

5289

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Form 501
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DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

DECLASSIFIED
AUTHORITY *EX. O. 11652 & NOAA Cir. 72-144*
DATE *8-3-77* **BY** *JKZ*

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State: Hawaiian Is.

DESCRIPTIVE REPORT

Topographic } Sheet No. 24 **5289**
Hydrographic }

LOCALITY

Entrances to Kaneohe Bay

Northeast Coast of Oahu

Hawaiian Islands

19 33

CHIEF OF PARTY

Hubert A. Paton

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVE

REG. NO. 5289

AUG 7 1933

Acc. No. _____

HYDROGRAPHIC TIDE SHEET

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3.2(a), EXECUTIVE ORDER 12356**

The Hydrographic Sheet should be completed by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 24

REGISTER NO. 5289

State ~~REPUBLIC OF~~ Hawaiian Islands

General locality Northeast Coast of Oahu ~~Yakima~~

Locality Entrance to Kaneohe Bay

Scale 1:10,000 Date of survey Oct. 1932 March, 1933

Party Inshore Hydrographic Survey of Oahu

Chief of Party Hubert A. Paton, Lieut. U. S. C. & G. S.

Surveyed by Sgt. S. D. Jones, Lieut. P. M. Reeve, & H. A. P.

Protracted by S. D. J. & H. A. P.

Soundings penciled by H. A. P.

Soundings in fathoms feet

Plane of reference Mean Lower Low Water

Subdivision of wire dragged areas by _____

Inked by Paul H. Scherr

Verified by Paul H. Scherr

Instructions dated July 14th, 1931

Remarks: Surveyed in cooperation with the U. S. Army

DESCRIPTIVE REPORT

to accompany
SHEET #24

NORTHEAST COAST OF OAHU, T. H.
ENTRANCE TO KANEHOE BAY

INSTRUCTIONS:

The work on this sheet was done in accordance with instructions dated July 14, 1931. The field work was done in cooperation with the U. S. Army and verbal instructions were received from various representatives of the Chief of Engineers.

METHODS:

See Descriptive Reports for Sheets 12 and 31 for detailed account of methods used. The undersigned was personally in charge of about 50% of the field work. The remainder of the work was done by Army personnel under close supervision of the Chief of Party. A cabin launch was used for the deeper area and a 20' dinghy in shoaler waters. A hand lead (10 lb.) was used for all soundings.

JUNCTIONS:

This sheet joins #20 on the southeast, #4833 on the south, #4834 on the west and #25 on the northwest. The area had previously been surveyed in 1920. See Sheet #3252. Junctions were in general quite satisfactory. A few shoal areas between the sheets could not be developed on account of breakers.

MISCELLANEOUS:

The inshore sheets, being on 1:5000 scale, did not reach far enough off shore to properly develop the entrances to Kaneohe Bay. The Department Engineer was advised that an attempt to use such a scale so far off shore would not be feasible on account of weak fixes. It was pointed out that the same degree of development could be done on a 1:10,000 scale as had been required on the 1:5000 sheets. Accordingly, permission was granted to use the smaller scale if the spacing of lines and soundings could be maintained. It is the plan of the Engineers to enlarge the sheet photographically, so that the work can all be shown on a 1:5000 scale.

For the convenience of the survey party, a large number of buoys and beacons were located in Kaneohe Bay as an aid in running to and from work. These are all of such a temporary nature, they were not plotted on the smoothsheet. While doing this, however, a small shoal was discovered

(Note: It was later found that this shoal was shown on the copy in Washington but that the Dept. Engr's. copy here did not show it.)

which had not been shown on Sheet #4788 (Lat. $21^{\circ}26'.1$; Long. $157^{\circ}47'.1$) See Volume #1, "A" day, for the development of this shoal.

A portion of the shoal area southwest of Kapapa Island was developed using a ten second sounding interval. An extra man was assigned to assist the recorder while doing this work. He watched the clock and called for the soundings. The Recorder might have been able to do this without assistance, but it was thought that more accurate results would be obtained using two men.

I am not certain whether an area which is covered at High Water should be graced with a name and designated as an island. However, former surveys have indicated the presence of Ahuolaka Island in Lat. $21^{\circ}28'$, Long. $157^{\circ}48'.7$. This is the highest portion of a very large shoal which is bare at Lower Low Water. The place was visited when the tide stood at 0.35 feet and the sand shoal appeared to be bare about one foot. The water line at that stage of the tide was located by sextant fixes while walking along the water's edge. The elevation varies, however; the sand drifting with different kinds of weather.

DISCREPANCIES:

At position #1, "E" day, two soundings were taken that appeared too shoal. Additional work was done in this area. (see Page 5, Volume #6,) and the shoal could not be found. It is believed that a new leadsman misread the lead line about ten feet. (Our lead line is not marked in fathoms). It is recommended that the two soundings be rejected.

In the shoal areas, it was found that the water was a little deeper than in 1910. In deeper parts, however, the two surveys check as well as could be expected in uneven coral bottom. A few soundings on the northern end of the sheet were rejected because of a weak fix. The fixes which were weak were sometimes plotted on a line between the strong fixes.

CHANNELS:

The two entrances, which are of any importance, are commonly known as the Waikane and Heeia Entrances. (See Boat Sheet) Both are in constant use by the fishermen operating sampans.

The Waikane Entrance has a depth of 17 feet for a width of about 140 meters, and a depth of 12 feet for a width of 450 meters. To enter it would be necessary to have someone with local knowledge pilot the boat in. For shallow draft boats it would only be necessary to keep clear of the breakers.

The Heeia Entrance is deep within the limits of this sheet but has a controlling depth of about 8 feet on Sheet #4833. However, it is protected from easterly winds by Mokapu Peninsula, and is an excellent entrance for small boats in normal weather. Within the limits of this sheet it is necessary merely to avoid the breakers.

It is possible in favorable weather for small boats to cross the reef in several places. However, it is necessary to round the large shoal (of which Ahuolaka Island is the southerly part) before entering Kaneohe Bay. To do this, keep as close to the line of breakers as possible.

Respectfully submitted,

Hubert A. Paton

Hubert A. Paton,
Lieutenant, U.S.C. & G.S.,
Chief of Party.

STATISTICS

for

SHEET #24

Total number of positions	1736
" " " soundings	9025
Statute miles of sounding lines	166.7
Area in square statute miles	7.2

APPROVAL OF RECORDS

SHEET #24

The above sheet and records have been inspected and are approved.

Hubert A. Paton

Hubert A. Paton,
Lieutenant, U.S.C. & G.S.,
Chief of Party.

September 2, 1933.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
6 volumes of sounding records for

HYDROGRAPHIC SHEET 5289

Locality Entrance to Kaneohe Bay, Oahu Island, T. H.

Chief of Party: Hubert A. Paton in 1932-1933
Plane of reference is mean lower low water, reading
1.1ft. on tide staff at Waikane
4.5ft. below B. M. 1

Height of mean higher high water above plane of reference is 2.2 ft.

Condition of records satisfactory except as noted below:

Aty Hammer
Chief, Division of Tides and Currents

Section of Field Records

Report on H 5289

Chief of Party . H.A. Paton

Projected by . S.D. Jones + H.A. Paton

Verified + inked by . P.H. Scherr

Surveyed in Oct 1932 - March 1933.

Surveyed by: S.D. Jones, P.M. Reeve,
H.A. Paton ✓

Soundings plotted by H.A. Paton.

Topography inked by . P.H. Scherr

1. The records conform to the requirements of the General Instructions. ✓
2. The usual depth curves can be completely drawn. These were partially uninked bordering the junction with H. 4833 ✓
3. The field plotting was completed to the extent prescribed in the General Instructions ✓
4. None of the drafting done by the field party was changed. ✓
However, the verifier did put in the shore line which had been omitted by the Field Party.

II

5. A junction was made with H. 4834 on H. 4834, and the curves thereon were modified. The junction was satisfactory.

A junction was made with H. 4833(a) and H. 5288 on H. 4833(a). The curves thereon were partly drawn in pencil pending complete review of the territory.

A junction was made with H. 4833 on H. 5289 completing the area southeast of Kapapa Island. The curves were left uninked here pending complete review of the territory.

No junction could be made with H. 5321 as it had not been verified as yet.

Now made
June 14 74

6. The 23' and 18' soundings between 1e and 2e, (P. 40, ^{Vol} bk 2) were omitted. There is no evidence of a shoal spot at that point. Consult notes by Lt. Paton on P 5+6 Volume 6.

III

A number of changes in reductions had been effected by the field party after the penciling of soundings with no attempt made afterwards to change the affected soundings. These, totaling 452, were changed by the verifier.

The fish trap at 167 d is incompletely described.

7. The field drafting was good.

Respectfully Submitted,

Paul H. Scherr

November 13, 1933.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5289 (1933)

Entrance to Kaneohe Bay, Northeast Coast of Oahu, Hawaiian Islands
Instructions dated July 14, 1931 (Paton)
Surveyed in 1932-1933

Hand Lead Soundings - Three Point Fix on Shore Objects

Chief of Party - Hubert A. Paton.

Surveyed by - Sgt. S. D. Jones, Lieut. P. M. Reeves and H. A. Paton.

Protracted and Soundings Plotted by - Sgt. S. D. Jones and H. A. Paton.

Verified and Inked by - Paul H. Scherr.

1. Condition of Records

The records are generally satisfactory, except that changes in tide reducers were applied to the soundings in the record but not to the soundings penciled on the sheet.

The datum note on the sheet was changed from "1930 Standard" to "Old Hawaiian," the latter being the one used in this work.

2. Compliance with Instructions for the Project.

The plan, character and extent of the survey satisfy the instructions for the project. The scale of 1-10,000 for this area was approved by the Army authorities in lieu of the 1-5,000 specified for all inshore detailed surveys on the Coast of Oahu. (page 1, D. R.)

3. Sounding Line Crossings.

The agreement in depth at line crossings is very good. In general the soundings are consistent, considering the nature of the bottom, which is coral and sand.

4. Depth Curves.

The depth curves are satisfactory. The bottom is uneven coral and the 18 and 12 foot curves are necessarily very irregular.

5. Junction with Contemporary Surveys.

(a) This sheet joins H-5288 (1932) to the southeast. There is a substantial overlap and the agreement in depth is good.

(b) Sheets H-4833 (1927) and H-4833a (1933) join this sheet to the south and southwest. The work on the "A" sheet has been combined on the main sheet and a selection of soundings is shown on H-5289 (1933). The agreement is good considering the nature of the bottom.

(c) The junction with H-4834 (1927) to the west is adequate, depths agreeing well in the overlapping area.

- (d) Junction with H-5321 (1933) to the northwest is satisfactory.
- (e) Off shore the sheet overlaps the 1910 survey (H-3252) to about the 8 fathom curve. In depths less than 16 feet the new survey shows slightly deeper water; in depths between 16 and 24 feet the agreement is fair. In the deeper areas the depth agreement is good, seldom varying over 4% of the depth.

The bottom on and near the reef is very irregular. The most important of the shoaler soundings from H-3252 (1910) have been placed on H-5289 (1933) in green.

A discrepancy exists in Lat. 21-30.8, Long. 157-49 where a line of soundings of 33, 29, 19, 33 falls in an area where the new survey indicates "no bottom at 51." The 19 only has been carried forward to H-5289 (1933).

In Lat. 21-29.75, Long. 157-49.55, a line of soundings (11, 10, 6, 6, 9 feet falls in considerably deeper water on the new survey. There is a superimposed line of soundings showing greater depths which are more nearly in agreement with the new surveys in this vicinity.

Because of the fact that these soundings are in an area of very irregular bottom, the shoaler soundings have been carried forward to H-5289 (1933).

6. Comparison with Prior Surveys:

The comparison with H-3252 (1910) is discussed in par. 5e. There are no other surveys of this area.

7. Comparison with Chart No. 4110.

Within the area of the present survey the chart is based on the surveys discussed in the foregoing paragraphs and no other information is shown that needs discussion in this review.

8. Field Plotting.

Field drafting was good, however the pencilled soundings on the smooth sheet were not corrected by the field party for changes made in reductions in the sounding record. The necessary corrections were made by the verifier in inking the sheet.

9. Additional Field Work Recommended.

No additional work is recommended at this time. Any future work should include wire dragging of the entrance channels.

10. Superseding Old Surveys.

Within the area covered, the present survey, with indicated additions from the previous survey, supersede the following for charting purposes: H-3252 (1910) in part.

11. Reviewed by - R. J. Christman, June, 1934.

Inspected by - A. L. Shalowitz.

Examined and approved:


C. K. Green,
Chief, Section of Field Records.


L. O. Gilbert,
Chief, Division of Charts.


J. Borden,
Chief, Section of Field Work.


G. H. Hulse,
Chief, Division of H. & T.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. **5289**

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet	1736
Number of positions checked	73
Number of positions revised	1
Number of soundings recorded	9025
Number of soundings revised	452
Number of signals erroneously plotted or transferred	—

Date: **November 13, 1933.**

Cartographer: **Paul H. Scherr**

