

4613

4613

Form 504

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

C. & G. SURVEY
L. & A
APR 1 1927
Acc. No.

State: *Oregon*

11-5613

DESCRIPTIVE REPORT.
C 4613

Hydrographic Sheet No. **4613**

LOCALITY:
Gape Falcon
~~*Northern Oregon*~~
Arch Cape to
~~*Castle Rock - Nehalem River*~~
Launch star
sheet c

1926

CHIEF OF PARTY:
R. F. Luce

DESCRIPTIVE REPORT

To accompany Launch Hydrographic Sheet "C", Cape Falcon, Ore.
(All directions are from true north and distances are in statute miles).

INSTRUCTIONS

This work was called for under Instructions from the Director dated April 17, 1926.

LIMITS

This sheet represents part of the hydrography executed by the launch STAR during the field season of 1926 and extends southerly in Latitude $45^{\circ} 48' 45''$ to a point $1/2$ mile below the mouth of the Nehalem River. It covers the area between the inshore limit of the ship's work and the beach.

The control for the hydrography consisted of third order triangulation, planetable traverse signals, and hydrographic signals cut in by sextants from the launch.

GENERAL CHARACTER OF SHORE LINE

The description under this heading will be confined largely to the appearance of the beach near the high water line and to rocks and reefs lying close inshore.

Reference is made to the descriptive report covering the topographic sheet made this season for the same stretch of coast. The general appearance of the headland is adequately described in the recent edition of the Coast Pilot.

South of Arch Cape, the shore line becomes steeper and more irregular

2

as Cape Falcon is approached. There are numerous rocks along the beach at Cape Falcon, the most prominent of which is about 35 ft. high and forms the western extremity of the headland. From this rock, Falcon reef, awash at half tides, makes out 0.2 mile in a W.N.W direction. The reef breaks off into deep water, its end being marked on the smooth sheet by sunken rock symbols.

At the south point of Cape Falcon, a rock awash at high tides lies 0.1 mile W.S.W from topographic signal "PIN", and marks the northern entrance to Smugglers Cove. The north and south sides of this cove are bounded by sheer cliffs and rocks while the eastern end terminates in what is locally known as Short Sand Beach. There are no buildings here and heavy timber extends to the highwater line.

The base of Neah-kah-nie Mountain south of Smugglers Cove is very steep and rugged, and is surrounded by rocks and high cliffs. The only important detached rocks are those marked by station "INK" and "HIGH", the former about 15 ft. high and marking the southern entrance to the Cove. Neither of these rocks are very noticeable from the westward owing to the background. Rock "HIGH" is 84 ft. in height. A rock bare at low tides lies about 30 yards N.W. of signal "HIGH".

The steep boulder beach south of Neah-kah-nie Mt. ends in the vicinity of signal "SOUTH". A regular sand beach extends from this point to the southern limits of the sheet. Nehalem Beach terminates in a long, low sand spit at the Nehalem River. Over this bare sand spit can be seen the cliffs and timber east of the River. From the Nehalem River to triangulation station "MOUTH", the beach is regular, backed by low grassy sand dunes.

BOTTOM CHARACTERISTICS

The bottom is uniformly sandy and slopes gradually to the beach from

see below under dangers. 3

the 15 fathom curve, which approximately parallels the beach except in the vicinity of Cape Falcon where it skirts the base of Falcon Rock. A rock awash at high tides lies 0.5 mile S.W. of Castle Rock. Deep water lies close to this rock awash on all sides, the same being true of Falcon Rock and Castle Rock.

It will be noted that soundings show that the reef off the point at the north entrance to Smugglers' Cove extends out about 0.2 mile, S.W. from the high water line. The entrance to Smugglers' Cove appears to be clear and presents a gently sloping sand bottom from the 15 fathom curve to the beach. Deep water exists close to the beach at the base of Neah-kah-nie Mountain. From this point to the lower limit of the sheet, the bottom is very even except for a small sand ridge paralleling the beach about 0.5 mile off the high water line. A description of the Nehalem Bar is made in this report under the heading CHANNELS.

DANGERS TO NAVIGATION

A. Inshore dangers,

The outer end of Falcon Reef, awash at half tide, lies 0.5 mile N.E. of Falcon Rock.

There are two rocks awash at low tide in the north side of Smugglers' Cove and present a real source of danger to small craft anchoring in the cove. Deep water exists close up to these rocks.

B. Outlying Dangers:

Castle Rock, 157 ft. in height is 0.6 mile W.N.W. of Arch Cape. It is oblong in shape with its major axis approximately in a east-west direction.

A rock awash at half tides lies 0.5 mile S.W. of Castle Rock.

Falcon Rock, 15 ft. in height, is 0.6 mile W.S.W of signal "DJ3"

Deep water lies close to all of the above rocks and sounding showed no jutting reefs in any direction.

CURRENTS

Currents are in general southerly during the summer but depend largely on the strength and direction of the wind, northerly set usually existing in southerly weather. Strong southerly currents were encountered in the vicinity of Falcon Rock and between there and the beach.

AIDS TO NAVIGATION

There are no aids to navigation within the limits of this sheet. All landmarks of importance are described in the Coast Pilot.

CHANNEL LINES

Clear channel apparently exist between all outlying dangers and the beach and between Falcon Rock and Falcon Reef, but owing to the character of these abruptly rising rocks, these channels cannot be recommended from the results of sounding lead alone.

The channel between the jetties at the entrance to the Nehalem River is of no importance to shipping. The bar breaks except in the best weather and the channel is very narrow, It is reliably reported that the Corps of Engineers has discontinued surveys of the bar owing to its unimportance and dangerous condition. It is not recommended even for small fishing craft.

ANCHORAGES

The only good protected anchorage on this sheet is that for small craft in Smugglers Cove during northwest weather. The holding ground is good. Cape Falcon and Falcon Rock are excellent landmarks in identifying the Cove. The northern entrance should not be approached too closely. Craft are especially warned against anchoring too closely to the north shore on

account of the two rocks awash at low tide east of signal "PIN". These rocks are steep-to with deep water outside. For description of Nehalem River see remarks under CHANNELS in this report.

NEW NAMES

Castle Rock - well known local name due to resemblance to a huge castle. The triangulation name is "SQUARE".

Falcon Reef - so named because of its nearness to Cape Falcon.

Smugglers Cove- a well known local name for the cove just south of Cape Falcon.

TIDAL DATA

When available, tide reducers obtained from the Garibaldi gauge were used. When these were not available, reducers obtained from the Fort Stephen or Tongue Point gauges were used. The proper time corrections were made in each case.

The time differences are as follows:

Open coast to Jetty - - - - - 95 minutes.

Open coast to Fort Stephen - - - - - 35 minutes.

Open coast to Tongue Point- - - - - 75 minutes.

Open coast to Garibaldi - - - - - 45 minutes.

The time differences between gauges were determined by simultaneous observations at the gauges.

Statistics for Launch Sheet "C"

| Date, 1926 | Letter | Volume | Positions | Soundings | Miles (Statute) | Vessel | |
|------------|--------|---------|-----------|-------------|--------------------|--------------|--------|
| August | 23 | A, or a | 1 | 65 | 179 | 10.0 | "Star" |
| | 24 | B, or b | 1 | 66 | 188 | 8.0 | |
| | 27 | C, or c | 1 | 118 | 356 | 18.5 | |
| Sept. | 1 | D | 1 & 2 | 100 | 275 | 13.2 | |
| | 2 | E | 2 | 177 | 291 | 17.5 | |
| | 2 | F | 2 | 10 | 31 | 0.7 | |
| | 8 | G | 2 | 121 | 164 | 12.1 | |
| | 9 | H | 2 | 159 | 161 | 15.2 | |
| | 10 | J | 2 & 3 | 117 | 165 | 13.0 | |
| | 18 | K | 3 | 63 | 194 | 9.0 | |
| | | | | <u>1006</u> | <u>2004</u> | <u>117.2</u> | |

Unit for soundings: Fathoms.

Plane of reference: Mean lower low water.

Location of gauge:

Plane of reference, reading on gauge: ft.

Lowest tide observed, " " " : ft.

Highest tide observed, " " " : ft.

(Over)

List of Positions
Launch Hydrographic Sheet "C"

| Name | Latitude | D.M. (Meters) | Longitude | D.P. (Meters) | Estimated Height (Feet) | Description |
|-------|----------|------------------|-----------|------------------|-------------------------------|---|
| Tip | 45 46 | 918 | 123 58 | 733 | 30 | Highest point of detached rock. |
| Dub | 45 46 | 141 | 123 59 | 18 | 35 | Highest point of large rock at western end of Cape Falcon. |
| Pin | 45 45 | 1297 | 123 58 | 952 | 86 | Highest point of pinnacles of low at entrance to Smugglers' Cove. |
| Block | 45 45 | 1577 | 123 58 | 122 | 20 | Center of flat face of large rock in slide. |
| Ink | 45 45 | 572 | 123 58 | 182 | 15 | Highest point of detached rock. |
| High | 45 45 | 159 | 123 58 | 100 | 85 | Ditto. |
| Gull | 45 44 | 1260 | 123 57 | 1092 | 15 | Highest point of white detached rock. |
| Tri | 45 44 | 1066 | 123 57 | 572 | 15 | West end of long light colored triangle on vertical cliff. |
| Clay | 45 44 | 105 | 123 56 | 1179 | 15 | Center of eroded bank. |

Scaled by: J.W.H.
Checked by: R.L.P.

June 23 1927.

(11)

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
volumes of sounding records for

5

HYDROGRAPHIC SHEET

4615

Locality:

COAST OF OREGON.

Chief of Party:

Plane of reference *R. F. Luce, 1926.*

ft. on tide staff at *L L W*

S. G.

Garibaldi.

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. D.

Chief, Division of Tides and Currents.

Verification of Hydrographic Sheet No. 4613

The fixes up to 660 were verified by R.C. Bolstad and those remaining by Newton Stewart. There were no errors found.

The soundings were verified and inked by Newton Stewart. The regulations in general were followed but there were a number of errors in the fractions of fathoms.

The usual depth curves were drawn.

The overlap joining sheets 4612 and 4614 were plotted and inked, and a portion of the overlap for sheet 4637 was plotted in pencil by Newton Stewart. The remainder of the overlap for 4637 is to be done yet.

The junctions with the sheets as far as plotted are good.

The title on this sheet is in pencil, to be inked yet.

The records conform to general instructions but there were only three bottom characteristics given for this sheet.

The plan and character of development fulfills the general instructions.

The sounding line crossings are adequate.

The field plotting was completed according to the general instructions.

Newton Stewart

9/10/27

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

AND REFER TO No. 3-DEM

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

October 12, 1927.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4613

Cape Falcon, Oregon

Surveyed in 1926

Instructions dated April 17, 1926 (GUIDE)

Chief of Party, R. F. Luce.

Surveyed by F. W. Hough

Protracted by F. W. Hough

Soundings plotted by J. C. Bose

Verified by R. C. Bolstad and A. N. Stewart.

Inked by A. N. S.

1. The records conform to the requirements of the General Instructions except that only 2 or 3 bottom characteristics are noted in the entire 3 volumes. Nothing is mentioned in the sounding records as to the character of bottom in Smugglers Cove, the only anchorage on the sheet.
2. The plan and character of the development fulfill the requirements of the General Instructions.
3. The plan and extent of development satisfy the specific instructions except that the lines were not carried in to the beach. Considering the dangerous character of the coast, this may not be so important. However, at the entrance to the Nehalem River, it would seem that the work should have been carried closer inshore, in view of the fact that the Engineers have discontinued making surveys here (see Descriptive Report, page 4). There are indications of marked changes in depth having taken place since the Engineers survey of 1925 (blueprint 19928), so that it will be difficult to combine the present survey with the latest Engineers' information.
4. A comparison of soundings on adjacent lines as well as at crossings shows the work to be up to standard.

5. The usual depth curves, except those inshore, could be drawn. From the entrance to Nehalem River to about 2 miles south of Smugglers Cove, the 18 foot curve could not be completed. A narrow sand ridge with depths less than 18 feet parallels the entire shore here, and if possible the eastern limits should have been determined.
6. The usual field plotting was done by the field party and was satisfactory.
7. The junctions with the contemporary adjacent surveys are good.
8. No additional work is necessary unless as mentioned in Paragraphs 3 and 5. The sunken rock with $5 \frac{5}{6}$ fathoms over it (position 3 E) 1080 meters 116° from Falcon Rock should have been developed since it lies close to the northern entrance into Smugglers Cove, the only good anchorage on this sheet (see Descriptive Report, page 4).
9. Character and scope of field operations - very good.
Field drafting - very good.
10. Reviewed by A. L. Shalowitz, September, 1927.

Approved:

Chief, Section of Field Records (Charts)

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

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

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.

4613

U. S. Coast and Geodetic Survey.

Register No. 4613

State Oregon

General locality Cape Falcon, Oregon Coast

Locality . . . Arch Cape
~~Castle Rock to Nehalem River~~

Chief of party R. F. Luce, H. & G. Engineer

Surveyed by Floyd W. Haugh, Jr. H. & G. Engineer

Date of survey August 23 - September 18, 1926

Scale 1:20,000

Soundings in Fathoms

Plane of reference M. L. L. W.

Protracted by F. W. H. . Soundings in pencil by J. C. Bose

Inked by A. Newton Stewart Verified by R. C. Bolstad
A. N. Stewart

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:

Launch Star Hydrographic Sheet "C"