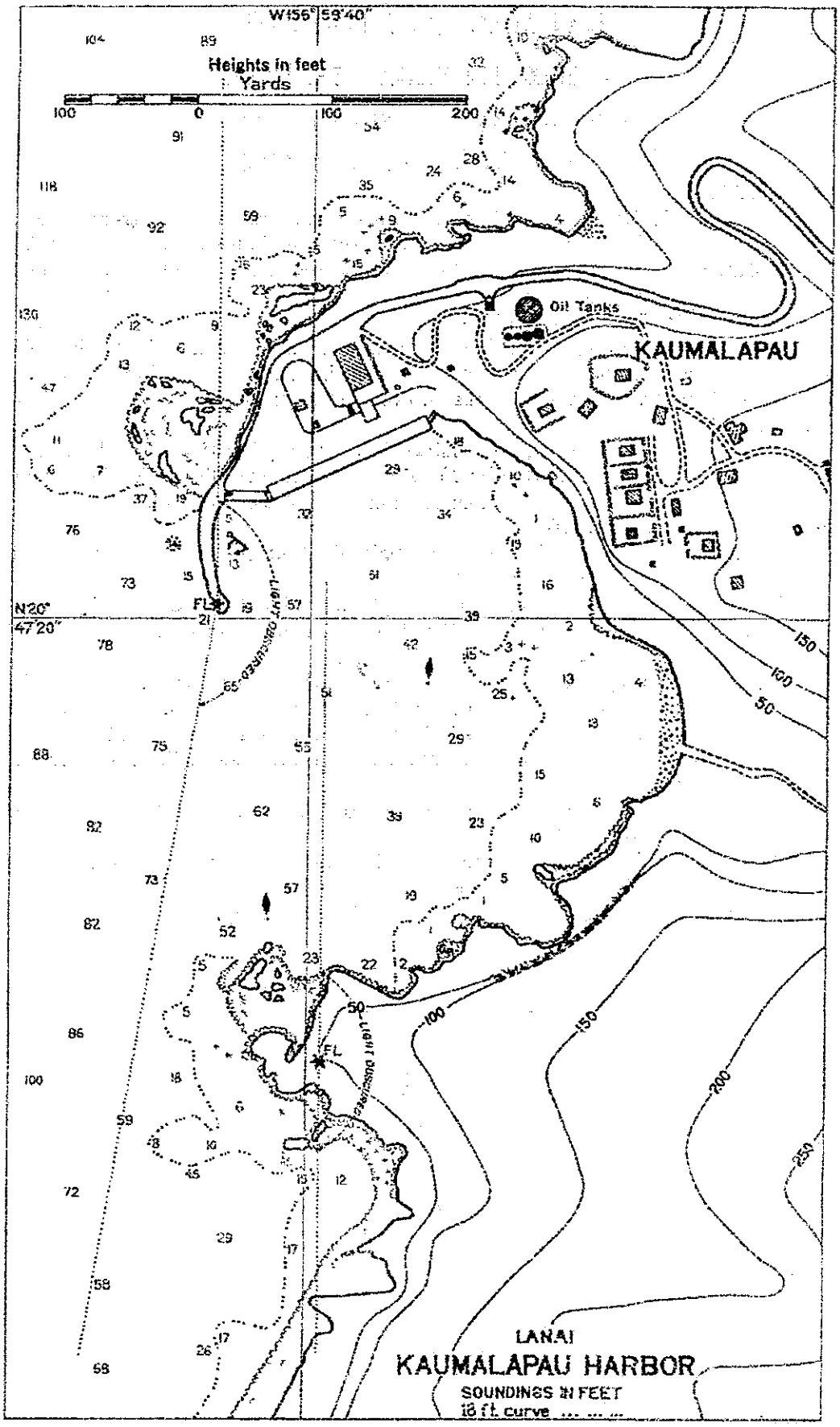
SEAPLANE ANCHORAGE

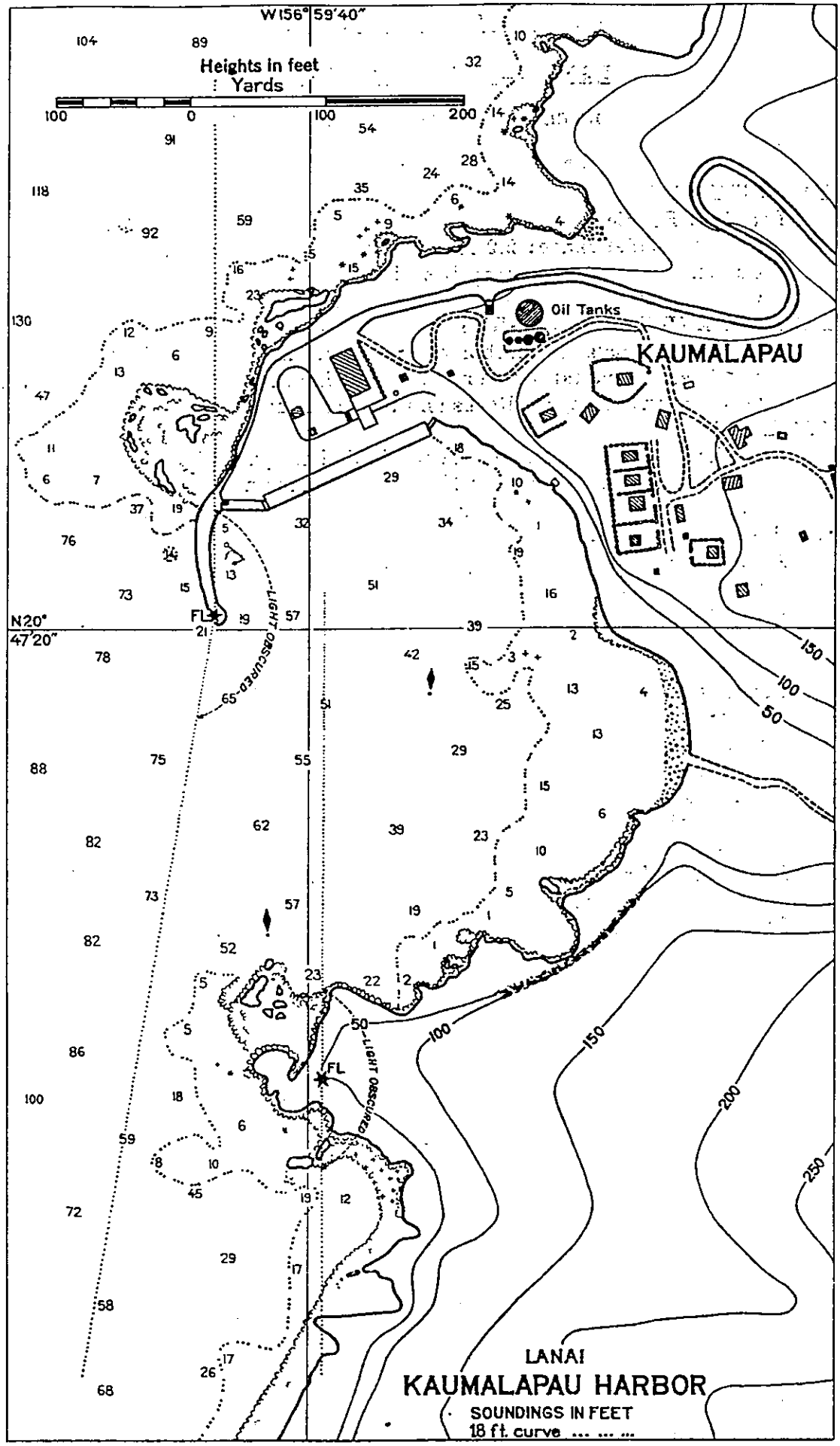
Kaumalapau Harbor (20°47′ N., 157°00′ W.) sketch and description page 235, 236.

Manele Bay (20°45′ N., 156°53′ W.) emergency anchorage, about ¼ mile wide and indents the coast about ¼ mile. **Facilities:** Boat landing. **Beach:** Good beach at head of bay. **Remarks:** Very heavy swells.

LANDING FIELD

Lanai City Airport (20°50′ N., 156°57′ W.) sketch and description on pages 237, 238; photograph on page 626.


W156°59'40"
Heights in feet
Yards
100
0
100
200
Oil Tanks
KAUMALAPAU
N20°
47'20"
FL
LIGHT OBSCURED
150
100
50
LANAI
KAUMALAPAU HARBOR
SOUNDINGS IN FEET
18 ft. curve


W156° 59'40"
Heights in feet
Yards
100
0
100
200
Oil Tanks
KAUMALAPAU
N20° 47'20"
FL
LIGHT OBSCURED
FL
LIGHT OBSCURED
LANAI
KAUMALAPAU HARBOR
SOUNDINGS IN FEET
18 ft. curve ... ...

KAUMALAPAU HARBOR

LANAI—HAWAIIAN ISLANDS

EMERGENCY SEAPLANE ANCHORAGE

(Lat. 20°47′ N., long. 157°00′ W.)

DESCRIPTION

Location: Restricted anchorage in the lee of the breakwater. **Depths:** 5 to 54 feet. **Tidal range:** 2.2 feet. **Character of bottom:** Mud and rocks. **Currents:** Weak. **Shelter:** Best harbor on Lanai in all but westerly weather; small lee.

LANDING AND TAKE-OFF AREA

Location: Kaumalapau Harbor or open sea. **Area:** Kaumalapau Harbor, restricted. Long take-offs must be made in open sea. **Shelter:** Small lee. **Obstructions:** Buoys. Rocks and reefs close ashore.

FACILITIES

Provisions and water can be obtained in limited quantities. Good machine shop at Lanai City. **Beach:** No beach. **Communications:** Radio station, call letters KHN. Good road to Lanai City 5 miles inland.

GENERAL INFORMATION

Aspect: Kaumalapau Harbor is a small bight at the mouth of the most prominent gulch in the vicinity.

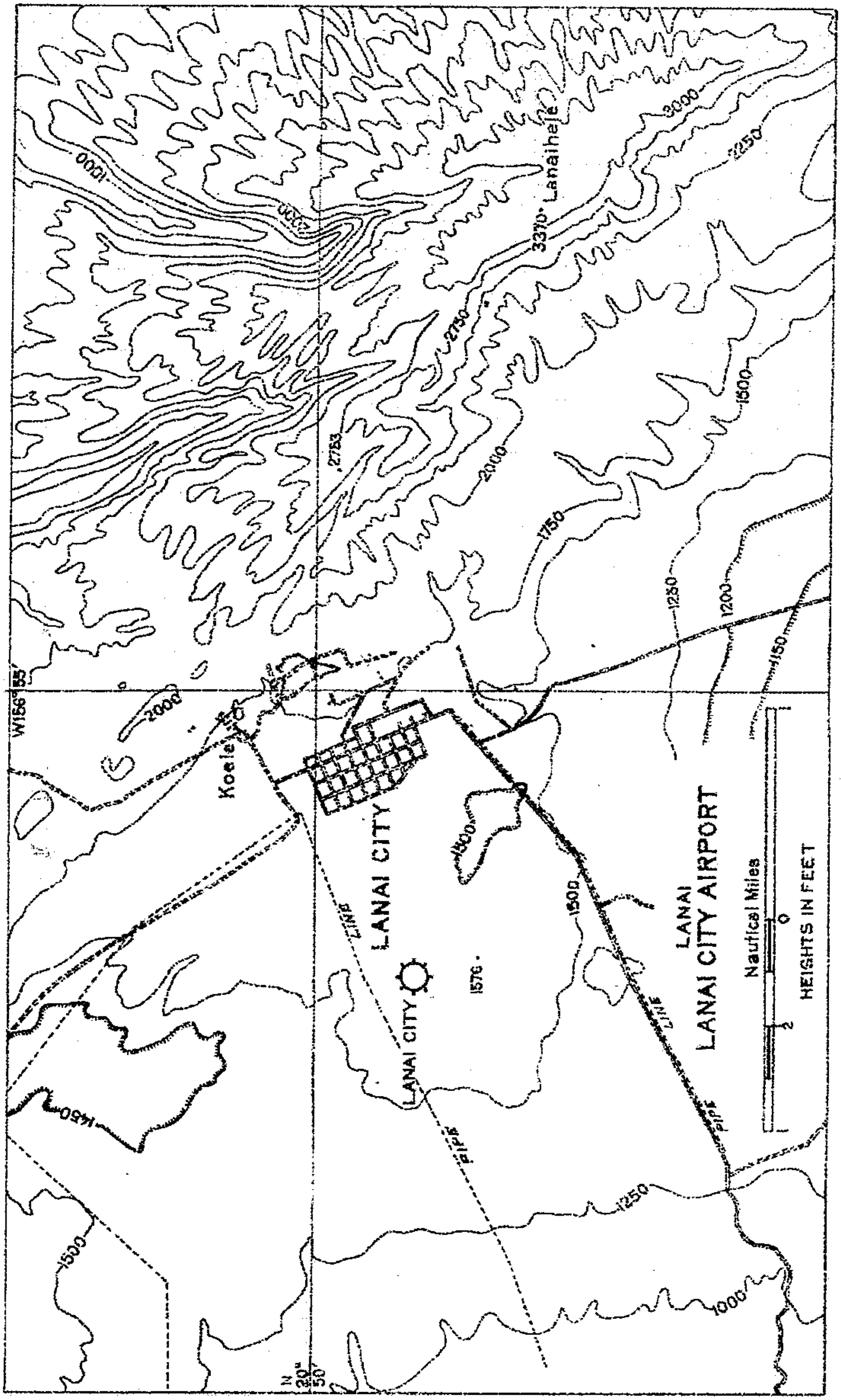
Landmarks: Groups of silvered-colored oil tanks, 100 yards in from the wharf and on high ground. Few houses among clumps of trees on bluff above the harbor.

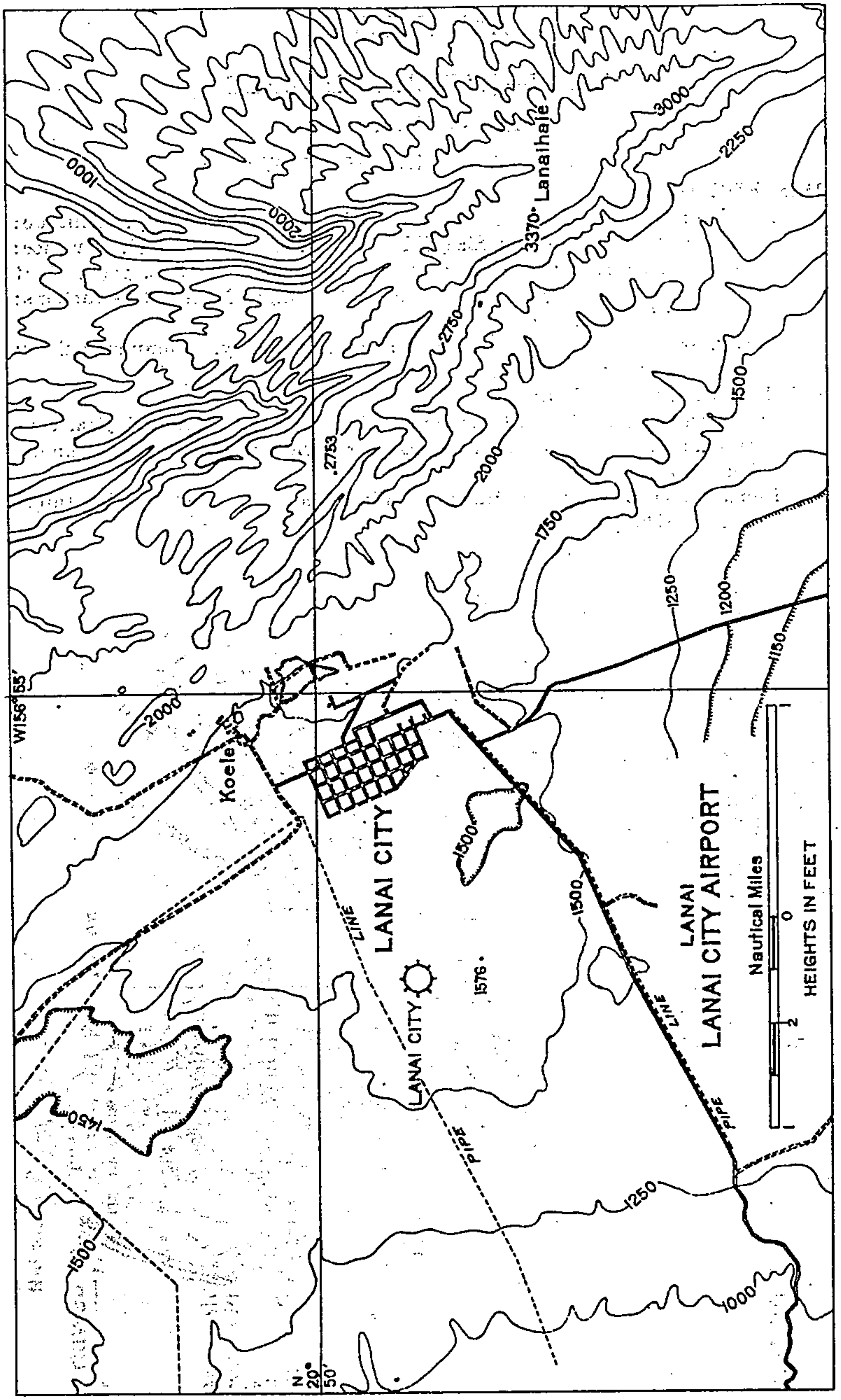
Tender anchorage: There is not room for large vessels within the breakwater, and local steamers anchor off the harbor; boats are used to land passengers and freight. An indifferent anchorage can be had in about 22 fathoms sand and coral bottom, with the breakwater light bearing 64° and 300 yards distant.

The wharf, which is in back of the breakwater, has 28 feet of water alongside.

Importance: Emergency seaplane anchorage. The coast of Lanai is of little operating value to aircraft.

Remarks: Best place to land, but only in emergency.


LANAI
LANAI CITY AIRPORT
LANAI CITY
Koele
3370' Lanaihale
W156°55'
N 20° 50'
Nautical Miles
HEIGHTS IN FEET
PIPE LINE


LANAI
LANAI CITY AIRPORT
Nautical Miles
HEIGHTS IN FEET
LANAI CITY
LANAI CITY
Koele
Lanaihale
3370
3000
2250
2753
2750
2000
1750
1500
1250
1200
1150
1000
1450
1576
PIPE LINE
W156°55'
N 20° 50'

LANAI CITY

LANAI—HAWAIIAN ISLANDS

LANAI CITY AIRPORT

(Lat. 20°50′ N., long. 156°57′ W.)

DESCRIPTION

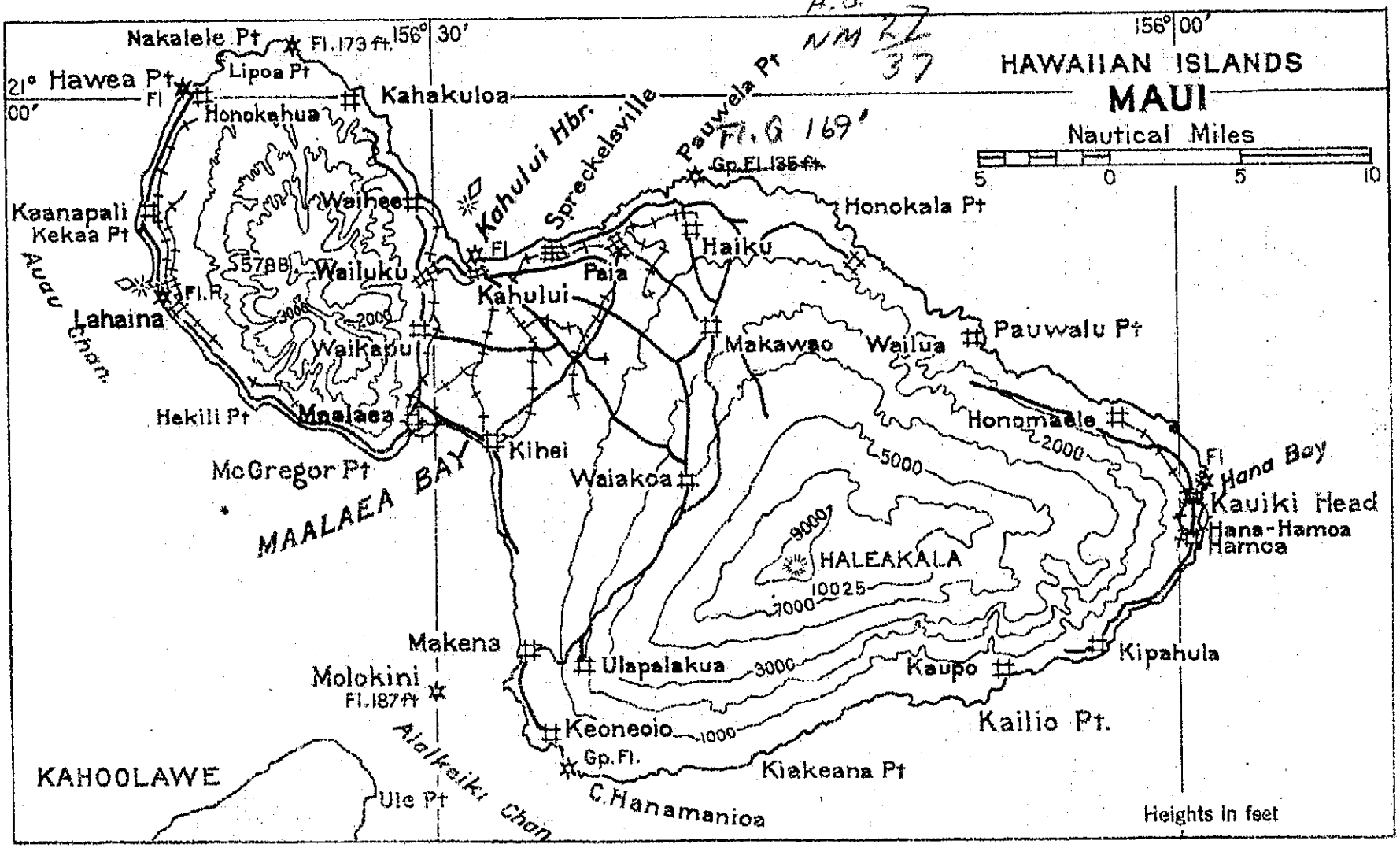
Location: Commercial airport located 1 mile west of Lanai City. **Altitude:** 1,500 feet. **Dimensions:** Size, NE./SW., 2,500 by 1,200 feet. **Surface:** Level hard dirt with few grass spots. **Drainage:** Natural, good. Soft after rain. **Marking:** Wind cone. **Lighting:** None. **Obstructions:** None. Field surrounded by pineapple fields.

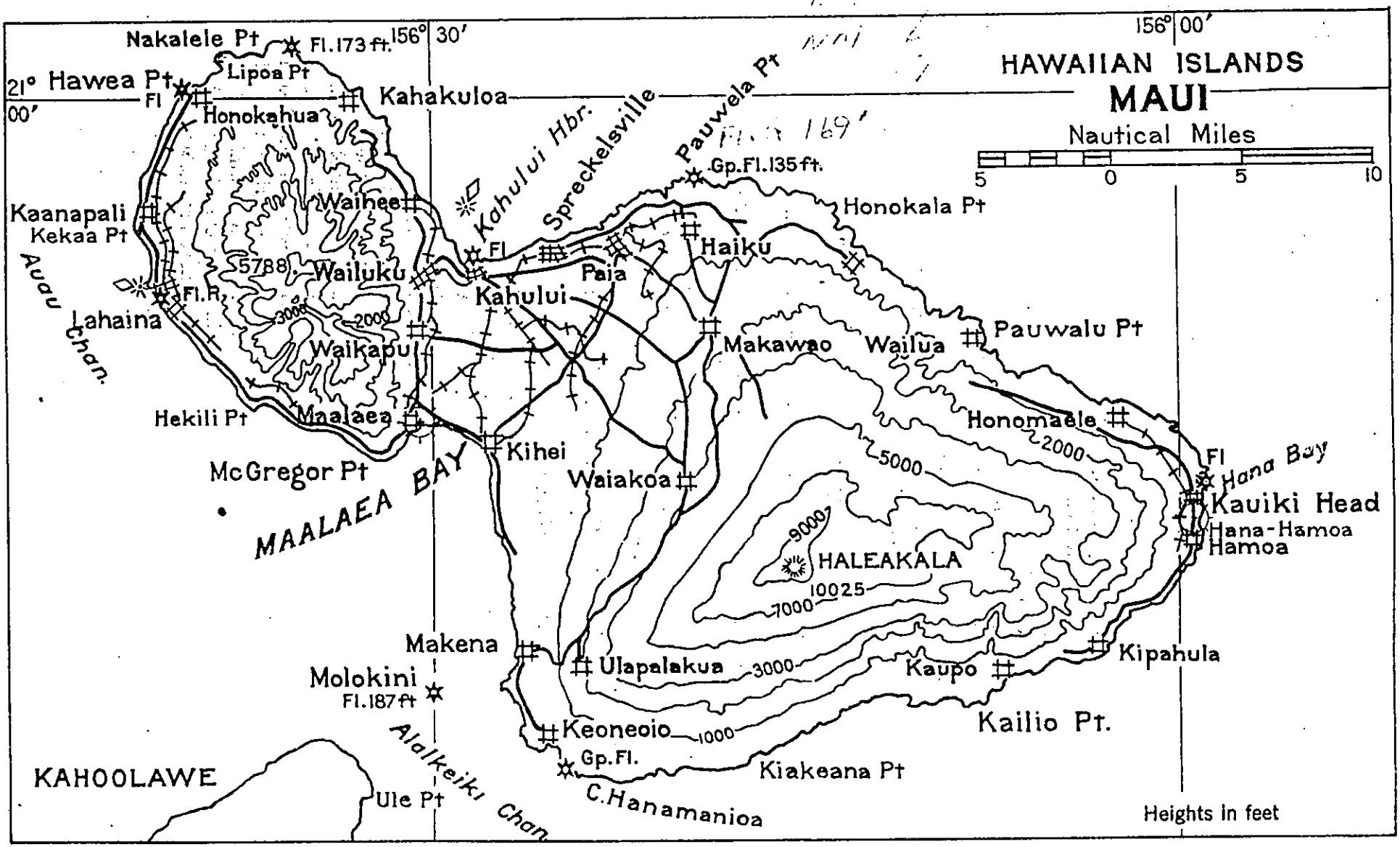
Facilities: None. Good machine shop at Lanai City. **Communications:** Radio and telephone at Lanai City.

GENERAL INFORMATION

Landmarks: Lanai City in the center of the island. **Meteorological conditions:** Prevailing winds, northeast. **Heaviest winds:** 30 to 40 knots **Fog:** None.

Remarks: Owned by the Hawaiian Pineapple Co. Used by the Inter-Islands Airways.


H.O.
NM 82
37
HAWAIIAN ISLANDS
MAUI
Nautical Miles
5 0 5 10
156° 00'
156° 30'
21° 00'
Nakalele Pt
Fl. 173 ft.
Lipoa Pt
Hawea Pt
Fl
Honokahua
Kahakuloa
Kahului Hbr.
Spreckelsville
Pauwela Pt
Fl. G 169'
Gp. Fl. 135 ft.
Honokala Pt
Kaanapali
Kekaa Pt
Waihee
Fl
Haiku
5788
Wailuku
Paia
Kahului
Fl. R
Lahaina
3000
2000
Auau Chan.
Waikapu
Makawao
Wailua
Pauwalu Pt
Hekili Pt
Maalaea
Honomaele
2000
Kihei
McGregor Pt
MAALAEA BAY
Waiakoa
5000
Fl
Hana Bay
Kauiki Head
Hana-Hamoa
Hamoa
9000
HALEAKALA
10025
7000
Makena
Ulapalakua
3000
Kaupo
Kipahula
Molokini
Fl. 187 ft
Keoneoio
1000
Kailio Pt.
Gp. Fl.
Kiakeana Pt
KAHOOLAWE
Ule Pt
Alalkeiki Chan
C. Hanamanioa
Heights in feet


HAWAIIAN ISLANDS
MAUI
Nautical Miles
5 0 5 10
156° 30'
156° 00'
21° 00'
Nakalele Pt
Fl.173 ft.
Lipoa Pt
Hawea Pt
Fl
Honokahua
Kahakuloa
Kahului Hbr.
Spreckelsville
Pauwela Pt
Gp.Fl.135 ft.
Honokala Pt
Kaanapali
Kekaa Pt
Waihee
Fl
Haiku
5788
Wailuku
Paia
Kahului
Fl.R
Lahaina
3000
2000
Auau Chan.
Waikapu
Makawao
Wailua
Pauwalu Pt
Hekili Pt
Maalaea
Honomaele
2000
Kihei
5000
Fl
Hana Bay
McGregor Pt
MAALAEA BAY
Waiakoa
Kauiki Head
Hana-Hamoa
Hamoa
9000
HALEAKALA
10025
7000
Makena
Ulapalakua
3000
Kaupo
Kipahula
Molokini
Fl.187 ft
Keoneoio
1000
Kailio Pt.
Gp.Fl.
Kiakeana Pt
KAHOOLAWE
Ule Pt
Alalkeiki Chan
C.Hanamanioa
Heights in feet

MAUI

Maui, the second in size of the islands, is about 42 miles long in a westerly direction and about 23 miles wide, and consists of two distinct mountain masses joined by a low flat isthmus. The extinct crater of Haleakala (Kolekole Peak), 10,025 feet high, is near the center of the eastern peninsula. On the northwesterly side of the crater the land slopes gently, while on the southerly and easterly sides it is much steeper and in some places precipitous. Koolau Gap on the northerly side and Kaupo Gap on the southeasterly side are two large openings in the side of the crater.

Mount Kukui, 5,788 feet high, is near the center of the western peninsula. This peninsula is cut up by rugged peaks and deep valleys and gulches which open out in sloping plains that extend to the coast. Kahului is the most important town on Maui.

SEAPLANE ANCHORAGES

Hana Bay (20°45′ N., 155°59′ W.) sketch and description on pages 241, 242.

Kahului Harbor (20°54′ N., 156°28′ W.) sketch and description on pages 245–247; photograph on page 628.

Lahaina Roads (20°54′ N., 156°42′ W.) sketch and description on pages 248, 250; photograph on page 630.

LANDING FIELDS

Hana, Hamoa Airport (20°44′ N., 155°59′ W.) sketch and description on pages 243, 244; photograph on page 627.

Lahaina (20°55′ N., 156°42′ W.) sketch and description on pages 250; photograph on page 630.

Lipoa Point (21°01′ N., 156°52′ W.) emergency field, 2,400 by 900 feet. **Surface:** Sod, sloping slightly and rough; used as a golf course. **Facilities:** None.

Maalaea Airport (20°48′ N., 156°31′ W.) sketch and description on pages 251, 252; photograph on page 628.

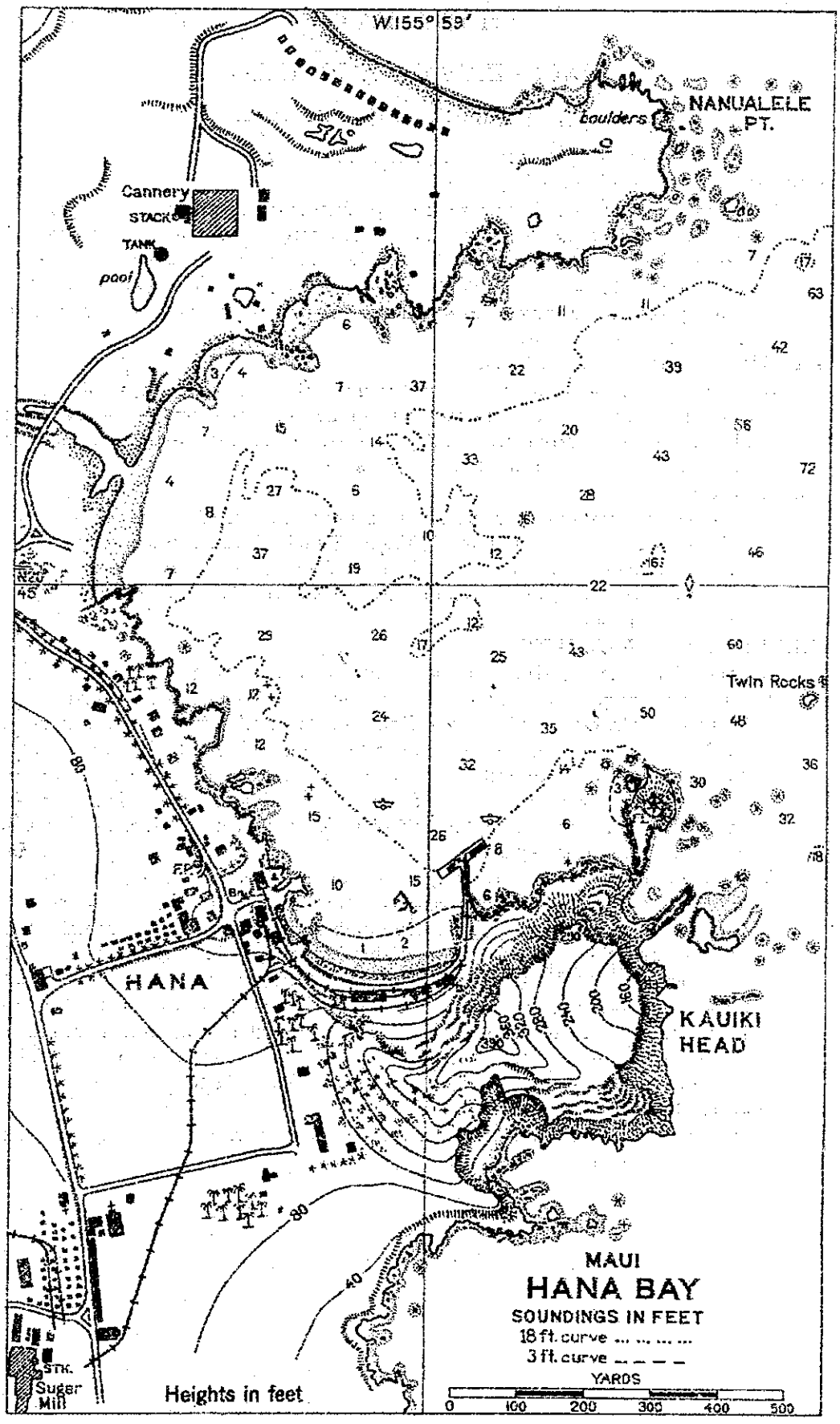
COMMUNICATIONS

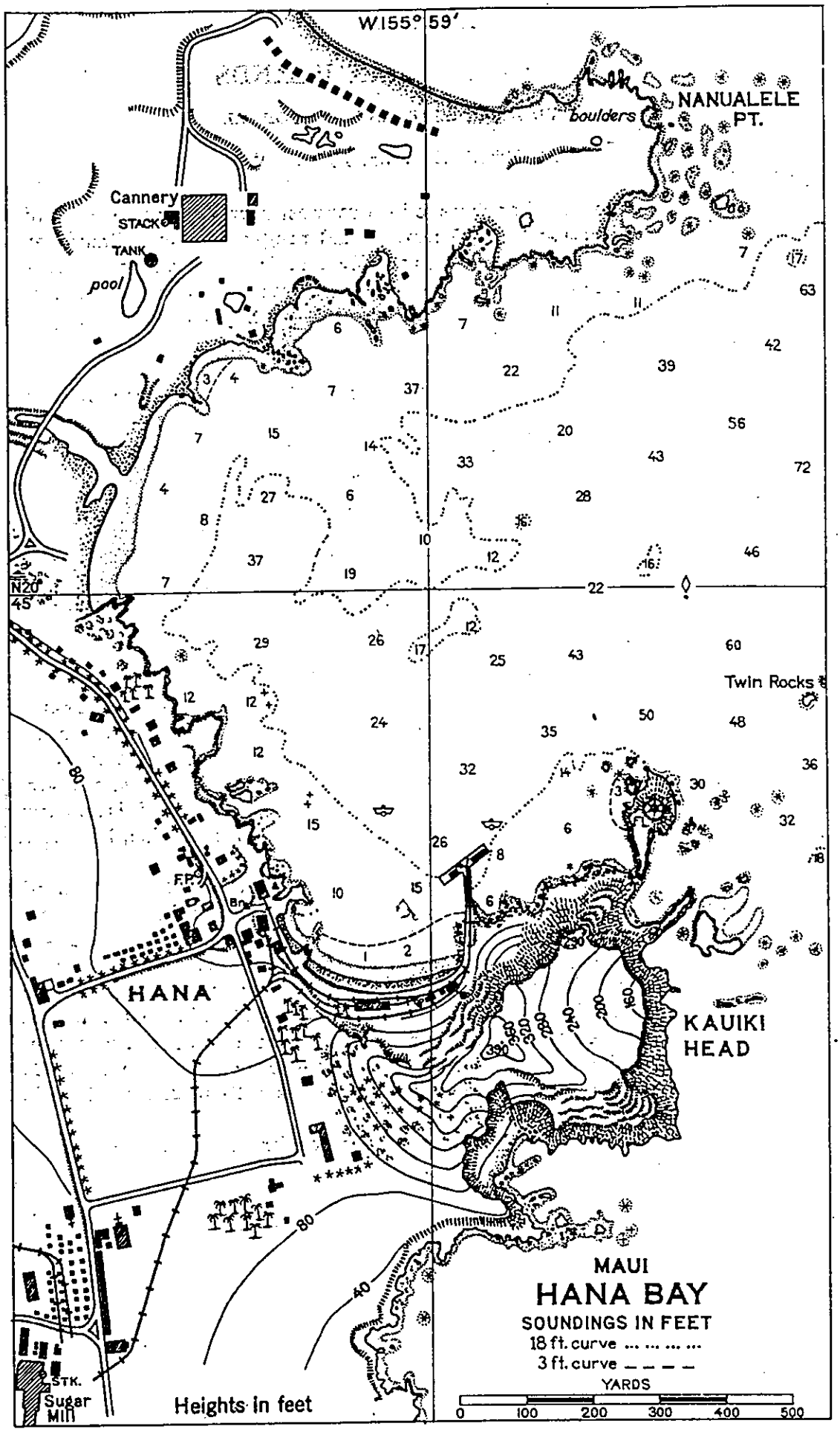
Telephone to all parts of the island. Radio and radiotelephone to the other islands and the United States.

METEOROLOGICAL CONDITIONS

Winds: The trade winds divide at Kauiki Head, part following the trend of the coast northwesterly as far as the isthmus when it again divides, part of it drawing southward, often reaching great force to the vicinity of Maalaea Bay. Another part follows the trend of the coast around the northwesterly end of Maui and through Pailolo Channel; the wind blows with great force on the Molokai side of the channel. From Kauiki Head the wind follows the trend of the south coast of Maui, part continuing along the south shore of Kahoolawe and part drawing through Alalakeiki Channel around the northerly end of Kahoolawe and westward through Kealaikahiki Channel. On the south coast of Maui a sea breeze frequently sets in about 0900 and continues until after sundown, when the land breeze springs up. Light airs or calms are generally found in the vicinity of Molokini, and again along the west shore of Maui between Hekili and Kekaa Points. In the vicinity of Lahaina there is generally a light onshore breeze, while farther out in Auau Channel the northeast trades are felt.

Rainfall: There is quite a heavy rainfall on the weather side, while on the lee side it is very light.


W.155° 59'
NANUALELE PT.
boulders
Cannery
STACK
TANK
pool
Twin Rocks
HANA
KAUIKI HEAD
MAUI
HANA BAY
SOUNDINGS IN FEET
18 ft. curve
3 ft. curve
YARDS
0 100 200 300 400 500
Heights in feet
STK.
Sugar Mill


W155° 59'
NANUALELE PT.
boulders
Cannery
STACK
TANK
pool
N20° 45'
Twin Rocks
HANA
KAUIKI HEAD
MAUI
HANA BAY
SOUNDINGS IN FEET
18 ft. curve ... ...
3 ft. curve — — — —
YARDS
0 100 200 300 400 500
Heights in feet
STK.
Sugar Mill
F.P.
Br.

HANA BAY

MAUI—HAWAIIAN ISLANDS

EMERGENCY SEAPLANE ANCHORAGE

(Lat. 20°45′ N., long. 155°59′ W.)

DESCRIPTION

Location: Small exposed anchorage in southwest portion of bay westward of the wharf. **Depths:** 3 to 15 feet. **Tidal range:** 2.5 feet. **Character of bottom:** Rocky. **Currents:** Weak. **Shelter:** Does not afford a desirable anchorage. Exposed to northeast winds and sea, and during strong southwesterly blows the wind comes offshore in such heavy squalls that planes are apt to drag anchor.

LANDING AND TAKE-OFF AREA

Location: Hana Bay or open sea. **Area:** Hana Bay, about ⅜ mile in diameter. **Shelter:** None. Long take-offs must be made in open sea. **Obstructions:** Mooring buoys. Breakers usually on shoal which extends halfway across the bay from the middle of the north shore.

FACILITIES

Provisions and water can be obtained in limited quantities. Small stock of ordinary gasoline. No hotels in village. **Beach:** Two short gravel beaches, one at the south end of bay and the other on the northwesterly side. **Communications:** Local steamer and occasionally a few ocean-going steamers call here.

GENERAL INFORMATION

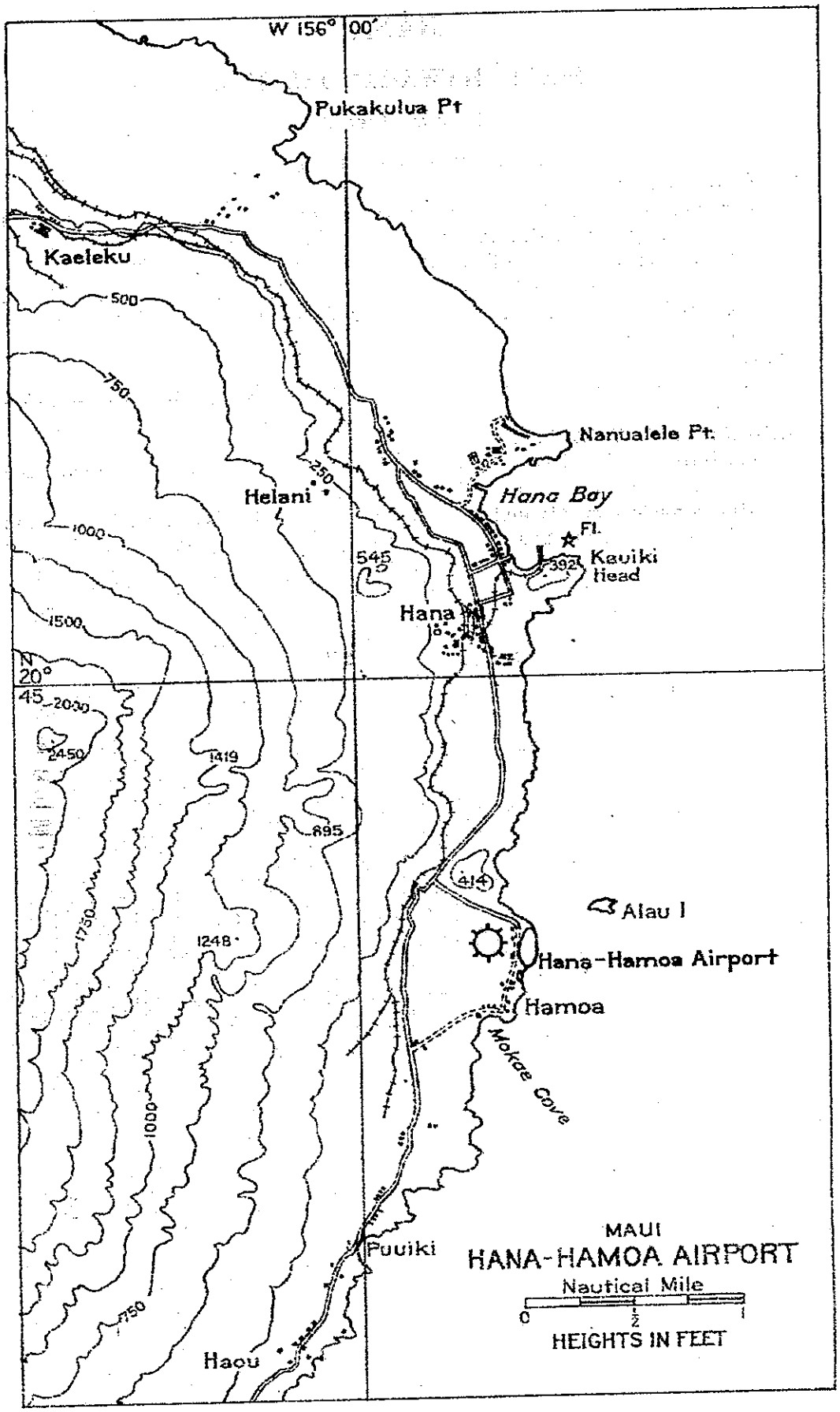
Aspect: The shore of Hana Bay is rocky except for two gravel beaches.

Landmarks: Sugar mill and stack, with many red-roofed cottages near by, ½ mile southwest of wharf; the lights of the mill settlement are a good mark at night. Abandoned cannery building and stack, ⅜ mile west of Nanualele Point. Kahaula Cone, 545 feet high, is the highest of a group of five hills lying ¾ mile west of the wharf. Kauiki Head, is an extinct crater 390 feet high, the outer half of which has been eroded, leaving the inside of the crater exposed.

Tender anchorage: The bay is open to the eastward and does not afford a desirable anchorage. Small vessels sometimes anchor in the southwest portion of the bay but do not have much swinging room. In the absence of local knowledge the anchorage should not be attempted by any but small craft. An anchorage can be had in deeper water along the coast between Kauiki Head and Alau Island which is 1½ miles South of Hana Bay. Local vessels drop anchor northeastward of the wharf, make a starboard landing and run bow and stern lines to the mooring buoys. The concrete wharf is 80 yards long and has depths of 21 to 26 feet alongside.

Boat landing: At the wharf.

Importance: Forced landings, when quick repairs can be made, could be made here in moderate weather.


W 156° 00'
Pukakului Pt
Kaeleku
500
750
1000
1500
Helani
250
Nanualele Pt.
Hana Bay
Fl.
Kauiki Head
392
545
Hana
18
N 20° 45'
2030
2450
1419
895
414
1750
1248
1000
750
Alau I
Hana-Hamoa Airport
Hamoa
Mokae Cove
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HANA-HAMOA AIRPORT
Nautical Mile
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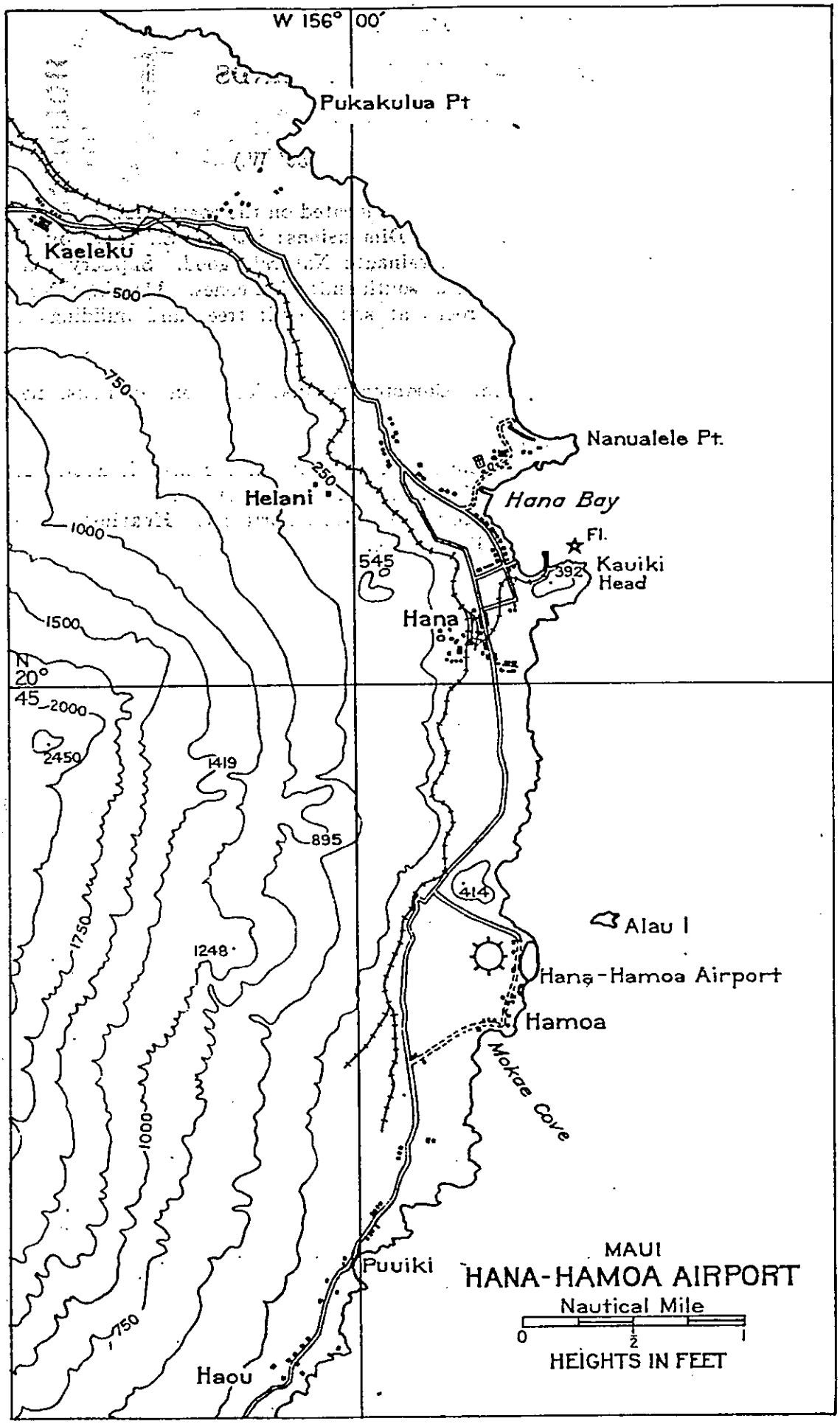
HEIGHTS IN FEET


W 156° 00′
Pukakulua Pt
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Helani
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Nanualele Pt.
Hana Bay
Fl.
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392
Kauiki Head
Hana
1500
N 20° 45
2000
2450
1419
895
414
Alau I
1750
1248
Hana-Hamoa Airport
Hamoa
Mokae Cove
1000
Puuiki
1750
Haou
MAUI
HANA-HAMOA AIRPORT
Nautical Mile
0
1/2
1
HEIGHTS IN FEET

HANA

MAUI—HAWAIIAN ISLANDS

HAMOA AIRPORT

(Lat. 20°44′ N., long. 155°59′ W.)

DESCRIPTION

Location: Hamoa a Territorial airport located on the coast 2 miles south of Hana Bay. **Altitude:** 15 feet. **Dimensions:** Size, N./S., 1,800 by 300 feet. **Surface:** Hard dirt. **Drainage:** Natural, good. Slippery when wet. **Marking:** Landing tee at south end; wind cones. **Lighting:** None. **Obstructions:** Trees and rocks at south end; trees and buildings on northwest side.

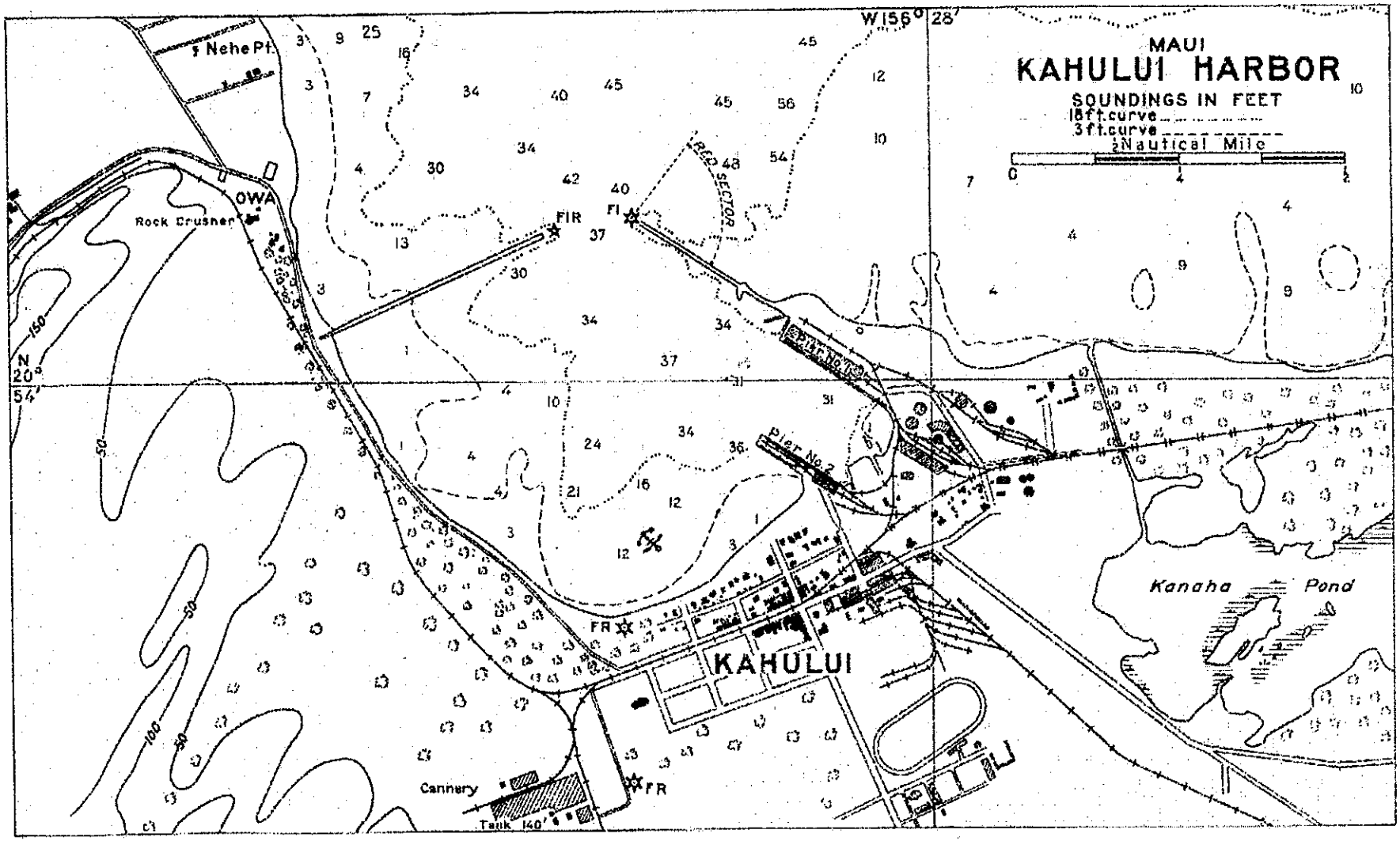
FACILITIES

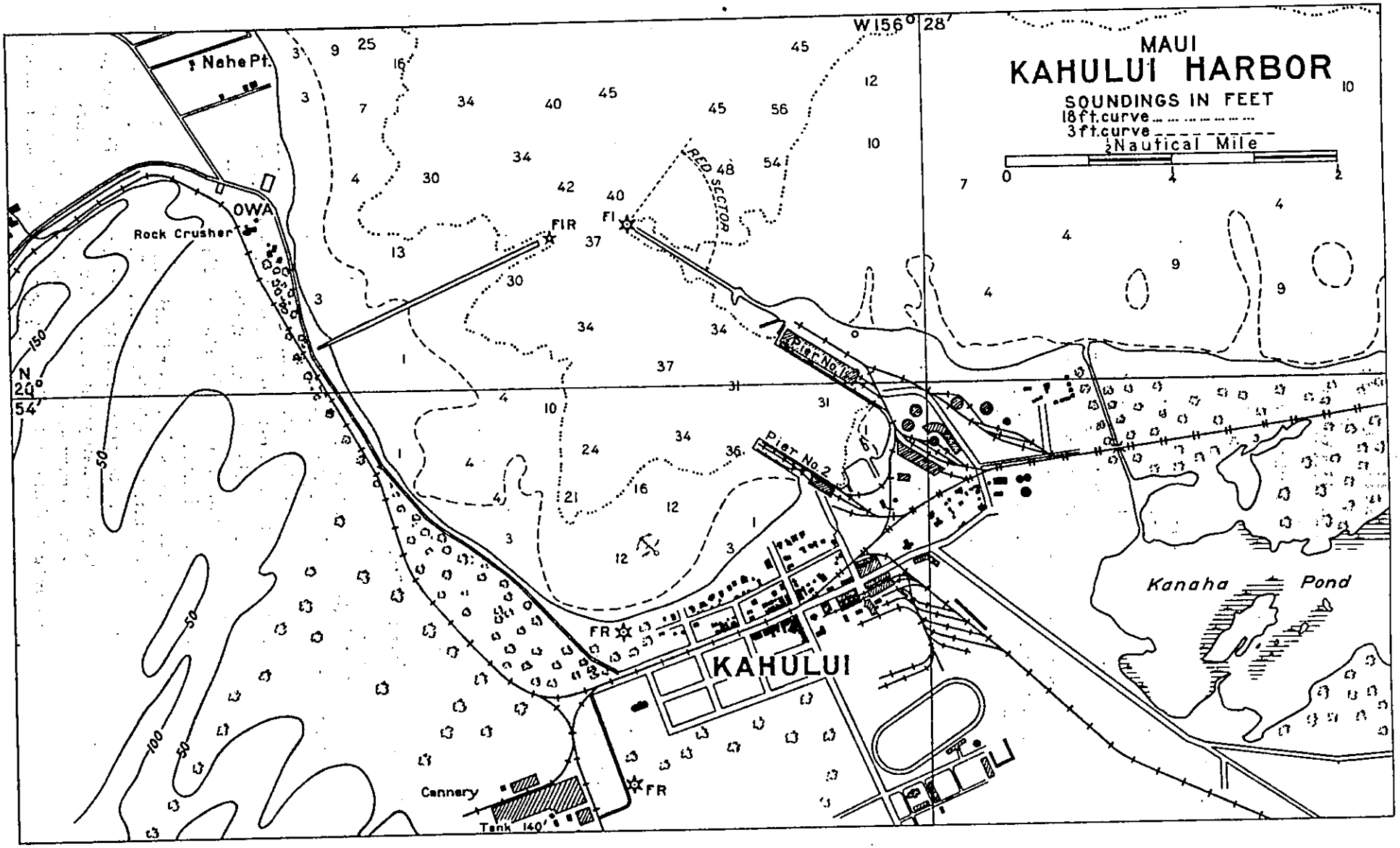
None. Rest house on field. **Communications:** Telephone in house near field.

GENERAL INFORMATION

Landmarks: Alau Island ½ mile northeastward of the field is about 100 yards in diameter and 150 feet high and is grass covered.

Meteorological conditions: Prevailing winds, northerly. **Heaviest winds:** 30 to 40 miles per hour. **Fog:** None.


MAUI
KAHULUI HARBOR
SOUNDINGS IN FEET
18 ft. curve
3 ft. curve
½ Nautical Mile
W156° 28'
N 20° 54'
Nehe Pt.
Rock Crusher
OWA
FIR
Fl
RED SECTOR
Pier No. 1
Pier No. 2
Kanaha Pond
KAHULUI
FR
FR
Cannery
Tank 140'


MAUI
KAHULUI HARBOR
SOUNDINGS IN FEET
18 ft. curve
3 ft. curve
½ Nautical Mile
0
½
1
2
W 156° 28'
N 20° 54'
Nahe Pt.
OWA
Rock Crusher
FIR
Fl
RED. SECTOR
Pier No. 1
Pier No. 2
Kanaha Pond
KAHULUI
FR
FR
Cannery
Tank 140'
150
100
50

KAHULUI HARBOR

MAUI—HAWAIIAN ISLANDS

SEAPLANE ANCHORAGE

(Lat. 20°54′00″ N., long. 156°28′30″ W.)

DESCRIPTION

Location: Southern part of harbor adjacent to the town. Heavy weather anchorage between Piers 1 and 2. **Depths:** 6 to 36 feet. **Tidal range:** 1.6 feet. **Character of bottom:** Coral and mud. **Currents:** Weak. **Shelter:** Mooring facilities are good for a maximum number of 9 VP-type seaplanes. The chart indicates that about 18 planes could be moored but the restricted operating area would not permit operating more than 9. Moored planes would probably weather anything less than a gale from any direction but would be subjected to heavy swells if the gale came from the northwest. It is believed that by laying heavy weather moorings in the lee of the piers, 6 planes could ride out a gale in perfect safety. In the opinion of the local harbor master the breakwater would probably not afford sufficient protection under these wind conditions.

LANDING AND TAKE-OFF AREA

Location: Kahului Harbor and approaches. **Area:** Restricted. Approaches for landings must be made over land for all northerly winds. Take-offs must be made toward the entrance between the breakwaters which under certain conditions of wind and sea would be impossible. A heavily loaded plane would run through breakwater entrance when taking off in a light wind. **Shelter:** Safe landings can be made under any reasonable conditions of wind direction or force. Take-offs are practicable so long as sea conditions outside harbor entrance are reasonably good. For southerly winds take-offs must be made in the open sea and toward the breakwater entrance. **Obstructions:** Harbor buoys. Shoals to west.

FACILITIES

Aviation gasoline and oil obtained through shipments made from Honolulu. Planes are serviced by boats or from tender; winds stronger than force 4 blowing for periods of 2 or more hours makes servicing of planes hazardous and perhaps impossible. Machine shops are available where minor repairs could be made. Small marine railway. **Beach:** South shore of harbor almost entirely free from rock and coral; about 100 yards in length. **Communications:** Telegraph, telephone, and radiotelephone service.

GENERAL INFORMATION

Aspect: The shores of the bay are low and sandy; much higher ground is to be found on both sides of the harbor at a distance of 2 or 3 miles.

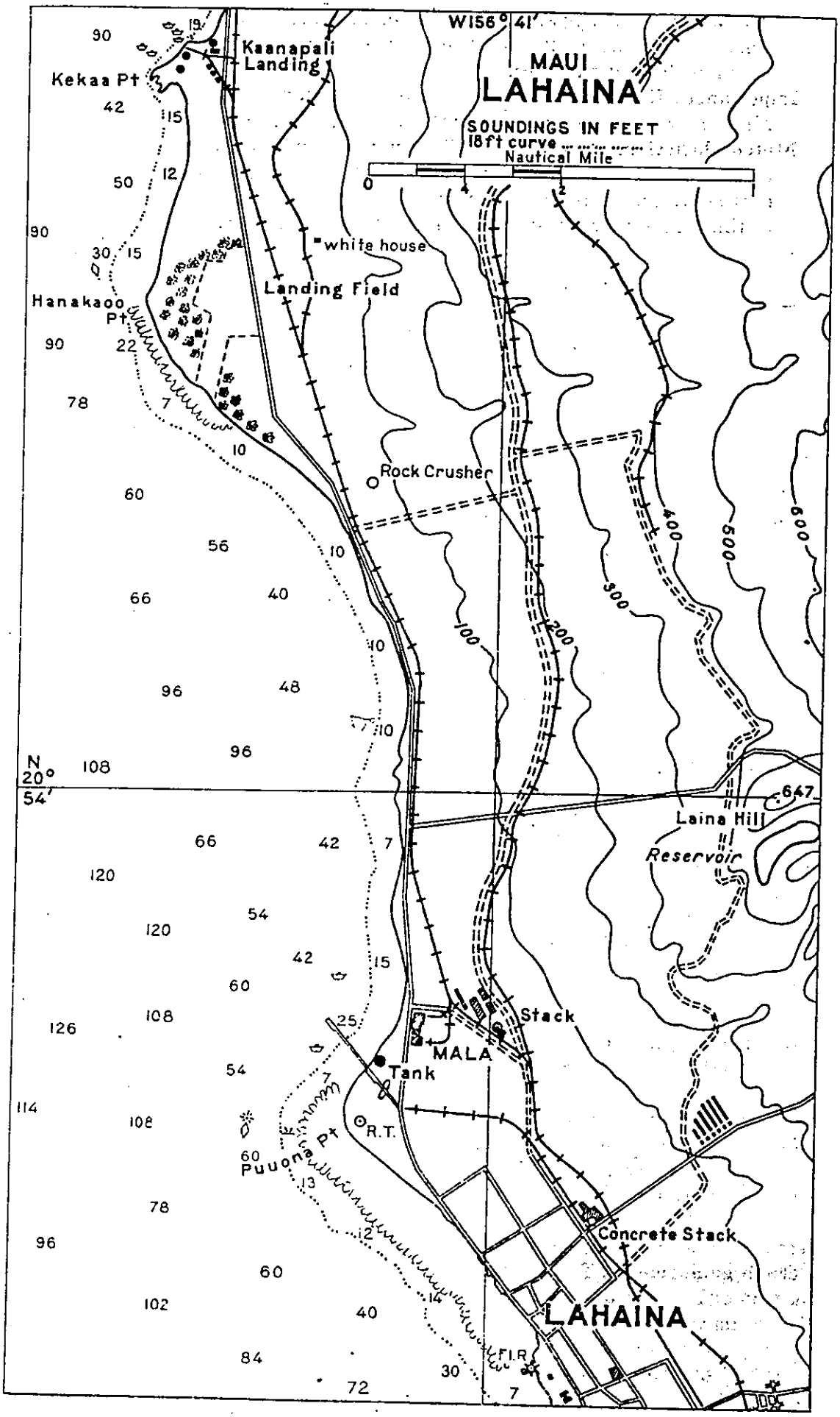
Landmarks: Aluminum-colored water tank of the pineapple cannery ½ mile southwest of Kahului. Large gray building 400 yards northwestward of the inshore end of the west breakwater. Power station 180-foot concrete stack 1 mile southeastward. Wailuku mill stack about 1¼ miles west. Puunene mill black twin stacks, 1¾ miles southeastward. Name "KAHULUI" on building.

Tender anchorage: Large vessels do not ordinarily anchor within the breakwater because of the restricted swinging room. The controlling depth of the harbor is 31 feet and the general depths are 33 feet. The entrance between the breakwaters is 240 yards wide. Two modern wharves with large warehouses, extensive cargo-handling equipment, and rail connection. Pier No. 1 has a length of about 1,000 feet, a depth of 31 to 33 feet along-

side, and is used by large ocean steamers. Pier No. 2 is about 850 feet long, has a depth of 29 to 33 feet along its northeast side. Interisland steamers dock at this pier.

Importance: Kahului Harbor is the most important harbor in the island of Maui, as well as the only one with protection from all weather.

Meteorological conditions: Prevailing winds, northeast trades, which shift to a southerly direction frequently with little or no warning. Strong northerly, and especially northwesterly winds blowing for any length of time cause a heavy swell which is felt in the harbor.


W156° 41'
MAUI
LAHAINA
SOUNDINGS IN FEET
18ft curve
Nautical Mile
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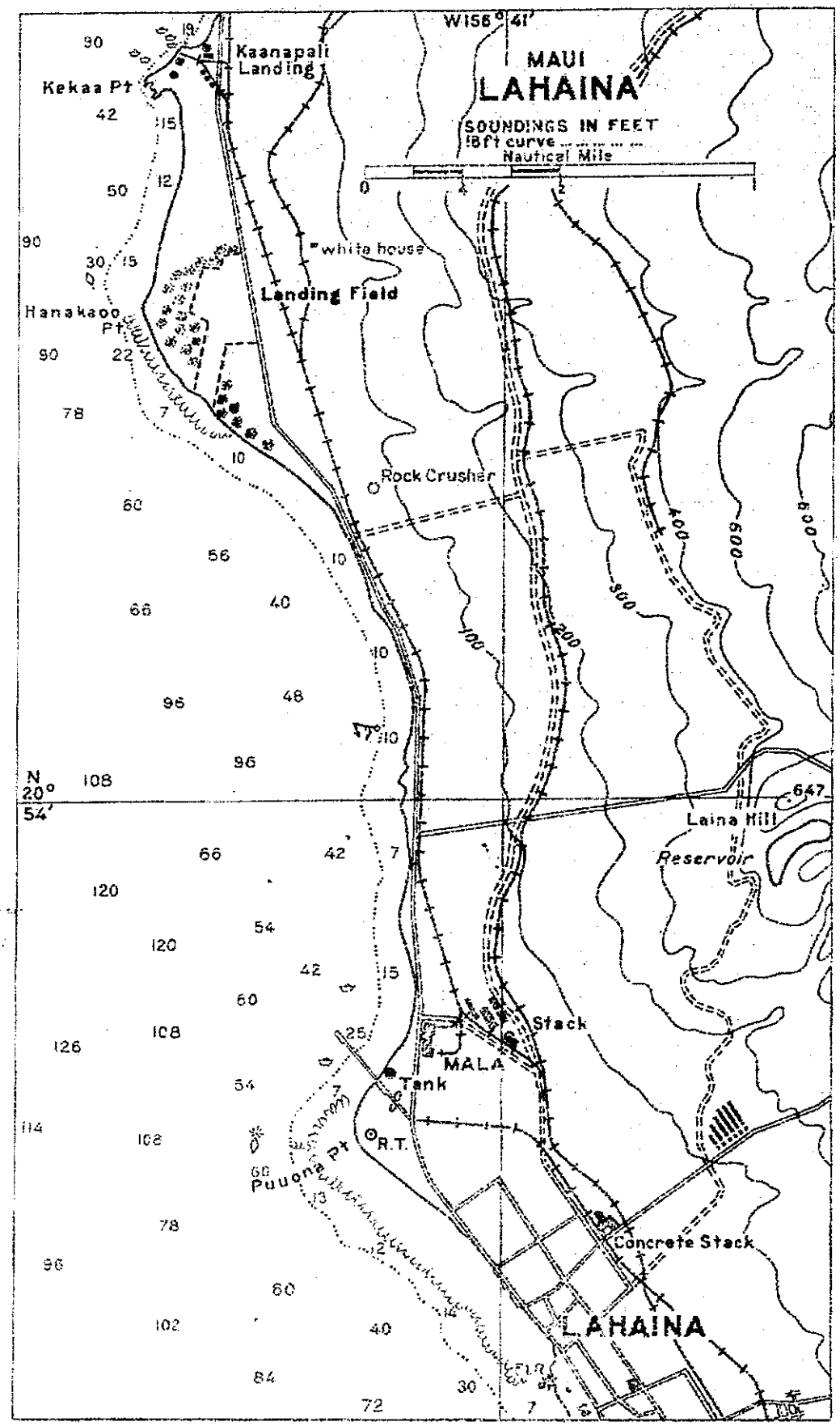
4
2
Kaanapali Landing
Kekaa Pt
"white house
Landing Field
Hanakaoo Pt
Rock Crusher
100
200
300
400
500
600
N 20° 54'
647
Laina Hill
Reservoir
Stack
MALA
Tank
R.T.
Puuonaulu Pt
Concrete Stack
LAHAINA
F.I.R.


W156° 41'
MAUI
LAHAINA
SOUNDINGS IN FEET
1Bft curve
Nautical Mile
Kekaa Pt
Kaanapali Landing
white house
Landing Field
Hanakaoo Pt
Rock Crusher
N 20° 54'
Laina Hill
647
Reservoir
Stack
MALA
Tank
R.T.
Puuoma Pt
Concrete Stack
LAHAINA

LAHAINA ROADS

MAUI—HAWAIIAN ISLANDS

EMERGENCY SEAPLANE ANCHORAGE

(Lat. 20°54′ N., long. 156°42′ W.)

DESCRIPTION

Location: Lahaina Roads approximately ⅞ mile north of Mala Wharf, 200 to 300 yards offshore. **Depths:** 6 to 36 feet. **Tidal range:** 1.7 feet. **Character of bottom:** Sand and coral. **Currents:** Sets northward on the ebb and southward on the flood; the northerly current is the stronger and may reach a velocity of 2 knots about 1 hour before low water. Slight southerly current of short duration may be expected 1 to 2 hours before high water. **Shelter:** Good lee is afforded under almost all wind conditions, excepting storms or winds of high velocity. Seaplanes can operate from tenders and be afforded safe anchorage during average weather conditions. **Remarks:** Good anchorage for a large number of planes.

LANDING AND TAKE-OFF AREA

Location: Lahaina Roads. **Area:** Unlimited. Landings and take-offs can be made in any direction. **Shelter:** Large open roadstead between the islands of Maui and Lanai generally calm even though strong trades are blowing; it is exposed to south and southwesterly weather. **Obstructions:** Seaplanes should not attempt to taxi alongside or fuel from dock; due to heavy surge. Reinforcement rods project several feet at end of Mala Dock.

FACILITIES

Provisions, water, and ordinary gasoline may be obtained at Lahaina in limited quantities. There are two or three small hotels at Lahaina. **Beach:** Sandy beach along shore. **Communications:** Local steamers.

GENERAL INFORMATION

Aspect: The coast consists of a low sandy beach with a fringe of coconut and algaroba trees back of which the cane fields extend inland for about 2 miles. Between Lahaina and Mala the highway skirts the shore, and the automobile lights along the road are usually the only lights visible. Lahaina village is situated among the trees near the beach.

Landmarks: Most prominent feature in the vicinity of Lahaina is the high white, concrete stack of a mill located ⅜ mile north-northeastward of the wharf at Lahaina. Close to the inshore end of Mala Wharf is a silver-colored oil tank, and a warehouse with the name "LAHAINA" in large letters on its roof. A large pineapple cannery is situated near the shore, about 300 yards northeastward of the wharf. Laina Hill 1¼ miles northeastward of Mala Wharf is a prominent cone 647 feet high, the lower slopes of which are covered with cane. A gray-colored rock crusher, 1½ miles north of Mala and close to the shore.

Tender anchorage: In approaching Lahaina vessels should keep about 1 mile offshore until the wharf or light bears 56° and then head in on this course until near Lahaina buoy; anchor in 10 to 15 fathoms. At Mala anchorage can be had anywhere in the bay north of the wharf, ⅝ mile offshore, in about 12 fathoms, sandy bottom. Passenger steamers usually anchor off the wharf. There is a small wharf at Lahaina with 3 feet of water alongside. At Mala there is a modern concrete wharf 960 feet long with a depth of 32 feet at the end. The wharf has a small warehouse and a derrick.

Boat landing: Passengers and freight for Lahaina are landed at the Mala Wharf.

Importance: Fleet seaplane operating base. Considered a good seaplane base for extended operations throughout all seasons of the year.

LAHAINA EMERGENCY FIELD

(Lat. 20°55′ N., long. 156°42′ W.)

DESCRIPTION

Location: Emergency field located on the coast just south of Hanakaoo Point and 1¾ miles north of Mala Wharf. **Altitude:** 5 feet. **Dimensions:** Size, 2,500 by 400 feet. **Surface:** Level dirt covered with weeds. **Drainage:** Natural; good except near beach. Soggy in area between trees near beach. **Lighting:** None. **Obstructions:** Algaroba trees and cane fields surround field. Several dirt roads across field. Clear approaches.

FACILITIES

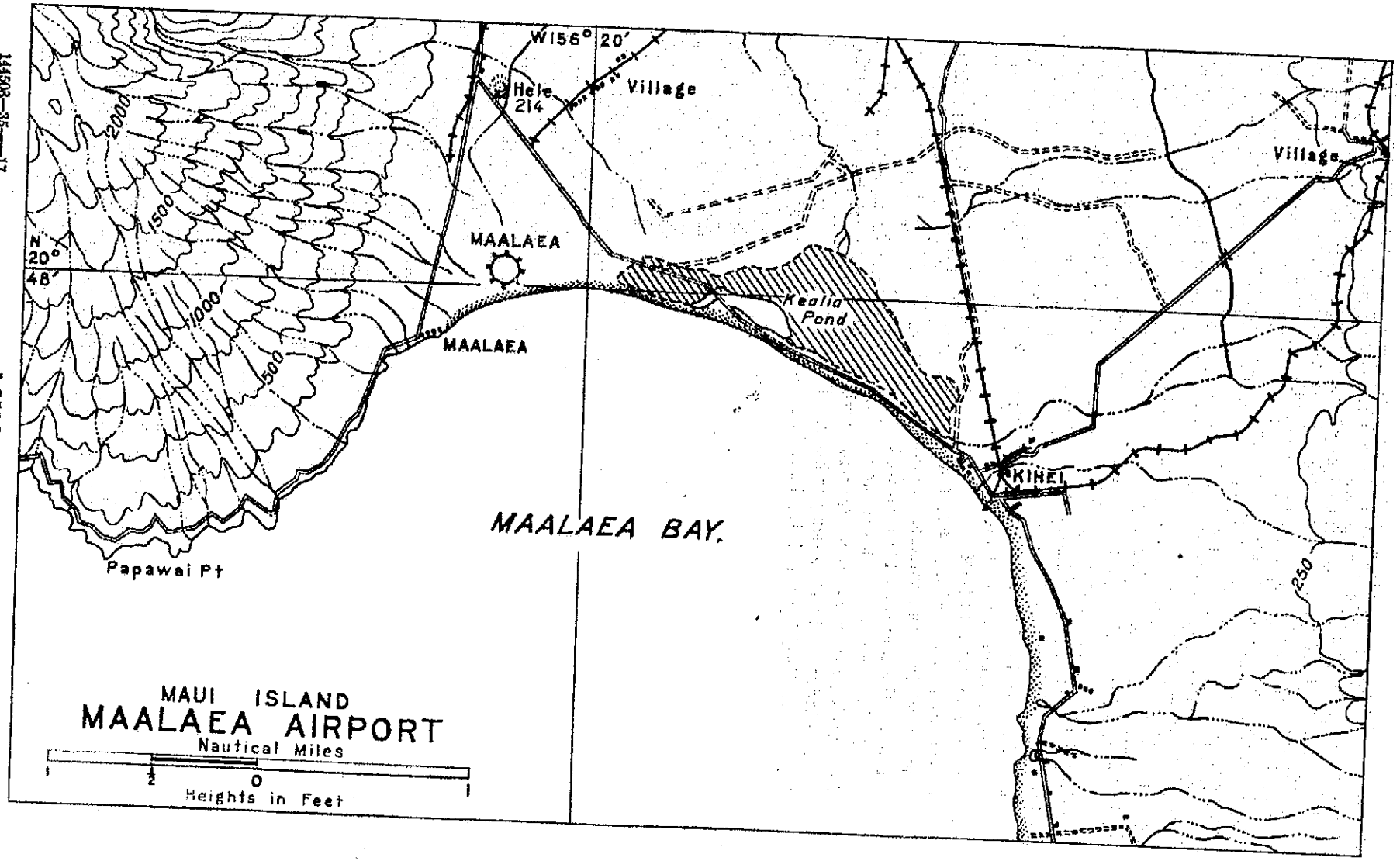
None. **Communications:** Road to Lahaina. Kaanapali Landing, on the northerly side of Kekaa Point ¾ mile north of the landing field, is the shipping point for all the sugar produced along the coast, and large ocean steamers call here.

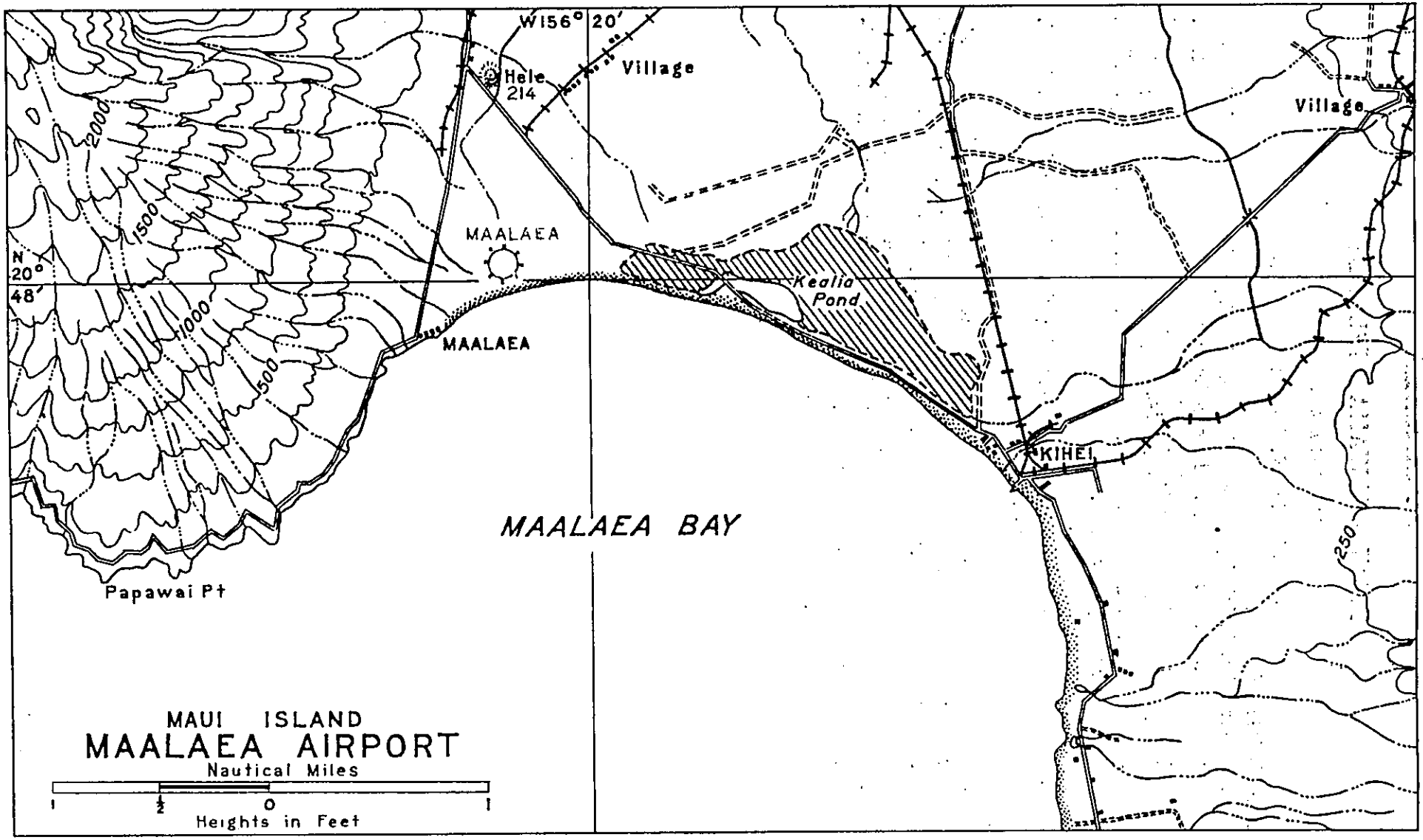
GENERAL INFORMATION

Landmarks: White house ½ mile northeast of Hanakaoo Point. High light-colored stack of the pumping station at Honokowai 1½ miles north of the landing field. Warehouse at Kaanapali Landing. Kekaa Point is a dark, rocky promontory 85 feet high.

Meteorological conditions: Prevailing winds, north. **Heaviest winds:** 30 to 40 miles per hour. **Fog:** None.

144503—36——47


W156° 20'
Hele
214
Village
Village
2000
1500
1000
500
N
20°
48'
MAALAEA
MAALAEA
Kealia
Pond
KIHEI
MAALAEA BAY
250
Papawai Pt
MAUI ISLAND
MAALAEA AIRPORT
Nautical Miles
1
½
0
1
Heights in Feet


W156° 20'
Hele
214
Village
Village
MAALAEA
N
20°
48'
MAALAEA
Kealia
Pond
KIHEI
MAALAEA BAY
Papawai Pt
2000
1500
1000
500
250
MAUI ISLAND
MAALAEA AIRPORT
Nautical Miles
1
½
0
1
Heights in Feet

MAALAEA

MAUI—HAWAIIAN ISLANDS

MAALAEA AIRPORT

(Lat. 20°48′ N., long. 156°31′ W.)

DESCRIPTION

Location: Territorial airport located on beach 500 yards northeast of Maalaea village. **Altitude:** 5 feet. **Dimensions:** Size, 4,050 by 2,100 feet. Macadam runways, N./S., 1,500 by 100 feet; NW./SE., under construction 1934. **Marking:** Wind cones. **Lighting:** None. **Obstructions:** East end of field low and soft. Ditch at south end of N./S. runway. Field between runways swampy.

FACILITIES

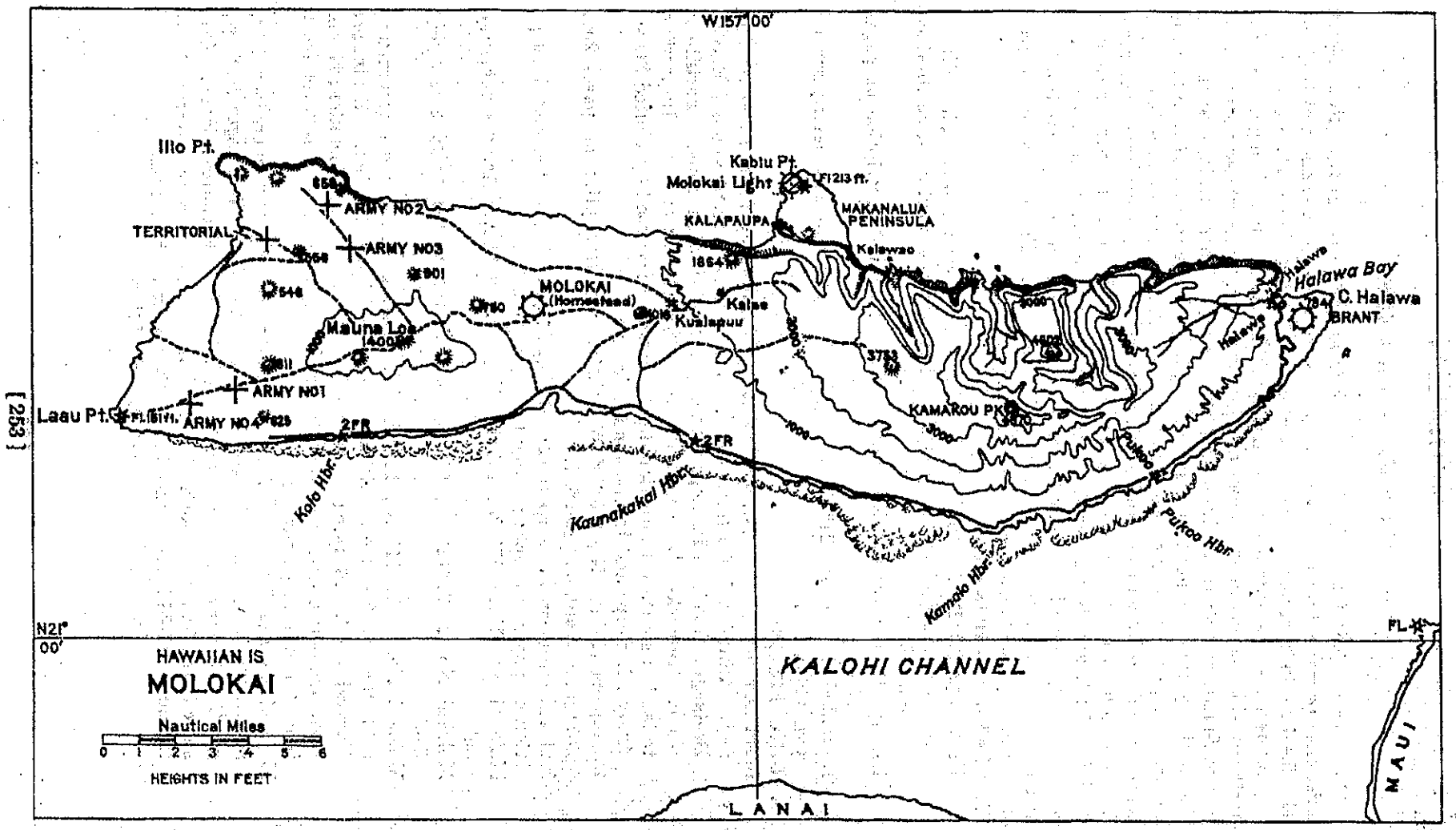
Terminal station building. Specification fuel and oil via truck from Kahului. **Communications:** Telephone.

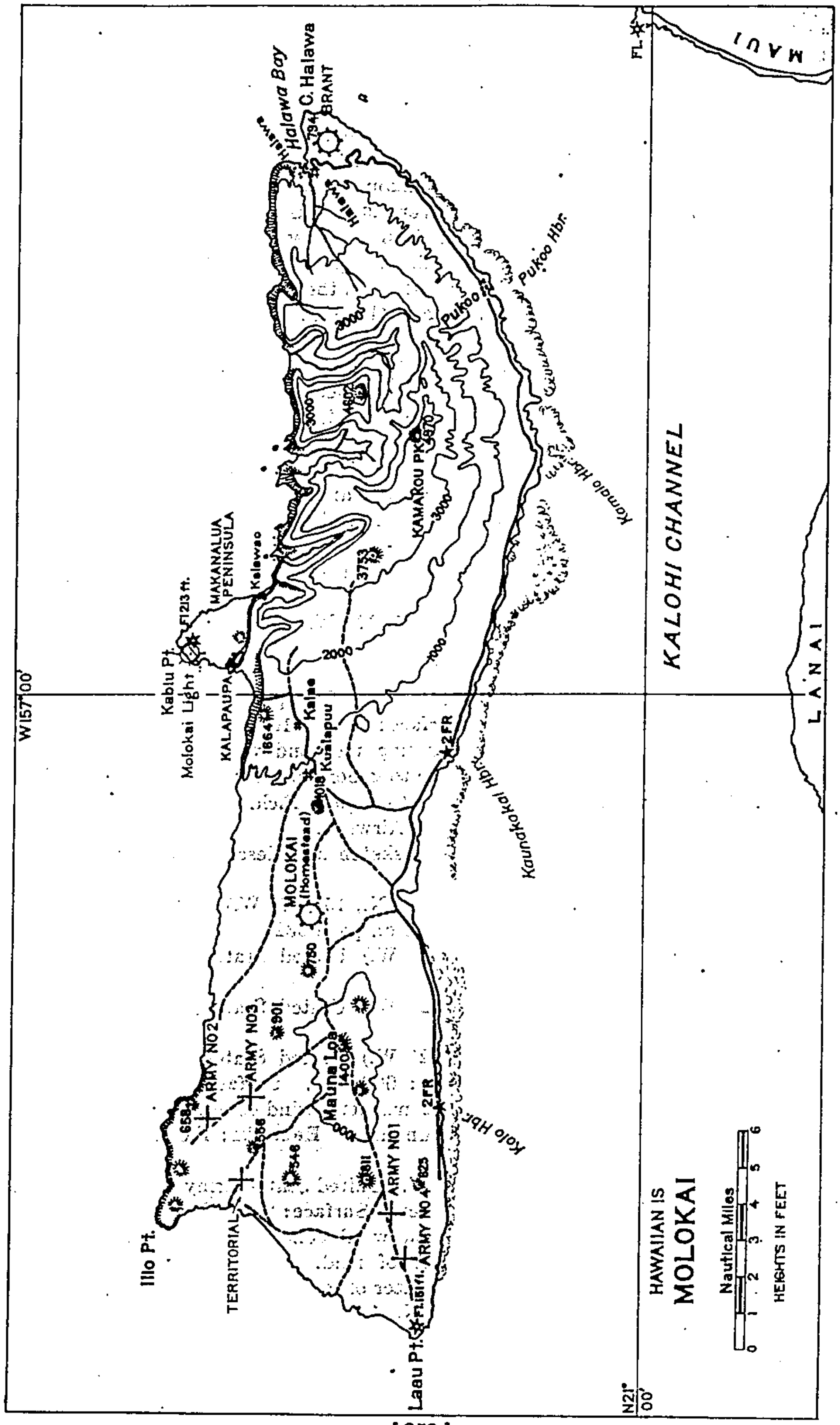
GENERAL INFORMATION

Landmarks: Hele Hill, 214 feet high, is situated 1¼ miles north-northeastward of Maalaea village. Maalaea village consists of a few buildings among the algaroba trees along the shore. Several stacks of sugar mills at Kahului on the northern side of Maui may be seen from Maalaea.

Meteorological conditions: Prevailing winds, north and northwest. **Heaviest winds:** 30 to 40 miles per hour. **Fog:** None.

Remarks: Used by the Inter-Islands Airways.


W157° 00'
Ilio Pt.
Kaiu Pt.
Molokai Light
FI 213 ft.
ARMY NO2
TERRITORIAL
ARMY NO3
KALAPAUPA
MAKANALUA PENINSULA
Kalawao
1864
MOLOKAI
(Horseshead)
Kalae
Kualapuu
Halawa
Halawa Bay
C. Halawa
BRANT
Mauna Loa
1400
ARMY NO1
Laau Pt.
FI. 15 ft.
ARMY NO 4
2FR
KAMAKOU PK
Kolo Hbr.
Kaunakakai Hbr.
Pukoo Hbr.
Kamalo Hbr.
N21° 00'
FL
HAWAIIAN IS
MOLOKAI
Nautical Miles
0 1 2 3 4 5 6
HEIGHTS IN FEET
KALOHI CHANNEL
LANAI
MAUI


HAWAIIAN IS
MOLOKAI
Nautical Miles
0 1 2 3 4 5 6
HEIGHTS IN FEET
KALOHI CHANNEL
LANAI
MAUI
W157°00'
N21° 00'
Illo Pt.
Laau Pt.
Kalaupapa
Molokai Light
Kalaupapa Pt.
MAKANALUA PENINSULA
Kalawao
KALAPAUPA
Kalae
Kualapuu
MOLOKAI (Homestead)
Mauna Loa
TERRITORIAL
ARMY NO 1
ARMY NO 2
ARMY NO 3
ARMY NO 4
Kolo Hbr.
Kaunakakai Hbr.
Kamalo Hbr.
Pukoo Hbr.
Pukoo
KAMAKOU PK.
Halawa Bay
C. Halawa
BRANT
2FR
FL.
3000
2000
1000

MOLOKAI

HAWAIIAN ISLANDS

The fifth in size of the islands, lies 7½ miles northwestward of Maui and 8 miles northward of Lanai. It is more or less rectangular in shape and is about 34 miles long in a westerly direction and about 7 miles wide. The easterly end is mountainous, its summit being Kamakou Peak, 4,970 feet high. On the northerly side the mountain slopes are very steep, in many places being almost perpendicular, and there are numerous deep gorges with precipitous sides. On the southerly side the slopes are gradual, cut up with gorges, and terminate in a narrow strip of rolling land near the coast. On the westerly side the land slopes gently, is cut up by gulches, and here and there an extinct crater can be seen. About 10 miles from the westerly end of the island the plain is only a few hundred feet high and is marked here and there by prominent blowholes. The entire westerly end of the island is a bare tableland cut up by small gulches and rising gradually to Mauna Loa, 1,400 feet high. From seaward the part of the island presents a smooth and rolling appearance.

SEAPLANE ANCHORAGES

✓ Kalaupapa (21°12′ N., 156°59′ W.) affords an emergency landing in ordinary weather. Subject to heavy swells. Permission to visit must be obtained beforehand.

✓Kamalo Harbor (21°03′ N., 156°53′ W.) sketch and description on pages 258, 259.

✓Kaunakakai Harbor (21°05′ N., 157°02′ W.) sketch and description on pages 260, 261.

LANDING FIELDS

Brant Airport (21°09′ N., 156°44′ W.). Emergency field, 1,000 by 500 feet. **Altitude:** 1,000 feet. **Surface:** Grass; 10 percent grade NE./SW. **Drainage:** Good. **Marking:** Landing tees and wind cones. **Facilities:** None. **Remarks:** Dangerous due to general lay-out of field. Impossible to land in southwest direction due to slope. Field used by United States Army Air Corps and Inter-Islands Airways.

Kalaupapa (21°13′ N., 156°59′ W.) sketch and description on pages 256, 257; photograph on page 631.

Molokai (Homestead) Airport (21°09′ N., 157°07′ W.) sketch and description on pages 262, 263; photograph on page 632.

Molokai No. 1 (21°07′ N., 157°15′ W.) United States Army emergency field.

Molokai No. 2 (21°12′ N., 157°12′ W.) United States Army emergency field.

Molokai No. 3 (21°11′ N., 157°12′ W.) United States Army emergency field, 900 by 300 feet. **Altitude:** 600 feet. **Surface:** Sod. **Drainage:** Natural, good. **Marking:** Corner markers; wind cone. **Facilities:** None. **Obstructions:** Cattle may overrun field. **Remarks:** Field is level tract in center of large pasture area.

Molokai No. 4 (21°06′ N., 157°16′ W.) United States Army emergency field, 800 by 800 feet. **Altitude:** 400 feet. **Surface:** Sod. **Drainage:** Natural, good. **Marking:** Corner markers; wind cone. **Facilities:** None. **Obstructions:** Fence through center of field. Cattle may overrun field. **Remarks:** Field is level tract in center of large pasture area.

Territorial emergency field (21′11° N., 157°14′ W.).

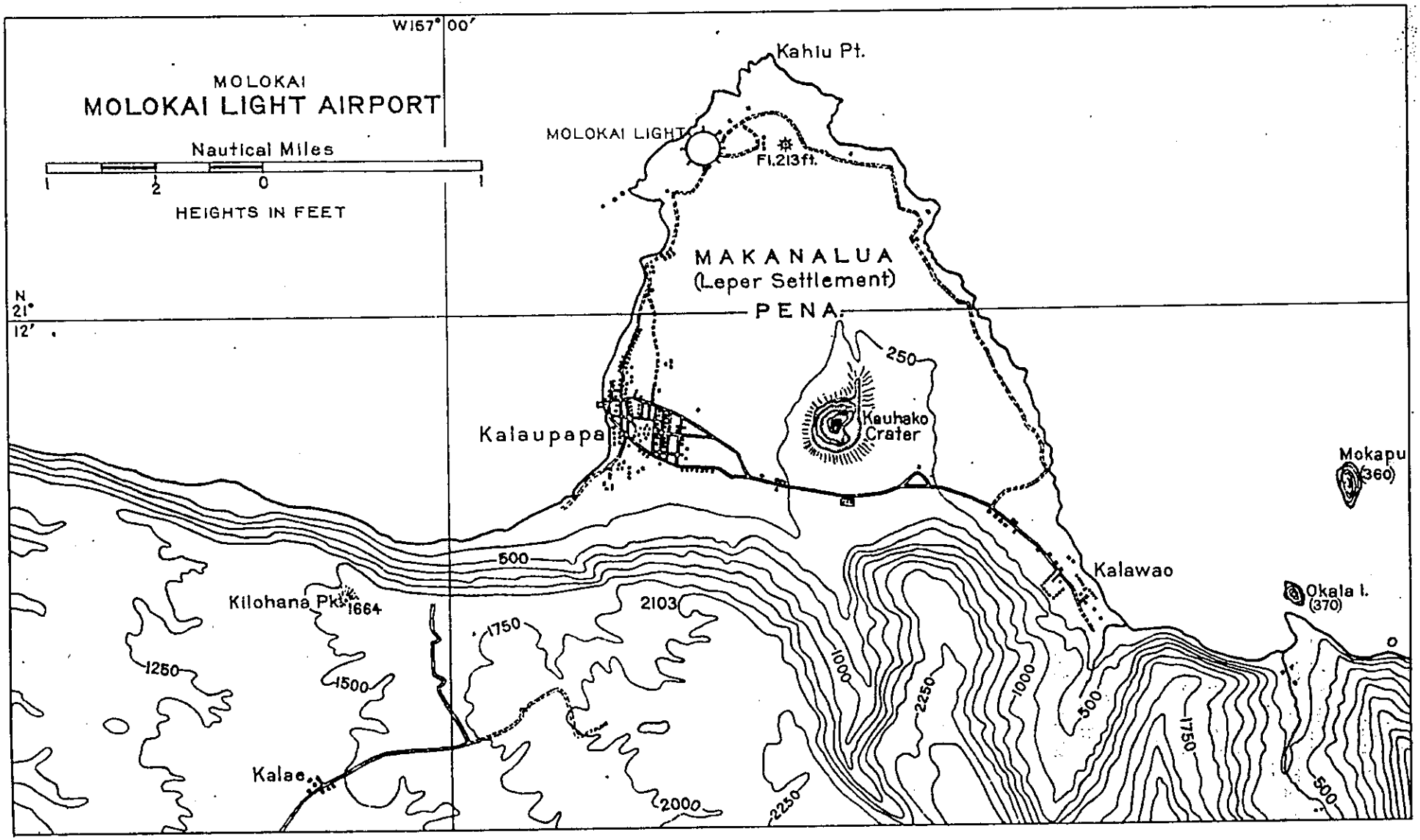
COMMUNICATIONS

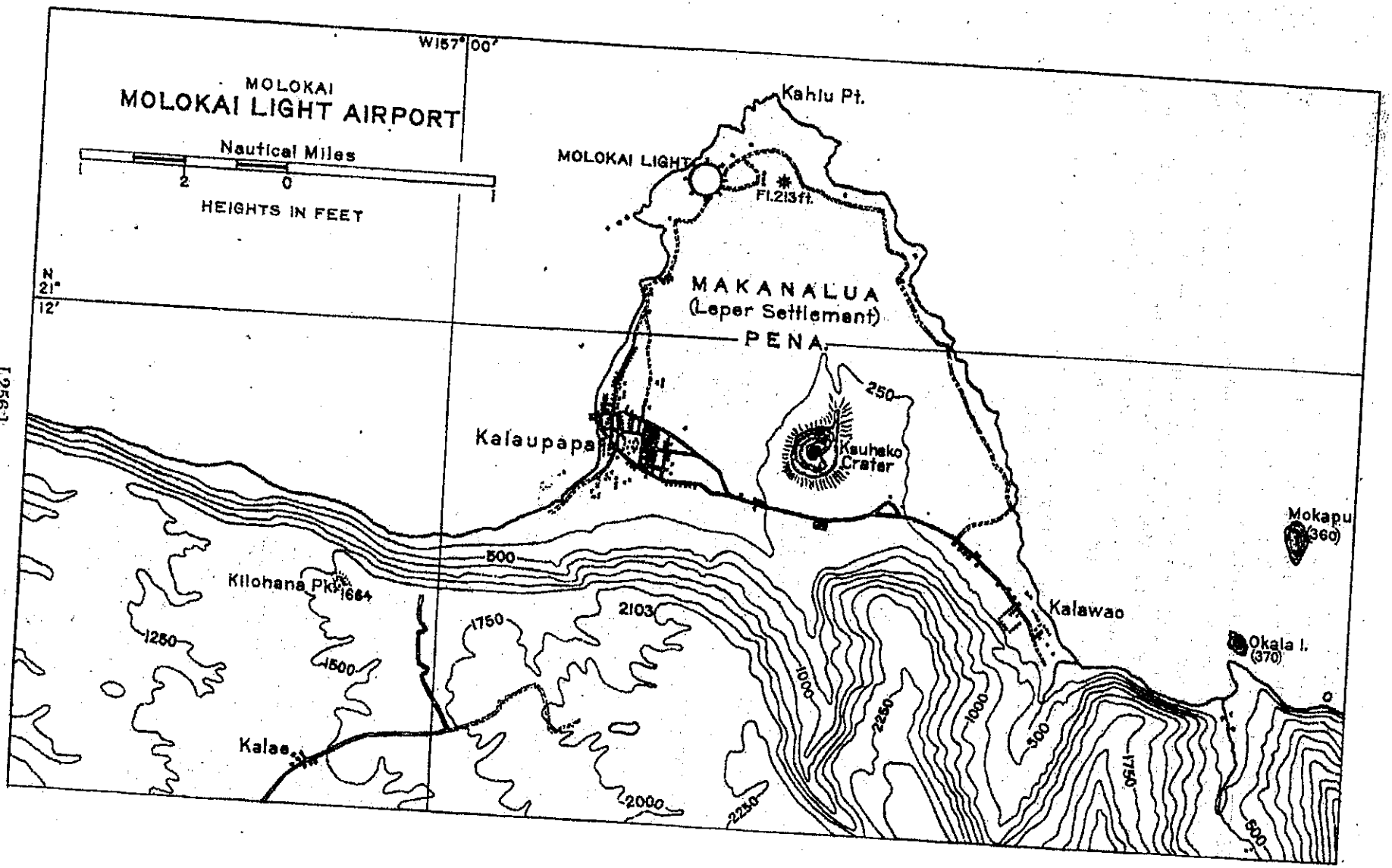
Highway skirts the southern shore and there are other roads in the central and western parts of the island. Telephone to all parts of the island. Radiotelephone to the other islands.

METEOROLOGICAL CONDITIONS

Winds: The trade winds divide at Cape Halawa, part following the north shore and another part following the south shore. On account of the topography of the island, the trade wind is frequently a little south of east along the south coast of Molokai. This wind is usually light in the early morning but blows with considerable strength during the middle of the day. During strong trades, dust clouds appear over the western end of the island.

Rainfall: There is a very heavy rainfall on the northeast side. The south and west sides receive very little rainfall.


W157° 00'
MOLOKAI
MOLOKAI LIGHT AIRPORT
Nautical Miles
1 2 0 1
HEIGHTS IN FEET
N 21° 12'
Kahiu Pt.
MOLOKAI LIGHT
Fl.213ft.
MAKANALUA
(Leper Settlement)
PENA
250
Kauhako Crater
Kalaupapa
Mokapu (360)
500
Kalawao
Okala I. (370)
Kilohana Pk. 1664
2103
1750
1250
1500
1000
2250
1000
500
1750
500
Kalae
2000
2250


MOLOKAI
MOLOKAI LIGHT AIRPORT
Nautical Miles
2 0 1
HEIGHTS IN FEET
W157° 00'
N 21° 12'
Kahlu Pt.
MOLOKAI LIGHT
Fl.213ft.
MAKANALUA
(Leper Settlement)
PENA
250
Kauhako Crater
Kalaupapa
500
Kilohana Pk. 1664
1250
1500
1750
2103
2000
2250
Kalae
Kalawao
1000
2250
1000
500
1750
Mokapu (360)
Okala I. (370)
600
0

KALAUPAPA

MOLOKAI—HAWAIIAN ISLANDS

MOLOKAI LIGHT AIRPORT

(Lat. 21°13′ N., long. 156°59′ W.)

DESCRIPTION

Location: Territorial airport located on west side of Kahiu Point about 1 mile north of Kalaupapa village and west of Molokai Lighthouse. **Altitude:** 15 feet. **Dimensions:** Size, NE./SW., 2,000 by 300 feet. **Surface:** Sand coral and lava; rough in spots. **Drainage:** Natural; in rainy weather water collects in low spots. **Marking:** Landing tee and wind cone at southwest end. **Lighting:** None. **Obstructions:** Fence at southwest end. Walled enclosure at northwest corner. Clear approaches.

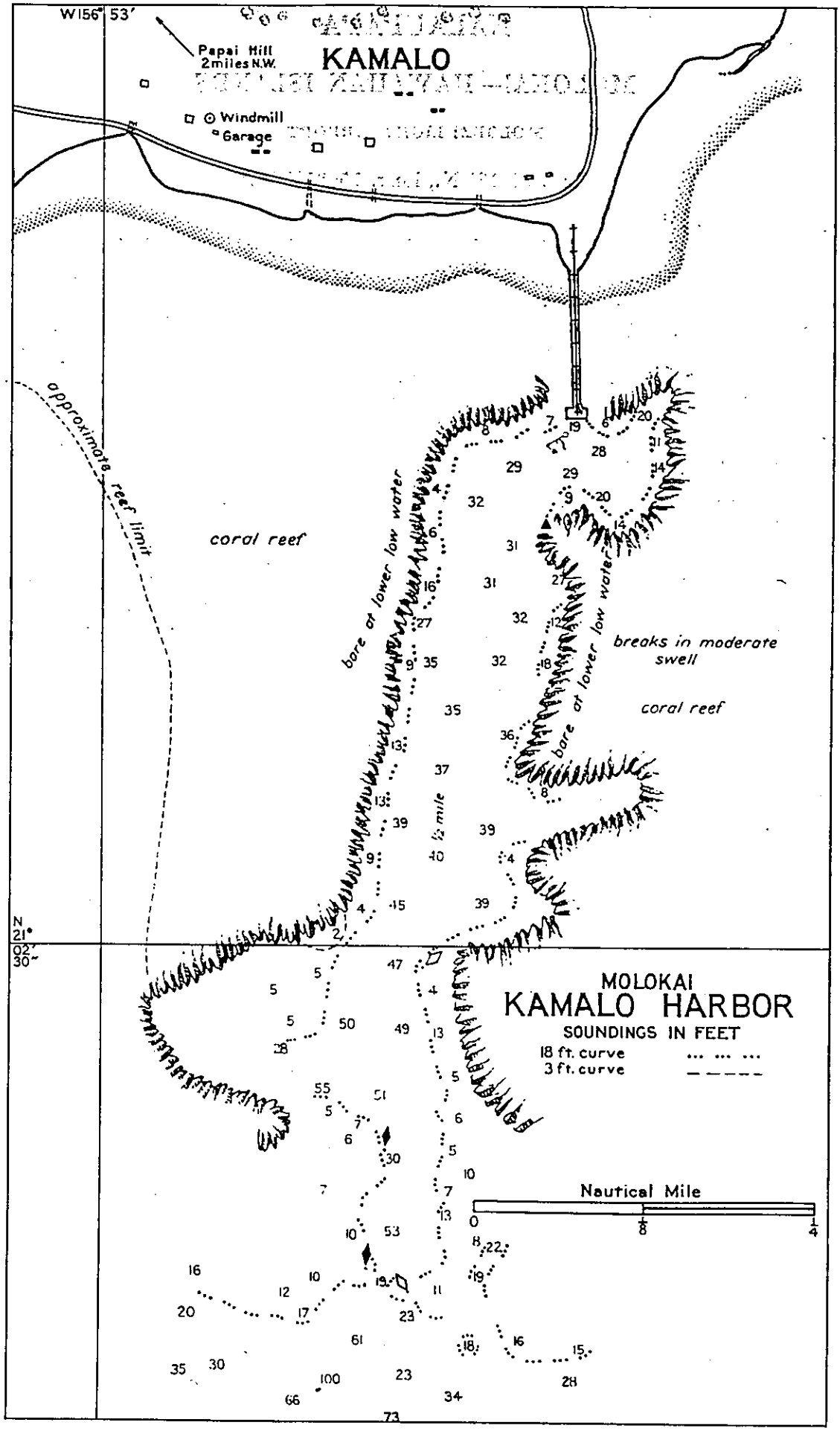
FACILITIES

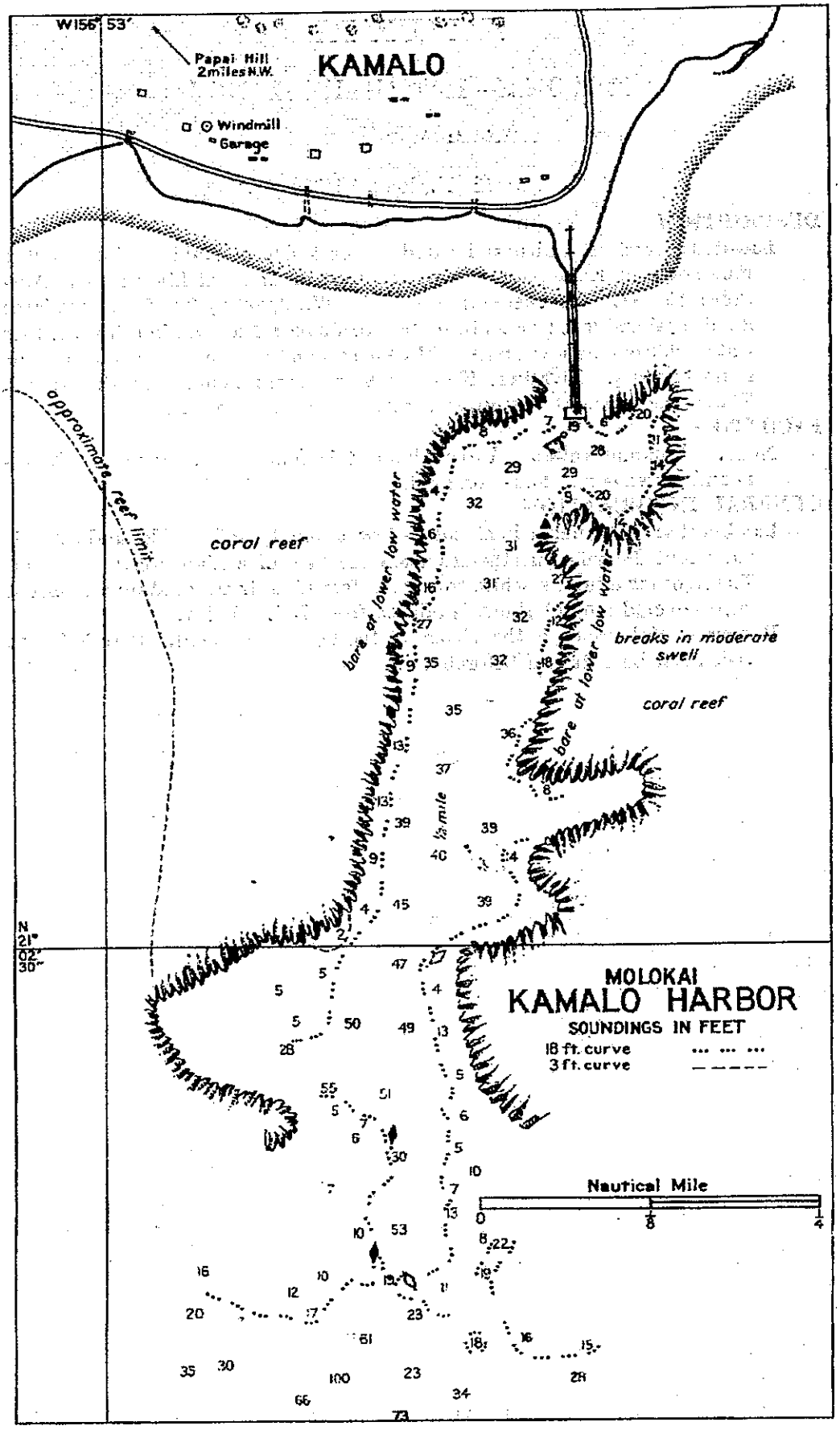
None. **Communications:** Inter-Island telephone at settlement. Inter-Island Airways rest house on field.

GENERAL INFORMATION

Landmarks: Makanalua Peninsula is low, about 1½ miles wide, and extends out about 2¼ miles northward from the face of a high precipitous cliff. The light structure, a white tower 132 feet high, is situated on an 80-foot grass-covered mound about ¼ mile in from Kahiu Point.

Remarks: Kalaupapa is the village of the leper settlement. Permission to visit must be obtained beforehand.


W156° 53'
Papai Hill
2 miles N.W.
KAMALO
Windmill
Garage
approximate reef limit
coral reef
bare or lower low water
breaks in moderate swell
coral reef
bare or lower low water
½ mile
N
21°
02'
30"
MOLOKAI
KAMALO HARBOR
SOUNDINGS IN FEET
18 ft. curve
3 ft. curve
Nautical Mile
0
1/8
1/4


W156° 53'
Papai Hill
2 miles N.W.
KAMALO
Windmill
Garage
approximate reef limit
coral reef
bare at lower low water
breaks in moderate swell
coral reef
bare at lower low water
½ mile
N
21°
02'
30"
MOLOKAI
KAMALO HARBOR
SOUNDINGS IN FEET
18 ft. curve
3 ft. curve
Nautical Mile
0
½
1

KAMALO HARBOR

MOLOKAI—HAWAIIAN ISLANDS

EMERGENCY SEAPLANE ANCHORAGE

(Lat. 21°03′ N., long. 156°53′ W.)

DESCRIPTION

Location: Restricted anchorage adjacent to the end of the pier. **Depths:** 7 to 32 feet. **Tidal range:** 2 feet. **Character of bottom:** Gray mud. **Currents:** Weak. **Shelter:** This harbor is the only one along the south coast of Molokai that is considered safe during a southwesterly storm. The swell is not felt within the harbor.

LANDING AND TAKE-OFF AREA

Location: Kamalo Harbor or open sea. **Area:** Kamalo Harbor N./S., ½ mile; E./W., 130 to 250 yards. **Shelter:** Fair, reefs only. **Obstructions:** Coral reef on both sides of harbor, which can be easily seen by day. Buoys.

FACILITIES

Provisions and water can be obtained in limited quantities. **Communications:** Local steamer calls weekly.

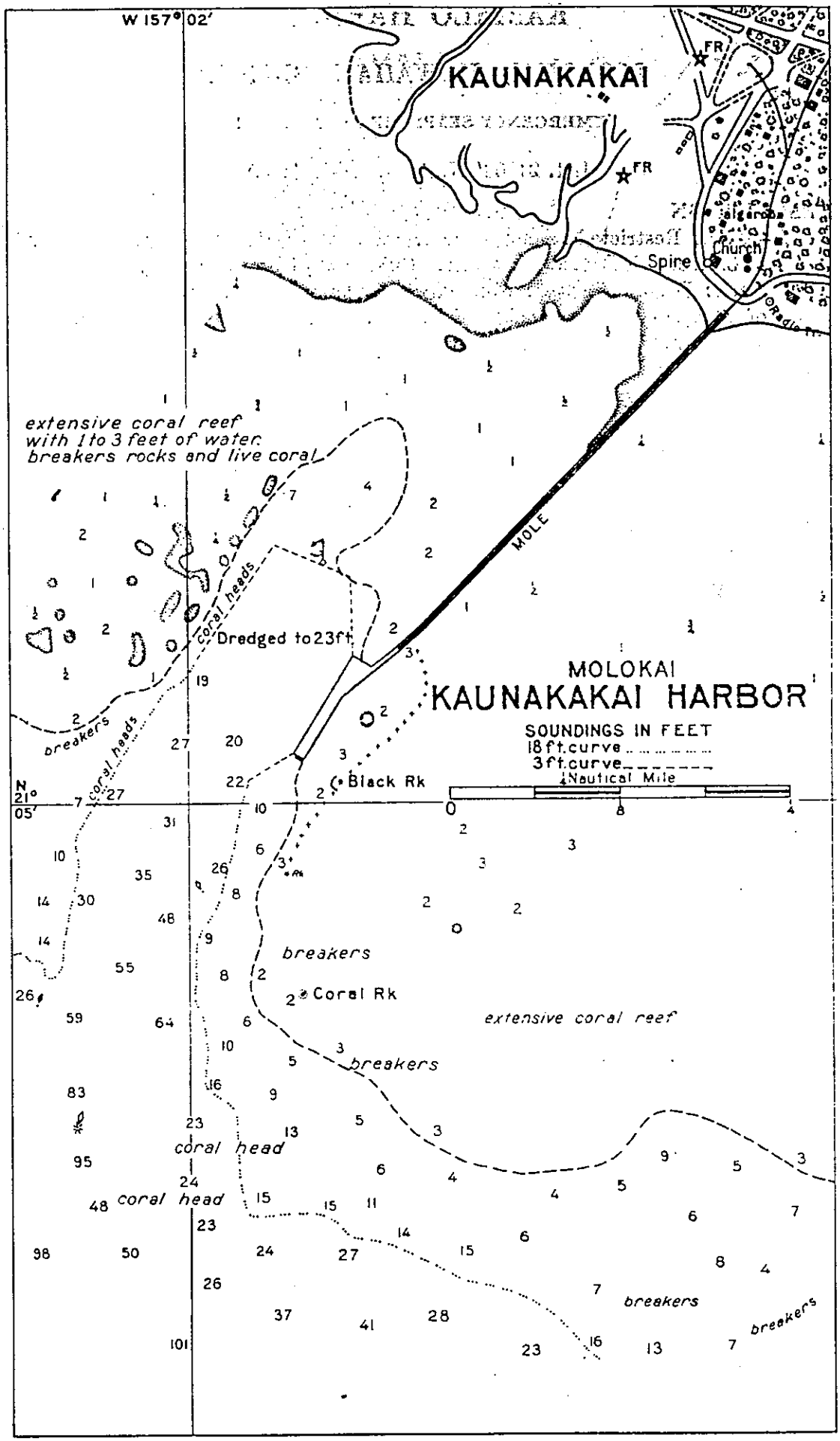
GENERAL INFORMATION

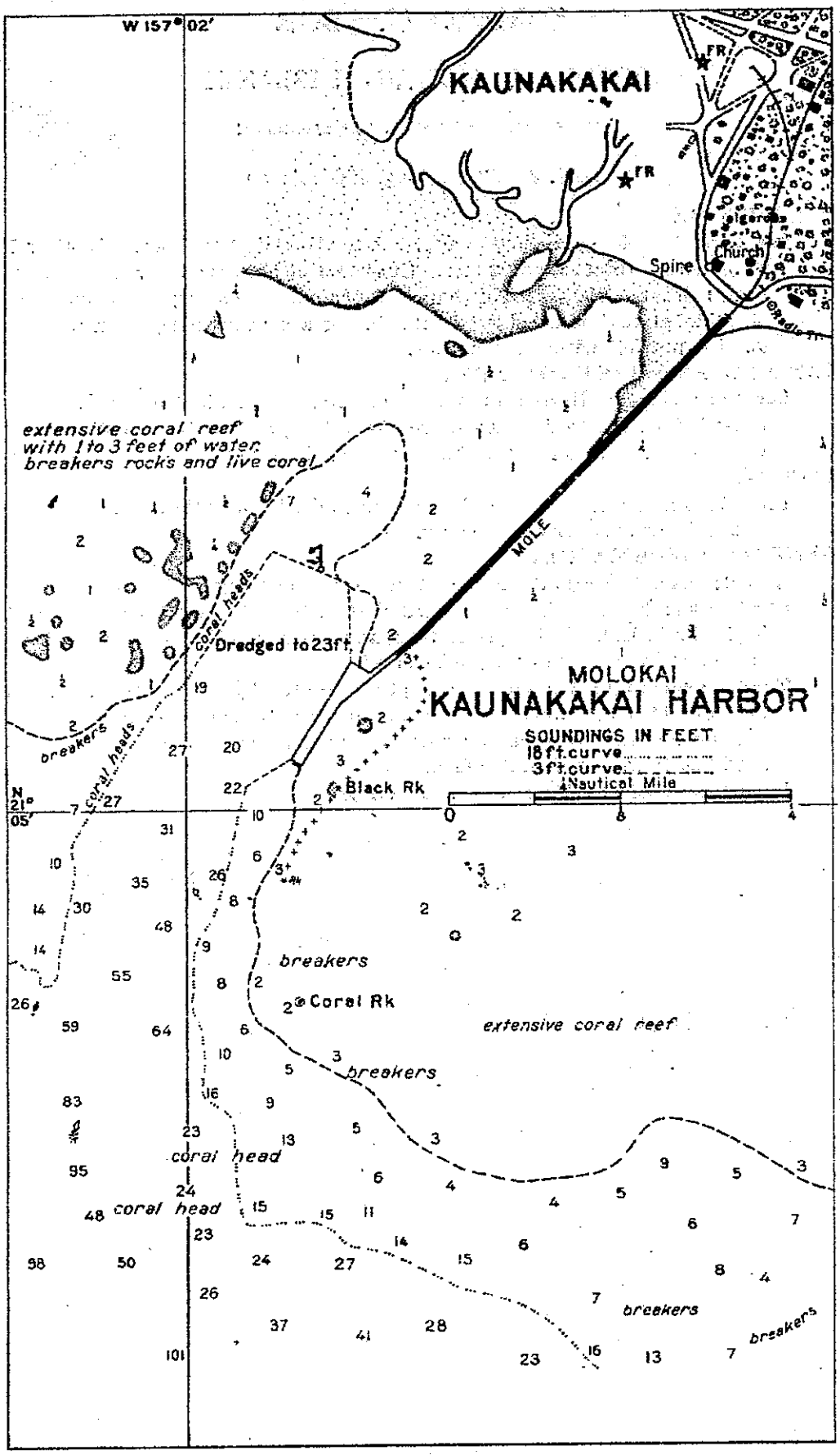
Aspect: Kamalo Harbor is a pocket in the reef opening southward.

Landmarks: Papai Hill, 2 miles northwest of Kamalo, is 830 feet high and is ⅝ mile inland. It is bare of trees and has a slightly lighter color than the mountain slopes in the background.

Tender anchorage: The entrance depth is limited by a bar with a general depth of 14 feet, though it is possible to carry 19 feet into the harbor by passing midway between the entrance buoys. The wharf with a small shed has 19 feet at its outer face.

Importance: Emergency seaplane anchorage.


W 157° 02'
KAUNAKAKAI
FR
FR
Spire
Church
extensive coral reef
with 1 to 3 feet of water
breakers rocks and live coral
coral heads
Dredged to 23ft
MOLE
MOLOKAI
KAUNAKAKAI HARBOR
SOUNDINGS IN FEET
18 ft curve
3 ft curve
Nautical Mile
0
8
4
N 21° 05'
coral heads
breakers
Black Rk
breakers
Coral Rk
extensive coral reef
breakers
coral head
coral head
breakers
breakers


W 157° 02'
KAUNAKAKAI
FR
FR
Spire
Church
extensive coral reef
with 1 to 3 feet of water
breakers rocks and live coral
MOLE
Dredged to 23ft
coral heads
coral heads
breakers
MOLOKAI
KAUNAKAKAI HARBOR
SOUNDINGS IN FEET
18 ft. curve
3 ft. curve
1 Nautical Mile
N 21° 05'
Black Rk
Coral Rk
breakers
extensive coral reef
breakers
coral head
coral head
breakers
breakers

KAUNAKAKAI HARBOR

MOLOKAI—HAWAIIAN ISLANDS

EMERGENCY SEAPLANE ANCHORAGE

(Lat. 21°05′ N., long. 157°02′ W.)

DESCRIPTION

Location: Restricted anchorage north of the wharf. **Depths:** 3 to 23 feet. **Tidal range:** 2 feet. **Character of bottom:** Soft sand and mud. **Currents:** Weak. **Shelter:** During the summer season, with the steady northeast trades, seaplanes could, with moderate assurance as to their safety, be moored fairly close to the beach. A wind to the south of east or west would make this position untenable.

LANDING AND TAKE-OFF AREA

Location: Open sea. **Area:** Unlimited. **Shelter:** None. **Obstructions:** Coral heads on both sides of channel. Buoys.

FACILITIES

Provisions and water can be obtained in limited quantities. Ordinary gasoline can be obtained in limited amounts. **Beach:** Continuous surf, except in ideally calm weather, makes hauling out or beaching impracticable. **Communications:** Radio station, call letters KHO. Local steamer calls biweekly.

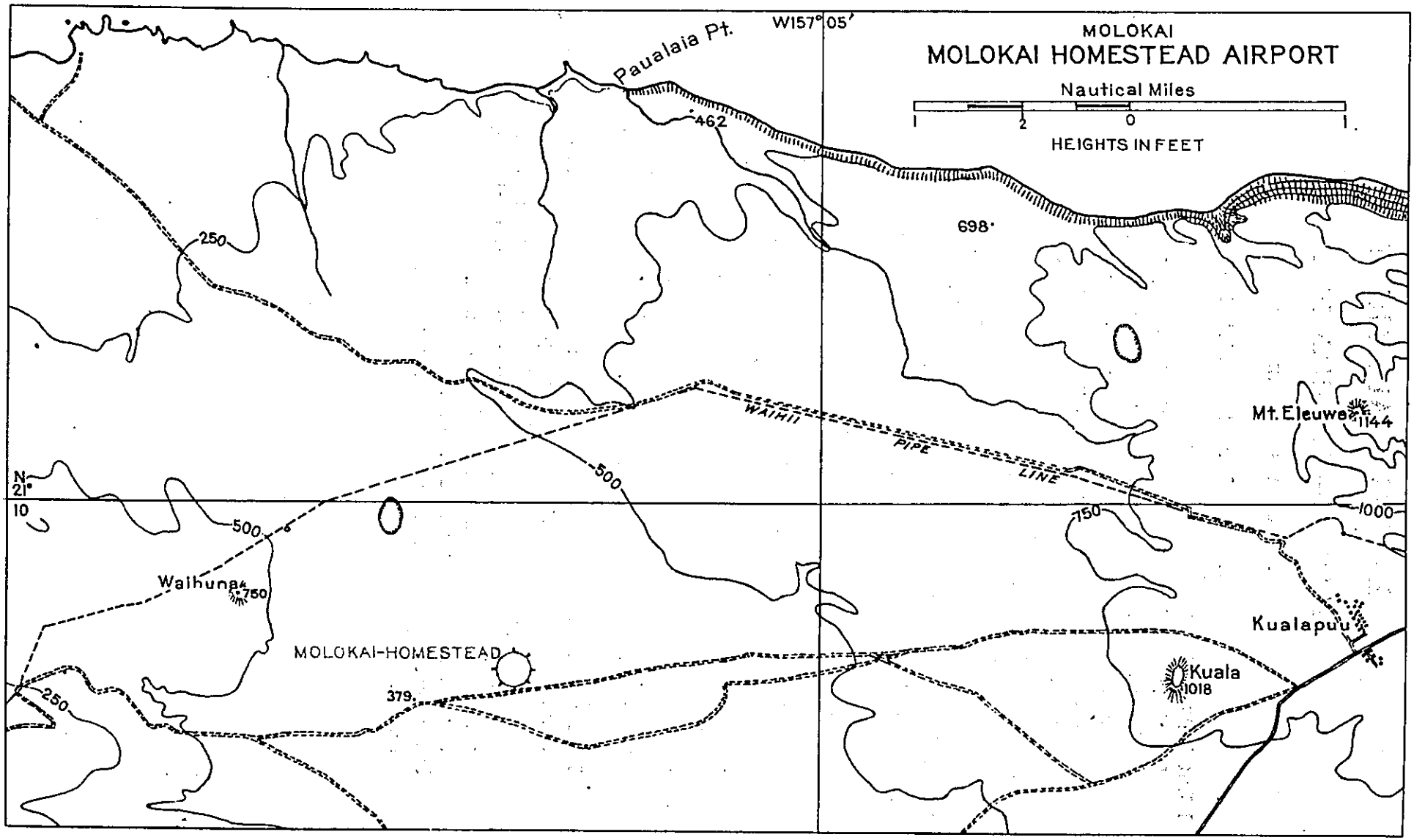
GENERAL INFORMATION

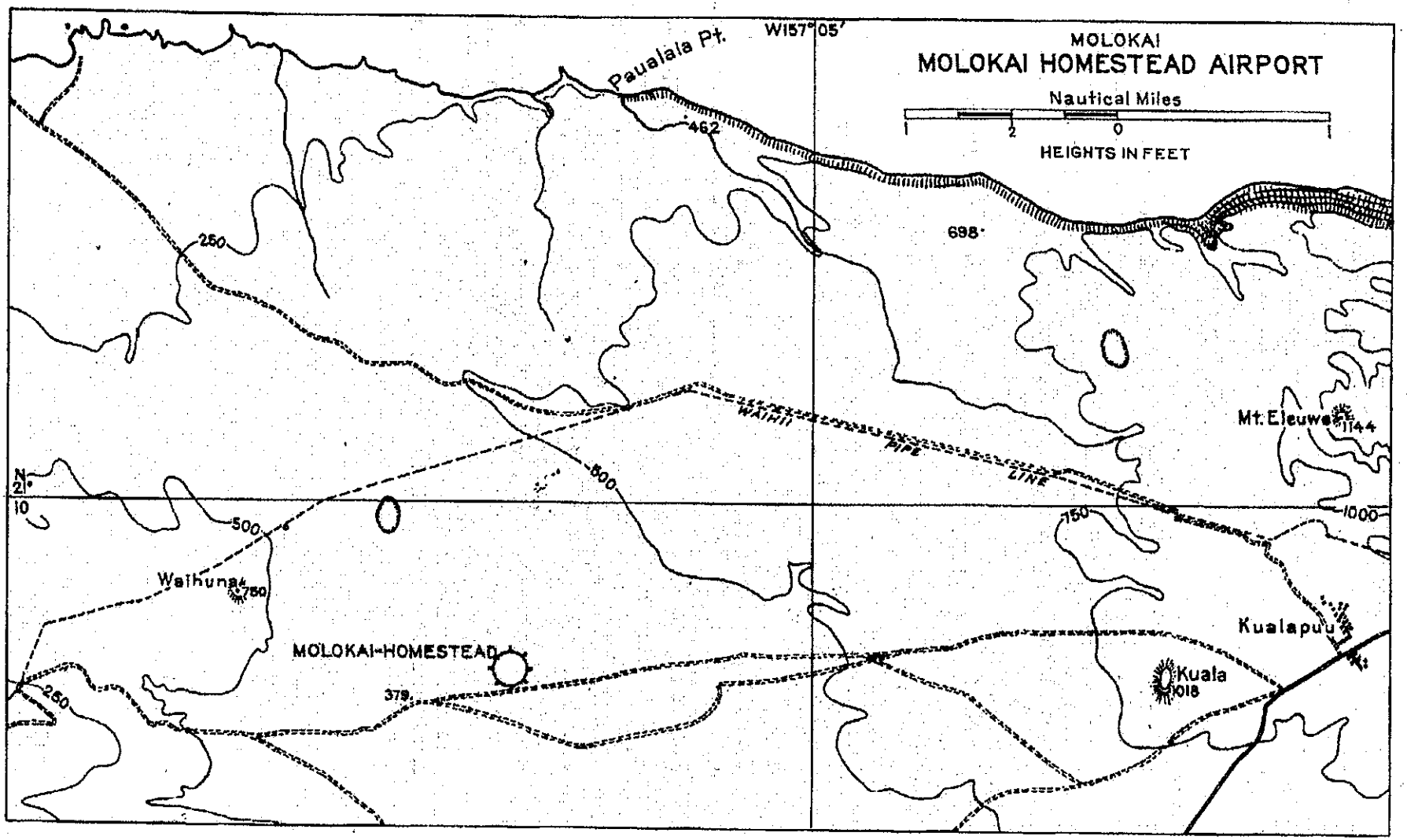
Aspect: Kaunakakai Harbor is a pocket, 600 yards long and 200 yards wide, in the reef and open southward. The village consists of a few houses and stores about ½ mile inland from the mole.

Landmarks: Silver-colored water tank, 4 miles north-northeast of Kaunakakai, high up on the mountain side. White radio tower and silver-colored oil tanks. About 1 mile west of the village, at the water's edge, is a conspicuous, thick, coconut grove.

Tender anchorage: Anchorage for small craft only on account of the limited swinging room. Vessels can anchor temporarily just outside the entrance, in about 15 fathoms, but there is little shelter from the trade winds. A rock and gravel mole extends ⅜ mile from the shore to the concrete wharf which has 12 feet of water along its outer face. Small steamers drawing as much as 14 feet can go alongside.

Importance: Presents a fair location for operations during the summer season.


MOLOKAI
MOLOKAI HOMESTEAD AIRPORT
Nautical Miles
1 2 0 1
HEIGHTS IN FEET
W157° 05'
N 21° 10
Paualaia Pt.
462
698
250
500
500
750
1000
WAIHII
PIPE
LINE
Mt. Eleuwe
1144
Walhuna
750
MOLOKAI-HOMESTEAD
379
250
Kualapuu
Kuala
1018


MOLOKAI
MOLOKAI HOMESTEAD AIRPORT
Nautical Miles
2 0
HEIGHTS IN FEET
W157°05'
Paualala Pt.
462
250
698
Mt. Eleuwa 1144
WAIHII
PIPE LINE
N 21° 10'
500
800
150
1000
Waihuna 750
MOLOKAI-HOMESTEAD
379
250
Kualapuu
Kuala 1018

MOLOKAI (HOMESTEAD) AIRPORT

MOLOKAI—HAWAIIAN ISLANDS

(Lat. 21°09′ N., long. 157°07′ W.)

DESCRIPTION

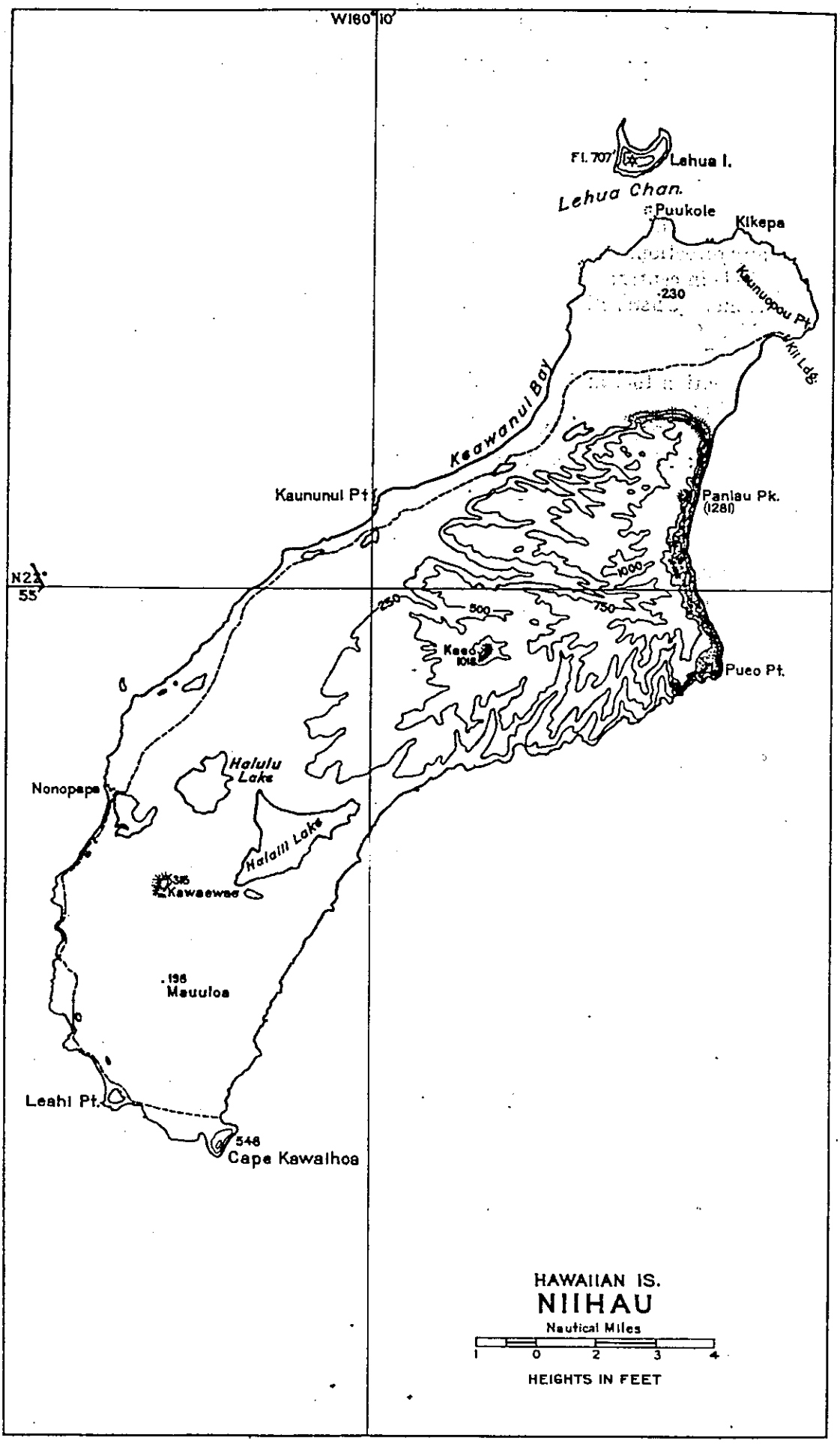
Location: Territorial auxiliary airport located in the center of the western part of Molokai Island, 12 miles northeast of Laau Point. **Altitude:** 500 feet. **Dimens ons:** Size, 4,000 by 2,700 feet. Landing may be made in any direction. **Surface:** Sod, rough. **Drainage:** Good. **Marking:** White circle in center; wind cone at southwest and northwest corners. **Lighting:** None. **Obstructions:** Wire fence surrounding field. Buildings on one side.

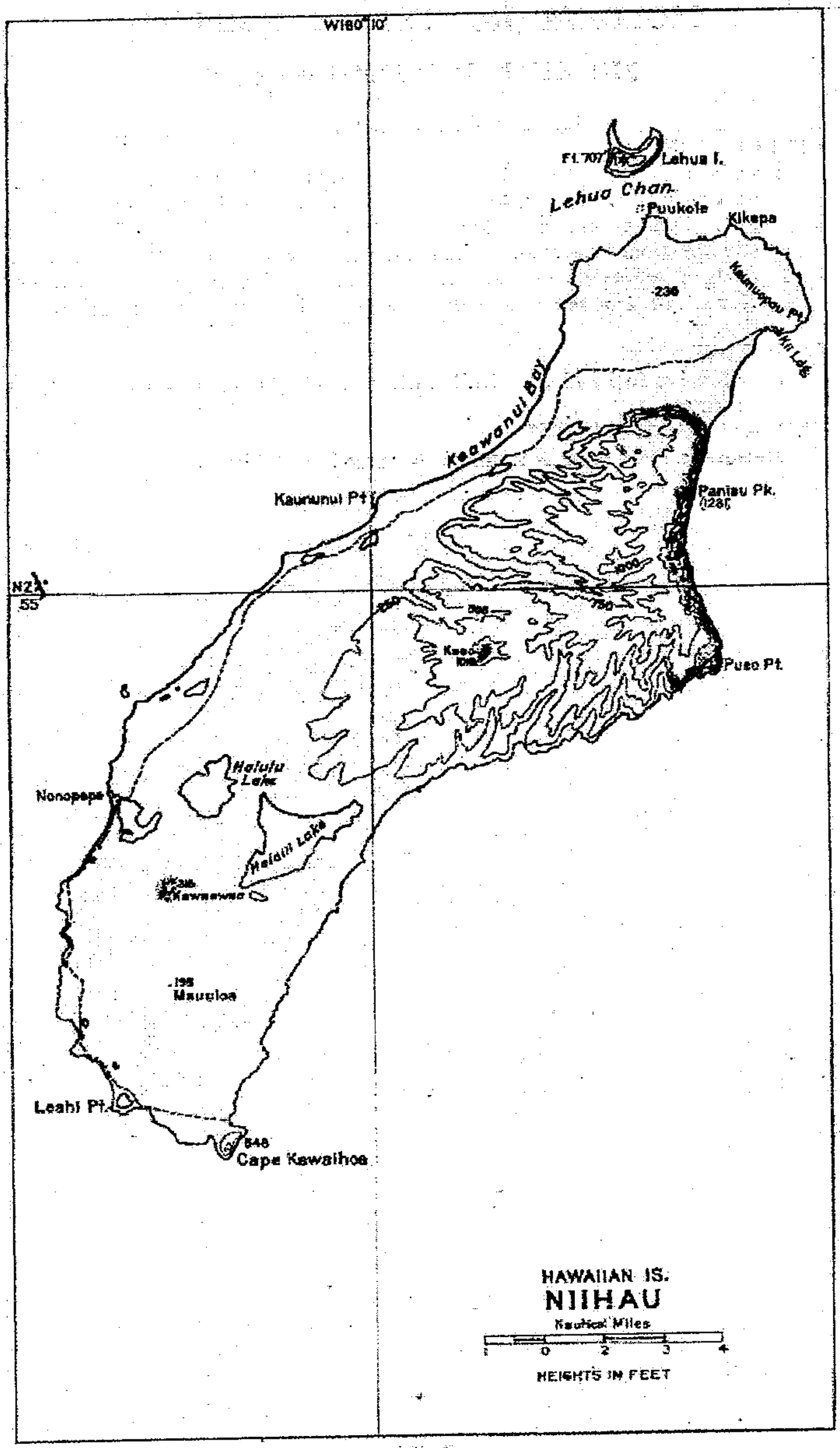
FACILITIES

Specification fuel and oil. United States Army Air Corps man on duty at all times.

GENERAL INFORMATION

Remarks: Field used as terminal by Inter-Island Airways.


W160° 10'
Fl. 707'
Lehua I.
Lehua Chan.
Puukole
Kikepa
230
Kaunuopou Pt.
Kii Ldg.
Keawanui Bay
Kaununui Pt.
Paniau Pk.
(1281)
N22° 55'
1000
500
250
750
Keae
1018
Pueo Pt.
Halulu Lake
Nonopapa
Halalii Lake
335
Kawaewae
196
Mauuloa
Leahi Pt.
548
Cape Kawaihoa
HAWAIIAN IS.
NIIHAU
Nautical Miles
1 0 2 3 4
HEIGHTS IN FEET


W160° 10'
Lehua I.
Lehua Chan.
Puukole
Kikepa
Keawanui Bay
Kaununui Pt.
Paniau Pk.
(1281)
Puao Pt.
Halulu Lake
Halalii Lake
Nonopapa
Kawaewae
Mauuloa
Leahi Pt.
Cape Kawaihoa
N 21° 55'
HAWAIIAN IS.
NIIHAU
Nautical Miles
1 0 2 3 4
HEIGHTS IN FEET

NIIHAU

The seventh in size of the islands is at the westerly end of the group. It is about 16 miles long in a northeast-southwest direction and varies in width from 3 to 5 miles. Near the middle of the island there is a high tableland with low projecting cones, or peaks, of which Paniau Peak, 1,281 feet high, is the highest. The northerly and easterly ends of the tableland are precipitous, varying in height from 600 to 1,000 feet, while the southerly and westerly slopes are gradual. There are no streams on the island. A single ranch, devoted to stock raising, furnishes the sole occupation of the inhabitants. By the census of 1930, Niihau has a population of 136.

SEAPLANE ANCHORAGES

Nonopapa (21°52′ N., 160°14′ W.) affords the most protected area for emergency landings. **Facilities:** Boat landing used only from May to September, as during winter months there is often a heavy northerly swell.

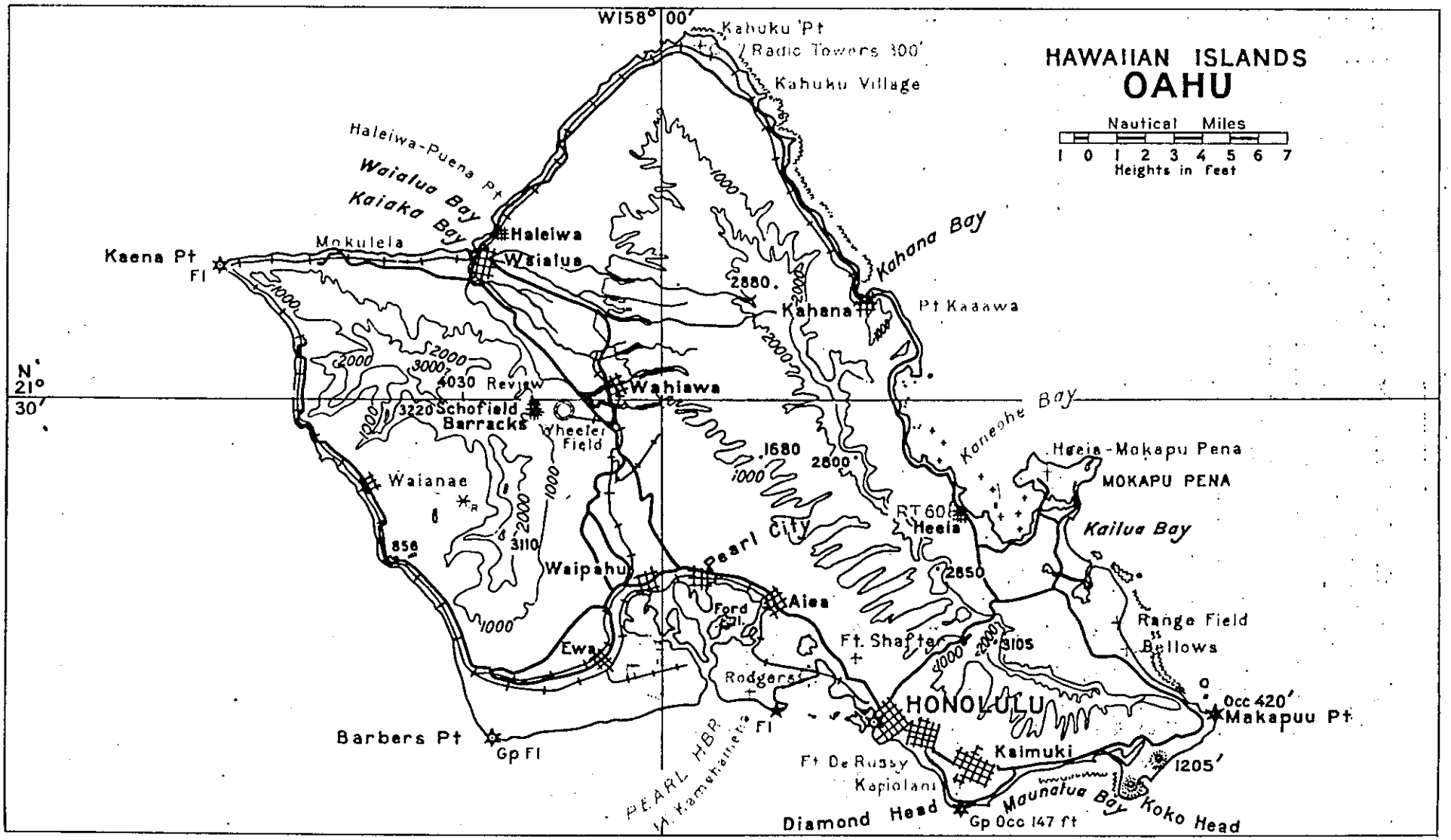
Kaali Bay (21°58′ N., 160°07′ W.). Possible emergency landing area, subject to heavy swells.

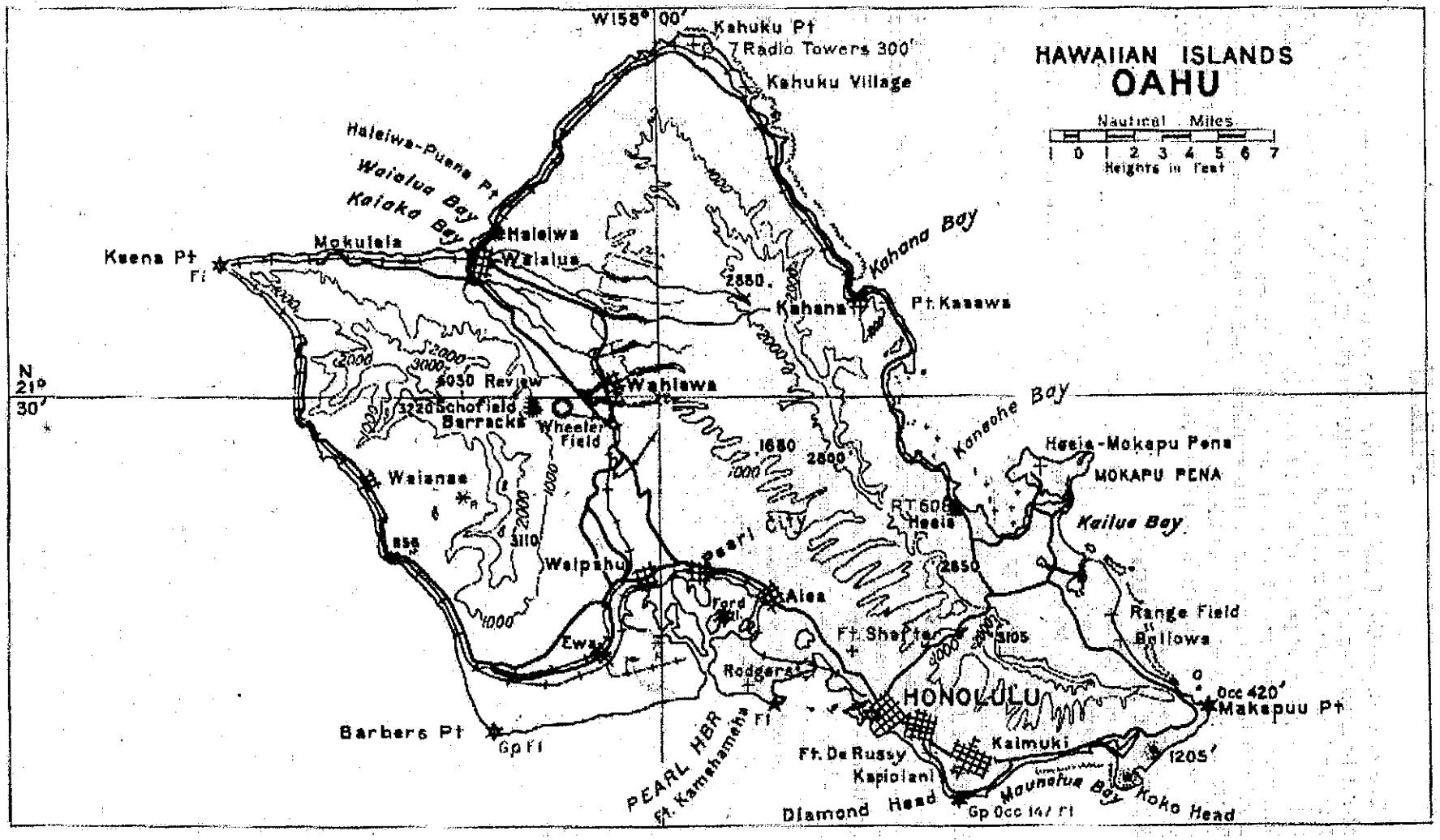
LANDING FIELDS

Keawanui Bay (21°58′ N., 160°07′ W.) potential emergency field. **Surface:** Smooth with some small washes. **Obstructions:** Shrubbery on approaches from all directions.

COMMUNICATIONS

There is no regular communication with Niihau, but local steamers call infrequently for cattle and wool. There is no telegraph or radio communication. A dirt road extends from the southern end of the island along the western shore to Kii.


HAWAIIAN ISLANDS
OAHU
Nautical Miles
1 0 1 2 3 4 5 6 7
Heights in Feet
W158° 00'
N 21° 30'
Kahuku Pt
Radio Towers 300'
Kahuku Village
Haleiwa-Puena Pt
Waialua Bay
Kaiaka Bay
Haleiwa
Waialua
Mokulela
Kaena Pt
Fl
Kahana Bay
2880.
Kahana
Pt Kaaawa
4030 Review
3220 Schofield Barracks
Wheeler Field
Wahiawa
Kaneohe Bay
Waianae
1680
2800
Heeia-Mokapu Pena
MOKAPU PENA
RT 60
Heeia
Kailua Bay
Pearl City
856
3110
Waipahu
2850
Aiea
Ford Isl
Range Field
Bellows
Ft. Shafter
3105
Ewa
Rodgers
HONOLULU
Occ 420'
Makapuu Pt
Barbers Pt
Gp Fl
PEARL HBR
Kamehameha
Fl
Ft De Russy
Kapiolani
Kaimuki
1205'
Maunalua Bay
Koko Head
Diamond Head
Gp Occ 147 ft


HAWAIIAN ISLANDS
OAHU
Nautical Miles
0 1 2 3 4 5 6 7
Heights in Feet
W158° 00'
N 21° 30'
Kahuku Pt
7 Radio Towers 300'
Kahuku Village
Haleiwa-Puena Pt
Waialua Bay
Kaiaka Bay
Mokuleia
Haleiwa
Waialua
Kuena Pt
Fl
Kahana Bay
2880
Kahana
Pt Kasawa
3030 Review
Wahiawa
3220 Schofield Barracks
Wheeler Field
Kaneohe Bay
1680
2800
Waianae
Hesia-Mokapu Pena
MOKAPU PENA
RT 60
Hesia
Kailua Bay
Pearl City
856
3110
Waipahu
2850
Aiea
Range Field
Bellowa
Ft Shafter
3105
Ewa
Rodgers
HONOLULU
Occ 420'
Makapuu Pt
Barbers Pt
Gp Fl
PEARL HBR
Ft Kamehameha
Ft De Russy
Kapiolani
Kaimuki
1205'
Diamond Head
Gp Occ 147 Fl
Maunalua Bay
Koko Head

OAHU

Oahu, the third in size of the islands, lies 22 miles westward of Molokai. It is about 40 miles long between Makapuu Head and Kaena Point and about 26 miles wide between Kahuku Point and Barbers Point. It includes two important mountain systems, and in general presents a more rough and jagged skyline than any of the other islands.

Koolau Range parallels the northeasterly coast for nearly its entire distance. The southeasterly part, between Makapuu Point and a point abreast of Heeia on Kaneohe Bay, is marked on its seaward side by a sheer, rocky cliff, or pali, nearly 2,000 feet high in places. Northwestward of this point the cliffs give way to steep, rugged slopes. From offshore the northwesterly half of the range presents a long ridge sloping gradually downward and ending in low bluffs near Kahuku Point. The crest of the ridge and about half the seaward slope is wooded, below which it is grass-covered. The entire range presents a very jagged appearance and is cut up on its inshore side by deep gorges and valleys. The greatest elevation found on this range is Mount Konahuanui, which is 3,105 feet high. This peak is back of Honolulu, on the east side of Nuuanu Valley, and overlooks the famous Nuuanu Pali at the head of the valley. On the easterly side of the range the land is low and rolling, cut up by a few sharp hills, and is under cultivation.

Waianae Mountains parallel the southwesterly coast for nearly the entire distance between Kaena Point and Barbers Point. Several spurs extend from the range toward the shore, forming short valleys. The range is much broken, and there are a number of high peaks. Mount Kaala, 4,030 feet high, has the greatest elevation. Between these two important ranges is a plain which extends from Pearl Harbor to Waialua. This plain is under cultivation, except in the middle, where it is high and rolling and somewhat cut up. Honolulu is the most important city on the island.

SEAPLANE ANCHORAGES

Honolulu (21°18′ N., 157°52′ W.), small harbor usually congested with shipping. Planes may be easily docked but good anchorage is hard to obtain. Tide flats may be used to beach planes, in sinking condition. Prevailing winds are offshore, making take-off difficult, as it is necessary to run down channel, cross wind. Very bumpy air.

Kailua Bay (21°25′ N., 157°43′ W.) is an open bight affording emergency anchorage with no shelter from the trades. Shoal water extends ⅛ mile off the shores of the bay. **Facilities:** Telephone, small boats. **Beach:** Splendid sandy beach. Very heavy swells.

Kaneohe Bay (21°28′ N., 157°50′ W.) sketch and description on pages 273, 274; photographs on page 637, 638.

Koko Head (21°17′ N., 157°43′ W.) emergency anchorage in Maunalua Bay an open bight on the westerly side of Koko Head. Shoal water extends ¾ mile from the head of the bay; there is an opening in the reef where small boats may pass to the sandy beach. **Facilities:** Telephone, small boats.

Pearl Harbor (21°23′ N., 158°59′ W.) sketch and description on pages 275, 276; photograph on page 640.

Waialua Bay (21°36′ N., 158°07′ W.) is a small indentation at the bend near the middle of the northwest coast of Oahu. **Facilities:** Telephone, stores. **Beach:** Excellent beach. Heavy swells. **Remarks:** Anchorage in creek mouth available for a few planes.

LANDING FIELDS

Bellows Field (21°21′ N., 157°43′ W.) United States Army auxiliary field. **Two runways:** Hard surface 2,000 feet; rolled cinders and sand 1,700 feet. **Altitude:** 10 feet. **Drainage:** Natural, good. **Marking:** Wind cone. **Facilities:** Gas and oil available during United States Army gunnery season. **Obstructions:** Trees on northwest side; 50-foot cliff to south of runway. **Remarks:** Field at north end of United States Army reservation.

Ewa mooring mast (21°21′ N., 158°02′ W.) emergency field 750 by 100 feet. **Altitude:** 15 feet. **Surface:** Hard sand. **Drainage:** Good. **Marking:** Landing tees; wind cone. **Facilities:** None. **Obstructions:** Mooring mast to south; trees surround field; mooring mast track.

Fort De Russy Parade Ground (21°17′ N., 157°50′ W.) emergency field, 1,000 by 600 feet. **Altitude:** 10 feet. **Surface:** Smooth grass. **Drainage:** Natural, good. **Facilities:** None. **Obstructions:** Trees, flag pole, and buildings. Radio towers at southwest end. **Remarks:** Dangerous, due to strong prevailing cross winds and size of landing area. Field used as review field by United States Army Coast Artillery unit.

Fort Kamehameha (21°19′N., 157°57′ W.) emergency landing field, 1,200 by 1,000 feet. **Altitude:** 20 feet. **Surface:** Grass, soft. **Drainage:** Natural, poor. **Marking:** landing tees; wind cone. **Facilities:** None. **Obstructions:** None. Field outside area between tees dangerous due to marshy grass.

Fort Shafter golf course, Putnam Field (21°21′ N., 157°53′ W.) emergency field, 1,500 by 200 feet. **Altitude:** 45 feet. **Surface:** Smooth grass. **Drainage:** Natural, good. **Facilities:** None. **Obstructions:** Traps and other golf hazards. Tennis courts and telephone wires at west end. **Remarks:** May be used by any type plane, landing toward mountains over tennis court into prevailing wind.

Haleiwa, Puena Point (21°36′ N., 158°06′ W.) emergency field, 2,000 by 400 feet. **Altitude:** 5 feet. **Surface:** Hard grass. **Drainage:** Natural, good. **Marking:** Landing tees; wind cone. **Facilities:** None. **Obstructions:** Trees on south and west sides. Very rough at north end. **Remarks:** Best area for landing between tees. Photograph on page 633.

Heeia-Mokapu Peninsula (21°27′ N., 157°46′ W.) emergency field, 1,500 by 100 feet. **Altitude:** 5 feet. **Surface:** Flat, sandy. **Drainage:** Very poor. **Marking:** Landing tees; wind cone. **Facilities:** None. **Obstructions:** Standing water on field after high tides. **Remarks:** Landing should be made over landing tee. Field dangerous on account of wind currents over field and casual water. Photograph on page 634.

John Rodgers (21°20′ N., 157°55′ W.) sketch and description pages 271, 272.

Kaaawa (21°33′ N., 157°52′ W.) emergency field, 1,100 by 600 feet. **Altitude:** 10 feet. **Surface:** Very rough. **Drainage:** Good. **Marking:** Landing tees; wind cone. **Facilities:** None. **Obstructions:** Telephone wires across field at south end. **Remarks:** Good approach from the north. Photograph on page 635.

Kahuku Point (21°42′ N., 157°59′ W.) emergency field, 1,500 by 500 feet. **Altitude:** 15 feet. **Surface:** Hard, grass. **Drainage:** Good. **Marking:** Landing tees; wind cone. **Facilities:** None. **Obstructions:** Radio towers and antennas, seven 300-foot towers and many 100-foot towers. Photograph on page 636.

Kahuku village (21°41′ N., 157°57′ W.) emergency field, 1,200 by 400 feet. **Altitude:** 5 feet. **Surface:** Smooth, grass. **Drainage:** Good. **Marking:** Landing tees; wind cone. **Facilities:** None. **Obstructions:** Sand dunes at east end.

Kapiolani polo field (21°16′ N., 157°49′ W.) emergency field, 750 by 360 feet. **Altitude:** 20 feet. **Surface:** Smooth, grass. **Drainage:** Good. **Obstructions:** Trees surround field. **Facilities:** None.

Luke Field (21°22′ N., 158°58′ W.) sketch and description on page 275, 277; photograph on page 640.

Mokuleia (21°35′ N., 158°10′ W.) emergency field, 1,800 by 1,200 feet. **Altitude:** 15 feet. **Surface:** Rough, grassy. **Drainage:** Good. **Marking:** Landing tee. **Facilities:** None. **Obstructions:** Trees on east end; telephone wires along highway. Road runs through center of field. Field may be obstructed by horses. **Remarks:** Best available area just north of road over landing tee. Approach in direction of prevailing wind is over telephone wires. Photograph on page 639.

Review Field-Schofield Barracks (21°30′ N., 158°05′ W.) emergency field, 1,800 by 1,200 feet. **Altitude:** 900 feet. **Surface:** Good, grassy. **Drainage:** Good. **Facilities:** Available from Wheeler Field. **Obstructions:** Trees on north and south sides. Review stand on southwest side of field. **Remarks:** Field is used as a review field.

Waimanalo Range Field (21°22′ N., 157°43′ W.) emergency field, 1,500 by 100 feet. Landing strip, N./S., about 75 feet wide. **Altitude:** 15 feet. **Surface:** Rough, grass. **Drainage:** Natural, good. **Marking:** Landing tee; wind cone. **Facilities:** None. **Obstructions:** High trees on west side; sand dunes surround field. **Remarks:** Used as an emergency field for United States Army gunnery range. Photograph on page 641.

Wheeler Field (21°30′ N., 158°04′ W.) sketch and description on pages 278, 279; photograph on page 642.

COMMUNICATIONS

Several regular steamer lines to United States, British Columbia, Australia, and the Orient. Frequent service by coasting steamers around the islands. Airplane service is maintained between the larger islands and Honolulu. Telephone to all parts of Oahu, and by radio and radiotelephone to the other islands and United States. Cable communication with San Francisco and also with Manila via Midway and Guam.

Railroad that runs westward from Honolulu along the southwesterly and northwesterly coast as far as Kahana, on the northeasterly coast. A branch of the railroad runs to Wahiawa, in the interior of the island.

Good highways in many parts of the island, and transportation can be obtained at most of the towns. A highway skirts the entire coast of the island except for a short distance around Kaena Point.

METEOROLOGICAL CONDITIONS

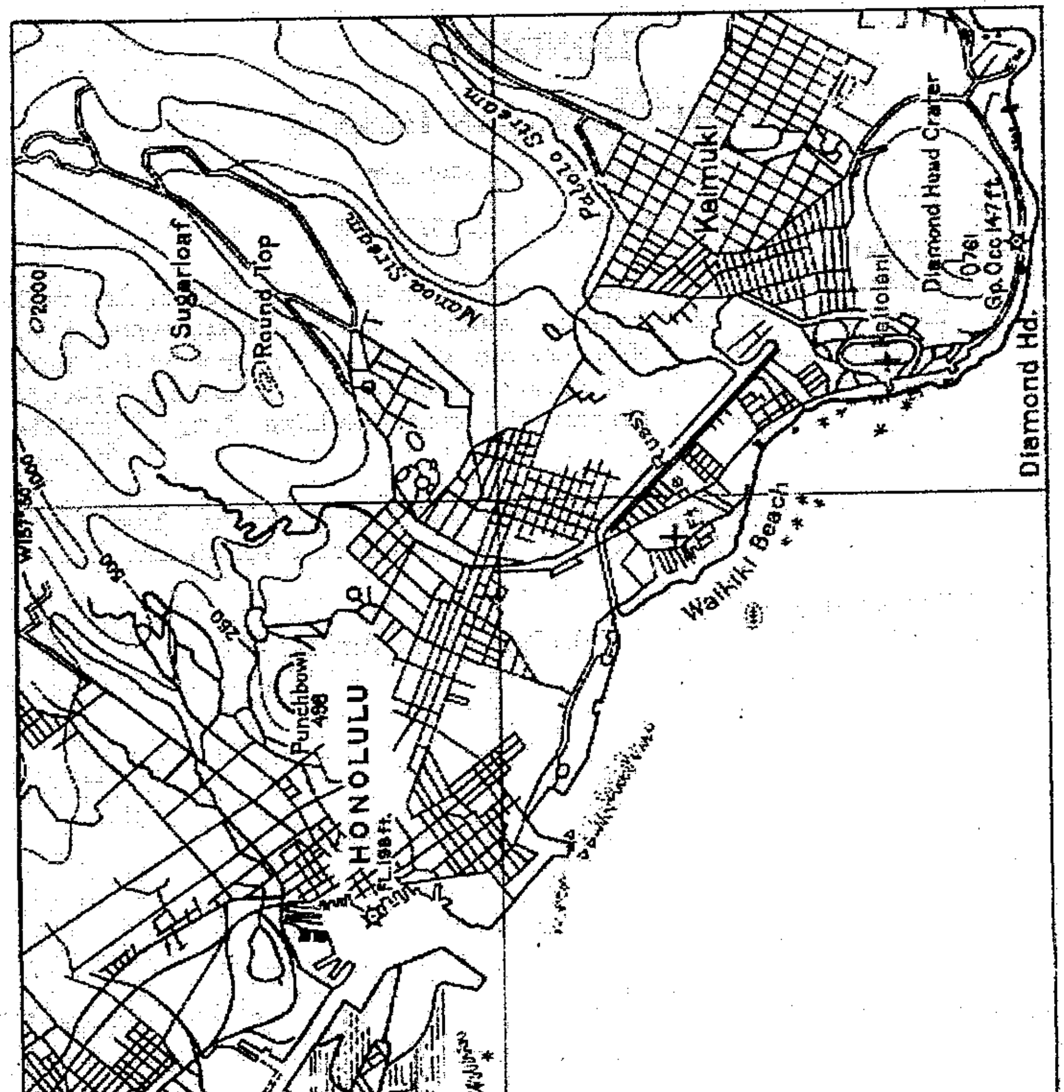
Winds: Between Diamond Head and Honolulu the winds are offshore during the trades.

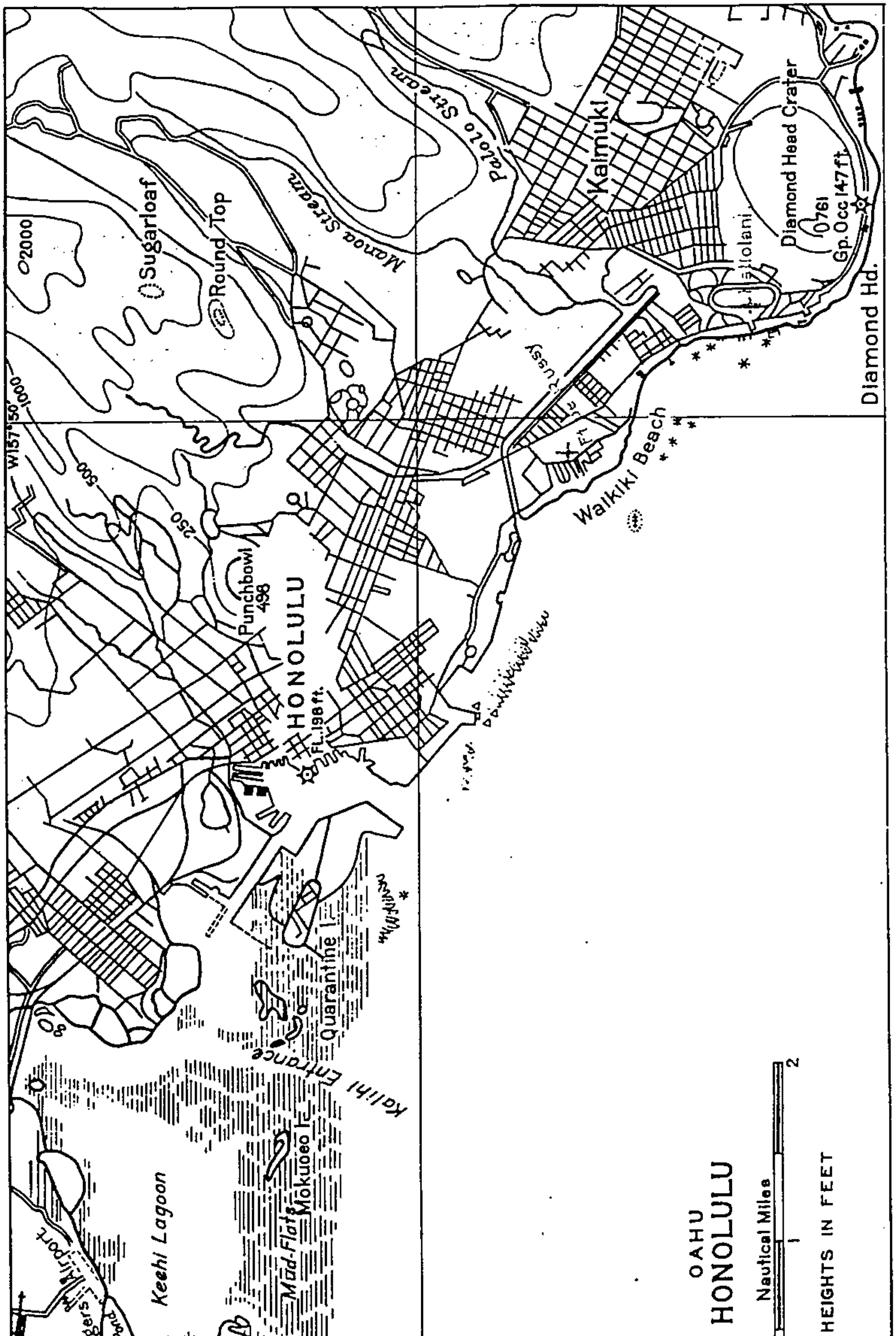
Rainfall: The rainfall in Oahu varies greatly in different localities. The greatest amount is found on the southwesterly side of the Koolau Range opposite Punaluu.

METEOROLOGICAL TABLE

Average meteorological conditions at the Honolulu (T. H.) Observatory Station (lat. 21°19′ N., long. 157°52′ W.)

Month	Barometer at 32° F. and mean sea level				Air temperature							Average relative humidity	Average amount of clouds, 0–10	Precipitation			Wind										Number of days gales 40 miles or over	Number of days of fog
	Mean	Extremes			Mean				Extremes								Average hourly velocity	Highest velocity	Average number of times (observations at 8 a. m. and 8 p. m.) from—										
	For month	Highest	Lowest	Range	For month	Maximum	Minimum	Range	Highest	Lowest	Range			Average fall	Number of days 0.01 inch or more	Maximum fall in 24 hours			North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm		
	In.	*In.*	*In.*	*In.*	°	°	°	°	°	°	°	*Pct.*		*In.*		*In.*													
January	30.00	30.30	29.58	0.72	70.5	75.5	65.5	10.0	82	57	25	72	4.4	3.24	14	4.48	8.6	51	7	23	17	3	2	3	2	3	2	0.7	0
February	30.05	30.32	29.63	.69	70.7	75.9	65.6	10.3	84	56	28	72	4.9	4.52	11	3.46	8.0	48	5	23	15	2	2	3	2	2	2	.3	0
March	30.05	30.24	29.68	.56	71.1	76.2	66.0	10.2	82	57	25	70	4.7	3.65	13	13.52	8.5	42	5	32	14	2	1	2	2	2	2	.2	0
April	30.06	30.25	29.77	.48	72.7	77.6	67.7	9.9	82	60	22	68	5.0	2.05	13	3.79	9.2	40	2	29	22	2	1	1	1	1	1	.1	0
May	30.03	30.20	29.80	.40	74.6	79.6	69.6	10.0	85	63	22	68	4.6	1.66	12	1.94	8.3	48	2	30	21	3	1	1	2	1	1	0	0
June	30.03	30.18	29.84	.34	76.2	81.0	71.4	9.6	86	66	20	68	4.1	.93	13	3.67	8.5	40	1	28	36	2	1	1	0	1	0	0	0
July	30.02	30.15	29.82	.33	77.3	82.2	72.4	9.8	87	67	20	68	4.0	.92	13	1.19	8.5	31	1	28	32	1	0	0	0	1	0	0	0
August	30.01	30.16	29.86	.30	78.1	83.0	73.2	9.8	88	66	22	68	4.6	1.24	13	1.12	8.5	36	1	30	27	2	0	1	0	0	0	0	0
September	30.00	30.15	29.82	.33	78.0	83.0	73.0	10.0	87	68	19	68	4.0	1.47	13	2.70	7.7	32	1	28	27	2	0	0	1	0	1	0	0
October	30.00	30.17	29.78	.39	76.8	81.7	71.8	9.9	87	63	24	69	4.6	1.75	14	4.58	7.3	42	1	30	24	2	1	1	1	1	1	0	0
November	30.03	30.16	29.75	.41	74.6	79.4	69.7	9.7	85	61	24	70	4.9	3.80	14	4.31	8.5	39	2	30	21	2	1	1	1	1	1	0	0
December	30.01	30.28	29.51	.77	72.6	77.3	67.8	9.5	83	59	24	72	4.5	4.52	16	4.83	8.5	53	5	26	20	3	1	2	1	2	2	.2	0
Mean	30.02	-------	-------	------	74.4	79.4	69.5	9.9	----	----	----	69	4.5	29.75	------	------	8.4	----	----	----	----	----	----	----	----	----	----	----	----
Total	-------	-------	-------	------	------	------	------	------	----	----	----	------	------	------	159	------	------	----	33	337	266	26	11	16	13	15	13	1.5	0


OAHU
HONOLULU
Nautical Miles
0
1
2
HEIGHTS IN FEET
HONOLULU
Punchbowl
498
Sugarloaf
Round Top
2000
1000
500
250
Manoa Stream
Palolo Stream
Kaimuki
Kapiolani
Diamond Head Crater
Diamond Hd.
Waikiki Beach
Quarantine I.
Kalihi Entrance
Mokuoeo I.
Mud Flat
Keehi Lagoon
John Rodgers
Ahua Pt.


OAHU
HONOLULU
Nautical Miles
0
1
2
HEIGHTS IN FEET
Diamond Hd.
Diamond Head Crater
Gp. Occ. 147 ft.
761
Kaimuki
Palolo Stream
Manoa Stream
Sugarloaf
Round Top
2000
1000
500
250
W157° 50'
Punchbowl
498
HONOLULU
Fl. 198 ft.
Waikiki Beach
Kalihi Entrance
Quarantine I.
Mokuoeo I.
Mud Flats
Keehi Lagoon
Airport
John Rodgers
Kaihikapu Pond
Ahua Pt.
Fl.
N21° 18'

HONOLULU

OAHU—HAWAIIAN ISLANDS

JOHN RODGERS AIRPORT

(Lat. 21°20′ N., long. 157°55′ W.)

DESCRIPTION

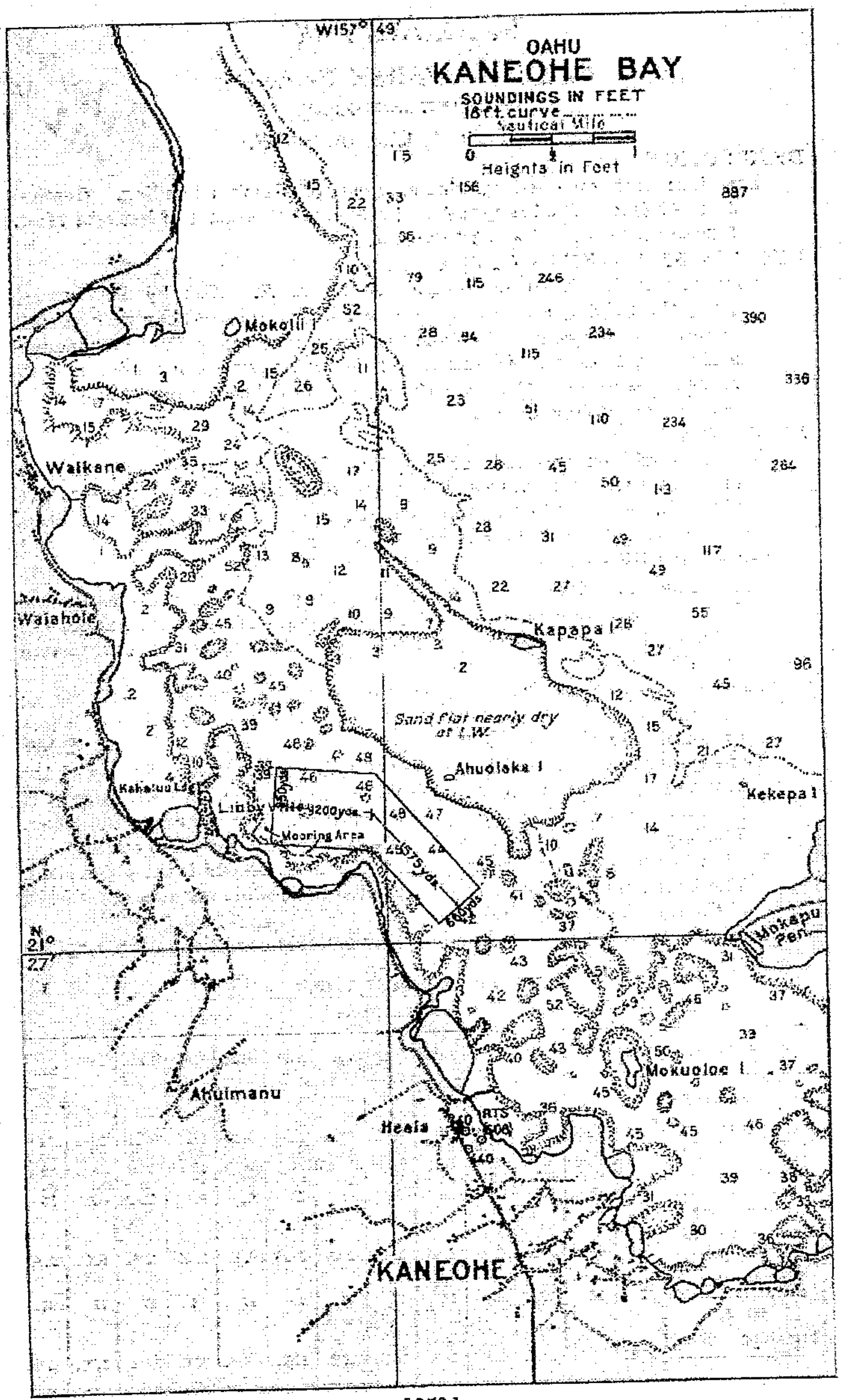
Location: John Rodgers Airport is located on the shore of Keehi Lagoon 3 miles northwest of Honolulu. **Altitude:** 5 feet. **Dimensions:** Size, 2,500 by 2,500 feet. Macadam runway, NE./SW., 1,000 by 100 feet. **Surface:** Rolled coral. **Drainage:** Natural, good. **Marking:** "INTER-ISLAND AIRWAYS" on hangar; wind cone. **Lighting:** None. **Obstructions:** Hangars.

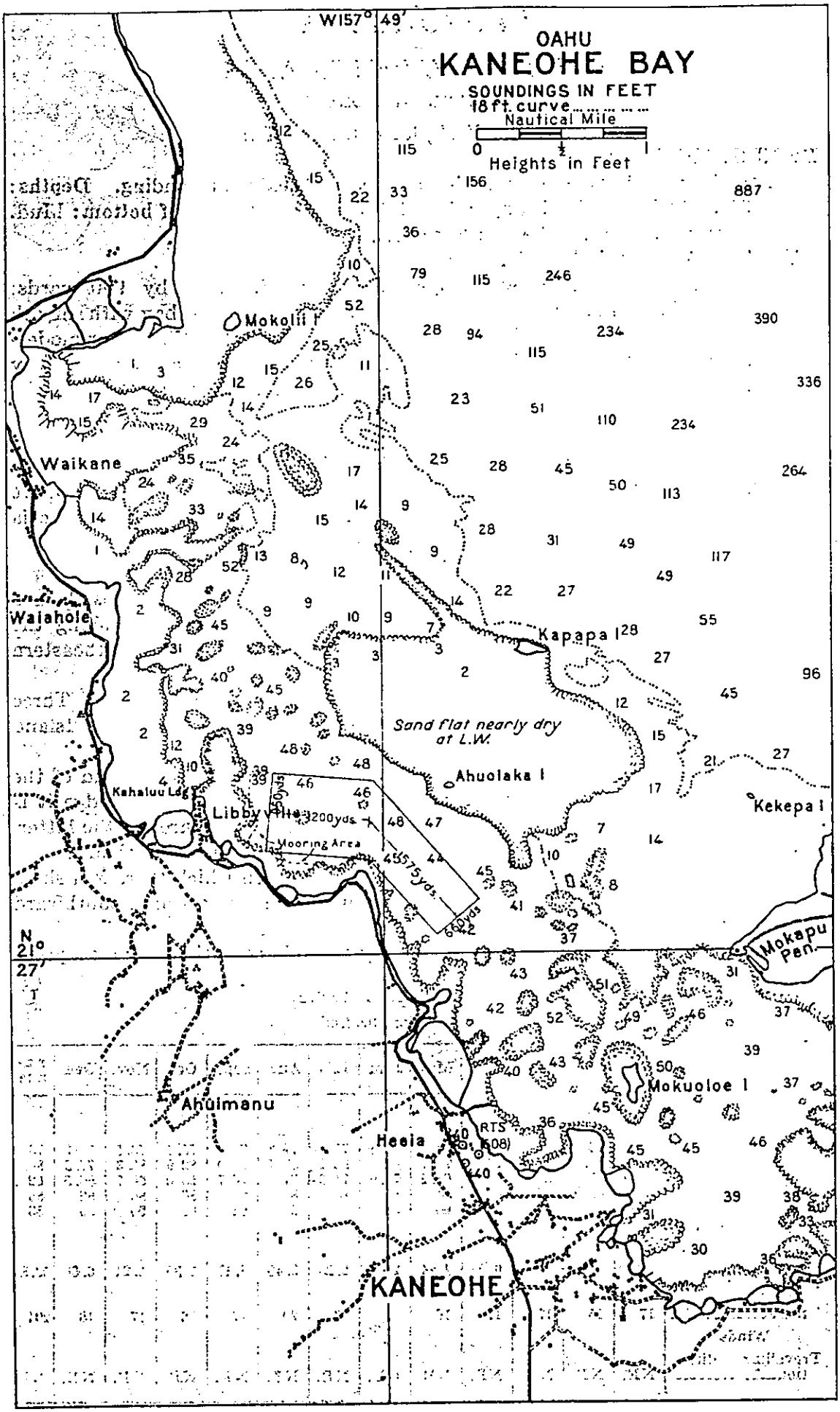
FACILITIES

Specification fuel and oil. Mechanics and limited spares. Two metal hangars, 100 by 120 by 20 feet. **Communications:** Telephone. Bus to Honolulu.

GENERAL INFORMATION

Remarks: Control terminal of the Inter-Island Airways Co.


OAHU
KANEOHE BAY
SOUNDINGS IN FEET
18ft. curve
Nautical Mile
Heights in Feet
W157° 49'
Mokolii I
Waikane
Waiahole
Kahaluu
Libbyville
Mooring Area
Kapapa I
Sand flat nearly dry at L.W.
Ahuolaka I
Kekepa I
Mokapu Pen.
N 21° 27'
Ahuimanu
Heeia
Mokuoloe I
KANEOHE


W157° 49'
OAHU
KANEOHE BAY
SOUNDINGS IN FEET
18 ft. curve
Nautical Mile
0 ½ 1
Heights in Feet
Mokolii I
Waikane
Waiahole
Kapapa I
Sand flat nearly dry at L.W.
Ahuolaka I
Kekepa I
Kahaluu Lgn
Libby Ville
3200yds
Mooring Area
4557yds
600yds
Mokapu Pen.
N 21° 27'
Ahuimanu
Heeia
RTS (508)
Mokuoloe I
KANEOHE

KANEOHE BAY

OAHU—HAWAIIAN ISLANDS

SEAPLANE ANCHORAGE

(Lat. 21°28′ N., long. 157°50′ W.)

DESCRIPTION

Location: Anchorage and mooring area east of Kahaluu Landing. **Depths:** 31 to 42 feet. **Tidal range:** About 1.5 feet. **Character of bottom:** Mud. **Currents:** Weak. **Shelter:** Excellent.

LANDING AND TAKE-OFF AREA

Location: Adjacent to anchorage. **Area:** E./W. 1,200 by 950 yards; NW./SE., 1,575 by 660 yards. **Shelter:** Large protected bay with smooth water. General conditions make this bay a good take-off zone for moderately loaded planes. **Obstructions:** Many dangerous coral heads may be easily seen from the air. **Remarks:** Coral heads would have to be marked for safe operations.

FACILITIES

Tender would be required for supplies. Limited supplies etc., may be obtained from shore via small boats. **Beach:** No suitable beach where planes can be hauled out. **Communications:** Naval radio station at Heeia inoperative. Paved highway and telephone.

GENERAL INFORMATION

Aspect: Kaneohe Bay is full of reefs and shoals. In heavy trades the sea breaks across both entrances. Several villages are scattered along the shore of the bay. The village of Kaneohe is located at the southeastern end of the bay.

Landmarks: Mokapu Peninsula with greatest elevation 695 feet. Three radio towers at Heeia, the highest being 608 feet. Mokuoloe Island eastward of Heeia.

Tender anchorage: There is an entrance near the northwesterly end of the bay and one near the southeasterly end, and with local knowledge it is possible to take 10 feet through the former and 8 feet through the latter. The bay has depths of 7 to 8 fathoms between the reefs and shoals.

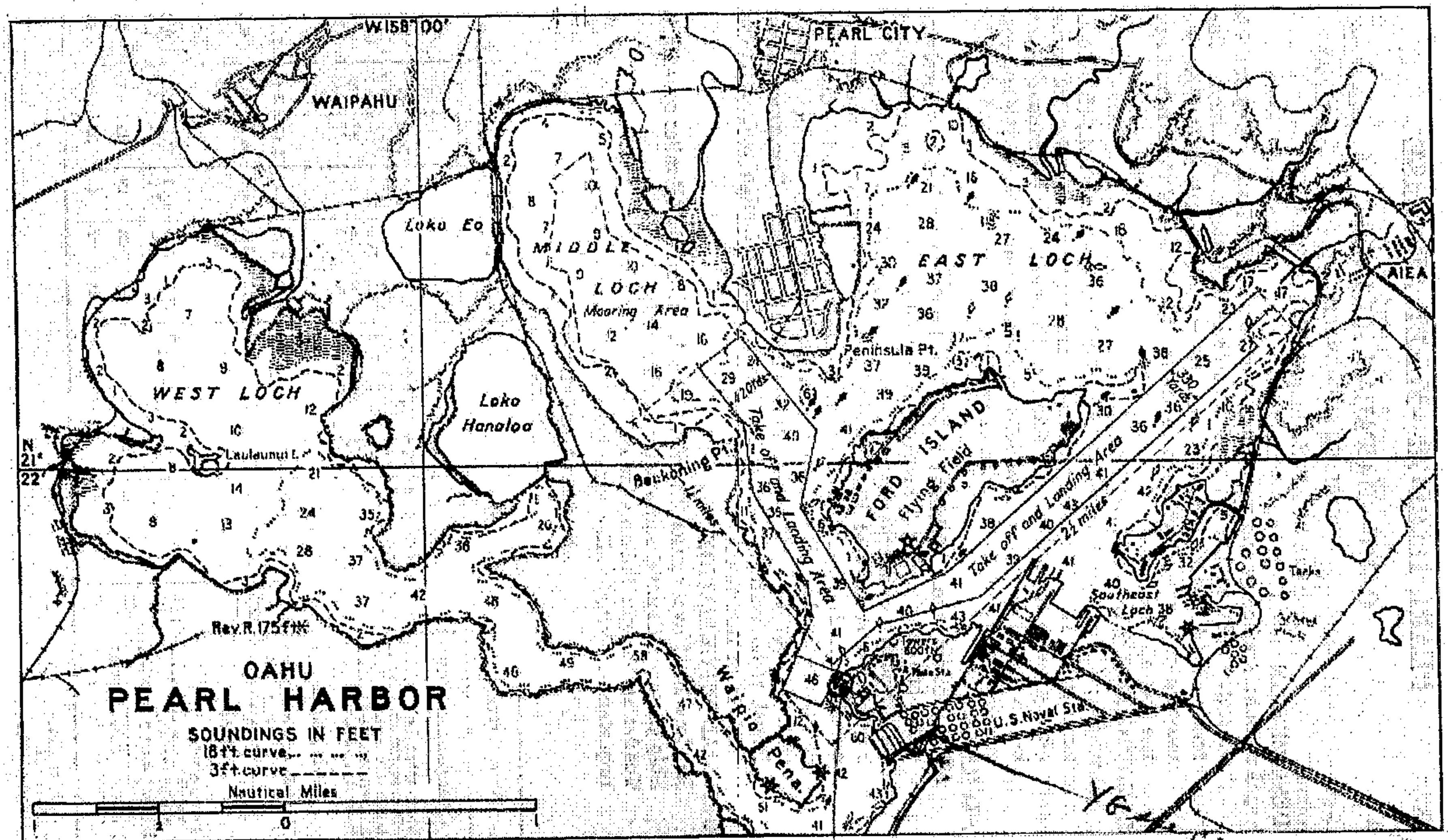
Boat landing: A dock exists at Kahaluu Landing, on which there is a shed. The boat landing of a yacht club is situated a short distance southward of the radio towers at Heeia.

Importance: Kaneohe Bay affords highly suitable conditions for a seaplane operating base.

METEOROLOGICAL TABLE

[Heeia, elevation, 100 feet]

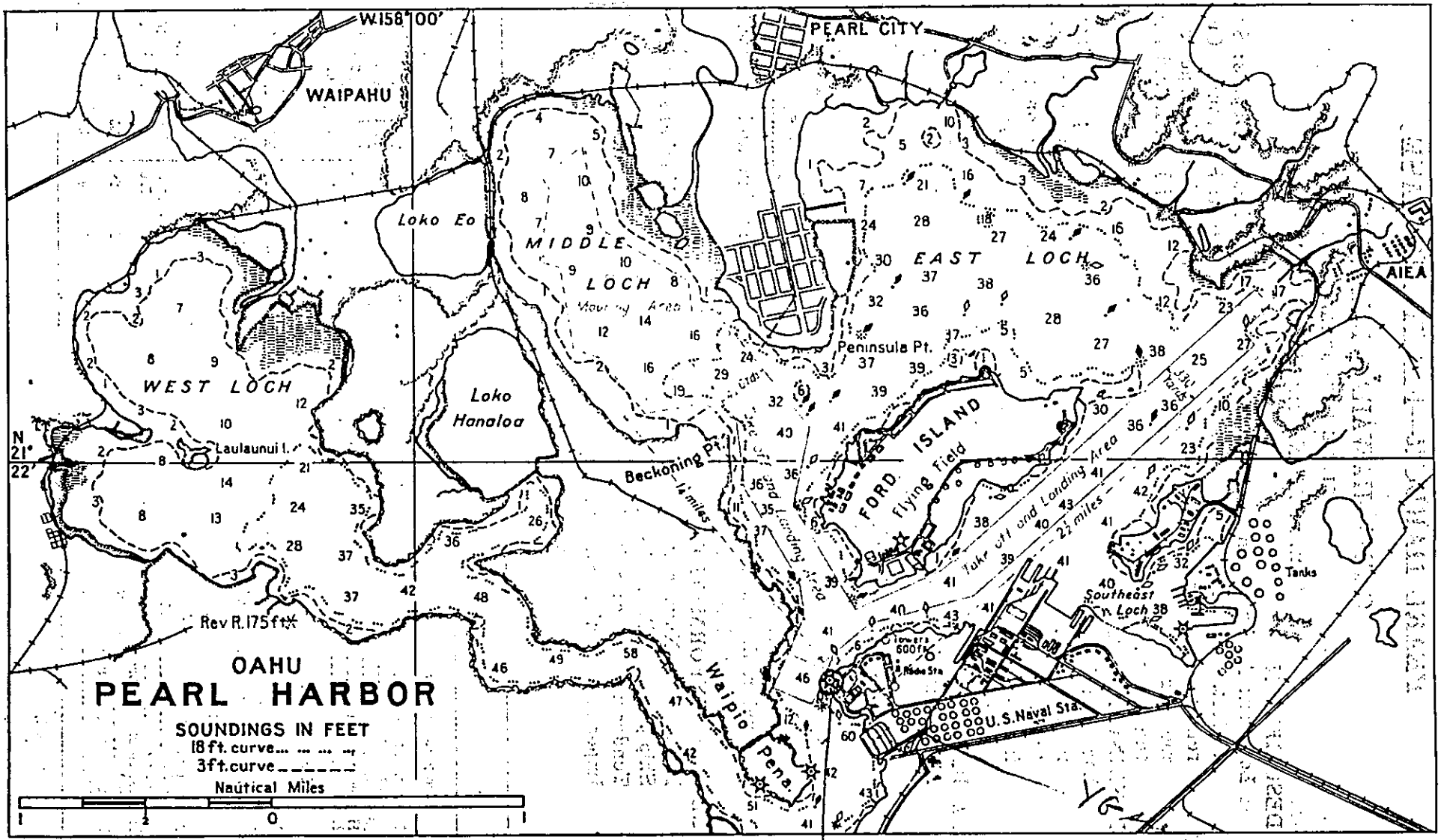
Weather element	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Temperature (° F.)													
Mean monthly	70.3	70.8	71.4	72.1	74	75.8	77	77.3	77.3	75.5	73.5	72.2	73.9
Mean maximum	76.7	77.7	77.2	77.6	79.7	80.9	83.2	83.4	83.9	82.9	80.3	77.8	80.1
Mean minimum	64.0	63.6	65.2	66.4	68.2	70.6	71.3	71.1	70.7	68.0	66.7	66.5	62.7
Highest recorded	86	85	87	85	84	85	88	88	87	86	86	82	88
Lowest recorded	54	53	58	58	60	64	65	65	64	61	60	59	53
Precipitation													
Monthly amount, inches	7.93	4.84	8.65	6.06	4.84	2.49	2.23	3.40	4.17	3.36	5.24	6.66	59.87
Number of days with 0.01 inch or more	17	15	17	17	16	17	17	20	17	16	17	18	204
Winds													
Prevailing direction	NE.	NE.	NE.	NE.	NE.	NE.	NE.	NE.	NE.	NE.	NE.	NE.	NE.



Aircraft range and approach lights on Ford Is.

Discontinued 9H78/H2-3 (231 897)

YG 2-24/43



Aircraft range and approach lights on Ford Is.

A 10-1 (Chf 1200) (322217) Navy Dept. June 4, 1940

Discontinued PH78/H2-8 (331877) 22/43

Rec'd 5/31/38

PEARL HARBOR—FLEET AIR BASE

OAHU—HAWAIIAN ISLANDS

SEAPLANE ANCHORAGE

(Lat. 21°23′ N., long. 158°59′ W.)

DESCRIPTION

Location: Anchorage and mooring area within Middle Loch. **Depths:** 8 to 18 feet. **Tidal range:** 1.5 feet. **Character of bottom:** Soft mud. **Currents:** Weak. **Shelter:** Excellent. **Remarks:** Small anchorage and mooring area located adjacent to the southwest side of Ford Island near the fleet air base.

LANDING AND TAKE-OFF AREA

Location: (A) Channel between Ford Island and naval station; (B) Channel between Ford Island and Waipio. **Area:** (A) 2½ miles by 330 yards; (B) 1¼ miles by 420 yards. **Shelter:** Excellent. **Obstructions:** Mooring and channel buoys; three 600-foot radio towers at naval station; congested shipping and submarine operations.

FACILITIES

All at fleet air base. **Lighting:** A 24-inch, 1,000,000 candlepower revolving white beacon showing 6 revolutions per minute with a white auxiliary code beacon flashing characteristic "P(. — — .)" is located on top of the 224-foot water tank at Ford Island. Operated only when specially requested. A 24-inch, 1,000,000 candlepower revolving red beacon 175 feet above sea level is exhibited from the water tank on the south shore of West Loch to mark the naval ammunition depot. **Communications:** Naval radio station, call letters NPM. Large foreign and coastwise trade from Honolulu.

GENERAL INFORMATION

Landmarks: Naval station and Ford Island. Honolulu 6½ miles southeast.

Ship passage: Channel suitable for any size ship.

Tender anchorage: Suitable for any size ship.

Importance: United States naval base. Excellent seaplane base.

METEOROLOGICAL TABLE

Pearl Harbor

Weather element	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Temperature (° F.)												
Mean monthly [1]	71.4	71.2	71.4	72.6	74.9	75.9	76.4	77.1	77.1	76.4	74.7	71.6
Mean maximum [1]	75.2	75.3	75.2	75.8	77.5	79.3	79.7	80.6	80.9	80.4	78.3	75.8
Mean minimum [1]	67.2	67.0	67.1	69.4	70.7	72.4	73.2	73.6	73.4	72.4	71.2	67.5
Highest recorded [1]	82	80	83	81	82	89	83	86	87	86	85	83
Lowest recorded [1]	58.0	73.0	57.0	62	66	68	68	65	68	67	62	60
Precipitation												
Monthly amount, inches	1.79	1.18	1.82	0.88	1.02	0.20	0.26	0.72	1.24	0.90	2.19	3.71
Number of days with 0.01 inch or more	12.3	8.3	7.2	11.9	12.0	9.5	11.0	7.6	8.0	6.5	12.5	9.0
Winds												
Average velocity:												
Day [2 3]	10.6	8.9	10.8	11.6	12.3	11.6	13.3	12.8	11.4	9.8	9.6	10.2
Night [3 4]	8.5	6.4	7.8	7.8	6.7	7.8	9.2	8.4	7.0	6.6	7.4	7.9
Highest hourly velocity, month	38	24	32	31	28	24	30	28	28	25	33	33
Highest gust during month	42	42	46	43	40	38	44	42	40	37	46	56

[1] 1927 to 1932.
[2] 0600–1800.
[3] 1926 to 1932.
[4] 1800–0600.

LUKE FIELD

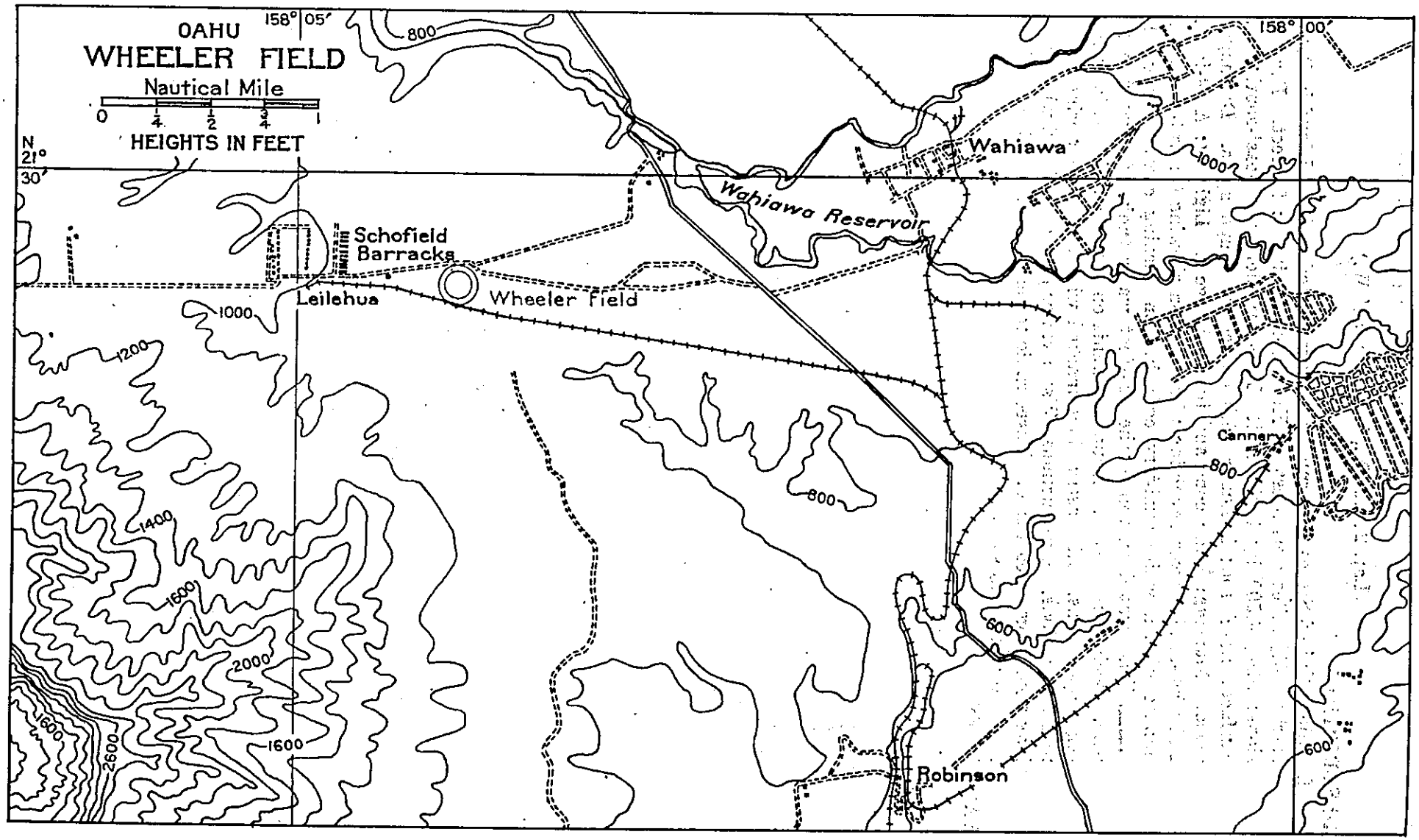
(Lat. 21°22′ N., long. 158°58′ W.)

DESCRIPTION

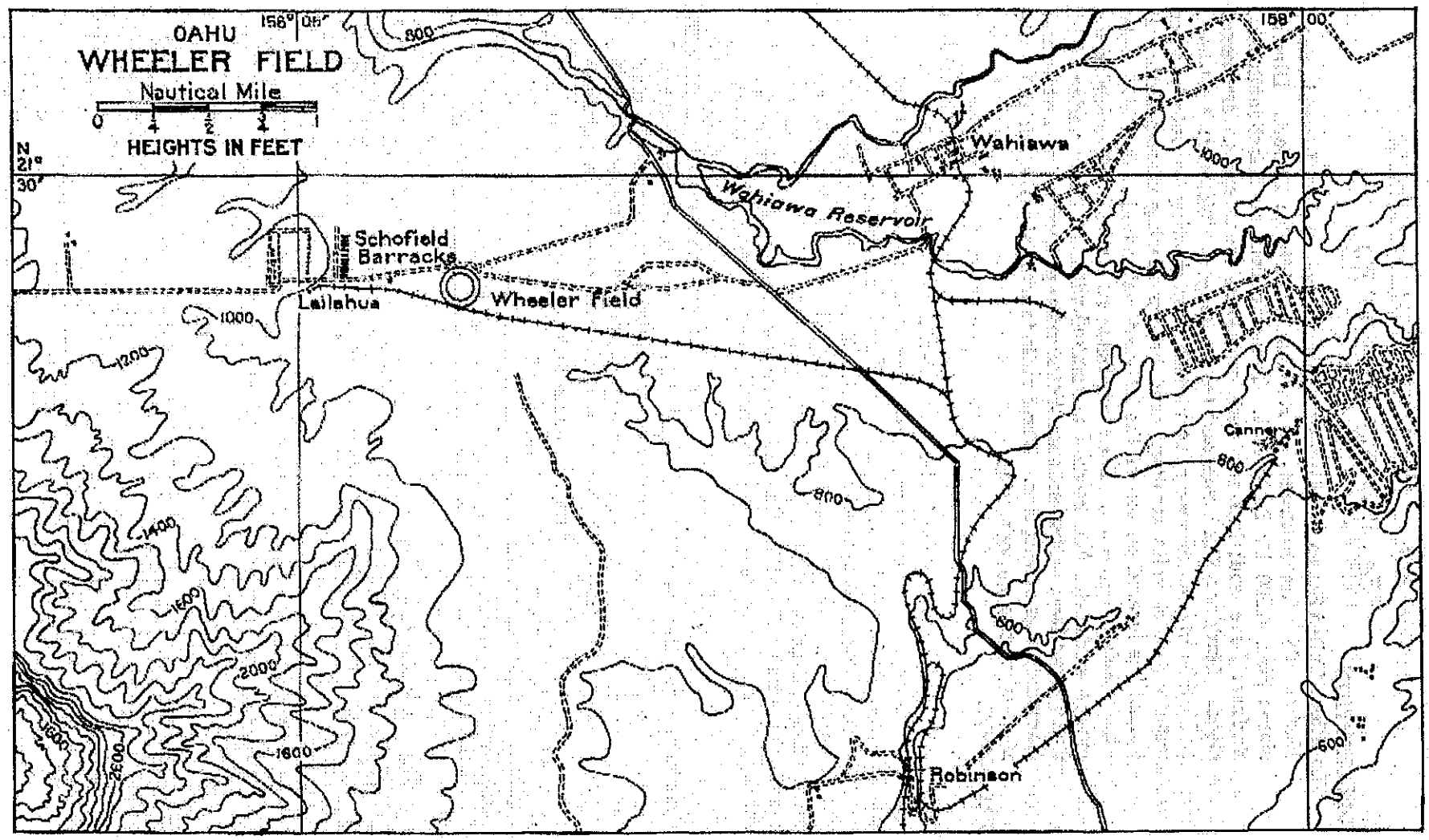
Location: United States Government airport located on Ford Island in Pearl Harbor, 6½ miles northwest of Honolulu. **Altitude:** 20 feet. **Dimensions:** Size, 4,500 by 3,000 feet. Two-way field northeast-southwest. **Surface:** Level sod; irregular with occasional rough spots. **Drainage:** Good. **Marking:** Wind cone and tee on hangers. **Lighting:** A 24-inch, 1,000,000-candlepower revolving white beacon showing 6 revolutions per minute with a white auxiliary code beacon flashing characteristic "P (.——.)" is located on top of the 224-foot water tank. Operated only when specially requested. Boundary lights on east side. Floodlights for night operations. All obstructions marked with red lights during night flying operations. **Obstructions:** Water tower painted red and white and Navy buildings on east side. Three radio towers painted black and white at naval station on south side.

FACILITIES

All.


OAHU
WHEELER FIELD
Nautical Mile
0 1/4 1/2 3/4 1
HEIGHTS IN FEET
158° 05′
158° 00′
N 21° 30′
800
1000
1200
1400
1600
2000
2600
Wahiawa
Wahiawa Reservoir
Schofield Barracks
Leilehua
Wheeler Field
Cannery
Robinson

12781


OAHU
WHEELER FIELD
Nautical Mile
0
HEIGHTS IN FEET
N 21° 30'
158° 08'
158° 00'
Wahiawa
Wahiawa Reservoir
Schofield Barracks
Lailahua
Wheeler Field
Cannery
Robinson
800
1000
1200
1400
1600
2000
2200
2600

SCHOFIELD BARRACKS—U. S. ARMY

OAHU—HAWAIIAN ISLANDS

WHEELER FIELD

(Lat. 21°30′ N., long. 158°04′ W.)

DESCRIPTION

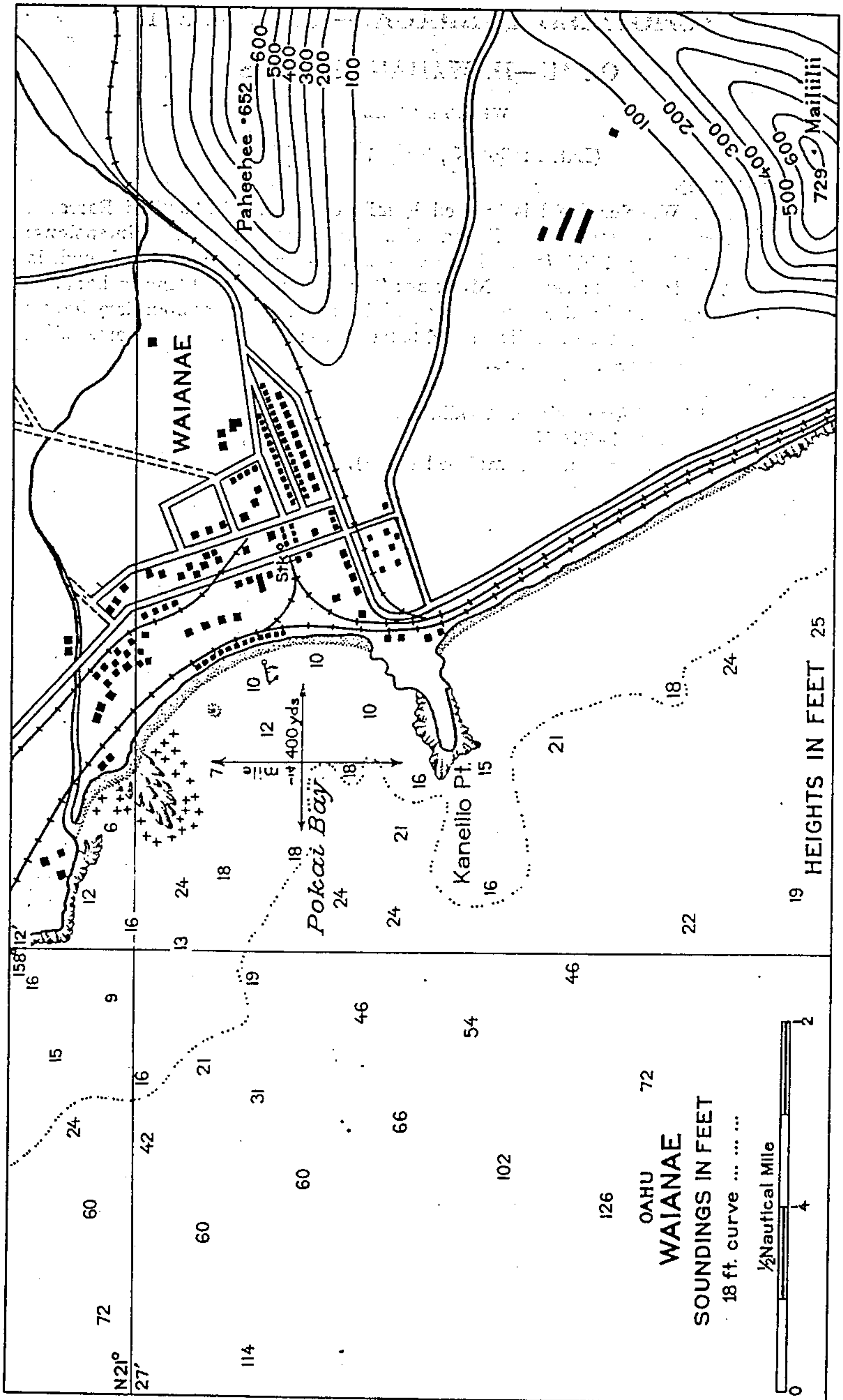
Location: Wheeler Field is located ½ mile eastward of Schofield Barracks and 16 miles northwest of Honolulu. **Altitude:** 800 feet. **Dimensions:** Size, 8,000 by 1,000 feet. Long axis east and west. **Surface:** Rough in spots. **Drainage:** Good. **Marking:** Tee to northeast of line of hangars. **Lighting:** Fixed white beacon on administration building; boundary lights; flood and obstruction lights. **Obstructions:** Buildings on north side; telephone wires at east end.

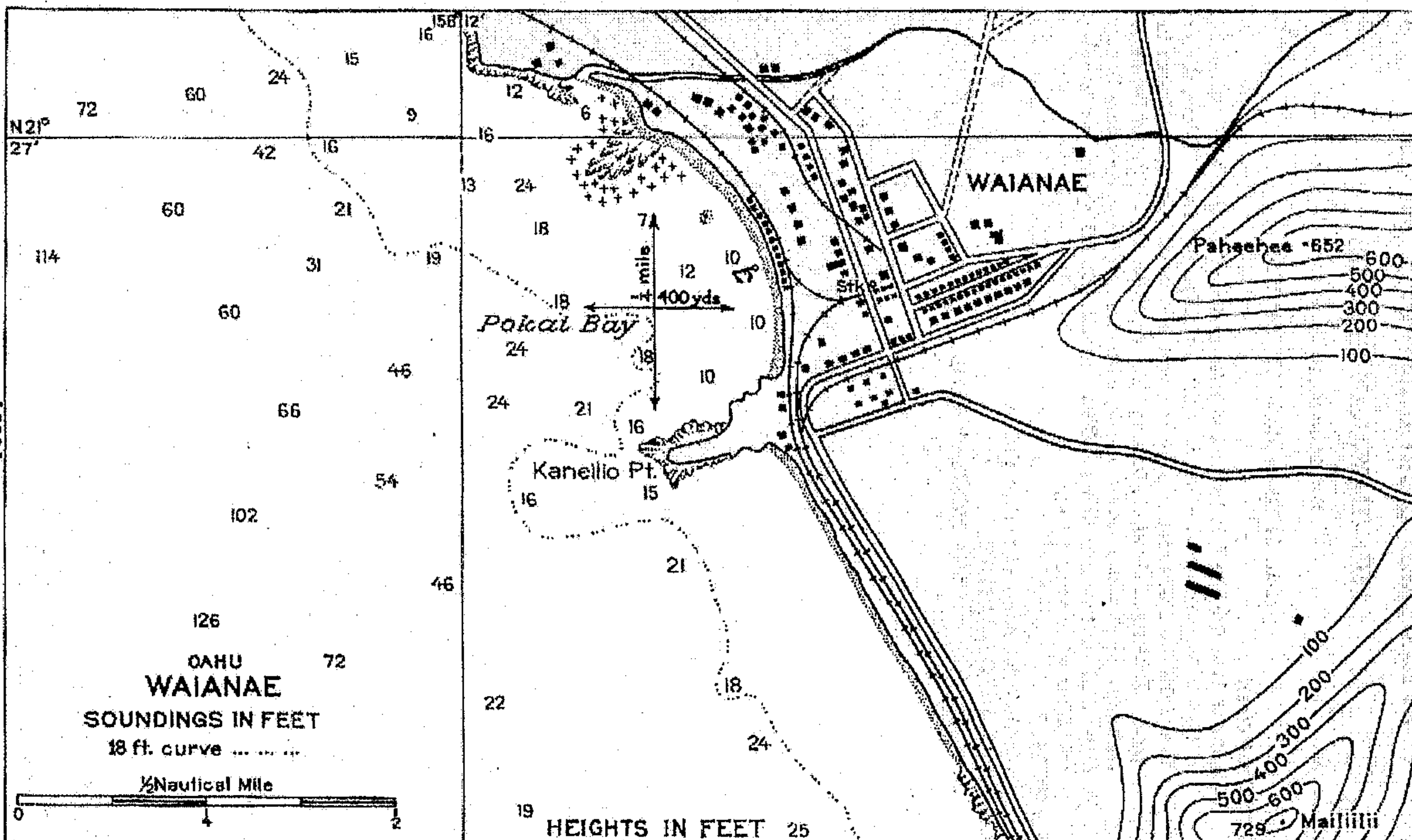
FACILITIES

All facilities of Army airport available.

GENERAL INFORMATION

Remarks: Field recently completed (1934).


OAHU
WAIANAE
SOUNDINGS IN FEET
18 ft. curve ... ...
½ Nautical Mile
HEIGHTS IN FEET
WAIANAE
Paheehee ·652
Mailiilii
729
Pokai Bay
Kaneilio Pt.
400 yds.
N21°
27'
158°
12'


OAHU
WAIANAE
SOUNDINGS IN FEET
18 ft. curve
½ Nautical Mile
HEIGHTS IN FEET
WAIANAE
Pokai Bay
Kaneilio Pt.
400 yds
N 21°
27'
158°
12'

WAIANAE

OAHU—HAWAIIAN ISLANDS

EMERGENCY SEAPLANE ANCHORAGE

(Lat. 21°27′ N., long. 158°12′ W.)

DESCRIPTION

Location: Pokai Bay adjacent to the village. **Depths:** 6 to 24 feet. **Tidal range:** 1.2 feet. **Character of bottom:** Sand. **Currents:** Weak. **Shelter:** Open sea in the lee of the island of Oahu. Fair anchorage in average weather, with the usual trade winds.

LANDING AND TAKE-OFF AREA

Location: Pokai Bay or open sea. **Area:** Pokai Bay N./S., ¼ mile; E./W., 400 yards. **Shelter:** Open sea in the lee of island of Oahu. **Obstructions:** Coral reef along shore at Kaneilio Point, and also along north shore.

FACILITIES

Provisions and water can be obtain in limited quantities. **Beach:** Planes could be beached, in front of the village, through breakers in emergency. **Communications:** Railroad and telephone.

GENERAL INFORMATION

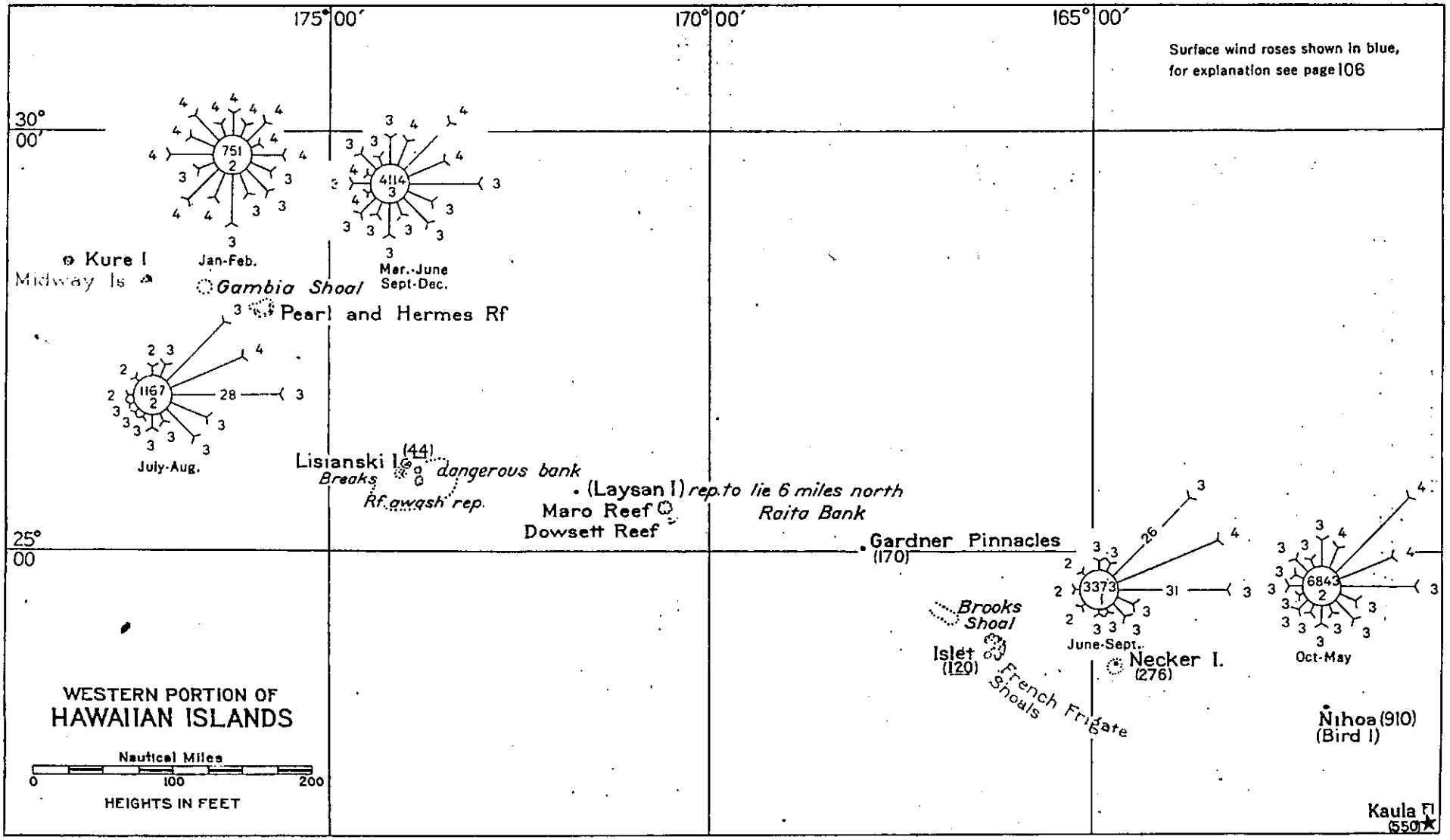
Aspect: Pokai Bay is a small indentation in the coast. The village of Waianae is partly hidden by the trees.

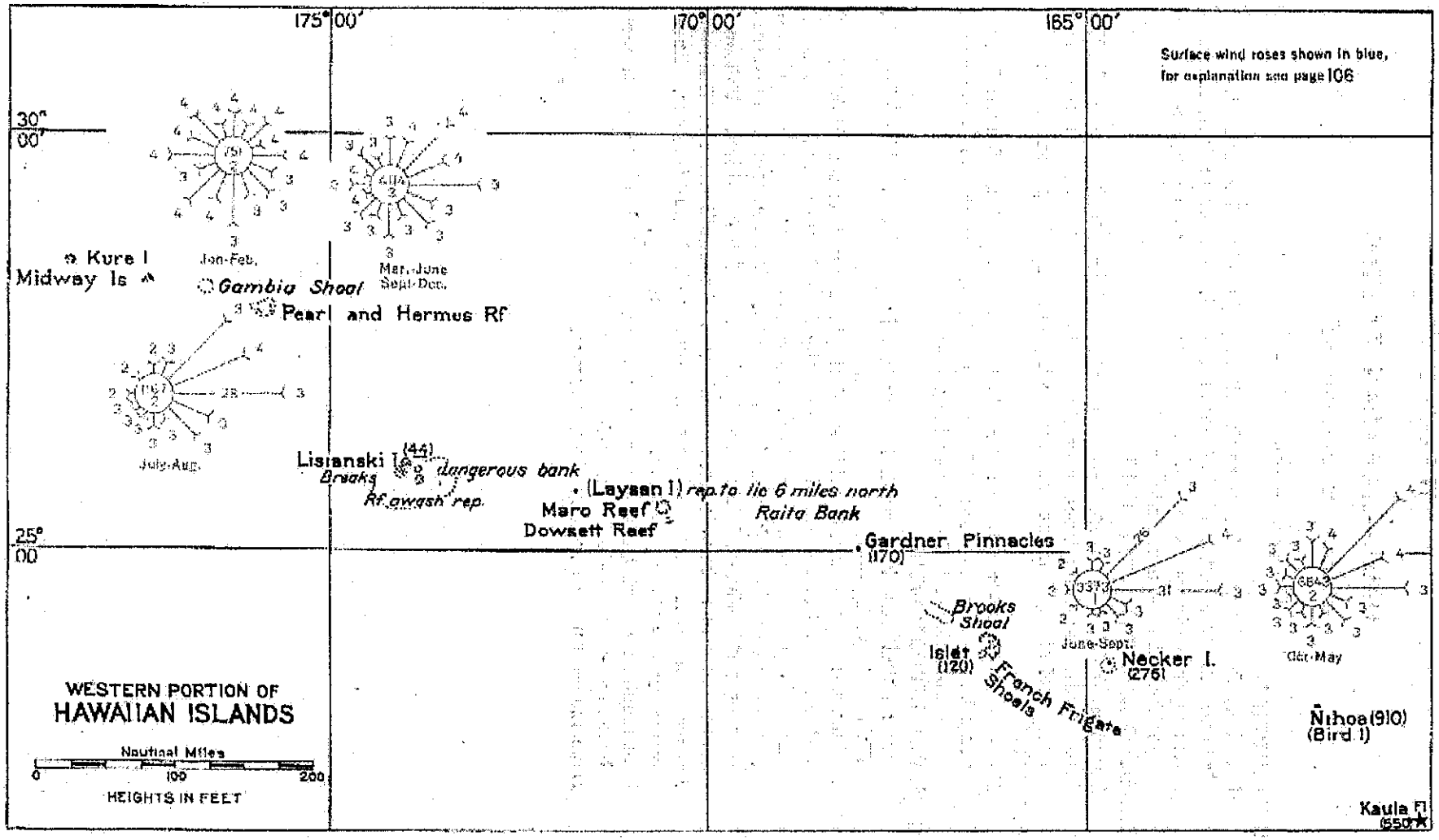
Landmarks: Light-colored buildings of the lime kiln between Mailiilii Hill and Kaneilio Point show up against the dark background. Red brick stack of the sugar mill. Red tank at the railroad station is located close to the shore on the southeast side of the bay. Mailiilii Hill, 1 mile south-southeast of Waianae, is a narrow rocky ridge 729 feet high. Paheehee Hill is 652 feet high, is located ¾ mile east of the mill stack at Waianae.

Tender anchorage: Anchor about ½ mile offshore in 8 to 10 fathoms. Shoal water extends about ¼ mile off the shore of the bay.

Boat landing: Landing can generally be made on the short stretch of sand beach except during southerly winds.

Importance: Emergency seaplane anchorage.


175° 00′
170° 00′
165° 00′
Surface wind roses shown in blue, for explanation see page 106
30° 00′
25° 00
751
2
Jan-Feb.
4114
3
Mar.-June
Sept-Dec.
Kure I
Midway Is
Gambia Shoal
Pearl and Hermes Rf
1167
2
28
July-Aug.
Lisianski I (44)
Breaks
dangerous bank
Rf awash rep.
(Laysan I) rep. to lie 6 miles north
Maro Reef
Raita Bank
Dowsett Reef
Gardner Pinnacles
(170)
3373
2
26
31
June-Sept.
6843
2
Oct-May
Brooks Shoal
Islet
(120)
French Frigate Shoals
Necker I.
(276)
Nihoa (910)
(Bird I)
Kaula I
(550)
WESTERN PORTION OF
HAWAIIAN ISLANDS
Nautical Miles
0
100
200
HEIGHTS IN FEET


175° 00′
170° 00′
165° 00′
Surface wind roses shown in blue, for explanation see page 106
30° 00′
25° 00′
Kure I
Midway Is
Jan-Feb.
Mar.-June Sept.-Dec.
Gambia Shoal
Pearl and Hermes Rf
July-Aug.
Lisianski I (44)
Brooks
dangerous bank
Rf awash rep.
(Laysan I) rep to lie 6 miles north
Maro Reef
Dowsett Reef
Raita Bank
Gardner Pinnacles (170)
Brooks Shoal
Islet (120)
French Frigate Shoals
June-Sept.
Necker I. (276)
Oct.-May
Nihoa (910) (Bird I)
Kaula Fl (550)
WESTERN PORTION OF
HAWAIIAN ISLANDS
Nautical Miles
0 100 200
HEIGHTS IN FEET

REEFS AND ISLANDS WESTWARD OF KAUAI

KAULA ISLAND

(Lat. 21°39′ N., long. 160°32′ W.)

Description: Kaula is a small, bare, rocky islet 550 feet high, with sheer sides and no considerable area of level land. It is marked by a white skeleton tower lighthouse on the highest part of the islet.

Anchorage: Vessels have anchored close to both the south and east sides of Kaula in about 20 fathoms. There is little protection.

Seaplane anchorages: Emergency landing in calm weather only; conditions are unsatisfactory.

Potential landing field sites: Apparently none; examination made of this island was too superficial for definite statement.

Boat landirg: The only possible landing giving access to the upper reaches of the island is on the northeast corner. This is impracticable during even moderate winds.

Importance: It is believed that Kaula has no strategic value, except as a light location.

NIHOA ISLAND

(Lat. 23°04′ N., long. 161°55′ W.)

Description: Nihoa is a barren, rocky island about ¾ mile long and averages a little more than ¼ mile in width. The southeast and southwest sides of the island terminate at points forming a bay known as Adams Bay. There are three small bights in this bay, the westerly one having a sand beach, while the shores of the other two are rock ledges. The greatest elevation is Millers Peak, near the northwesterly end of the island, which is 910 feet high.

Anchorages: The safest anchorages are between the 15- and 20-fathom curves westward and southwestward of the island. There is some tendency to drag anchor here. During the northeast trades the west cliffs offer a triangular lee about 1,000 yards base line by 2,000 yards perpendicular, from which the choppy sea is excluded, but in which the ground swells prevail.

Seaplane anchorages: None, except during the calmest of weather. Only the choppy seas are excluded from such lee as the island affords, the ground swells being always present.

Potential landing field sites: None.

Boat landing: The middle cove of Adams Bay is the only practicable landing place, the rise and fall of the swell is considerable and great care must be taken in landing.

Importance: Excellent landmark for aircraft. It is believed that Nihoa has strategic value only as a possible anchorage.

NECKER ISLAND

(Lat. 23°35′ N., long. 164°44′ W.)

Description: Necker Island is a rocky island ¾ mile long in an east and west direction and is less than ⅛ mile wide. It is of volcanic origin and has four peaks, one near each end and two between; the highest, Summit Hill, is near the middle of the island and is 277 feet high. The sides of the island are precipitous, with 5 to 8 fathoms alongside. There is a sparse growth of low

brush on the upper slopes of the hills. The island is the home of countless sea birds.

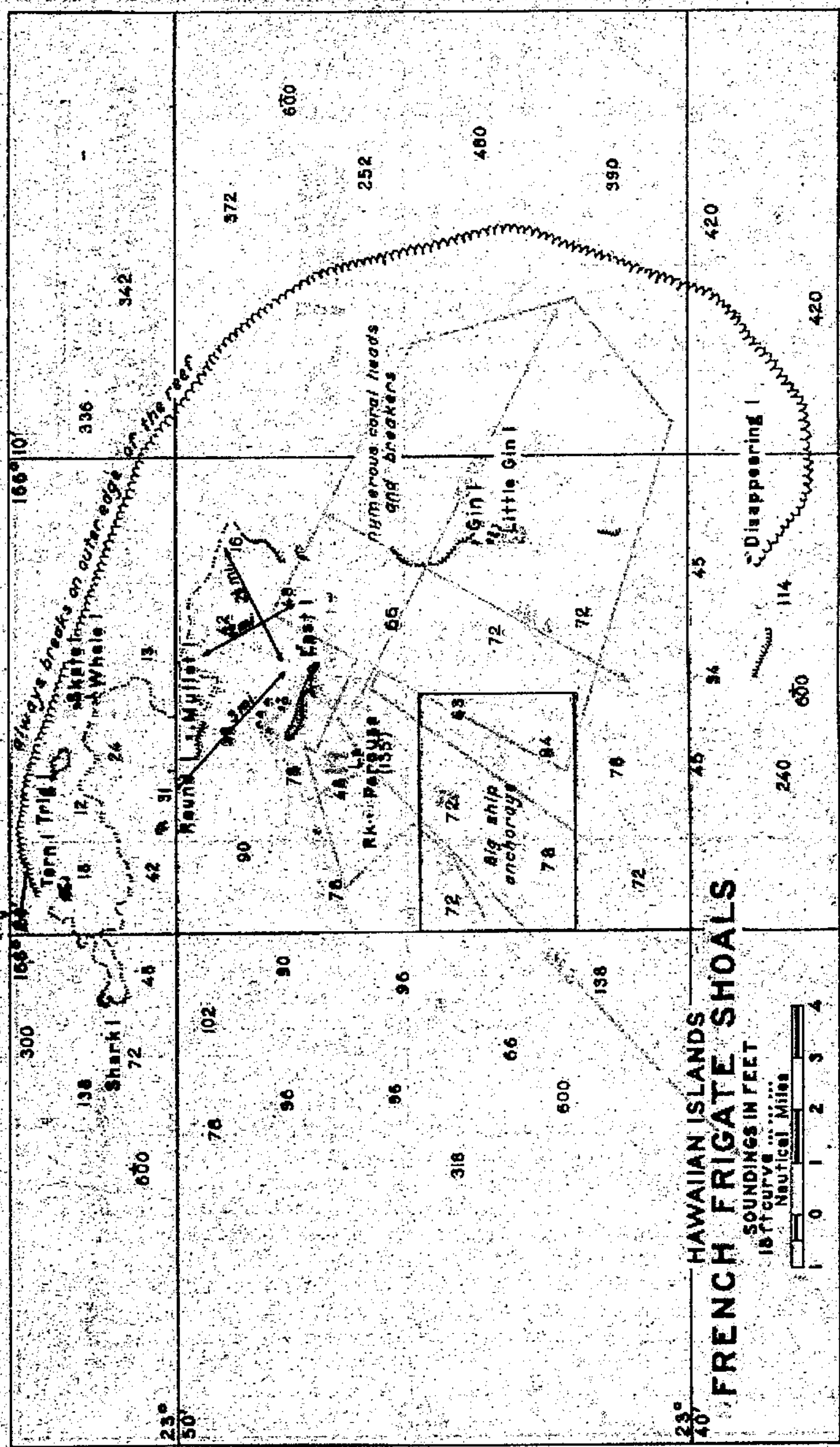
Anchorages: Vessels can anchor in about 12 fathoms ½ mile south of the southwestern point of the island. The island is so small that it offers but little protection. During the northeast trades the island affords a triangular lee to the westward, of about 1,000 feet base line by 800 feet perpendicular, from which the choppy sea is excluded, but in which the ground swell prevails.

Seaplane anchorages: None, except in the calmest of weather when the above lee might be used.

Potential landing field sites: On the summit of the eastern portion of the island are nearly level areas, well covered with large rocks and platforms built up of loose rocks, which with some clearing might be used as an indifferent landing place in case of necessity.

Boat landing: East and West Coves at the west end of the island are the best landing places, but there are times when it is impossible to land anywhere on the island. The West Cove affords the best place alongside of a ledge.

Importance: Good landmark for aircraft. It is believed that Necker has strategic value only as a possible anchorage.


HAWAIIAN ISLANDS
FRENCH FRIGATE SHOALS
SOUNDINGS IN FEET
18 ft curve
Nautical Miles
1 0 1 2 3 4
166°10'
166°20'
23°50'
23°40'
Always breaks on outer edge on the reef
numerous coral heads and breakers
Big ship anchorage
Shark I
Tern I
Trig I
Skate I
Whale I
Mullet I
Round I
East I
Gin I
Little Gin I
Disappearing I
La Perouse (135)
Rk
Lt
600
480
252
372
390
420
420
342
336
300
138
72
48
102
78
90
96
96
96
66
318
600
138
13
24
12
18
31
42
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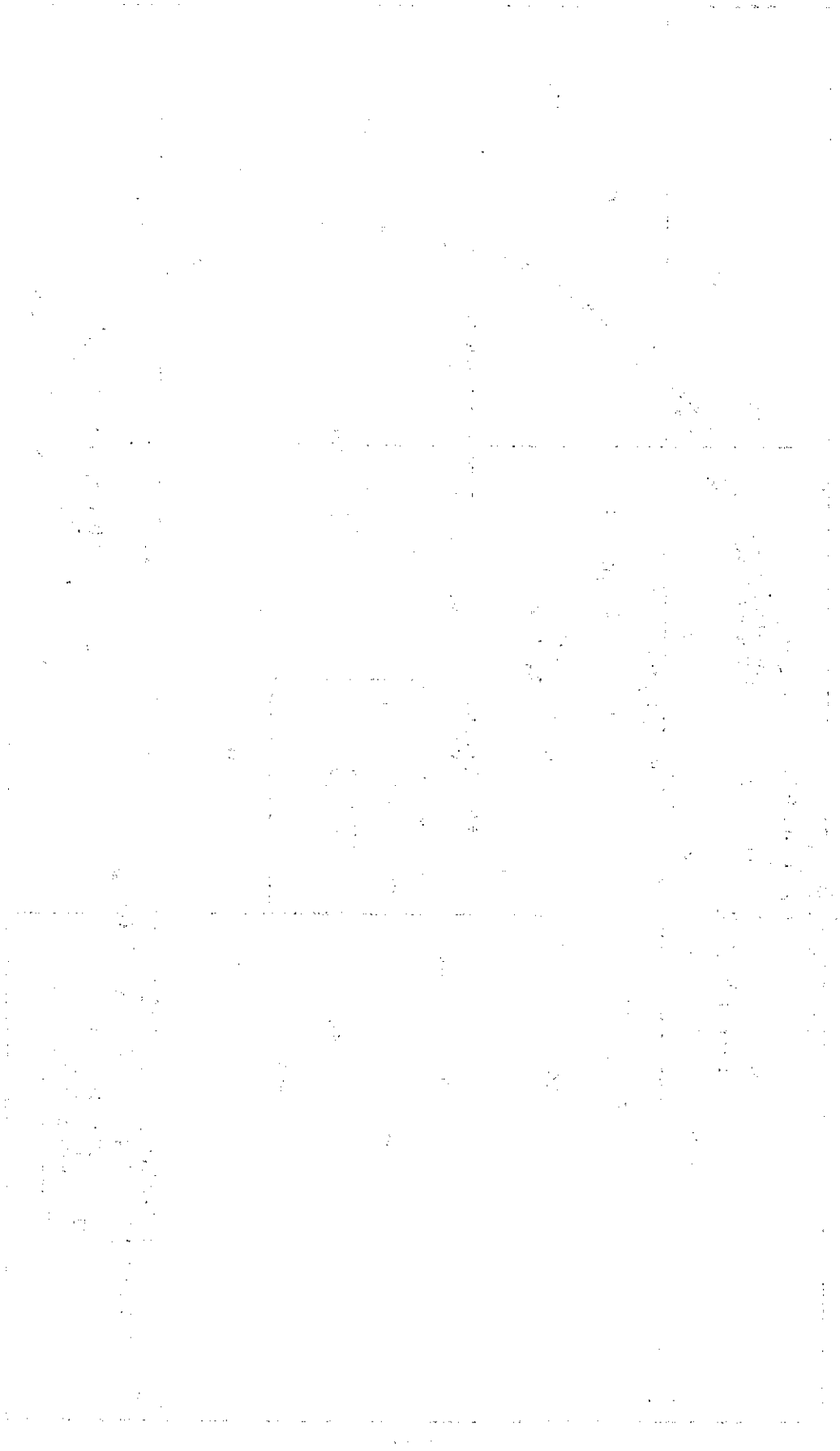
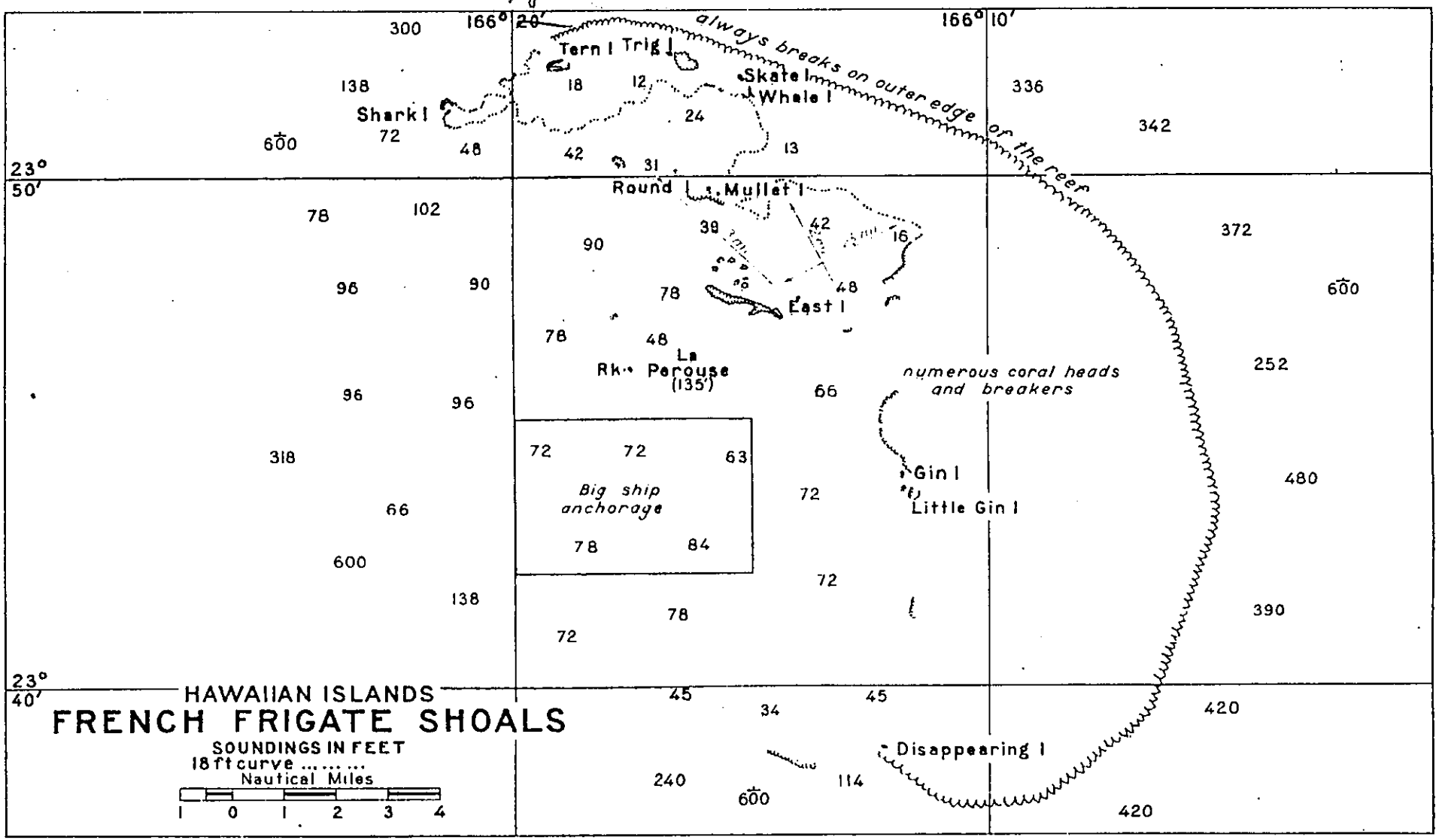
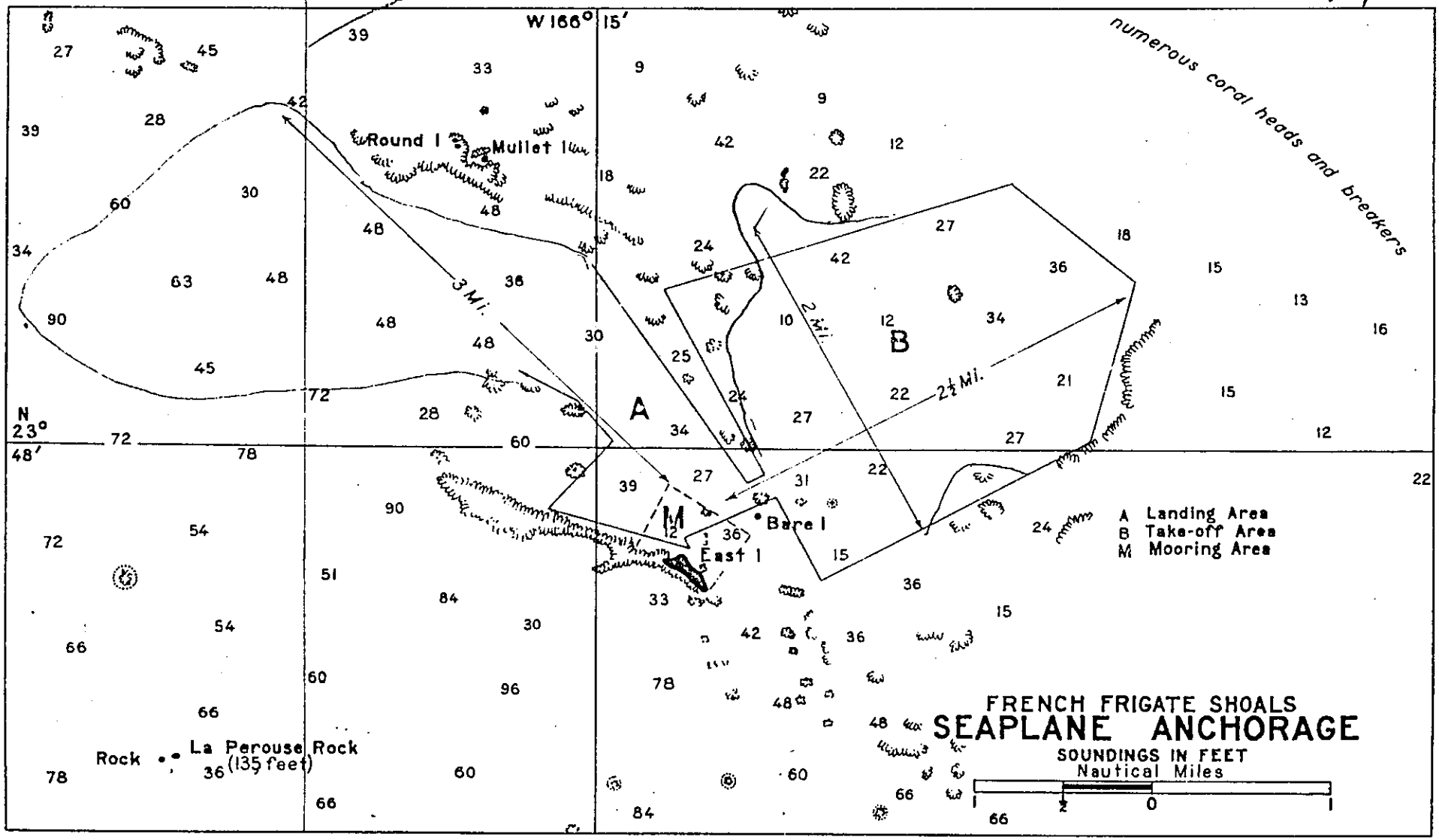
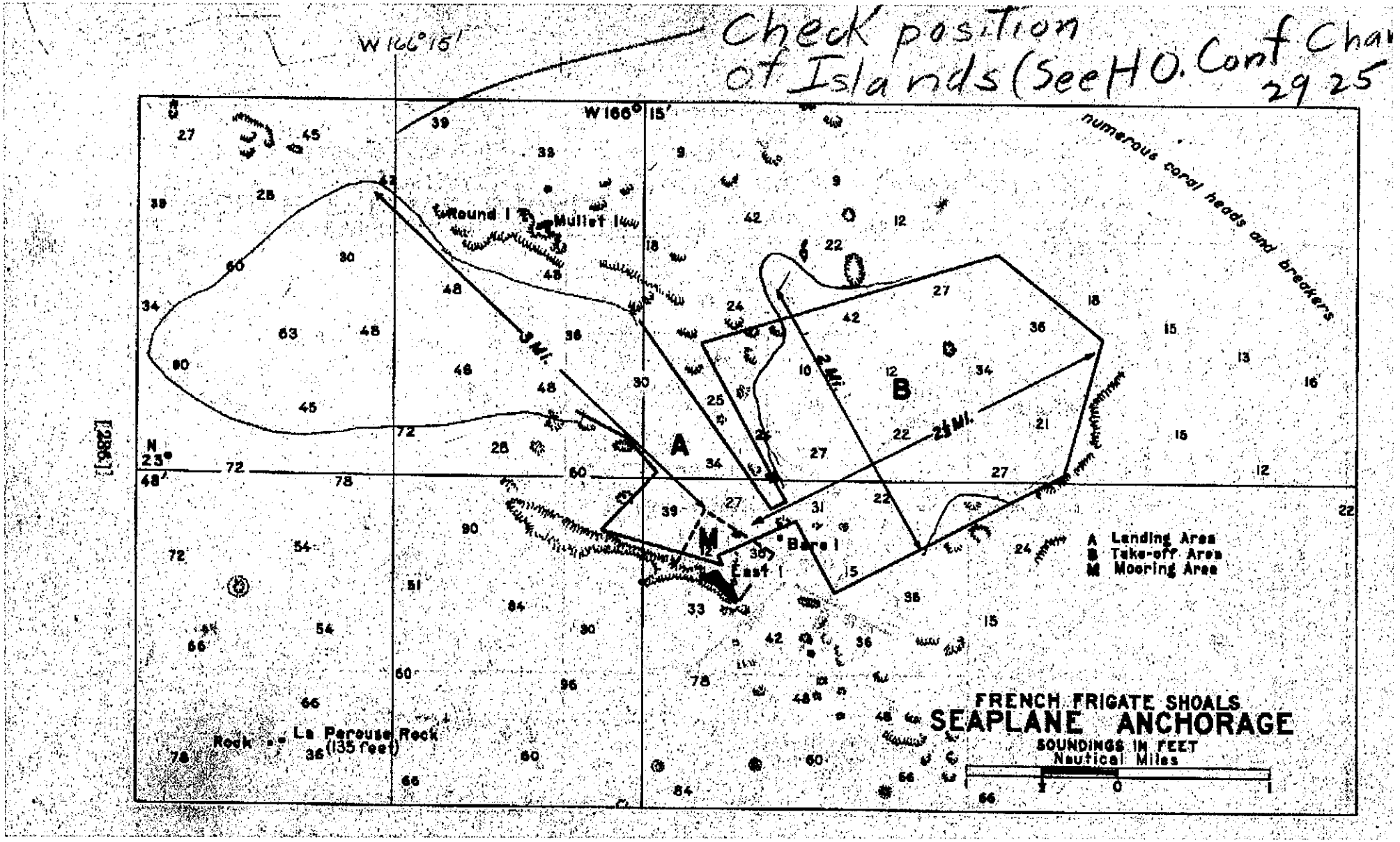
68
84
72
45
114
94
600
240
45
72
16




166° 20'
166° 10'
23° 50'
23° 40'
always breaks on outer edge of the reef
Tern I Trig
Skate I
Whale I
Shark I
Round I
Mullet I
East I
La Perouse Rk
(135')
numerous coral heads and breakers
Big ship anchorage
Gin I
Little Gin I
Disappearing I
HAWAIIAN ISLANDS
FRENCH FRIGATE SHOALS
SOUNDINGS IN FEET
18 ft curve .....
Nautical Miles
1 0 1 2 3 4


Check position of Islands (See H.O. Conf Cha 2925
W 166° 15'
W 166° 15'
numerous coral heads and breakers
Round I
Mullet I
3 Mi.
2 Mi.
2½ Mi.
A
B
M
Bare I
East I
N 23° 48'
72
60
A Landing Area
B Take-off Area
M Mooring Area
Rock
La Perouse Rock (135 feet)
FRENCH FRIGATE SHOALS
SEAPLANE ANCHORAGE
SOUNDINGS IN FEET
Nautical Miles
2 0 1


Check position of Islands (See H.O. Conf Chart 2925
W 166° 15'
W 166° 15'
N 23° 48'
numerous coral heads and breakers
Mullet I
Round I
3 Mi.
2 Mi.
2½ Mi.
A
B
M
Bare I
East I
A Landing Area
B Take-off Area
M Mooring Area
Rock
La Perouse Rock
36 (135 feet)
FRENCH FRIGATE SHOALS
SEAPLANE ANCHORAGE
SOUNDINGS IN FEET
Nautical Miles
½ 0 1
[286]

FRENCH FRIGATE SHOALS

HAWAIIAN ISLANDS

SEAPLANE ANCHORAGE AND POTENTIAL LANDING FIELD SITE

(Lat. 23°48′ N., long. 166°15′ W.)

DESCRIPTION

Location: Anchorage and mooring area close in and northward of East Island. **Depths:** 9 to 30 feet. **Tidal range:** 2 feet. **Character of bottom:** Coral and sand. **Currents:** Westerly. **Shelter:** During April 1933 when 30 VP-type seaplanes were moored here the wind reached 35 miles per hour at times and veered from northeast to southeast but the anchorage was well protected and the planes rode very satisfactorily to the moorings. It is believed that this anchorage would be sufficiently protected from a wind and sea from the southwest.

LANDING AND TAKE-OFF AREA

Location: North and northeast of East Island. **Area:** (*A*) Landing area, NW./SE., 3 miles, (*B*) Take-off area, NE./SW., 2½ miles; NNW./SSE., 2 miles. **Shelter:** Surrounding reef breaks up the seas coming from the open, and the small sand islets and shoal spots within the lagoon are such that rough seas do not make up inside the reef. **Obstructions:** Numerous coral heads.

FACILITIES

None. Tenders would be required for servicing planes. Brackish water has been found by digging wells about 8 feet deep on the sand islets back from the beach.

POTENTIAL LANDING FIELD SITES

The larger of the sand islets offer almost level ground of sufficient areas to afford landing fields. The islets are in most cases covered with scrubby growths of low-lying vegetation of varying density; and the ground is undermined to depths of from 1 to 3 feet by bird burrows. The sand which forms these islets is seldom hard packed, except near the water's edge. From the foregoing it is not believed that these islets, without considerable work, offer more than indifferent possibilities as potential landing field sites.

GENERAL INFORMATION

Aspect: French Frigate Shoals is a crescent-shaped atoll with a number of small, bare, sand islets. It is about 17 miles long in a general northwest-southeast direction, and 12 miles wide at the southern end.

East Island is a low sand islet 600 yards long and 100 yards wide. It is about 10 feet high, has a scattering of low weeds, and is the nesting place of sea birds and turtles.

Landmarks: First sighted, French Frigate Shoals appears as a line of breakers on the horizon. La Perouse Pinnacle, 135 feet high, is a volcanic rock islet about 60 yards long and 20 yards wide, and from a distance resembles a square-rigged sailing ship.

Tender anchorage: The large vessel anchorage with good holding ground, is between 1 and 4 miles south of La Perouse Pinnacle and between 166°15′ and 166°20′ meridians of longitude in 10 to 15 fathoms of water. There is no anchorage for large vessels protected from all weather.

The small vessel anchorage with good holding ground is ¾ mile southwestward of East Island in 14 fathoms of water, the center of East Island bearing 28°. This anchorage is protected from northeast and easterly winds but is exposed to the westward.

An excellent lee may be obtained anywhere about the shoal in accordance with the prevailing wind and weather.

Boat passages: A channel from the aircraft anchorage is clearly discernible around the southeast end of East Island. With the placing of a few buoys on certain shoal spots this channel could be easily used by small vessels, boats, and aircraft taxying to ships in the outer anchorages to refuel.

Boat landings: Landings on small sand islets can easily be made by small boats.

Importance: Commander base force in 1933 states "It appears that the area cannot be considered a satisfactory potential base except in a very limited sense." The district intelligence officer of the fourteenth naval district, in a report on the military aspects of the Leeward Islands of Hawaii and Johnston and Wake Islands in 1923, states "It is believed that the atoll offers the best opportunities of any of the group under consideration for an advance base, on which could be centered the activities of an air force, or fleet of small craft, as well as a good anchorage for larger vessels."

Jurisdiction: United States.

Meteorological conditions: The northeast trades prevail throughout the year, but westerly blows can be expected during the winter months.

GARDNER PINNACLE

(Lat. 25°00′ N., long. 167°57′ W.)

Description: Gardner Pinnacle is a solid volcanic rock islet 190 feet high and about 200 yards in diameter, and has a small pinnacle rock close to its northwesterly side. It is barren of vegetation and covered with guano grass, giving it the appearance of being snowcapped.

Anchorages: Poor anchorage may be had in from 17 to 20 fathoms within 1 mile of the island. It is believed that this anchorage would not be tenable even in moderate weather. Islet is too small to offer a lee of any size.

Seaplane anchorage: None.

Boat landing: In comparatively smooth weather, landings can be made just north of the bight on the west side of the pinnacle.

Importance: It is believed that the strategic value of Gardner is limited to a possible vessel anchorage in good weather only.

LAYSAN ISLAND

(Lat. 25°46′ N., long. 171°44′ W.)

Description: Laysan Island is a low sand island about 1⅞ miles long and about 1 mile wide, and has an elevation of 35 feet near the north end. It is fringed with a narrow coral reef and is partly covered with low vines and grass, but in general appearance is white sand. The center of the island is a salt water lagoon about ¾ mile long with from 2 to 15 feet of water. This lagoon is slowly but gradually disappearing. It is above sea level and has no connection with the open water; each year the winds drift quantities of sand into it. The island is marked by two coconut trees and an ironwood tree, which are close to the ruins of a small building on the west side of the island.

Anchorage: Vessels can anchor from 1 to 1½ miles off the island in from 8 to 15 fathoms on all sides, depending upon which side affords the best protection. Anchorage can be had from ½ to 1 mile off the west side of the island in from 8 to 15 fathoms, with fair holding ground. Small craft drawing not over 12 feet

can lie at anchor inside the reef and off the coconut trees on the west side of the island, except during westerly weather. Due to the lack of effective lee any anchorage becomes uncomfortable in moderate breezes, and would prove untenable in squally or rough weather.

Seaplane anchorages: The lagoon is always smooth, and is the only landing area in the vicinity suitable for seaplanes. The sand along the shore of the lagoon is very loosely packed, and in most places will not bear up the weight of a man, resembling quicksand very closely in its action.

Potential landing field sites: The island is level or gently sloping. On the south and west sides are small rocky areas. The sand surface is loosely packed, except where beaten by the sea and is undermined to a great extent by bird burrows.

Boat landing: The best landing place during northeasterly and southeasterly weather exists just off the buildings on the western side of the island; landings are not safe here during westerly winds. A poor landing can be made near the northeasterly end of the island during light westerly winds.

Importance: Excellent landmark for aircraft. It is believed that the strategic value of Laysan is slight and of less value when considered with French Frigate Shoals and Midway Islands.

LISIANSKI ISLAND

(Lat. 26°00′ N., long. 174°00′ W.)

Description: Lisianski Island is a small, low sandy island about 1⅛ miles long and ½ mile wide and has an elevation of 20 feet near the northeast side. The shores are white sand except for two stretches of rock ledge at the water line on the east side. The surface of the island is overgrown with vines and bushes, and there are no prominent features.

Anchorages: Vessels can anchor 3 miles west of the island in 12 to 15 fathoms, sand and coral bottom, with the north end of the island and the breaker on the north side of the entrance to the lagoon in range and bearing 80°; the north breaker being 1¼ miles distant. Smaller vessels can anchor closer to the entrance breakers, but the rocky bottom is very uneven. During southwest weather vessels can find anchorage from 3 to 4 miles east of the north end of the island in from 8 to 15 fathoms. Small vessels can anchor inside the lagoon in from 3 to 6 fathoms taking care to avoid the scattered coral heads with only a few feet of water over them. The passage into the lagoon through the reef has an uneven bottom with depths of 2 to 6 fathoms.

The island is too small to offer a lee, while the conformation of the reef is such that it is effective as a lee only in moderate weather.

Seaplane anchorages: In fair weather such lee as is afforded by the reef might be used, but would be impracticable in even moderate weather.

Potential landing field sites: Same general conditions prevail on Lisianski as on Laysan Island.

Boat landing: Landings can be made on the west side and the south end of the island in all but the southwesterly and westerly weather.

Importance: Poor landmark. It is believed that the strategic value of this island is negligible, except as a possible anchorage for vessels.

C. & G. S. has survey sheets of this area; N.O. has copies. 4/5/39

PEARL AND HERMES REEF

(Lat. 27°53′ N., long. 175°55′ W.)

Description: Pearl and Hermes Reef is an extensive atoll about 40 miles in circumference, 16 miles long in an easterly direction, and 9 miles wide, on which are scattered 12 small, low islands and islets. Turtle and fish are abundant. A greenish tinge from the shoal water of the lagoon is reflected on the under side of the clouds. This lagoon green furnishes the first intimation of the approach to the atoll, and is visible long before the low lying islets or the breakers on the reef, when there are clouds over the lagoon.

Anchorages: Vessels can anchor outside the reef, on the northwesterly side near the entrance, in 8 to 12 fathoms, or on the easterly side of the reef. All anchorages must be made outside the reef, as only small boats may cross the reef into the lagoon.

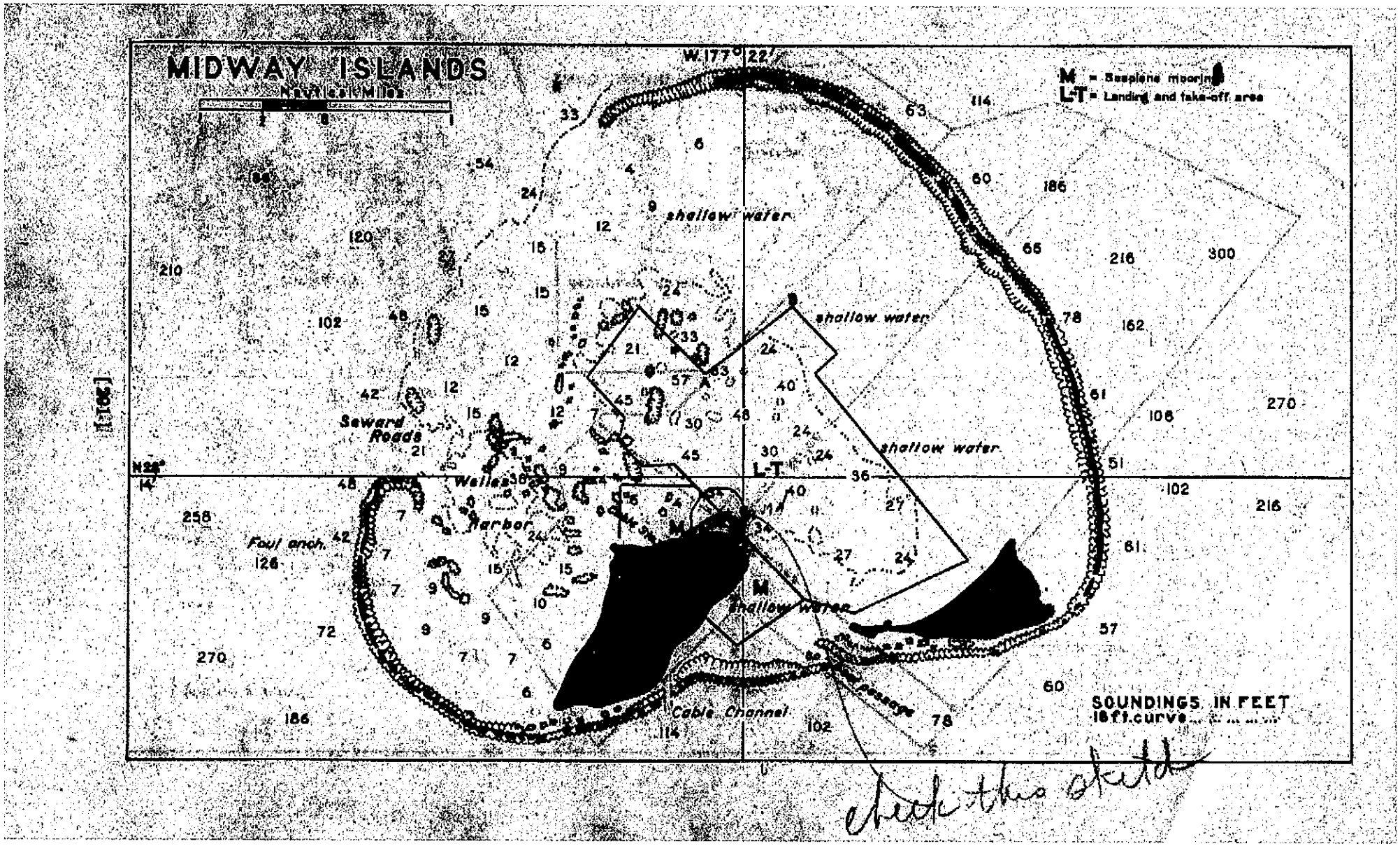
Seaplane anchorages: In fair weather the lagoon might be used; in moderate to fresh breezes the lagoon becomes rough and choppy rapidly.

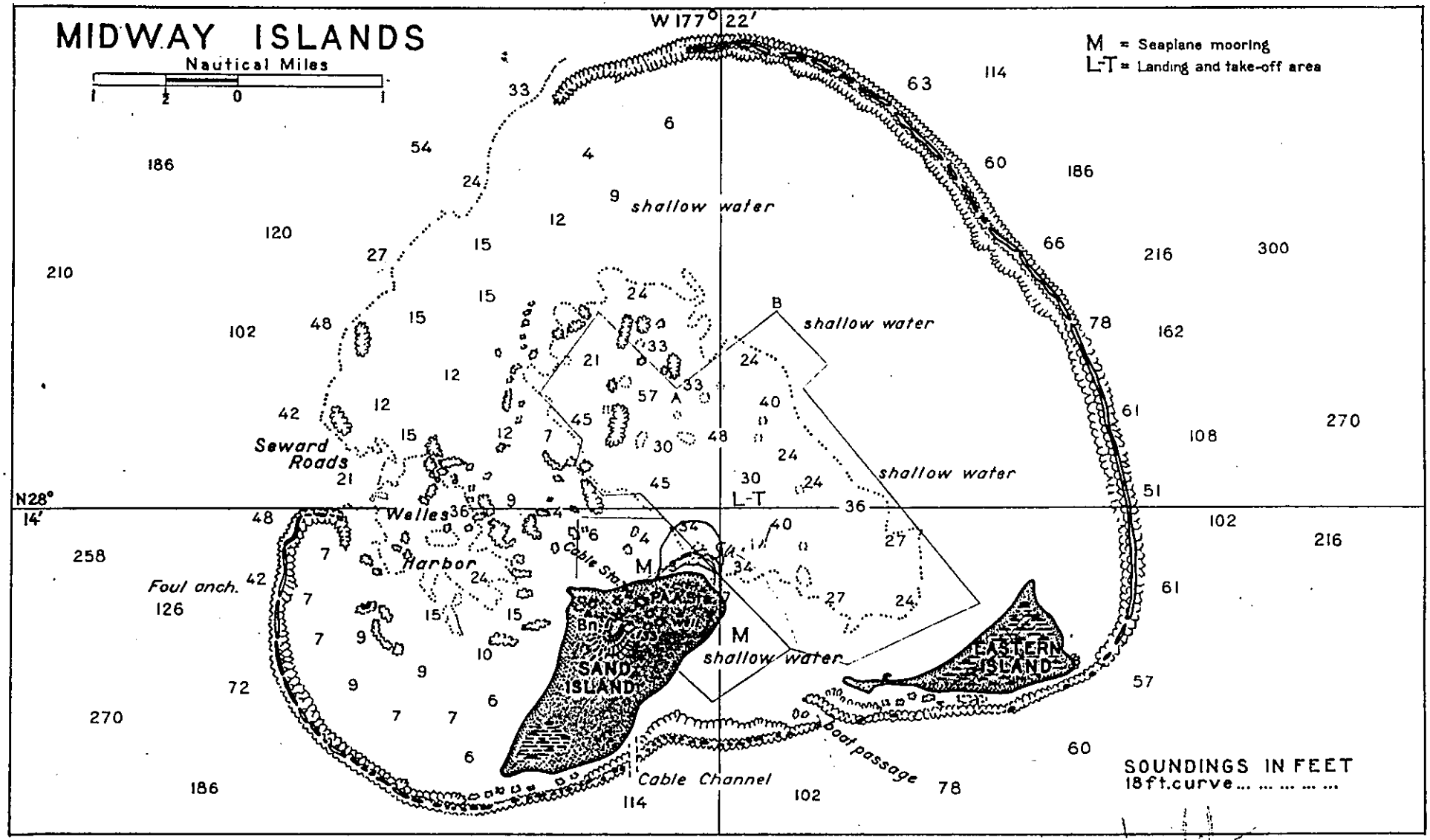
Potential landing field sites: Two of the sand islets within the lagoon are of sufficient size to afford landing sites; the same general conditions prevail on them as on Laysan and Lisianski Islands.

Boat landing: There is an entrance to the lagoon on the northwesterly side, through which there is 1 to 6 feet with numerous coral heads. Fairly easy landings may be made on all of the islets.

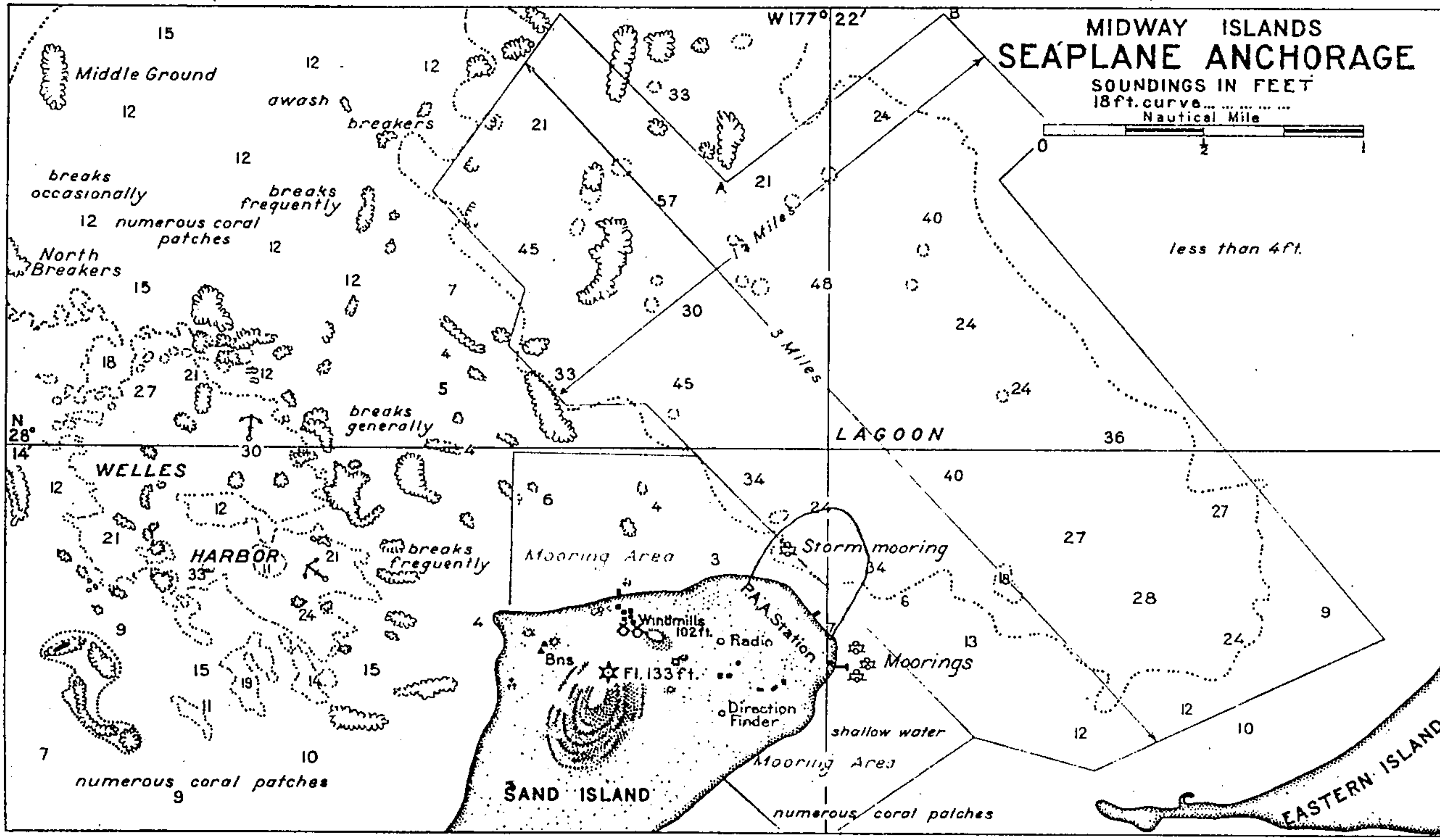
Importance: Pearl and Hermes Reef is considered to offer but little strategic value, particularly as it lies so close to the Midway Islands.

QH78/H1-18 (287862) 13 Aug. 1936
NI-9/EG12 (293977) Advance Base Report, 1936

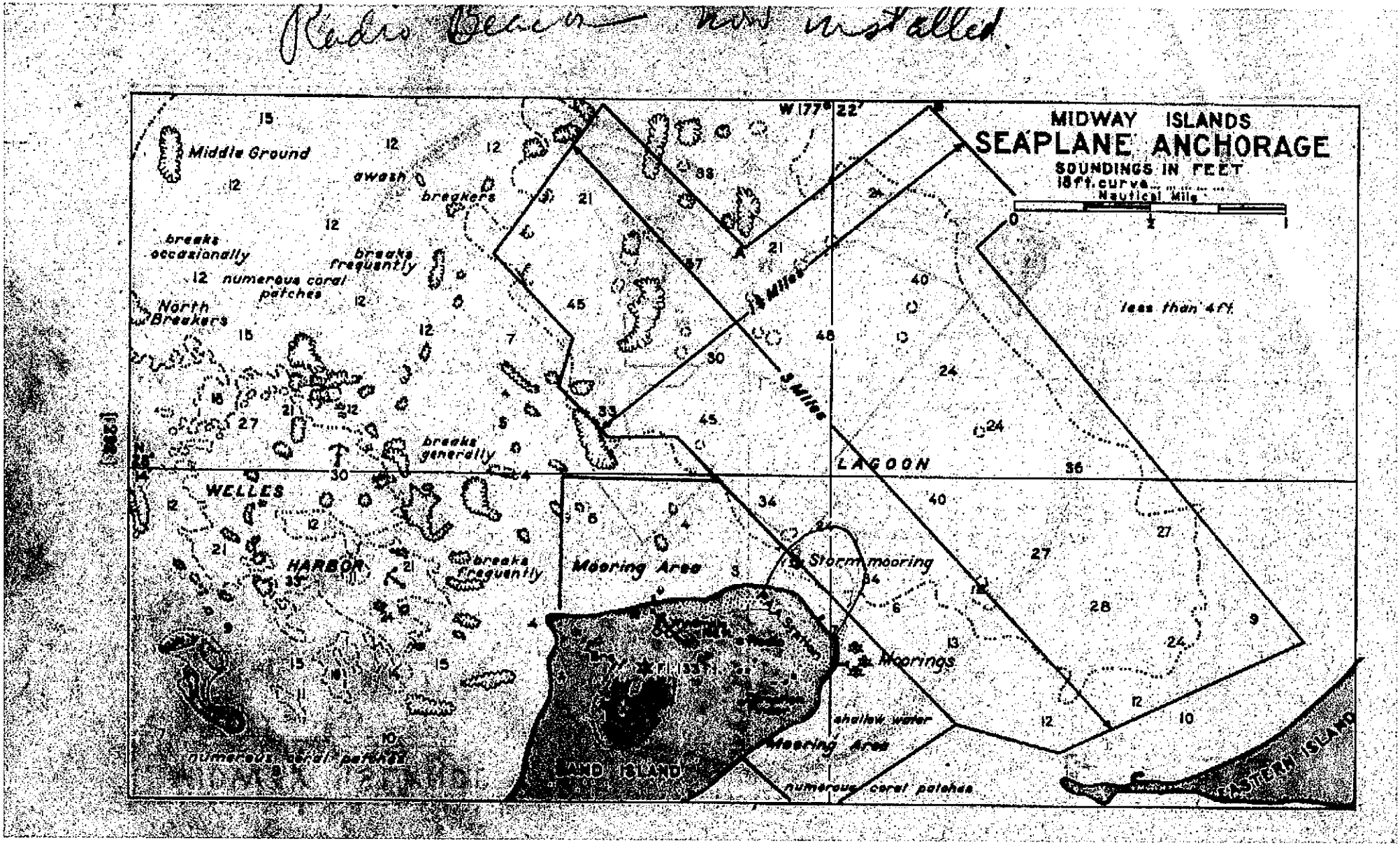

MIDWAY ISLANDS
Nautical Miles
W.177°
22'
M = Seaplane mooring
L-T = Landing and take-off area
shallow water
shallow water
shallow water
shallow water
Seward Roads
Welles Harbor
Foul anch.
Cable Channel
L-T
M
SOUNDINGS IN FEET
18 ft. curve
check this date


MIDWAY ISLANDS
Nautical Miles
1 2 0 1
W 177° 22'
M = Seaplane mooring
L-T = Landing and take-off area
shallow water
shallow water
shallow water
shallow water
Seward Roads
Welles Harbor
Foul anch.
N28° 14'
L-T
M
M
SAND ISLAND
EASTERN ISLAND
Cable Channel
boat passage
SOUNDINGS IN FEET
18 ft. curve

Radio Beacon — was installed.



Radio Beacon — not installed.



MIDWAY ISLANDS

HAWAIIAN ISLANDS

SEAPLANE ANCHORAGE

(Lat. 28°14′ N., long. 177°22′ W.)

DESCRIPTION

Location: Mooring area adjacent to the north and northeast shore of Sand Island. **Depths:** 3 to 12 feet. **Tidal range:** 0.9 foot. **Character of bottom:** Sand and coral. **Currents:** Weak. **Shelter:** Good under any wind conditions for about 60 VP-type seaplanes; in very high winds it might be necessary to rig spoiler boards.

LANDING AND TAKE-OFF AREA

Location: Within the lagoon. **Area:** NE./SW., 1¾ miles; NW./SE., 3 miles; sufficient operating area to permit basing any number of planes for which adequate servicing facilities could be provided. **Shelter:** Excellent, open to wind from all directions but protected from the sea by the reef. **Obstructions:** Shoal water surrounding the lagoon is clearly marked as light green against the darker blue of the deeper water; coral patches show up clearly within the deep water and have at least 6 to 12 feet of water over them. Wild birds present considerable danger to material and personnel from collision in the air.

FACILITIES

Pan American Airways, Inc., maintain servicing facilities. Cable company personnel is dependent upon the cable ship for delivery of necessary supplies and foodstuffs. The limited output of garden supplies and the small amount of livestock on Sand Island barely meets the requirements of its few permanent inhabitants. **Water:** Slightly brackish but palatable water is available in large quantities a few feet below the surface of the ground; rain water is exclusively used by the cable company personnel for drinking purposes. **Wharf:** Small boat wharf adjacent to cable station. **Communication:** Cable station. Cable ships call quarterly.

GENERAL INFORMATION

Aspect: Midway Islands is a circular atoll about 6 miles in diameter, enclosing two islands. The narrow encircling reef is about 5 feet high in places. Sand Island has a greatest elevation of 43 feet in its northerly part. Eastern Island is 6 to 12 feet high. The fauna of the islands consists almost entirely of bird life. Both islands lend themselves readily to the propagation of wild bird life. Eastern Island contains the greater number of birds and almost cover the surface of the island. The flora embraces practically every known specie growing in the Hawaiian group, except the coconut tree. Dwarf magnolia has spread over a large part of both Sand and Eastern Islands. The bush, which reaches a height of 4 to 6 feet, has effectively prevented sand storms during high winds.

Landmarks: Midway Islands Lighthouse on the summit of Sand Island. Group of trees near the northern end of Eastern Island. Trees and cable station buildings on Sand Island.

Tender anchorage: Anchorage in Welles Harbor with the best swinging room is in the middle of the basin; this is exposed to westerly winds. The best and most convenient anchorage to the boat landing on the north side of Sand Island is in the middle of the basin in the eastern part of the harbor, about ½ mile westward from the northwest end of Sand Island, in 4¾ fathoms. There is scant swinging room for a vessel of any size. The deepest draft entering Welles Harbor is about 17 feet. The harbor is safe

in the summer, when the northeast trades blow steadily. From October to April gales are of frequent occurrence, with always a rough westerly sea breaking over the bar almost constantly. Anchorage outside the reef is practicable on any side of the atoll, permitting a vessel to obtain a lee in any steady wind.

Boat passage: The boat passage between Sand and Eastern Islands can be used during winds from the northwesterly quadrant. The other passage is a channel blasted through the reef to permit landing of a cable. This passage, though narrow, can often be used when the passage between Sand and Eastern Islands is too dangerous. With winds from the southwest quadrant all passages are very hazardous and usually cannot be used. Landing may be made on Sand Island either at the small wharf on the northern side or anywhere along the beach. Landings on Eastern Island may be made along the beach, but the vicinity of this island is well strewn with coral heads and shoal areas, over which there is but from 1 to 3 feet of water.

Importance: Ideal base for patrol plane operations. Not suitable as an operating base in its present state during winter months due to the fact that there is no dependable channel through which transfer of material may be effected between ship and shore.

Sand Island or Eastern Island could be made suitable for the operation of land-planes.

Jurisdiction: United States.

Recommendations: Commander aircraft base force in 1934 reports as follows:

(*a*) Points A and B should be buoyed.

(*b*) It is believed that the channels required for entry into the lagoon by small tenders could be provided by a moderate amount of dredging. If such dredging operations were contemplated consideration should be given to not only providing entrance to the lagoon through Welles Harbor but also to making a channel on the northeastern side of the reef which could be used when westerly winds prevented the use of Seward Roads. The construction of a suitable channel, or channels leading into the lagoon, would also permit its use as a very satisfactory submarine or destroyer anchorage.

(*c*) If it were contemplated using these islands as a base for some time, it would appear desirable to erect temporary buildings on shore for storage of supplies.

(*d*) It is believed that the strategic value of the Midway Islands warrants careful consideration being given to the steps necessary to make this point a semipermanent operating base for VP-class of aircraft. Such a project would involve principally the dredging of a channel through the reef which would permit contact with the islands and lagoon when northwest winds of winter months prevent the use of Welles Harbor.

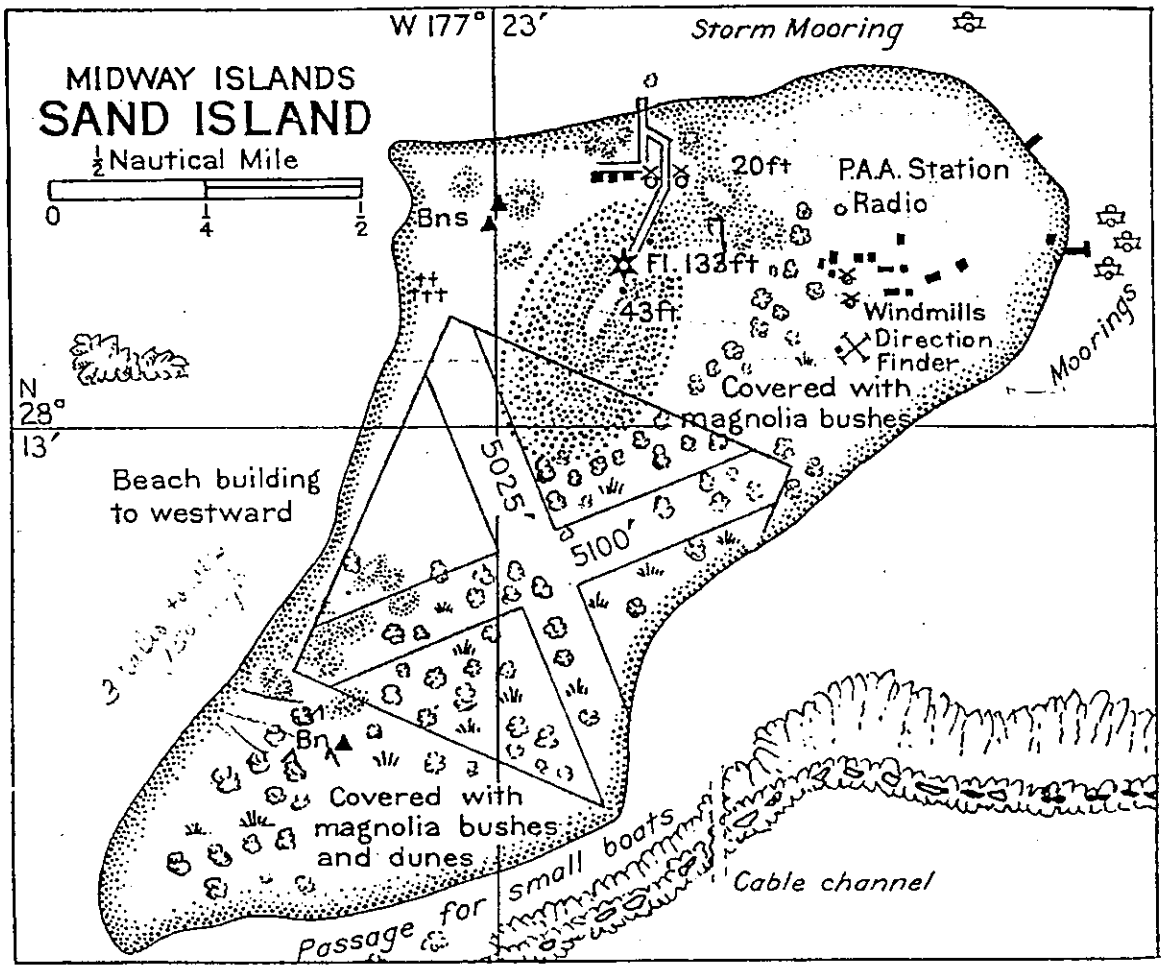
Health: It is reported that there was little sickness on the islands.

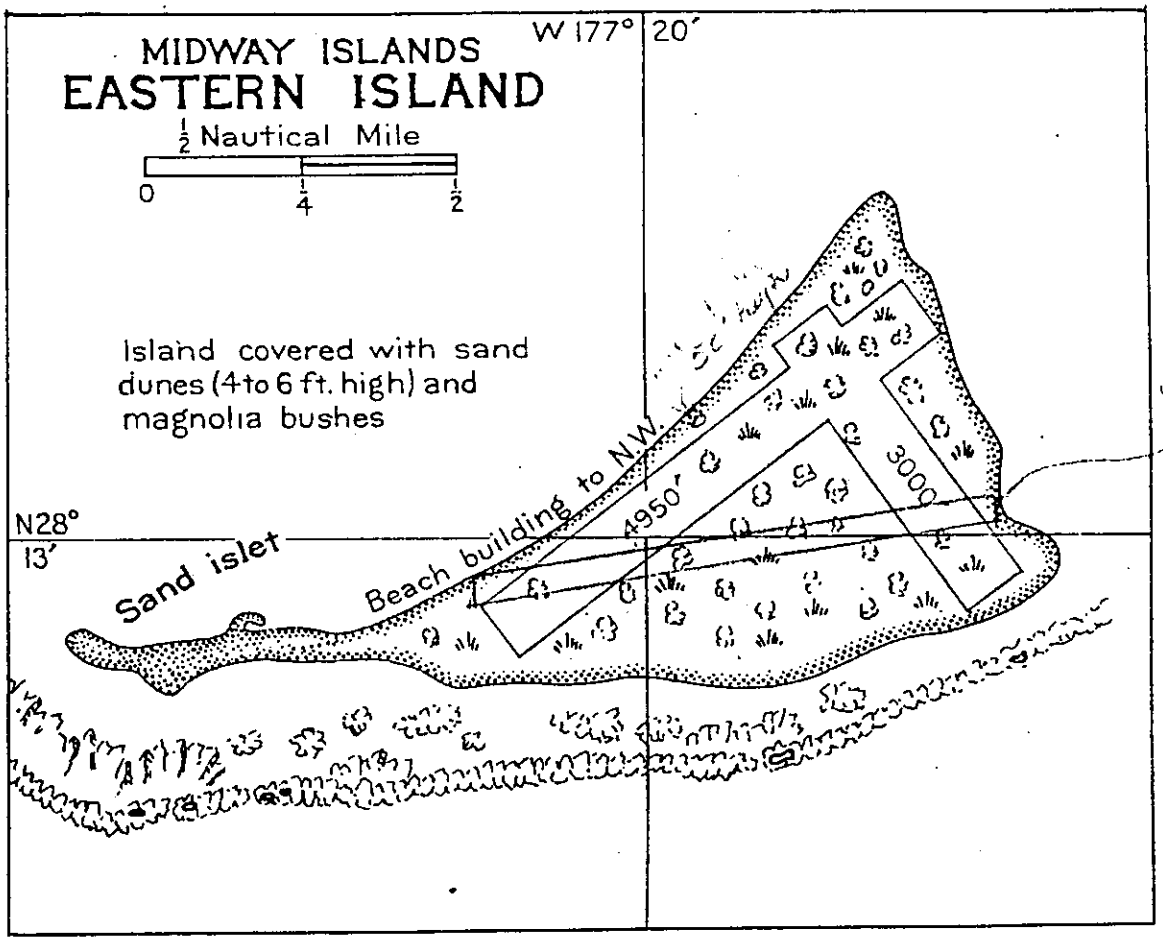
Meteorological conditions: Prevailing winds: During summer months the winds are generally variable and light, either from northeast, southeast, or southwest until about the middle of July, when fresh to strong northeast trades set in and continue through July and August. Southwest winds are always accompanied with a low barometer and rain and squalls, but rain also occasionally comes with northeast and southeast winds and a high barometer. Northwest winds following southwest storms generally indicate clearing weather. **Heaviest winds:** During the winter months, from October to April, gales frequently occur, working around

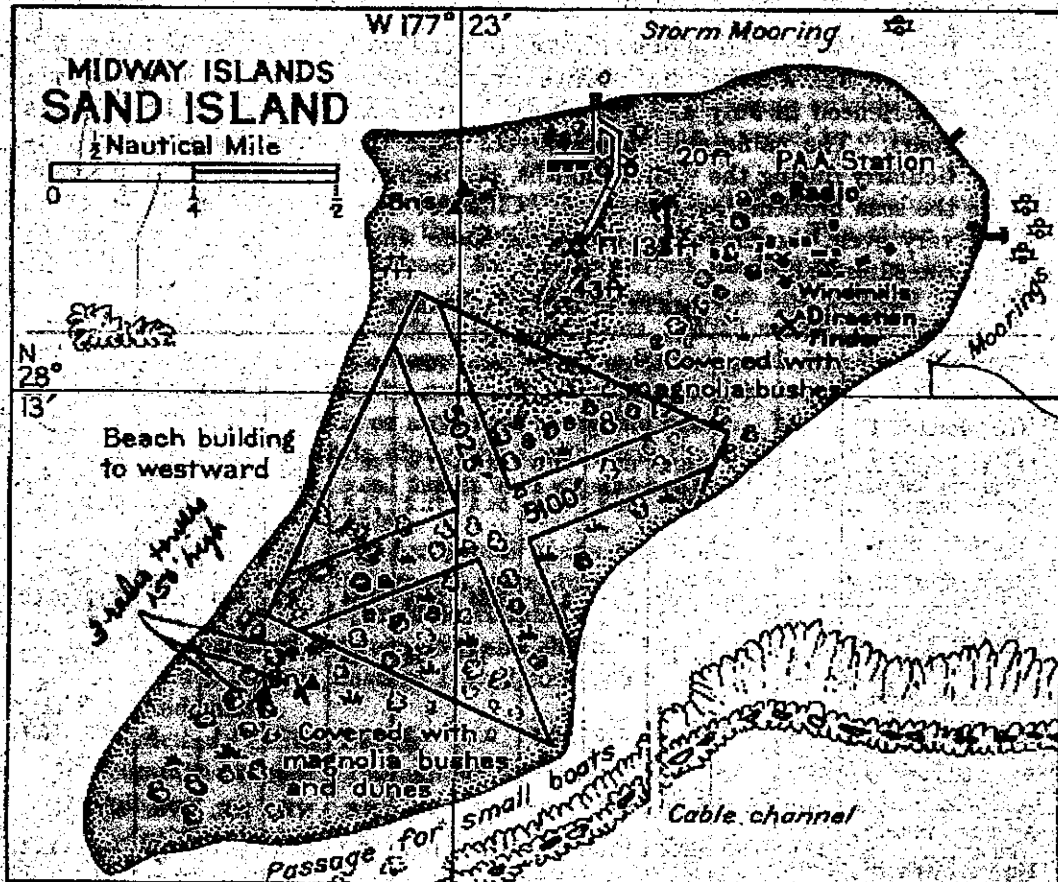
from southeast through southwest to northwest, with occasionally a few days of fine weather, but always a rough westerly sea. Gales have been experienced in July and September in frequent intervals of 5 or 6 years apart. The cable station employees state that in rough weather, particularly during the winter months, the lagoon is a mass of choppy water, the seas breaking over the reef. **Climate:** The climate is reported to be very even, the prevailing northeast trade winds making it amply cool in the summer.

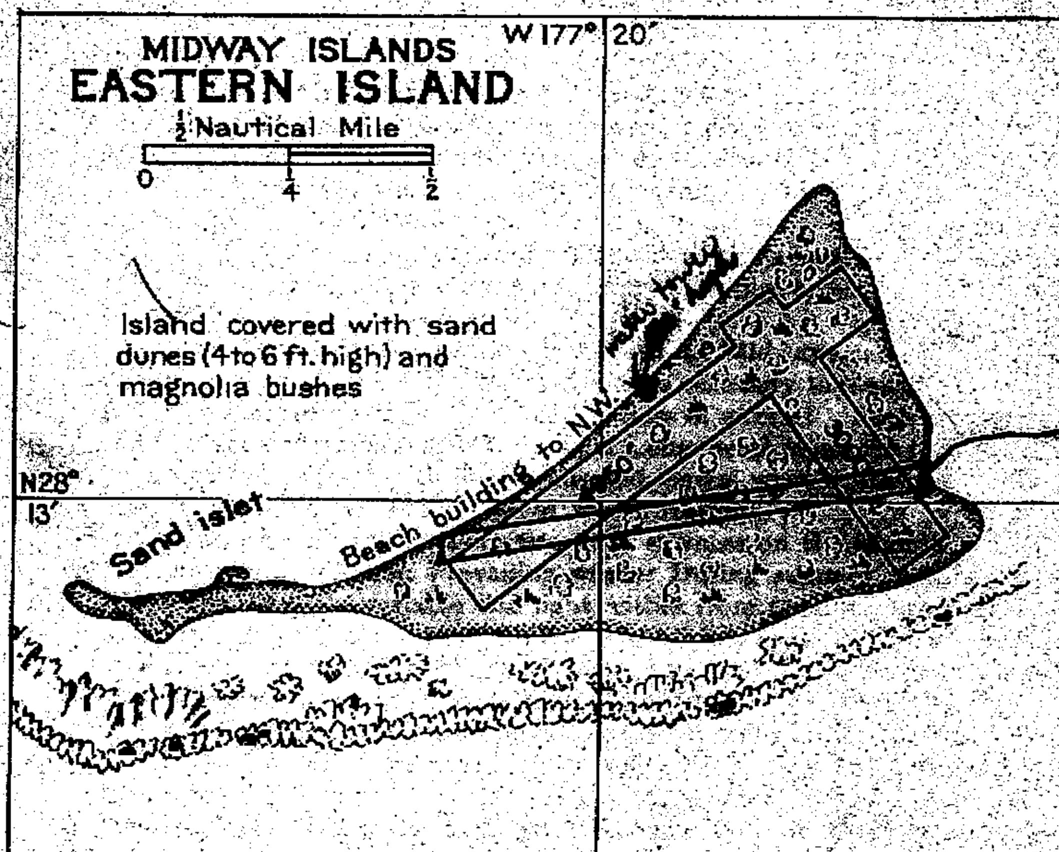
METEOROLOGICAL TABLE

Weather element	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Temperature (° F.)													
Mean monthly	66.0	64.8	66.6	67.7	71.2	75.4	77.6	78.5	78.0	74.5	70.8	66.8	71.5
Mean maximum	72.0	71.0	72.4	74.0	78.3	82.2	84.1	85.2	84.7	80.9	76.9	72.3	77.8
Mean minimum	60.1	58.7	60.7	61.4	64.0	63.5	71.2	71.8	71.4	68.1	64.8	61.4	65.2
Precipitation													
Mean monthly, inches	4.19	3.66	4.24	5.08	3.60	3.35	3.08	3.54	5.01	5.20	1.74	3.61	46.30
Number of days with measureable amount	16	16	13	11	10	10	15	14	15	12	12	18	162
Thunderstorms													
Mean number of	1.0	0	0	0.5	0.4	0.2	0.2	1.0	0.2	1.4	0	0.2	5.1
Winds													
Prevailing direction	SW.	SW.	E.	NE.	NE.	NE.	NE.	NE.	NE.	NE.	NE.	NW.	NE.
Average velocity, knots	12.9	15.0	13.4	13.3	10.2	9.4	11.4	9.5	10.5	11.7	12.7	15.9	12.1
Highest velocity, knots	40	52	46	52	33	42	40	31	37	46	52	67	67


W 177° 23′
Storm Mooring
MIDWAY ISLANDS
SAND ISLAND
½ Nautical Mile
0 ¼ ½
Bns
20ft
P.A.A. Station
Radio
Fl. 133ft
43ft
Windmills
Direction Finder
Moorings
Covered with magnolia bushes
N 28° 13′
Beach building to westward
5025′
5100′
3 cables to reef
Bn
Covered with magnolia bushes and dunes
Passage for small boats
Cable channel


MIDWAY ISLANDS
EASTERN ISLAND
W 177° 20′
½ Nautical Mile
0 ¼ ½
Island covered with sand dunes (4 to 6 ft. high) and magnolia bushes
N28° 13′
Sand islet
Beach building to N.W.
4950′
3000′


W 177° 23′
Storm Mooring
MIDWAY ISLANDS
SAND ISLAND
½ Nautical Mile
0
¼
½
20 ft
P.A.A. Station
Radio
43 ft
Windmills
Direction Finder
Moorings
N 28° 13′
Covered with magnolia bushes
Beach building to westward
5100′
Covered with magnolia bushes and dunes
Passage for small boats
Cable channel


MIDWAY ISLANDS
EASTERN ISLAND
½ Nautical Mile
0
¼
½
W 177° 20′
Island covered with sand dunes (4 to 6 ft. high) and magnolia bushes
N 28° 13′
Sand islet
Beach building to N.W.

MIDWAY ISLANDS

HAWAIIAN ISLANDS

POTENTIAL LANDING FIELD SITES

DESCRIPTION

Location: Sand and Eastern Islands. **Size:** Sand Island, rectangular area 3,600 by 3,900 feet with two runways NE./SW., 5,100 feet, NW./SE., 5,025 feet. Sufficient area exists to the north or south of the proposed layout to amply house hangars, shops, and living quarters. Eastern Island, entire area may be developed into a landing field or as an alternative rolled oil runways could be laid out, NE./SW., 4,950 feet, NW./SE., 3,000 feet. Sufficient space is available for the construction of buildings as might be necessary.

Surface and drainage: Sand Island is of coral substance with many sand dunes 4 to 6 feet high, and but a small portion is free from dwarf magnolias. The entire area is a natural rookery for wild bird life. The sand of the island is fairly well packed but soft patches exist. Birds have tunneled to some extent underground. Eastern Island has the same characteristics as Sand Island except that the soil is more in the nature of coral gravel and is packed more firmly. For the reason there are fewer dunes and those that do exist are smaller than those on Sand Island. Dwarf magnolias almost completely cover its surface and bird life exists everywhere.

GENERAL INFORMATION

Recommendations: Commander aircraft base force in 1934 reports as follows:

Sand Island: To develop a landing field it would be necessary to grade the sand dunes, remove the magnolias and bind the area with oil or some other binding substance. The bird tunnels would have to be broken through and filled. A hedge of magnolias closely planted and entirely surrounding the field should be effective in preventing the drifting of sand during high winds. Considerable maintenance and renewal of oil treatment might be necessary due to the looseness of the soil. If runways were constructed in lieu of a rectangular operating area it would be necessary to grass with marrom grass or bind the adjacent areas to discourage sand drifting.

Eastern Island: To develop a landing field it would be necessary to grade the sand dunes, remove the magnolias and bind the soil with oil or a suitable binder. Less maintenance would probably be required than on Sand Island because of the firmer character of the soil. A hedge of magnolias surrounding such a field would largely prevent sand drifting. If runways were constructed the surrounding area would have to be bound to prevent sand drifting. Less binding substance would be needed here than on Sand Island.

Remarks: Eastern Island, because it is uninhabited, contains the greater number of birds. The abundance of wild bird life existing on the islands would present a problem requiring solution if any large scale aircraft operations were contemplated. It might happen that increased habitation and activity would result in the departure of the birds but their actual destruction and removal of their eggs during the mating season would probably be necessary. There are evidences that both islands are being built up to the westward. This movement westward receives an occasional setback from violent storms but in general the building up appears to be greater than the erosion.

KURE (OCEAN) ISLAND

(Lat. 28°25′ N., long. 178°25′ W.)

Description: Kure Island is an atoll closely resembling Midway Islands in both formation and appearance. The atoll is about 15 miles in circumference, and encloses a lagoon, the entrance of which is about 1 mile wide. From the appearance of the islands it may be assumed that they are sometimes visited by severe storms, the sand being thrown into numerous cones and pyramids.

Anchorages: The best anchorage is on the westerly side, near the northwesterly point of the breakers, in 8 to 12 fathoms, rocky bottom. Only a fair lee may be had in accordance with the prevailing wind and weather.

Seaplane anchorage: The lagoon might be used only in smooth weather, but would become impossible in moderate or stronger breezes.

Potential landing field sites: Only Green Island contains sufficient area to be used for this purpose. Green Island is about 20 feet high, densely covered with shrubs, which grow to an average height of 4 feet, well to the waters edge.

Boat landing: Passage over the reef, for small boats, may be had through an opening to the westward, and only through this opening may boats gain access to the lagoon. Small boats may make a landing on Green Island through a break in the reef to the southwestward of the island.

Importance: The strategic value of Kure Island is considered slight, more particularly so with its proximity to the Midway Islands.

METEOROLOGICAL CONDITIONS. (See wind roses on chartlet.)

The northeast trade dominates the whole of this extended region in only 2 months, July and August, but the trade also prevails over the southeastern part of the area in June and September. Westerly winds break in occasionally even at the height of the trade wind season when 60 to 80 percent of the air movement is from directions between northeast and east.

In the cooler months, from October to May, northeast to east winds continue to predominate more than 50 percent of the time over the southeastern part of the region but winds from all other points of the compass are of frequent occurrence.

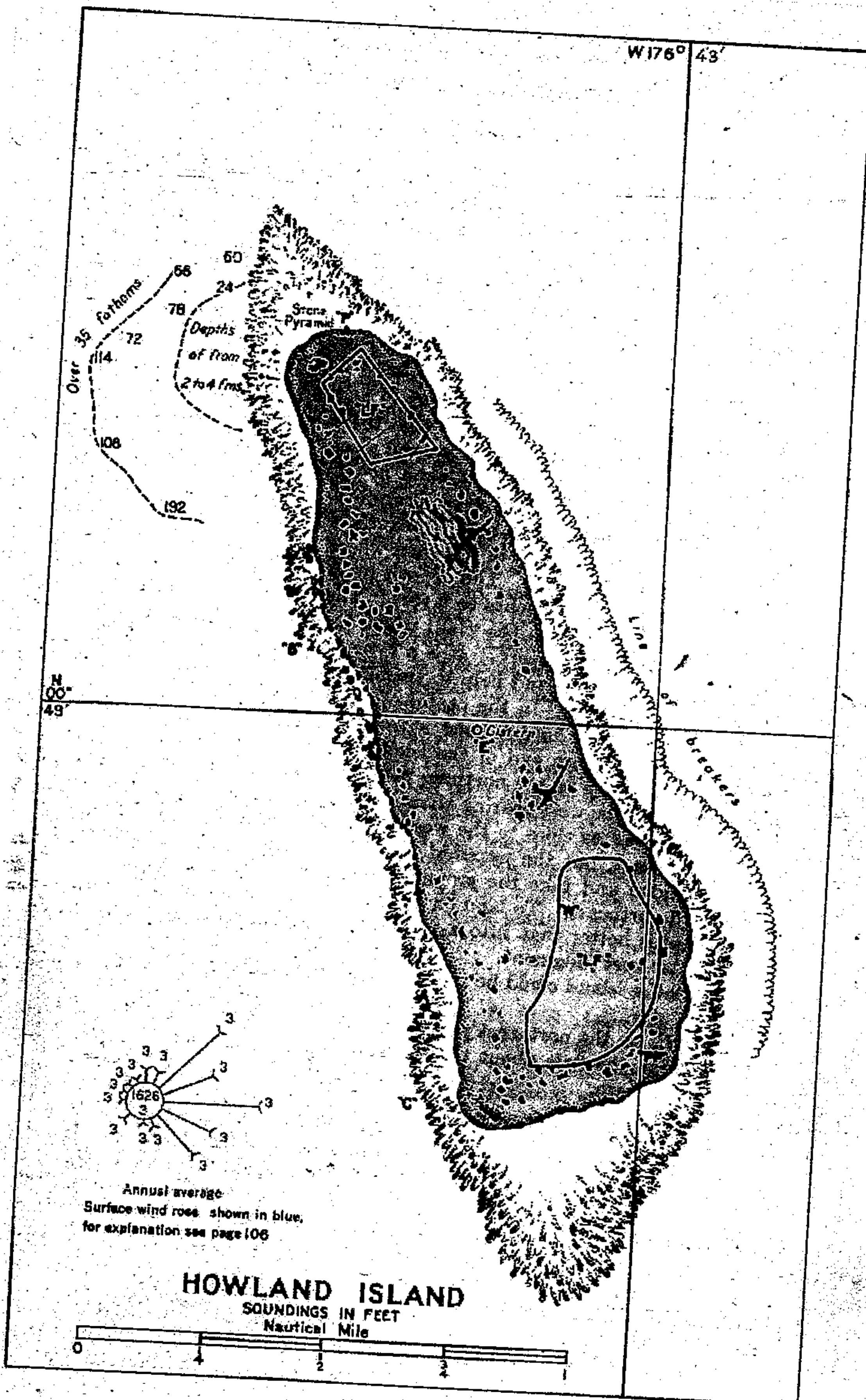
Over the northwestern part of the region, outside of the brief season when the trade prevails (July and August) the winds are highly variable although northeast to east are more frequently recorded than other directions except in January and February, when south to west winds are slightly predominant in the vicinity of Midway Islands.

Cloudiness increases northwestward, especially in the cooler months, when there is considerable overcast sky, with occasional fog or mist. Thunderstorms are rare in the first half of the year, but somewhat more frequent during the latter half. Squalls are not of frequent occurrence, but gales occasionally sweep the region, especially toward Midway Islands, where at times in the cooler months the winds reach hurricane force.

Rainfall is well distributed through the year, and is generally moderate. The annual average at Midway Islands is 46 inches.

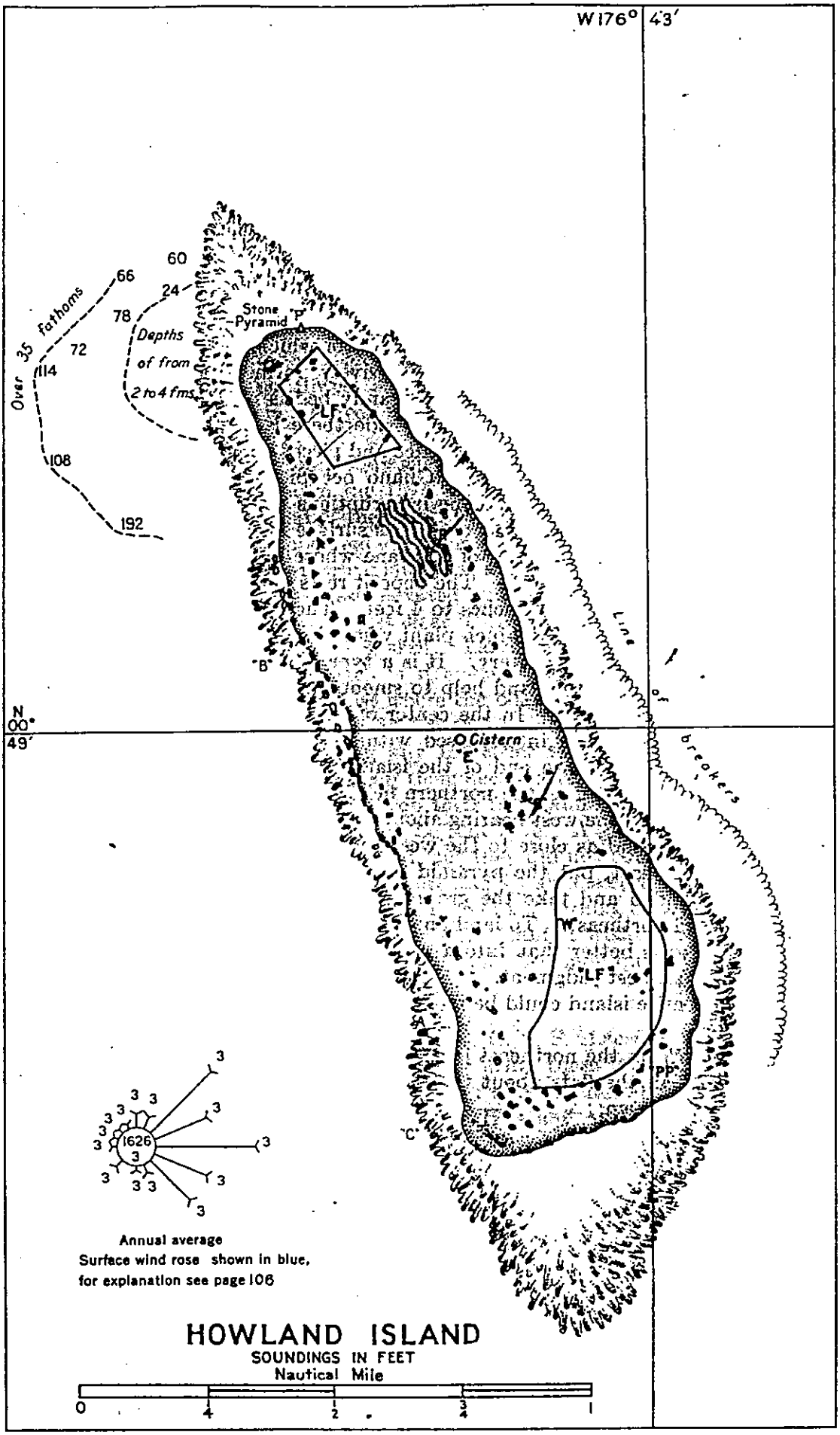
QH78/H1-18 (287862) 21 June 1936 13 Aug. 1936

Spots good for aircraft – Changed P. above



HOWLAND ISLAND
SOUNDINGS IN FEET
Nautical Mile

144508—35——20


W176° 43′
60
66
24
78
72
114
108
192
Over 35 fathoms
Depths of from 2 to 4 fms
Stone Pyramid
"A"
LF
"B"
N 00° 49′
Cistern
"E"
Line of breakers
LF
PP
"C"
1626
Annual average
Surface wind rose shown in blue,
for explanation see page 106
HOWLAND ISLAND
SOUNDINGS IN FEET
Nautical Mile
0
1/4
1/2
3/4
1

HOWLAND ISLAND

POTENTIAL LANDING FIELD SITES

(Lat. 0°49′ N., long. 176°43′ W.)

DESCRIPTION

Location: Landing areas available for emergency landings are marked "LF" at the north and south ends of Howland Island. **Surface:** The surface, at least on the western side, is somewhat depressed and much of it is covered by a growth of purslane, grass, and other vegetation. Near the center of the island at "*S*" are seven 10-foot high scrub trees with shiny green leaves. The windward side of the island is formed by a succession of ridges composed of coral debris with some sand and shells, running parallel to the eastern beach, each one of which may, at earlier stages of the island's growth, have successively formed the weather shore. Occasionally among these ridges a sandy bed is met with in which some little guano is mixed. On the lee side there is also a sandy margin of considerable width. Bits of pumice and pieces of driftwood are scattered all over the island's surface. Guano occupies the middle part of the island and stretches, with some interruptions of intervening sand, nearly from the north to the south end. Its surface is even and in many places covered by a thick growth of purslane whose threadlike roots abound in the guano where it grows. The deposit rests on a hard coral bottom and varies in depth from 6 inches to 4 feet. The northern part of the island is covered with a 6- to 8-inch plant whose branches are brittle and whose leaves are thick and watery. It is a type of cover that would lay easily under airplane wheels and help to smooth the ground as well as act as a break on the wheels. In the center of the island the growth is thinner, tufts of green grass interspersed with the same sort of plant as in the north. The southern end of the island is also covered as in the north. **Remarks:** To land on the northern field, use the pyramid for left tangent of island from the west bearing about 90° and take the ground on a course about 100° and as close to the western bank as possible. If the wind is from northeast, put the pyramid on the port hand about 200 yards on line extended and take the ground about 150 yards from western bank and head northeast. To land on the southern field, landing into a northeast wind is better than into a southeast wind but as there are no landmarks, use best judgment.

The entire island could be made suitable for landings with scrapers and rollers.

At "*R*" on the northeast portion are three rows of ridges about 1 foot higher than the flats about them. These ridges run about 400 yards in direction shown.

FACILITIES

None; the island is uninhabited. The surrounding waters abound in edible fish, particularly over the outer coral to the southwest and northwest. Countless birds are nested over the entire island. **Water:** Water had been found by digging down 4 feet at point "*W*" near the western edge of the southern landing field. The taste was sweet and the water clean. It is believed that the water, if boiled and filtered, would support life with no ill effects.

GENERAL INFORMATION

Aspect: Howland Island is a reef bound coral island 2 miles long and about 1,000 yards wide at the southern end and 650 yards wide at the northern end; the highest point is 17 feet above the reef and 10 or 12 feet above the

level of the high tide. The entire eastern shore of the island has a coral ledge extending farther out than shown on the sketch. Breakers begin at the beach line about twice as far out as the coral shown on the sketch. On the southwest end is a very wide beach of coral sand which slopes gradually to the sea. At the extreme southwest tip the beach is being extended out by the shifting sand to form a cove and gives fair protection from the swells. On the west side the reef slopes from the beach fairly smooth where it drops to deep water about 50 to 60 yards offshore. At the northwest end of the island the coral ledge has extended to a 4-fathom line. This ledge slopes from the 4-fathom line to about 2 fathoms toward shore; after which the coral is rough and shoaling to the beach which here is very steep.

At the northern end of the island is a stone pyramid "*P*" about 5 feet high and constructed with loose flat stones. A mound 6 feet high is located about 200 yards southwest of the pyramid. At "*E*" is an old cistern filled up with guano, decayed brush, etc.

Landmarks: Breakers.

Tender anchorage: Incompletely surveyed. No anchorages known.

Boat landings: Boats from the U. S. S. *Astoria* landed at "*A*"; from the watermark to the end of the ledge, there are no coral ridges and landing was simple. For method used see under Baker Island, pages 109, 110. Boats from the U. S. S. *Whippoorwill* landed at a point near the middle of the west coast where the reef is less elevated and seas are easier; anchoring her motor launch on the bank just clear of the reef and freighting passengers and gear over the reef in a skiff. Landing is difficult under the best conditions. The sand beach is steep-to, and the sea, a moderate swell offshore, breaks in a surf just where the boat touches the beach.

Importance: Potential landing field sites for aircraft.

Health: No reason for fearing any ills other than sunstroke. Personnel should wear dark glasses, keep their necks covered with a flap from the hat, wear white clothes and keep their faces annointed with mineral oil. No blondes or red heads should be sent here. A good many house type flies have been seen on the island, but they did not bother humans. Life on the islands, as far as temperature and air are concerned, would be very distasteful due to the terrible baking and sunburning effect of the air and sun. Nevertheless, if the islands were planted with some sort of trees for shade, such as coconut trees, it could be made quite livable as far as sun and air are concerned.

Jurisdiction: United States.

Recommendations: Commanding officer, U. S. S. *Astoria* in 1934 reports as follows: "If there is any idea of ever using these islands, a small vessel should be sent from Samoa or Honolulu with about 400 coconut and some breadfruit seeds. Plant ¾ of these on Howland and ¼ on Baker. The coconut palms and breadfruit will give shade and food. Planting of coconuts on coral islands is merely a matter of half burying a whole complete husk in a mixture of coral and decayed vegetation. On Howland and Baker, the combination of guano and coral ought to suffice.

"Add about 6 feet to the pyramid and erect another pyramid at '*PP*' in the south.

"At very little expense and labor a small pier could be built at '*A*' using stones from the northern beach for about 20 yards and 6- by 6-inch wood, driven in on a slope to a total distance of 30 yards which would suffice to a small boat at all tides. It is preferable to construct so as to take boats on the northern side of pier."

Remarks: Seaplanes, depending on the weather, could land on the sea and taxi to vicinity of beach between points "*A, B, C*" and have protection about 50 yards from shore during easterly winds. Under ideal conditions a seaplane could be beached at "*A*" during high water.

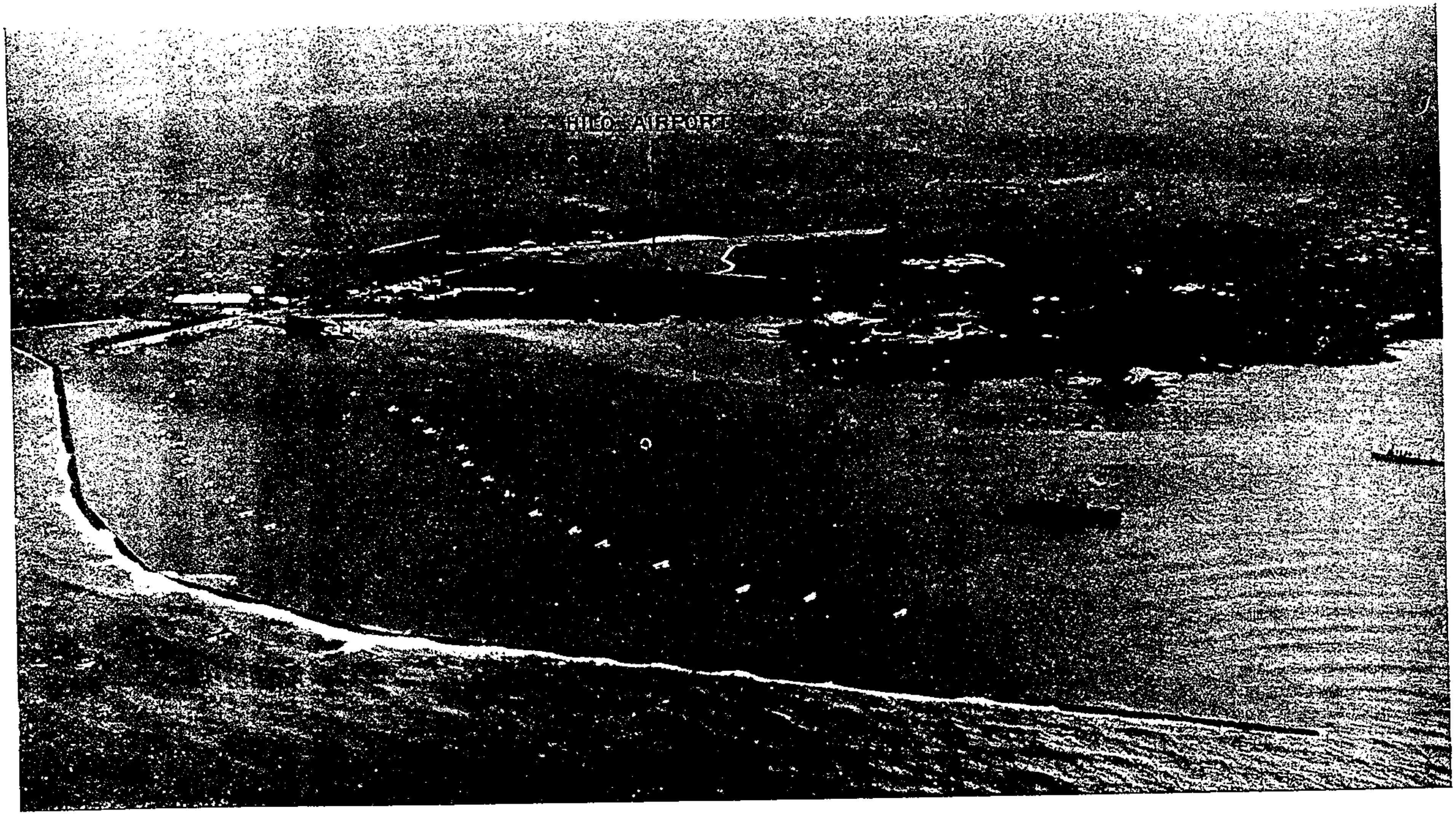
Meteorological conditions: The northeast trade drives quite steadily into the vicinity of Howland and Baker Islands from January to April. During the remainder of the year the average winds are dominated by the great east wind system of the equatorial South Pacific. For the year as a whole the winds are slightly more than 80 percent from directions between northeast and southeast; westerly winds are most frequent in the middle of the year.

Gales are rarely if ever encountered near these islands. Ships' reports indicate that thunderstorms and squalls occur with relatively low frequency.

Detailed rainfall records are not available, but the general climate situation indicate a rainfall regime probably resembling that of the Gilbert Island region, with annual rainfall upwards of 100 inches, quite well distributed, but with the season of the northeast trade probably wetter than the remainder of the year.

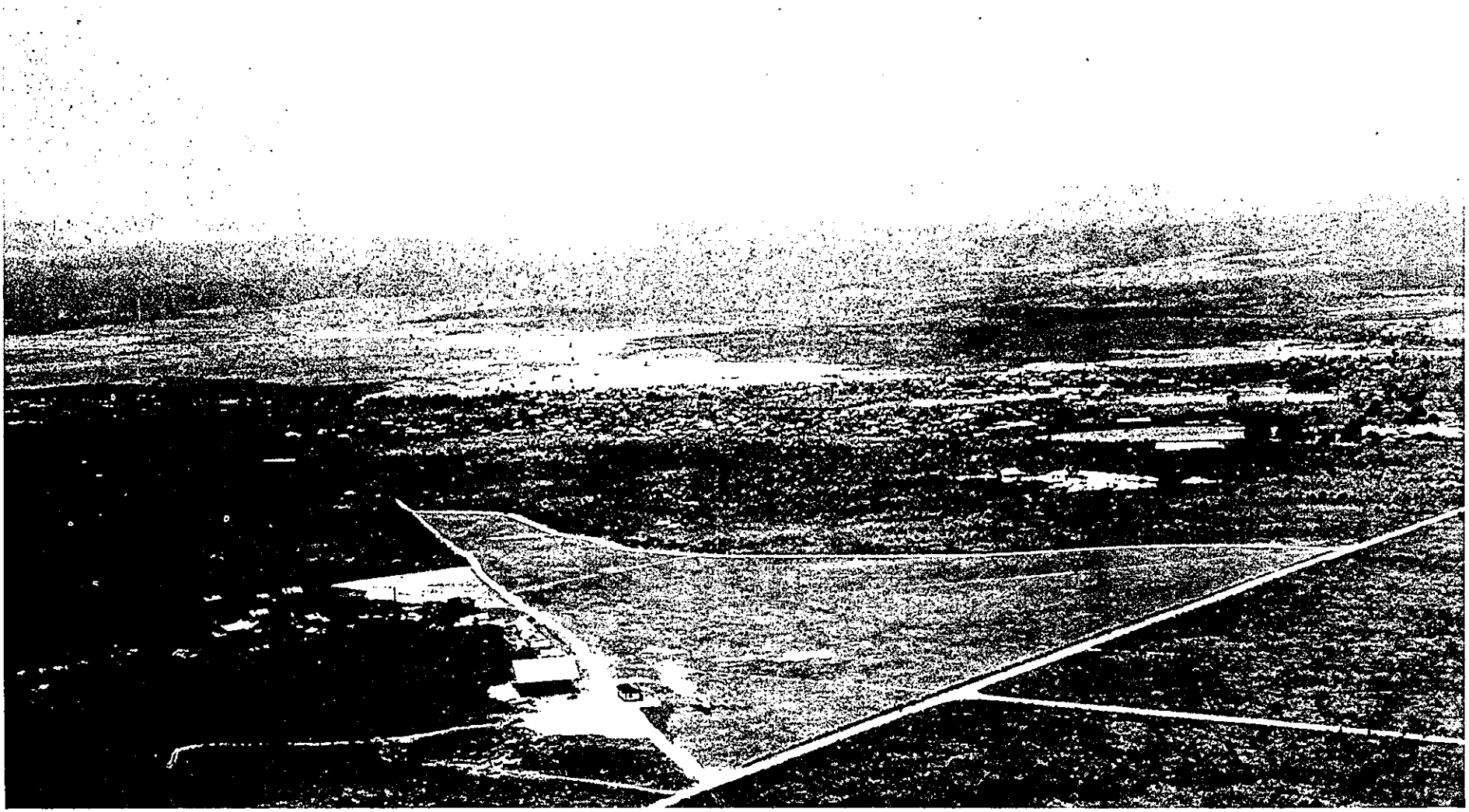
QH98/H1-7 (275568) U.S. Coast Guard - blueprint, 19 Nov. 1936

QH98/H1-17 (313-919) Sounding, Howland Island Area - C.O. U.S.S. Drayton; Rec'd in H.O. 8/21/37



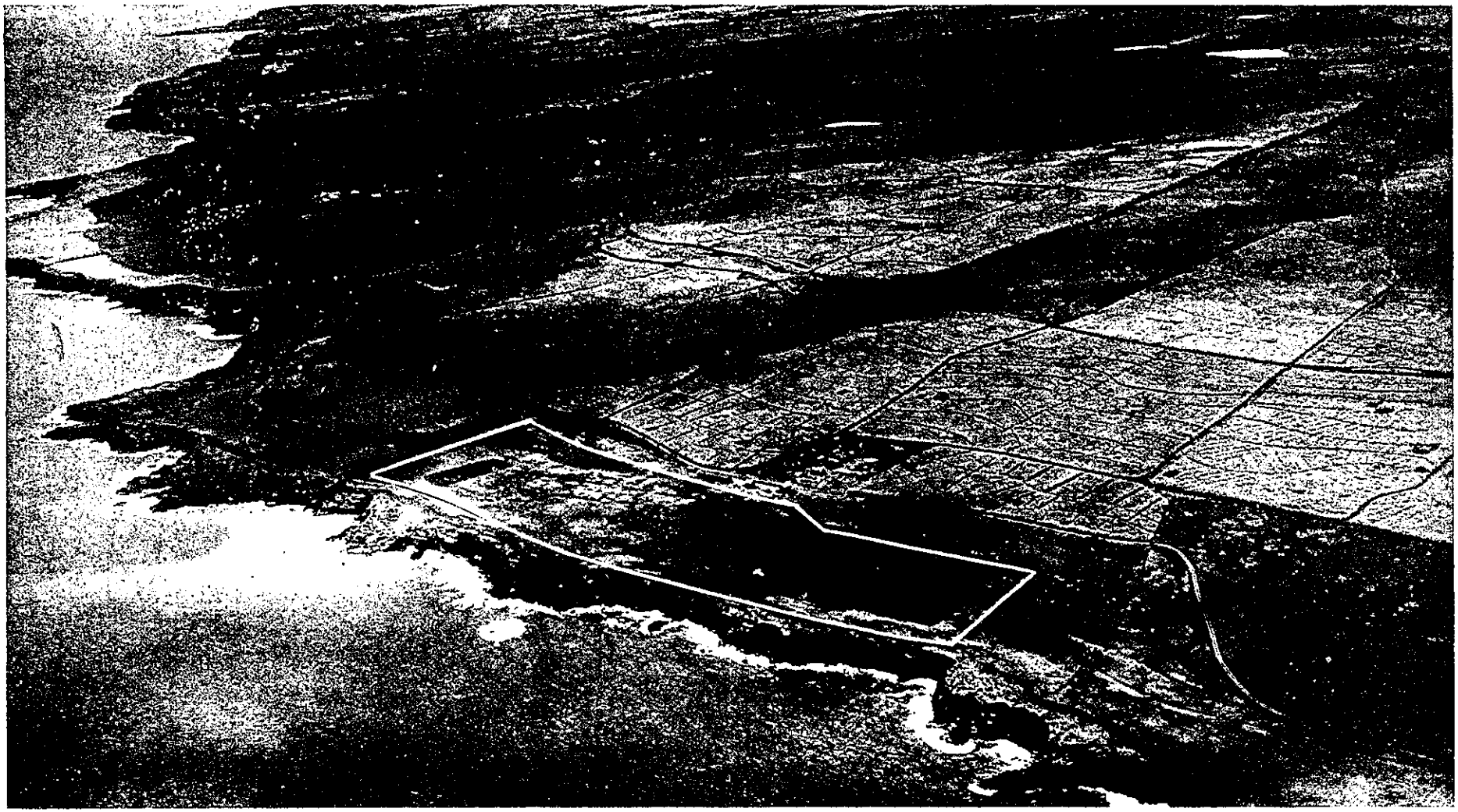
HAWAIIAN ISLANDS, HAWAII HILO HARBOR SEAPLANE ANCHORAGE FROM 2,500 FEET.

144308—35——40



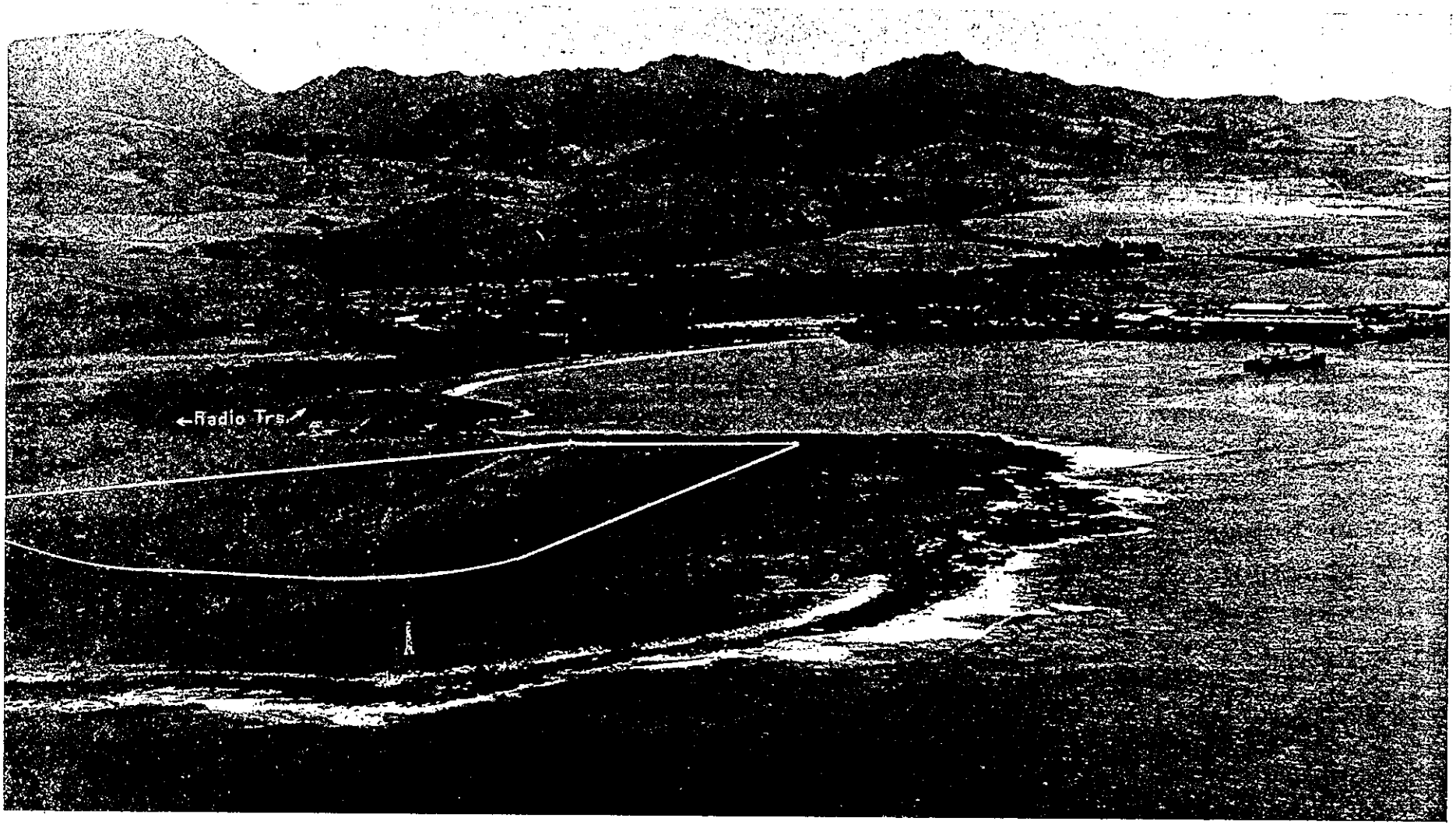
HAWAIIAN ISLANDS, HAWAII—HILO AIRPORT FROM 1,000 FEET.

HAWAIIAN ISLANDS, HAWAII—KALAE (SOUTH CAPE), MORSE FIELD, LOOKING NORTHEAST FROM 600 FEET.

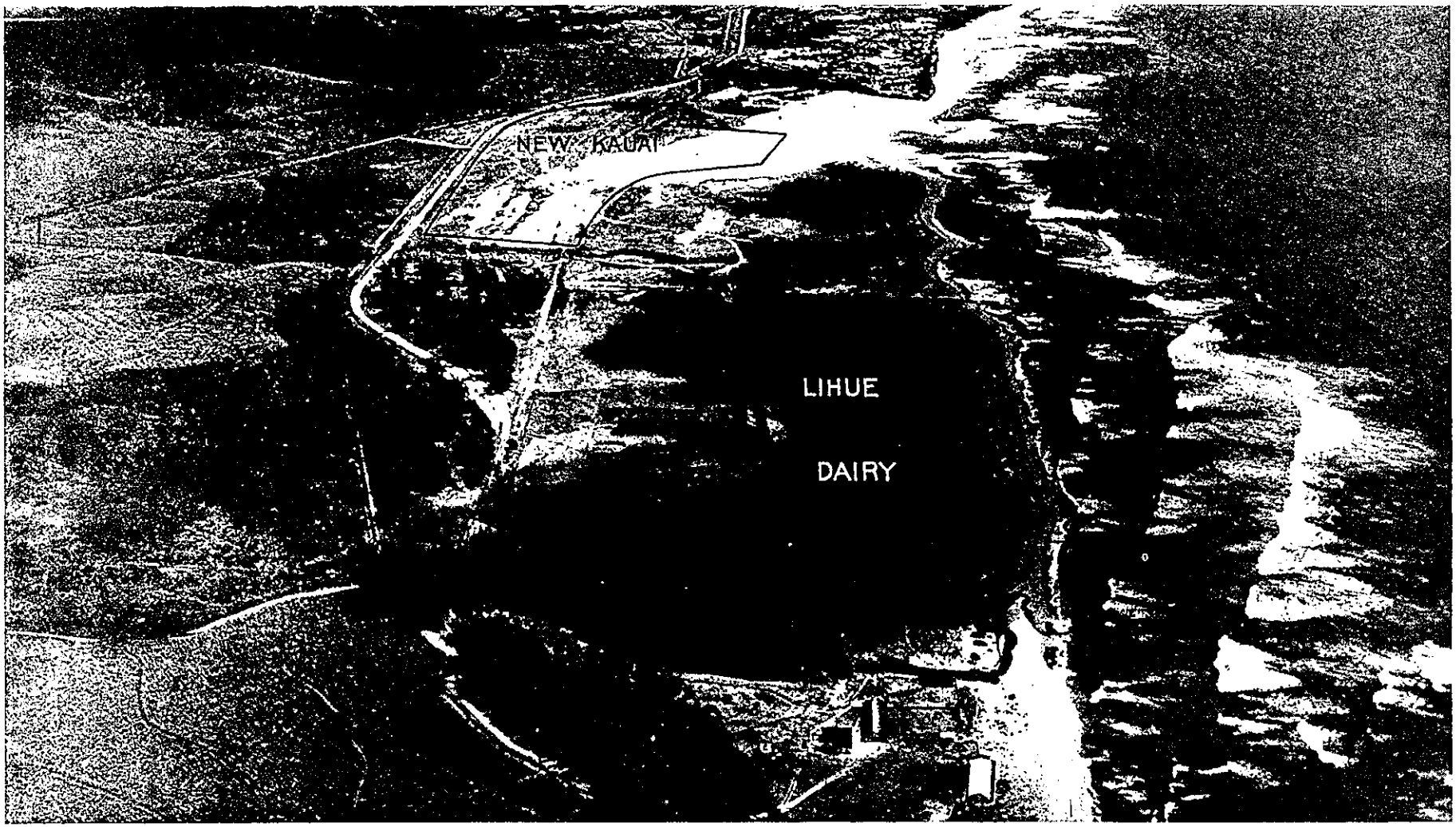


HAWAIIAN ISLANDS, HAWAII—UPOLO POINT, SUITER FIELD FROM 1,000 FEET.

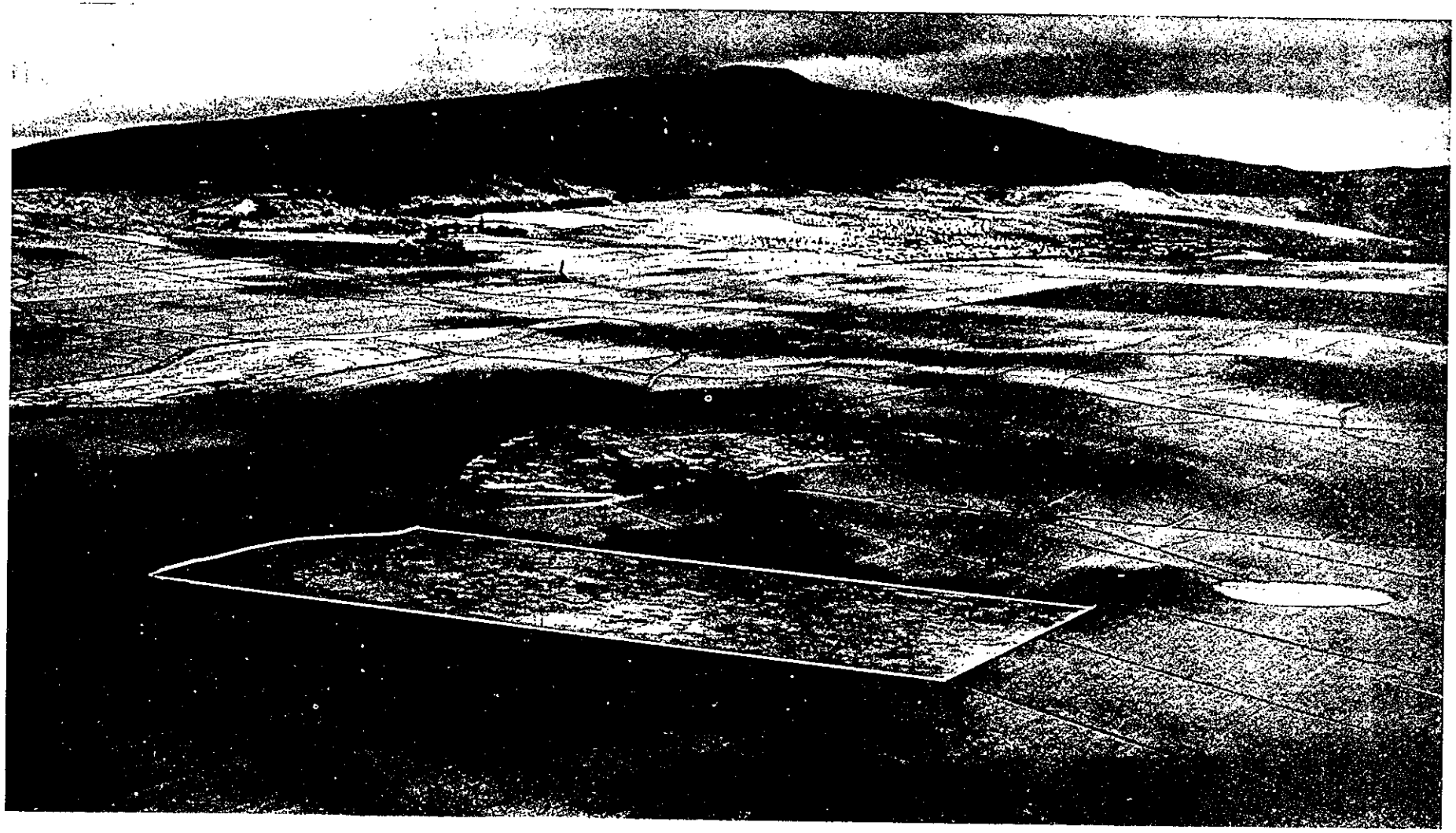
HAWAIIAN ISLANDS. KAUAI —NAWILIWILI BAY. SEAPLANE ANCHORAGE.



HAWAIIAN ISLANDS, KAUAI—PORT ALLEN EMERGENCY SEAPLANE ANCHORAGE AND BURNS FIELD, A TERRITORIAL AIRPORT.

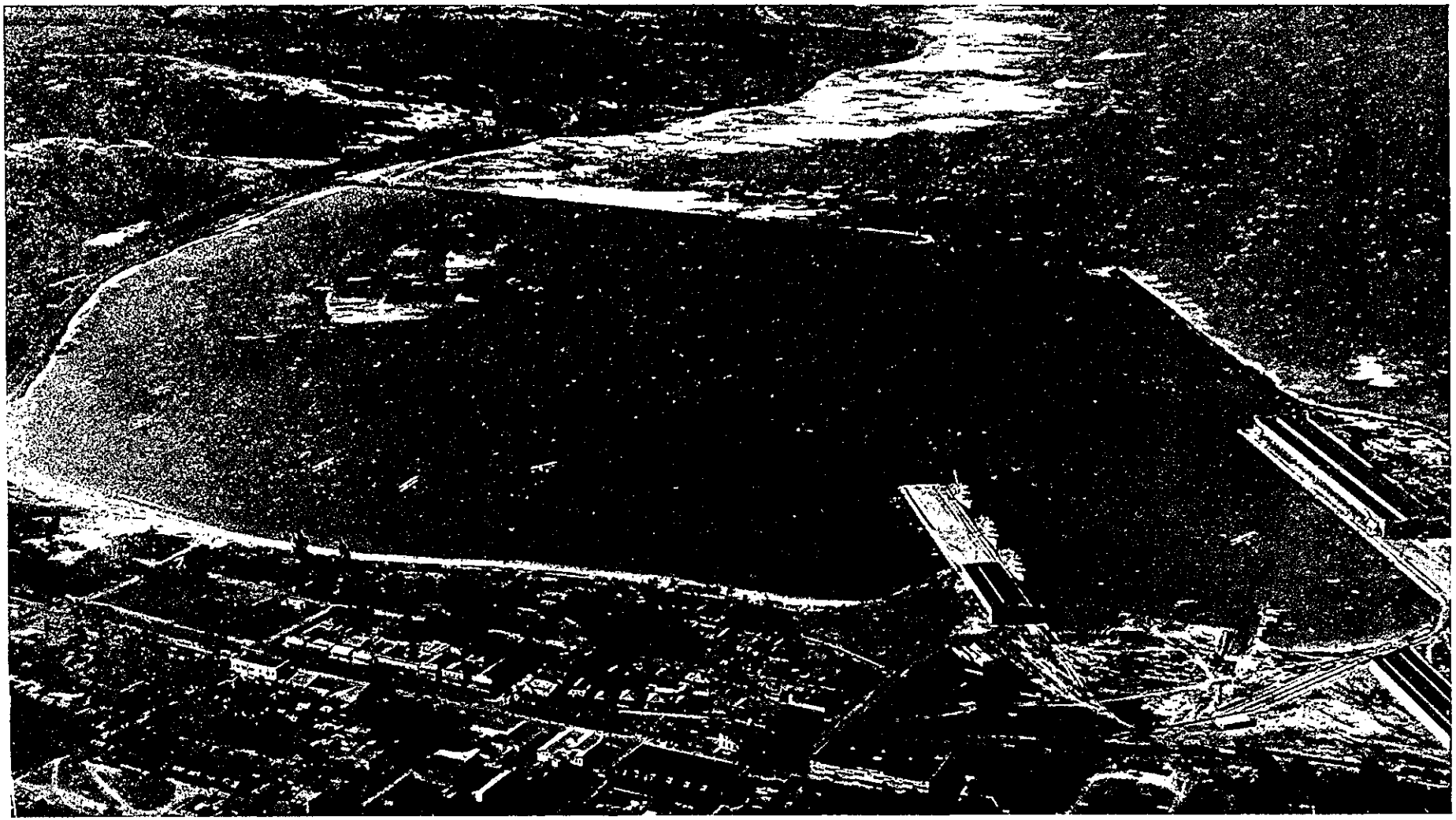


HAWAIIAN ISLANDS, KAUAI--WAILUA, NEW KAUAI AIRPORT AND LIHUE DAIRY EMERGENCY FIELD FROM 1,200 FEET.

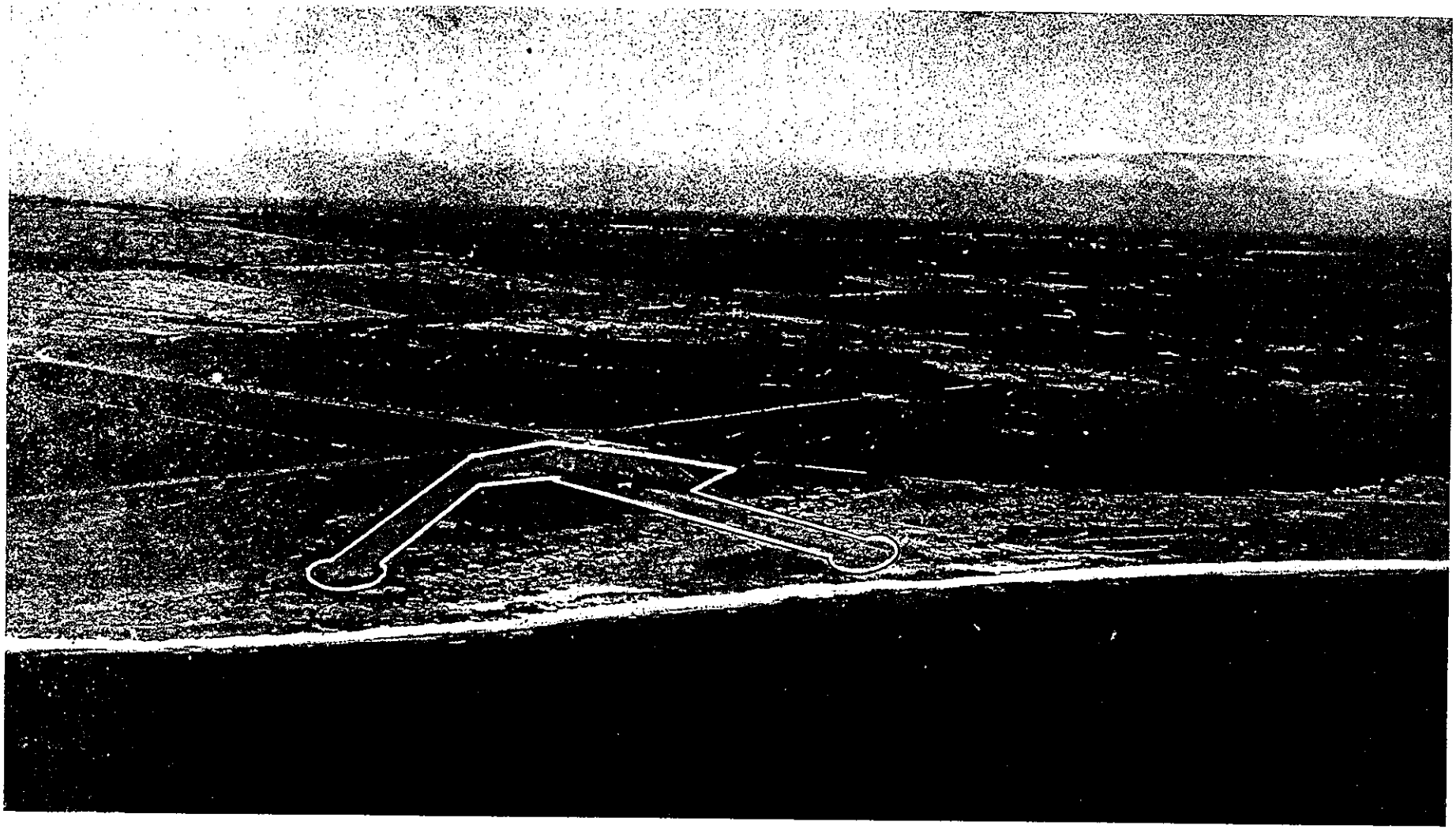


HAWAIIAN ISLANDS, LANAI - LANAI CITY AIRPORT.

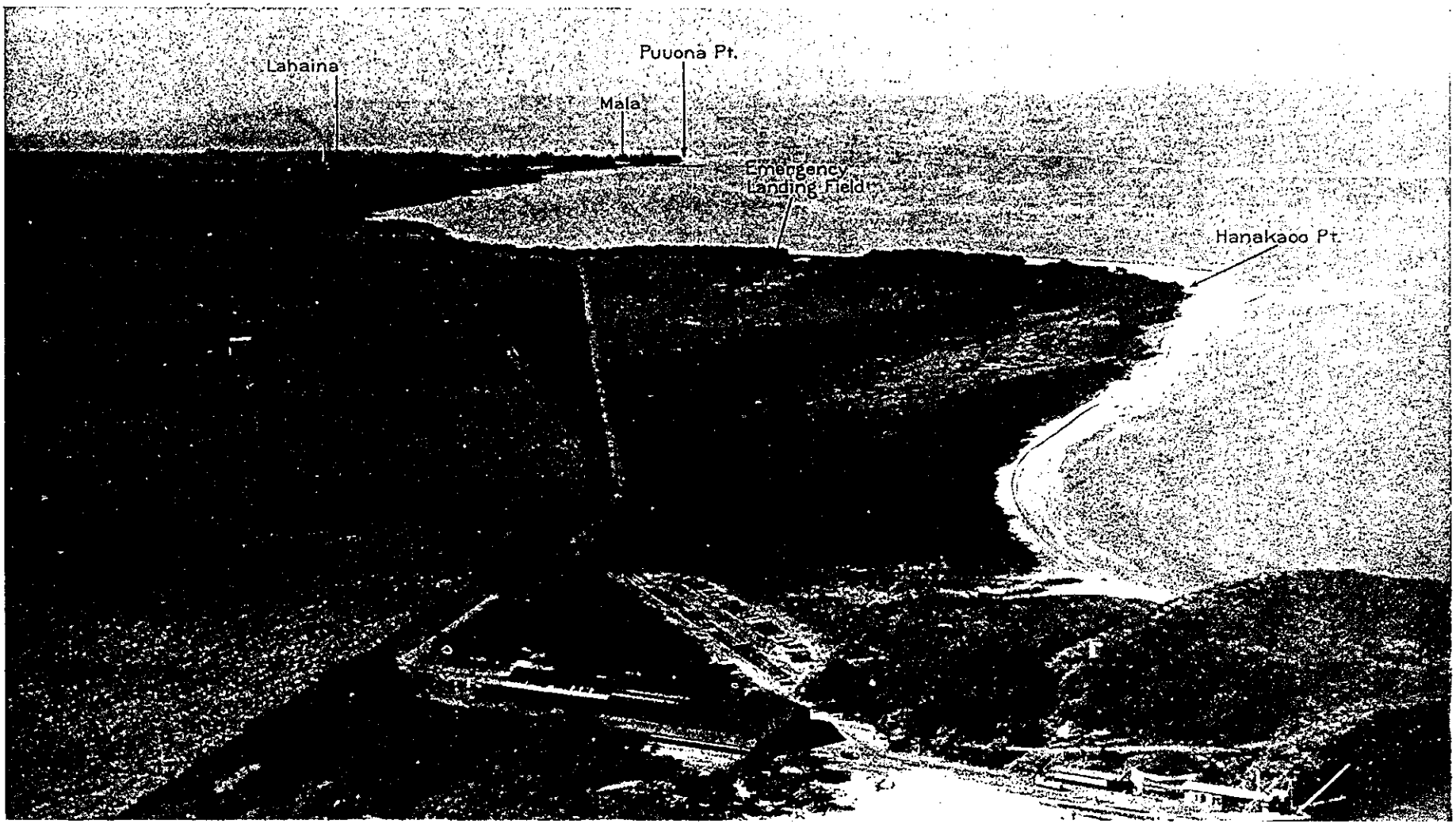
HAWAIIAN ISLANDS, MAUI HANA, HAMOA AIRPORT FROM 1,000 FEET.



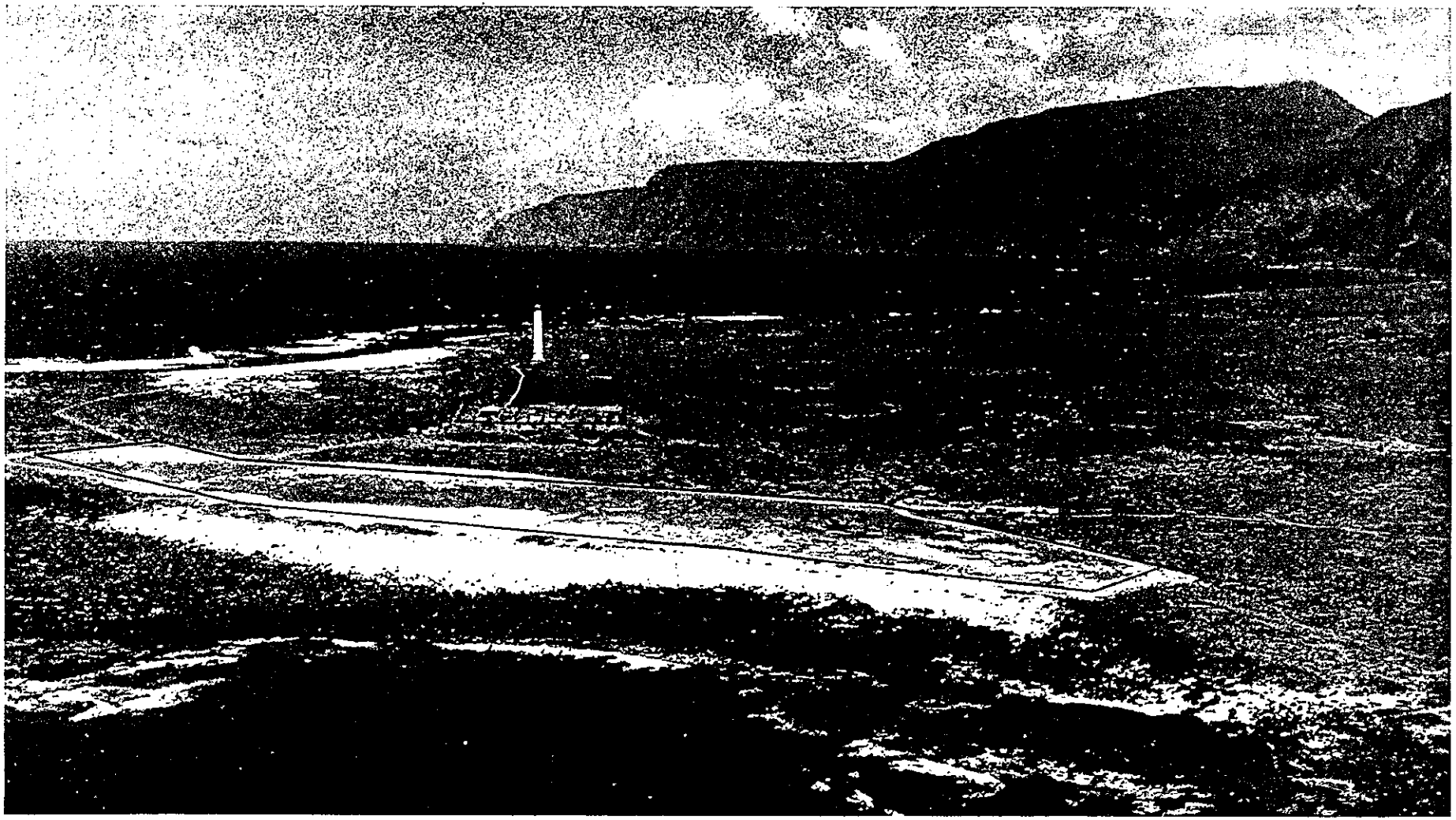
HAWAIIAN ISLANDS, MAUI—KAHULUI HARBOR, SEAPLANE ANCHORAGE FROM 1,500 FEET.



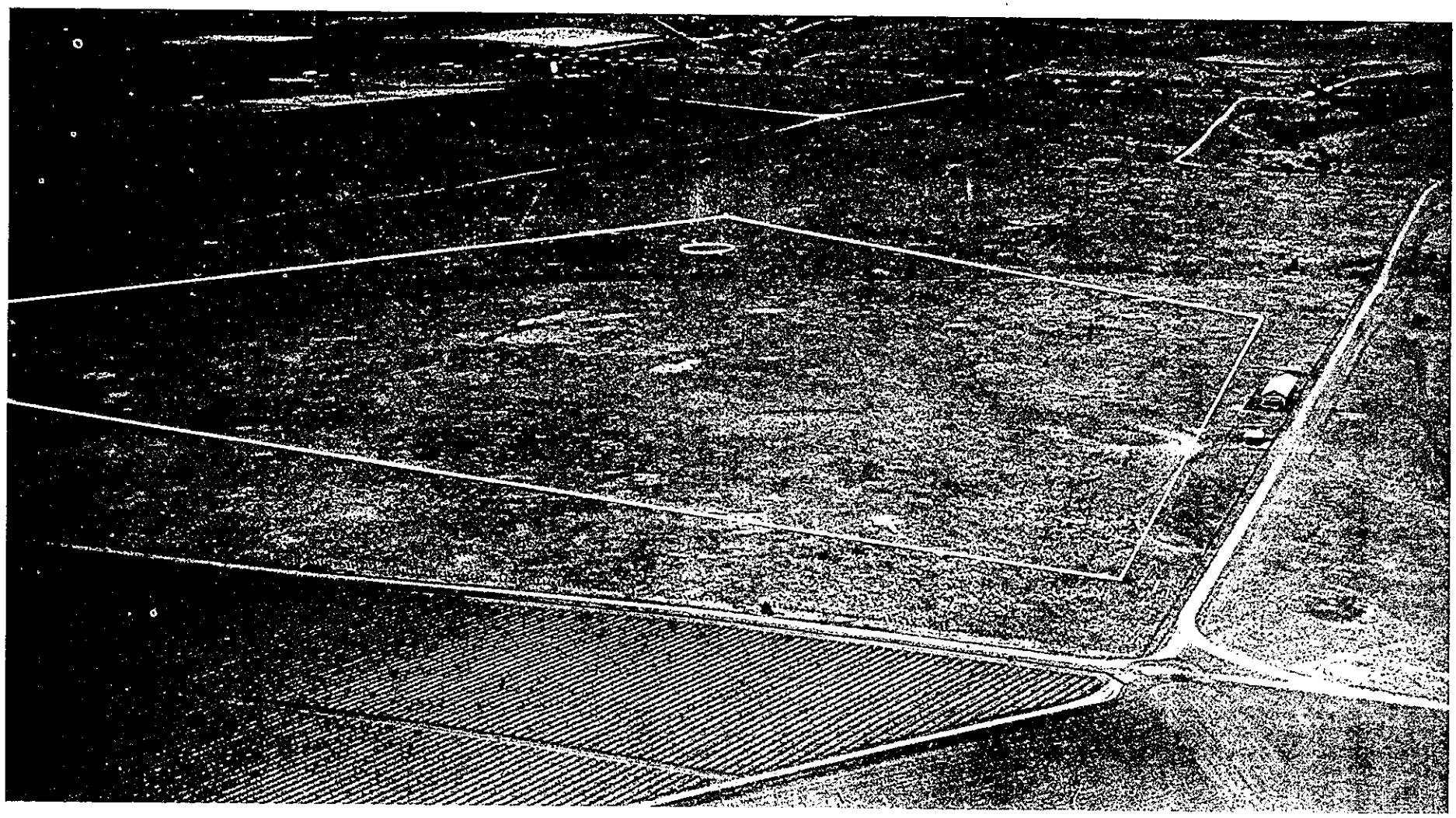
HAWAIIAN ISLANDS, MAUI—MAALAEA AIRPORT, LOOKING NORTHEAST FROM 1,000 FEET.



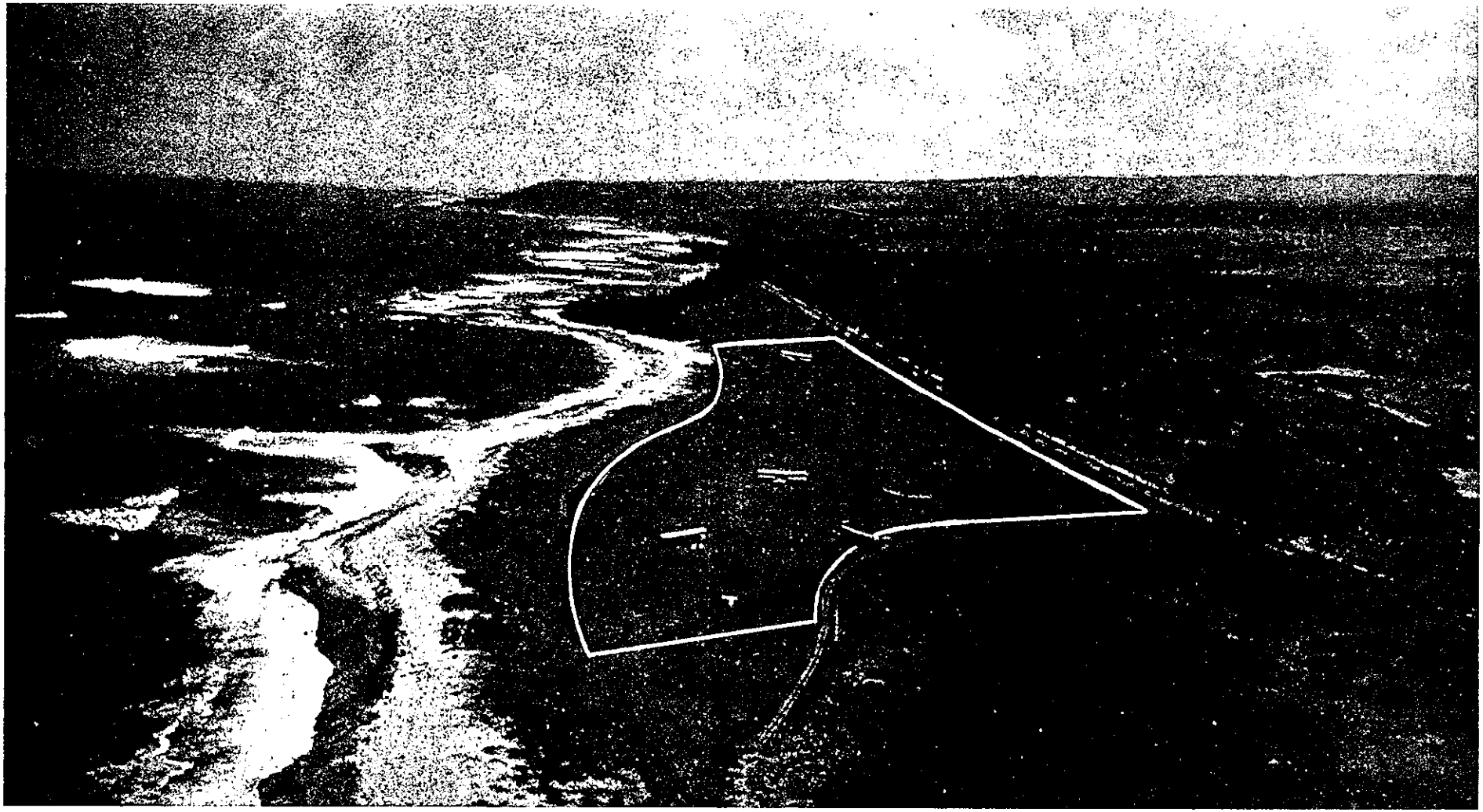
HAWAIIAN ISLANDS, MAUI NORTHWEST COAST OF MAUI FROM KAANAPALI LANDING TO MALA.



HAWAIIAN ISLANDS, MOLOKAI—KALAUPAPA, MOLOKAI LIGHT AIRPORT, FROM 1,000 FEET.



HAWAIIAN ISLANDS, MOLOKAI—MOLOKAI (HOMESTEAD) AIRPORT, LOOKING EAST-NORTHEAST FROM 1,000 FEET.



HAWAIIAN ISLANDS, OAHU – HALEIWA, PUENA POINT EMERGENCY FIELD FROM 1,000 FEET.

HAWAIIAN ISLANDS, OAHU—HEEIA, MOKAPU PENINSULA, EMERGENCY FIELD FROM 1,000 FEET.

HAWAIIAN ISLANDS, OAHU - KAAAWA EMERGENCY FIELD FROM 1,000 FEET.

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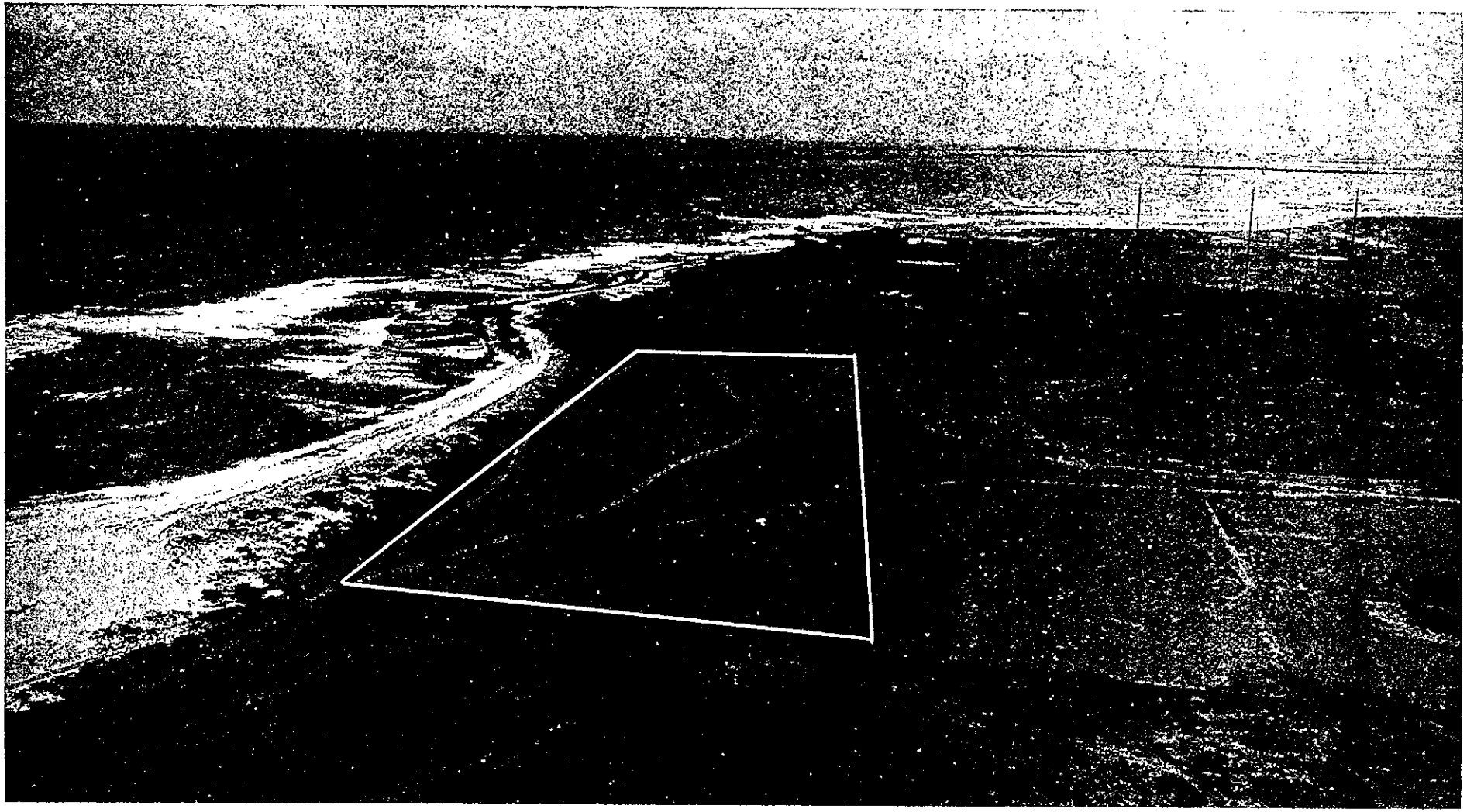
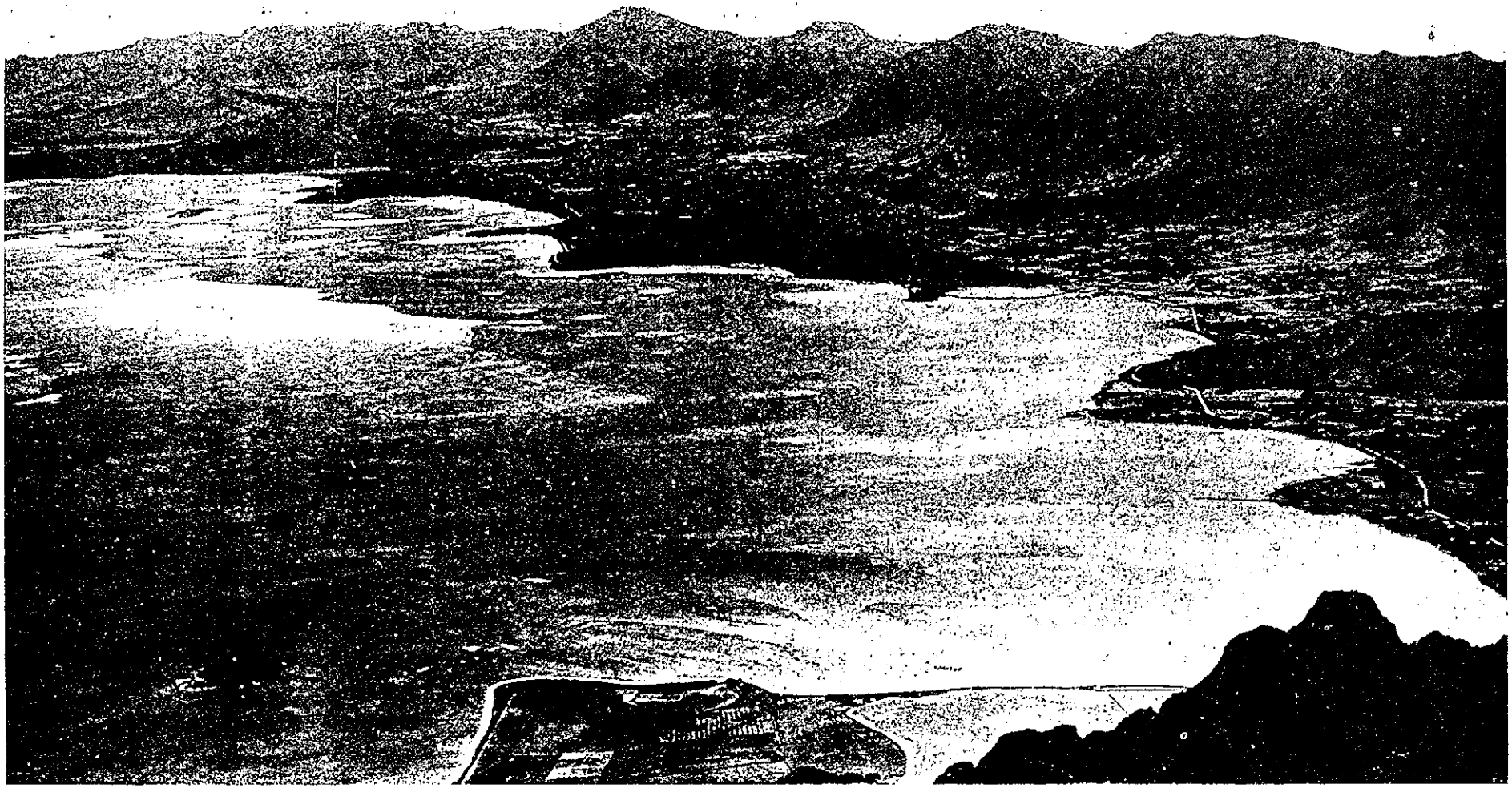
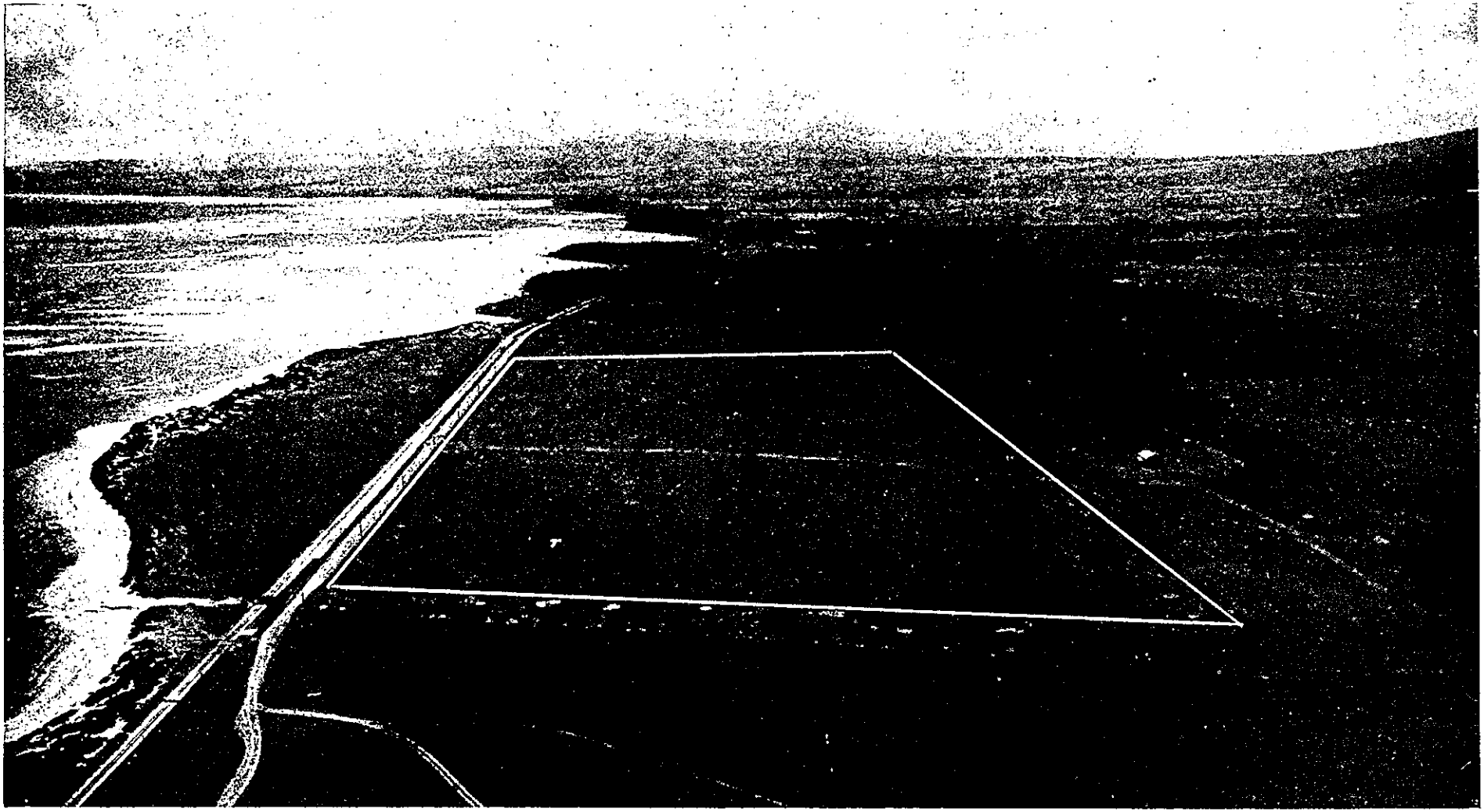


HAWAIIAN ISLANDS, OAHU—KAHUKU POINT EMERGENCY FIELD FROM 1,000 FEET

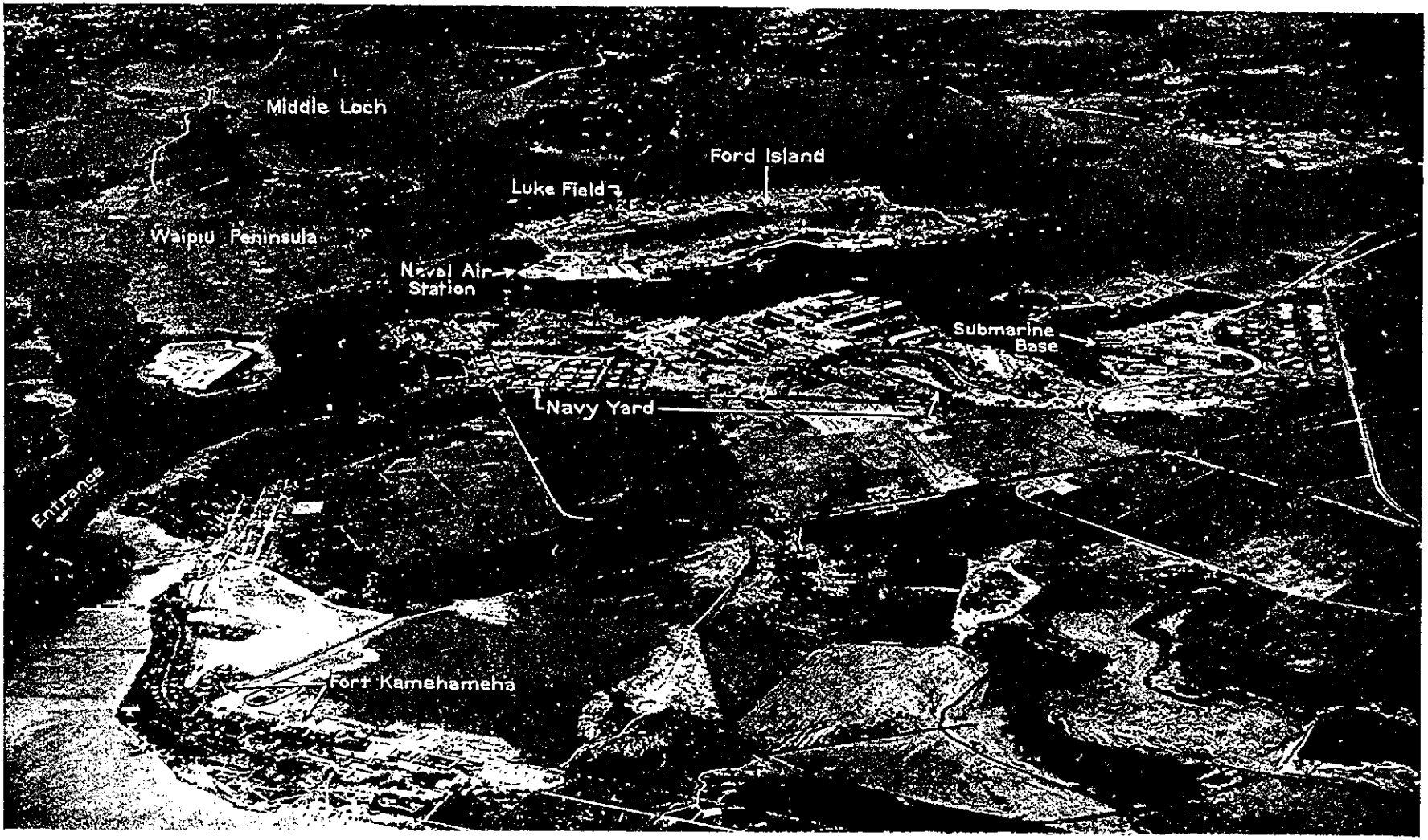


HAWAIIAN ISLANDS, OAHU—KANEOHE BAY, LOOKING SOUTHEAST FROM 4,500 FEET.

HAWAIIAN ISLANDS, OAHU—KANEOHE BAY, LOOKING SOUTHEAST FROM 7,000 FEET.



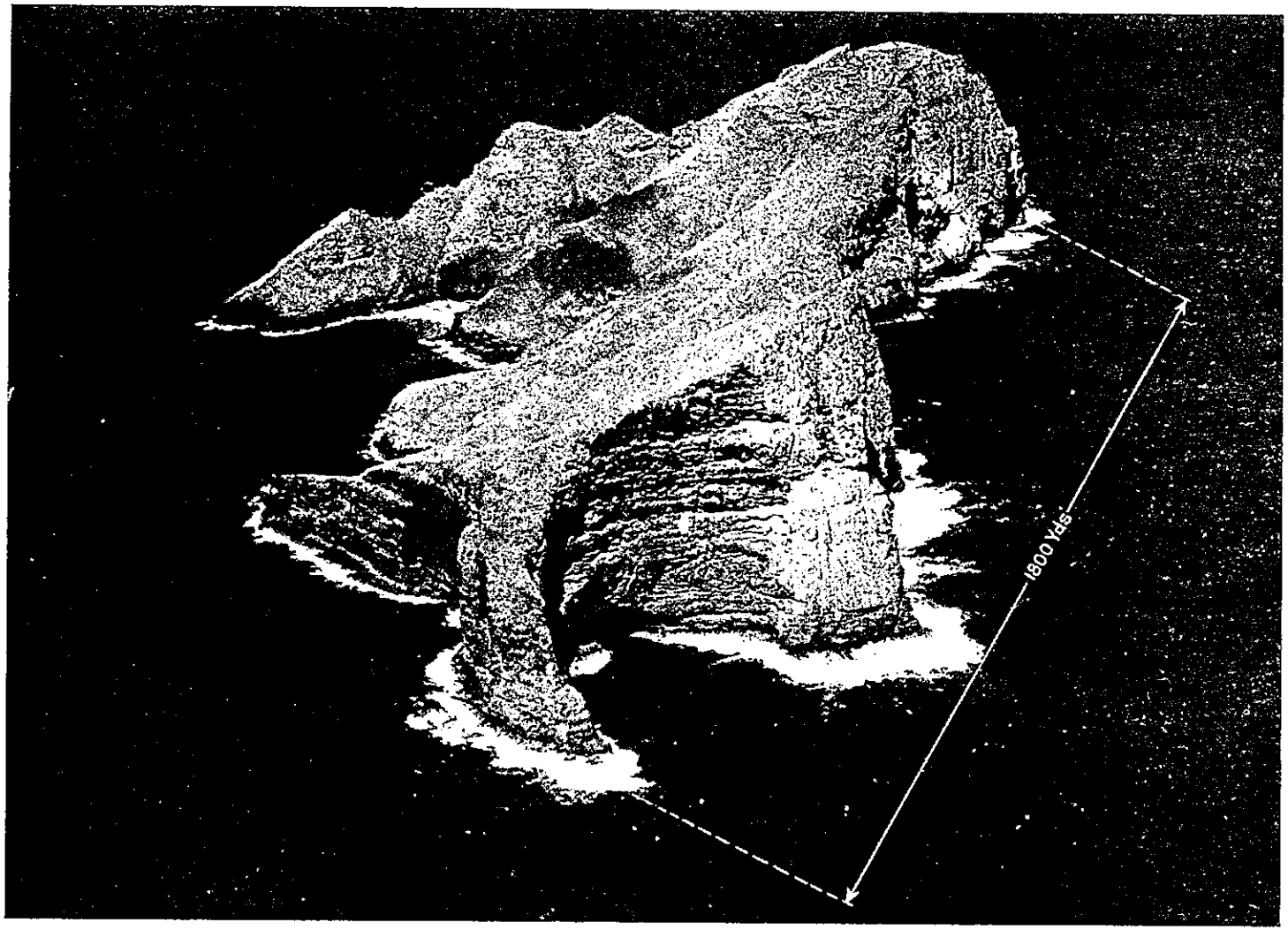
HAWAIIAN ISLANDS, OAHU—MOKULEIA, EMERGENCY FIELD FROM 1,000 FEET.



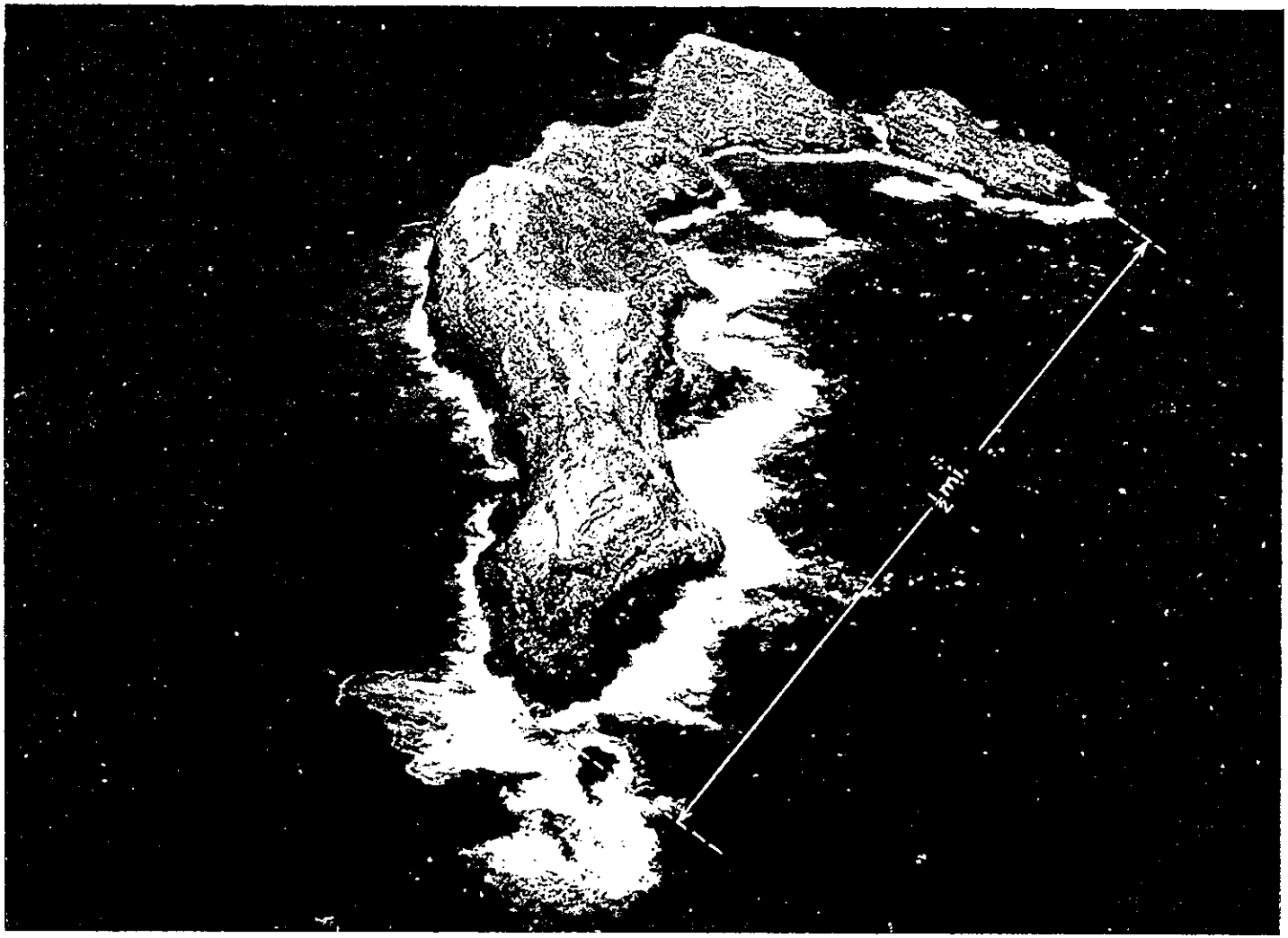
HAWAIIAN ISLANDS. OAHU--PEARL HARBOR, LOOKING NORTH FROM 10,000 FEET.

HAWAIIAN ISLANDS, OAHU—WAIMANALO RANGE EMERGENCY FIELD FROM 1,000 FEET.

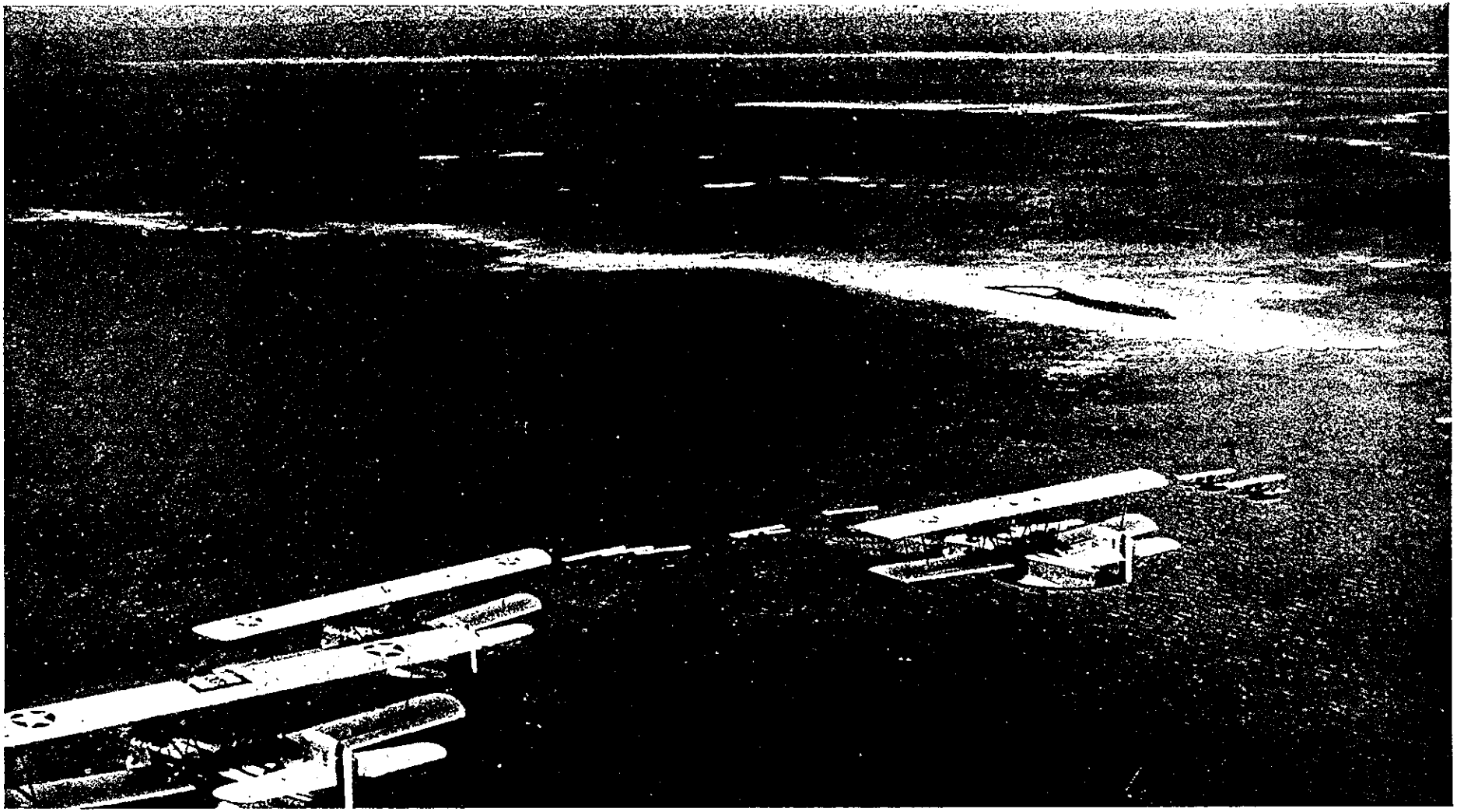
HAWAIIAN ISLANDS, OAHU—WHEELER FIELD FROM 1,000 FEET.



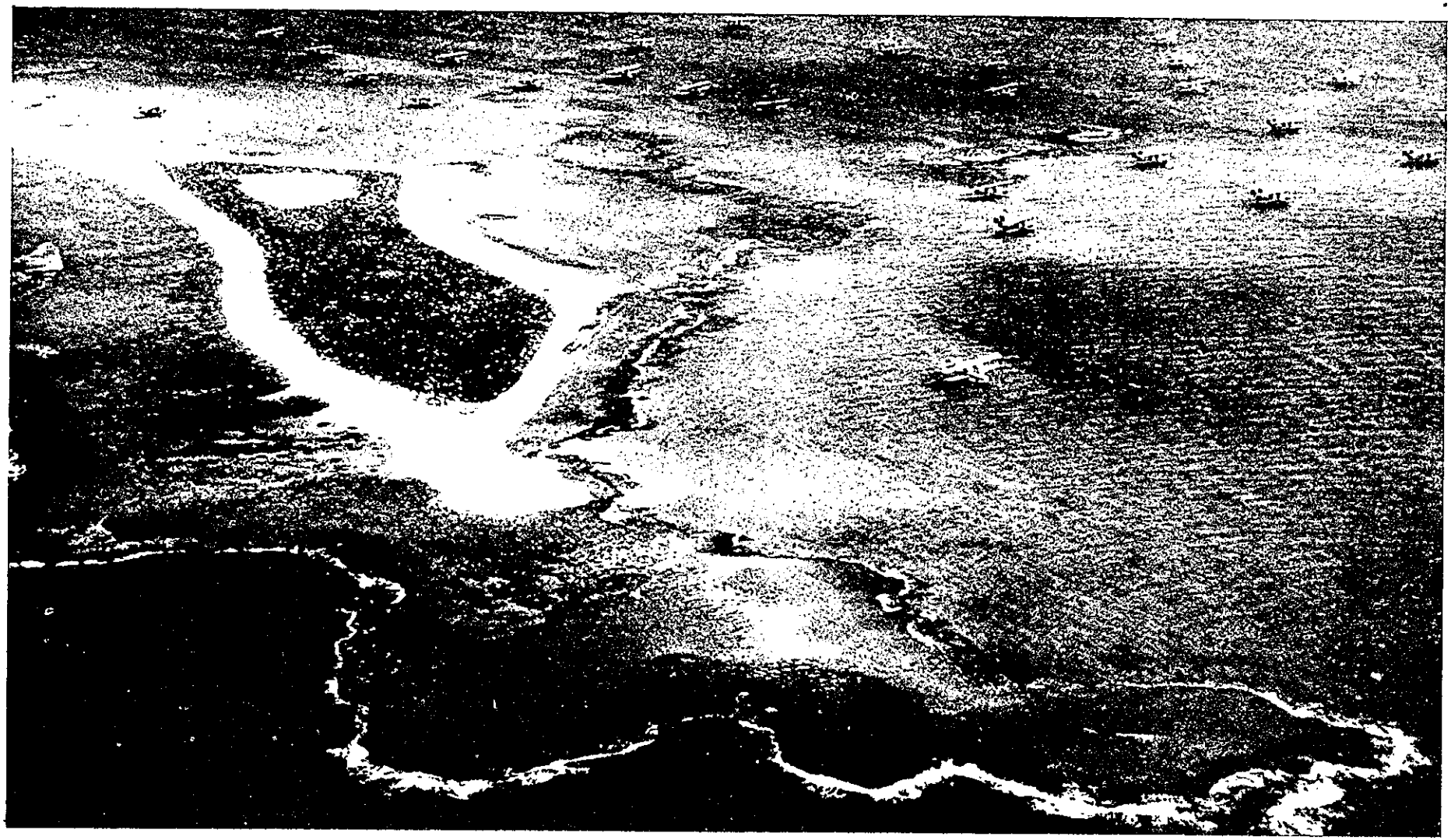
HAWAIIAN ISLANDS, NIHOA ISLAND. 910 FEET HIGH. EXCELLENT LANDMARK FOR AIRCRAFT. LOOKING WEST FROM 2,500 FEET.



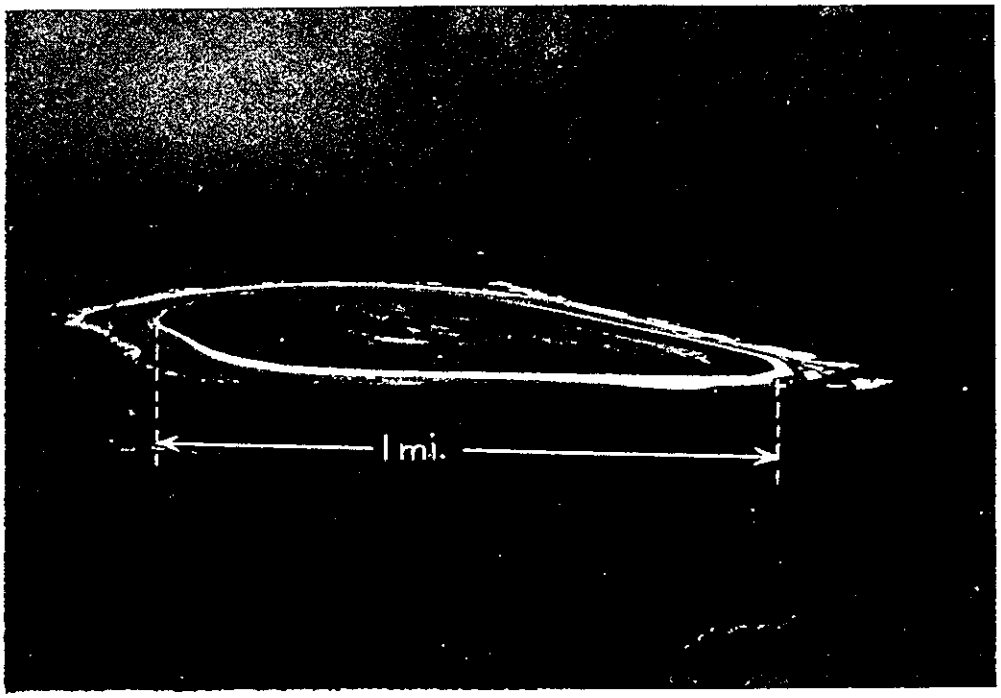
HAWAIIAN ISLANDS. NECKER ISLAND, 277 FEET HIGH. GOOD LANDMARK FOR AIRCRAFT. LOOKING WEST FROM 2,000 FEET.



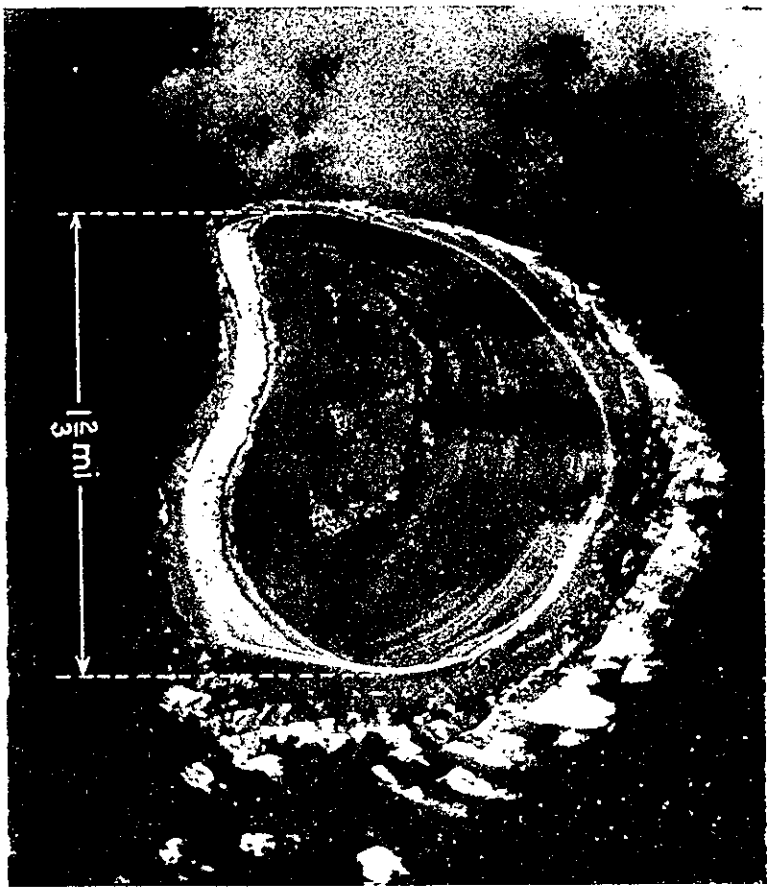
HAWAIIAN ISLANDS, FRENCH FRIGATE SHOALS. EAST ISLAND TO RIGHT.



HAWAIIAN ISLANDS. FRENCH FRIGATE SHOALS. SEAPLANE ANCHORAGE. FROM 800 FEET.



BAKER ISLAND, LOOKING EAST.



HOWLAND ISLAND, LOOKING NORTH.