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Diag. Cht. No. 8102-2
Form 504

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
E. Lester Jones, Director.

State: S. E. Alaska.

11—5618

DESCRIPTIVE REPORT.

Hyd. *Sheet No.* 4161 4200 2 (Field #)

LOCALITY:

Clarence Strait

Stone Rock Bay to Scott Pt.

1921

~~1920~~

CHIEF OF PARTY:

J. H. HAWLEY, H. & G. E.

DESCRIPTIVE REPORT

HYDROGRAPHIC SHEET NO. 2 (Field Number) 4161

Stone Rock Bay to Scott Point, Clarence Strait,
S. E. Alaska.

This report of hydrographic sheet No. 2 is respectfully submitted. This survey was made in compliance with orders dated Feb. 11, 1921.

All depths used in this report refer to M.L.L.W. and all distances are in nautical miles. All bearings are given in a clockwise direction with North as zero.

LIMITS:

The southern limit of this sheet is about 3/4 mile north of Stone Rock. From a point just outside the 100 fathom curve, or about 131° 56' 15" W., the eastern limit runs northward in an approximately straight line to a point about 3/4 mile off Scott Point, or about 131° 56' 45" W., thence the northern limit runs to Scott Point, and the western limit follows the shore line of Prince of Wales Island. It cuts across the entrance to Hidden Bay, Kendrick Bay and McLean Arm, but includes about one half of Gardner Bay and a small portion of Stone Rock Bay which was not completed in 1920.

ORGANIZATION:

In charge, right angle and plotting: Geo. L. Bean, H.& G.E.
Left and angle and recording: M.C.Bonaobra, Ch.Wr.
Coxswain: Fred Peterson, Sea.
Engineer: S.N.Davis, A.To E. 2c; Frank Haines, A.to E. 1c.
Leadsman: D. R. Haines, Sea.
Sounding machine operator: H. C. Miller, Sea.
Tide observer. T. J. Stocking, W.O.2c.

EQUIPMENT:

Boat used: Steam launch "Delta"
Machine: Cosmos sounding machine driven by 3-cyl. steam engine.
Wire: Regular 7-strand steel sounding wire.
Lead: Twenty to twenty-five pounds.
Depth indicator: Regular registering sheave.
Tide gauge: Plain staffs at Hidden Bay and Gardner Bay, referred to automatic gauge at Menefee Anchorage.
Camps at Hidden Bay and Gardner Bay.

METHOD:

This survey was made on a 1:20,000 projection, except Gardner Bay and the entrance to Gardner Bay which was made on a 1:10,000 projection. Up and down soundings were taken by stopping and backing for each sounding. The leadline was used only to obtain the least water upon shoals. The work was done as far south as triangulation Drick. From here south it was done from a camp at Gardner Bay, Plain staffs were read in Hidden Bay and Gardner Bay and referred to the automatic gauge at Menefee Anchorage. Three hundred meter-lines were used except where closer lines were necessary for an adequate development. It was endeavored to get a good development of the ten-fathom curve. Many rocks and kelp patches are shown on the sheet which could not be mentioned in the sounding records.

CONTROL:

The control on this sheet was obtained from the following triangulation stations: Stone Rock, Orca, Drick, Scott and Back. The hydrographic signals as far south as Gardner Bay were located by the topographic party. From Gardner Bay south the hydrographic signals were recovered from the 1920 location.

DANGERS:

From Scott Point to triangulation station Drick there are many rocks and shoals extending as far offshore 900 meters in places. At Scott Point the ten-fathom curve is about 200 meters offshore and continues this way about 1 mile south. Inside the ten-fathom curve are many small islands and rocks and kelp grows abundantly. Just north of the entrance to Hidden Bay a reef makes offshore about 550 meters. It bares about 3/4 tide. The outer end bears about 131°, 555 m. dist. from hyd.sta. Tri
71°, 560 m. " " " " Pod
42°, 800 m. " " " " Hid

South of the entrance are three rocks close together. They lie about 465 meters offshore and are marked by kelp. They bear about 126°, 570 m. dist. from hyd.sta. Hid
72°, 505 m. " " " " Den
40°, 870 m. " " " " Tan
They bare about 1/4 tide.

About 300 meters east of the south end of the largest island outside Hidden Bay are two rocks, marked by kelp which bare about 3/4 tide.
They bear about 162°, 810 m. dist. from hyd.sta. Hid
133°, 405 m. " " " " Den
57°, 460 m. " " " " Tan

S.E. from the same island a shoal extends about 700 meters. A rock at the outer end bares about 1/4 tide.

It bears about 148°, 940 m. dist. from hyd.sta. Den
117°, 660 m. " " " " Tan
55°, 1050 m. " " " " Cow

225 meters inshore is a rock which bares about 1/4 tide.
It bears about 158°, 790 m. dist. from hyd.sta. Den
121°, 440 m. " " " " Tan
44°, 920 m. " " " " Cow

About 225 meters off hydrographic station Tan is a rock which bares about 1/4 tide. It is marked by kelp.
It bears about 174°, 660 m. dist. from hyd.sta. Den
136°, 225 m. " " " " Tan
29°, 850 m. " " " " Cow

In the entrance to Hidden Bay is a rocky shoal with 1-4/6 fathom on it. It is marked by kelp.
It bears about 96°, 170 m. dist. from hyd.sta. Flu
326°, 170 m. " " " " But
253°, 280 m. " " " " Pod

About 200 meters off hydrographic signal Oil is a rock which bares about 3/4 tide.
It bears about 105°, 200 m. dist. from hyd.sta. Oil
61°, 370 m. " " " " Gun
240°, 240 m. " " " " But

Off hydrographic signal Cow the ten-fathom curve extends about 400 meters offshore. From here as far south as Kendrick Bay are many rocks, small islands and patches of kelp extending offshore as much as 400 meters.

Off hydrographic signal Kel is a rock with 3 feet on it at M.L.L.W.
It bears about 72°, 300 m. dist. from hyd. sta. Kel
158°, 825 m. " " " " Bes
26°, 1150 m. " " " " Nin

There are many small islands across the entrance to Kendrick Bay. Reefs extend out from these for a distance of 300 meters in some places. They are marked by kelp.

N.E. from triangulation station Drick a reef extends about 600 meters. It is marked by kelp and small bare islets.

About 900 meters east of triangulation station Drick is a shoal with a least depth of 10 fathoms on it.

From triangulation station Drick south there are many offlying rocks and small islands close to shore.

On chart 8102 at P.D.3/4 fathoms is shown off Stone Rock Bay. * A careful examination was made but not less than

mile

50 fathoms could be found. About 1/2 NW of the charted position of the P.D. a shoal was found with a least depth of 10 fathoms on it.

It bears about 187°, 2270 m. dist. from hyd.sta. Chu
172°, 1460 m. " " " " Sot - ?
117°, 2350 m. " " " " Kino

No breakers were observed in this vicinity on the lowest tide of the month with a heavy ground swell.

In the entrance to Gardner Bay is a rock with 1-1/2 fathoms on it.

It bears about 210°, 695 m. dist. from hyd.sta. Via
136°, 390 m. " " " " Tal
23°, 340 m. " " " " Sel

On the north side of the entrance to Gardner Bay is a rock which bares at mean lower low water.

It bears about 262°, 265 m. dist. from hyd.sta. Via
108°, 650 m. " " " " Pea
52°, 465 m. " " " " Tal

The two latter rocks were probably described in the 1920 report.

CHARACTER OF BOTTOM:

The bottom is generally rocky with an occassion mud in the bays or sand beyond the 200-fathom curve. Close to shore the bottom is very uneven from the ten-fathom curve the bottom drops rapidly to the 200-fathom curve.

CHARACTER OF SHORELINE:

The shoreline is bold and broken, many small islands, offlying rocks and rocks awash lie close to shore. Vegetation begins at the storm water line and consists of a thick growth of fir, hemlock and cedar with a heavy undergrowth in many places. Kelp grows plentifully close to shore.

CURRENTS:

There are no unusual tidal currents on this sheet. The flood is much stronger than the ebb and reaches an estimated velocity of two knots. It is more noticeable close to the points. Tide rips are set with the wind opposed to the tide in the vicinity of Stone Rock Bay, Gardner Bay and Scott Pt. They are usually light to moderate in character.

ANCHORAGES:

The only ship anchorage on this sheet is Gardner Bay. This anchorage was described in the report of the 1920 party and as the sailing line for entering is drawn on the sheet from last year's work, and no dangers were discovered this year, I will not describe it in this report.

Hidden Bay is an excellent anchorage for small boats, but the entrance is narrow and several rocks render it dangerous for large craft. There are also strong currents in the narrowest part of the entrance. A stranger, even with a small craft, should proceed very slowly and feel his way, on entering the first time. There are nox good ranges to be had for approaching the entrance. A navigator entering for the first time should select the low water slack when all the reefs outside, and the rocks in the entrance will be showing, and the current will not be as strong.

SHEETS:

There are two boat sheets and two smooth sheets for this survey. A small 1:10,000 projection was made for Gardner Bay and the work of 1920 plotted on it, so that it would not be duplicated. For the smooth sheet the work in Gardner Bay was plotted on sheet 4161 which was sent from the office. The entire work could not be plotted on this sheet because the title was in the way. Therefore a new 1:20,000 projection was made and all the work except Gardner Bay, plotted on it.

Prepared and submitted by G.L.Bean, H.& G.E.

Approved and forwarded (see note below)

J.H.Hawley,
Chief of Party.

Note:- in the area southeast of McLean Arm, entrance to Mallard Bay, several shoal indications were found and were not fully investigated. This work was delayed by severe weather conditions and it was found that further work would seriously delay other operations of the party. For this reason and on account of the unimportance of the locality complete development of the shoals were not made. It is believed however that no dangers to small boats exist as the work was done when there was usually a heavy swell, no tendency to break being noted.

TIDAL DATA

HYDROGRAPHIC SHEET NO 4161
NO 2 (Field Number)

A plain staff in Hidden Bay, connected with bench marks, established in 1921, was used from May 20 to May 28, 1921.

Plane of reference	Mean Lower Low Water
do	3.6 feet on staff
Highest tide observed	17.7 do
Lowest tide observed	2.0 "

A plain staff in Gardner Bay, connected with bench marks, established in 1920, was used from June 1 to June 11, 1921.

Plane of reference	Mean Lower Low Water
do	5.2 feet on staff.
Highest tide observed (During this work)	19.5 do
Lowest tide observed (During this work)	1.6 "

LIST OF SIGNALS

HYDROGRAPHIC SHEET NO. 4161
No. 2 (Field Number)

Hydrographic Name.	Location.		Est.
Stone	Triangulation station	Rock	1885
Orca	do	Orca	1885
Brick	"	Brick	1912
Scott	"	Scott	1912
Back	"	Back	1921

All other signals on this sheet as far south as Gardner Bay are located on topographic sheet No. 0. The signals from Gardner Bay south were located in 1920 and recovered in 1921.

This is a duplicate copy. The original is posted in the front of Vol. 1 sounding record.

STATISTICS SHEET NO. 2 (Field Number)

Date 1921	Letter	Vol.	Pos.	Sdgs.	Miles Stat.	Vessel
May. 20	a	1	122	287	19.0	"Delta"
" 21	b	1	77	250	12.0	"
" 23	c	1	38	88	5.8	"
" 24	d	1	16	35	1.9	"
" 24	d	2	78	143	15.3	"
" 25	e	2	129	241	20.3	"
" 27	f	2	54	102	10.3	"
" 28	g	2	21	62	3.3	"
" 28	g	3	53	168	9.0	"
June 3	h	3	126	302	20.4	"
" 4	j	3	82	170	12.9	"
" 6	k	3	27	52	3.0	"
" 6	k	4	63	117	10.2	"
" 8	l	4	82	224	6.9	"
" 10	m	4	83	219	9.9	"
" 11	n	4	40	140	4.0	"
Totals			1091	2600	164.2	

Hyd. Sheet No. 4200

The work on this sheet covers the area from Scott Point to a point about three fourths of a mile north of Stone Rock.

The bottom is so irregular and rocks and shoals so numerous that no soundings, which might appear doubtful in other localities were questioned or rejected.

The sounding at pos. 4e marked "on rock" and "not the least depth" was shown as a sunken rock.

Soundings between pos. 71h and pos 73h, were not inked because the fix at pos. 72h is "on circle." (off McLean Bay)

The work on this sheet was combined and joined with all adjoining sheets excepting Hyd. 3390 which was examined and compared but no attempt was made to combine it with this sheet.

R. L. Johnston

ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY

AND REFER TO NO. 4-DRM

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4200

Surveyed in 1921.

Instructions dated Feb. 11, 1921.

Chief of Party J. H. Hawley.

Surveyed by G. L. Bean.

Protracted and soundings plotted by W. G. Fielder.

Verified and inked by R. L. Johnston.

1. The records conform to the requirements of the General Instructions except that the boat's courses were omitted throughout.

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

3. The plan and extent of development satisfy the specific instructions.

4. The sounding line crossings are as good as could be expected in irregular bottom like that of this survey.

5. The information is sufficient to permit the usual depth curves to be drawn, except close inshore.

6. The field plotting was completed to the extent prescribed in the General Instructions and none of it had to be done over. The representation of rocks and islets was not as carefully done as it should have been.

7. The junctions with adjacent sheets are satisfactory.

8. No further surveying is required except inshore and dragging when the commercial importance of the locality warrants it.

9. The surveying is excellent and the field drafting good.

10. Reviewed by E. P. Ellis, November, 1922.

DESCRIPTIVE REPORT TO ACCOMPANY H-4200a

TOPOGRAPHIC LOCATION OF SIGNALS SHEET NO. 1

The work on this sheet was done under orders dated Feb. 11, 1921.

LIMITS: Signals were located for hydrography from Scott pt., Clarence Strait to the north entrance to McLean Arm. Only one bay, a small one 3/4 mile south of Hidden Bay was covered. Signals were established in the entrance only of Hidden Bay, Kendrick Bay, Gardner Bay and McLean Arm.

METHOD: A traverse was carried from triangulation station Back southward along the East coast of Prince of Wales Id. to triangulation station Drick - a closing error of 15 meters, 6 nautical miles of traverse. While at Drick a whitewash, topographic station Lat was made at entrance of Kendrick Bay and a cut and rod reading taken to it. Topographic station Rel was rodded in and table set up there and another cut taken to Lat. The intersection and rod reading checked well. This traverse was concluded at triangulation station Orca with a 9 meter error, 4 nautical miles of traverse.

Approved.

J. H. HAWLEY,
H.& G. E.,
Chief of Party.

Respectfully submitted,

E. F. LEWIS,
Jr. H.& G. E.

EFL/mb

Form 537
11—5812

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.

U. S. Coast and Geodetic Survey.

Register No. 4200 *~~Field Number~~

State . . S.E.Alaska

General locality . Clarence Strait

Locality . Stone Rock Bay to Scott Point.

Chief of party . JH.Hawley,. H.& G.E.

Surveyed by . .Geo. .L. Bean,. H.& G.E.

Date of survey . May 20 to June 11, 1921

Scale . . . . . 1:20,000 . . ~~1:10,000~~

Soundings in . . . fathoms

Plane of reference . M.L.L.W.

Protracted by W.G.F. . . Soundings in pencil by W.G.F.
Geographic names lettered by L.F.Lewis.
Inked by . . . . . Verified by . . . . . .

Records accompanying sheet (check those forwarded):

Des. report, 2 Tide books, ... Marigrams, 2 Boat sheets,

4 Sounding books, ... Wire-drag books, ... Photographs.

Data from other sources affecting sheet . . . . . .

Remarks: ~~Sheet~~ smooth sheet#.
" boat "

Form 537a
11—3813

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC ~~TOPOGRAPHIC~~ TITLE SHEET

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

C

U. S. Coast and Geodetic Survey.

Register No. 4200a

State . . S.E.Alaska. . . . . .

General locality .Clarence Str. East Coast Prince of Wales Isl.

Locality ~~No. Loan Arm~~ Stone Rock Bay to Scott Pt. (location of signals only)

Chief of party .J.H.Hawley . . . . . .

Surveyed by . E.F.Lewis. . . . . .

Date of survey May and June, 1921. . . . . .

Scale . 1:20,000. . . . . .

Heights in feet above no elevations shown . . . . . .

Contour interval . . . . feet.

Inked by .E.F.Lewis . . Lettered by E.F.Lewis . . . . . .

Records accompanying sheet (check those forwarded): ~~Photographs~~,

Descriptive report, ~~Horizontal angle books, Field computations~~,

Data from other sources affecting sheet . . . . . .

Triangulation of 1912.

Remarks:

Location of Signals only.