DESCRIPTIVE REPORT

U.S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES

JUL 2 1942

ACC. No. __________

State __________

LOCALITY

Dead reckoning sounding lines from Wash. to Cape Flattery to Midway Islands, Johnston L via Midway and from Midway Islands to Johnston Island.

1941

CHIEF OF PARTY

F. B. T. Siems
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

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. Charts Nos. 4000, and 9000 and 4183

REGISTER NO. H6762 a, b + c

State ......................................................... Johnston, L. via Midway
General locality ........................................ Cape Flattery, Wash. to Midway Islands
Locality ...................................................... Midway Islands to Johnston Island

Scale Same as charts ........................................ October 20 - 30
Date of survey .............................................. December 4 - 7, 1941

Vessel ......................................................... EXPLORER

Chief of Party .............................................. F. B. T. Siems

Surveyed by .................................................. Ships Officers

Protracted by ................................................ T. B. Reed, L. B. McCarthy

Soundings penciled by ..................................... T. B. R., L. R. M.

Soundings in fathoms ....................................... XXXX

Plane of reference ......................................... WWWW

Subdivision of wire dragged areas by ..................

Inked by ..................................................... R. H. Cartens

Verified by .................................................. R. H. Cartens

Instructions dated ........................................ September 24 and November 10, 1941

Remarks: Ship track lines; astronomic control.
Seattle, Washington
February 18, 1942

APPROVAL SHEET

SOUNDING LINES FROM CAPE FLATTERY TO MIDWAY ISLANDS AND FROM MIDWAY ISLANDS TO JOHNSON ISLAND.

Records inspected and approved.

F. B. T. Siems,
Comndg. Ship Explorer.
DESCRIPTIVE REPORT TO ACCOMPANY CHARTS NOS. 4000, 9000 AND 4183
SHOWING SOUNDING LINE FROM CAPE FLATTERY TO MIDWAY ISLANDS
THEN TO JOHNSTON ISLAND.

Authority.

Instructions dated September 24, 1941 and November 10, 1941. (Instructions of November 10 were not received until after completion of work; line from Midway to Johnston was run under authority of a radiogram received December 3, 1941).

Survey Methods.

Fathometer soundings, using such astronomic sights as were obtainable for control. The fathometer functioned fairly well until depths of about 5000 fathoms were reached when noise and interference made the obtaining of soundings very difficult. At times soundings could be obtained by slowing or stopping the ship but during the greater part of the 300 mile space between positions 103A and 132A the echo could not be heard even when the ship was stopped. The sea was fairly rough during the greater part of the trip and part of the fathometer noise can be attributed to this reason.

Control.

The beginning of the line from Cape Flattery to Midway was fixed by gyrocompass bearings on lights at the entrance to the Strait of Juan de Fuca. The bearings were plotted on a large scale chart and position 3A transferred to chart No. 9000 to start the dead reckoning line. The sky was cloudy and overcast during most of the line to Midway and it was possible to get star sights only on October 24 and 25. On these two days good morning and evening star fixes were obtained. The remainder of the line was plotted by dead reckoning and sun sights as follows:

October 22 — Line fixed at position 43A by three sun sights which were run to time 1418. Adjustment from D. R. position was 6 miles 127°. The sun sight at 1237 on October 21 checks adjusted position 16A but was not used in the adjustment.

October 23 — No sights obtained.

October 24 — The line from position 43A was adjusted to position 85A which was located by a good star fix. Adjustment from the D. R. position was 25 miles 40° true. Line adjusted to position 98A which was located by a good star fix.

October 25 — Line adjusted to positions 115A and 130A which were located by good star fixes.

October 26 — Two sun sights obtained but not used in adjustment. Position 156A as located by these two sights plots within two miles
of the position as adjusted between positions 130A and 215A.

October 27 — Two sun sights obtained, both poor. Plot within 5 miles of adjusted line. Not used in adjustment.

October 28 — Seven sun sights; all run to position 215A. Good fix except for one sight. The line from position 130A was adjusted to position 215A. Adjustment from the D. R. position was 29 miles 347° true.

October 29 — Four sun sights in afternoon and two moon sights in evening were run back to position 242A giving a fairly good fix. The line from position 215A was adjusted to position 242A. Adjustment from the D. R. position was 8 miles 180° true.

October 30 — The end of the line was fixed by gyrocompass bearings on lights on Midway Islands. These were plotted on a larger scale and position 259A transferred to chart No. 4000 to end the line. The line was adjusted between positions 242A and 259A, the adjustment from the D. R. position being 5 miles 170° true.

While the astronomic control parts of the line from Cape Flattery to Midway is scarce it is believed that the soundings are located with sufficient accuracy for charting, considering the scale of the charts involved.

Good star fixes were obtained on the line between Midway and Johnston Islands and were used to control the plotting, the various sun sights being used as approximate checks only. The end of the line was not tied in to Johnston Island on the evening of December 7th due to the outbreak of war and the possibility of enemy forces being in that locality.

The sounding line between Johnston Island and Honolulu called for in the instructions of November 10th was not run because of the possibility of the sound of the fathometer oscillator being picked up by enemy submarines.

Fathometer Reductions.

Soundings on the line from Cape Flattery to Midway were reduced from Tables 42, L3, and N4 of the British Admiralty Tables. No reductions were made to the soundings between Midway and Johnston Islands as all were less than 1%.

Comparison With Charted Soundings.

Chart No. 9000,

The soundings plotted on chart No. 9000 agree fairly well with the charted soundings except that no indication was found of
the charted 1379 fathom sounding in Lat. 31° 15', Long. 162° 25'.
The 1379 should be verified in the original records as it may
possibly have been charted wrong. The 1225 fathom sounding about
15 miles east of the charted 525 fathoms in Lat. 46° 30', Long.
131° 00' shows evidence of there being a shoal in that locality
and it is recommended that the 525 be retained on the chart.

Chart No. 4000.

Soundings on "A" day agree fairly well with the charted
soundings except between positions 254A and 259A where considerable
discrepancy exists. The soundings on "E" day between Midway and
Johnston Islands are in general fair agreement except in a few
instances such as the charted 1048 fathoms in Lat. 24° 20', Long.
173° 52' where no indication of shoaling was found and the charted
2950 fathom sounding in Lat. 20° 05', Long. 171° 00' where depths
of about 1900 fathoms were found. A least depth of 150 fathoms
was found on the line about 2 miles south of the charted 30 fathom
sounding in Lat. 26° 55', Long. 175° 30'.

Statistics.

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<td>903</td>
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<tr>
<td>Number of positions</td>
<td>353</td>
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</tbody>
</table>

Respectfully submitted,

Thos. E. Reed,
 lieut., c. & g. Survey.

Approved and forwarded,

F. B. T. Sims,
Comdg. ship Explorer.

Note:
The sections of these sounding lines which fell within the
area of confidential chart No. 4183 were plotted on the special red
print of 4183 after the writing of the descriptive report and the
plotting of the entire lines on charts 4000 and 9000. The red print
of chart 4183 had been left with other confidential data in the
custody of the Commandant of the Naval Base at Pearl Harbor and
was only recently returned to this vessel.
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Names underlined in red approved by L. Heck on 3/11/42
Surveys Section (Chart Division)

HYDROGRAPHIC SURVEY NO. H6762 α, β, γ, ε

Records accompanying survey:

Boat sheets ....; sounding vols. (1) ...; wire drag vols. ....;
bomb vols. ......; graphic recorder rolls ......;
special reports, etc. (?). cabiers

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

Number of positions on sheet 353
Number of positions checked ....
Number of positions revised ....
Number of soundings recorded 403
Number of soundings revised (refers to depth only) ....
Number of soundings erroneously spaced ....
Number of signals erroneously plotted or transferred ....
Topographic details Time ....
Junctions Time ....
Verification of soundings from graphic record Time ....

Verification by RH Carstens

Total time 26 Date 3/3/43

Review by RH Carstens Time 15 Date 3/5/43
MEMORANDUM
IMMEDIATE ATTENTION

SURVEY DESCRIPTIVE REPORT

No. H 6762a

received July 6, 1942
registered Nov. 4, 1942
verified
reviewed
approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

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RETURN TO

82 R.W. Knox

\[Signature]\
DIVISION OF CHARTS
SURVEYS BRANCH

REVIEW OF HYDROGRAPHIC SURVEY REGISTRY NO. 6762ab & c
Field Nos. 9000, 4000, 4183

Pacific Ocean; Cape Flattery, Washington, to Johnston Island via Midway

Surveyed October - December 1941; Scales 1:4,500,000
1:3,167,000
1: 600,000

Instructions dated September 24, November 10, 1941

Soundings: Pathometer
Control: Dead Reckoning Adjusted to Astronomic Sights

Chief of Party - F. B. T. Siems
Surveyed by - Ship's Officers
Protracted by - T. B. Reed; E. R. McCarthy
Soundings plotted by - T. B. Reed; E. R. McCarthy
Verified and inked by - R. H. Carstens
Reviewed by - R. H. Carstens
Inspected by - H. R. Edmonston

1. Purpose

The purpose of this survey was to provide additional trackline soundings from Cape Flattery, Washington, to the Midway Islands and from the Midway Islands to Johnston Island, crossing the 525-fm. shoal in Lat. 46°30'; Long. 131°00' en route.

2. Field Work

The field work was submitted on charts Nos. 9000, 4000 and confidential chart 4183.

3. Office Work

The positions as plotted by the field party were accepted. The soundings were inked on the charts submitted.

4. Comparison with Chart 9000 (latest print date 12-24-42)

<table>
<thead>
<tr>
<th>Chart No.</th>
<th>Latest Print Date</th>
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<tr>
<td>4000</td>
<td>12-30-41</td>
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<td>5052</td>
<td>2-13-43</td>
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</table>
The charted hydrography within the limits of the present survey originates largely with track line soundings of the U. S. Navy and from miscellaneous sources. U. S. Navy lines across chart 9000 are plotted on H-5512 (1931-40). In general, agreement with the charted soundings is good. An indication of the 525-fm. shoal (chart 9000) in Lat. 46°30'; Long. 131°00' is found in the present survey sounding of 1225 rising from depths of 1641-1749 fm. The least depth from the present survey line crossing the edge of the 30-fm. shoal in Lat. 26°55'; Long. 176°29' (chart 4000) is 150 fm.

The following charted soundings are in disagreement with the present survey depths.

(a) 2650 fm. in Lat. 37°17'; Long. 152°43' (chart 9000) falls near present survey depths of 3067-3103 fm. which occur in a portion of the line where the fathometer was operating unsatisfactorily. The present depths are not considered adequate to disprove the charted depth.

(b) 1379 fm. in Lat. 31°12'; Long. 162°25' (chart 9000) falls near present survey depths of 3248-3269 fm. The charted sounding may be out of position somewhat but it should be retained because depths just as shoal are shown by the charted sounding of 1360 fathoms 35 miles to the eastward.

(c) 2400 fm. in Lat. 28°22'; Long. 176°22' (chart 4000) is in disagreement with shoaler depths of 1803-2146 fathoms of the present survey and should be superseded by them.

(d) 1861 fm. in Lat. 28°18'; Long. 176°48' (chart 4000) is in disagreement with present survey depths of 2434-2455 fm. but in this area of abrupt change in the bottom the charted sounding should be retained.

(e) 1048 fm. in Lat. 24°20'; Long. 174°00' disagrees with nearby depths of 2770 fm. from the present survey. The charted sounding may be out of position slightly but it should be retained because of other similar abrupt shoaling within this area.

(f) 2950 fm. in Lat. 20°04'; Long. 171°00' (chart 4000) is in marked disagreement with depths of 1870-1990 fathoms from the present survey and similar shoal depths in the same general area from other sources. It can well be superseded by the present survey depths.
The sounding 1.434 fm. in Lat. 46°59'; Long. 129°06'; applied to chart 5052 from the present survey before verification was not inked on H-6762a.

The present survey sounding 2566, Lat. 35°26'; Long. 155°32' on H-6762a, differs by approximately 500-600 fathoms with the preceding and following soundings. There is no other difference of such magnitude on this line which fact points to the possibility that the 2566 sounding may be in error. A note in the record on the following sounding 25 minutes later states that the echo was very faint and the value doubtful.

5. Condition of Survey
Satisfactory.

6. Additional Field Work Recommended
Due to the outbreak of hostilities within this area, work was discontinued and the project surveys are still incomplete.

Examined and approved:

[Signatures and names]

Robert White
Chief, Surveys Branch

Jim Brown
Chief, Division of Charts

Earl O. Haggard
Chief, Section of Hydrography

Chief, Division of Coastal Surveys
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<td>7002</td>
<td>May 1, 1943</td>
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