4895

Diag. Cht. No. 5802 & 5902

Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

....., *Director*

State: Oregon

DESCRIPTIVE REPORT

~~*Topographic*~~ *Hydrographic* } *Sheet No.* 4 4895

LOCALITY

Yaquina Bay
Heceta Head to
Cape Foulweather
Offshore

1928

CHIEF OF PARTY

O.W. Swainson

GOVERNMENT PRINTING OFFICE

4895

C. & G. SURVEY
MAY 15 1929
Acc. No.

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SHEET NO. 4. see Trans Letter May 6 4895

OREGON COAST

SURVEY VESSEL PIONEER

O. W. SWAINSON - COMD'G.

1928

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SHEET NO. 4.

LIMITS Lat. 44° 05' to 44° 47' N. - Long. 124°20' W. to 100 fath. curve.

SCALE 1 : 80,000.

Hydrographic Sheet Field Number 4. is part of the work done off the coast of Oregon by the Surveying Vessel PIONEER, commanded by O. W. Swainson, during the season of 1928 under instructions dated March 3, 1928.

The scale of the sheet is 1 : 80,000. It covers the area from longitude 124°20' to the 100 fathom curve and from latitude 44° 05' to 44° 47' north, It joins sheet 5 on the west, sheets 3, 7, and 8 on the east, former work on the north, and sheet 9 on the south.

Out to longitude 124° 30' W. the work was controlled chiefly by visual fixes. Westward from this it was necessary to use R. A. R. control. The lines were to be spaced ¼ mile apart out to the 50 fathom curve and ½ mile apart from the 50 to 100 fathom curves. Consequently, every effort was made to carry the work to the fifty fathom curve with visual fixes. To accomplish this it was necessary to utilize the exceptionally clear days, especially the afternoons, on the outer limits of the work.

The triangulation stations had been established by a party under Lt. Bean a previous season. The topographic party recovered these and built signals over them. Additional signals and natural objects were located by the topographic party. It was found necessary to cut in hill tops and prominent bare spots on the shore line, etc., with sextants from the vessel for control on the outer limits of the visual control work. A list of these objects and their accepted positions is attached to this report.

For a detailed descriptions of the R. A. R. control see the Chief of Party's special report, "Radio Acoustic Ranging, Season of 1928".

All soundings were taken with the fathometer except a few vertical casts to check the fathometer, and several lines over the shoals. See the Chief of Party's Season's Report for a description of the fathometer corrections. It would seem that a simpler way of applying fathometer corrections out to the 100 fathom curve would be to take several comparisons with a vertical cast each day in the various depths sounded that day, and from these draw up a curve of corrections. In other words correct the fathometer in a similar manner as the tube soudings.

The soundings at the junction of sheet 4 with the inshore sheets agree very well except for an occasional discrepancy of two fathoms. The junc-

DES. REP. SHEET 4.

tion with sheet 5 is not so good. The soundings that agree with those on sheet 5 were check marked. Those that appeared to be in error were enclosed with a line and a note made as to their probable error. Some of these were on sheet 5 and some on sheet 4. They were not rejected in the records as there was no reason for doing so other than their disagreement. These enclosed soundings should not be inked. Preference should be given the FR soundings over those obtained with FW.

The following is a list of the above doubtful soundings:

	Between Pos.	and Pos.
48, 48, 47, 47, 46,	77L	78L
43, 43,	52J	53J
46, 45, 45,	110A	111A
45, 45,	84A	85A
54, 52, 51.	132A'	133A'
46, 49.	114A'	115A'
49, 49, 48, 47, 46, 46, 46, 46, 46, 46, 47, 47, 47.	51A'	49A'
48, 48, 47, 47.	25A'	28A'
107, 105, 105, 102, 99.	18A'	19A'
117, 126, 126,	123A'	125A'
181, 181, 181,	12C'	13C'
96, 97, 95, 94, 93, 93, 90,	62V	65V
138, 128, 116.	14V	15V
116, 109.	97U	98U
83, 87, 91, 108, 113, 128, 129, 132, 133, 135, 131, 124, 118, 109.	49H'	54H'

Very few cross lines were run on the sheet as the junction at numerous line ends and the adjacent parallel lines on different days were considered as sufficient checks.

An automatic tide gauge was kept in operation throughout the season at Newport, Oregon. The records from this gauge were used for the reduction of soundings on sheet 4.

There is a series of shoals extending in a southwesterly direction from Yaquina Head and terminating in Heceta Bank. The first of these on this sheet is centered in approximately latitude 44°32' and longitude 124° 24'. This shoal is locally known as* The Stone Wall. It was developed by running at slow speed back and forth over it and watching the fathometer carefully. A boat was anchored on the southern end of the shoal and used as a guide in running the lines. The bottom on the shoal is rocky and very uneven. For this reason it was difficult to tell stray flashed on the fathometer from soundings. The flashes that occurred more than once consecutively at the same place were recorded. If similar flashes were obtained in passing over the spot a second time, they were called good soundings. Three overlays

* now called Stonewall Bank

DES. REP. SHEET 4.

were used on which to plot the development.

The least soundings found on (Stone Wall Shoal) Stonewall Bank are as follows:

13 fathoms on the southern end of the shoal.
14 fathoms on the central portion of the shoal.
13 fathoms on the northern end of the shoal.

The next shoal is at latitude 44°17' and longitude 124°40'. The least depth found on this rocky shoal was 33 fathoms.

The other shoal in this line on this sheet is in latitude 44°10' and longitude 124°48'. Like the others the bottom is rocky and very irregular. The least depth found here was 25 fathoms.

O. W. Swanson
Chief of Party

STATISTICS

HYDROGRAPHIC SHEET NO. IV.

Date 1928	Day Letter	Vol.	Bomb Pos.	Log Pos.	Visual Pos.	Stat. Miles	F. R.	F. W.	Sonic	Leadline	Boat
May 22	A	1			136	91.0	447				PIONEER
23	B	1			146	106.5	722				"
26	C	2			19	21.0	191				"
June 5	D	2			119	79.0	408				"
6	E	2			143	111.0	478				"
7	F	3			191	103.0	904				"
8	G	3&4			220	89.0	1115				"
12	H	4			71	50.0	248				"
13	J	4			154	101.0	510				"
14	K	5			52	33.0	178				"
15	L	5			52	78.0	250				"
19	M	5			11	6.5	35				"
21	N	5			6	4.0	19				"
July 1	P	5			117	90.0	431				"
2	Q	5&6			130	107.0	497				"
12	R	6	5	16	45	72.0	362				"
17	S	6	35	41		110.0	495	21			"
18	T	6&7	26	31	44	122.0	575	15			"
19	U	7	25	38	67	126.0	686	7			"
25	V	7&8	37	49		110.0	531	18			"
26	W	8	11	19		39.0	162				"
30	X	8	19	28	6	66.0	306	13			"
31	Y	8	35	58		104.0	431	35			"
Aug. 1	Z	8&9	19	24	69	48.0	209	10			"
2	A'	9	9	45	68	149.0	638	25			"
3	B'	9&10	8	5	37	55.0	249	11			"
7	C'	10	43	77	4	136.0	513	69			"
10	D'	10	16	16		51.0	229				"
13	E'	10	17	24	1	50.0	245	6			"
14	F'	10	9	9		24.0	116	6			"
15	G'	11	8	10		24.0	131				"
16	H'	11	32	37		95.0	475				"
17	J'	11	12	26		50.0	252				"
21	K'	11	9	14		27.0	140				"
22	L'	11&12	38	65	17	100.0	614	22			"
23	M'	12	27	19		83.0	532	2			"
			439	651	1945	2711.0	14224	260			

ACCEPTED POSITIONS OF HYDROGRAPHIC SIGNALS

SHEET 4 - Scale 1 : 80,000.

	Latitude °	'	m.	Longitude °	'	m.
Green	44	49	(626) 1226	124	03	(273) 1046
Peak 2		48	(245) 1607		10	00
Wet		45	(1108) 744		02	(168) 1152
Sharp		44	(943) 909		10	(1068) ---
Sand		42	(594) 1258		03	(573) 748
Wood		41	(1472) 380		01	(136) ---
Clump		32	(846) 1006		02	(1029) 296
Tuf		23	(602) 1250		00	(783) 546
Cone		20	(59) 1493		03	(667) 662
Tit		16	(487) 1365		02	(44) 1287
It		13	(1604) 248		06	(292) 1040
Gab		10	(640) 1212		06	(179) 1154)
Wall		07	(1822) 30		07	(988) 347
Dar		04	(211) (1641)		07	(1297) 38

REPORT OF COMMANDING OFFICER'S INSPECTION
OF RECORDS AND SHEETS

Sheet 4 and its records have been examined and approved by me. Each individual record was not examined thoroughly but all doubtful entries found by the various officers when working on the records were examined and acted on. The officers were instructed to examine the records closely when they plotted the positions, reduced the soundings, and put the soundings on the sheet.

I examined the junction of sheets closely and made notes regarding discrepancies found and for which there was no apparent reason for altering to make the soundings check. Tracings were made of the junctions and these tracings are forwarded with the sheets.

It seems to me a better way to determine the fathometer corrections is to take several careful comparisons daily with a vertical cast. Many comparisons were taken during the past season. These comparisons were used to correct the soundings for the boat sheet. The difference between the vertical cast and the fathometer reading corrected for temperature and salinity of the water and base between oscillator and hydrophones was not constant, altho of course theoretically they should be.

As noted in the descriptive reports the greatest difficulty with the fathometer was over 95 fathoms. There seemed to be interference of the sound and its echo from 95 to 115 fathoms. Later in the season, soundings at the depth were taken with the fathometer emitting the outgoing sound at every other revolution. In this way echos returned between the outgoing impulses, and better results were obtained. The white light should not be used where soundings with an accuracy of less than 20 fathoms is required.

O. W. Swainson

O. W. Swainson,
H. & G. Engineer,
Chief of Party.

Form 167

11—683

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

Washington, 5/16, 1929

Respectfully referred to Charts (F.R.)

The attached list marked "Overlay Sheets" was enclosed in a letter received from CO. Str. Pioneer. With reference to it the letter stated:

"There is also enclosed a list of overlay sheets for Sheet No. 4. It is requested that this be pasted in the first sounding volume of Sheet No. 4."

signed O. W. Swainson
Comdg Pioneer.

4895

F. S. Bordue

See copy Vol. 1

C. & G. SURVEY
L. & A.
MAY 15 1929
Acc. No.

4895

OVERLAY SHEETS, SHEET NO. 4.

Development of Shoals.

Sheet 4a.

Position Nos. :

90 - 112 F
140 - 191 F
1 - 11 G
38 - 56 G
67 - 98 G
140 - 142 G

Sheet 4b.

Position Nos.:

113 - 134 F
11 - 17 G
31 - 38 G
56 - 67 G
98 - 100 G
103 - 106 G
109 - 117 G

Sheet 4c.

Position Nos.:

135 - 140 F
18 - 30 G
100 - 103 G
118 - 139 G

Shoal Soundings.

Position Nos.	Day	Least Depth (fms)	Sheet
105	F	17	4a
110 - 111	"	16	4a
122 - 123	"	17	4b
126 - 130	"	14	4b
138 - 139	"	14	4c
142 - 145	"	15	4a
149 - 151	"	14	4a
161 - 182	"	19	4a
168 - 171	"	17	4a
179 - 180	"	14	4a
185 - 187	"	15	4a
189 - 190	"	13	4a
6	G	19	4a
10 - 11	"	19	4a
16 - 17	"	17	4b
19 - 20	"	19	4c
22 - 24	"	16	4c
32 - 33	"	19	4b
52 - 53	"	18	4a
85 - 86	"	16	4a
99 - 100	"	13	4b
100 - 102	"	16	4c
113	"	16	4b
119 - 121	"	15	4c
131 - 132	"	16	4c
134 - 139	"	15	4c
141 - 142	"	16	4a
115 - 116	F	15	4b

See copy Vol 1

2cm

For Files of Field Records Section

June 24, 1929

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in
12 volumes of sounding records for

HYDROGRAPHIC SHEET 4895

Locality: Oregon Coast

Chief of Party: O. W. Swainson in 1928
Plane of reference is Mean lower low water, reading
2.1 ft. on tide staff at Newport
~~ft. below B. M.~~

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.

Section of Field Records.
Report on Hyd. Sheet No. 4895.

Heceta Head to C. Foulweather - Offshore, Oregon.
Surveyed in 1928.
Instructions dated Mar. 3, 1928 (Pioneer)

Chief of Party O.W. Swainson. Protracted by R.C. Rowse
Surveyed by O.W.S. Plotted by R.C.R.
Verified and Inked by G. Pissegari.

1. The records conform to the requirements of the General Instructions.
2. The plan and character of development fulfill the requirements of the Genl. Instructions.

3. The plan and extent of development satisfy the Specific Instructions.

4. The sounding line crossings appear good where shown and from such indications it might be safely assumed where crossings were ~~not made~~ lacking that the work was correspondingly good.

5. The usual depth curves can be completely drawn.

6. The junction with H. 4758 (North) appears to be satisfactory.
" " " H. 4894 (East) is not yet finished.
" " " H. 4882 (East) appears to be satisfactory.
" " " H. 4883 (East) " " " "
" " " H. 4896a (South) " " " "

The junction with H. 4888 (West) in some parts of the sheet was in disagreement. These questionable areas were also noticed by the Chief of Party, who made remarks on them in the descriptive report (which see). This information was noted on the sheet and helped in determining the accepted soundings, which were approved by the Chief of Field Records Section.

7. The development of the shoals on sheet appears to have been fully developed.

Report on Hyd. Sheet No. 4895.

8. Three soundings located near Lat 44°35', Long. 124°25' on Chart 5802 fall in with soundings on H 4895 of much less depths, and are as follows:

57 fath. practically coincides with a 30 fathom sounding. *
54 " " " " " 40 " "
60 " " " " 34 " "

The bottom in this area is in general clayey is quite uniform and not suggestive of any deeps, and recommendation is made to give preference to the soundings of the latest survey.

9. Character and scope of the surveying — good.
Field drafting — good

10. Reviewed by G. Piccegiri Oct. 17, 1929

A 24 fath. sounding appears on Chart 5802 and falls in among sdgs of 42 faths depth. This sounding is noted on the chart as "reported". It would appear from inspection of the bottoms and surrounding sdgs. that the 24 fath does not exist.

The 24 fm. sounding noted above (44°28'-124°26') was reported by the S.S. Shoshone in 1911 (letter 386, 1911). As the report is indefinite and the new survey indicates the non-existence of the 24 fm sounding in the position shown, the Chief, T.R. Section recommends its removal from the chart.

E.P.T.

App.
A.M. Sobieralski

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 4895

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

Number of positions on sheet 3035

Number of positions checked 250

Number of positions revised 20

Number of soundings recorded 14484

Number of soundings revised 80

Number of signals erroneously plotted or transferred .....

Date: Oct. 18, 1929

Cartographer: G. Ruggari

Form 537

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

C. & G. SURVEY
L. & A.
MAY 15 1929
Acc. No.

REG. NO. 4895

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. 4895

State Oregon

General locality ~~Northern Oregon Coast~~ Yaquina Bay

Locality ~~Yaquina Bay~~ Heceta Head to Cape Foulweather-Offshore

Scale 1 : 80,000 Date of survey May 22 - Aug. 23, 19 28

Vessel Steamer PIONEER

Chief of Party O. W. Swainson

Surveyed by O. W. Swainson - R. D. Horne

Protracted by R. C. Rowse

Soundings penciled by R. C. Rowse

Soundings in fathoms ~~feet~~

Plane of reference M. L. L. W.

Subdivision of wire dragged areas by

Inked by

Verified by

Instructions dated March 3, 19 28

Remarks:

U. S. GOVERNMENT PRINTING OFFICE

1 B.S
Statistics, Hyd
List of Hyd. Signals
12 Vols

NAUTICAL CHARTS BRANCH

SURVEY NO. H 4895

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
Dec. '54	6056	H.W.B	~~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.