

7766

Diag. Cht. No. 8551-3

CS-277

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. DE-41-48-49 Office No. H-7766

LOCALITY

State Alaska

General locality Prince William Sound

Locality Knowles Head to Naked Island

194 8-9

CHIEF OF PARTY

H.A.Karo and G.E.Boothe

LIBRARY & ARCHIVES

DATE June 3 - 1951

B-1870-1 (1)

922
7766

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.

REGISTER No. H-7766

Field No. DER-41-48-49

State Alaska

General locality Prince William Sound

Knowles Head

Locality ~~Green Bay~~ to Naked Island

Scale 1:40,000 Date of survey 22 June 1948 to 19 Sept. 1949

Instructions dated 9 Feb. 1942, Supplemental Inst. 5 Feb. 1948 and 13 April 1949

Vessel USCGC DERICKSON

Chief of party H. Arnold Karo and Glendon E. Boothe

Surveyed by H. Arnold Karo, Glendon E. Boothe and Harry F. Garber

Soundings taken by fathometer, ~~graphic recorder, hand level, etc.~~ NMC #57 and 808 Fath. # 66

Protracted by Wm. M. Martin

Soundings penciled by Wm. M. Martin

Soundings in fathoms feet at ~~MLLW~~ MLLW

REMARKS:

R.W.W. 3/7/94

Descriptive Report to Accompany
the 1948 Portion of Sheet H-7766 (DER-41-48-49 Field No.)

Prince William Sound, Alaska

Scale 1:40,000

Ship DERICKSON H. Arnold Karo, Comdg.

1. AUTHORITY: -

The hydrography was executed in accordance with Instructions dated 9 February 1942 and Supplemental Instructions dated 5 February 1948, Project CS-277.

2. SURVEY LIMITS AND DATES: -

The area covers the central portion of Prince William Sound between Knowles Head and Naked Island. Work on only a small portion of the sheet was accomplished this season. The ship's working grounds were in the extreme western portion of Prince William Sound and hydrography was executed on the sheet during the runs to Cordova for oil and supplies. However, poor visibility limited hydrography to only a few days. It is planned to continue work on the sheet during the 1949 season.

Sounding was done between 22 June and 2 October 1948.

3. VESSEL AND EQUIPMENT: -

All sounding was done with the Ship DERICKSON. The NMC Fathometer No.57 calibrated at 800 fms/sec. was used exclusively in obtaining soundings. No wire soundings or bottom samples were taken.

4. TIDE STATION: -

Tide reducers were obtained from the standard tide gage maintained at Cordova, Alaska. No time or height corrections were applied. (See Tidal Note accompanying this report.)

5. CONTROL STATIONS: -

The triangulation is on the Valdez datum. The station mark at PARROT, 1905 was not found. However the rocky point on which it was located was positively identified and the area white washed for a signal. Signal Scar is a hydrographic station cut in by sextant angles.

6. SHORELINE AND TOPOGRAPHY: -

As this is an offshore sheet on a scale of 1:40,000 no inshore hydrography is contemplated on this sheet.

7. SOUNDINGS: -

All soundings were obtained from the Ship DERICKSON using the NMC Fathometer No. 57, calibrated at 800 fms. per second. The velocity corrections obtained from temperature and salinity observations proved to be negligible. (See the 1948 fathometer report.) The oscillator has a draft of 6.4 feet, so that an index correction of plus one fathom was applied to all soundings.

Soundings ranging in depths up to 200 fathoms and from 225 to 400 fathoms were obtained on the 100 and 200 fathom scales of the fathometer which can read to within a fathom. The depths between 200 to 225 fathoms and from 400 to 425 fathoms were obtained on the 2000 scale where the sounding can only be estimated to within five fathoms. This must be borne in mind when examining crosslines in the above mentioned depths.

It was noticed over a period of two seasons that the initial was less than zero when using the 2000 fathom scale. By inspection and measurements with bow dividers the initial marked ahead of the zero line seven fathoms. This gave an additional index correction of seven fathoms, or a total of eight fathoms when using the 2000 scale.

As the velocity corrections were negligible, index corrections and tide reducers only were applied to the soundings.

CONTROL OF HYDROGRAPHY: -

All positions were determined by three point fixes, obtained by sextant angles.

ADEQUACY OF SURVEY: -

The sheet is incomplete. Further hydrography is contemplated in 1949.

COMPARISON WITH CHART AND PREVIOUS SURVEYS: -

These comparisons will be made when the sheet is completed.

Respectfully submitted

Harry F. Garber
Harry F. Garber
Lt. Comdr., USC&GS

Descriptive Report to Accompany
the 1949 Portion of Sheet H-7766 (DE 4148-49 Field No.)
Prince William Sound, Alaska
Scale 1:40,000
Ship DERICKSON Glendon E. Boothe, Comdg.

1. AUTHORITY: -

The hydrography was executed in accordance with Instructions dated 9 February 1942 and Supplemental Instructions dated 13 April 1949.

2. SURVEY LIMITS AND DATES: -

Sounding was done between 10 July and 19 September 1949. The work on the northern portion of the sheet was accomplished during the runs to and from Cordova, whenever visibility permitted.

Hydrography was completed to the southern limits of the project between Naked Island eastward to the limit off the mainland. It was carried northward as far as time permitted, to Lat. $60^{\circ} 43'$. The sheet makes a juncture with Sheet DER-2449 in the vicinity of Naked and Smith Island, and Sheet DER-4147 in the vicinity of Orca Bay.

3. VESSELS AND EQUIPMENT: -

Sounding was done by the Ship DERICKSON using the NMC Fathometer No. 57 for deep water and the 808 fathometer No. 66 for shoal depths, generally to fifty fathoms.

The motor whaleboat, using the 808 fathometer No. 1288 was used to develop the 4.2 fathom shoal 1.83 miles 176° true from Goose Island Light. The least depth on this shoal was verified by hand lead soundings.

4. CONTROL STATIONS: -

All control is on the Valdez Datum. ^{for boat sheet.} The 1947, 1948, 1949 values of the geographic positions were used when available. The 1933 positions of Knowles Head and Smith Island Light (abandoned) were used. Signal Trap is located by sextant cuts. It was transferred from the 40,000 sheet to the 20,000 Inset for development of the shoal.

5. SHORELINE AND TOPOGRAPHY: -

As this is an offshore sheet on a scale of 1:40,000 no inshore hydrography is contemplated on this sheet.

6. SOUNDINGS: -

The season was divided into two periods for the application of velocity corrections. Period 1 extends from 10 July to 20 August 1949 and

period 2 from 21 August to 30 September 1949. Draft corrections were determined by taking a mean of bar checks during the periods. A table of fathometer corrections accompanies this report. (See the 1949 fathometer report for the Ship DERICKSON.)

7. CONTROL OF HYDROGRAPHY: -

All positions were determined by three point fixes obtained by sextant angles.

8. ADEQUACY OF SURVEY: -

Time did not permit the completion of the entire area covered by the sheet, however there are no holidays in the area covered. No further development is needed. Satisfactory junctures were made with sheet H-7765 (DE-2449) to the westward and Sheet DE-4147 to the southeastward. There are no contemporary surveys to the southward, eastward or northward.

9. COMPARISON WITH CHART AND PRIOR SURVEYS: -

The comparison with chart and prior surveys will be made by the Seattle Processing Office upon completion of the smooth sheet.

10. DANGERS AND SHOALS: -

4.0 Smaggy Shoal

A 4.2 fathom shoal was discovered 1.83 nautical miles, 176° true from Goose Island Light. The limits of the shoal were determined by ship hydrography, and a motor whaleboat was used to determine the least depth. Drift soundings were taken over the area using both the 808 fathometer and hand lead. The least fathometer depth was verified by hand lead soundings. This shoal is near the steamer track between Valdez and Cordova, Alaska.

11. COAST PILOT INFORMATION: -

See separate Coast Pilot Report for Ship DERICKSON, 1949.

12. GEOGRAPHIC NAMES: -

Geographic names are covered in the reports of the inshore sheets.

Approved:

Glendon E. Boothe
Glendon E. Boothe
Comdr., USC&GS
Chief of Party

Respectfully submitted

Harry F. Garber
Harry F. Garber
Lt. Comdr., USC&GS

List of Signals
for Sheet H-7766
1948 and 1949

Hydrographic Name

Location

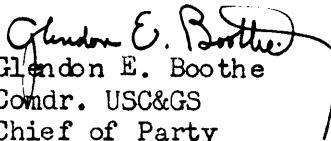
Ask	⊙ Topo Sheets T-7082
Beg	* Beg 1911-1949
Bird	* Bird Rock, 1905 - <i>FELIX, 1949</i>
Dick	* Dick (Hydro) 1947
Duck	* Duck 1912 (Use 1948 position)
Fish	⊙ Topo Sheet T-7082
Flower	* Flower 1905-1949
Giant	* Giant, 1949
Goose	* Goose Island Light, 1947
Head	* Knowles Head, 1900
Jim	⊙ Topo Sheet T-7114
Knowles Head Peak	* Knowles Head Peak, 1900
Lily	* Lily (Hydro) 1947
Lone 2	* Lone 2, 1948
Lumpy	* Lumpy, 1947
Mit	* Mit, 1949
Naked	Within 3 meters of Naked 2, 1949
Naked 2	* Naked, 2, 1949
Out	* Out, 1901
Peak 2	* Peak 2,
Peak 111	* Peak 111, 1901
Peak 112	* Peak 112, 1901
Point Eleanor Light	* Point Eleanor Light, 1948-1949
Quest	* Quest, 1949
Red	* Red Head, 1900
Row	* Row 1911 (Use 1947 position.)

List of Signals
(Cont.)

Hydrographic Name	Location
Rot	* Parrot, 1905
Romeo	^ Romeo, 1949
Reef	* Reef, 1942, (Use 1947 position)
Scar	* Pages 6,7,8, Vol. I, H-7766
Storm	* Storm 1907-1948 (Use 1949 position)
Sage	* Sage (Hydro.) 1947
Smith	< Smith Island Light, (Abandoned) 1933
Storey	* Storey, 1947
Tall,	x Tall, 1911-1949
Tex	Topo Sheet T-7082
Trap	⊙ Pages 53,54, Vol.6, H-7766.
Tuft	x Tuft 1905, 1933, (Use 1949 position)
Ute	⊙ Topo Sheet T-7082.

Approval Sheet

The boat sheet, sounding volumes, and fathograms have been examined and approved by me. The smooth sheet has not been plotted at the time of this report.


Glendon E. Boothe
Comdr. USC&GS
Chief of Party

H 7766 (De 4148)

Prince Wm. Sound.
Knowles Head to Naked Island.

Processing Office Notes.

Smooth sheet.

The projection was ruled on the machine in Washington. Adjusted GP's are found on Pages 3, 21, 32, 34, 46, 48, 67, 91, 130, 131, 134, 147 and 232 Vol. 6, Alaska.

Datum.

The datum of the sheet is NA 1927. Datum differences were obtained from the means of nine Δ stations on Naked I. and vicinity.

	ϕ		λ
	+ 314.2		- 426.9
	315.1		427.7
	315.7		428.2
	315.6		426.6
	315.2		428.8
	315.9		427.1
	315.9		426.3
	315.8		426.3
	315.5		426.7
Mean	<u>+315.4</u>	Met.	<u>-427.2</u> Met.

These corrections were applied to the field computations of 1949 which are on Valdez datum.

Sub-plan.

A subplan was made for the launch development of the 4 fm. shoal off Knowles Head. The ship's sounding lines through this area were doubled in scale and transferred to the sub-plan so that the sub-plan is complete as to the shoal area. The principal sheet shows the least depth found on shoal and the ship's lines.

The sub-plan was placed in an area which will not interfere with additional soundings on the unfinished survey. The three signals used to plot the subplan, Goose I., Trap and Knowles Head, lay outside the sub-plan box. They were left in pencil and are to be ERASED after verification.

*LD verified
and inked on
subplan
RHC 2/76*

Survey of area will not be completed on this smooth sheet. RHC 376

Boatsheets.

Because the survey was unfinished the field party retained the boat sheets for the 1950 season. The party had contingent orders which could have returned them to Prince Wm. Sound. This did not occur so the survey is still incomplete. They wish to hold the boat sheet. The Supervisor instructs that the boatsheets be sent to Washington with the request that they be returned to Seattle in ample time for use when work is resumed on this project. A note to this effect has been placed on the boatsheet.

Comparison with Chart.

ϕ	λ	H 7766	Chart 8551.	
		Fms.	Fms.	
60 35.4	147 26	24	31	
36.24	24.8	27		Not shown on chart, but could be inferred reasonably. Close by.
33	13.8	225	23	
42	146 59.2	246.	252.	
41	43.3	4	15	Reported in Notice to Mariners, Item 4691, 8/20/49.

These are the more important points.

new position obtained from smooth sheet + reported in item 51 (1950) 788

Edgar E. Smith
 Edgar E. Smith.
 Cart. Engr. 11/10/50

H 7766
De 4148

Prince Wm. Sound.
Knowles Head to Naked Island.

List of geographic names
penciled on smooth sheet.

Prince William Sound

Naked Island

Peak Island

Storey Island

Eleanor Island

Smith Island

Goose Island

Knowles Head

Tidal Note to Accompany Sheet H-7766

1948 Season

Hourly heights obtained from the Cordova Tide Station were used in the reduction of soundings during the 1948 season. No time or height corrections were applied.

Location of gage: Lat. $60^{\circ} 32'.72$ N, Long. $145^{\circ} 46'.45$ W.

MLLW on the tide staff as furnished by the Washington Office is 8.4 feet.

1949 Season

Hourly heights obtained from the Naked Island Tide Station were used in the reduction of soundings during the 1949 season. No time or height corrections were applied.

Location of gage: Lat. $60^{\circ} 40'.55$ N, Long $147^{\circ} 24'.33$ W.

MLLW on the tide staff as furnished by the Washington Office is 1.7 feet.

Statistics - Sheet 7766

1948 Season

Date 1948	Vol.	Day Ltr.	No. of Pos.	No. of Wire or H.L. Soundings	Stat. Miles Sdg. Line
June 22	1	A	62	--	41.5
Aug. 3	1	B	81	--	51.2
Aug. 13	1	C	43	--	24.5
Aug. 17	2	D	85	--	53.7
Aug. 30	2	E	47	--	31.0
Sept. 7	2	F	74	--	45.1
Sept. 17	3	G	27	--	18.0
Sept. 20	3	H	54	--	35.7
Sept. 23	3	J	60	--	44.1
Sept. 28	3 & 4	K	158	--	95.2
Sept. 29	4	L	37	--	20.4
Oct. 2	4	M	19	--	11.4
TOTALS			728	--	460.4

Area 96.7 Sq. Stat. Miles

1949

1949 Season

July 10	5	N	52	--	22.3
July 20	5	P	70	--	43.4
July 21	5 & 6	Q	58	--	31.8
July 22	6	R	78	--	40.0
July 26	6	S	76	--	42.3
July 30	6	T	38	--	19.6
Aug. 2	6 & 7	U	85	--	48.7
Aug. 16	7	V	37	--	20.1
Aug. 18	7	W	68	--	43.7
Aug. 29	7 & 8	X	54	--	28.1
Sep. 19	8	Y	33	--	16.6

Motor Whaleboat

July 30	9	a	65	1	9.1
TOTALS FOR 1949			714	1	365.7

Area 56.3 Sq. Stat. Miles

Grand Total for 1948 and 1949

1442 1 826.1

Total Area for 1948 and 1949 153.0 Sq. Stat. Miles

GEOGRAPHIC NAMES

Survey No. H-7766

Name on Survey	Source										
	A	B	C	D	E	F	G	H	K		
<u>Alaska</u>											1
<u>Prince William Sound</u>									USGB		2
<u>Knowles Head</u>											3
<u>Goose Island</u>											4
<u>Smith Island</u>											5
<u>Little Smith Island</u>											6
<u>Eleanor Island</u>									USGB		7
<u>Naked Island</u>											8
<u>Peak Island</u>											9
<u>Storey Island</u>									USGB		10
<u>Lone Island</u>									"		11
<u>Perry Island</u>											12
											13
											14
											15
											16
<u>Cordova</u>											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

Names underlined in red are approved. 1-9-51

(location of one tide station)

Hydrographic Surveys (Chart Division)

H-7766

HYDROGRAPHIC SURVEY NO.

Records accompanying survey:

Boat sheets ².....; sounding vols. ⁹.....; wire drag vols.;
bomb vols.; graphic recorder rolls ⁵.....^{envel.}
special reports, etc.
.....

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

Number of positions on sheet
Number of positions checked
Number of positions revised
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.....Total time Date

Reviewed by..... Time Date

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H-M-7766

The verifier should deal with the present hydrographic survey only, as the reviewer considers its relation to previous surveys and published charts. He should be thoroughly familiar with Chapters 3, 7 and 9 of the Hydrographic Manual.

1. The descriptive report was consulted and appropriate notes were made in soft pencil regarding action taken.
2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude.
3. All reference to survey sheets mentioned in the descriptive report include the registry number and year.
4. Geographic names of hydrographic features if on sheet are in slanting lettering and of topographic features in vertical lettering.
5. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken.
6. All positions verified instrumentally were check marked in the sounding records.
7. All critical soundings are clear and legible and are a little larger than the adjacent soundings.
8. The metal protractor has been checked within the last three months.
9. The protracting and plotting of all bad crossings were verified.
10. All detached positions locating critical soundings, rocks or buoys were verified.
11. The boat sheet was compared with the smooth sheet.

12. The spacing of soundings as recorded in the records was closely followed.
13. The bottom characteristics were shown on outstanding shoals.
14. The reduction and plotting of doubtful soundings were checked.
15. The transfer of contemporary topographic information was carefully examined.
16. All junctions were transferred and overlapping curves made identical.
17. The notation "JOINS H- (19--)" was added in ink for all contemporary adjoining or overlapping sheets now registered. Those not verified are shown in pencil.
18. The depth curves have been inspected before inking.
19. All triangulation stations and transfer of topographic and hydrographic signals were checked.
20. Heights of rocks were checked against range of tide.
21. Rocks transferred from topographic surveys have a dotted curve where shown thereon. Rocks located accurately by hydrographer are encircled by dotted red curve.
22. Unnecessary pencil notes have been removed.
23. Objects on which signals are located and which fall outside of the low water line have been described on the sheet.
24. The low water line and delineation of shoal areas have been properly shown.
25. Degree and minutes values and symbols have been checked.
26. Questionable soundings have been checked on the fathograms.

27. Source of shoreline and signals (when not given in report).
28. All notes on sheet are in accordance with figure 171 in the Hydrographic Manual.
29. All aids located, with those on contemporary topographic sheets, have been shown on survey.
30. Depth curves were satisfactory except as follows:
31. Sounding line crossings were satisfactory except as follows:
32. Junctions with contemporary surveys were satisfactory except as follows:
33. Condition of sounding records was satisfactory except as follows:
34. The protracting was satisfactory except as follows:
35. The field plotting of soundings was satisfactory except as follows:
36. Notes to reviewer:

Verified by

Date

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~

16 January 1951

Division of Charts: R. H. Carstens

Plane of reference approved in
9 volumes of sounding records for

HYDROGRAPHIC SHEET 7766

Locality Naked Island to Orca Bay, Prince William Sound, Alaska

Chief of Party: H. A. Karo)
 G. E. Boothe) in 1948-49
Plane of reference is mean lower low water, reading
1.7 ft. on tide staff at Naked Island
13.5 ft. below B. M. 1 (1949)
8.4 ft. on tide staff at Cordova
44.1 ft. below B. M. 1 (1929)

Height of mean high water above plane of reference is as follows:

Naked Island = 10.9 feet
Cordova = 11.5 feet

Condition of records satisfactory except as noted below:

E. C. McKay
Section
Chief, ~~Division of Tides and Currents.~~

