4882 4883
4890 4894

Diag. Cht No. 5802 & 5902

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic
4882 4890

Field No. ..... Office No. 4883 4894

LOCALITY

State Oregon

General locality Coos Bay to

Locality Cape Foulweather

1928

CHIEF OF PARTY

C. W. Swanson

LIBRARY & ARCHIVES

DATE .....

B 1870 1 (1)++

4883 4894
4882 4890

4882, 4813 and
4890, 4894

Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

....., *Director*

State: Oregon

not required

DESCRIPTIVE REPORT

~~*Topographic*~~
Hydrographic | *Sheet No.* Field 3 #7 - 4894, #8 - 4882, #15 - 4890

LOCALITY

Coos Bay to Cape Foulweather

(4 Sheets)

1928

CHIEF OF PARTY

O.W. Swainson

GOVERNMENT PRINTING OFFICE

D E S C R I P T I V E R E P O R T

TO ACCOMPANY

4894 4882 4883 4890

HYDROGRAPHIC SHEETS NOS. 3, 7, 8, AND 15.

O R E G O N C O A S T

SURVEY VESSEL PIONEER

O. W. SWAINSON - COMD'G

1 9 2 8

DESCRIPTIVE REPORT

To accompany hydrographic sheets Nos. 3, 7, 8, 15.

Offshore Hydrography-Coast of Oregon

Hydrographic sheets 3, 7, 8, and 15 are part of the work executed by the party on the vessel PIONEER, O. W. Swainson Commanding, during the season of 1928 off the coast of Oregon under instructions dated March 3, 1928.

The scale of the sheets is 1 : 40,000. They extend from a junction with the 1927 season's work on the north to Cape Arago, and from a junction with the inshore hydrography out to the fifty fathom curve.

Visual fixes on triangulation and topographic signals, and natural objects cut in by sextant angles were used to control the work. The triangulation was executed by a party the previous season. The topographic signals were established by a shore party temporarily detached from the vessel. This party recovered the triangulation stations and built all the signals. The hydrographic signals were cut in from the vessel. Some of the cuts were plotted on these sheets and some on the 1 : 80,000 offshore sheets.

Advantage had to be taken of all clear days to work on these sheets, as it was desired to carry the work out to the fifty fathom curve on them. The exceptionally clear days and the afternoons were utilized to run the outer portion of the sheets. The visibility was very poor after the month of August. The best seeing was during June. In October and November the R. A. R. had to be carried farther inshore than desired for the best results.

An automatic tide gauge was kept in operation thruout the season at Newport, Oregon. Auxiliary stations were established at Umpqua River and Coos Bay. The Tide Division in the Office computed the various reductions and planes to be used. See their attached letter.

All the soundings were taken with the fathometer on the PIONEER except a few less than fifteen fathoms which were obtained with the hand lead. A speed of approximately ten knots was maintained while sounding. When developing shoals the speed was reduced to four to six knots. Frequent comparisons were taken between the fathometer and vertical casts. These comparisons were tabulated and in conjunction with temperatures and salinities of the water were used as a basis to correct the fathometer. For a detailed description of these corrections and their manner of derivation see the Chief of Party's Season's Report.

Cross lines were not run throughout the sheets as it was thought the junction of ends of lines and the running of adjacent lines on different days or under different conditions was a sufficient check.

No shoals were found on any of these four sheets. In several places the

DES. REP. SHEETS 3, 7, 8, & 15.

junction with the adjoining outer sheet is not perfect. The soundings that appear to be in error were enclosed with a line and a note made regarding them. They were not rejected as no reason for doing so was found other than the fact that they do not check adjacent soundings. These doubtful soundings should not be inked.

The following is a list of such soundings:

Sounding	From Pos.	To Pos.
Sheet 3.		
51, 51	128 D	129 D.
55, 56, 54	154 E	155 E.
Sheet 7.		
43.	88 L	89 L.
44.	85 L	
All soundings	114 K	118 K.
Sheet 8.		
None		
Sheet 15.		
55, 55, 54, 53, 50, 46	68 G	70 G.
51.	15 A	16 A.

Coast Pilot notes are attached to sheets 9 and 5.

Respectfully submitted.

O. W. Swainson

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

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS OFFICE:

REFER TO: 25-EF

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

January 4, 1928.

To: The Commanding Officer,
U. S. Coast and Geodetic Survey
Str. PIONEER,
P.O. Box 2512 San Francisco, Calif.

From: The Director,
U. S. Coast & Geodetic Survey.

Subject: Tidal Data.

In compliance with your letter of November 9, 1928, there are furnished herewith the tabulated hourly heights of the tides for tide stations on the coast of Oregon as follows:

Newport, Yaquina Bay, April 24 to November 28, 1928.
At Jetty, Umpqua River, September 7 to 15th, 1928.
Coos Bay, C. G. Station, Coos Bay, Sept. 18 to Oct. 26, 1928.

For the reduction of soundings the records from the gauge in operation nearest to working ground shall be used.

The difference in the time of tide over the whole region is so small as to be negligible. The tide at Coos Bay occurs on the average only about 15 minutes earlier than at Newport and at Umpqua River it is only about five minutes earlier than at Newport. On the outside coast at Newport the tide does not appear to occur more than ten minutes earlier than at the tide station.

The mean range of tide at Newport is one foot greater than at Umpqua River and Coos Bay. Therefore if it is necessary to use the Newport tides for the reduction of inshore soundings more than half way to Umpqua River, allowance should be made for the difference in range but if possible this should be arranged so as not to split the day's work.

The mean range of tide and the mean lower low water datum on tide staff derived for each of the above tide stations are as follows:

	Mean Range Feet	Mean Lower L. W. Feet
Newport, Yaquina Bay	6.0	2.2
At Jetty, Umpqua River	5.0	3.1
Coos Bay C.G. Station, Coos Bay	5.0	3.8

(Signed) R. S. Patton
Acting Director.

Enclosures.

STATISTICS

HYDROGRAPHIC SHEET NO. III.

Date 1928	Day Letter	Vol.	Bomb Pos.	Log Pos.	Vis. Pos.	Stat. Miles	Soundings F.R.	Soundings F.W.	Soundings Sonic	Soundings Lead line	Boat
Apr. 26	A	1		71		27.8	228				PIONEER
27	B	1&2		202		100.0	708				"
May 2	C	2		243		126.0	715				"
3	D	3&4		216		121.0	691				"
4	E	4		190		110.0	619				"
8	F	4		170		94.0	815				"
9	G	4&5		230		139.0	1014				"
11	H	5&6		224		140.0	693				"
16	J	6&7		197		119.0	698				"
17	K	7		206		119.0	875				"
22	L	8		66		41.0	307				"
23	M	8		68		44.5	235				"
25	N	8		126		72.0	538				"
26	P	9		183		113.0	636				"
27	R	9		80		41.0	390				"
June 22	S	9		15		10.0	57				"
Totals				2487		1417.3	9219				

STATISTICS

HYDROGRAPHIC SHEET NO. VII.

Date	Day Letter	Sndg. Vol.	Bomb Pos.	Log Pos.	Visual Pos.	Miles	F.R.	F.W.	Sonic	Leadline	Boat
June 5	A	1			72	45	368				PIONEER
6	B	1			72	42	248				"
7	C	1			23	12	97				"
12	D	1			101	66	429				"
13	E	2			87	52	409				"
14	F	2			124	61	428				"
15	G	2&3			169	106	604				"
19	H	3			223	141.5	1028				"
20	J	4			137	91	729				"
21	K	4			124	93	609				"
22	L	4 & 5			56	41	271				"
27	M	5			140	108	586				"
29	N	5			89	66	442				"
TOTAL					1470	924	6248				

STATISTICS

HYDROGRAPHIC SHEET NO. VIII.

Date	Day Letter	Sndg. Vol.	Bomb Pos.	Log Pos.	Visual Pos.	Miles	F. R.	F. W.	Sonic	Leadline	Boat
June 27:	A	1	Cuts to Hydro. signals on this day.								
29:	B	1			82	63.0	376				
July 1:	C	1			110	75.0	483				
2:	D	2			69	44.0	293				
10:	E	2			172	106.0	649				
13:	F	3			93	52.0	322				
16:	G	3			34	16.0	82				
18:	H	3			20	8.0	65				
Nov. 1:	J	3			41	16.0	26			138	
20:	K	3 & 4			142	103.0	648				
21:	L	4			152	108.0	608				
22:	M	4			107	72.0	459				
Totals					1022	663.0	4011			138	

ACCEPTED POSITIONS OF HYDROGRAPHIC SIGNALS

SHEET 3 - Scale 1 : 40,000.

	Latitude			Longitude		
	°	'	m.	°	'	m.
Green	44	49	(626) 1226	124	03	(273) 1046
Peak 2		48	(247) 1605		01	00
Sharp		44	(943) 909		01	(1068) —
Sand		42	(594) 1258		03	(573) 748
Wood		41	(1472) 380		01	(136) —
Clump		32	(846) 1006		02	(1029) 296
White		29	(352) 1500		04	(198) 1128
Tut		23	(615) 1239		00	(776) —

ACCEPTED POSITIONS OF HYDROGRAPHIC SIGNALS

SHEET 7 - Scale 1 : 40,000.

	Latitude	Longitude
	° ' m.	(1033)
Clump	44 32 1008	124 02 292
	(602)	(791)
Tuf	23 1250	00 537
	(1509)	(253)
Roof	23 343	04 1075
	(359)	(667)
Cone	20 1493	03 662
	(487)	(44)
Tit	16 1365	02 1287
	(543)	(877)
Tin	18 1309	06 453
	(1604)	(292)
If	13 248	06 1040
	(640)	(179)
Gab	10 1212	06 1154
	(1832)	(940)
Wal	07 20	07 395
		(1280)
Dar	04 1684	07 55

ACCEPTED POSITIONS OF HYDROGRAPHIC SIGNALS

SHEET 8 - Scale 1 : 40,000.

	Latitude			Longitude		
	*	'	m.	*	'	m.
Peak 18		(1238)			(90)	
	44	07	614	124	00	1244
Wall		(1822)			(987)	
		07	30		07	347
Dar		(211)			(1297)	
		04	1641		07	38
Peak 15		(1153)			(831)	
	43	57	699		00	507
Peak 25		(1714)			(1007)	
		57	138		01	331
Up		(554)			(42)	
		51	1298		00	1298
Peak 26		(1488)			(932)	
		47	364		08	409
Peak 27		(1508)			(1197)	
		46	344		09	145

ACCEPTED POSITIONS OF HYDROGRAPHIC SIGNALS

SHEET 15 - Scale 1 : 40,000.

								(605)
Ver	43	46	1764		124	09	737	
				(712)				
			(828)			10	635	
Square		32	1024					
			(936)					(1012)
Sky		26	916			11	338	
								(1311)
Scat		21	187			17	40	

REPORT OF COMMANDING OFFICER'S INSPECTION

OF RECORDS AND SHEETS

Sheets 3, 7, 8, and 15 and their 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 15 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.

For files Field Records Section

June 17, 1939

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 4882

Locality: Oregon Coast, Alsea Bay - Cape Perpetua

Chief of Party: O. W. Swainson in 1938
Plane of reference is mean lower low water, reading
2.1 ft. on tide staff at Newport
[redacted]

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:

Chief, Division of Tides and Currents.

ecm

FOR FILES OF FIELD RECORDS SECTION

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 4883

Locality: Oregon Coast off Heceta Head

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, Oregon
[redacted]

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.

Chief, Division of Tides and Currents.

Sec. of Field Records June 11, 1929. EAL

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in
3 volumes of sounding records for

HYDROGRAPHIC SHEET 4890

Locality: Oregon Coast, north of Coos Bay.

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, Oregon.
~~ft. below Datum~~

* Allowance made for range of tide at place of sounding operations.

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 J. Whitney

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. 11-DRM

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

November 19, 1929.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4882

Heceta Head to Alsea Bay, Oregon

Surveyed in 1928

Instructions dated March 3, 1928 (PIONEER)

Fathometer Soundings

Chief of Party, O. W. Swainson.

Surveyed by O. W. S.

Protracted and soundings plotted by K. G. Croxby.

Verified and inked by J. T. Jarman.

1. The work conforms to the General Instructions and specific instructions.

2. The results obtained on this survey are very satisfactory and very few problems presented themselves. There are two lines on the sheet that differed materially from the adjacent lines and from cross lines. These were lines 15 A to 21 A (approx. lat. 44° 24 1/2', long. 124° 10') and 114 K to 118 K (approx. lat. 44° 10 1/2', long. 124° 20'.) In both cases the soundings were accepted since no satisfactory reason could be adduced for rejecting them. Their retention on the sheet will also serve to bring out the fact that the fathometer occasionally gives erratic results.

   The note made on the smooth sheet by the Chief of Party regarding the first line that the "fathometer was working badly", was not considered sufficient to reject them since no such notation was made in the records at the time the soundings were taken, and was probably a conclusion reached from a study of adjacent soundings.

3. The junctions with the inshore sheets H. 4880 and H. 4881 are satisfactory. The differences between the surveys are in depths of less than 15 fathoms and since this is the accepted limit for fathometer soundings, the expedient was

adopted of omitting on the offshore sheet (H. 4882) all fathometer soundings of less than 15 fathoms that differed with the hand lead soundings on H. 4880 and H. 4881 by more than 1 fathom.

The junction with the offshore sheet H. 4895 is satisfactory, as well as that with H. 4883.

The junction with H. 4894 on the north will be taken up when that sheet is reviewed.

4. There is no additional work necessary within the limits of this survey.

5. No cartographic problems are raised by this survey.

6. Reviewed by A. L. Shalowitz, November, 1929.

Approved:

A. M. Sobieralski
Chief, Section of Field Records (Charts)

T. S. Borden
Chief, Section of Field Work (H. & T.)

STATISTICS

HYDROGRAPHIC SHEET NO. XV.

Date 1928	Day Letter	Vol.	Bomb Pos.	Log Pos.	Visual Pos.	Stat. Miles	Soundings F.R.	Soundings F.W.	Soundings Sonic	Soundings Leadline	Boat
Sept. 10	A	1			71	51.0	424				PIONEER
19	B	1			73	41.0	310				"
24	C	1 1 2			41	26.0	177				"
Oct. 18	D	1 - 2			78	39.0	321				"
19	E	2			83	43.0	330				"
25	F	2			120	56.0	588				"
31	G	2 - 3			160	93.0	639				"
Nov. 1	H	3			29	20.0	184				"
19	J	3			59	25.0	175			76	"
23	K	3			7	4.0	49				"
30	L	3			27	5.0	114				"
tals					748	403.0	3311			76	

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 4882

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

Number of positions on sheet .1428.

Number of positions checked .124.

Number of positions revised .11.

Number of soundings recorded .4248.

Number of soundings revised .42.

Number of signals erroneously plotted or transferred .None.

Date: Aug. 14, 1923

Cartographer: Junius T. Jarman

Aug. 14, 1928

Section of Field Records
Report on Hydrographic Sheet No. 4882
Heceta Head to Alsea Bay, Oregon
Surveyed in June, 1928.
Instructions dated March 3, 1928

Chief of Party — O. W. Swainson
Surveyed by — O. W. S.
Protracted and Soundings plotted by — K. J. Crosby
Verified and Inked by — J. T. Jarman

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

2. The plan and character of development conform to the requirements of the General Instructions

3. The sounding line crossing discrepancies are within the limit.

4. The bottom is regular and only the 20 fathom curve appears on the sheet.

5. The field platting was completed to the extent prescribed by the General Instructions.

6. The junctions with H 4880 and H 4881 on the East are good but there is a slight disagreement in shoals and

since the work on the adjoining sheets is lead line while the work on this sheet is fathometer, it was thought advisable by the verifier to leave the questionable junction soundings in pencil for further study by the reviewer. These soundings will be found on sheets H4880 and H4881. Most of them in question are below the 15 fathom limit for fathometer soundings.

6. The character and scope of the survey are excellent.

Remarks:

The following soundings are doubtful and were left in pencil:

Sounding	From Pos.	To pos.
43	84L	84L
44	85L	
all	114K	115K

Inked. A.C.S.

(See descriptive report)

Soundings from 14A to 21A were questioned by C.W.S and the verifier ~~too~~ left them in pencil. Inked. A.C.S.

Soundings between 30d and 31d were plotted on a greater arc than is customary. The verifier justifies this plotting by (1) that the course was not changed until two soundings after the position had been taken, (2) that the soundings are so numerous that the swing as indicated would be necessary to plot them providing the ship maintained anywhere near the same speed on the curve that it had on a straight line, (3) that the soundings as plotted agree better with the adjoining work.

Report by, J. T. Barman

Section of Field Records

Report on Sheet No. 4883

Surveyed in 1928 – Instructions dated 3/3/28

Chief of Party – O. W. Swainson

Surveyed by – O. W. Swainson

Protracted by – C. Le Fever

Soundings plotted by – C. Le Fever

Verified and inked by – J. H. Church

1. The records conform to the requirements of the general instructions, except that the character of the bottom is not shown at the top of each record page. ✓

2. The plan and character of the development fulfil the requirements of the general instructions. ✓

3. The usual depth curves can be completely drawn, except the 50 fathom curve. (Adjoining sheet takes care of this. J.Z.S.)

4. The field plotting was completed to the extent prescribed by general instructions. ✓

5. The office draftsman replotted the following tabulated positions ✓

Day	Position
B	40, 41, 52
C	58
D	65

Doy	Position
E	10, 34, 72, 149
F	17
G	19
J	40
K	25
L	1, 15, 22, 23, 24, 140
M	41, 107

6. Overlap was transferred to H-4881 H-4884 and H-4885 but the junctions were not examined as the soundings transferred were at or below the border limit the fathometer (15 fathoms) The examination of these junctions is referred to the reviewer.

The junction of this sheet with H-4882 is satisfactory

7 Remarks:-

The position of triangulation station (Elmer Mill 1928) was picked in an erroneous position, but the correct position had been used in plotting the hydrography. This station was picked in its correct position and verified from the original records of computation.

The position of triangulation station (Brushy Hill 2, 1908) was plotted from data taken from the publication of triangulation in Northern California and Oregon.

There is a discrepancy in the

names identifying the same river. On chart 5802 this name is Siltcoos River, but on T-4416 it is Siltcoos River.

In the vicinity of positions 27 and 29 M the fixes are weak.

Aug 15, 1929

Respectfully submitted
J.A. Church

P. J.

positions 1E to 2E and 9D to 11D and the intervening soundings are left in pencil as they are doubtful. Final disposition of these positions and soundings are reserved to the reviewer.

J.A. Church

Inked. A.L.S.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 4883

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

Number of positions on sheet . . 991 .

Number of positions checked 499 .

Number of positions revised . 21 . .

Number of soundings recorded 4145

Number of soundings revised . 3 . .

Number of signals erroneously plotted or transferred . . . 1 . . . .

Date: Aug. 15, 1929

Cartographer: J.H. Church

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

AND REFER TO No. 11-DRM

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

November 18, 1929.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4883

Umpqua River to Heceta Head, Oregon

Surveyed in 1928

Instructions dated March 3, 1928 (PIONEER)

Fathometer and Hand Lead Soundings

Chief of Party, O. W. Swainson.

Surveyed by O. W. S.

Protracted and soundings plotted by C. Le Fever.

Verified and inked by J. H. Church.

1. The work conforms to the General and specific instructions with the exception that there are a number of fathometer soundings in depths less than 15 fathoms. However, there are only a few where the uncorrected echo soundings are less than 15 fathoms. These soundings usually occur near the eastern limit of the work where it would have been impractical to change to hand lead. This could have easily been obviated by carrying the inshore work far enough offshore to define the 15 fathom curve and then begin the offshore sheet with fathometer soundings.

2. A comparison was made of closely spaced adjacent lines. In general there is a good agreement and smooth curves are possible. However, there is an area in the vicinity of Lat. 43° 59', Long. 124° 14' where discrepancies of as much as 4 fathoms in 40 fathoms are noted between adjacent lines of different days. An attempt was made to reconcile these differences, with the thought that the solution might possibly affect other portions of the sheet. No satisfactory explanation could be deduced and it was assumed that either there was an error made in the control on E or F day or that the fathometer was giving erratic results on one or the other of those days. The area is not a critical one and the charts will not be materially affected by retaining the discordant soundings.

3. The junctions with H. 4881 and H. 4884 are generally satisfactory. The differences between the surveys are in depths of less than 15 fathoms and since this is the accepted limit for fathometer soundings, the practical expedient was adopted of omitting on the offshore sheet (H. 4883) all fathometer soundings of less than 15 fathoms that differed with the hand lead soundings on H. 4881 and H. 4884 by more than 1 fathom. This rule was also applied to soundings within the sheet when differences were found between the two methods of surveying.

   The junction with H. 4885 presented no problem, since the nearest line to the inshore work was a hand lead sounding line and no differences were noted.

   The junctions with H. 4882, H. 4890, and H. 4895 are satisfactory.

   The junction with H. 4896a will be taken up when that sheet is reviewed.

4. Attention is called to the Commanding Officer's note in the descriptive report regarding the determination of fathometer corrections by comparisons with vertical casts. This seems a wise procedure. By correcting the fathometer sounding for temperature, salinity and base line and then applying a further correction for difference between the corrected fathometer sounding and the vertical cast we are at once making allowance for all errors inherent in the instrument itself. This same procedure is followed today in correcting tube soundings by comparisons with vertical casts.

5. Reviewed by A. L. Shalowitz, November, 1929.

Approved:

A. M. Shalowitz

Chief, Section of Field Records (Charts)

F. S. Borden

Chief, Section of Field Work (H. & T.)

FIELD RECORDS

AUG-16-1929.

REPORT ON SHEET NO. H-4890

CHIEF OF PARTY — O.W. SWAINSON — SURVEYED IN — 1928

PROTRACTED BY — C. LE FEVER — SURVEYED BY — O.W. SWAINSON

VER. & INKED BY — W. H. BAMFORD. — SOUNDINGS PLOTTED BY — C. LE FEVER

1./ The records were found to conform to the requirements of the General Instructions.

2./ The plan and character of development fulfill the requirements of the General Instructions.

3./ The sounding line crossings were adequate.

4/ It was possible to draw the fifty and twenty fathom curves almost completely. The development showed only a small portion of the ten fathom curve.

5./ The field plotting was completed to the extent prescribed in the General Instructions

6./ The protracting was excellent, but the spacing of the soundings was very, very poor - and incentitated replotting 14% of the total number of soundings.

7./ The junctions of the adjacent sheets were satisfactory.

8./ Triangulation station "LITE" was on sheet as "LIGHT" - The name "LITE" was used in the records therefore it was added to the sheet.

Station "DEAD" in records is actually triangulation station "DEADMAN" on sheet.

Between pointings 21 G and 25 G — erroneous soundings had been plotted in field; these soundings were replaced by the correct ones in the records

Respectfully Submitted

Warren H Bamford

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

AND REFER TO No. 11-DRM

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4890

Coos Bay to Umpqua River, Oregon

Surveyed in 1928

Instructions dated March 3, 1929 (PIONEER)

Fathometer and Hand Lead Soundings

Chief of Party, O. W. Swainson

Surveyed by O. W. S.

Protracted and soundings plotted by C. Le Fever

Verified and inked by W. H. Bamford

1. The records conform to the requirements of the general and specific instructions with the exception that there is a noticeable lack of bottom characteristics.

2. In adjusting the work with the inshore surveys H. 4885, H. 4886 and H. 4887, and H. 4891, the same procedure was adopted as was followed on H. 4882 and H. 4883. That is, in depths less than 15 fathoms the fathometer soundings were omitted where they differed by more than 1 fathom from the hand lead soundings. An exception was made, however, where the sounding was marked O.K. in the record.

   The junction with H. 4883 as well as with the offshore survey H. 4896a was found to be satisfactory. There are a number of discrepancies amounting to about 4% between soundings on H. 4896a and those on H. 4890 in the vicinity of lat. 43° 38'. Since this difference occurs in only one portion of the sheet and is not characteristic of the entire survey, no further study was made thereof.

   The junction with H. 4886 is generally satisfactory except that in the vicinity of lat. 43° 26' to lat. 43° 28' there is a paucity of soundings at the junction of the two sheets.

3. Comparison with old survey

   A junction was effected with the old survey H. 4217 (surveyed in 1922 with the Electric Sounding Machine with trolley gear). Some differences are noted, particularly

north of lat. 43° 23'. Almost without exception, the fathometer soundings on the new survey are shoaler by 2 to 4 fathoms, in depths ranging from 15 to 40 fathoms, than the old survey. Since no critical depths are involved and since there are many cases where the two surveys are in agreement, no further study was made. T he differences may be due to changes in the bottom, to a tendency to record the minimum reading of the fathometer, to the trolley method of the 1922 survey giving slightly deeper depths; or it may be due to a combination of the last two. No question of control is involved since both surveys used shore signals.

In connection with the trolley method used on the 1922 survey it should be noted that, as nearly as can be determined, the same method was used as was used by the same vessel in the work on the east coast during the seasons of 1924 and 1925. (See descriptive reports for H. 4216 and H. 4523). It was there found that the trolley soundings were consistently deeper from 2 to 12 feet than soundings taken with the hand lead. (See review for H. 4437 and H. 4533) The method was later investigated in the field during the 1925 season and its use discontinued. In the present comparisons, while the differences ranged from 2 to 4 fathoms, part of this might be due to the tendency to read the fathometer soundings too shoal. As the depths involved are not critical and since the development on the later survey is adequate, no corrections were applied to the trolley method soundings as was done on the 1924 work (H. 4437). The work at the junction should be treated as set out in the following paragraph.

4. Cartographic Problems

The only cartographic problem raised by this survey is what soundings to use where there is a conflict between the old and the new work. And it is recommended that in such cases the new work be applied first to its limits. Beyond this a ~~random~~ selection should be made from the old work that will avoid indications of abrupt changes in depth at the junction of the two surveys.

5. Reviewed by A. L. Shalowitz, November, 1929.

Approved:

A. M. Sobieralski

Chief, Section of Field Records (Charts)

F. S. Borden

Chief, Section of Field Work (H. & T.)

H-4894

Chief of Party - O. W. Swainson
Surveyed by - O. W. Swainson
Protracted by - E. H. Bernstein
Sounding plotted by - J. F. Fay
Verified and inked by John G. Ladd and J. Fleming

1. The records conform to the requirements of the General Instructions.
2. The plan and character of development fulfill the requirements of the General Instructions
4. The sounding line crossings are adequate
5. The depth curves could be drawn
6. The field plotting was complete to the extent prescribed in the General Instructions.
7. The junctions with adjacent sheets are satisfactory except that the inshore areas all seem to be slightly deeper by about 1 to 2 fathoms. The inshore curve (20 fath.) was changed in a number of places because of this junction discrepancy.

8. Further surveying is unnecessary as the area is fully developed.

9 (a) The area on the extreme west (the farthest from shore) was very difficult to prolonged as the sheet has been subjected to considerable distortion and the position do not seem to checks with those as plotted by the field. The Variation was found to be about the same amount and in the same direction so it was deemed best to leave it unchanged, (The distortion being fairly uniform within the area).

(b) The records lacks sufficient data in regard to Turn both as to when the Turn were made.

(c). The number of bottom characteristics seem to be far to few for the area covered.

9. (d). The first 3 volumes of the work were verified and ~~ibed~~ by Mr J. Fleming and the remaining 6 volumes were verified and ~~ibed~~ by J.S. Ladd. who completed the sheet. Mr Fleming being unable to do so because of illness

10. The Field plotting was very well done, (Position plotted accurately and ~~th~~ soundings penciled in neatly and correctly.) and no part of the work had to be done over.

11. Three signals (Tops) which were used in ~~the~~ records were not plotted on ~~the~~ ~~sta~~ smooth sheet by the field party.

John S. Ladd
Jr Coast Eng.

Jan. 13, 1930

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

AND REFER TO No. 11-WSW

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

August 26, 1930.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4894

Alsea Bay to North of Cape Foulweather, Oregon

Surveyed in 1928

Instructions dated March 3, 1928. (Pioneer).

Fathometer soundings

Chief of Party, O. W. Swainson.

Surveyed by O. W. Swainson.

Protracted by E. H. Bernstein.

Soundings plotted by J. F. Fay.

Verified and inked by J. Fleming, J. G. Ladd.

1. The records conform to the requirements.

2. This work conforms to the general and specific instructions with the exception that there are a few fathometer soundings in depths under 15 fathoms. These occur on the extreme inshore limit of the work, where the change from fathometer to hand lead soundings could hardly have been made for one or two soundings. It is suggested in a previous review that this could be avoided by carrying the inshore work past the 15 fathom curve.

3. The cross lines cross well, and in general the agreement between adjacent lines is good.

4. The information is sufficient for drawing the usual depth curves. The curves are irregular owing to slight differences in depths and the twenty fathom curve is badly broken between Lat. 44° 42' and Lat. 44° 44' by poor agreement between the fathometer soundings and the inshore sheet, H. 4738.

5. The junction on the north with H. 4756 is satisfactory.

   a. At the junction on the N. W. with H. 4758 (1927), the agreement is not good. There are differences of from one to four fathoms, causing irregularity in the 50 fathom curve.

   b. The junction on the west with H. 4895 is satisfactory. The general agreement is good but differences of about three

fathoms in depths of 50 fathoms were noted near Lat. 44° 42'.

c. The junction with H. 4878, the northernmost inshore sheet is satisfactory. The fathometer soundings are consistently about one fathom shoaler.

d. At the junction with H. 4749 (1927), there is an overlap of about half a mile. The fathometer soundings are shoaler and there are differences of about three fathoms near the twenty fathom curve.

e. The junctions with H. 4879 and H. 4880 are satisfactory. The depths check fairly well but the fathometer soundings are still slightly shoaler.

f. The junction with H. 4882 on the south is satisfactory.

6. The usual amount of field plotting was well done by the field party. The protracting on the western limits of the work, does not check closely. This is probably due to distortion, as some positions, which were corrected when the work was first verified do not check at the present time, when tested with the same protraction.

7. Character and scope of surveying --- very good.

a. There are no dangers or shoal features within the limits of this sheet. The ground has been uniformly covered and the results are good. Vertical casts and bottom characteristics should have been obtained at more frequent intervals..

8. No additional work is necessary.

9. Reviewed by R. L. Johnston, January 18, 1930.

Approved:

A. M. Schwalbe

Chief, Section of Field Records (CHARTS)

F. S. Borden

Chief, Section of Field Work (H. & T.)

ecm

For Files of Field Records Section

June 18, 1929

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in
9 volumes of sounding records for

HYDROGRAPHIC SHEET 4994

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.

Form 537

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

REG. NO. 4882

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. 7

REGISTER NO. 4882

State Oregon

General locality ~~Northern Oregon Coast~~ Heceta Head

Locality ~~Alsea Bay to Cape Perpetua~~ Heceta Head to Alsea Bay

Scale 1 : 40,000 Date of survey June 5 - June 29, 19 28

Vessel Steamer PIONEER

Chief of Party C. M. Swainson

Surveyed by C. M. Swainson

Protracted by K. G. Crosby

Soundings penciled by K. G. Crosby

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, 1928

Remarks:

U. S. GOVERNMENT PRINTING OFFICE

Form 537

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.

Field No. 8

REGISTER NO. 4883

State Oregon

General locality ~~S. W. Oregon Coast~~ Siuslaw River

Locality North of Umpqua River to Heceta Head ~~Heceta Head to south of Siuslaw River~~

Scale 1 : 40,000 Date of survey June 27 - Nov. 22, 1928

Vessel Steamer PIONEER

Chief of Party C. M. Swainson

Surveyed by C. M. Swainson

Protracted by C. LeFever

Soundings penciled by C. LeFever

Soundings in fathoms ~~feet~~

Plane of reference M. L. L. W.

Subdivision of wire dragged areas by

Inked by

Verified by

Instructions dated March 5, 1928

Remarks:

U. S. GOVERNMENT PRINTING OFFICE

Form 537

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4890

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. 15

REGISTER NO. 4890

State Oregon

General locality ~~Southwest Oregon Coast~~ Umpqua River

Locality Coos Bay to Umpqua River

Scale 1 : 40,000 Date of survey Sept. 10 to Nov. 30 1928

Vessel Steamer PIONEER

Chief of Party O. W. Swainson

Surveyed by O. W. Swainson

Protracted by C. LeFever

Soundings penciled by C. LeFever

Soundings in fathoms ~~feet~~

Plane of reference M. L. L. W.

Subdivision of wire dragged areas by

Inked by Warren N Bamford.

Verified by Warren N Bamford.

Instructions dated March 3, 1928

Remarks:

U. S. GOVERNMENT PRINTING OFFICE

11-WSW

August 26, 1930.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4894

Alsea Bay to North of Cape Foulweather, Oregon

Surveyed in 1928

Instructions dated March 3, 1928. (Pioneer).

Fathometer soundings

Chief of Party, O. W. Swainson.

Surveyed by O. W. Swainson.

Protracted by E. H. Bernstein.

Soundings plotted by J. F. Fay.

Verified and inked by J. Fleming, J. G. Ladd.

1. The records conform to the requirements.

2. This work conforms to the general and specific instructions with the exception that there are a few fathometer soundings in depths under 15 fathoms. These occur on the extreme inshore limit of the work, where the change from fathometer to hand lead soundings could hardly have been made for one or two soundings. It is suggested in a previous review that this could be avoided by carrying the inshore work past the 15 fathom curve.

3. The cross lines cross well and in general the agreement between adjacent lines is good.

4. The information is sufficient for drawing the usual depth curves. The curves are irregular owing to slight differences in depths and the twenty fathom curve is badly broken between Lat. 44° 42' and Lat. 44° 44' by poor agreement between the fathometer soundings and the inshore sheet, H. 4736.

5. The junction on the north with H. 4756 is satisfactory.

   a. At the junction on the N. W. with H. 4758 (1927), the agreement is not good. There are differences of from one to four fathoms, causing irregularity in the 50 fathom curve.

   b. The junction on the west with H. 4895 is satisfactory. The general agreement is good but differences of about three

fathoms in depths of 50 fathoms were noted near Lat. 44° 42'.

c. The junction with H. 4878, the northernmost inshore sheet is satisfactory. The fathometer soundings are consistently about one fathom shoaler.

d. At the junction with H. 4749 (1927), there is an overlap of about half a mile. The fathometer soundings are shoaler and there are differences of about three fathoms near the twenty fathom curve.

e. The junctions with H. 4879 and H. 4880 are satisfactory. The depths check fairly well but the fathometer soundings are still slightly shoaler.

f. The junction with H. 4882 on the south is satisfactory.

6. The usual amount of field plotting was well done by the field party. The protracting on the western limits of the work, does not check closely. This is probably due to distortion, as some positions, which were corrected when the work was first verified do not check at the present time, when tested with the same protraction.

7. Character and scope of surveying --- very good.

a. There are no dangers or shoal features within the limits of t is sheet. The ground has been uniformly covered and the results are good. Vertical casts and bottom characteristics should have been obtained at more frequent intervals..

8. No additional work is necessary.

9. Reviewed by R. L. Johnston, January 18, 1930.

Approved:

Chief, Section of Field Records (CHARTS)

Chief, Section of Field Work (H. & T.)

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 4894

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

Number of positions on sheet	2630
Number of positions checked	480
Number of positions revised	20
Number of soundings recorded	9885
Number of soundings revised	15
Number of signals erroneously plotted or transferred	none

Date: Jan 11th 1930

Cartographer: John D. Fould

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 4890

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

Number of positions on sheet 739

Number of positions checked 121

Number of positions revised 7

Number of soundings recorded 3293

Number of soundings revised 455

Number of signals erroneously plotted or transferred NONE

Date: Aug 16 1929

Cartographer: J Warren H Bamford.

H-4882 Applied to chart 6056 Feb 1955

H.4890 Some soundings added to Reconstr 6004 to conform to slight extension of west limit H.W.B Oct. '54

H.4883 Add a few soundings at north border of Reconstr 6004 H.W.B Oct. '54

H.4894 Add about a doz. dots at west edge of Cht 6055 H.E.M. Dec. '54

H.4894 Completely applied to new chart 6056 H.W.B. Dec. '54