3819b

Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

State: S. E. Alaska

11—3613

DESCRIPTIVE REPORT.

Hyd. Sheet No. 3819b

LOCALITY:

Dall Island -

Off shore

1920

CHIEF OF PARTY:

E. H. Pagenhart

3819b

DESCRIPTIVE REPORT

Off Shore Hydrography, Off Dall Island,

S.E. Alaska, 1920

U.S.S. LYDONIA

E.H. Pagenhart, Chief of Party

DESCRIPTIVE REPORT

Off Shore Hydrography, Off Dall Island, S.E. Alaska,

LYDONIA - 1920.

This sheet on a scale of 1/120000, embraces within its limits the outside coasts of Dall, Suemez, Baker and Noyes Islands and extends westward to include the 1000 fathom curve, which has not as yet been determined. This sheet was laid out and sounding done on it by the EXPLORER in 1917 and the present seasons work is a continuation of that work.

The general plan followed in sounding was to alternate tubes with up and down casts and to have the submarine sentry towed continually at a depth of about seventeen fathoms. The tubes and sentry to indicate the presence of dangers and the up and down casts to furnish depths to be shown on the chart. The tube soundings are all shown on the ship's boat sheet in red and the up and down casts in black. Frequent errors of from 3 to 5 fathoms were noted in the tube depths when taken simultaneously with up and down casts; therefore they should not be considered in drawing depth curves except in a general way. The lines were run one mile apart except in broken areas where splits were run.

Five of the breakers shown on the published chart have been verified. The one about a mile southwest of Nut is the most conspicuous one in the vicinity and the rock is visible at extreme low water; the breaker south from Cliff at Cape Felix breaks only occasionally; the breaker in latitude 55 06.5', Longitude 133 20' does not break at the higher tides unless a swell is running, which is true of the breaker Northeast of it in latitude 55 07.5', Longitude 133 18.5'; at low water they generally break. There may or may not be kelp on them. The breaker shown in 27 fathoms of water in latitude 55 00', longitude 133 18.0' was observed to break only once during the season. At that time, with a heavy Westerly, it broke heavily and was observed for an hour at a distance of 300 meters. The rock is evidently small as there is only one break which occurs within a radius of twenty meters. At the close of the season, we were still waiting for a favorable day to investigate it.

The area between Suemez Island and Wolf Rock is so irregular that only by the use of a drag will there be any assurance that the dangers have been located. The numerous breakers in this vicinity indicate the possible dangers.

The shoreline of the bight on the South coast of Suemez Island was rerun between Cape Felix and Δ Nut. The sounding lines run were insufficient to develop this area but they do show it to be foul. The small cove in the Northwestern end seems to be clear. The ship anchored East of the point and off the entrance to this cove on one occasion.

In making Sea Otter Harbor, Cone peak, immediately South from the entrance is a good land mark. A mid channel course between Entrance Rock and Juel Point avoids the sunken rock to Northward of Entrance Rock. Steer for the low gap at the head of Manhattan Arm. In passing between Gate Island and Nellag Island favor Gate Island. Between Clear Point and Way Point favor that shore as it is steep to and you avoid the rock off Camp Island and the one off Low Rock. The channel between Way Point and Channel Island is clear for vessels anchoring at the head of the bay. In taking anchorage in the bight to Northward of Channel Island, round the Eastern end of Channel Island not closer than 200 meters and anchor North of the middle, as the North shore of the bight is clear. A noticeable absence of wind will be found in this bight.

At Port Bazan the large rocky point, which Δ Bazan is located ~~on~~, is conspicuous because of its light color and is a good land mark for the North entrance. The four fathom spot off the north entrance was found covered with kelp this season. It was carefully and thoroughly sounded over and no less depth than shown on the chart was found.

No current observations were made. The ship was hove to during the night in the vicinity of the 75 fathom curve ten miles Northwest from Forrester on several occasions but the drift was with the wind. The indications were that there was a slight set to Westward.

The signals used were the mountain peaks which had been located by triangulation in former years. The names and method of location of other signals is given:

By Cuts: Sue, Felix, Cliff, Lome, Dy,
Saw (weak), Noyes (weak).

From topography verified by cuts:
Nip, Cot, Lowrie.

It was noted that Cone, Ok was clear more often during the season than any other point, probably because it is lower than

the peaks South of it and the winds drawing through the low gap at the head of Manhattan Arm keep it free from clouds.

A description of the natural objects which were used as signals is appended.

Chief of Party

EHP-T.

SIGNALS USED ON HYDROGRAPHIC WORK OF LYDONIA - 1920

DALL, SUEMEZ, BAKER AND NOYES ISLANDS.

SOUTH EAST ALASKA

STRIPE - Dall Island. The highest point of the high peak near Point Cornwallis.

TWIN - Dall Island. The western and higher of the twin, bare peaks at the head of Waterfall Bay. The ridge, which continues westward from Twin peaks to the coast, has, on its southern side, a prominent land slide which extends half way down the slope.

HIGH - Dall Island. Is a slender, sharp, bare peak (second to right of CONE when viewed from west or southwest); It is the highest in the vicinity. When viewed from northward of west it assumes a flatter shaped top with slightly highest point on the south end.

PEAK 8 - Dall Island. Is an irregularly shaped, grass covered peak. When viewed from west or southwest, highest point is a knob on the right end.

CONE - Dall Island. Is lower than PEAK 8, which, in turn, is lower than HIGH. It is an unmistakable, sharp topped, wooded cone, as viewed from all seaward directions and is immediately south from the entrance to Sea Otter Harbor. During 1920 CONE has been clear oftener than other points on Dall, Id

ISLE - Dall Island. Is the highest point of Entrance Rock, elevation 40 ft., at the southern side of the entrance to Sea Otter Harbor.

SLIDE - Dall Island. Is the higher of two land slides.

TREE - Forrester Island. Is the southern edge of timber (southernmost timber in group) on island south of Forrester. The slope to the south is grassy and falls off to water about ten meters south of tree line.

SOUTH - Forrester Island. Is the highest point of highest rocky islet between Forrester and timbered island to the south.

PEAK A - Forrester Island. Is the highest point of Forrester Island; timbered.

MID - Forrester Island. Is lower than PEAK A; is first peak to north of PEAK A and is a flattened, conical, timbered hill.

LIT - Forrester Island.—Is the highest point of a rounded, wooded knob to the northward of MID.

LOWRIE -- Forrester Island. Is the highest point of Lowrie Island and is the knob on the northwest end. The knob is sparsely timbered, with grass in the timber. The highest point of trees is on the highest point of the knob.

WOLF ROCK - ~~Forrester Island~~. Is on the apparent highest point of Wolf Rock when viewed from the north and north east. It is on the northern, ~~[illegible]~~ knob when viewed from the eastward and southeastward.

SUE - Suemez Island. Is the highest point of the high, rounded, timber covered knob rising from the coast near NUT.

CLIFF - Suemez Island. At the southernmost point of Suemez Id.; the grey streak on the prominent, ~~sheer or~~ overhanging cliff of columnar structure rising from the water at Cape Felix.

FELIX - Suemez Island. The highest point of the mountain at Cape Felix.

FALSE - Suemez Island. The prominent shoulder close to northwestward from the highest point of the mountain at Cape Felix.

LOME - Baker Island. On the southernmost, tree covered islet off Cape Bartolome; the well defined highest point of the trees on this islet which shows up prominently from eastward or westward.

STEP - Baker Island. The highest point of the step-like mountain rising from Cape Bartolome.

NIP - Baker Island. Is a well defined, conical hill; the first prominent tip north of Mt. Step.

WEST - Baker Island. The highest point of hill rising from the coast immediately south from the southern bay on the west coast of Baker Island.

TRY - Baker Island. Is the highest point of the ridge which extends west to the coast just north of the southern bay on the west coast of Baker Island. This ridge ends in a shoulder then slopes down to conspicuous white, bare cliffs at the shore.

DY - Baker Island. Is the bullet shaped, highest point of the range running east and west ~~which is~~ immediately south of BAKER and separated from it by a deep, steep valley. The range runs from Bucarelli Bay at the coast continuously to DY. The southwest shoulder of DY has a small scar, conspicuous for its lighter color. The scar is visible from Bucarelli Bay when looking up the valley south of DY (second valley south from BAKER).

BAKER - Baker Island. The highest point of the southern half of Baker Island. Viewed from the southward, it appears as the western of two similar tips, close together and of nearly the same elevation. A good approach from the south arm of Port San Antonio is to gain the ridge to the eastward and follow south to the station.

COT - Baker Island. Is a bullet shaped tip, rising abruptly from western shore of south arm of Port San Antonio. Elevation 1920 feet.

SHOULDER- Baker Island. Is the shoulder mentioned in the description of ~~BAKER~~ Try

SAW - Noyes Island. The highest timbered point on the southwestern end of Noyes Island. It is about three miles northeast from Cape Addington and is prominent.

NOYES - Noyes Island. The eastern and higher of the bare, twin peaks, the most prominent objects on Noyes Island.

June 8, 1922.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 3819b

Locality: W. Coast of Dall Island, S. E. Alaska.

Chief of Party: E. H. Pagenhart in 1920.
Plane of reference is mean lower low water, reading
5.8 ft. on tide staff at Craig, Alaska

For reduction of soundings,
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 F Rude

Chief, Division of Tides and Currents.

Report on the Verification & Inking of Hyd. Sheet 3819a.
Scale 1:120,000

1. The entire sheet was surveyed by three-point fixes with the exception of a small portion during the run from the 1000 fathom curve, which was done by propellor revolution counter, allowing a predetermined number of revolutions per mile.

2. The records and notes were very good, except description & method of sndg. even where one officer was in charge, taking both angles, plotting and recording. The protracting was good. The pencilled soundings, however, should have been made much smaller. The field drafting was fair. An error in reduced soundings was noted where a reducer was 2, 8, or 14 ft. The 4 feet were not dropped as per instructions.

3. Although tube soundings were in red on the boat sheet, no distinction was drawn on the smooth sheet, and all soundings were inked in black.* However, see the second paragraph of the descriptive report concerning tube soundings.

4. Shoal development has been transferred to Hyd. Sheet 4191 which is on a 20,000 scale.

Frank M. Albert
Draftsman, Section of Field Records.

July 17, 1922.

An enlargement was made in the field of two of the shoal spots. The office has no knowledge of the method by which this was done. To have have plotted the positions directly on a 10,000 scale (the scale of the enlargement) would have required a sheet at least 12 feet square and perhaps much larger. Likewise, it is not known where the field party got the data for this work as it is of the season of 1917 (3 years previous to this season). The two sentry strikes on these enlargements are commented upon in the draftsman's report of the 1917 work. His recommendation is here repeated that the shoals be swept with the wire drag.

FMA

Oct. 4/1922

*See next page of report

Referring to paragraph 3 of my report dated July 17, 1922, after a study of circumstances and methods of taking the tube soundings and soundings marked "slide" in the sounding records, the chief of the section decided to reject all such soundings. Accordingly they were expunged from the sheet and all soundings now shown on Smooth Sheet 3819 are wire soundings vertical casts.

The draftsman was guided by the following in erasing the tube and slide soundings.

A day all up and down casts note Vol. I. p. 3.
B " " " " " " " " " " " 11 & 19
C " " " " " " " " " " " 20 & 25
D " soundings marked X retained " " " " 32
First 2 " retained (on B.S. in black)

E " all up and down casts note Vol. I. p. 37
F " apparently all up and down casts
G " soundings rejected where first sounding of two recorded in record is crossed out
H " " on position up and down, note Vol. I. p. 56
J " " " " " " " " " " 2 " 4
K " " " " " " " " " " " 13

L " } Soundings with X considered up and down (no notes)
M " } " on position " " " " " " "
" over 100 fms " " " " " " "

N " Soundings marked "slide" rejected
O " No note as to methods of sounding (assumed vertical casts)
P " Boat sheet used as guide (sndgs in red rejected)

(cont'd)

Q day - Boat sheet used as guide (Sndgs. in red rejected) Sndgs marked "slide" in record also rejected.

R " Soundings on position assumed up and down unless notes to contrary.
S " Boat sheet used as guide.
T " "Sentry line", therefore not plotted (see record)
U " Notes after soundings used as guide.
V " " " " " " " " and rejected sounding between positions unless marked up and down.
W " probably all vertical casts, therefore all soundings retained.

Frank M. Albert,
Draftsman, Section of Field Records

Oct. 18, 1922.

Recommendation:-

From the experience the writer has had with this and other sheets it has been found that tube soundings may give approximate soundings. They cannot, however, be relied on as correct. At times they differ by as much as 70 to 80 per cent of the depth determined by wire or vertical casts. Shoal soundings obtained by tube are often later discredited by wire soundings (see beginning of Q day. where sndgs. of 72-74 fms discredit soundings of 50-55 fms. of N day). Therefore until a reliable tube is found which can give depths to within 2 or 3% of true depths, the use of tubes should be discontinued.

FMA.

ADDRESS THE DIRECTOR
U.S. COAST AND GEODETIC SURVEY
AND REFER TO No.

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

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 3819[b].

Surveyed in 1920

Instructions dated Mar. 18, 1920.

Chief of Party, E. H. Pagenhart.

Surveyed by party of Str. Lydonia.

Protracted and soundings plotted by: W. T. Chovan

Verified and inked by: F. M. Albert.

1. The records conform to the requirements of the General Instructions except that the methods of sounding were not sufficiently described.

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

3. The spacing of the sounding lines fulfill the requirements of the specific instructions, but owing to the rejection of all tube soundings, the actual number of accepted soundings is not more than half the number called for in the specific instructions.

   The orders contemplated the use of tubes for soundings. Owing to the manner in which the tube sounding was executed and the failure to include necessary data in the sounding records, all of this work has been omitted from the smooth sheet. Paragraph 2 of the descriptive report recommends that all tube soundings be rejected.

4. Owing to the excessive depths in the area covered by this sheet and the uneven character of the bottom, such differences in sounding line crossings as exist are not of vital importance.

5. The information is sufficient for drawing the usual depth curves.

6. The field plotting was completed to the extent prescribed in the General Instructions. The drafting was accurately done but had two faults: - The tube soundings were all plotted, although it was the intention of the chief of party to reject them. Also the soundings and positions numbers and day letters were much too large.

7. The office draftsman did not have to do over any of the work done by the field draftsman.

8. The junctions with adjacent sheets are satisfactory.

9. No further work is required on the area covered by this sheet except in the northeast corner of the surveyed area where there are several shoals that should be dragged.

10. Character and scope of surveying and field drafting are fair.

11. Reviewed by E. P. Ellis, October, 1922.