

4677-4677  
Field Sheet M.

C. & G. SURVEY  
I. & A.  
NOV 26 1927  
No.

Form 504  
DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

State: *S. W. Alaska*

11-5013

DESCRIPTIVE REPORT.

*Hydro* Sheet No. <sup>M</sup> **4677**

LOCALITY:

*Montague Island*

*Prince William Sound*

Montague Strait - Cape Cleare

to Hanning Bay

1917

CHIEF OF PARTY:

*R. T. Lukens*

4677

## DESCRIPTIVE REPORT

To Accompany Hydrographic Sheet

### MONTAGUE ISLAND

Str. SURVEYOR - R. R. Lukens, Chief of Party

Work executed under instructions dated February 3rd, 1927.

General Description:- The system of sounding lines was kept as nearly as possible normal to the coast line with lines spaced 300 meters apart except in Macleod Bay where the spacing was 200 meters.

On the north the hydrography made a juncture with a previously completed survey of Hanning Bay. The lines were run from as close to the beach as it was safe to maneuver, out to the 50 fathom curve, or to slightly overlap the ship hydrography. This procedure was followed down the entire outside coast as far as Cape Cleare.

It will be noticed that in many places the sounding line ends or turns at the kelp line where the depth indicates that launch might have been brought closer to the beach. This is due to the fact that in August and the first part of September the kelp beds had become so thick in places that it was impossible to run a launch thru them without the risk of losing a propellor, except at high water when a stiff current was running and the kelp was towed under.

North of Macleod Harbor the character of the bottom is mostly rocky with small areas of mud and gravel. It slopes quite uniformly and rather steeply down to 70 fathoms on the limit of the sheet. The 50 fathom curve approximately parallels the coast to a point  $\frac{3}{4}$  mile N W of Point Woodcock where it swings slowly out, forms a narrow loop behind the 28 fathom bank off the entrance to Macleod Harbor, then swings westward beyond the limits of the sheet. South of Macleod Harbor the depth curves swing further off shore and the character of the bottom gradually changes, there being more sand and gravel and less broken rocky bottom. The bight just north of Cape Cleare, known locally as San Juan Bay, has a level sand bottom with only a few indications of rock.

Macleod Harbor is deep and free from any dangers to navigation. The bottom is rather uniform in slope and characteristics and offers no features worthy of note except as will be listed under Anchorages. The flats shown between high and low water at the head of the bay are mud and sand with no indication of rock. They bare at lower low water on spring tides.

Outlying Dangers:- There is very little which could come under this heading, except, perhaps, the fish traps shown along the south side of Macleod Harbor and the one in San Juan Bay. These are of more or less temporary nature because toredos and wave action take

out most of the piling wash year, but as long as the traps are used they are kept in repair. ✓

Inshore Dangers:- The most important inshore dangers are the few boulders and detached rocks lying outside the general talus line along the stretches of rocky beach. In every case these rocks are plainly marked with kelp. ✓

240 meters N W of signal Bay is a rock, bare at 1/2 tide, which marks the outer edge of a boulder flat making out from the point. ✓

140 meters WNW of signal Basil lies a detached rock in a thick bed of kelp. This rock bares at 3/4 tide and has between it and the beach a narrow channel free of kelp and averaging 2 fathoms in depth. ✓

The rock awash shown in pencil 280 meters NW of station Bry was sighted at extreme lower low water by the signal building party at station Bry but was not visible when either the hydrography or topography was done at this point. Thick kelp beds prevented a thorough hydrographic investigation, thus no accurate location could be made. ✓

380 meters N of signal Bar is a detached boulder in about 1-1/2 fathoms of water. There are a good many such boulders for a distance of 50 meters or so out from the beach but apparently none further out than this. ✓

250 meters SW of signal Tom are three points of rock marking a reef that bares at 3/4 tide. Kelp beds prevented a thorough investigation but no indication of the reef existed west of the kelp line shown on the sheet. ✓

Tide Rips and Currents:- The currents in the area covered by this sheet are purely tidal and have all the common characteristics of their class. There is a marked difference in rate of flow between spring and neep tides. ✓

The general trend of the current is parallel with the axis of the Strait, running north on the flood and south on the ebb. No observations were made to determine the time relation of slack water and maximum velocity to the stage of the tide or to measure velocity, but from observation of sounding lines I would estimate as high as 2 knot currents at maximum flood and ebb. ✓

It will be noted in the sounding record that attention is frequently called to tide rips especially off station Mont, signal Ral and station Trap. These tide rips are not of first importance and vary in intensity and location with the velocity and stage of the tide. To save confusion they were not noted on the sheet. ✓

On a strong flood tide, first half, there seems to be a slight, clockwise rotation of water in San Juan Bay, the current running south along the beach and north in the straits. This same condition seems to hold true around and a little west of the fish trap, at station Trap. A flood tide gives a clockwise rotation at this point but an ebb tide has very little if any current effects. ✓

Awash at  
1/2 tide from  
toposheet.  
A.L.S.

Landmarks:- In approaching Montague Strait from the south, Cape Cleare stands out well defined. It appears as a low, flat promontory almost level for a half a mile east from signal Mont; then it rises at a constantly increasing slope in a smooth curve to the 1650 foot peak (see topo. sheet). At the outer or western edge, the bluff rises slightly to an elevation of 320 feet, then falls sharply to the beach at an angle of about  $45^{\circ}$ . The top of the headland is heavily forested to the edge of the bluff.

Just north of San Juan Bay the peak Stair shows very plainly from the southwest. The lower slopes are forested but the upper third is smooth, rounded and grassy. This peak marks the S. W. end of the ridge forming the highlands of Point Bryant and its slightly greater elevation makes a prominent landmark.

In Latitude  $59^{\circ} - 53.6$ , Longitude  $147^{\circ} - 46.7$ , is a 1600 foot peak which makes an excellent landmark in approaching Macleod Harbor. The top is free of forest and covered with grass and moss. The general slope as viewed from the southwest is conical with a slightly flattened top. It stands out clear and distinct from the jumble of peaks and ridges in the background.

Anchorage:- There is only one anchorage to be recommended; Macleod Harbor. In running in to this anchorage, ships should keep about one third of the distance from the north to the south shore until on a line drawn from signals Ten to Bug. This range can be easily recognized because Ten is a prominent shingle spit and Bug is a sharp, rocky point - the only rocky point on that side of the bay. This gives an anchorage in 17 fathoms, soft sand and mud bottom, excellent holding ground and perfect protection in any weather.

San Juan Bay is not recommended because a heavy swell is always running into the bay and it offers no protection in southwest to northwest weather.

As noted on the sheet, there are several groups of piling driven in depths of from 5 to 2 fathoms behind the shingle spit at signal Ten. These pile clusters were put in by the San Juan Fish and Packing Co. as moorings for their pile drivers while at work on the traps. They furnish excellent moorings with plenty of swinging room and good protection for fishing boats. The hailbut men, fishing on the banks south of Cape Cleare, take advantage of this in bad weather.

Note:- The low water line at the head of Macleod Harbor was rodged in at one foot minus tide, when this flat bares.

Survey Methods:- The sounding was done with Motorsailer # 2967 rigged with a sounding machine geared to the engine. This was a new installation in that launch and proved very satisfactory in every way. It seldom proved necessary to wait for the lead to be raised between soundings as the increased speed of the hauling in was sufficient to bring the lead to the surface on the run between soundings. Soundings to a depth of 150 fathoms were taken with this apparatus in two minutes.

14 and 16 pound leads were used with the best results for average depths up to 70 fathoms.

The shoal water at the heads of the bays was hand leaded

with a regulation lead line.

Control by sextant angles to signals on topographic location. ✓

New Place Names:- Well established local name:- San Juan Bay as applied to the first bay north of Cape Cleare on the west side of Montague Island. The San Juan Fishing and Packing Co. have, for several years, maintained a fish trap in this bay, hence the name. ✓

Geographic Names:-

Montague Island  
Point Woodcock  
Macleod Harbor  
Point Bryant  
Cape Cleare

Note: Portable auto.  
tide gauge was operated  
at Macleod harbor and  
all sdg. reduced from this  
gauge. Plane determined  
by 1 months obs. Comparison ✓  
was not made with Seward  
for reason that Seward gauge  
was not working well at this  
time. R.R.L.

Respectfully submitted,



S. B. Grenell  
Jr. H & G Eng. C & G Survey

approved  
R.R. Lukens

sheet M

STATISTICS - MONTAGUE STRAIT

Date	Day		Day	Vol.	Pos.	Sdgs.	Miles	Boat	Remarks
Aug. 8	1:23 pm	5:08 pm	a	1	55	165	13.4	MS #2967	
10	9:35 am	4:44 "	b	1	83	168	16.9	"	
11	8:28 "	4:24 "	c	1	131	248	20.8	"	
12	1:08 pm	4:08 "	d	2	53	93	8.4	"	
16	8:09 am	4:39 "	e	2	126	242	28.2	"	
23	8:40 "	4:09 "	f	2	115	213	26.2	"	
24	9:11 "	3:42 "	g	3	77	146	17.7	"	
25	9:56 "	3:58 "	h	3	86	162	21.3	"	
27	8:33 "	11:10 am	j	3	51	93	9.2	"	
<b>TOTALS</b>				787	1530	162.1	<u>AREA</u> 22.5 sq. mi.		

December 15, 1927.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide reducers are approved in  
5 volumes of sounding records for

HYDROGRAPHIC SHEET 4677

Locality: **MONTAGUE STRAIT, S.W. ALASKA.**

Chief of Party: **R. R. Lukens, 1927.**

Plane of reference is **M L L W**  
**4.5** ft. on tide staff at **Enclosed Harbor.**

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.

*[Handwritten Signature]*  
Chief, Division of Tides and Currents.

Report on H 4677

Chief of party R.R. Lukens

Survey by S.B. Sewell - L.P. Soules

Projected and plotted by S.B. Sewell

Verified and inked by John G. Reed

1. The records conform to the requirements of the general instructions, except for the omission of the course of the boat, and this feature is clearly explained in each volume.
2. The plan and character of development fulfills the requirements of the general instructions.
3. The sounding line crossings are adequate.
4. The usual depth curves could be completely drawn.
5. The field plotting was complete to the extent prescribed in the general instructions.
6. No part of the work had to be done over by the office draftsman.
7. Further survey is not required to



to fully develop the important areas  
with in the limits of the sheet.

- 8. Both the character and scope of the surveying  
and the field drafting were very well  
done, and can be classed as excellent.

John S. Loog

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

March 24, 1928.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4677

Macleod Harbor and Vicinity, Prince William Sound

Surveyed in 1927.

Instructions dated February 3, 1927 (SURVEYOR)

Chief of Party, R. R. Lukens.

Surveyed by S. B. Grenell, L. P. Sowles.

Protracted and soundings plotted by S. B. G.

Verified and inked by J. G. Ladd.

1. The records conform to the requirements of the General Instructions with the exception that "ahead" and "stop" notations were not entered. The explanation given in the records for the omission of compass courses is satisfactory.
2. The plan and character of development conform to the requirements of the General Instructions.
3. The plan and extent of the survey satisfy the specific instructions. Owing to the extensive kelp along shore, it was impossible to extend the lines in to the beach. (See Descriptive Report).
4. The usual depth curves could be drawn except close inshore.
5. The usual field plotting was completed by the field party and was very satisfactory. However, latitude and longitude figures should have been shown entirely around the sheet instead of merely on the right and bottom edges. Also the position numbers and day letters in many cases were too small.
6. The junction with the contemporary hydrographic sheets in this vicinity will be taken up when those sheets are completed. They have not yet been received in the office.

The junctions with the old surveys, H. 2802 and H. 2741 (both surveyed in 1905) are satisfactory.

7. No additional work appears necessary here unless it is desired to further develop the 14 fathom sounding in lat.  $59^{\circ} 49' 750$  m., long.  $147^{\circ} 57' 120$  m.
8. Attention is called to the fact that the rock awash shown on the smooth sheet about 300 meters northwest of  $\Delta$  Bry is only an approximate location, being sighted by the signal building party when at that station. It was never seen again, ~~and~~<sup>and</sup> the thick kelp prevented a hydrographic examination. For want of a more accurate location the smooth sheet position will be accepted for charting purposes.
9. Character and scope of field operations - excellent.  
Field drafting - very good.
10. Reviewed by A. L. Shalowitz, February, 1928.

Approved:

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Chief, Section of Field Records (Charts)

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

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

C. & G. S. No. 11  
L. & A.  
NOV 28 1927  
Spec. No.

" M "

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.

M

Register No. 4677

4677

State . S. W. Alaska . . . . .

General locality . Prince William Sound . . . . .

Locality . ~~Montague Island~~ **Montague Strait-Cape Cleare to Hanning Bay** . . . . .

Chief of party . R. R. Lukens . . . . .

Surveyed by . S. B. Grenell - L. P. Sowles . . . . .

Date of survey . August - September, 1927 . . . . .

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

Soundings in . Fathoms . . . . .

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

Projected by S. B. G. . . . . Soundings reduced by S. B. G. . . . .

Indexed by . . . . . Verified by . . . . .

Records accompanying sheet (check those forwarded):

Des. report,  Wide books,  Manuscripts,  Charts

Sounding books,  Wire-draw books,  Photographs

Data from other sources affecting sheet . . . . .

Remarks:

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

C. & G. SURVEY  
L. & A.  
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4677

State . S. W. Alaska . . . . .

General locality . Prince William Sound . . . . .

Locality . Montague Strait-Cape Cleare to Hanning Bay  
~~Montague Island~~ . . . . .

Chief of party . R. R. Lukens . . . . .

Surveyed by S. B. Grenell - L. P. Sowles . . . . .

Date of survey August - September, 1927 . . . . .

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

Soundings in Fathoms . . . . .

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

Pretracted by S. B. G. . . . . . Soundings in pencil by S. B. G. . . . . .

Inked by . . . . . Verified by . . . . .

Records accompanying sheet (check those forwarded):

Des. report,  Tide books, 6  Marigrams, One  Boat log,

3  Sounding books,  Wire-drag books,  Photographs.

Data from other sources affecting sheet . . . . .

Remarks: