

5310

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Form 504

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

State: Terr. of Hawaii

11-5613

DESCRIPTIVE REPORT.  
5310

Hydrographic Sheet No. 22

LOCALITY:

Hawaiian Islands

South coast of Molokai Island

1930-31

CHIEF OF PARTY:

O. W. Swainson

5310

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

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REG. NO. 5310

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

Field No. 22

REGISTER NO. 5310

State Hawaiian Is. of Hawaii

General locality South Coast of Molokai

Locality Kalaaloa Hbr. to Kahanui Pt.

Scale 1:20,000 Date of survey Dec. 1930 to Jan., 1931

Vessel U.S.C. & G.S.S. PIONEER.

Chief of Party O. W. Swainson

Surveyed by O. W. Swainson, E. O. Heaton, P. L. Bernstein.

Protracted by J. R. Jahn

Soundings penciled by J. R. Jahn & C. J. Wagner

Soundings in fathoms feet

Plane of reference Mean Lower Low Water

Subdivision of wire dragged areas by

Inked by J. G. Ladd & W. L. Muller

Verified by " "

Instructions dated August 19, 1930

Remarks:

DESCRIPTIVE REPORT  
TO ACCOMPANY SHEET NO. 22, PROJECT 69,  
HAWAIIAN ISLANDS

U.S.C. & G.S.S. PIONEER

O. W. SWAINSON, CMDG.

INSTRUCTIONS DATED

August 19, 1930.

LOCALITY

South coast of Molokai Island.

SURVEY METHODS

The hydrography was done by the ship, launches, and skiff. The ship used the fathometer for sounding, with vertical casts for calibrating same. The launch and skiff used the handlead. Control was by visual fixes on triangulation, topographic, and hydrographic (located by sextant cuts) stations.

For fathometer corrections and method of computation see Season's Report, 1930-31, Project 69.

*\* see Chief of Party's Report of Inspection of Smooth Sheet.*

DISCREPANCIES

No discrepancies were noted when smooth sheet was plotted.

DANGERS

There is a coral reef extending well offshore along this section of the Coast of Molokai, in places as much as a mile.

CHANNELS

The sheet covers part of the north side of Kalohi Channel.

ANCHORAGES

The ship usually anchored at Kaunakakai, just west of the entrance channel and in from 12 to 15 fathoms. There is little protection from the wind as the prevailing northeast winds sweep along this coast, at times with considerable force.

COMPARISON WITH PREVIOUS SURVEYS

Refer to tracing #1. This tracing shows limiting soundings from sheet #4457, Kamalo Harbor, reduced to scale 1:20,000. The old and new surveys check very well.

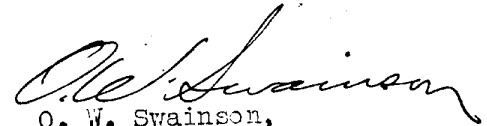
Refer to tracing No. 2. This tracing shows limiting soundings from sheet 4458, Kaunakakai Harbor, reduced to scale 1:20,000. The old and new surveys check very well.

Refer to tracing No. 3. This shows soundings from sheet 2457, on scale 1:20,000. The two surveys check very well, there is one 9-3/4 fathom sounding that was not verified by the new survey, and is encircled in blue ink on the tracing with note. There is a 539 foot sounding in Lat. 21° 03.6', Long. 157° 03.2', that is in depth of about 58 fathoms, as obtained by the new survey. This sounding is believed to be wrong.

GEOGRAPHIC NAMES

No new geographic names were assigned on the sheet.

<u>STATISTICS</u>	Statute Miles Sounding Line	Number of Soundings	Number of Positions
Ship	450.9	5077	983
Launch	96.0	2653	795
Skiff	<u>1.2</u>	<u>102</u>	<u>13</u>
Total for Sheet	548.1	7832	1791

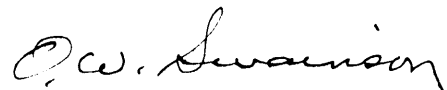
  
O. W. Swainson,  
H. & G. Engineer,  
Chief of Party.

CHIEF OF PARTY'S REPORT ON INSPECTION  
OF SMOOTH SHEET.

The sheet was plotted by J. R. Jahn, draftsman. The sheet was verified by C. W. Menard, draftsman, by protracting about one position in fifteen and by checking the plotting of all the soundings from the record book, and by tracing positions from the smooth sheet and comparing with the boat sheets. Soundings in a small area south of Kaunakakai were plotted by C. J. Wagner and have not been checked. The writing of the Descriptive Report was done by C. J. Wagner, Jr. H. & G. Engineer.

There was no doubt as to the recovery of the stations on the topographic sheets shown as relocated by sextant cuts. Triangulation stations were used in the fixes relocating nearly all of these stations.

The sheet and accompanying records are recommended for approval.



O. W. Swainson,  
H. & G. Engineer,  
Chief of Party.

October 21, 1933

Division of Hydrography and Topography:

Division of Charts:

Lide reductions are approved in  
7 volumes of sounding records for

HYDROGRAPHIC SHEET 5310

Locality Kalaeloa Harbor to Kahamui Point, Southwest Coast of Molokai, Hawaii

Chief of Party: O. W. Swainson in 1930-1931

Plane of reference is mean lower low water reading

1.9 ft. on tide staff at Kaunakakai

5.8 ft. below B. M. 4

Height of mean higher high water above plane of reference is 2.1 feet

Condition of records satisfactory except as noted below:

*Harriman*  
Acting Chief, Division of Tides and Currents

Nov. 8, 1933

Section of Field Records.

Report on part of Hydrographic Sheet No 5310.

Kalaheoa Harbor to Kekaunui Point.

South Coast of Molokai  
Hawaiian Islands.

Chief of Party O. W. Swanson

Surveyed by O. W. Swanson, E. O. Heaton, P. L. Bernstein

Protracted by J. R. Jahn

Soundings penciled by J. R. Jahn

Verified and inked by W. L. Muller

The verification covered by this report includes only the positions with red letters. (ship work, offshore)

A usual method of verification was used, with about 7 1/2 % of the positions either checked or protracted. In several places the positions had been protracted in the field and then removed from the sheet. It was deemed advisable to replace these.

There is a bad crossing at positions 68-69 <sup>(and)</sup> and 123-124 C - Lat 21-01.3 - Long 156-54.5

The reviewer's attention is called to a 15 fathom sounding inserted in the notes on page 33 of Vol. 1.

A day, positions 136 to 137. Sounding O.K. - confirmed by adjacent soundings 829

The shoreline was transferred from T 3525 and T 3561.

The dock at Kuanakakai was transferred from T 4114

Signals with blue positions and red names are topographic signals with positions revised by ship cuts. (over)

The errors have not been inked. This work awaiting completion of the verification, to be made by H. W. Murray.

The records conform to the requirements of the Hydrographic Manual with the following exception - No bottom characteristics were taken and only three vertical casts made in eight days field work.

Respectfully submitted

W. R. Muller

The inshore hydrography was verified and inked by John G. Ladd.

The junction with the offshore ships work (by fallowate) is very good. No special discrepancies were noted.

The records conform to the requirements of the general instructions.

John G. Ladd



SECTION OF FIELD RECORDS  
Review of Hydrographic Sheet No. 5310.  
South Coast of Molokai, Hawaiian Islands.  
Surveyed in 1931.

Hand lead and fathometer soundings.  
Instructions dated August 19, 1930. (Pioneer).

Chief of party - O. W. Swainson.  
Surveyed by - O. W.S., E. O. Heaton, P. L. Bernstein.  
Protracted by - J. R. Jahn.  
Soundings penciled by - J. R. Jahn, C. J. Wagner.  
Verified and inked by - J. G. Ladd, W. L. Mullen.

1. The records are generally clear and well kept. They conform to the requirements of the Hydrographic Manual with the following exceptions:

In the area covered by the ship work no bottom characteristics were recorded when vertical casts were obtained.

Vertical casts for fathometer comparison were recorded on only three of the eight days work.

2. The character and extent of the work satisfy the specific instructions except that in a few places the lines are more widely spaced than specified.

3. The sounding line crossings and agreement of adjacent lines are generally satisfactory. In the area in the vicinity of Lat.  $21^{\circ}01'$  to  $21^{\circ}02'$ , and long.  $156^{\circ}54'$  to  $156^{\circ}55'$  there are some differences in the soundings, which appear to be due to the lumpy and irregular character of the bottom.

4. The information is sufficient for drawing the usual depth curves with the exception of the low water curve and some of the shoaler curves close against the reef.

5. The junctions on the west with H. 5309 and H. 5299 are satisfactory.

The junction on the east with H. 5311 is satisfactory.

The junctions at Kaunakakai Harbor and Kamalo Harbor with the surveys of 1925, H. 4457 and H. 4458 are satisfactory.

It is noted that the lighted buoy outside of the entrance to Kamalo Harbor has moved approximately 130 meters north of its charted position.

6. Previous work.

With the exception of one or two soundings the inshore survey of 1900, H. 2457 is in excellent agreement with the new work. A sounding of 569 feet shown on H. 2457 in lat.  $21^{\circ}03'.6$ , long.  $157^{\circ}03'.2$  was found to have been incorrectly located. The records of H. 2457 state that a wrong middle object was probably used on the fix locating this sounding. When plotted by line and time the sounding checks well with the new work. This sounding should not be charted and has been so marked on H. 2457.

A 58 ft. or  $9\frac{3}{4}$  fathom sounding shown on H. 2457 in lat.  $21^{\circ}04'.8$  long.  $157^{\circ}02'.6$  falls between two sounding lines on H. 5310. The record was examined and appears to be correct. It has been retained.

In general H. 2457 should be superseded by the recent survey, H. 5310, however there are a few soundings beyond the limits of the new work, close into the reef at the western part of the sheet which could be used for charting as well as soundings in the blank areas such as the area between the 2 fathom and 10 fathom curve between long.  $157^{\circ}00'$  and  $157^{\circ}01'$ .

Apparently the field party had no copy of the survey of 1914, (H. 3653 and did not note some discrepancies. The soundings on this survey were obtained with Bassnett or Tanner-Blish pressure tubes and are not considered as accurate as the fathometer soundings on the recent work.


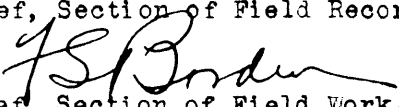
It is recommended that the new survey, H. 5310, completely supersede the work on H. 3653.

7. Chart changes.



Three soundings of 47, 49 and 56 fathoms are shown on chart 4116 in Kalohi Channel, in approximate lat.  $21^{\circ}00'$ , long.  $157^{\circ}00'$ . These soundings are from a sounding line on H. 3653, pos. 13A to pos. 15A, which is discredited by the cross lines on that sheet and also disproved by the soundings on H. 5310. The removal of these soundings from the chart is recommended.

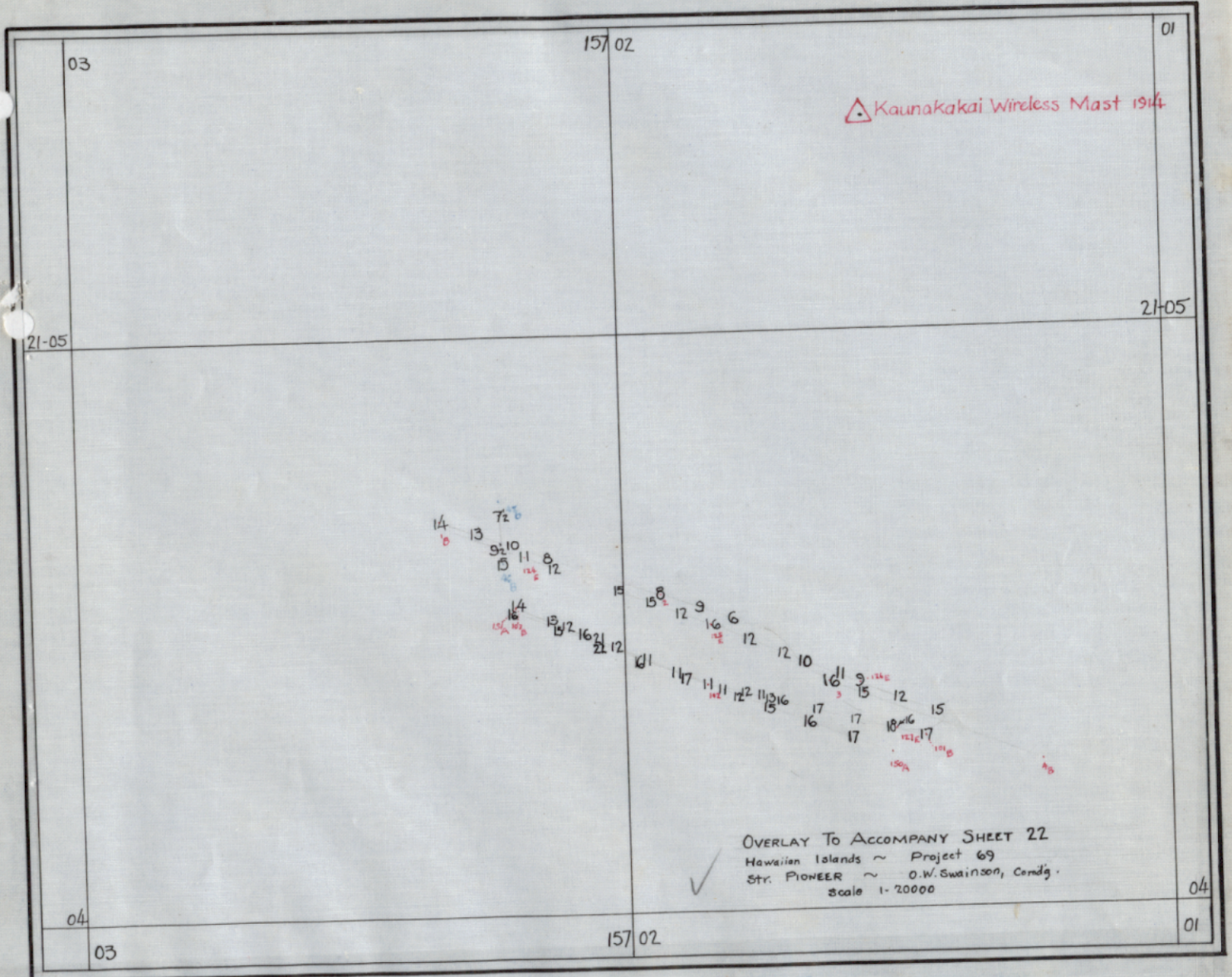
8. This area has been quite uniformly covered. In the vicinity of the 20 fathom curve between long.  $156^{\circ}53'$  and long.  $156^{\circ}59'$  the bottom is quite lumpy and there are a number of soundings of 16, 17 and 18 fathoms which might indicate shoaler depths. Although closer development on some of these would have been desirable, it is doubtful if additional work is necessary.

9. Reviewed by - R. L. Johnston.

  
L. O. Colbert,  
Chief, Section of Field Records.  
  
Chief, Section of Field Work.

Examined and approved:

  
Chief, Division of Charts.  
  
Chief, Division of H. & T.



△ Kaunakakai Wireless Mast 1944

✓  
 OVERLAY TO ACCOMPANY SHEET 22  
 Hawaiian Islands ~ Project 69  
 STR. PIONEER ~ O.W. Swainson, Comdg.  
 Scale 1:20000

On sheet

To accompany #5310

Applied to new chart 4120 - Mar 7, 1941 - JFW