

4004

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

State: *Alaska*

11-5613

DESCRIPTIVE REPORT.

Sheet No. *4004*

LOCALITY:

*Cross Sound*

*Gulf of Alaska*

1917

CHIEF OF PARTY:

*C. G. Julian*

4004

*TO*

DESCRIPTIVE REPORT  
of  
HYDROGRAPHIC SHEET NO. 4004

ALASKA

APPROACHES TO CROSS SOUND

SCALE 1 - 200 000

STEAMER PATTERSON

1917

C. G. QUILLIAN

Chief of Party

This sheet was intended to cover the offshore sounding approaching Cross Sound. The instructions were to run lines parallel to shore at distances of four miles and split as found feasible. In line with this plan the work was begun. However, on a number of days signals and peaks for location could be seen nearer shore and a number of the split lines were run on such days.

- FIXES -

Using peaks located by triangulation, particularly NUB, MT. PEROUSE, MT. CRILLON, and MT. FAIRWEATHER, a number of conspicuous lower peaks were cut in both along the mainland and on Yakobi Island. These points, together with the peaks located by triangulation, served to give excellent and definite fixes for plotting the soundings. As the peaks are available for definite fixes it was not thought wise to sound during thick or foggy weather when the work would have to be fixed by dead-reckoning and adjusted. Consequently all soundings on this sheet are definitely fixed by three point problem and are subject only to the small error of jump in shifting signals. These jumps (see 51, 53 "L" day) are probably due to distortion of sheet, and necessary use of mountain signals introducing small errors in horizontal sextant angles, the latter also affecting the cutting in of points.

- SOUNDINGS -

Soundings were made by use of the Miller-Dake machine on stern. In depths of 85 fathoms and over the vessel was stopped and each sounding is an "up and down" cast. In depths of 70 to 85 fathoms, when the comparisons were close, one or two tube soundings were taken between up and down casts. In depths of fifty to seventy fathoms every fourth or fifth sounding was an up and down cast. It was made a rule that sufficient up and down soundings should be taken to insure selection of only up and down soundings for a chart on scale of 1:100,000 if desired, and the tube soundings to be regarded as verification of depth or checks showing no abrupt change of gradient. Tubes were Bassnett's Sounders, and of those on board a few were found which checked very closely at depths of 70 to 90 fathoms.

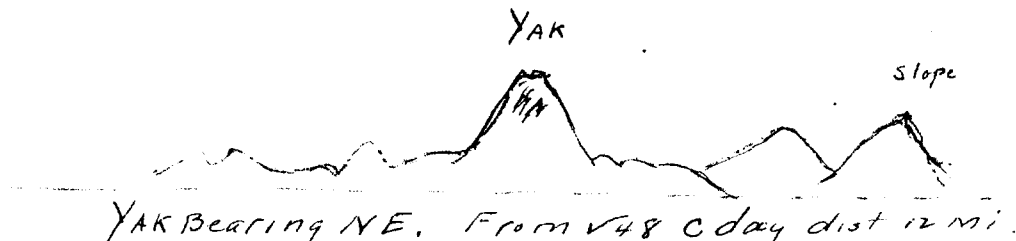
Over certain of the lines the submarine sentry set at 25 to 30 fathoms was towed. In inking the sheet some scheme should be devised to indicate this, as a light tint or a circle around soundings. The submarine kite was towed astern and did not cause great trouble in stopping, of course, the kite sunk to a greater depth, and also a small

section was not covered by the kite. Later the kite was towed from an outrigger and a small rudder also arranged to throw same more to starboard and away from sounding wire. Tanner Bliss tubes were sent down on kite a few times to check depth to which same descended.

Soundings platted on sheet have not been reduced for tide, although reducers from the Miner Island gauge have been entered in the sounding record.

The following description of certain of the peaks cut in are added for information and assistance of other parties continuing this work:

YAK, a large, dark, covered peak, about 3,000 feet high, located about center of Yakobi Island, and highest peak on the island. It is somewhat isolated and conspicuous. Sides are steep and precipitous and on seaward side covered with broken rock and slides.



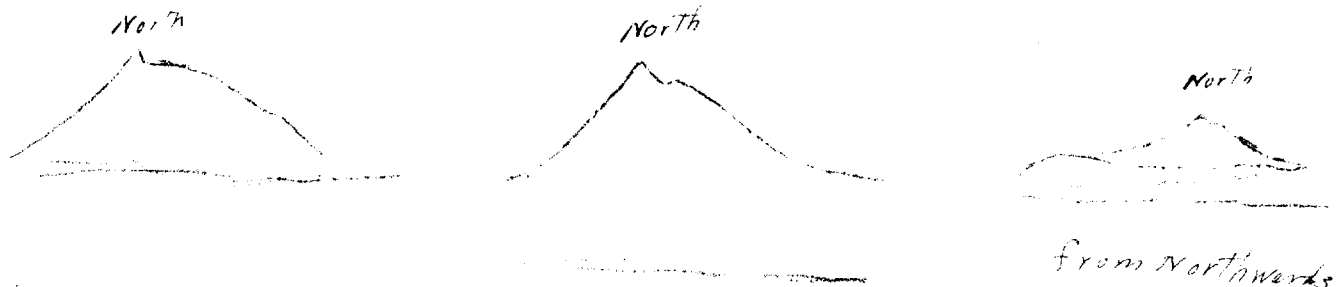
DUB, about 2,000 feet high, moss covered hill.

CROSS, a tripod signal on the high, steep, rocky islet forming Cape Cross, is about 150 feet high, and signal is near a clump of trees on summit of the island; located by cuts only.

CAP, a low, rounded, wooded knoll on Yakobi Island, near Cape Theodore, not conspicuous except in certain positions.

PEAK 72, cut in by triangulation, the southern and highest part of a serrated or sawtooth ridge.

NORTH, triangulation station, 1,950 feet, a very sharp and prominent peak; from well offshore is hard to see against the higher peaks inshore.



CUB and ALPHA 2, are very similar from offshore and must be identified before using. This is also true of the various hills north of Stag Bay.

DOOLTH MT, about 2,000 feet, a rounded, wooded peak, easily distinguished from northward.

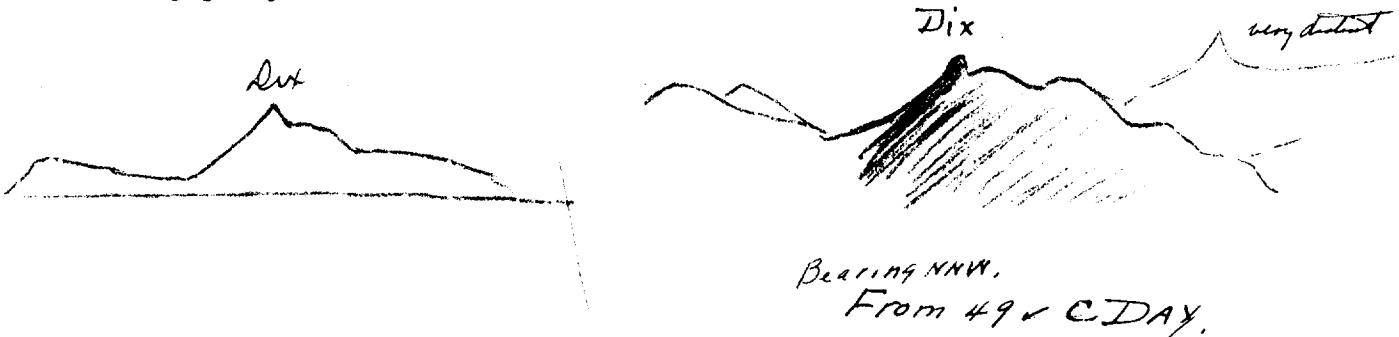
NUB, about 2,000 feet, moss covered, easily picked out.

TABLE, higher than NUB, but not so easily identified.

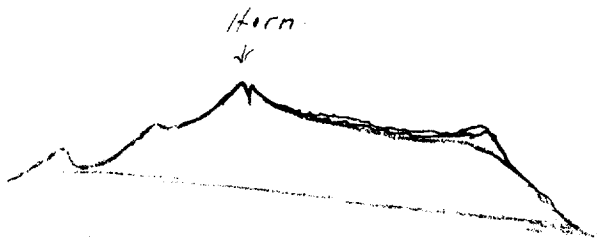
CLUMP, cut in the clump of trees on island lying a little northwest of Cape Spencer.

LIBBY, cut in center and highest part of Libby Island.

DIX, about 2,200 feet, a high, sharp peak, near water, cut in by party.



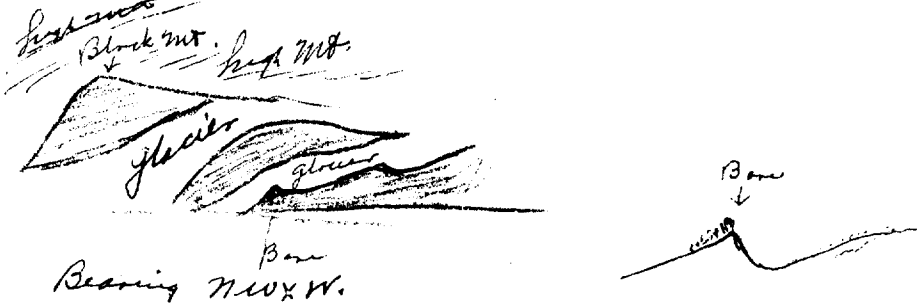
HORN, about 2,300 feet, a sharp horn on mountain. There are two of these horns and the more ~~southern~~ <sup>highest</sup> was used.



MOUND, a wooded mound, near Icy Point, is not conspicuous except with favorable light.

BARE, about 800 feet, a good signal, is a small bare hill top sheared off by the glacier. The western slope is wooded, eastern slope bared by glacier and of brownish color.

This point should be sut in again as changes in the glacier may modify same.



ISLAND, an island in the glacier, eastern side scarred and barren, western part wooded. From certain positions is very conspicuous. This island may change appearances or be entirely hidden by changes in the glacier. *Used eastern edge of true line.*

BLACK, is highest point of a rounded, wooded hill, about 1,500 to 1,800 feet high, shows black.

IN and OUT, are two wooded knolls on Yakobi Island, just back of Cape Cross, and are conspicuous from Cross Sound and from southward. They blend and are hard to distinguish when abeam.

WEST PAP, is the western of "The Paps", cut in by sextant angles.

BLUNT, a rounded, blunted mountain and probably will not be picked up by another party.

RIGHT and LEFT CRESCENT, are two horns of a crescent shaped peak, easily identified. The locations, however, are not strong except in direction of the suts.

LOST, can not be identified by another party.

The main peaks are easily identified with care. Mt. Perouse from Cross Sound shows quite a ridge and bare spots are to be seen. When southeast of this mountain the ridge is in the line of sight and a very sharp point is presented which is unmistakable.

MT. CRILLON, is snow-covered and very white. From Cross Sound and from Cape Cross it is sometimes mistaken for Mt. Fairweather. From southeast a form of snow spike or point renders this peak unmistakable.

MT. FAIRWEATHER, is the highest and most western of the big peaks, can not be mistaken. Avoid confusing it with Mt. Crillon when nearly in range; when more open Mt. A shows as a nub on Mt. Fairweather. The high peaks north of Mt. Fairweather are not visible and can not be identified until opened up west of Mt. Fairweather, which is not until off Lituya Bay.

MT. D AGELET, is very symmetrical and sharp, but hard to pick out against back ground of Mt. Perouse and Mt. Crillon.

ROUND, is a symmetrical peak, cut in by party, but not needed, about 8,000 feet, snow-covered.

MT. D, (© DEE), is a very sharp peak and can not be mistaken when about southeast of it, and the skyline of peaks between Mt. Fairweather and Mt. Perouse is opened up and all peaks distinct. Before opening up the skyline Mt. D is difficult to pick out.

MT. LITUYA, shows very blunt against Mt. Fairweather and until near Lituya Bay when finally opened up against skyline it is sharper, and when near end of lines may be identified from sketch in Coast Pilot.

Certain of the back peaks can not be seen from offshore, as Mt. Bertha, which has a sharp point on western end. Bertha shows from Cross Sound and Icy Strait, but is soon shut in by Mt. Perouse.

SUG, is the highest point of the sugarloaf island at the entrance to Dixon Harbor. There is a hill to eastward of Libby Island similar shaped which must not be confused in foggy weather. The position on the sheet was out in by sextant angles.

The point RED BLUFF was a red scar on hillside about half a mile inshore.

CREEK, RAVINE, BOULDER, are on shoreline and cut in to fix shoreline; also, tangents were taken to Icy Point. Tangents are also taken to tangents of Libby Island.

Shoreline and apparent slope of the glaciers are sketched in on the boat sheet, as is also the shoreline in bight between Icy Point and Dixon Harbor. The shoreline of the bight was sketched from a distance and is not so reliable as that around Icy Point.

Note that between Peak D and Mt. Crillon is a divide of about 4,000 feet elevation which may afford access to interior.

A number of objects were cut in along west shore of Yakobi Island to afford some control for sketching shore and should be combined with shoreline on present chart for details of bays, etc.

It is thought that data for filling in the topography on the east side of the Fairweather Range can be obtained from a number of camera stations on board ship if the proper camera is provided with fast lens and color screens.

A panorama camera similar to those used by Geological Survey parties the last few years and mounted on gimbals will probably give results desired. Each view should take in sufficient peaks to locate fixes, as well as sextant angles taken.

Respectfully submitted,

*W. G. Quillian*

Seattle, Wash.,  
Jan. 24, 1918.

*also see photographs attached to report.*



POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS OFFICE:

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

February 16, 1918.



INDICATED BY...  
R. & G. ENGINEER IN CHARGE IS

*Archived*



From C.G. Quillian.  
To Superintendent, Coast and Geodetic Survey.

Subject. Mountain profiles for attaching to Descriptive Report of Cross Sound.

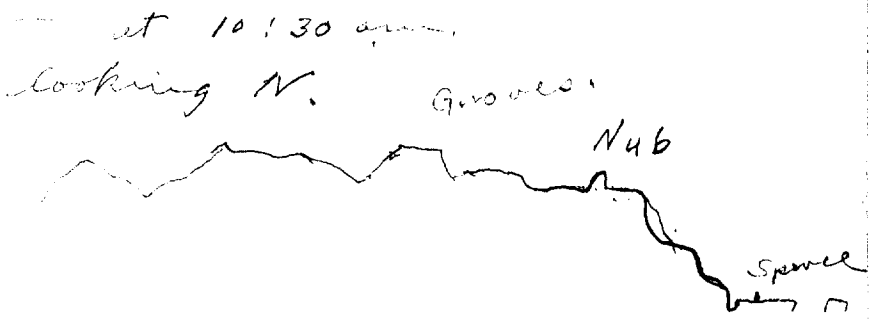
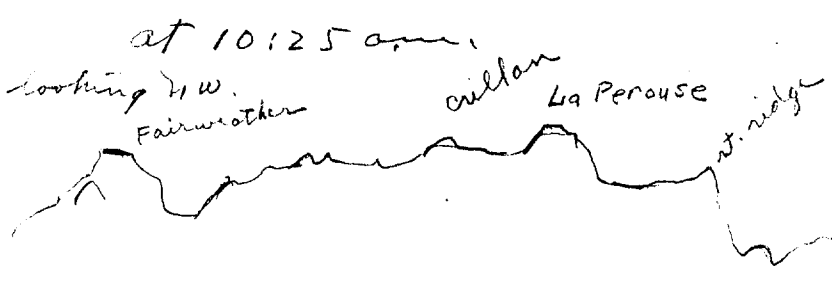
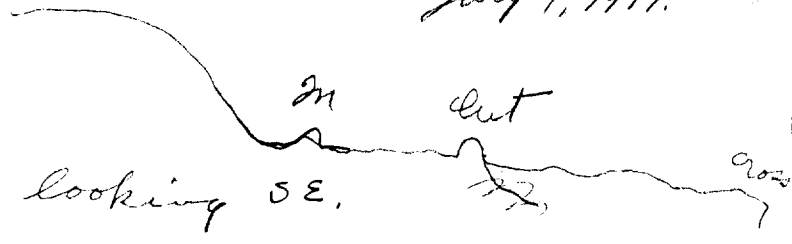
1. The profiles attached 3 sheets may aid in identifying peaks used in offshore hydrography Approaches to Cross Sound 1917. Fairweather Range and to Eastward.
2. Request to be attached to Descriptive Report of ship sheet called "Approaches to Cross Sound. Alaska."

SURVEY (0)  
R. F. S.

*C. G. Quillian*

*Hyd. 4004*

at 10:15 am.  
July 9, 1917.



at 10:35 am July 8, 1917

DIX



clump

at 12:10 noon July 8, 1917.

Horn 1

Horn 2

dist

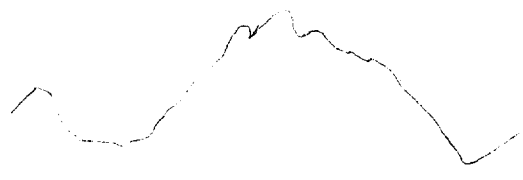


looking N.W.

Dist is a very distinct  
Pike faint blue color.

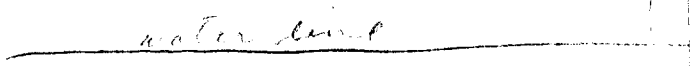
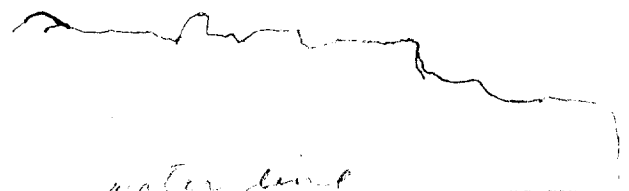
at 10.50 am.

● Dix



Bearing N x W.

Nub



10/ ADAY

Lead



Statistics Sheet No. 4004 Ship's Sheet.

Date 1917.	Day.	Volume.	To work From work		Total	St. miles	Soundings.	Soundings	Pos.	Ang.	Vessel
			Statute	Miles.							
July 9	A	1	15.0	0.0	15.0	70.1	93	64	283	Patson	
" 10	B	1	0.0	6.0	6.0	71.5	104	90	233	"	
" 22	C	1	20.0	20.0	40.0	76.0	130	83	376	"	
Aug 8	D	2	46.0	30.0	76.0	28.0	61	33	80	"	
" 9	E	2	0.0	0.0	0.0	56.0	103	72	271	"	
" 10	F	2	0.0	13.0	13.0	60.2	79	48	118	"	
" 16	G	3	15.0	18.0	33.0	33.0	87	35	94	"	
" 21	H	3	21.0	20.0	41.0	13.0	30	24	56	"	
" 25	J	3	43.0	75.0	118.0	53.0	75	47	174	"	
Sept. 3	K	3	140.0	0.0	140.0	55.0	89	66	222	"	
" 4	L	3 & 4	1.0	0.0	1.0	85.2	137	83	243	"	
" 10	M	4	11.5	17.0	28.5	35.0	77	42	164	"	
Totals. . . . .						626.0	1065	692	2014		

ADDRESS  
U. S. COAST AND GEODETIC SURVEY  
WASHINGTON, D. C.

REFER TO NO.  
5-EMK

LIBRARY

Place with descriptive report  
of hydrographic sheet No. 4004

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY ~~Drawing~~ Section. ✓

WASHINGTON

June 13, 1918.

CHARTS (H) ✓

Division of Hydrography and Topography: HCS

Division of Charts: ✓

Tidal reductions have been approved in  
4 volumes of Sounding records for

HYDROGRAPHIC SHEET 4004

Gulf of Alaska, Approaches to Cross Sound,  
Alaska

C. G. Quillian in 1917.

Plane of reference is  
Mean lower low water, reading

6.4 ft. on staff at Miner Island, Alaska.

*Paul Schureman*

Acting Chief, Section of  
Tides and Currents.

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

February 9, 1921.

To: The Chief of the Section of Field Records.  
From: A. L. Shalowitz, Hydrographic & Topographic Draftsman.  
Subject: Verification of Hydrographic Sheet 4004, Approaches to <sup>ROSS</sup> Coes Sound.

There was no trouble whatever encountered in the verification of this sheet. The sounding records were clear and distinct and most doubtful places were supplemented by appropriate notes.

The smooth sheet was in excellent shape. The protracting was verified by Mr. MacEwen. The spacing of the soundings was very good and Mr. Weidlich is to be commended for same.

The overlap shown on this sheet in blue was transferred from Hydrographic Sheet # 2558.



Aaron L. Shalowitz,  
Hydrographic & Topographic Draftsman.



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

SECTION OF FIELD RECORDS.

Report on Hydrographic Sheet No. 4004.

Surveyed in 1917;

Chief of Party: C. G. Quillian.

Surveyed by party of Str. Patterson

Protracted by W. Weidlich

Soundings plotted by W. Weidlich.

Verified and inked by A. L. Shalowitz.

1. The records conform to the requirements of the General Instructions.
2. The plan and character of development fulfills the requirements of the General Instructions.
3. The plan of development satisfies the specific instructions dated March 12, 1917, but the survey does not extend as far offshore as directed.
4. The sounding line crossings are adequate.
5. The hydrography was sufficient to permit the usual depth curves to be drawn.
6. The field plotting was completed to the extent prescribed in General Instructions.
7. The junction with adjacent sheets is satisfactory.
8. There are no indications of dangers to navigation within the area of this survey but, as indicated in paragraph 3 above, further surveying is needed to fully cover the limits contemplated by the original instructions.
9. The character and scope of the surveying is good and the field drafting is excellent.
10. Reviewed by E. P. Ellis, March, 1921.
11. Two copies of this report to be sent to Hydrography and Topography Division.