

4860

Diag. Cht. No. 5702

ORIGINAL

Form 504	
DEPARTMENT OF COMMERCE	
U. S. COAST AND GEODETIC SURVEY	
E. Lester Jones, Director	
G. & G. SURVEY L. & A.	
State: California and Oregon	Acc. No.
DESCRIPTIVE REPORT	
Hydrographic Hydrographic	Sheet No. 2 4860
LOCALITY	
Northern California.	
Crescent City, Calif. to Brookings, Oregon.	
1928	
CHIEF OF PARTY	
F. G. Engle, H. & G. Engineer.	

GOVERNMENT PRINTING OFFICE

4860

DESCRIPTIVE REPORT

To Accompany Hydrographic Sheet #2 (Field)

Scale 1/40,000

Coast of Northern California ----- and ----- Southern Oregon
Crescent City, California ----- to ----- Brookings, Oregon
U.S.C. & G.S.S. DISCOVERER ----- F. G. Engle,
H. & G. Engineer,
Commanding.

June -- October 1928.

Instructions dated March 13, 1928. Supplemental Instructions dated May 8 and October 12, 1928.

Limits:

The work on this sheet extends from the inshore work by launch "Martha" season of 1928, to the fifty fathom curve, between Crescent City, Calif. and Brookings, Oregon.

Soundings lines were run in St. George Channel additional to the work in the channel by launch "Martha" St. George Reef was covered by launch "Martha".

Control:

All the work is controlled by three point visual fixes on triangulation points.

Method:

Soundings over approximately fifteen fathoms are by fathometer (Red Light), with ship speed of *eight* to ten knots. The fathometer readings were recorded at thirty second intervals and at times of pronounced changes of depth. The disc speed was kept constant by adjustment of rheostat to keep the middle reed of the tachometer vibrating.

Vertical casts for comparison with fathometer, bottom temperatures and samples and surface temperatures and water samples for salinity determination were taken at points scattered over the area.

In depths less than fifteen fathoms, the hand lead was used with a ship speed of about four and one-half knots. The phosphor bronze wire center line was used. On some of the lines rough sea or heavy swell was encountered making it difficult to read the line accurately.

Shoals etc.:

The bottom appears to be quite regular and of fine grey sand except for a few shoal spots near St. George Reef, and in St. George Channel where rocky bottom exists.

Soundings of thirty-six, forty-four and forty-five fathoms were obtained at a point four miles south, (true), of St. George Lighthouse outside of the fifty fathom curve. The first soundings was marked at the time "might be stray" by Mr. Marchand reading the fathometer. The area was investigated immediately afterward by running closely spaced lines with Mr. Shelton, a more experienced officer, at the fathometer. As no shoal indications were found it is thought that the shoal soundings obtained on the original system were strays and they are accordingly rejected.

The following shoals were found and developed without finding any danger:

- 30 fathoms, $3\frac{1}{4}$ miles, 320 degrees (true) from St. George Lighthouse.
- 19 fathoms, $\frac{3}{4}$ mile, 0 degrees (true) from St. George Lighthouse
- 16 fathoms, $\frac{5}{8}$ mile, 225 degrees (true) from St. George Lighthouse.
- 17 fathoms, $4\frac{1}{2}$ miles, 180 degrees (true) from Castle Rock.

The latter is a large shoal extending northwest and southeast in the position of two old twenty-one fathom soundings previously shown on chart 5702 (Least depth of 16 fathoms was obtained see Sheet 3). 15

Comparison with Previous Surveys:

No indication was obtained on the regular system of sounding lines of the twenty-eight fathom shoal shown on Chart 5702, $6\frac{1}{4}$ miles 195 degrees from Point St. George. No additional development was made.

The present survey otherwise checks the soundings shown on Chart 5702.

Discrepancies Smooth & Boat Sheets:

Moderate discrepancies in position are caused by small inaccuracies in plotting triangulation points on the Boatsheet and to distortion of the Boatsheet before completion of work. The soundings on the Boatsheet were plotted as soon as possible after the lines were run and are the result of approximate reduction consisting of predicted tides and estimated constant correction to fathometer. This will explain the moderate differences in depths on the Boat and Smooth Sheets.

St. George Channel:

This channel is used by steam lumber schooners to and from Brookings and by other coasting vessels bound north in strong northwest winds, to take advantage of the lee afforded in this weather by St. George Point and Chetco Point.

Considerable care should be exercised in navigating the channel to avoid the dangers on either side.

Sounding lines in the channel were run by the ship in addition

to the development by launch on sheet #8 as it was found convenient to do this

The many rocks on either side of the channel would suggest the advisability of dragging but it was not possible to do this during the season.

The lee formed by St. George and Chetco Points in northwesterly weather is remarkable in that it is very pronounced at the outset of northwesterly winds even to the extent of forming a light southeast eddy. Occasionally the northwest winds are very strong and continue throughout the night with only a slight moderation. At such times no lee exists.

Generally the northwest wind springs up from seven to nine A.M. and dies down from six to eight P.M. and the lee south of Chetco and St. George Points lasts for three or four hours, the wind working in gradually towards the beach.

Respectfully submitted,


F. G. Engle,
H. & G. Engineer,
Commanding.

Approval by Chief of Party.

Sheet #2 and accompanying records have been inspected and approved by me. The field and office work have been under my immediate supervision at all times. No additional work except possibly dragging of St. George Channel is thought necessary.


F. G. Engle,
H. & G. Engineer,
Commanding.

TIDAL NOTE SHEET 2 (Field).

The auto-portable gauge at Crescent City, Calif. Latitude 41-45 North, Longitude 124-12 West was used in reducing the soundings on this sheet with the exception of the soundings on K, L, M, N, and P days. On these days the auto-portable gauge at Brookings, Oregon, Latitude 42-03 North, Longitude 124-16 West was used because the gauge at Crescent City was not in operation.

The plane of mean lower low water on the gauges was used in each case. The reading of mean lower low water on the Crescent City gauge was 3.00 ft.; on the Brookings gauge, 1.59 ft.

The tabulations for highest and lowest tides observed have not been made.

STATISTICS, SHEET NO. 2

Date	1928	Letter	Vol.	Pos.	Soundings		Miles(stat)		Vessel
					H.L.	Fm	H.L.	Fm	
June	26	A	113	173		1312		125.0	Ship
"	27	B	1&2	191		1502		137.4	"
"	28	C	2&3	200		1555		144.9	"
July	9	D	3	43		272		24.1	"
"	12	E	3	93		611		57.4	"
"	13	F	3	100		709		59.0	"
"	17	G	4	160	258	635	25.9	51.7	"
"	19	H	4	52	270		23.8		"
"	26	J	4&5	101	478		47.0		"
"	27	K	5	65	263		27.6		"
"	31	L	5	57	251		24.5		"
Aug.	2	M	5	90	148	391	15.8	30.9	"
"	10	N	5	72		517		39.0	"
"	22	P	6	136		882		73.6	"
Sept.	6	Q	6	18		123		11.7	"
"	7	R	6	42		250		28.3	"
"	10	S	6	53		401		31.0	"
"	12	T	7	59		435		35.6	"
"	14	U	7	58		57		4.8	"
"	20	V	7	31		214		12.8	"
Oct.	3	W	7	20		301		20.0	"
Nov.	17	X	7	19		148		8.5	"
Total - - - - -				1783	1669	10305	164.6	916.0	

Section of Field Records

Report on sheet # H-4860
Chief of Party: F. G. Knapp
Protracted by Casper M. Murgin
Verified & inked by F. G. Eskine

Surveyed in 1928
Surveyed by F. G. E.
Soundings plotted by —
Gilbert R. Fish

1. With but few exceptions the sounding records were neat and complete. In lat. $41^{\circ}48\frac{1}{3}'$ long. $124^{\circ}20'$ there are soundings of 13 and 17 fathoms. There is no other indication of such depths either on H-4860 or on the adjoining sheet H-4862 which show depths of 25 fathoms and more. There is no note in the sounding records to prove or disprove these two soundings.

2. The protracting was very good. A little over 22% of the positions were checked and less than 10% of the total had to be re-protracted. Apparently there was an error in the field protractor, which showed up in the work furthest from shore. The positions were only slightly off in the middle of the sheet but in northern and southern parts the error was quite a bit. Positions in error due to this were not corrected.

3. The plotting of soundings was very good. The time interval was generally regular. Occasionally unequal timing occurred which the field draftsman sometimes overlooked. Slightly more than 1% had

to be reported.

4. The work was clear and very legible.
5. The drafting conformed to the General Instructions.
6. There were no rocks on the smooth sheet. There were some on the boat sheet, some transferred from old surveys, ~~and~~ some from the chart and some intimate. Also a few small soundings were transferred from the old surveys. The rocks on St. George Reef were not plotted on H-4860, as the area is covered by H-4862. A rock S.E. of the Reef (Lat. $41^{\circ}44\frac{1}{3}'$ Long. $124^{\circ}12\frac{1}{2}'$) was not transferred to the smooth sheet as it falls ^{and remains} within the limits of H-4865. The rocks along the eastern limits of H-4860 will not be transferred as they fall within the limits of H-4877 and will be taken up with the verification of that sheet. A cluster of sunken rocks (B.S. of H-4860) in Lat. $41^{\circ}48\frac{1}{2}'$ Long. $124^{\circ}17\frac{1}{3}'$ was not transferred to smooth sheet in view of approximate position and the fact that it is questioned on the boat sheet.

Respectfully submitted
Frank G. Estline

August 9, 1959

Section of Field Records
Report on Hyd. Sheet No. 4860
Crescent City, Cal. to Chetco River, Oregon.
Surveyed in 1928.

Instructions dated March 13, 1928 (Discoverer)
and supplemental instructions dated May 8 and Oct 12,
1928

Chief of Party - F. G. Engle

Surveyed by - F. G. Engle

Protracted by - C. M. Durgin

Soundings plotted by - G. R. Fish

Verified and inked by - F. G. Erskine

1. The records are well kept and conform to the requirements.
2. The plan and character of development conform to the requirements of the General Instructions.

3. The plan and extent of the survey satisfy the specific instructions. The ground is uniformly covered and shoal development is considered sufficient except in the case of the 13 and 17 fathom soundings in Lat. $41^{\circ}47.3'$ and Long $124^{\circ}20.0'$. These are fathometer soundings, taken while turning, and appear doubtful. As there is no note in the record, there is no evidence upon which these soundings can be rejected, but the spot should have been further examined. (The charting of these soundings is recommended by C. M. S.)
4. There are not many cross lines, but these cross well and the agreement of adjacent lines is good.
5. The information is sufficient for drawing the usual depth curves.
6. The junction with H. 4863 on the north is satisfactory. The junction with H. 4876 and H. 4874 on the west is satisfactory but these sheets have not been completed. The junction on the south with H. 4852 is satisfactory.

The junction on the east with H. 4877, H. 4862, H. 4872 and H. 4865 is satisfactory. H. 4862 is the only one of these sheets which is completed and overlapped. As none of the rocks, in the vicinity of St. George Reef, fall within the limits of the soundings on this sheet, H. 4860, they are not indicated on this sheet but are shown on H. 4862. All rocks off the eastern limits of the work are shown on the inshore sheets.

7. The usual amount of field plotting was well done by the field party.

8. Character and scope of survey - very good.

9. Additional work within these limits is not necessary unless it would be considered advisable to wire drag St. George Channel, as suggested by the chief of party.

Reviewed by R. L. Johnston Aug. 20, 1929.

Section of Field Records. ✓

EAT

April 19, 1929.

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in
7 volumes of sounding records for

HYDROGRAPHIC SHEET 4880

Locality: St. George Reef, Calif. - Cape Sebastian, Oregon.

Chief of Party: F. G. Engle in 1928

Plane of reference is mean lower low water, reading
2.8 ft. on tide staff at Crescent City, Calif.

~~mean lower low water~~

1.8 ft. on tide staff at Brookings, Oregon.

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 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.

Paul C. Whitney

Chief, Division of Tides and Currents.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4850

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. 2

REGISTER NO. 4860

State ~~California~~ and Oregon

General locality ~~Northern California~~ Point St. George

Locality ~~Crescent City, Calif. to Brookings, Oregon~~ Chetco River, Oregon

Scale 1/40,000 Date of survey June 14 - Oct. 24, 1928

Vessel Str. DISCOVERER

Chief of Party F. G. Engle

Surveyed by F. G. Engle

Protracted by Casper M. Durgin

Soundings penciled by Gilbert R. Fish

Soundings in fathoms feet

Plane of reference M.L.L.W.

Subdivision of wire dragged areas by

Inked by F.G.Erskine

Verified by F.G.Erskine

Instructions dated March 13, 1928

Remarks:

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. *4860*

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

Number of positions on sheet *.1783.*
Number of positions checked *428.*
Number of positions revised *.13.*
Number of soundings recorded *11,974.*
Number of soundings revised *152.*
Number of signals erroneously
plotted or transferred *0.*

Date: - - *August 9, 1929* - - - -
Cartographer: - *Frank M. Estlin* - - - -