4640
Additional work - 1954

Diag. Cht. No. 8202-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. Office No. 4640 Ad. Wk. 1954

LOCALITY

State S.E. Alaska

General locality Graves Harbor

Locality Sugarloaf Islands

1954

CHIEF OF PARTY

Frank G. Johnson, Chief of Field Party

LIBRARY & ARCHIVES

DATE April, 1955

8-1870-1 (1)

4640
Additional work - 1954

Form 537
(Ed. June 1946)

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. 4640 Ad. Wk. 1954

Field No. ------

State S. E. Alaska

General locality Graves Harbor

Locality Sugarloaf Islands

Scale 1 : 20,000 Date of survey October 1, 1954

Instructions dated August 5, 1954

Vessel Surveyor

Chief of party Frank G. Johnson

Surveyed by Ralph V. Sobieralski, and Miller J. Tonkel

Soundings taken by ~~fathometer~~, graphic recorder, hand lead, ~~wire~~

Fathograms scaled by [redacted]

Fathograms checked by [redacted]

Protracted by Chester F. Kupiec

Soundings penciled by Chester F. Kupiec

Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW

REMARKS: Soundings based on 800 fms. / sec. Corrections for velocity not appreciable and were not made.

U. S. GOVERNMENT PRINTING OFFICE 777032

H-4640 A.N. 1954

20 NOV - 1 1954

DEPARTMENT OF COMMERCE
COAST & GEODETIC SURVEY
U.S. COAST AND GEODETIC SURVEY

POST OFFICE ADDRESS: USC&GSS SURVEYOR - 705 Federal Office Bldg., Seattle 4, Wash.

TELEGRAPH ADDRESS: 1954 NOV 1 AM 8:48 File: 703.3/FRG/wkk

EXPRESS ADDRESS:

19 October 1954

To: The Director
U. S. Coast and Geodetic Survey
Department of Commerce Building
Washington 25, D. C.

Via: Supervisor, Northwestern District

Subject: Report on Special Hydrographic Survey, vicinity of Sugarloaf Island, Southeast Alaska.

In accordance with Director's letter 22-SRO, S-1-SU dated 5 August 1954, a survey was executed in the vicinity of the pinnacle rock charted in latitude 58-17-27, longitude 136-52-32.

Although heavy 6 to 12 foot swells considerably handicapped the survey, the position and depth of the sunken rock as reported by the Coast Guard was considered substantially verified. A least depth of 1.3 fathoms (reduced from predicted tides at 1552 (135° W time) on 1 October 1954) was obtained in latitude 58-17-26, longitude 136-52-37.

Methods used and extent of work accomplished was as follows: Three parties were dispatched to make landings, recover triangulation stations and build signals. None of the parties were able to land even on reverse sides of islands because of heavy ground swell which the parties reported to surge 30 to 40 feet up some of these points on this exposed coast at the time of this survey.

An occasional breaker was noted near the reported position of the sunken rock. Two launch hydrographic parties were sent to make the investigation. Launch No. 3 was in charge of LCDR Sobieralski and Launch No. 1 was in charge of LCDR Tonkel. Launch No. 3 arrived first and spent approximately 3/4 hour in reconnaissance sounding within a radius of a half mile of the indicated position of the shoal, using sextant angles on tangents to locate the position of the launch. This control proved unsatisfactory for the development because heavy surf obscured the tangents and estimated 12 to 15 foot swells over the shoal made the whole shoreline invisible when the launch was in the

Receipt acknowledged by form letter.
11/3/54 jee

troughs. Locations of nearby peaks were then plotted on the launch sheets. A system of closely spaced north-south lines was run over the indicated postion of the shoal controlled by sextant angles to three peaks.

Launch No. 1 dropped a marker buoy and did most of feeling around on shoal. The water was not breaking continuously over the shoal, but a definite humping and tendency to break occurred throughout the day. A buoy was dropped at this spot. Cross ranges were used to control considerable reconnaissance in the vicinity of the buoy. During this time various patterns were run, using the ranges in an effort to determine the location of the least depth in relation to the buoy. Several leadline attempts were then made, feeling over the area, with positions recorded on least depths, with part of fathometer depths recorded in fathoms, and with part in feet. Approximately three hours were spent in pattern and leadline development. A small system of lines were then run normal to the regular system, through the shoalest area and on both sides. The least depth obtained was recorded by fathometer on the line between Pos. 13 and 14a. This depth of 1.3 fathoms was interpreted from the fathogram with some question as to the exact break between bottom and kelp. The bottom was very irregular with considerable evidence of kelp or extraneous echoes on the fathogram. It is to be noted however, that there was no surface evidence of kelp. The least depth obtained by leadline was 2.2 fathoms after correction of +0.5 fathom for swell. Both the depths noted above are reduced by predicted tides.

See plat on Ch L 657(1952)

No wire drag survey was made, since the location of the shoal was found readily by action of the swells. Also, because of the heavy swells, a wire drag survey was not considered feasible. During the 24 hour period in which the ship was in this vicinity, the swells appeared to become progressively worse. The enclosed tracings, numbers 1 and 2, show results of this survey.

The present coverage of the shoal is believed to be sufficient for verification of its existence and for charting purposes.

Frank G. Johnson
FRANK G. JOHNSON
Commander, USC&GS
Commanding Ship SURVEYOR

Enclosure: Overlay No. 1 and 2.

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. Apr. 1950

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~: 13 April 1955

Division of Charts: R. H. Carstens

Plane of reference approved in
2 volumes of sounding records for

HYDROGRAPHIC SHEET 4640 Add. Wk.

Locality Sugarloaf Island, Southeast Alaska

Chief of Party: F. G. Johnson in 1954
Plane of reference is mean lower low water, reading
5.0 ft. on tide staff at Sitka
13.1 ft. below B. M. 8 (1924)

Height of mean high water above plane of reference at the working grounds is 7.6 feet.

NOTE: The tide reducers entered were computed and verified by using Sitka observations with a time correction of -0 45 minutes.
Condition of records satisfactory except as noted below:

E.C.McKay
Tides Branch

Chief, Division of Tides and Currents.

U. S. GOVERNMENT PRINTING OFFICE 877933

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 4640 Additional Wk. 1954.

Records accompanying survey:

Boat sheets .2...; sounding vols. .2...; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls .1-Envelope.

special reports, etc. .....

.....

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

Number of positions on sheet		96
Number of positions checked		4
Number of positions revised		2
Number of soundings revised (refers to depth only)		1
Number of soundings erroneously spaced		—
Number of signals ~~erroneously~~ plotted ~~or transferred~~		1
Topographic details	Time	—
Junctions	Time	—
Verification of soundings from graphic record	Time	1 hr.

Verification by Chester P. Kupiec Total time 16 Date 2-21-56

Reviewed by Lee Zeskind Time 13 Date 3-16-56

M-2232-1

NAUTICAL CHARTS BRANCH

SURVEY NO. H-4640, Additional work - 1954

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
7-10-59	8410	M. Rogers	Completely applied ~~Before~~ After Verification and Review in conjunction with CL-657/1953.
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

H-4640 (Add. Wk. 1954)

(1) The additional work was accomplished in accordance with the Director's letter dated 5 August 1954.

(2) The additional work consists of the hydrographic development of the area in the vicinity of lat, 58°17'27", long. 136°52'32", where a U. S. Coast Guard vessel, whose draft was approximately 13 ft., reported striking an under-water object on 10 July 1953. Heavy seas at the time of the present survey prevented wire-dragging the area.

(3) The control consists of sextant fixes on nearby peaks. The location of one peak was plotted on the original smooth sheet during the present survey; the location of the other peaks are shown on the original smooth sheet.

(4) A sunken rock with a least depth of 1.3 fms. was located on the present survey in lat. 58°17.42', long. 136°52.60'. The position of the sunken rock is about 98 meters southwest of the position reported by the U. S. Coast Guard in Chart Letter 657 (1953).

(5) Minor differences of 1 - 3 fms. in depths of 15 - 30 fms. were noted between the 1926 and the additional work of 1954. The depths obtained during 1954 were generally shoaler than those obtained in 1926. Where differences in depths occurred, the shoaler depths have been plotted.

(6) A comparison between the charted depths on Chart 8410, dated 28 May 1954, and the depths obtained in 1954, reveals only minor differences of 1 fm. The 1.3 fm. sounding obtained on the 1954 work has been charted as 1 fm. from Chart Letter 657 (1953)

Examined and Approved:

H. R. Edmonston
Chief, Nautical Chart Branch

E. R. McCarthy
Chief, Chart Division

J. C. Bull
Chief, Hydrography Branch

Earl O. Heaton
Chief, Division of Coastal Surveys

4640

Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

....., *Director*

State: S.E. Alaska

DESCRIPTIVE REPORT

~~*Topographic*~~ *Hydrographic* and W.D. *Sheet No.* 4640

LOCALITY

Graves Harbor

Cape Spencer to Dixon Harbor

1926 & 1954

add WK-1954

CHIEF OF PARTY

A.M. Sobieralski

GOVERNMENT PRINTING OFFICE

Duplicate

4640

Form 537
11—5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4640

HYDROGRAPHIC TITLE SHEET
and Wire Drag

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. 4

REGISTER NO. 4640

State S. E. Alaska

General locality ~~Outer Coast, S. E. Alaska~~ Graves Harbor

Locality Cape Spencer to Dixon Harbor

Scale 1:20,000 Date of survey ~~Apr. — July~~ Apr.27 ~ Oct. 9, 1926

Vessel Str. SURVEYOR

Chief of Party A. M. Sobieralski

Surveyed by A. P. Ratti, Fr. Vogt

Protracted by A. P. Ratti

Soundings penciled by A. P. Ratti

Soundings in fathoms ~~feet~~

Plane of reference M.L.L.W. Graves Harbor, 7.0'

Subdivision of wire dragged areas by A. P. Ratti

Inked by

Verified by

Instructions dated Feb. 12, 1926, 192

Remarks: Wire drag at approach to Dicks Arm, Cape Spencer plotted on this sheet.

GPO

(1)

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SHEET NO. 4

CAPE SPENCER TO DIXON HARBOR, S.E.ALASKA

This survey was executed under instructions dated Feb. 12, 1926, issued to the Commanding Officer of the Str. SURVEYOR. All the hydrogaphy on this sheet was done by the steam launch Delta, except four days work off Cape Spencer, done by the SURVEYOR using the fathometer.

This work adjoins hydrographic sheet no. 2558, Str. Patterson, J. F. Pratt, Commanding. For descriptions of the coast and landmarks see the Report to accompany the Topographic sheet of this area.

This sheet extends from Cross Sound to Dixon Harbor. Some revision work was done in Dixon Harbor.

Dangers.-

Hydrographic bromide No. 2558 shows a breaker 628m-133° true from Cape Spencer Light. No evidence of this breaker was found at this location. There is a breaker with 4-4/6 fathoms on it, 347 m. 118° true from Cape Spencer Light. It is believed that the former breaker was incorrectly located for the latter.

There is a rock awash at H. W. 982 m. 70° true from Cape Spencer (shown on smooth sheet ⊙Lit). This rock is correctly shown on bromide No.2558. = ⊙ Vog (MWM).

Group of rocks awash at H.W. 700 m. 219° from ⊙Lit.
Nearer 900 m. — MWM.

Rock awash at H.W. 1135 m., 254° from ⊙Lit.

Reef awash at L.L.W., extreme western tip of which is 1354 m., 275° from ⊙ Lit. This reef extends 90° true for approximately 330 m. There is thick anchored kelp in this visinity.

The passage between the northern group of Graves Rocks and the mainland is foul with thick, anchored kelp.

The rock in Graves Harbor, which is ⊙ Wash, is awash at 1/2 tide and is surrounded by kelp.

Rock with 3-1/2 fathoms on it was found 960 m. 216° from △Oval.

Rock with 3-1/2 fathoms on it was found 586 m. ~~205~~ 227° from △Oval.

Sunken rock and breaker, 643 m., 283° from △Oval.

Reef awash at 3/4 tide, 1560 m., 191° from △Garnet.

Reef awash at 3/4 tide, 1718 m. 188° from △Garnet

Rock awash at L.L.W., 1857 m., 169° from △Sugarloaf.

Sunken rock 1732 m., 179° from △Sugarloaf.

Breaker with 5-4/6 fathoms, 2214 m. 186° from △Sugarloaf.

Breaker with 5-4/6 fathoms, 2260 m., 195° from △Sugarloaf.

Rock awash at L.W., 534 m., 166° from △Sugarloaf.

Rock awash at 1/2 tide, 563 m., 304° from △Sugarloaf.

Breaker 166 m., 180° true, from ⊙ Side.

Rock awash at 1/4 tide, 771 m., 114° true, from △ Astrolabe.

Rock awash, 319 m., 207° true from △ Astrolabe. This rock was transferred from hydrographic sheet 2762, Str. Mc Arthur.

The approach to Dicks Arm, Cape Spencer, was wire dragged, with the light wire drag, to an effective depth of 20 feet. Pos. 1B to 10B were not plotted as the drag was aground on shoal of 2-4/6 fathoms, rocky, 300 m., ~~180°~~ 210° true from ⊙ Jam.

The buoy, 350 m., 90° true from ⊙ Pop is a mooring buoy and was used as a signal with the name, buoy.

Miscellaneous.-

All soundings on this sheet, except revision work in shoal water done in Dixon Harbor, were taken by wire. The registering sheave was tested with a marked 100 fathom wire.

All soundings are reduced to M.L.L.W., Graves Harbor, plane of reference, 7.0 feet. Position and soundings "1X to ~~24~~ 25X" and all of U day were not plotted, fathometer soundings of ~~this~~ area were plotted instead, "A to D" ships work. All soundings on this sheet are given in fathoms.

Note: Launch work "1X to 24X" and all of U day was done under conditions of weather & current which made it difficult to get vertical casts — the Fathometer work was therefore considered more reliable. A. M. Sobieralski

* This rock was not seen by any of the party and does not exist, but from check soundings should be retained on chart. A. M. Sobieralski

Anchorages.-

For anchorages on this sheet see revision of Coast Pilot notes, made this season and forwarded to the office.

Respectfully submitted,

A. P. Ratti

A. P. Ratti
Jr. H & G Eng. C & G Survey

STATISTICS FOR HYDROGRAPHIC SHEET NO. 4

Date	Day	Miles	Soundings	Positions
Apr. 27	a	12.0	154	81
29	b	15.0	195	110
May 1	c	3.0	39	35
4	d	7.5	175	82
5	e	11.0	255	102
6	f	19.0	159	95
7	g	23.5	207	103
10	h	27.5	201	105
11	i	19.5	147	86
13	j	21.0	174	81
14	k	5.5	79	46
17	l	27.0	382	160
18	m	20.3	178	80
19	n	1.0	18	9
20	o	7.0	225	99
21	p	13.6	199	105
22	q	13.5	114	43
24	r	29.2	245	99
25	s	23.0	255	97
26	t	22.5	208	89
27	u	20.0	116	67
June 3	v	2.0	35	22
5	w	11.8	114	53
7	x	13.2	131	85
8	y	13.0	265	134
9	z	16.7	248	139
10	aa	12.0	202	109
11	bb	22.0	265	123
12	cc	2.5	48	27
14	dd	6.5	84	55
16	effff	22.4	375	170
17	gg	20.0	339	154
18	hh	23.6	379	141
19	ii	12.7	95	53
21	jj	12.0	246	88
22	kk	9.1	84	44
23	ll	13.0	142	74
24	mm	14.5	246	106
25	nn	14.1	149	86
26	oo	7.7	101	56
July 14	pp	8.0	248	77
15	qq	7.5	220	93
30	rr	8.0	131	55
TOTAL		613.9	7872	3718

Aug 9 a roll 14
Aug 28 A " " 15
Oct- 6 B " "
Oct 8 C " "
Oct 9 D " "

Oct-7+8 - Wire Drag. Vols 16 17+18

Corrs May 18, 1927

(11)

T.D.H.

Copy for Records Section

June 7, 1927.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
18 volumes of sounding records for

HYDROGRAPHIC SHEET 4440

Locality: S. E. ALASKA, VICINITY OF CAPE SPENCER.

Chief of Party: A. M. Sobieralski, 1926.

Plane of reference is M L L W

7.0 ft. on tide staff at Graves Harbor
4.1 ft. ------do------ Dixon Harbor
6.2 ft ------do------ Sitka

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

G Rude

Chief, Division of Tides and Currents.

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. 25-ACB

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

FIELD RECORDS (C)

May 15, 1928

To: The Chief,
Division of Charts.

From: The Chief,
Division of Tides and Currents.

Subject: Planes of Reference, Dixon Harbor, Alaska.

The planes of mean lower low water used for the reduction of soundings on Hydrographic Sheets Nos. 2762 (1905) and 4640 (1926) Dixon Harbor, Alaska, have been verified with the following results.

The mean lower low water datum for H. S. 2762 based on 28 high waters and 28 low waters for the period August 23 to September 6, 1905, corresponds to 4.50 feet on tide staff and is 11.88 feet below Bench Mark 2.

The mean lower low water datum for H. S. 4640 based on 59 high waters and 59 low waters for the period July 10 to August 9, 1926, and corrected to mean values by comparison with Ketchikan, corresponds to 4.10 feet on tide staff and is 13.44 feet below Bench Mark 2.

From the above relations to Bench Mark 2 the plane of reference for H. S. 4640 appears to be 1.56 feet below the plane of reference for H. S. 2762.

Since the datums for both sheets appear to be reasonably well determined, it is believed that the change in depth must be due to land movements consisting of the rise of the land in this region. A similar condition has been found at several tide stations in Icy Strait and Lynn Channel and is referred to on pages 74-76 of Special Publication No. 127.

G Rude

Chief, Division of Tides and Currents.

Report on Hyd. Sheet No. 4640.
Graves Harbor & Spencer to Dixon Harbor.
Surveyed in 1926.

Instructions dated, Feb. 11 1925 Feb. 12, 1926 (Surveyor). June 11, 1926

Chief of Party A. M. Sobieralski.
Surveyed by A. P. Patti, F. Vogt.
Protracted " A. P. Patti.
Soundings plotted by A. P. Patti.
Verified and Inked by C. Pisegari.

1. The records, methods and character of the survey, conform to the requirements of the General Instructions.

2. The plan and extent of development cover the Specific Instructions.

3. The hydrographic lines were executed as per Specific Instructions "to be run normal to the beach". There are, however, no crossings except in a very few cases. In these particular cases, the crossings appear to be satisfactory.
The hydrographic work in general appears to have been executed satisfactorily and complies with the requirements of the Specific Instructions.

4. The usual depth curves could be completed and such curves were broken only near the dangerous rocky shore, in the vicinity of outlying rocks, thick kelp etc.

5. There were a number of cases where it was found necessary to reprotract sounding positions and also to replot soundings when the time intervals spacings were not carefully adhered to.
Attention should be called here, of the necessary omission of the positions and soundings, "1x" to "24x" inclusive, and all of "x" day, — the fathometer soundings being supplemented in their stead. The descriptive report states that it was difficult to get vertical casts under the prevailing condition of the weather and current at the time. These soundings

appear satisfactory with adjacent soundings, some of which are vertical casts.

6. The junction with adjacent sheets are satisfactory. W.D. sheet 4318 (Hawley, 1923) was used in this connection for the southeastern juncture.

Two shoal soundings, 13 + 18 faths., shown in green at southern part of 4640, were transferred from W.D. 4318.

The position of signal "Can" in Dicks Arm, is located by a fix, see 44y, and is located differently on Top. 4238. This is a temporary ~~to~~ mooring buoy and it appears that the field party used the recorded position of "Can" which undoubtedly was more correct to use at the time the work was in progress and was accepted.

7. There are a number of shoal spots, ~~outside~~ which appear should be further developed.

There are also several small blank areas on the sheet showing where the work was not carried to the shore & further development would have been desirable. The work in general, however, was carried as far as it was permissible to the shore.

Three soundings in pencil, 3¼, 12¼, 7¼ faths, are transferred from H. 2558 and are located between signal "Eve" and signal "Vog" at southeastern end of this sheet. These appear as shoal spots and should be further developed.

It is understood that small vessels heading for Graves Harbor and vicinity from a southerly port make use frequently of a the lane between Graves Rocks and signal Corner. The hydrography in this particular area appears to be insufficiently developed and is quite hazardous, being infested with rocks and large areas of kelp.

A discrepency was found in the soundings in Dixon Harbor between ~~Dixon Harbor~~ this sheet and H. 2762 which made it impossible to join the work of both sheets. The Dir. of J. & C. has submitted a report which is attached hereto covering this point in question.

8. Character and scope of surveying - good.
Field drafting - good.

9. Reviewed by E. Ruegari May 11, 1928.

Report on W. D. Sheet #4640.

Off Cape Spencer, SE. Alaska.

Surveyed in 1926 (Surveyor).

Chief of Party: A. M. Sobieralski.
Surveyed by: A. P. Patte.
Protracted & Inked by: A. P. Patte.
Reviewed by S. Risegari.

1. The records conform to the requirements of the General Instructions.

2. There appears to be no specific instructions for the wire drag work, but the main purpose of the wire drag, it is understood, was to discover any obstacle in the approach of to Dicks Arm.

3. The field plotting was completed to the extent prescribed by the General Instructions.

4. The wire drag grounded near the mouth of Dicks Arm on two shoals on which soundings were recorded by the tender + end launch, $2\frac{4}{6}$, $3\frac{6}{6}$, $4\frac{2}{6}$ fathoms (blue inked on sheet). These soundings, however, are not conclusive to be the least depth obtainable for the shoal areas as the drag was not reset for clearance after the groundings.

The wire drag work, 1 to $\frac{9}{10}$ Bday, was not plotted, as the drag was aground on shoal shown by depth of $2\frac{4}{6}$ fathoms (mentioned above). This area, however, is open to suspicion and appears unsufficiently dragged.

5. Drag work — fair.
Drafting — good.

6. Reviewed by S. Risegari. May 24, 1928.

Applied to chart 8402 Stamm