

4749

Diag. Cht. No 5902

Form 504
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
L. & A. MAR 20 1928
State: Oregon Acc. No.
<small>11-5613</small>
DESCRIPTIVE REPORT.
Sheet No. 4749
LOCALITY:
Yaquina Head
Yaquina Head to Otter Rock
1927
CHIEF OF PARTY:
R.F. Luce

4749

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

4749

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. ["] 4749

State OREGON

General locality . . . ~~NORTHERN~~ OREGON Yaquina Head . . .

Locality ~~VICINITY OF~~ YAQUINA HEAD to Otter Rock

Chief of party R. F. LUCE

Surveyed by I. E. RITTENBURG & RALPH L. PFAU

Date of survey AUGUST TO OCTOBER

Scale 1 : 20,000

Soundings in FATHOMS & FEET

Plane of reference . . MEAN LOWER LOW WATER

Protracted by . . I.E.R. . . Soundings in pencil by L.P.S. . . .

Inked by *J. Fleming* Verified by *A. F. Apr 21-1928*

Records accompanying sheet (check those forwarded):

Des. report, Tide books, Marigrams, Boat sheets,

Sounding books, Wire-drag books, Photographs.

Data from other sources affecting sheet

Remarks:

DESCRIPTIVE REPORT

TO ACCOMPANY LAUNCH HYDROGRAPHIC SHEET

No. 11 5749

VICINITY OF YAQUINA HEAD

DESCRIPTIVE REPORT

To Accompany Launch Hydrographic Sheet 11, vicinity of Yaquina Head.

Authority

This work was called for under Instructions from the Director, dated March 8, 1927. This work was done during the months of August, September, and October, 1927, one day in each of these three months.

Limits

This sheet represents part of the inshore hydrography executed by the Launch Wisdom during the field season of 1927, and extends from Latitude 44 -44- 30 to about Latitude 44 - 39. North of Yaquina Head the work was carried offshore to about 21 fathoms, and south of Yaquina Head to about the 13 fathom curve. Sounding lines are spaced at about 200 meters.

Control

The control for " A " day (South of Yaquina Head) consisted of three third order triangulation stations and several intermediate points located by means of sextant cuts taken from these triangulation stations on natural and prominent objects. This work was done in advance of the topography and was done primarily to establish bottom characteristics and the 10 fathom curve off Yaquina Head to be used in the location and establishment of a hydrophone station, and consequently the hydrography was carried out to the 12 or 13 fathom curve. The remainder of the sheet was controlled by third order triangulation stations supplemented by plane table locations of other natural and artificial objects.

Bottom Characteristics

North of Yaquina Head, the bottom is generally of gray sand with a few scattered patches of rock bottom, gradually sloping toward the beach. No attempt was made to sound the area east of the two rocks between Latitude 44 - 43 and Latitude 44 -45.5 since the area is covered with scattered kelp patches and many sunken rocks are reported to exist there. The engineer in charge of the launch deemed it unsafe to take the " Wisdom " in there due to her draft which was $5\frac{1}{2}$ feet.

South of Yaquina Head the bottom is of gray sand except for a narrow ledge of rock reef, the extent of which is shown by the full green line on the boat sheet. The average width of this reef is approximately 160 meters. It is thought that this reef is a continuation of Yaquina Reef shown on chart # 6058 and that this narrow reef will be found from Yaquina Bay Bar to Yaquina Head.

General Description Of The Coast

From Cape Foulweather to Yaquina Head the shore line consists of low yellow and white sandstone cliffs, broken in places. A high railroad trestle, abandoned by the U. S. Government, and used during the war to tap the spruce timber in the vicinity of Siletz Bay, is plainly visible from seaward. Yaquina Head is easily distinguished by two conical grassy hills. The seaward hill is 360 feet high and the inshore hill is about 410 feet high. From Yaquina Head to Yaquina Bay the shore is of broken yellow cliffs with low water sand beaches. There are numerous cottages along the beach here and from Sig. White to Yaquina Bay the cottages become thicker.

Landmarks and Dangers to Navigation.

Otter Rock lies about $3\frac{1}{4}$ Northward from Yaquina Head and about $\frac{1}{2}$ mile offshore. The survey of 1927 shows this rock to be 11 feet high. About $1\frac{1}{4}$ miles N x W true from Otter Rock is another rock somewhat larger and 56 feet high. Extending inshore from a line between these two rocks is a large kelp field with many sunken rocks and rocks awash. This area is considered to be very foul. About $\frac{1}{2}$ mile S. true of Otter rock is a long low narrow ledge of rocks about 2 feet high. A long kelp patch extends from Otter Rock to this ledge and the area inshore from this kelp patch is considered foul. About $\frac{7}{8}$ of a mile N x E true from Yaquina Head Light House is a cluster of sunken and visible rocks. About $1\frac{1}{2}$ miles S x W true from Yaquina Head Light House is a 3 fathom spot of rocky bottom. This 3 fathom spot is on the narrow reef mentioned in the paragraph dealing with bottom characteristics. On this reef are also several lumps of 5 and 6 fathoms. Iron Mt. is a very prominent mountain bare on top and with timber on the sides to within 200 feet of the top. It lies about $1\frac{1}{2}$ miles North easterly true from Yaquina Head Light House and is about 654 feet high.

Currents.

Little or no current was experienced south of Yaquina Head and a slight South easterly current was found north of the head. The currents here are not as strong as those further north and seem to be governed by the prevailing winds.

Aids to Navigation.

Yaquina Head Light House, Yaquina Head Light House Old Tower, now used as a Coast Guard Lookout Tower, Otter Rock, the rock about $1\frac{1}{4}$ miles north of Otter Rock, Iron Mt. are the most important landmarks on the sheet.

A black and white vertical striped whistle buoy in about 15 fathoms of water $1\frac{7}{8}$ miles SW true from Yaquina Head Light House Old Tower.

Black can Buoy # 1 marking S. end of Yaquina Reef.

Channel ranges to cross the bar.

Black can buoy #3 marking N. end of entrance channel.

Red can buoy # 2 marking end of the submerged S. jetty.

Fixed red light on Sputh jetty.

Coast Guard Lookout Tower (Yaquina Head L. H. Old Tower)

Inner channel buoys.

Channels.

The bar at the entrance to Yaquina Bay is carefully surveyed each summer by the U. S. Engineers and consequently no attempt was made to survey the channels. The least water obtained in the summer of 1927 was 13 feet at mean lower low water. The bar consists of hard sand bottom with patches of rocks. These rocks are being blasted out in an attempt to deepen the channel. There is also a north channel and a south channel both of which avoid the bar but are very dangerous to a stranger since they both necessitate local knowledge in avoiding reefs. The south channel can not be used in heavy weather due to the fact that in entering by means of this channel the vessel is exposed to a beam sea.

The bar breaks heavily in a moderate swell, especially when the swells are from the west or southwest, but is fairly smooth during the summer months when the prevailing winds and sea are from the Northwest. Considerable difficulty was experienced after the first of September as the ground swells caused the bar to break almost constantly. The bar is very dangerous

when breaking since the break is on the quarter and not dead astern and should not be attempted at this time.

Anchorage.

The only protected anchorage or docking facilities within the limits of this sheet are those of Yaquina Bay, which is fully described in the Coast Pilot. A little protection may be found from Northwest weather in the bight formed by Yaquina Head.

Methods Employed

The hand lead was used throughout the sheet. The sounding chair was rigged up about 9 feet above the water line making it possible to obtain 16 fathom soundings with the launch proceeding at about 4 knots. In depths to about 23 fathoms it was possible to obtain up and down soundings by throwing out the clutch about 20 seconds before the sounding was taken. The notes C. O. and C. I. in the record book refer to clutch out and clutch in. The notes H. L. and H. R. refer to hard left and hard right.

J. E. Pillsbury
J. H. J. Coy.

T A B L E O F S T A T I S T I C S
Sheet 11

Date-1927	Letter	Volume	Positions	Soundings	Miles, Statute	Vessel
Aug. 22	A	1	146	529	26.0	WISDOM
Sept. 19	B	1	138	484	27.0	"
Oct. 8	C	1	118	359	24.0	"
TOTAL			402	1,372	77.0	

Soundings are in fathoms referred to Mean Lower Low Water on the auto-portable tide gauge at Garibaldi, Oregon.

Mean Lower Low Water on Staff is 5.66 feet.

Tide arrives on Outside Coast 45 minutes earlier than at Garibaldi, Oregon, and 75 minutes earlier than at Tongue Point, Oregon.

Tides were tabulated in Washington Office and consequently highest and lowest tides observed are not known.

March 26, 1928.

(11)

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
1 volumes of sounding records for

HYDROGRAPHIC SHEET 4749

Locality: COAST OF GIBSON

Chief of Party: E. F. Ince, 1927.
Plane of reference is M L L W
5.6 ft. on tide staff at Caribaldi.

Condition of records satisfactory except as checked below:

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

G. H. H. H.

Chief, Division of Tides and Currents.

FIELD RECORDS

HYD SHEET No 4749

Surveyed in 1927

Chief of party R.F. Duce — Surveyed by I.E. Kittenberg & R.L. Pfan
 Protracted by I.E.R. — Soundings plotted by R.T.S
 Verified and inked by J.F. Fleming

- 1 Records rather carelessly kept — Angles and ranges sometimes running into remark column and time figures often difficult to read
- 2 Plan and character of development fulfill requirements of G.I.
- 3 Sounding line crossings are inadequate
- 4 Hydro. signal 'shot' was inaccurately plotted and because cuts were taken from this signal to locate signals DAVE GAB & WHITE these signals were also inaccurate. The faint outline of the former position remains on the smooch sheet.
 Replotting the hydro signals resulted in the shifting of positions for 'A' day in a generally southwesterly direction. Attention is called to the fact that the two vertical sounding lines beginning at 115-A and 129-A appear to be superimposed, yet there is a wide difference in the sounding values.
 From 115-A up, the soundings have been inked but from 129-A up they have been plotted in pencil. Increasing the angular measurement of GAB WHITE by the shifting of these signals has caused the vertical line of soundings beginning with 115-A to be pushed out while the vertical line of soundings beginning with 129-A whose fix is OLD YAK WHITE, remains as it was.
 Attention is called to the sounding $3\frac{7}{8}$ fath. at 115-A and the sunken rock observed at Position 63-A. More information concerning this rock should have been given.

J.F. Fleming
 April - 21 - 1928

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

June 20, 1928.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4749

Yaquina Head to Otter Rock, Oregon

Chief of Party, R. F. Luce.

Surveyed by I. E. Rittenburg and R. L. Pfau.

Protracted by I. E. Rittenburg.

Soundings plotted by L. P. S.

Verified and inked by J. Fleming.

1. The spacing of lines in general conforms to the requirements of the General and Specific Instructions. The plan of development is satisfactory but actual development is inadequate. It is doubtful whether all shoals are discovered.
2. Certain shoal indications, marked in pencil on the sheet, require further development. (Instructions covering this have been sent to the Chief of Party.)
3. The soundings 115 A to 121 A appear very irregular, yet examination of the records shows no likelihood of a blunder. Some of the cross lines give slight indications of shoal, and it is believed by the reviewer that this line actually follows a narrow submarine ridge culminating in the rock indicated at 63 A-64 A. Further development should be made.
4. The control is very weak, resulting in material uncertainties in position of soundings, especially the critical soundings mentioned above.
5. More explicit notes regarding the character of the foul along-shore area should have been made, as well as notes relating to the strange shoal soundings shown on the sheet. Depth on the rock at 63 A should have been given.
6. It is recommended that the area covered on "A" day be resurveyed using stronger and more reliable control, and better development.

7. Aside from the above, there is no particular criticism, except the doubt regarding discovery of all shoals. The depth curves appear somewhat irregular, yet are acceptable.
8. Reviewed by E. B. Roberts, Jr. H. & G. Engineer.

Approved:

Chief, Section of Field Records (Charts)

J. S. Borden

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

