5421

5421

Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
H. S. PATTON, *Director*

State: ALASKA

DESCRIPTIVE REPORT

~~Topographic~~
Hydrographic | *Sheet No.* M-2233 5421

LOCALITY

PRINCE WILLIAM SOUND

MONTAGUE STRAIT, GREEN ISLAND TO

SEAL ISLAND.

*19*33

CHIEF OF PARTY

A. M. SOBIERALSKI, H. & G. E.

U. S. GOVERNMENT PRINTING OFFICE 1931

Form 537

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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. M 2233

REGISTER NO. 5421

State ALASKA

General locality PRINCE WILLIAM SOUND

Locality MONTAGUE STRAIT, GREEN ISLAND TO SEAL ISLAND.

Scale 1/20,000 Date of survey May 25 - Oct.12, 1933

Vessel SHIP SURVEYOR, LAUNCH WILDCAT, LAUNCH No.4.

Chief of Party A.M.SOBIERALSKI.

Surveyed by R.R.MOORE, R.C.ROWSE, F.B.QUINN, V.M.GIBBENS.

Protracted by C.J.BEYMA

Soundings penciled by R.C.ROWSE, C.J.BEYMA.

Soundings in fathoms ~~feet~~

Plane of reference MLLW

Subdivision of wire dragged areas by

Inked by R. B. Krum

Inspected by L. S. Straw

Verified by ~~R. B. Krum~~

Instructions dated April 15-th, 1933

Remarks: Part of ship sheet, originally called M4133 plotted on this sheet; part on sheet M2133.

U. S. GOVERNMENT PRINTING OFFICE

Applied X Chs 8515. Dec 1934 - H.D. Bowker
" " " 8517 " " "

DESCRIPTIVE REPORT

to accompany

SHEET M-2233 (FIELD NUMBER)

MONTAGUE STRAIT, PRINCE WILLIAM SOUND, ALASKA

PROJECT HT - 141, 1933

DATE OF INSTRUCTIONS: APRIL 15, 1933.

LIMITS: Joins sheet M-2333 (field number) at the south in the vicinity of the north end of Green Island; sheet H-3353 at the north end of Green Island; sheet M-2833 (field number) at the west between Green Island and Seal Island; sheet M-2133 at the north near Seal Island; and at the east the shore line of Montague Island. It also overlaps sheets H-2741 (1905) and H-2741* (1911) near Seal Island. Where these sheets are overlapped, this survey should be considered supplementary to them. To the northeastward of Seal Island, some soundings from H-2984 were transferred to the smooth sheet, as the work is not complete without them.

* 2741 bis - (1911)

SURVEY METHODS: The boat sheet for this work was prepared in the office and all soundings from previous surveys carefully compiled. The work is therefore supplementary to previous surveys.

Regular methods were used, the ship SURVEYOR using a fathometer, and the launches WILDCAT and No.4 using wire machine and handlead. All recording sheaves were checked at the end of the season and found correct.

All spots indicating shoals were closely developed and spot sounded, particularly the extensive shoal between Seal and Green Islands and the 2-2/6 fathom spot 1¼ miles southwestward of Graveyard Point. The shoal area extending northeastward from Seal Island was also closely developed.

DANGERS: The area surrounding the 2-1/6 fathom spot about 1 mile North true from eastern end of Seal Island shown on H-2984 was further developed on this sheet and on hydrographic sheet M-2133 (field number) but no shoaler water was found.

not shown on this sheet

The 4½ fathom spot in Lat. 60 - 22.2, Long. 147 - 22.8 marks the northern end and the 2½ fathom spot in Lat. 60 - 20.5 Long. 147 - 27.9 marks the extreme western end of an extensive shoal area 3 miles long in NE - SW direction.

The position of the rocky islet on which △ DET is located differs slightly from the position on H-3353. The reef ½ mile

to the northward is charted as 3 feet high, but it is just awash at M. H. W. and should preferably be indicated by the rock awash symbol. See review par. 5 b (3)

A rock awash charted 1/2 mile 260° from △ DET was verified, but the slight change in position of △ DET now makes the bearing 250°.

The sunken rock symbol charted 0.6 mile 270° from △ DET does not exist. *The origin of this rock is unknown as it does not appear on H-3353. There are however, shoal indications about 300 meters westward. See review par. 5 d (1) * originates with H2741

The sunken rock* 0.8 mile 221° from △ DET was verified by a 4/6 fathom sounding, although a few meters from the position shown on H-3353. There are a few soundings on H-3353 in this vicinity which are apparently misplaced, and it is suggested that the soundings from position 7 m to pos. 20 m on H-3353 be marked "superseded". These soundings are in fair agreement and have been retained on the sheet y.h. * shown as rock awash on H3353 and on chart

A 5/6 fathom spot was located 0.8 mile 236° from △ DET. also a 3/6 fath. on same shoal.

A rock awash at MLLW lies 1.6 miles 242° from △ DET, while surrounding it at a distance of about 0.6 mile there are a number of shoals including the 2 fathom spot mentioned above.

The rock awash charted 1.5 miles 192° from △ DET in Lat. 60 - 19.7 and Long. 147 - 24.5 was searched for and no indication found. On the H-3353, the original source of this rock, it is noted that this symbol was shown on the boat sheet in pencil and therefore charted. There should, therefore, be no hesitation about removing this rock from the chart. See review par. 5 b 1

In Lat. 60 - 19.8, Long. 147 - 22.3 a sunken rock is charted which is marked E. D. on Chart 8551. This symbol is also brought forward from pencil mark on boat sheet of H-3353. It was searched for and no indication found, and as it is doubtful just what the boat sheet indicated in the first place, it should be removed from the chart. See review par. 5 b 2.

The removal of these two dangers from the chart opens up a clear channel between Green Island and △ DET from Montague Point towards Knight Island Passage, cutting off several miles from the route now used to the northward of Seal Island.

In the area between Green and Montague Island covered by this sheet, special attention is called to the 2-1/6 fathom spot 1.3 miles 228° from Graveyard Point. At low water kelp is visible. Irregular bottom extends to shore from this shoal.

The southern part of Stockdale Harbor contains many shoals.

note in margin by y.s.h. reviewer.

ANCHORAGES: Stockdale Harbor furnishes the best anchorage in this vicinity in the prevailing N. E. weather. In entering, the shoals off the northern entrance point must be avoided. Anchor in the northern part of the bay. Small boats can find protection in the various bights.

COMPARISON WITH PREVIOUS SURVEYS:

A good junction was made with H-3353, except as noted above, and in general a good agreement was found with H-2741 (1905), but in the vicinity of Seal Island, some of the soundings on the latter appear to be slightly displaced. The principal discrepancies are the following: a 42 fathom sounding was found taken nearly on top of a 19½ fathom spot shown on H-2741 at Lat. 60 - 26.9 N., Long. 147 - 23.3 W; and a 43 fathom sounding close to a 25 fathom spot at 60 - 27.1 N. Long. 147 - 23.6W.

see par. 6, a(2) of the review of this survey H.S.H.

The junction with H-2984 North of Seal Island also contains some discrepancies indicating slight displacements, particularly a 24 fathom sounding close to a 9½ fathom spot at Lat. 60 - 25.9, Long. 147 - 23.0. The 9½ fathom spot apparently is displaced, but the bottom is so irregular that it may possibly exist. None of these discrepancies is serious. The 9½ fath. sounding originates with H-2741 and has been carried forward to H-5421 H.S.H.

GEOGRAPHIC NAMES: The name "Applegate Rock" is suggested for the rock midway between Seal and Green Islands. The rock is indicated on a manuscript map in archives of C. & G. S. dated 1887, submitted by S. Applegate, a noted sea otter hunter and pioneer, who furnished much information to the Bureau regarding Alaska waters.

O.K.

STATISTICS:

Total number of positions	2,650
Total number of soundings	6,522
Total statute miles	479.8

Respectfully submitted,

Francis B. Quinn.

FRANCIS B. QUINN,
Jr. H. & G. E., C. & G. S.

APPROVED AND FORWARDED:

A. M. Sobieralski

A. M. SOBIERALSKI, H. & G. E.
Chief of Party.

STATISTICS

SHEET NO. M-2233

Vol.	Day	Date	Positions	Soundings	Statute Miles
6	A	6-10-33	137	477	64.5
6	B	6-12	192	765	67.4
8	a	7-10	134	250	16.7
8	b	7-15	70	176	12.7
1	A	7-17	48	101	4.5
1	B	8-12	32	105	2.5
1	C	8-23	119	214	23.0
1	D	8-24	102	169	16.5
1	E	8-28	57	98	8.1
2	E	8-28	43	80	6.0
2	F	8-29	34	80	4.5
2	G	8-30	156	263	17.8
2	H	8-31	132	277	17.3
3	H	8-31	12	31	1.7
3	J	9-1	156	331	19.7
3	K	9-8	64	125	11.2
3	L	9-14	149	248	11.8
4	L	9-14	23	29	1.0
4	M	9-15	167	276	12.6
4	N	9-20	166	248	18.3
5	P	9-21	71	131	13.3
6	C	10-10	52	258	46.0)
7	C	10-10	49	124	)
9	a	10-2	137	523	25.5
9	b	10-4	85	249	11.3
9	c	10-6	108	369	15.0
10	d	10-10	76	268	13.7
10	e	10-12	79	257	17.2
		Total:	2,650	6,522	479.8

Inspection of H. 5421

Montague Strait
Surveyed in 1933 by A. M. Sobieralski

Hand Lead - Machine - Fathometer Soundings.

1. Protracting.

The protracting is satisfactory. The Topographic signals were not checked by the Field.

2. Remarks.

a. No boat sheet has been found for an area of approximately 12 square miles Lat. 60°26' to Lat. 60°31' and Long. 147°09' to Long. 147°17'. The plotting on the smooth sheet is in good agreement with adjacent work and is apparently satisfactory. The work is recorded in Volume 10 - H. 5421. See notes on Page 4 and 19.

b. Several rocks awash were located by the Hydrography in the vicinity of △ Det 1933 (Applegate Rock).

c. In Stockdale Harbor the sounding line 85 - 86a (red) runs ~~east~~ north of a rock awash located by the Topography, bare 7 ft. M.L.L.W. The reduced sounding "0" falls first northwest of the rock awash. This indicates that the rock has a large top or that there is a slight disagreement between the Hydrographic and Topographic location.

one rock only is shown
sounding
the rock
that originates with
the top.

Submitted by - Leo S. Straw,
July 18, 1934.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 5421

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet	2650
Number of positions checked	46
Number of positions revised	2
Number of soundings recorded	6522
Number of soundings revised	12
Number of signals erroneously plotted or transferred	13

Date: August 22, 1934

Cartographer: Inspection by L. S. Straw
Verification and inking by R. B. Krum

Verification of protracting
Verification & inking of rocks and shoals } by L. S. Straw Time: 19 hrs.

Verification of inking by R. B. Krum Time: 137 hrs.

Noted by John G. Ladd 43 hrs. Time: 50

Verification Report H. 5421.

Records.

The records are neat and legible. They conform to the general requirements of the Hydrographic Manual.

Protracting:

See the Inspection Report submitted by L. S. Straw for information regarding protracting.

Plotting and Drafting.

The field plotting and drafting was well done with the exception of the following:

> The topographic stations were not verified by the field party. The verifier found that the transfer of these stations had been carelessly done. Thirteen of them were changed a distance of 10 m. or more (1:20,000 scale). However, the effect upon positions by this change of topographic stations was so slight that none of the positions were changed.

Crossings.

The crossings are in good agreement.

Comparison with other Data.

The hydrographic sheet checked well with the topographic sheets 4809, 4834, and 4837 except for the disagreement in topographic stations (from T. 4834 and T. 4837) mentioned above under Plotting and Drafting.

Curves.

The usual depth curves could be drawn.

Junctions.

This sheet joins H. 5430 on the north and northwest, H. 5431 on the west, H. 3353 on the southwest, H. 5427 on the south and H. 3675 on the east. It was decided not to make a junction with H. 3353 and H. 3675, surveyed in 1911 and 1914, respectively, unless the reviewer requests it* Of the three contemporary surveys, H. 5431 is the only one that has been verified. The junction of H. 5431 with this sheet shows good agreement.

* These junctions have been added H.S.P.

Remarks.

The name "Applegate Rock" for the rock on which station DET is located (lat. 60° - 21'.2, long. 147° 23'.9) was left in pencil until a decision to so name the rock is assured. (See the Descriptive Report).

The zero sounding referred to in paragraph 2c of the Inspection Report was inked as a rock awash symbol after consideration of the records and the boat sheet. see note at 2.c.

Submitted by - R. B. Krum - Aug. 22, 1934.

R B Krum

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5421 (1933)

Montague Strait, Green I. to Seal I., Prince William Sound, S.W.Alaska
Instructions dated April 15, 1933 (Surveyor)
Surveyed in May 25 to Oct. 12, 1933

Fathometer, Machine & Hand Lead Soundings - 3 Point Fixes on Shore Signals

Chief of Party - A. M. Sobieralski.
Surveyed by - R. R. Moore, R. C. Rowse, F. B. Quinn, V. M. Gibbens.
Protracted by - C. J. Beyma.
Soundings Plotted by - R. C. Rowse & C. J. Beyma.
Verified and Inked by - Leo. S. Straw & R. B. Krum.

1. Condition of Records.

The records conform to the requirements of the Hydrographic Manual with the following exceptions:

a. No boat sheet was submitted for the northeast section of the smooth sheet (an area of about 12 miles square).

b. Evidence that the plotting of the topographic signals had been checked was lacking, since the initials of the checker were omitted. This was accomplished in the office and 13 signals were found to be in error by at least 10 meters and were accordingly corrected. However, no replotting of positions was necessary as a result of the changed signals.

c. The arcs used to construct the central parallel were unnecessarily long and so sharp as to break the fiber of the paper.

2. Compliance with Instructions for the Project.

The survey satisfies the instructions for the project, except that a better junction should have been effected with H-3675 (1914) on the east.

3. Sounding Line Crossings.

No general system of cross lines were run. Those that were run or those that result from the work as well as a comparison of adjacent lines on areas of smooth bottom show a good agreement.

4. Depth Curves.

Within the limits of the survey the usual depth curves may be satisfactorily drawn, except the 50 fathom curve at the junction of this sheet and H-3675 (1914) on the east in Lat. 60°25', Long. 147°09'.

5. Junctions with Surveys.

a. On the west a satisfactory junction is made with H-5431 (1933).

b. On the southwest a junction was effected with H-3353 (1911). Because of the extensive overlap between the two surveys, only the soundings along the junction line were transferred, in addition to a number of the more important soundings within the common area. The two surveys are in good agreement except as follows:

(1) The rock awash charted in Lat. 60°19.75', Long. 147° 24.50' falls on a 50 fathom sounding on the new survey, and the surrounding soundings fail to show any evidence of shoaling within the area. The rock originates with the boat sheet for H-3353 (1911), on which it is shown in pencil only. There is a 67 fathom sounding 80 meters to the south on the old survey, but the records do not mention the rock. The field party for the new survey searched for the rock and failed to find it. (See Descriptive Report H-5421). The rock symbol should be removed from the chart as recommended by the field party.

(2) The E. D. sunken rock (charted) in Lat. 60°19.8', Long. 147°22.3' also originates with the boat sheet for H-3353 (1911), on which it is shown in pencil only. A search of this area by the present field party failed to reveal any rock, the least depths found being 19 fathoms. Their recommendation (See D. R. H-5421) that the sunken rock symbol be expunged from the charts is concurred in.

The descriptive report points out that the removal of the two dangers mentioned in par. 5b (1 & 2) opens up a clear passage approximately 2 miles northward of Green Island.

(3) The islets and rock awash shown on H-3353 (1911), and originating with same, at Lat. 60°21.6', Long. 147°23.6', Lat. 60°21.1', Long. 147°24', and Lat. 60°21', Long. 147° 24.8' were located by cuts from the ship, at distances from 350 to 900 meters. As these distances are excessive for the accurate determination of the features involved, the delineation of the area as shown on H-5421 (1933), which originates with T-4837 (1933), should supersede that shown on H-3353 (1911).

(4) The rock awash shown on H-3353 (1911) at Lat. 60°20.53', Long. 147°25' falls on the new survey on a 4/6 fathom sounding. The rock is bare 3 feet at M. L. L. W., which is arrived at by an estimated depth of one fathom over it during a heavy swell, with a nine foot tide.

The present field party drifted over this spot and took numerous soundings of which the 4/6 fathom was the shoalest. Since the 4/6 fathom sounding is considered more accurate than the estimated depth in the records for H-3353 (1911), it should be accepted in place of the rock awash.

c. On the east the junction with H-3675 (1914) is not close enough. An additional sounding line should have been run along the eastern edge of the present survey to fill the gap between the two surveys, which is approximately one mile.

d. Satisfactory junctions are made with H-5430 (1933) on the north and northwest and with H-5427 (1933) on the south.

e. H-2984 (1908)

Some soundings from this survey have been added to H-5421 (1933). The shoal about $\frac{3}{4}$ of a mile northeast of Seal Island was not developed by the present survey and the soundings from H-2984 (1908) were used to cover this area. This survey is in good general agreement with the present survey.

6. Comparison with Prior Surveys.

The following sheets constitute the prior surveys of the area.

a. H-2741 (1905) and H-2741 bis (1911).

H-2741 bis (1911) on a scale of 1-100,000 appears to be a boat sheet used as a smooth sheet. As the soundings on H-2741 bis (1911) have been replotted on H-2741 (1905), scale 1-40,000, the comparison was made with that sheet. It is in general agreement with the present survey with the following exceptions:

(1) Several sunken rock symbols and small islets are shown in brown in the vicinity of Lat. 60°21', Long. 147°25'. These apparently do not originate with H-2741 (1905) but are from some undetermined source. This area is also covered by H-3353 (1911). Two of these sunken rocks are charted in Lat. 60°21.15', Long. 147°25.20' and in Lat. 60°20.7', Long. 147°25.7'. They fall in depths of about 14 fathoms and 2-1/6 fathoms, respectively, on the present survey. Because of their doubtful origin and because the area is covered in detail by the present survey these sunken rock symbols should be discontinued in future charting.

(2) A $19\frac{1}{2}$ fathom sounding (charted) in Lat. 60°26.9', Long. 147°23.3' and a 25 fathom sounding at Lat. 60°27.1', Long. 147°23.6' fall on a 42 and 43 fathom sounding, respectively, on the new survey. The fix controlling the $19\frac{1}{2}$ and 25 fathom soundings uses for center object a signal located by cuts, which do not agree well. A replotting of the two soundings places them about 200 meters southward, in which positions they are in fair agreement with the present survey. Because the control of the recent work is more accurate, the old $19\frac{1}{2}$ and 25 fathom soundings should be superseded by the depths shown on H-5421 (1933).

(3) The 9½ fathom sounding at Lat. 60°25.9', Long. 147°23' fall close to a 24 on the new survey. As the bottom in this vicinity is very irregular, and the new survey does not conclusively disprove its existance , the 9½ fathom sounding has been carried forward to H. 5421 (1933)

Apart from the matters noted above, H-2741 (1905) may be used to supplement the new work (H-5421, 1933) wherever necessary for charting purposes.

b. H-2807 (1905).

Only a few soundings from this reconnaissance survey fall within the limits of the present survey. While in agreement, it is unnecessary to use them in charting.

7. Comparison with Charts No's. 8515, 8517 and 8551.

a. The charted 2 fathom sounding at Lat. 60°20.5', Long. 147° 27.9' is a preliminary depth originating with the present survey and reported in Chart letter No. 601 (1933). The final reduced value is 2½ fathoms as shown on H-5421 (1933). Another preliminary depth of 4½ fathoms in Lat. 60°22.2', Long.147°22.8', also reported in Chart letter No. 601 (1933), is in agreement with its final value.

b. The 2 fathom sanded spot shown on Chart No. 8515 in Lat. 60° 19', Long. 147°15.6' is also a preliminary depth originating with the present survey and reported in chart letter No. 425 (1933). The least depth found on this shoal as the final result of the survey was 2-1/6 fathoms.

c. Chart letter No. 493 (1934) consists of a section of chart No. 8515 on which some of the critical rocks and dangers in the foul area approximately 3 miles north of Green Island have been shown. This was prepared by the Section of Field Records before the verification of the sheet and should not be used for charting now that H-5421 (1933) is available.

d. Large clusters of sunken rock symbols are charted in Stockdale Harbor from sources outside of this Bureau. Because of the detailed nature of the present survey, these sunken rock symbols should be replaced on the chart by the delineation shown on H-5421 (1933).

e. With the above exceptions, the chart is based within the area of the present survey on surveys discussed in the foregoing paragraphs and contains no additional information that needs consideration in this review.

8. Field Plotting.

The field plotting is satisfactory.

9. Additional Field Work Recommended.

a. A closer development on the 12 fathom shoal in Lat. 60°18.4', Long. 147°14.5' is desirable because of its proximity to the entrance to Stockdale Harbor.

b. A development of the 18 fathom shoal off the entrance to Stockdale Harbor (Lat. 60°18.65', Long. 147°15.85'). A 24 fathom sounding approximately 500 meters southwest of the 18 indicates that this shoaling is of some extent and there is a possibility of shoaler depths.

c. A split line between the eastern limits of the present survey and the western limits of H-3675 (1914) to better define the curves and cover the area more uniformly.

d. A more complete development of the shoal about 1 mile northeast of Seal Island. This shoal was not fully developed on the 1908 survey (H-2984) nor on the present survey (H-5421).

e. A number of undeveloped shoals and shoal indications were located in the general vicinity of Lat. 60°21.5', Long. 147°25'. The importance of these are minimized by their close proximity to the generally foul area to the eastward, hence no additional work is deemed necessary on these shoals.

10. Superseding Old Surveys.

Within the area covered the present survey, with the indicated additions from previous surveys, supersedes the following survey for charting purposes.

H-2807 (1905) In Part.

11. Reviewed by - John G. Ladd and R. L. Johnston, Dec. 17, 1934.

Inspected by - A. L. Shalowitz.

Examined and approved:

C. K. Green, C K Green
Chief, Section of Field Records.

L. O. Colbert
Chief, Division of Charts.

J. S. Borden
Chief, Section of Field Work.

G. Ladd
Chief, Division of H. & T.

RAC
P2

June 9, 1934

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in
11 volumes of sounding records for

HYDROGRAPHIC SHEET 5421

Locality **Montague Street, Green Island to Seal Island, Prince William Sound, Alaska**
Chief of Party: **A. M. Sobieralski in 1933**
Plane of reference is **mean lower low water reading**
6.0 ft. on tide staff at **Wilby Island, Port Chalmers**
20.4 ft. below B. M. 1

Height of mean higher high water above plane of reference is 11.7 feet

Condition of records satisfactory except as noted below:

Paul F. Whitney

Chief, Division of Tides and Currents

25 Jan 24, 1936