

6351

U. S. COAST & GEODETIC SURVEY
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APR 26 1939

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Form 504
Rev. April 1935
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Topographic }
Hydrographic } Sheet No. 6351

6351

State S. E. ALASKA

LOCALITY
Sitka Sound
SITKA HARBOR

~~SOUTHEAST ALASKA~~

1938

CHIEF OF PARTY

G. C. Jones

28
1, 1939

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES

APR 26 1939

REG. NO.

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. 1

REGISTER NO. 6351

H6351

State S. E. Alaska

General locality Sitka Sound

Locality Sitka Harbor

Scale 1:1,000 Date of survey June-August, 1938

Vessel U.S.C. & G.S.S. EXPLORER

Chief of Party G. C. Jones

Surveyed by L. C. Wilder

Protracted by L. C. Wilder

Soundings penciled by L. C. Wilder

Soundings in ~~fathoms~~ feet and tenths.

Plane of reference M.L.L.W.

Subdivision of wire dragged areas by

Inked by

Verified by J.A. McCormick

Instructions dated March 7 and May 5, 1938.

Remarks: Project HT-220

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET NO. 6351

SITKA HARBOR

S. E. ALASKA

1938

G. C. JONES, H. & G. E.,

CHIEF OF PARTY

COMMANDING Ship EXPLORER

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET NO. 6351

SITKA HARBOR

S. E. ALASKA

1938

AUTHORITY:

This survey was made under Instructions to the Commanding Officer, Ship EXPLORER, dated March 7, 1938, and Supplemental Instructions dated May 5, 1938.

SCALE:

The scale is 1:1000.

LIMITS:

The survey covers the area off the Naval Air Station and in the ships channel to shoal water on the east side of Sitka Harbor and from Latitude $57^{\circ}03.0$ to Latitude $57^{\circ}03.3$.

POSITION DENOTATION:

Positions along the east side of the sheet which were taken in the usual manner with the sounding boat underway are inked in the standard manner.

Positions on the ranges out from the range origins on the west side of the sheet were inked with the letter of the days work only, as this letter together with the range number and distance out identify the soundings. In the two closely developed areas off the ramp the letter of the day was not repeated at each sounding as all the work was done on "1" day.

SOUNDINGS FROM OTHER SHEETS:

Certain positions and soundings were plotted from the record books for other sheets in order to assist in drawing curves and since the larger scale of this sheet gave a more accurate location. Only positions obtained by fixes on signals plotted on this sheet were used however. Position numbers were left in pencil in order to avoid confusion with other positions.

The following were plotted on this sheet:

6352 (along east side of sheet). Positions 1 to 4 "r" day, Sheet No. 6352 (along east side of sheet). Position 1 to 17 "t" day, Sheet No. 6352 (detached soundings in S.E. corner of area). Positions 125 and 126 "v" day, Sheet No. 6352 (detached soundings in S.E. corner of area). Positions 17-19-20-21-22-28-39-41 and 43 "m" day, Sheet No. 6352 (along faces of Pyramid Packing Company and Conway docks). Positions 1 to 12 "p" day, Wire Drag Sheet No. 2. H-6351 W.F.

These soundings will be considered on H-6352 and applied to the present survey if necessary.

The L.W. line and a single rock about \triangle Bor were transferred from 1:5000 topo sheet for purposes of drawing curves. H.W. line on east side added in office. Par. 1, reviewed.

METHODS:

After consultation by the Commanding Officer with officers at the Naval Air Base as to any suggestions, a spacing of 24 feet for the soundings along the west side was adopted. This spacing was broken down to 8 feet, at a later date, in two areas on the west side near the plane ramp, as particularly detailed soundings were desired in connection with naval activities.

The points marked 1-2-3- etc. along the shore were stakes established along a traverse by turning off an angle from \triangle Union as an initial (on east side of waterway) with a theodolite set up on range between \triangle Navy and \triangle Union at a known distance from \triangle Navy and measurement with the same instrument of the angles between the adjacent legs of the traverse. Stakes were placed as to distance along the traverse by measuring with a wire run over sounding sheave No. H334 (correction factor 1.0058) from the origin and from the intersections of the legs of the traverse. The origins of ranges out from the face of the Navy Dock were established along the face of the dock, from the topography furnished, by measuring from a point on this face which was also on the azimuth \triangle Navy to \triangle Union. At this point a sextant angle was turned from \triangle Union to the azimuth desired on the range lines and a back sight noted in range with the face of the dock which thereafter was used in any later ranges out from this face.

The traverse starting at range No. 1 to range 44 was carried out to \triangle Nut where it closed without error in azimuth and $1\frac{1}{3}$ feet S.E. in error in distance. Also several of the sounding lines were checked in on \triangle Bor and they agreed very closely in azimuth and distance.

Soundings were made with a hand lead-line, with 10 pound lead, graduated to feet, estimating to tenths of a foot, leadsman in the stern sheets of a 16 foot skiff. In the skiff was mounted a small reel and a swivel type sheave which had been carefully calibrated. Each line

was started inshore with the boat grounded, sheave set at the correct distance out from the range stakes; the boat was rowed by one man and stopped for each sounding on the correct sheave reading (distance out from stakes). The skiff was kept on a range of a certain azimuth with respect to the line of range stakes, by the officer in charge who remained at each stake with a sextant properly set to keep the skiff on the predetermined range.

The soundings in the two very detailed areas on the west side of the sheet near the plane ramp were taken with a level rod graduated to feet and tenths. ✓

The work on "j" day, on the east side of the harbor was done after it was decided that the entire width of the channel to the east shore could best be done on this scale. This work was done in a catamaran, with outboard motor and two leadsmen and with visual fixes on signals Nut, Tea, Let, Flag, and Pig. Anglemen were close together and the speed was held as constant as possible. A man in a skiff with a small flag superstructure and graduated line secured to the pole at \triangle Bor, held his skiff 24,48,72, etc. feet out from

\triangle Bor at right angles to the direction the lines were run. This flag in the skiff was then used as a port range and it served very well. N.B.

Searches for least water were made by planting buoy and feeling around with 2 or more leads or by means of a 16 foot pipe suspended horizontally. ✓

CONTROL:

As specified in the above paragraph, all signals used were either triangulation stations or located on the 1:1,000 topographic survey sheet No. 6634. ✓

GENERAL CHARACTERISTICS OF THE SHORELINE AND THE BOTTOM:

The shoreline between the high and low waterlines on the west side of the harbor is gravel and scattered boulders (boulders up to 4 feet in diameter) and outcropping ledge at the small points from the foot of the Navy Dock to the south edge of the surveyed area. On the east shore, also gravel and boulders except for some outcropping ledge about midway between the Pyramid Packing Company and Conway Docks. ✓

Below the low water line out from the west shore, for a short distance, the bottom is sand or gravel and rocky (ledge or boulders) for the most part out from there to mid harbor. Off the Navy Dock to mid harbor the bottom is mud. At the south end of the sheet off the west side to mid-harbor, the bottom is mostly mud except for some rocky bottom close into the low water line. ✓

Off the east shore from the north end of the sheet to Pyramid Packing Company Dock the bottom is hard and rocky with boulders. (This area includes the dredged channel past Harbor Rock Light.) From Pyramid Packing Company Dock to the southeast end of the sheet the bottom is mostly soft except for scattered boulders and the outcropping ledge between the two docks and southeast of Conway's Dock. Harbor Rock Light is located on outcropping ledge.

DANGERS, OBSTRUCTIONS, AND SHOALS:

The ledge and shoal about Harbor Rock Light (\triangle Bor) extend well to the northwest, the 2 fathom curve being about 80 meters distant. The low water line and a rock 16 meters northwest of the light were transferred from the 1:5,000 topographic sheet (1938) of this area.
 T-6651

The least depths found by wire drag in the dredged channel and adjacent to the docks will be described in the Wire Drag Descriptive Report. They are as follows:

(1) 18.7⁵ foot spot in Latitude 57°03.27 Longitude 135°20.78 by wire drag, Position "10p", boulders. (19.3 feet, position 27k, sheet 6351, obtained near this spot).

(2) 19.9^{19.5 and 20.0} foot spot in Latitude 57°03.24 Longitude 135°20.76 by wire drag, Position "9p", boulders.

(3) 21.0 foot spot in Latitude 57°03.23 Longitude 135°20.73 by wire drag, position "6p", boulders.

(4) 18.0 foot spot in Latitude 57°03.19 Longitude 135°20.68 by wire drag, position "5p", boulders. This is close to the eastward of steamer courses.

(5) 17.4^{o.k.} foot spot in Latitude 57°03.14 Longitude 135°20.63 by wire drag, position "1p", boulders. Almost in the direct path of ships and particularly if going alongside Conway's Dock from the north.

(6) 12.0 foot spot in Latitude 57°03.14 Longitude 135°20.59, sheet No. 6352, position "7t", rocky bottom. A danger to ships making Conway's Dock or lying alongside. A very careful search was made here at the end of this ledge by planting buoy and sounding around. To be considered on H-6352.

(7) 22.0 foot spot in Latitude 57°03.04 Longitude 135°20.54, sheet 6352, position "126v", either a boulder, submerged pile, or other similar object. Same as (6)

(8) 17.0 foot spot in Latitude 57°03.04 Longitude 135°20.49, sheet 6352, position "1t" - on end of shoal making out into channel. Very thorough search. Same as (6)

Along the east side of this surveyed area soundings disclosed that the dangers are boulders, perhaps as large in diameter as from 4 to 5 feet. It is almost impossible to get the tops of these by hand lead. A 16 foot pipe suspended horizontally by leadlines was used in most of these areas in searching for least water, particularly in the dredged channel past Harbor Rock Light; also a 12 foot square pipe frame with wire laced inside and suspended horizontally with graduated line was used. } N.B.

CHANNELS, AIDS, RANGES, AND DOCKS:

There are no maintained ranges on this sheet. No natural ranges were selected by the hydrographer. ✓

The aids are Harbor Rock Light and buoys C-3, N-4, S-5, and S-7 along the ship channel to the east of this light. ✓

There is a least depth of 18.⁵/₇ feet at M.L.L.W. in the channel past Harbor Rock Light, approaching Sitka from the northwest. The 18 foot spot 27 yards west (t) of the northwest corner of the outer face of the Pyramid Packing Company Dock is close to the east of the course followed by ships. ✓

The channel southwest of Harbor Rock Light from the northwest into Sitka is not recommended for vessels drawing more than 10 feet. There is a 12.3 foot spot - Latitude 57°03.18 - Longitude 135°20.87. } Pass about 100 yards southwest of the light. The 2 fm curve makes out about 55 yards southwestward of the light. Twenty one feet can be carried to and alongside the Naval Air Base Dock by approaching from a direction northerly to the westward of a line from this dock to Harbor Rock Light. } The shoalest sounding obtained along the outer face of the dock was 21.8 feet. Approach to this dock from the southeast carries over plenty of water, 30 feet, if not inside a line along the inside face of the dock. (NOTE: This dock was being repaired and revised - August, 1938, and the changes to be made were not known.) ✓

There is 15 feet, least depth, alongside the face of the Pyramid Packing Company Dock. }

There is 24 feet, least depth, alongside the face of Conway Dock Company Dock, but a 12 foot spot 70 yards northwest and in range with the outer face of Pyramid Packing Company Dock. - Also a 17 foot spot 100 yards South-South East (T) of the southwest corner of the dock. }

On H-635 ✓

CURRENTS AND TIDE RIPS:

Nothing but very small currents and no tide rips were observed by the hydrographer. ✓

ANCHORAGES:

Swinging room is not sufficient for the large passenger ships in heavy weather in Sitka Harbor altho temporary anchorage can be had in the middle of the harbor south of a line between Conway's Dock and the Naval Air Base Dock, mud bottom. Fishing vessels anchor off the west shore 120 yards or more southeast of the Navy Dock, mud bottom.

DISCREPANCIES:

The hydrographer returned to the following soundings and sounded for a check, a large number of soundings being taken in each position. The first number is the range number and the second number the distances out from the range origin, 45-42½, 1-24, 1-36, 3-8, 27-72, 23-60, 35-24, 50-40, 52-20, 58-28, 92-20, 80-16, 80-12, 95-20, 72-12, 73-16, 72-12, 72-16.

On each of these positions the check soundings were shoaler, indicating an error of a foot or two, and were used except 45-42½ where the shoaler original sounding could not be found and the deeper check sounding was plotted; 1-36, the original sounding was shoaler and was plotted; 3-8, ~~both original and check soundings~~ shown on sheet; 27-72, both original and check soundings shown on sheet; 50-40, original sounding evidently one fathom in error; 92-20, both original and check soundings shown. Necessary rejections made.

Evidently some of the above original soundings were on small boulders one to two feet shoaler and could not be found again.

COMPARISON WITH EXISTING SURVEYS:

Hydrographic Sheet 2174, 1893. (Insert scale 1:5000). This survey shows the two fathom curve making a greater distance to the northwest and northeast of Harbor Rock Light than the present survey. Depths to southwest of the light are in general agreement except that the old survey shows a 9 3/4 foot spot further offshore than the new survey. The 18 foot curve in this area agrees fairly well. The channel northeast of the light is in fair agreement except the dredged area close to the light.

Southeast of the light, scale 1:10,000, this survey shows fair agreement as well as can be determined considering the larger scale of the modern survey.

Chart 8244, edition September, 1930. Area close to the north and northeast of Harbor Rock Light has been dredged. The three fathom curve around this light and to the Navy Dock agree fairly well otherwise. In the channel southwest of the light near the middle a sounding of 1 1/4 fathoms is shown on the chart. The shoalest sounding on the 1938 survey here is 12.3 feet. A 1 3/4 fathoms spot 170 yards northwest of the Navy Dock is about 40 yards further offshore than any such depth on the present survey. Soundings are from H-2174 but are referred to a plane 2 ft. below M.L.W. See par. 5b and 7a, review.

The 1 1/2 fathom spot at the northwest corner of the Navy Dock is non-existent. The inshore trend of the 3 fathom curve south of the Navy Dock is incorrect. ✓

The present survey obtained 13 feet on the shoal northwest of Indian Rock where 2 1/4 fathoms are charted, and 7 feet (1938) on Indian Rock (partly removed by United States Army Engineers. Indian Rk. is on H-6357. ✓

LANDMARKS:

The following objects within the area of this sheet should be charted as landmarks or fixed aids to navigation:

Harbor Rock Light

I understand that the Naval Radio Towers will probably be removed in the near future.

GEOGRAPHIC NAMES:

Subject covered in a special report for the area of the season's work. ✓

Respectfully submitted,

L. C. Wilder

L.C. Wilder,
H. & G. Engr., C. & G.S.,
U.S.C. & G.S.S. EXPLORER.

*G. A. Jones
Comd. Ship Explorer*

STATISTICS

<u>DATE</u>	<u>LAUNCH</u>	<u>DAY</u>	<u>STATUTE MILES</u>	<u>POSITIONS</u>	<u>SOUNDINGS HAND LEAD</u>
June 21, 1938	Skiff	a	1.3	292	292
June 22, 1938	Skiff	b	1.3	272	272
June 23, 1938	Skiff	c	1.4	359	359
June 24, 1938	Skiff	d	2.0	454	454
June 25, 1938	Skiff	e	0.4	122	135
June 27, 1938	Skiff	f	1.7	368	368
June 28, 1938	Skiff	g	0.0	4	10
June 29, 1938	Skiff	h	0.0	2	11
Aug. 4, 1938	Catamaran	j	4.0	172	910
Aug. 6, 1938	Catamaran	k	0.69	28	102
Aug. 13, 1938	Catamaran	l	<u>0.25</u>	<u>191</u>	<u>191</u>
Totals:			13.04	2264	3104

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. **H.6351**

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

Number of positions on sheet	...2264
Number of positions checked17
Number of positions revised2
Number of soundings recorded	...3104
Number of soundings revised13
Number of soundings erroneously spaced0
Number of signals erroneously plotted or transferred0

Date: July 18, 1939.

Verification by } J.A. McCormick
Review by

Time: }
Time: } 57 hr.

Remarks

Decisions

1		File Nos. 570 353
2		570 353
3		570 353
4		570 353
5		570 355
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M 234		

GEOGRAPHIC NAMES

Survey No. M-6351

Name on Survey	On Chart No. 8244		On previous survey		On U. S. quadrangle Maps		From local information		On local Maps		P. O. Guide or Map		Rand McNally Atlas		U. S. Light List		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
<u>Japonski Island</u>	✓																1
<u>Sitka Harbor</u>	✓																2
<u>Sitka</u>	✓																3
<u>Harbor Rock</u>	✓																4
<u>Sitka Sound</u>	8281																5
																	6
																	7
																	8
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	Names on this list are approved by the Hydrographic Office, U. S. Navy															24	
	Date: <u>7/31/29</u>															25	
																	26
																	27

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY DESCRIPTIVE REPORT PHOTOSTAT OF	}	No. H-6351 No. T	{ received April 26, 1939 registered May 12, 1939 verified reviewed approved
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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.

ROUTE		Initial	Attention called to
20			
22			
24			
25	✓	ABC	Pages 4, 5 and 6
26			
30			
40			
62			
63			
82			
83			
88			
90			

RETURN TO

82	T. B. Reed
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ABC
 ✓ JOBOR

TIDE NOTE FOR HYDROGRAPHIC SHEET

May 15, 1939

Division of Hydrography and Topography:

✓ Division of Charts: Attention: Mr. E. P. Ellis

Plane of reference approved in
3 volumes of sounding records for

HYDROGRAPHIC SHEET 6351

Locality Sitka Harbor, Sitka Sound, S. E. Alaska

Chief of Party: G. C. Jones in 1938
Plane of reference is mean lower low water reading
5.0 ft. on tide staff at Sitka, Standard Oil Dock
13.1 ft. below B. M. 1

Height of mean high water above plane of reference, 9.1 ft.

Condition of records satisfactory except as noted below:

Ham

Acting Chief, Division of Tides and Currents.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6351 (1938) FIELD NO. 1

Sitka Harbor, Sitka Sound, S. E. Alaska
Surveyed in June - August 1938, Scale 1:1,000
Instructions dated March 7 and May 5, 1938 (EXPLORER)

Hand Lead Soundings.

3 Point fixes on shore signals.
Ranges and taut wire distances.

Chief of Party - G. C. Jones.
Surveyed by - L. C. Wilder.
Protracted by - L. C. Wilder.
Soundings plotted by - L. C. Wilder.
Verified and inked by - J. A. McCormick.

1. Shoreline and Signals.

Shoreline of Japonski Island and locations of all topographic signals are from T-6634 (1938) which is on the same scale as the present survey. Topographic detail on the east side of the harbor is enlarged five times from that on T-6631 (1938) and has been inked in broken lines to distinguish it from the topography executed on the larger scale.

2. Depth Curves.

The usual depth curves may be satisfactorily drawn.

3. Sounding Line Crossings.

Sounding line crossings are satisfactory.

4. Junctions with Contemporary Surveys.

The junction with H-6352 (1938) on the north and south will be considered in the review of that survey.

5. Comparison with Prior Surveys.

a. H-1439 (1879), 1:15,000; H-1626 (1884) 1:20,000.

These are reconnaissance surveys containing little information within the area of the present survey. They should be disregarded in future charting of the common area.

b. H-2174 (1893) 1:10,000.

This survey covers the entire area of the present work. Where artificial changes have not been made, the features on the old survey bear a fair

resemblance to those on the present survey. There is a tendency on the old survey to exaggerate the shoal areas such as that in the vicinity of Harbor Rock by equal spacing of shoal and deep soundings for which times were not recorded and which were probably obtained without appreciable pauses between casts. The present survey should supersede the old survey in future charting of the common area.

c. H-2174a (1920) 1:5,000.

This survey contains a few soundings along the Sitka waterfront. The present survey adequately covers the common area and should supersede the older survey in charting of the common area.

6. Comparison with Chart 8244 (New Print dated June 11, 1937).

a. Hydrography.

Within the area of the present survey the chart is based on surveys discussed in the foregoing paragraphs and on miscellaneous information in various chart letters and H. R. Document 108 (71-1). Depths on the old surveys and on the early editions of the chart were referred to the plane of mean lower low water. In 1901, 1/4 fathom was subtracted from charted depths of less than 6 fathoms and the reference plane was noted on the chart as being 2 feet below mean lower low water. In 1908, the reference plane was changed back to mean lower low water but the previously changed depths were not corrected. The present survey should supersede the miscellaneous information in future charting of the common area.

b. Aids to Navigation.

Survey positions of navigational aids in the area differ slightly from the charted positions. Either group of positions adequately marks the features intended.

7. Condition of Survey.

- a. Sounding volumes are neat and legible.
- b. The descriptive report is satisfactory.
- c. Field plotting was satisfactory.

8. Compliance with Instructions for the Project.

Satisfactory.

9. Additional Field Work Recommended.

None.

10. Superseded Surveys.

H-1439 (1879) in part
H-1626 (1884) in part
H-2174 (1893) in part
H-2174a (1920) in part.

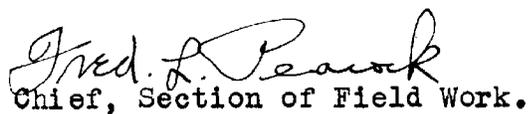
11. Reviewed by - J. A. McCormick, July 18, 1939.

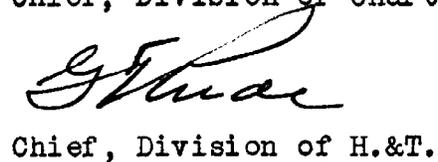
Inspected by - H. R. Edmonston, July 21, 1939.

Examined and approved:


T. B. Reed,
Chief, Section of Field Records.


K. T. Adams
Chief, Division of Charts.


Fred. L. Peavck
Chief, Section of Field Work.


G. F. Mac
Chief, Division of H.&T.

Applied to drawing (Reconstruction) of Chart 8244 - Oct, 10, 1939 - J.F.W.
Examined for Reconstr. 8281 Select via 8244 June 16, 1959 J.M.A.