

5079

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Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. Patten, Director

State: Alaska

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. 5079
Hydrographic } Field # 3

LOCALITY

Behm Canal
Naha Bay to Heckman Pt.

1930

CHIEF OF PARTY

E. W. Eickelberg

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

REG. NO. 5079

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. 3

REGISTER NO. 5079

State Alaska

General locality Behm Canal

Locality Naha Bay to Heckman Pt.

Scale 20,000 Date of survey June - Sept., 1923

Vessel Explorer

Chief of Party E. W. Eickelberg

Surveyed by Field party

Protracted by E. Rosen - W. Weidlich

Soundings penciled by J. C. Partington - W. Weidlich

Soundings in fathoms feet

Plane of reference M. L. L. W.

Subdivision of wire dragged areas by

Inked by

Verified by

Instructions dated Mar. 7, 1923

Remarks:

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET NO. 3.

AUTHORITY:

The hydrography on this sheet was executed under instructions of the Director of the U. S. Coast and Geodetic Survey, dated March 7, 1930.

SCALE:

1:20,000 and soundings are in fathoms.

LIMITS:

This survey covers the area between a line drawn between Betton Island and Trunk Island and a line drawn east and west about one half mile north of Heckman Point, connects and overlaps with sheets 1, 2, and 4.

CONTROL:

Triangulation and topography furnish the necessary control.

METHODS:

The approved methods of the Service were used throughout.

The survey between the inshore hydrography was done by the Steamer EXPLORER, and is indicated by red capital letters.

Soundings were taken with a steam sounding machine, stranded wire and forty-five pound lead. All soundings are up and down.

Sounding lines run in northerly and southerly directions and are spaced about 400 meters apart with splits between, wherever required.

The launch Delta completed the inshore hydrography from Trunk Island to the limits north of Point Heckman. The work is indicated by lower case letters in red.

The lines are spaced about 200 meters apart with splits between, depending upon the nature of the bottom. Practically all lines run normal to the shore in an easterly and westerly direction with the exception of the area at the head of Port Stewart and the small land-locked bight east of it, where the lines are spaced about 100 meters apart and less, and run in southeasterly and northwesterly direction.

A ten pound handlead was used in depths of less than fifteen fathoms and in greater depths a steam sounding machine with stranded wire and a fourteen or eighteen pound lead. All soundings are up and down.

When developing shoals two handleads were used simultaneously and on critical places an additional leadline by the officer in charge. Hundreds of soundings were taken on all shoals although only the least depths obtained were recorded and plotted. In order to avoid confusion when plotting only the lesser soundings were plotted or such necessary to obtain a complete depth curve.

The inshore hydrography from Grant Island to the limits of the sheet was done by Tender No. 1 and the work is indicated by lower case letters in blue.

A ten pound handlead was used in depths of less than fifteen fathoms and in greater depths a motor driven sounding machine with stranded wire and a fourteen or eighteen pound lead. All soundings are up and down.

The lines run normal to the shore in easterly and westerly direction, and are spaced about 200 meters apart with splits between.

Some development was done by launch No. 69 on the shoals west of Indian Point. A motor driven sounding machine with fourteen or eighteen pound lead and stranded wire was used and all soundings are up and down.

CURRENT:

No current observations were taken in this locality and therefore little can be said. It is well known that the flood sets in northerly and the ebb in opposite direction, greatly influenced by strong winds, of which the southeast is the prevailing.

A strong southerly set was experienced while working in the vicinity of Point Francis. With difficulties the launch was kept on line and the increased strength of the current no doubt is due to the very irregular bottom. The strength of the ebb at that time was estimated to be more than one knot.

KELP:

This area is comparatively free of kelp. Kelp was noticed only near the rocks at the entrance to Traitor's Cove and near a small wooded island at Port Stewart on which signal "TOP" is located. (Pos. 131 j, red) Although little kelp was found while working in this locality it is believed that all obstructions near the surface are marked by kelp during the late summer months.

CHARACTERISTICS OF BOTTOM:

Bottom is very irregular, hard and rocky with occasional mud, sand and coral.

ANCHORAGES:

Port Stewart on the west shores of Behm Canal is the only anchorage worth mentioning, has numerous islets and rocks. This anchorage was used by the ship EXPLORER on numerous occasions. No difficulties should be experienced entering the anchorage as the approaches are deep and clear, although leading between islets and rocks.

The passage north of two wooded islets is recommended and the islets should be left from 250 to 300 yards on the port hand when entering. When up to the northern most islet turn to the left, taking care to give the point a berth of at least 200 yards. Continue in westerly direction for about 300 yards and anchor in 15 to 16 fathoms of water, rocky and sandy bottom.

A land-locked bight at the head of Port Stewart offers excellent shelter to small boats. Local knowledge is required to enter this anchorage on account of a rock which lies about midchannel between the shores and the rocky islet on which station "PORT" is located. Strangers should enter at low tides only when obstructions are visible. Care should also be taken to enter the bight about midchannel as small ledges extend for some distance from the points. Deep water will be found in the center of the bight, from 6 to 7 fathoms, muddy bottom.

Port Stewart is visited by numerous small fishing vessels during the fishing season and they find shelter most anywhere.

TIDES:

A portable automatic tide gauge was in operation at Loring Cannery Dock during part of the season and comparative readings were taken for fifty-two hours with the Ketchikan Tide Station.

DANGERS AND OBSTRUCTIONS:

Numerous shoals and rocks were located by this survey and listed below, beginning at Trunk Island and following the shores of Cleveland Peninsula as far as Heckman Point. The enumeration of shoals and obstructions on the eastern side begins north of Grant Island and continues as far as Bushy Point.

1. A ledge extends for some distance from the point east of Raymond Cove, on which triangulation station "RAY" is located. A 5-5/6 fathom spot marks the extreme southern end. This spot lies about 510 meters 191° from station "TAN". (Pos. 12d - red) This area is well developed and only the least depths are recorded and plotted. ✓

2. A shoal of small extent with a least depth found of 9-1/2 fathoms at M.L.L.W. lies 550 meters $177\frac{1}{2}^{\circ}$ from station "TAN". Numerous soundings were taken on this shoal, only least depth recorded and plotted. (Pos. 35c - red) Bottom is very irregular and sandy. This shoal is surrounded by much deeper water. ✓

3. A shoal area with a least depth found of 17 fathoms at M.L.L.W. lies about 430 meters 80° from station "COW". (Pos. 12-13-14 & 17n - red) This area is well developed, only the least depth recorded and plotted. Bottom is rocky. ✓

4. A ledge extends for about 300 meters south of a point on which station "WIK" is located. (Pos. 79-80 & 81d - red) mark the extreme ends of the reef. The south end bares about 4-1/2 feet at M.L.L.W. ✓

Several shoals were located in a bight west of Point Francis. The passage between the two islets on which stations "OR" and "BIG" are located is obstructed by a rock which bares ✓

several feet at low tides (located by topographer). Bottom is very irregular in this locality and the 20 fathom curve extends for some distance in S.S.W. direction from the rocky islet on which station "OR" is located. ✓

5. A shoal of small extent with a least depth found of $1\frac{5}{6}$ fathoms at M.L.L.W. lies about 220 meters 180° from station "RIT". This area is well developed, numerous soundings were taken with two handleads, only least depths recorded and plotted. Bottom is rocky, no indication of any kelp. (Pos. 28g - red) ✓

6. A pinnacle rock of small extent with a least depth of three fathoms over it at M.L.L.W. lies about 220 meters 225° from station "RIT". Numerous soundings were taken, only least depths recorded and plotted. (Pos. 21g - red) No kelp. ✓

7. A shoal of small extent with a least depth found of $3\frac{1}{2}$ fathoms lies about 300 meters 274° from station "RIT". A 4 fathom sounding was obtained about 65 meters west of above position. Bottom is rocky, no indication of any kelp. Numerous soundings were taken only least depths recorded and plotted. (Pos. 33g - red). ✓

The area between station "OUT" and station "BO" is foul and in order to avoid grounding of the launch only a few lines were run. There is no passage south of station "BO" except at high tides. ✓

Very irregular bottom was found in vicinity off Point Francis. A considerable amount of development was done but nothing less than 50 fathoms was found. ✓

8. A 51 fathom sounding was obtained about 750 meters $130\frac{1}{2}^{\circ}$ from triangulation station "POY". Bottom is rocky. Area developed by regular soundings lines and detached soundings. (Pos. 94 & 95f - red) ✓

9. A 50 fathom sounding was obtained about 750 meters 117° from triangulation station "POY". Hard bottom (Pos. 45e - red) ✓

10. A shoal of small extent with a least depth found of $6\frac{1}{6}$ fathoms at M.L.L.W. lies about 250 meters 20° from station "FIN". Rocky bottom (Pos. 83g - red). ✓

11. A shoal of small extent with a least depth found of 9-1/2 fathoms at M.L.L.W. lies about 410 meters 0° from station "FIN". Rocky bottom (Pos. 78e & 81-82g - red) Bottom in the vicinity of the last two shoals is very irregular.

12. A shoal with a least depth found of 20 fathoms at M.L.L.W. lies about 530 meters 83° from station "LES". Rocky bottom. (Pos. 35-36-37j - red).

Several 21 fathom soundings were obtained about 160 meters N.E. from the above position. Bottom is rocky. (Pos. 17 & 30j - red). This area was developed by a system of regular sounding lines and numerous detached soundings.

13. A 37 fathom spot lies about 620 meters 126° from station "LO". (Pos. 160g - red) An attempt was made to relocate the 37 fathom spot on "k" and "j" day but without success. This sounding should be accepted as correct as the lead was lost while heaving in and being underway. The loss of the lead gave the sounding machine quite a jar, and judging from this, the lead must have hit a rock of small extent. The launch was stopped immediately and sounding taken as near as possible to where the lead was lost.

The bottom south and southeast of the small wooded islets on which station "LO" is located is very irregular. Shoal water extends for about 250 meters south of station "LO" and the depths range from 3-4/6 to 7-3/4 fathoms, dropping off into much deeper water. This area is well developed by regular sounding lines and numerous detached soundings. No indication of any kelp.

14. The area between stations "HE" and "TOP" is foul and studded with rocks. A bar extends all the way across and is plainly visible at minus tides. See Volume 8, Pos. 11j - red.

15. A shoal with a least depth found of 6-2/6 fathoms at M.L.L.W. lies about 310 meters 68° from signal "RAD". Bottom is rocky. (Pos. 19m - red) This area is well developed by a system of regular sounding lines and numerous detached soundings.

16. A shoal with a least depth found of 5 fathoms at M.L.L.W. lies about 580 meters 125° from station "EL". Bottom is rocky, no indication of any kelp. (Pos. 49k - red) Area is well developed, only least depth recorded and plotted.

17. A shoal with a least depth found of 4-1/6 fathoms at M.L.L.W. lies about 290 meters $106\frac{1}{2}^{\circ}$ from station "EL". Bottom is rocky, no indication of any kelp. (Pos. 38k - red) Numerous soundings were taken, only least depths recorded and plotted. ✓

18. A shoal with a least depth found of 3-1/2 fathoms at M.L.L.W. lies about 900 meters 87° from station "EL". Bottom is rocky. No indication of any kelp. (Pos. 71 & 95e - red) Numerous soundings were taken only least depths recorded and plotted. ✓

19. A rock which bares about 3-1/2 feet at M.L.L.W. lies about 520 meters 65° from station "EL". This rock was found to be free of marine growth and no indication of any kelp in immediate vicinity. (Pos. 7j-12k & 123h - red) Shoal water extends for about 200 meters in N.N.Wly direction. ✓

20. A rock awash at M.L.L.W. lies about 250 meters 8° from triangulation station "PORT". (Pos. 1 & 2j - red) mark the east end of the rock and Pos. 3j - red, the north end. This rock blocks the passage to a safe anchorage for small vessels. An apparent safe passage may be found east of the rock with comparatively deep water and a width of about 40 to 50 meters. The area between Pos. 2j and 3j is covered with eel grass and is foul. ✓

21. A ledge extends for about 230 meters in southerly direction from station "NIN". Position 6j - red, marks the extreme southern end. No record is made of the height of the ledge but it is believed to be from 4 to 6 feet at M.L.L.W. ✓

see
E.W.E.
regarding
height of ledge

22. A shoal about 1600 meters long and 500 meters in width lies south of Heckman Point. Least depth obtained is 32 fathoms, rocky bottom (Pos. 124-129 & 136r - red). The 32 fathom sounding lies about 1000 meters $92\frac{1}{2}^{\circ}$ from signal "WIS". This area is well developed by a system of regular sounding lines and numerous detached soundings. ✓

~~East~~
WEST SHORES OF BEHM CANAL.

23. A shoal about 188 meters long and 600 meters wide lies about west southwest off Indian Point. It runs in a N.N.E. and S.S.Wly direction. Bottom is hard and rocky with occasional mud, sand and coral. Least depth obtained is 26 fathoms, about 2300 meters 258° from triangulation station "DIN". Area is ✓

developed by regular sounding lines and numerous detached soundings. (pos 86N - red) This area was also developed by launch No. 69 and work is shown on an overlay. ✓

A 38 fathom sounding was obtained by launch No. 69 about 3230 meters 244° from triangulation station "DIN". Rocky bottom. (Pos. 34b - purple.) ✓

24. A shoal, covering an area of about 800 square meters lies about 2-1/2 miles west of Indian Point. Bottom is hard and rocky with occasional sand and gravel. Least depth obtained is 20 fathoms, about 4560 meters 267° from triangulation station "DIN". Area is developed by regular sounding lines and numerous detached soundings (Pos. 78p - red) This shoal was also developed by launch No. 69 and result of work is shown on separate tracing. ✓

W. Weidlich

W. Weidlich,
Mate,
U. S. Coast & Geodetic Survey.

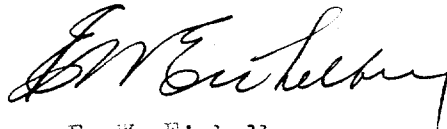
A danger which should also be mentioned is the reef located outside the northern entrance to Traitor's Cove. It lies 200 meters 135° off signal "JAY" and constitutes a real danger for craft entering or leaving the northern entrance. The danger does not seem apparent unless one considers that the vessel entering or leaving the Cove is within 100 meters of shore when passing through the entrance while this reef is 200 meters from shore. This reef is marked by kelp and bares 6 feet at M.L.L.W. There is deep water between the reef and shore.

E. W. Eickelberg

E. W. Eickelberg,
Commanding Officer,
U.S.C. & G.S.S. EXPLORER.

APPROVAL SHEET.

This sheet and accompanying records have been
examined by me and are approved.

A handwritten signature in cursive script, appearing to read 'E. W. Eickelberg', written in dark ink.

E. W. Eickelberg,
Commanding Officer,
U.S.C. & G.S.S. EXPLORER.

C O P Y

8 1/4 " Chart Letter
481 (1905)

POST-OFFICE ADDRESS: 520 Bailey Building, Seattle, Wash.

DEPARTMENT OF COMMERCE AND LABOR
COAST AND GEODETIC SURVEY

Str. "Gedney"

Ketchikan, Alaska
June 3d 1905

To the Superintendent,
U. S. Coast & Geodetic Survey
Washington, D. C.

Sir:

The owner of a gasoline launch here, reports a rock in Behm Canal about $1\frac{1}{2}$ miles to the Westward of the entrance to Traitors Cove. He says that he ran on this rock with his launch and that it has only two or three feet of water over it at low tide.

A tracing from Chart 8100, giving in red the approximate location assigned to the rock, by the owner of the launch, is attached hereto. } *see chart 8102*

If you desire me to look for this rock forward data as soon as possible and I will make examination on our return from Cordova Bay.

Very respectfully

/s/ E. F. Dickins

Assistant C. & G. Survey

REPORT ON EXAMINATION FOR REPORTED SHOAL OFF TRAITOR'S COVE.

The area off entrance to Traitor's Cove was surveyed by a regular system of sounding lines, consisting of vertical casts with stranded wire and lead. All indications were followed up for least water and the least depth was found.

There is absolutely no indication of the shoal mentioned, the least water within this area being eighty ~~four~~ fathoms. Inquiries were made with the mail boat making this run for a number of years and they claim never to have seen such a rock. Also this area was thoroughly covered at a 4-1/2 foot minus tide and there was no evidence of a rock in sight of this area.

It is recommended that the danger be expunged from the charts.



E. W. Eickelberg,
Commanding Officer,
U.S.C. & G.S.S. EXPLORER.

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

SECTION OF FIELD RECORDS

Review of Hydrographic Sheet No. 5079

Surveyed in 1930

Chief of Party, E. W. Eickelberg

Surveyed by E.W.E.

Protracted by W. Weidlich and E. Rosen

Soundings plotted by J. C. Partington and W. Weidlich

Verified and inked by H. E. MacEwen.

1. Records:

The records conform to the requirements of the Hydrographic Manual.

2. Development:

The plan and character of the development fulfill the requirements set forth in the Hydrographic Manual. While this survey was intended to supplement previous work it is a complete development of the area. The plan and extent of the development satisfy the specific instructions.

No cross lines were run except where shoal areas were developed. This is in accordance with paragraph No. 20 of the instructions. The development is sufficient to allow all the depth curves to be completely drawn.

3. Field Drafting:

The field drafting is excellent.

The plotting was complete and the protracting accurately done. None of the work executed in the field had to be done over in the office.

4. Junctions:

The junctions with adjacent sheets are satisfactory.

Attention is called to the following depths at Traitors Cove where H. 5105 overlaps this sheet:

(a) 4-fathom sounding 100 meters southeast of Δ Traitor plots between $6 \frac{5}{6}$ fathoms and 13 fathoms on this sheet.

(b) $4 \frac{5}{6}$ -fathom sounding 180 meters north of Δ Traitor falls between 6 and 18 fathoms and close on the 10 fathom curve.

(c) $1 \frac{5}{6}$ -fathom sounding at Δ Traitor on the west falls close to a $7 \frac{1}{2}$ fathom sounding on H. 5105.

5. Comparison with previous surveys:

H. 1649 was examined and found to be in agreement with this survey.

H. 1651 was examined and found to be in agreement with work on this sheet. These surveys (1649 and 1651) were made in 1885. No close development was made and all work was very open. They should be superseded by this sheet.

Hydrographic sheets 2107 and 2110 were examined and found to be in agreement.

H. 5106 joining this survey on the north was examined and found to be in agreement.

H. 5061 joins this survey along its southeast limits. A comparison shows the two sheets to be in good agreement.

H. 5105 joins this survey at Traitors Cove and along Meridian $131^{\circ} 43'$ northward from signal \odot Dik. The overlap is in agreement except in the instances mentioned in paragraph 4 above.

6. Comparison with charts:

A comparison was made with chart No. 8102 and the following differences noted:

(a) A clearance of 14 fathoms is indicated in the passage inside the two small islets to the left of the main entrance to Port Stewart, the depths charted being 21 and 14 fathoms. This survey shows a least depth of 11 fathoms with the channel practically stopped off by a $6 \frac{2}{6}$ fathoms shoal making out more than half way across channel toward the shore. (See Descriptive Report, paragraph 15, "Dangers".) A comparison was made with chart No. 8105 and found to be in general agreement within the area of this survey.

Several soundings close to the shore in the vicinity of Indian Point were found to disagree with soundings on this sheet when plotted by latitude and longitude. An examination of the topography revealed that these soundings based on their relation to the shoreline itself were correct and that the shoreline itself is as much as 190 meters in error when compared with the most recent topographic surveys. Since these soundings have no especial cartographic significance they should be superseded by the work on this sheet.

7. Remarks:

The rock marked P D in Lat. $55^{\circ} 42'.05$, Long. $131^{\circ} 44'.3$ (authority Chart Division letter No. 481-1905, attached to Descriptive Report) plots directly on a sounding of 172 fathoms taken at a fixed position. It is recommended that this rock be removed from the chart. (See note attached to the Descriptive Report by the Commanding Officer of the survey party.)

For a complete list of dangers see the Descriptive Report, pages 4 to 8.

The attention of the cartographer is called to the following:

(a) Rock awash 180 meters southwest of Δ Trunk is shown on T. 4564 as a sunken rock "covered 2' at low water." H. 5060 shows this rock as "awash at mean lower low water."

(b) In Lat. $55^{\circ} 45'.7$, Long. $131^{\circ} 46'.3$ a 205-fathom sounding plots near several soundings 25 to 68 fathoms shoaler. This sounding was thoroughly investigated by the field party and found to be correct.

8. Reviewed by H. E. MacEwen.

app.

A. M. Sobieralski

80
14

May 28, 1931

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
11 volumes of sounding records for

HYDROGRAPHIC SHEET 5079

Locality Behm Canal, S. E. Alaska

Chief of Party: E. W. Eickelberg in 1930

Plane of reference is mean lower low water, reading

5.4 ft. on tide staff at Loring

19.3 ft. below B. M. 1

2.2 ft. on tide staff at Yes Bay

26.9 ft. below B. M. 1

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 Whitney
Chief, Division of Tides and Currents.