Flyd 3709
3711
3712
3717
3718
Top 3471
3472
3474
3475

Department of Commerce and Labor
COAST AND GEODETIC SURVEY

Superintendent.

State

DESCRIPTIVE REPORT.

Sheet No.

LOCALITY:

(See also individual reports)

191

CHIEF OF PARTY:

11—4645

(3709 etc.)

Flyd 3709
" 3711
" 3712
" 3717
" 3718
Top 3471
" 3472
" 3474
" 3475

3709

Diag. Chr. 8102-2

Department of Commerce and Labor
COAST AND GEODETIC SURVEY

Superintendent.

State: Alaska

DESCRIPTIVE REPORT.

Hydrographic Sheet No 3709

LOCALITY:

see also General Description
Report for sheets Hyd 3709-18
Topog 3471-76
Approach to Nichols Passage and
Felice Strait

1914

CHIEF OF PARTY:

G. L. Quillian

11—4645

3709

DESCRIPTIVE REPORT FOR HYDROGRAPHIC SHEET 3709.

OF

APPROACH TO NICHOLS PASSAGE AND FELICE STRAIT,

ALASKA

Scale 1 - 40,000.

Widely spaced lines were run with the ship. Soundings were spaced about one-half mile apart, and lines spaced about the same. All soundings were deep; from 100 to 250 fathoms. The sheet is joined on the northward by the Hydrographic Sheet of Nichols Passage, and joined on the eastward by Hydrographic Sheer of Entrance to Felice Strait, in vicinity of Point Davison.

There are no points of unusual interest in regard to this sheet.

It was plotted in the field, and the soundings plotted by Mr. W. H. Kearns, Deck Officer.

Respectfully submitted,

C. G. Quillian

Assistant, C. & G. Survey,

Chief of Party.

CGQ/MDG.

TABLE OF STATISTICS
FOR
HYDROGRAPHIC SHEET OF
APPROACH TO NICHOLS PASSAGE

1 9 1 4

****

DATE	LETTER	VOL.	MILES	SOUNDINGS	POSITIONS	HOURS	DISTANCE OF WORK TO	DISTANCE OF WORK FROM	
Sept. 3	A	1	11	29	29	5:30	5	5	Ship
" 10	B	1	7	20,	19	2:03	12	16	"
" 17	H	1	2	55	55	6:40	8	9	"
" 18	J	1	25	55	55	4:06	9	5.5	"
			45	159	158	18:19	34	35.5	

VEC
Apr.8,1915
L. P. J.

HYDROGRAPHIC SHEET 3709.

Clarence Strait, S. E. Alaska, by Assistant C. G. Quillian in 1914.

TIDES.

	Port Chester ft.
Mean lower low water, or plane of reference on staff	6.3
Lowest tide observed " "	2.1
Highest " " " "	25.8
Mean range of tide	12.7

6-13-60 JRL New Chart 8086 - Hydro compilddy applid eastward of easterly limit of H-8382 (1957.)

3711

Diag. Cht. No. 8102-2

Department of Commerce and Labor
COAST AND GEODETIC SURVEY

Superintendent.

State: Alaska

DESCRIPTIVE REPORT.

Hydrographic *Sheet No.* 3711

LOCALITY:

Blank Inlet

1914

CHIEF OF PARTY:

C. G. Quilliam

11—4646

3711

D E S C R I P T I V E R E P O R T

of

H Y D R O G R A P H I C S H E E T

OF

BLANK INLET & THE NORTHERN PART OF NICHOLS PASSAGE BELOW WALDEN RKS.

SURVEYED DURING JUNE-AUGUST,1914,

BY PARTY OF U.S.S.McARTHUR,

C.G.QUILLIAN, Ass't.,
Commanding

****

DEPARTMENT OF COMMERCE

U. S. COAST & GEODETIC SURVEY

O.H. TITTMANN,-Superintendent

Sheet # 1
Number of Sheets is 4

DESCRIPTIVE REPORT-to accompany HYDROGRAPHIC SHEET No.2, of-
UPPER PART OF NICHOLS PASSAGE in vicinity of the BLANK ISLANDS,-
& BLANK INLET, -SOUTHEASTERN ALASKA.

****

HYDROGRAPHIC SHEET No. 2 covers Blank Inlet from Lat. 55°18.3' to Lat. 55°15', & Nichols Passage from Lat. 55°12.8' North to Lat. 55°15.2' along the West shore of Annette Id., & on the Eastern side of the Passage from 55°13.5' to 55°16.3' at the N E tan of the lower one of the Blank Islands. All Hydrography on the sheet lies between Long. 131°35.8' & Long. 131°41.8' .

SHORELINE. The shoreline running 3 mi. N from the N tan of Sylburn Harbor (signal "Karr") to .3 mi. N of the point W of Anvil Mt. (signal "Plug"), constitutes the Eastern limit of the hydrography.

The Northern limit running W is made up as follows:- A 2.2 mi. line of soundings from the point W of Anvil Mt. (signal "Plug") to the N E tan of the S one of the Blank Islands (signal "Blank"),- thence .4 mi. to the N E tan of the entrance to Blank Inlet (signal "Rag") (located ENE of the N tan of the N one of the Blank Ids),-thence N W 3 mi. along the N shoreline of Blank Inlet to the head of the Inlet.

The Western limit of the hydrography runs S 6 mi. along the W. shore of Blank Inlet to Blank Pt., -to the N E tan of the entrance to Bostwick Inlet. (signal "Men").

The Southern limit is defined by a 3.2 mi. line of soundings running W from 100 meters S of signal "Karr" to 100 meters N of signal "Men."

SIGNALS. The signals used in the hydrography are described partly in the descriptions of triangulation stations used in this locality during 1914, and partly in the "Descriptive Report & List of Plane Table Positions of Plane Table Survey of Blank Inlet, Nichols Pass. S.E.Alaska,-by D.Karr, 1914."

DANGERS. The West shore waters, along Annette Id., are abundant in kelp and it is best to keep off shore (as defined by the prominent points) by at least 1/8 mi., until the Point abreast of Anvil Mt. is reached, when there are four patches of rock between this point and Walden Rock, viz.,

(1). One patch WNW from signal "Plug" & distant 100 m. Should bare about 4 ft. at M L LW. This rock is surrounded by kelp.
(2). Onepatch bearing 3° true from Signal "Plug" & distant 550 meters
(3) " " " 16° " " " " " 400 "
(4) " " " 334° " " " " " 1060 "
(signal "Plug" is located on the point W of Anvil Mt.)
The bight N & E of signal "Plug" is well covered with kelp patches.

In the bight N of the S oneof the Blank Ids., and E of the N one, there is a fringe of kelp extending along the border of the islands to a distance of about 100 meters from shore. In and on the outer

Sheet No.2
Number of Sheets is 4.

DESCRIPTIVE REPORT to accompany HYDROGRAPHIC SHEET No.2.

EDGE of this kelp three rocks were found:-
(1) A rock bearing 148° (true) from signal "Bet" and distant about 120 meters. This rock is about 3 ft. above M L L W.
This rock lies about 1/6 mi. W of the N E tan of the S Id.
(2) A rock bearing 5° from signal "Bet" and distant about 350 meters. This rock is about 3 ft. above M L L W. It lies about 1/6 mi. S of the N E tan of the N Id. & about 150 meters off NW line of shore.
(3) A rock bearing 74° from signal "Bet", and distant about 300 meters. This rock is about 3 ft. above M L L W. It lies about .1 mi. WSW of the NE tan of the N Id. S ?

In BLANK INLET the following sheals and rocks were found:-
(1) A least depth (roughly reduced for tide) of 33 ft. was found at a distance of about 825 meters bearing 135° from signal "New". This sheal lies 1/2 mi. S E of the sharp point on the W shore which marks a bend in the shoreline about .9 mi. from the head of the Inlet, and 1/2 mi. off the W shore.
(2) A least depth (roughly reduced for tide) of 28 ft. at a distance of 1210 meters, bearing 322° from signal "Point". This sheal lies .7 mi. N W of the N W tan (NW line) of the N one of the Blank Ids., & .5 mi. off the N shore.
(3) A least depth (roughly reduced for tide) of 19 ft. at a distance of 930 meters, bearing 156° from signal New. This sheal lies .6 mi. S S E of the sharp point on the W shore,.9 mi. from the head of the Inlet, and .3 mi. off the W shore.
A least depth of 21 ft. at a distance of 1100 meters, bearing 156° from signal New. This sheal lies .7 mi S S E of point mentioned under 1st sheal under (3), and .5 mi. off W shore.
These two least depths are probably on the same sheal, but no less depth could be found, -in the vicinity.
(4) A rock bare about 7 ft. at M L L W, distant about 1030 meters from, & bearing 268° from signal "Point", marks the NW end of a sheal about 40 meters in width, 150 meters long, extending in a SSE direction. This sheal is marked and surrounded by kelp. It lies .6 mi. WbS of the NW tan of the N one of the Blank Ids and .7 mi. off the W. shore.

ISLANDS.
The 2 BLANK ISLANDS lie between Lat. 55°16'& Lat. 55°17' and Long. 131°58' & Long. 131°59', and are described in the General Report covering Nichols Pass.
The small rocky island 450 meters SE of Blank Pt., and on which signal "Bare" was located, is bare of all vegetation. Its highest point is about 10 ft. above the High Water mark.

HARBORS. The only anchorage is the bight N and E of the Blank Ids., if shelter is sought from winds from a NW to a SE direction. The nearest sheltered anchorages of any size are off Metlakatla and Ketchikan.
There is no place suitable along this shoreline for beaching a ship.

Sheet #3
Number of Sheets is 4

DESCRIPTIVE REPORT to accompany HYDROGRAPHIC SHEET No. 2.

TIDAL CURRENTS. The tidal current on the flood sets N thru Nicholls pass, with a velocity of about 3 mi. in the vicinity of Walden Rocks, and sets W into Tongass Narrows. The tides from the E side of Annette Id. run past Race Pt. and Walden Pt. and meet the tides coming up the W side of Annette Id. thru Nicholls Pass. in the vicinity of Walden Rocks, depending somewhat on the force and direction of the wind.
The flood tide running up Blank Inlet rounds the N tan of the N one of the Blank Islands and in meeting the tide coming up the E side of the [illegible] creates a tide rip just outside of the entrance to the Inlet, E of the N Island.

CHARACTER OF THE SHORELINE. Running N from signal "Karr" to signal "Plug", the shoreline is rocky with intermittent small bights or recesses with flat sloping shingle beaches.

The shores of the S one of the BLANK ISLANDS is generally of abruptly sloped rock,-with jagged rock patches extending out irregularly as far as 200 meters on the S side-alone. The neck joining the N & S Ids at low water is covered with coarse rock gravel and rocks, the largest boulder being used as signal "Bet."

The shoreline of the N one of the Blank Ids., is less abrupt and lower than the S Id., & in general, is covered with irregular masses of rock and boulders. Both islands are heavily wooded.

The N shore of Blank Inlet is generally low, rugged, and of jagged rock,-the only elevation of any importance being Judy Hill, which is about 800 ft. high, and 1/2 mi. inland. The beach between H & L W lines is in general covered with weathered rock products, varying from gravel size to irregular boulders 10 ft. in diameter. The thick timber inland from the H W line is mostly dead.

At the head of the Inlet is a small grassy, well-watered flat. From this flat to signal "New", the L W beach is of a more gentle slope than on the N shore, and is gravel and boulder covered. From signal "New" to signal "Mon" the shoreline is of more steeply shelved rock, very rough and jagged in places. At signal "Rum" the rock slopes at about 60° to the Horiz. to a distance of about 20 ft. above H W with hardly any L W slope. No foothold can be gained on the face of this rock at L W. From this W shore the back-lying hills and ridges rise quite abruptly, and there are numerous small wet-season streams entering the inlet but none of consequence.

N of signal "Rain" the W shore timber is of shorter growth than to the South'ard.

In the little bight S of signal "Rum" and W of signal "Bare", there is a more gentle L W beach, extending from Blank Pt. to about 900 meters S of signal "Bite", than elsewhere along this W shore. This L W beach is covered with gravel, debris rock and boulders.

LANDING PLACES. One can find sheltered & convenient landings for small boats at frequent intervals alongshore all around the shore line shown on this sheet, at distances not further apart than some 500 meters,-in average weather. With a heavy sea and swell running

Sheet #4
Number of Sheets is 4.

DESCRIPTIVE REPORT to accompany HYDROGRAPHIC SHEET #2

(Continued)- IT IS HARD TO LAND ANYWHERES ALONG the shoreline not in lee.

WATERING PLACES. There are none. There are no streams or rivers of any size, where water could be obtained.

LIGHTS. After leaving Warburton Id. Lt. astern, going N, the Blank Id. Lt. located on the S E tan of the S one of the Blank Ids., bearing almost true N from Warburton, is the only light. This is a Gp Fl W light, mounted on a 10ft. high white box, so that the light is about 20 ft. above the H W mark.

SURVEY METHODS. The Hydrographic party consisted of two officers, a recorder, a coxswain, an engineer, and three men tending the sounding machine. The launch "Delta" was used for all the work. Location was made by plotting sextant angles with a 3-arm protractor. When "Time" was called by the recorder, the engines were reversed and the lead payed out as soon as headway was lost so as to get an up and down sounding. Sextant angles were taken at the same time as the lead was let go,-and plotted at once on the boat sheet so as to afford a means of directing the course of the boat. A Cosmos Hand Sounding Machine was, rigged with stranded sounding wire about 3/64" in diam. running thru a standard Bullaur Registering Sheave mounted on a separate V-shaped support inverted and braced on to the sounding platform built on the stern,-so as to lead some 18" astern on the drop. 8 to 9 lb. hollowed out sounding leads gummed with tallow for sampling bottom were used,-the weight used depending on the depths found for any locality.

Note:- The positions of the smooth hydrographic sheet were plotted by M.O.Nelson.
All distances used in this report are in terms of statute miles.
All bearings are true, & figured from the N.

Respectfully submitted,

~~C.H.Gullikson, Asst.C.& G.S.~~
Comd. Str. McArthur.

by..M.O.Nelson, Aid, C.& G.S

M.O. Nelson
Aid, C&GS

TABLE OF STATISTICS
FOR
HYDROGRAPHIC SHEET OF
BLANK INLET AND NORTHERN PART OF NICHOLS PASSAGE
FROM BARE ROCKS TO WALDEN ROCKS
1914

DATE	LETTER.	VOL	MILES	SOUNDINGS	POSITIONS	HOURS	MILES TO & FROM WORK		BOAT
6/12	A	I	11.5	118	118	3:57	7.0	8.3	Delta
13	B	I	14.5	141	141	5:19	7.0	9.2	"
15	C	I	16.8	153	153	6:51	8.0	3.5	"
16	D	I	5.0	58	53	2:17	3.0	6.5	"
17	E	I & II	14.5	135	135	5:08	8.5	9.5	"
18	F	II	15.2	151	149	6:04	9.0	3.0	"
19	G	II	17.8	207	200	7:56	2.0	2.5	"
20	H	II	10.2	144	105	3:54	3.0	2.0	"
22	J	II & III	13.0	300	141	7:02	6.5	1.5	"
23	K	III	7.5	59	59	2:30	3.5	-	"
25	L	III	9.2	215	120	5:17	6.5	7.5	"
6/12 to 6/25			135.2	1581	1374	56:15	64.0	53.5	Fnd-June
7/6	M	III	9.5	130	113	4:49	5.5	9.5	
8/24	N	III	10.5	248	114	4:12	8.0	10.0	
7/8 to 8/24			20.0	378	227	~~8.61~~ 9:01	13.5	19.5	
Total this sheet 13		3	155.2	1959	1601	~~64.76~~ 63:16	87.5	73.0	

Addition of statistics corrected by M.O.N.

GENERAL DESCRIPTIVE REPORT

OF

NICHOLS PASSAGE AND FELICE STRAIT,

SE. ALASKA;

also

SUPPLEMENTAL INDIVIDUAL DESCRIPTIVE REPORTS

OF SHEETS IN CONNECTION WITH SURVEYS BY THE

STEAMER "McARTHUR"

- 1 9 4 4 -

ASSISTANT, C. G. QUILLIAN,

COMMANDING.

DESCRIPTIVE REPORT, NICHOLS PASSAGE, ALASKA. C.G.S. 1914.

This General Descriptive Report of Nichols Passage, Port Chester, and Felice Strait follows the form of the Coast Pilot on the same. The Coast Pilot notes are amplified from the notes and observations of the past season. It will be noted that frequently I have used almost the exact phraseology of the Coast Pilots.

In discussing bays and anchorages, I am giving directions for entering same immediately following, while the sailing directions for main passages are given after the description of the entire passage.

NICHOLS PASSAGE. Nichols Passage extends from Clarence Strait to the eastern end of Tongass Narrows. It lies between Gravina Island and Annette Island and offers the most direct route for vessels from the southern part of Clarence Strait to Ketchikan. This passage is also the most direct route for vessels entering Dixon Entrance from the sea and proceeding to Ketchikan.

There are several clusters of dangerous rocks in the passage; but they are easily avoided in daytime and clear weather. There is a good channel on either side of Kelp Rocks and Warburton Island. The channel east of Warburton Island is most generally used, and the lights and buoys are so placed as to favor the use of this channel.

DALL HEAD, the southern end of Gravina Island, is the western headland at the southern entrance to Nichols Passage. It is low and wooded, the elevation at the lower point being about 200 feet to tops of trees. Numerous rocks and islets lie close inshore. At a distance of about one and one-half miles northward from the southern point, the land rises rapidly to the high mountains of Dall Ridge, which with its high and remarkable peaks of nearly 3,000 feet elevation, forms, in clear weather, a conspicuous land mark from Clarence Strait and Dixon Entrance. The group of mountains at the southern end of Dall Ridge and immediately back from Dall Head, are exceedingly rugged and broken. There are some six or seven peaks which present a different profile from various positions in Clarence Strait and Nichols Passage. The two high mountains are bare and

sharp. The most southerly summit, elevation 1,970 feet, is crowned with a narrow skull-cap of trees, and below the trees are bare cliffs of gray and brownish rock for a distance of some 600 feet. There are several rounded hills of about 500 and 600 feet elevation, which are covered with dead trees and show white against the mountains of Dall Ridge. There are two large landslides, facing south, at the southern end of Dall Ridge.

BRONAUGH ISLANDS, on the west side of the entrance to Nichols Passage, are low and wooded, with rocks and reefs surrounding them. They lie from 1/2 to 2 miles offshore. The height to tops of trees is from 100 to 150 feet.

The most eastward of the Bronaugh Islands is called POINT McCARTEY. The southern and eastern part of this island is bare, and the western portion is covered with trees. The height to tops of trees is about ninety feet, while the height of land is nearly thirty feet.

DANGERS IN VICINITY OF BRONAUGH ISLANDS.

A ROCK which bares about two feet at low water, and which, in late fall, is marked by kelp, is 1/4 mile, 85°, True, from Point McCartey. This rock is surrounded by depths of 15 to 20 fathoms, rocky bottom. Between the rock and Point McCartey, are depths of 50 fathoms; but the rock is not buoyed, and vessels should not pass between it and Point McCartey. A bank, with a least found depth of 7 fathoms, was found 1/2 mile northward of the above described rock, with depths of 20 to 50 fathoms close by. A small bank, with a least found depth of 15 fathoms, is 1/4 mile eastward of the 7 fathom spot, and 5/8 mile, 50°, True, from Point McCartey. These banks were not dragged and vessels should avoid them, since there are depths of 75 fathoms 1/4 mile eastward.

Several ROCKS, which bare at half tide, and which, in the late fall, are marked by kelp, lie southward of the Bronaugh Islands, and are 1/4 mile southward of the nearest island. The outermost or most southern of these rocks lies 5/8 mile, 235°, True, from Point McCartey.

A clump of bare islets surrounded by rocks which bare, lie 3/4 mile northward from Point McCartey.

DESCRIPTIVE REPORT, NICHOLS PASSAGE, ALASKA. C.G.Q. 1914.

PASSAGE. There is a narrow passage between the Bronaugh Islands and Gravina Island. The least found depth was 35 feet. At the most narrow place this passage is about one hundred meters wide. There are dangers on either side which bare at lowest tides. The passage is now used by gas boats and small steamers plying between Ketchikan or Metlakatla, and Moira Sound or Dolomi. Local knowledge is required for vessels of over 30 feet in length. Vessels exceeding 100 feet in length should avoid this passage. Strangers should not attempt this passage at night.

DANGERS TO BE AVOIDED BY VESSELS USING THIS PASSAGE.

1. A ROCK, ~~which bares~~ with 5 feet at low water, 3/8 mile off Seal Cove, ~~now~~ marked by H. S. Buoy.

2. A ROCK, which bares, lies 1/4 mile off northern shore of Dall Bay, and 5/8 mile, 344°, True, from north point of northern Bronaugh Island.

3. A ROCK which bares, and which was not marked by kelp during summer, lies a scant three-eighth mile, 392°, True, from the north end of the northern Bronaugh Island. This rock is 200 yards westward from the track of vessels.

4. REEF and ROCKS which bare, extends 1/4 mile off the Gravina Island shore southward of Dall Bay.

5. A ROCK which bares, lies S SW'd from the northern Bronaugh Island, and is 200 yards eastward of the track.

6. A REEF, with a least found depth of 2 fathoms, lies 500 meters south of Dall Head, and about one hundred yards northward of the track frequently used. In the late summer this reef is marked by kelp.

7. A ROCK which bares, lies 900 meters south of Dall Head, and is 200 yards south of the usual track.

SAILING DIRECTIONS FOR THIS PASSAGE.

FROM TONGASS NARROWS. Pass 1/4 mile to eastward of Blank Island Light, make good a 204°, True, course for 6-1/4 miles, passing 1/4 mile eastward of the H. S. Buoy off Seal Cove. When 5/8 mile south of the buoy, and Dall Bay is opening, steer 212°, True, passing 100 yards to the westward of the most northern Bronaugh Island, and 50 yards westward of a small island lying close on the western side of the northernmost Bronaugh Island. This course passes 250 meters east-

ward of the rock and reef previously mentioned as Nos. 3 and 4. Continue this course until within 200 yards of Gravina Island, when the passage to the southward is opened. Then steer 185°, True, passing 50 meters westward of a group of islets, and 50 meters off Gravina Island. Continue 185°, True, until approximately abreast the nearest wooded island, and about one-quarter of a mile southward of Dall Head, and thus bring the north tangent of the wooded island astern bearing 60°, True, and steer 240°, True, passing between the reef described as No. 6, and the rock described as No. 7. After passing these reefs one-half mile, set course for Dolomi or Moira Sound.

The above course is the one now followed by small vessels. A safer course will be to continue the 185°, True, course 3/8 or 1/2 mile further until abreast the southern end of the wooded island and then steer 226°, True, for 1/2 mile, then set course as desired.

2. FROM METLAKATLA. Pass 1/4 mile south of Warburton Island and make good a 275°, True, course for just inside Dall Head until the 185°, True, course already described can be made, and continue as above

3. FROM DOLOMI OR MOIRA SOUND. Set course to pass not less than a mile southward of Dall Head until the southern part of the second Bronaugh Island (the wooded island 1/4 mile SE from Dall Head) bears 46°, True, and steer for same 46°, True, until nearly in line with the lower part of the southern Bronaugh Island, and Gravina Island, then steer 60°, True, passing close to Gravina Island, until beyond the small island which is 1 mile south of the southern head of Dall Bay, then steer 32°, True, passing close to the islet west of the northern Bronaugh Island. When 1 mile beyond Bronaugh Islands, steer 24°, True, passing 1/4 mile east of H. S. Buoy off Seal Cove, and 1/4 mile westward of Blank Island.

YELLOW HILL, is a marked yellow topped hill (elevation determined by this party, 525 feet). It is about one and one-half miles southward of Metlakatla. Several rounded knolls of approximately the same elevation form the summit. A wooded hill lies southeast about one-quarter of a mile. The part of Annette Island which lies southward of Yellow Hill and west of Tamgas Harbor, is low and apparently thickly wooded; the height to tops of trees is about 200 feet. The western shoreline is composed of numerous small bights, with islands and rocks lying near the shore.

DESCRIPTIVE REPORT, NICHOLS PASSAGE, ALASKA. C.G.O. 1914.

WARBURTON ISLAND, elevation 130 feet to tops of trees, lies off the southern entrance to Port Chester, 1-1/4 miles from the eastern shore. The island is of an oval shape, about one-quarter of a mile long by one-eighth of a mile wide. The shores are steep.

LIGHT. There is a white flashing, unattended, accetylene light on the southern side of the island. Formerly this light was obscured from Point McCartey; but I understand that recently the trees have been cleared away from the southern end of the island so that this light is now visible from slightly ~~northward~~ Southward of Point McCartey.

In the fall kelp was observed 1/4 mile westward of Warburton Island.

A SUBMERGED ROCK, with a depth of 9 feet at low water, was found 1/8 mile, 310°, True, from Warburton Island Light. Vessels should not pass between Warburton Island and Kelp Rocks.

CEDAR POINT, about two miles southward of Warburton Island, is low and heavily wooded. A reef which bares at low water, and extends 1/4 mile offshore, fringes the point.

DRIEST POINT, on the northern side of Port Chester, is a low point, about 250 feet to tops of trees. The shores are bold and rocky. The point is wooded to the water line. The tangent is conspicuous.

WALDEN POINT, is the western point of Annette Island. It is wooded. A small island lies a short distance offshore, and at low water is connected with the point. Hills rise rapidly to the southeastward of Walden Point.

GRAVINA POINT, is wooded to the shoreline. Shores are rocky. Deep water is close to the point.

JUDY HILL, is on the peninsula northward of Blank Inlet. It is 800 feet high to tops of trees, is conical in shape, and conspicuous. When Judy Hill is used as a fix, the mariner should be careful not to confuse it with a hill of similar shape of about 600 feet elevation, which lies inshore of Blank Point. Judy Hill is densely wooded. Westward of Judy Hill a large portion of the trees are dead.

DESCRIPTIVE REPORT, NICHOLS PASSAGE, ALASKA. C.G.S. 1914.

BLANK POINT, is on Gravina Island and on the southern side of the entrance to Blank Inlet. It is bold and steep. There is a heavily wooded, conical shaped hill 595 feet high, 1/2 mile westward of the point. This hill is quite similar in appearance to Judy Hill.

A barren rock which is 10 feet above high water, and is about one hundred and fifty yards long by about fifty yards wide, lies 1/4 mile, 55°, True, from Blank Point. This rock is prominent.

WALDEN ROCKS, elevation 10 feet above high water, is barren, except for small grassy patches. The rocks lie nearly midway between Walden Point and Blank Islands. The passage lies to the westward of Walden Rocks.

5/8 of a mile south of Walden Rocks is a LARGE DOUBLE ROCK which covers when the tide is three-fourths flood. A number of rocks which bare, lie between this last described rock and Annette Island.

See the report of the wire drag party in charge of Aid J. A. Daniels, 1914, in regard to the sunken rock symbol, and the 2-1/2 fathom sounding which is shown on Chart 8075, slightly northward from Walden Rocks.

BLANK ISLANDS, are in the entrance to Blank Inlet, and are on the western side of the passage from Nichols Passage into Tongass Narrows. These islands are approximately 250 feet in elevation to tree tops. The western shore is bold, with deep water close up to the shore. The rocky shoreline extends 50 to 100 meters outside of the tree line. These islands are known locally among some of the seafaring men of Ketchikan as Shoe Islands.

An unattended accetylene LIGHT is on the southern point of Blank Island.

The usual track of vessels is about midway between Blank Islands and Walden Rocks, or slightly favoring the Blank Island side.

A comfortable anchorage for small vessels can be found in the bight on the northern side of these islands. This anchorage is the most comfortable in Nichols Passage. The "McARTHUR" found it sheltered at all times, easy of access, moderate depth, and good holding bottom. The anchorage space gives swinging room of some 150 meters.

DANGERS IN VICINITY OF ANCHORAGE.

A ROCK, which bares 1 foot at low water, lies 75 meters offshore in the southern part of the bight. It is 120 meters, 140°, True, from the small island off the western island.

A ROCK, which bares 3 feet at low water, 75 yards off the eastern shore, 1/8 mile from the northern point of the eastern island.

A ROCK which bares 3 feet at low water, lies 120 meters off the eastern shore of the western island and is 550 yards, 295°, True, from the northern part of the eastern island.

A sounding of 2 fathoms on a spot, which in the late fall shows kelp, lies 200 meters eastward of the western point.

TO ENTER THE ANCHORAGE FROM NICHOLS PASSAGE, round the northern end of the eastern Blank Island at a distance of 1/4 mile and bring the passageway between the two Blank Islands to bear 230°, True, and anchor on this bearing, in from 12 to 15 fathoms, soft bottom.

The passage between Blank Islands and Gravina Island into Blank Inlet appeared clear; soundings gave depth of 14 fathoms. If used, keep midway between Blank Island and Gravina Island.

The passage separating the two Blank Islands bares at lowest tide. Although there is considerable tidal current at high water, this passage is used at times by small gas boats.

NOTE:- The tidal current in the vicinity of Walden Rocks has a velocity of 3 knots at times. Flood tides set northward into Tongass Narrows. With southerly winds there is a considerable tide rip between Walden Rocks and Blank Islands. During southerly blows, the sea from Dixon Entrance continues up Nichols Passage as far as Walden Rocks and Gravina Point.

At times, with strong southerly breezes and flood tide, there seemed to be a slight set toward Blank Island when passing between Blank Island and Walden Rocks.

The sea from Nichols Passage is broken at Gravina Point and Walden Point. During the fishing season a number of Indians are settled along the northern side of Walden Point. During the fishing season a half-dozen gas boats were frequently anchored in a small bight on the Annette Island side just northward of △ PLUG.

BOSTWICK POINT, so called by this party, is the north entrance to Bostwick Inlet. It is a large round point, densely wooded. Several rocks lie close inshore. The most conspicuous of these rocks is about eight feet above high water, and lies about one-eighth of a mile southward of the point.

BAYS AND INLETS.

SYLBURN HARBOR, is a small bay just northward of Port Chester. It is not recommended as an anchorage. However, small vessels may find anchorage in the western arm, in depths of 16 to 20 fathoms, with shelter from southerly swells. It was not used at any time by the "McARTHUR."

DANGERS IN VICINITY. A ROCKY ISLET which is bare 3 feet at high water and is surrounded by outlying ledges for a distance of 200 yards, lies 1/4 mile northward from Driest Point. The passage between this rock and Driest Point is contracted, soundings irregular, and the passage should not be used. The highest point of this rocky islet was cut in by triangulation and called △"SYL."

A ROCK which bares at low water, lies 1/4 mile northeastward from the highest point of the ledge just described, and is 100 yards outside of the outer limits of the ledge surrounding said islet.

Nearly in the middle of the outer entrance to Sylburn Harbor is a large double rock, which is well covered at high water. This rock lies 1/2 mile northeastward from △"SYL."

The southeastern bight of the harbor is contracted, and useless as an anchorage. The greater part bares at low water exposing a shingle beach.

SAILING DIRECTIONS, SYLBURN HARBOR. In entering the first time, do so at low water, when the dangers are visible.

If necessary to enter Sylburn Harbor, await low water and then steer in for the center of the western bight on a course 159°, True, with the center of Blank Inlet astern. Pass midway between the rocks already described and which are visible at low water, and anchor in about 19 fathoms of water some 200 yards offshore, with the northern tangent of Driest Point bearing 260°, True.

DALL BAY, on the western side of Nichols Passage and 1 mile northward of Dall Head, is contracted, and the bay is broken by numerous small islands and ledges.

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There is an abandoned mine on the northern side of the bay.

A shingle beach makes out from the creek on the north side of Dall Bay, for a distance of over 200 yards.

It is not a safe anchorage, as in entering a vessel must cross a patch of irregular bottom, with depths of 4 to 5 fathoms, which was not dragged.

DANGERS IN ENTERING DALL BAY. A shoal, with 2 fathoms, lies 3/16 mile northward of the northern point of the northern Bronaugh Island.

A ROCK which bares, lies 5/8 mile, 345°, True, from the northern end of the northern Bronaugh Island. Irregular soundings of 4 to 5 fathoms extend southward of this rock across the entire entrance of the channel.

A ROCK which is awash at low water and on which no kelp was noticed, lies 3/8 mile, 295°, True, from the northern point of the northern Bronaugh Island.

A ledge extends some 200 yards northward from the southern entrance to the bay.

The shingle beach which extends 200 yards off the mouth of the creek, has been mentioned.

Small gas boats might anchor between the two islands in the bay; but should not go west of the western island.

TO ENTER DALL BAY. I consider this anchorage dangerous and would not advise its use; but if necessary to enter, proceed as follows:

From a point 1/2 mile, 60°, True, from Bron Point (the northern point of northern Bronaugh Island) and 3 miles, 298°, True, from Warburton Island, proceed with caution, slow speed, shortly after low water, and only on a rising tide, on a course 283°, True, until midway between the ledges off the southern entrance of the harbor, and shingle beach off the creek on the northern side, and anchor in 12 to 13 fathoms.

NOTE:- If handling cargo at Dall Bay, I would prefer the anchorage northward of the northern Bronaugh Island, which is described below:

ANCHORAGE AT NORTH END OF NORTHERN BRONAUGH ISLAND. The "McARTHUR" anchored northward of the northern Bronaugh Island on several occasions finding indifferent shelter. With southeasterly breezes some swell makes into the anchorage. The swinging room is contracted, and caution necessary.

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DANGERS mentioned under Dall Bay should be borne in mind, and in addition there is a 3 fathom bank extending 1/8 mile eastward from the northern point of Bronaugh Islands.

TO ENTER THE ANCHORAGE. Keep a good 1/2 mile off Bronaugh Islands and enter northward of the northern Bronaugh Island until a small grassy island is open westward of this northern Bronaugh Island, bearing 200°, True, and steer on this course until Warburton Island is nearly closed on the ledge which forms the northern end of the northern Bronaugh Island; when anchor in 10 fathoms. This anchorage is almost directly in the track followed by vessels using the passage between Bronaugh Islands and Gravina Island.

SEAL COVE is on the western side of Nichols Passage, and is 3 miles northward of Dall Bay. The notes in the 5th Edition of the Alaska Coast Pilot are complete. Local knowledge is necessary to enter, and the pilot must reconnoiter the passage at low water. There is an abandoned mine in this cove, and the amount of rock on the dump would indicate considerable development. Some machinery has been left at this mine. There are two entrances, one from the south side and the other near the northern shore. Both are crooked and marked by numerous submerged rocks; and no attempt will be made to describe the channels.

A SUBMERGED ROCK, with a least found depth of 5 feet, lies 3/8 mile, 97°, True, from the highest part of the reef in the entrance to Seal Cove. This rock is marked by a small H. S. Buoy. In the late fall it is marked by kelp.

BOSTWICK INLET, 1-1/4 miles wide at the entrance, 2-1/4 miles long, extends in a northwesterly direction into Gravina Island. It is open to the southeastward and offers no shelter from any swell with southeasterly weather. The southern shore is generally foul. The upper part of the bay bares for a distance of nearly three-quarters of a mile from the head. A moderate sized creek enters at the head, and it is reported that there was excellent trout fishing in this creek. In August a number of small gas boats were fishing for salmon in this inlet. Some lumber is cut along the shores of this creek at the head and floated out during the winter.

The "McARTHUR" entered on a couple of occasions anchoring about midchannel about 1-1/2 miles from the head

of the bay in 10-1/2 fathoms, soft bottom. However, this inlet is not advisable as an anchorage.

DANGERS. A ROCK, which is 8 feet above high water, lies 1/8 mile southward of Bostwick Point.

A sand spit, which bares, extends 3/8 mile off the southern shore immediately opposite the sharp bend in the northern shore.

A ledge continues northward from this sand spit for 1/4 mile and terminates in a SANDY SHOAL, with a least found depth of 10 feet, which lies 3/8 mile S SW'd from the sharp bend in the northern shore and 1-3/8 miles southward from Bostwick Point. There is deep water between this shoal and the northern shore.

A ROCKY LEDGE, which is awash at high water, lies 1/8 mile off the northern shore, and 3/8 mile westward of the sharp bend.

A ROCKY LEDGE extends 1/4 mile offshore along the southern shore of the narrow part of the inlet.

TO ENTER. If necessary to enter, follow this course:- Bring Gull Island and the Church at Metlakatla in range over the stern bearing 139°, True, and steer 319°, True. This course will carry one about 200 yards southward of the sharp bend in the northern shore, and some 300 yards northward of the 10 foot spot already described. After passing the sharp bend in the northern shore, continue on the same course for about one-half mile, and anchor in midchannel in 10 fathoms, about one and one-half miles from the head of the bay.

BLANK INLET, is 1-3/4 miles wide at the entrance and extends "V" shaped 3 miles in a northwesterly direction into Gravina Island. It is open to all swells from Nichols Passage, affords no shelter, and does not offer an anchorage. At the head of the inlet is a small lagoon. There are no fish in this inlet, and I am not aware of its being used for any purpose.

SAILING DIRECTIONS are not necessary.

DANGERS IN BLANK INLET. The following rocks and shoals were found:

A ROCK which bares 7 feet, lies almost in the center of the inlet. It is 1,050 meters, 267°, True, from the northwestern point of the western Blank Island.

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A ROCKY LEDGE, with a least found depth of 21 feet, is 1,800 meters, 295°, True, from the northwesterly point of the western Blank Island.

A ROCKY LEDGE, with a depth of 33 feet, 1,850 meters, 310°, True, from the northwestern point of the western Blank Island.

A LEDGE of considerable extent, with a least found depth of 30 feet, 1,200 meters, 320°, True, from the northwestern point of the Western Blank Island, and this last shoal extends to the northern shore.

Vessels desiring to enter Blank Inlet may proceed on either side of Blank Islands and avoid the dangers described.

SMUGGLERS COVE, 2 miles south of Port Chester and immediately south of Cedar Point, is called Smugglers Cove because of whisky smugglers formerly using this cove when engaged in illicit traffic with the natives of Metlakatla. It is open to the southwestward and all swells in Nichols Passage strike here with full violence. It is useless as an anchorage.

Several rocks are close inshore.

There are three dangers a distance of a half-mile offshore, as follows:

ROCKY SHOAL, with 17 feet, lies 1/2 mile, 205°, True, from Cedar Point.

A SHOAL about one-quarter of a mile in extent, and one rock of which is awash at low water, lies 1 mile, 205°, True, from Cedar Point.

A ROCKY SHOAL, with a least found depth of 3 fathoms, lies 1-1/2 miles, 205°, True, from Cedar Point.

CANOE COVE, 3 miles southward from Cedar Point. It is shoal and foul, and there are a large number of small islands and rocky ledges in the entrance.

PORT CHESTER, (METLAKATLA), will be described under a separate heading. *See descriptive report of Hyd sheet Port Chester*

DANGERS IN NICHOLS PASSAGE.

HID REEF extends northwestward from Annette Island. The outermost rock is nearly two miles offshore. On this reef are three distinct clumps of rocks, with narrow passages between. A Red Nun Buoy is 200 yards northwest of the outermost rock. This outermost rock lies

4 miles, 201°, True, from Warburton Island. This rock bares 7 feet at low water.

The next rock of this reef lies 3/8 mile, 142°, True, from the outermost rock just described. It bares 5 feet at low water.

The third, or inner group of rocks, is the most extensive consisting of some 4 or 5 heads, one of which bares 13 feet at low water, and lies 3/4 mile, 145°, True, from the outermost rock.

There is a narrow passage eastward of the innermost clump of rocks; but is seldom used and is not recommended.

A ROCK, which bares at low water, and has already been mentioned, lies a little over a quarter of a mile eastward of Point McCartey. (See Point McCartey).

KELP ROCKS. These rocks consist of three distinct patches, as follows:

1. A ROCK which bares 4 feet, lies 1 mile, 313°, True, from Warburton Island Light.
2. A ROCK which bares 4 feet, lies 1-1/4 miles, 315°, True, from Warburton Island Light.
3. A ROCKY REEF, with a least found depth of 4 feet, lies 1-1/4 miles, 345°, True, from Warburton Island Light.
4. A ROCKY LEDGE of limited extent, with a least found depth of 10 feet, is the most northeastward shoal of Kelp Rocks. It lies 1-1/2 miles, 1°, True, from Warburton Island Light.

Ranges for this spot (No. 4) are as follows:

The western tangent of Annette Island just open west of Warburton Island. Waterfall at Port Chester in range with north tangent of Gull Island. A vessel is clear of this shoal when Warburton Island is kept open to westward of Annette Island. The usual track of vessels passing eastward of Warburton Island is a half-mile eastward of this shoal.

BUOY. During the summer a Black Can Buoy marked the third shoal described. I understand that this buoy has been moved since this vessel left Alaska, and now marks the northeastern shoal of the clump, and if so, vessels may pass close to the buoy without danger. (Coast Pilot Division please check last position of buoy before incorporating above note in coast pilot).

Each of these four shoals, which comprise Kelp Rocks, are of limited extent, and there are depths of 20 fathoms, or more, close alongside each one.

WALDEN ROCKS, already described.

DESCRIPTIVE REPORT, NICHOLS PASSAGE, ALASKA. C.G.Q. 1914.

SAILING DIRECTIONS. The Sailing Directions given on Page 72, of the 5th Edition, Part I, Alaska Coast Pilot, are good. I can not improve on them.

The distance to Blank Island from Cape Chacon is practically the same for the passage east or west of Kelp Rocks and Warburton Island.

AIDS TO NAVIGATION are placed for use of the passage eastward of Warburton Island, and for this reason the same should be used;

Between Warburton Island and Blank Island a good course is to put Cedar Point astern and Blank Island a little on the port bow so as to pass about one-fourth of a mile off Blank Island.

At night or in thick weather, it is safer to make Point McCartey, rather than chance being set eastward of Hid Reef Buoy. With heavy mist or rain, Warburton Island Light will probably not be seen until a vessel is northward of Hid Reef, hence necessity of care to avoid being set upon the reef. A number of gas boat operators make for Point McCartey from Cape Chacon, and then pass either between Bronaugh Islands and Gravina Island ~~of the~~ or use either of the two channels through Nichols Passage.

It should be mentioned that in making Nichols Passage in thick weather the Bronaugh Islands and Dall Head are very similar to the islands and land at Point Davison. I have understood that in thick weather a few vessels have attempted to make Nichols Passage, and instead, made Felice Strait, and did not discover the error until near ~~by~~ Harris Island.

With strong southeasterly breezes, considerable sea sets into Nichols Passage.

TIDAL CURRENTS. Tidal Currents in Clarence Strait must be considered by vessels making a course between Cape Chacon and Nichols Passage.

Rarely is the course made good.

In Nichols Passage the flood current sets northward with a velocity of 1 to 3 miles. The greatestvelocity being experienced in the vicinity of Walden Rocks. Currents are accelerated by favorable winds.

DESCRIPTIVE REPORT, FELICE STRAIT, ALASKA. C.G.Q. 1914.

FELICE STRAIT extends from Clarence Strait to Revillagigedo Channel, between Duke, Cat, and Mary Islands on the southeast, and Annette Island on the northwest. It offers the most direct route for vessels from the southern end of Clarence Strait to the eastern arm of Behm Canal. It is little used. During the season of 1914, only a half dozen gasoline cannery tenders were seen in this passage, and Felice Strait was not used during the entire summer by passenger carrying steam vessels. This passage was used considerably in former days when the Custom House was located at Mary Island, and vessels entering from Dixon Entrance would pass through Felice Strait en route to obtain clearance. Felice Strait is out of the way for vessels proceeding to Ketchikan for clearance from Dixon Entrance; and is also out of the way for vessels making Ketchikan via Revillagigedo Channel.

It is a shorter distance from off Mary Island Light to Metlakatla via Revillagigedo Channel and southward through Nichols Passage, than to proceed through Felice Strait.

There are several dangers, but with the exception of Indian Rock, those lying nearest the sailing line either show above water or are marked by buoys. There is no difficulty in making the passage through the strait in daytime and with clear weather. The tidal current sets strongly through Felice Strait, and with big tides the velocity around Snipe Island approaches 3 to 4 knots, setting northeast on flood; also the current runs around Harris Island with a velocity of 2 to 4 knots, the greater velocity only on the spring tides, and the velocity diminishes rapidly on either side of Harris Island.

The work of this party did not cover Danger Passage, Custom House Cove, or Mary Island Anchorage.

SEALED PASSAGE connects Clarence Strait and Felice Strait between Percy Islands and Hotspur Island. During the season the "McARTHUR" did not enter this passage at any time, and it was only used by the launch when occupying Mount Lazaro. The work of this party did not include work in Sealed Passage. I am told that this passage is used by gas power halibut fisherman.

DESCRIPTIVE REPORT, FELICE STRAIT, ALASKA. C.G.Q. 1914.

(Chart 974)

TAMGAS HARBOR, the entrance to which lies 1-1/2 miles northward of Harris Island, is a land-locked anchorage, with a narrow channel and contracted anchorage space. Vessels of over 200 feet in length should not attempt the inner anchorage except at low water unless the approaches are buoyed. Vessels of greater length than 200 feet will find the swinging room scanty during fall or winter.

Anchorage may be taken up off Tamgas Creek in depths of 28 to 30 fathoms, mud bottom. Occasionally fishing boats anchor off this creek. The bottom deepens rapidly from the shore to a depth of 30 fathoms and a vessel the size of the "McARTHUR" can not anchor in less than 28 fathoms.

The instructions of the party did not include Tamgas Harbor, consequently, it was not thoroughly resurveyed. However, the topographic party re-ran the shoreline of the entire bay and found the old work to be very good. The orientation and the delineation of the shoreline are almost identical. The only change was in geographic position, which is shifted approximately 50 meters. The plane table survey into Tamgas Harbor was based on traverse and plane table triangulation which were checked by two triangulation stations in the entrance. It may be mentioned that a number of plane table stations were marked by copper bolts, in case it is desirable to further survey this harbor. The "DELTA" sounded the eastern entrance up to Grey Point, and from Mule Rock southward. The "McARTHUR" ran sounding lines along the western portion of the harbor from Mule Rock northward, on days when work could not be continued in Felice Strait on account of heavy wind squalls. The soundings did not attempt to develop the shoals shown on the west side of the harbor. No sounding lines were run into the inner harbor.

The "McARTHUR" used the inner harbor during the months of October when violent squalls prevailed and interferred with the anchorage northward of Hotspur Island. The ship ran in on ranges and sounded in several evenings; but fixes were not taken.

Tamgass Harbor has a 0°, True, direction for 2-1/2 miles, with a width of 1/2 mile, and depth of 20 to 30 fathoms, excepting on the western side which is shoal. It then narrows to 3/8 mile for nearly one mile and then expands forming the anchorage, with a clear width of nearly 1/2 mile.

DESCRIPTIVE REPORT, FELICE STRAIT, ALASKA. C.G.S. 1914.

GRASS ROCK, 3/8 mile from the western side at the entrance, is 15 feet high and grass covered; and a rock which bares at low water, and shows kelp in the fall, lies about 200 yards. 160°, True, from Grass Rock.

MULE ROCK, lies 1/4 mile from the eastern side at the entrance, is awash at ordinary high tide and covered 2 to 3 feet at the highest tides, and may be passed on either side. On calm days and high tide, there is no ripple to indicate this rock when covered 3 feet and it is NOT marked by kelp.

Off Deer Point was not investigated by this party.

There is a heavy patch of kelp just northward of Grass Point, which was not sounded.

The channel connecting the outer harbor with the anchorage is narrow, being about 250 yards wide, with shoals which bare at low water and extend 300 yards from the southern side between Tent Point and Crab Point; and extend 200 yards off Yellow Point. Fresh water can be obtained from the stream from Tangas Lake, which enters at Creek Point about two miles above Mule Rock. At half tide a boat can be brought near the foot of the falls and filled through the bung, as there is a strong volume of water which comes from the lake, especially after rains. However, this stream is a salmon stream and the water is not good from July to September, owing to the large quantity of dead fish. The stream midway between Yellow Point and Creek Point does not contain water fit for drinking. This party did not water at the head of the harbor.

TO ENTER.- Enter the Harbor eastward of Grass Rock not less than 1/2 mile distant, pass outside of Mule Rock and keep the eastern shore aboard, distant not over 300 yards until up with Tent Point. If desirable, anchorage may be made from 200 to 300 yards off Creek Point, in 30 fathoms, soft bottom. If desiring to enter the inner harbor, bring the northeastern shore close aboard until up with the small stream opposite Tent Point. Bring this creek astern, and Crab Point nearly ahead until the tree line at Tent Point begins to close on the first small knoll on the western slope of Mt. Davison and about 3/4 mile eastward of Mule Rock, then haul northward until Tent Point is astern, and continue until well past Crab Point, then turn westward and anchor in the southern arm of the bight in 3-1/4 to 4 fathoms, with Crab Point nearly closed on Creek Point.

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The actual courses followed by the "McARTHUR" were, as follows:

Bring the western tangent of Harris Island astern bearing 205°, True, and steer 25°, True, passing about midway between Grass Rock and Mule Rock. Continue this course until the western shore of Annette Island closes on Spur Island, the small island just east of Hotspur Island; then steer 347°, True, heading for a small stream opposite Tent Point and with tangent of Annette Island, near Mule Rock, just open on the eastern tangent of Hotspur Island and astern bearing 167°, True. Continue this course until well up with the northeastern shore, when steer 316°, True, with Creek Point astern, and Yellow Point ahead until abeam Tent Point, favoring the northern shore, then starboard until Crab Point is nearly ahead and the small stream astern, and steer 285°, True, until Yellow Point is abeam, at which time Tent Point should be closed on southern part of Annette Island and be nearly in range with the first small knoll, about 250 or 300 feet high, on the western slope of Mt. Davison, then bring Tent Point in range with this knoll astern bearing 148°, True, and steer 328°, True, until a good quarter of a mile past Crab Point, then round for the southern part of the harbor on a course nearly 180°, True, until Crab Point is nearly closed on Creek Point; and take anchorage in 3-1/2 to 4 fathoms. It is advisable when entering the first time to do so at low water that the limits of the reefs off Tent and Crab and Yellow Points may be seen. The eastern shore is bold and may be approached very closely. Tangass Creek and Creek Point may be recognized by a strip of white sand beach on the north side of the creek, and the waterfall which is about 200 yards from the shore, can be seen and heard when abreast of same. In the fall violent williwaws are felt at the anchorage at the head of Tangas Harbor and in the narrow neck. A vessel the size of the "McARTHUR" may obtain some shelter from the williwaws in the anchorage mentioned, and smaller vessels may anchor closer inshore in the southern part of the bight with good shelter from squalls. The upper part of the harbor toward Port Chester receives the full force of wind sweeping up the entire harbor.

Tidal currents in Tangas Harbor are slight - rarely approaching 1 knot. When off Mule Rock and Grass Rock the current from Felice Strait will be felt, and on the ebb tide, a force of as much as 4 knots has been felt off Harris Island. The current from Felice Strait and Tangas Harbor are both intensified in the immediate vicinity of Harris Island, and the velocity diminishes when Point Davison is reached.

DESCRIPTIVE REPORT, FELICE STRAIT, ALASKA. C.G.Q. 1914.

TOPOGRAPHIC FEATURES, FELICE STRAIT.

The southwestern part of Annette Island is low and wooded, the height to tops of trees being about 200 to 250 feet. In the vicinity of Point Davison there are numerous small islands and bare reefs for some distance offshore, and rocky ledges, which cover at high water, lie more than 1/2 mile offshore. The outermost point of POINT DAVISON consists of a double island with a small wooded patch on same. It is conspicuous only when east or west of the point in entering Nichols Passage or Felice Strait.

PERCY ISLANDS are a large number of wooded islands about 200 feet high to tops of trees. Cow Island is at the north end of the group, and Seal Point is at the south end of the group. Chart 8075 shows one large island and several small islands grouped nearby. Actually this large island is cut by numerous sloughs and passages into a number of small islands. These passages may be used, and there is a contracted anchorage for small gas boats. The topographer was unable to complete the southern part of Percy Islands.

Northward of Cow Island are two small wooded islands, elevation about 180 feet to tops of trees. Between these two islands and Cow Island are two rocky reefs, which bare, and there are rocky ledges to the eastward of these two islands. Midway between Hotspur Island and these two rocky islands lie three wooded islands and a number of baren rocks and several ledges which bare. The hydrography was not extended between Cow and Hotspur Islands, and vessels should not use this passage.

HOTSPUR ISLAND, is heavily wooded, and near the center of the island it is about 290 feet high to tops of trees. Near the northern edge the eastern shore is bold, with deep water nearto.

HARRIS ISLAND, 90 feet to tree tops, is heavily wooded, and is nearly connected with Hotspur Island at lowest tides. There is kelp 100 yards off the northern edge of Harris Island, and depths of 10 to 12 fathoms immediately north and west of this island. A comfortable anchorage was made in the bight northward of Hotspur Island and eastward of Harris Island by the "McARTHUR" during this season, with moderate shelter. With southeast winds reaching the force of a moderate gale, the wind draws down Felice Strait and directly off the tangent of Hotspur Island and makes the anchorage uncomfortable on account of a tidal sea.

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TO ENTER HOTSPUR ISLAND ANCHORAGE, round Harris Island a full 1/4 mile distant until Spur Island is opened on Hotspur Island, then steer for the eastern tangent of Hotspur Island until Harris Island is just opened off the north end of Hotspur Island, and the wooded island lying 1 mile eastward of Harris Island is partially closed on Harris Island; when anchor in 10 to 12 fathoms, sandy bottom, and a good quarter of a mile off both Harris and Hotspur Islands.

A ROCKY REEF which bares, extends 100 yards eastward of Harris Island; and another reef extends 100 yards northward of Hotspur Island. A current of 2 to 3 knots will be felt at this anchorage, and slightly less closer inshore. Very small boats may anchor close in between Harris Island and Hotspur Island; but should be moored fore and aft.

About 1-1/2 miles East, True, of Point Davison and 1 mile westward from Harris Island, lies a clump of some half dozen islands and rocks. The larger of the islands are wooded, the highest being from 150 to 170 feet to the tops of trees. A group of three rocks, which bare at low water, lie 1/4 mile southeast of the larger island. Westward of the entire clump is a small rocky island, about 4 feet above high water, on which was located △"FEL."

MOSS and GREY POINTS are wooded, but not conspicuous.

DEER POINT is wooded to within 30 to 40 yards of the high water line, and there is a whitish cobble beach at water line.

SURVEY POINT is low and wooded. The southern portion of Annette Island is also low and wooded for a distance of 1-1/2 miles, when it rises rapidly to Mount Davison and Mount Tamgas.

ANNETTE POINT is low and wooded. Bold water is nearto. A fish trap is on the northern part of the point. Reefs and rocky ledges extend from 100 to 200 yards off the southern shore of Annette Island.

SNIPE ISLAND is about 10 feet above high water, and has a few small grassy patches on the highest part. It is of small size.

FISH ISLANDS consist of two small islands surrounded by moderate sized rocky ledges. Each of the islands ~~are heavily~~ wooded, and ~~are~~ about 150 feet high to tops of trees.

DOG ISLAND is heavily wooded, and has rocky shoreline.

CAT ISLAND is low and wooded.

VILLAGE ISLAND is a small sandy island, with a few trees and a number of totem poles, and is evidently an abandoned Indian burial place.

MARY ISLAND is low and wooded.

MOUNT DAVISON is heavily wooded to the summit. At the very top is a small bare spot.

MOUNT TAMGAS, 3,600 feet, is bare at the summit, and a barren ridge of 2,600 feet elevation extends southward for something over a mile and is very conspicuous. △"ROUND" was located on the southern part of this bare ridge. Southward of this ridge is a round wooded knoll about 500 feet high. The eastern slope of Mt. Tamgas is wooded to an elevation of about 1,000 feet and this wooded strip extends along the entire eastern side of Annette Island.

SAILING DIRECTIONS, FELICE STRAIT.

1. FROM CLARENCE STRAIT. From a position 1 mile eastward of Cape Chacon make good a 58°, True, course (N 1/2 E Mag) for 20 miles when Point Percy will be abeam about 1-1/2 miles distant. Then steer for Harris Island on a 58°, True, course until Mt. Davison bears 45°, True, when steer for the mountain and pass 1/4 mile NW~~x~~W of Harris Island. When Harris Island is abeam steer 95°, True, for Snipe Island (low and grassy) until Survey Point (wooded and indefinite) is abeam and the southern shore of Annette Island is about 500 yards distant, then head for the lower part of Fish Island bearing 90°, until Snipe Island is on the quarter and the shore northward along Annette Island opens up. This course is clear of all danger, and has been dragged to a depth of 22 feet, low water, and leads midway between the bare part of Ajax Reef and the reefs off Annette Island, and passes 400 meters northward of Ajax Reef Buoy, and 200 meters north of the red buoy marking Wallace Reef. This course leads 300 meters distant from Annette Island at the closest point, and has the lower part of Fish Island dead ahead, and the wooded islands off Annette Island and westward of Harris Island astern, and the north tangent of Harris Island is about 200 yards on the south side of this course.

When Snipe Island is on the quarter, haul up for the northern part of Mary Island or the Twin Islands on a 41°, True, course keeping a full quarter of a mile

off Annette Island until abeam the point on the northern side of the small bight northward of Annette Point, then haul on to a 17°, True, course, with Hog Rocks lying a little on the starboard bow, visible on a clear night, and pass 200 yards off the bold shore of Annette Island and well to the westward of Indian Rock. When the Annette Island shore turns northward, about 2-3/4 miles above Snipe Island and clear of Indian Rock, set the course to pass either side of Twin Islands, as desired. One is northward of Indian Rock when Cat Island is closed on Grave Point.

2. IF BOUND FROM NICHOLS PASSAGE, follow the courses from Nichols Passage until Hid Reef Buoy is 1/4 mile to the eastward and then steer 177°, True, until a rocky ledge (just southward of the two wooded islands which are 3/8 mile northward of Cow Island) is in range with a wooded island midway between Cow Island and Hotspur Island, bearing 102°, True. Run this range, and pass 1 mile off Point Davison, until well up to the wooded islands and when Davison mountain bears 45°, True, proceed as previously described. (Δ mid)

DANGERS. A sounding which reduced to 14 feet was obtained on a spot 1-1/4 miles, 298°, True, from Point Davison. A rock which bares 6 feet, lies 1/4 mile eastward of this kelp patch.

A clump of rocks which bare, lies 1/2 mile, 287°, True, from Point Davison. These rocks are 1/2 mile offshore.

A Rock which bares, lies about 3/4 mile, 83°, True, from Point Davison, and 1/4 mile offshore.

A clump of three rocks which bare, lie about 1-3/8 miles, 278°, True, from the north end of Harris Island.

A number of rocks which bare at various stages of tide, lie from 1/4 to 1/2 mile off the Annette Island side, and westward of a line connecting Grass Island and the wooded islets 1 mile westward of Harris Island.

A rock which bares, lies 250 yards, 163°, True, from Grass Island.

Mule Rock, 1-1/4 miles, 35°, True, from Harris Island is awash at ordinary high water and covers about 3 feet on the largest tides. (See sheet).

Ajax Reef is 2-3/4 miles, 90°, True, from Harris Island, and about 1/2 mile offshore. It covers at 3/4 flood, and is marked by kelp. A rock which bares, lies 200 meters from the highest part in an easterly direction.

In the fall the reef is surrounded by kelp. Deep water is closeto on the southern side. A ledge, with a depth of 5 fathoms on the outer end, extends 500 meters northeastward from the highest part of the rock, and the buoy placed as at present, will lead a vessel to pass over this shoal. The buoy should be placed in 5 fathoms, 500 meters, 32°, True, from the highest part of this shoal to mark its actual limit.

Wallace Reef, with 8 feet of water at lowest tides, consists of several heads close together and in the fall is marked by heavy kelp. Wallace Reef is 5/8 mile, 277°, True, from Snipe Island, and a scant 1/2 mile off the nearest part of Annette Island. At the strength of the current the kelp is run under. The shoal is marked by a RED BUOY placed 75 yards northward of the shoal.

On the Annette Island side midway between Survey Point and Annette Point, is a rocky ledge which is awash at high water. Ledges which bare, extend 100 yards southward of Annette Point just eastward of Survey Point and has deep water near by.

The bight 1 mile eastward of Survey Point is foul and should not be entered. In the fall the reefs are lined with kelp.

There is a rocky reef just westward of Annette Point, and vessels should not approach within 200 yards of shore to the westward of Annette Point.

TAMGASS REEF consists of several rocks, the larger of which are awash at high water. It covers an area of 1/4 mile long by 200 yards wide, lies 1-1/2 miles, 222°, True, from Snipe Island. It is not marked by kelp and is not near the sailing line.

Several irregular shoals, with depths not less than 8 fathoms, were noticed between Tamgass Reef and Snipe Island.

No indications were seen of the reef reported to bare at low water and marked by kelp and supposed to lie midway between Hotspur Island and Ajax Reef.

A rock which bares, lies 800 yards eastward of Hotspur Island and is not near the sailing line.

A rock which bares, lies 1/8 mile off Annette Island, 1 mile 30°, True, from Snipe Island.

INDIAN ROCK consists of several heads covering an area of about 500 meters, and was not developed; nor was Bostwick Reef developed, owing to the lateness of the season. The western edge of Indian Rock lies 5/8 mile off Annette Island. A sounding of 1-1/2 fathoms at low water was obtained 1-5/8 miles 320°, True, from Fish Island. Three heads of Indian Rock bare at extreme low water, and

DESCRIPTIVE REPORT, FELICE STRAIT, ALASKA. C.G.Q. 1914.

after July 1st the reef was marked by heavy kelp.

BOSTWICK REEF. The work did not extend as far as Bostwick Reef, and no information other than given in the Coast Pilot is available.

Kelp could not be seen from the bridge in passing by the track recommended.

RYUS BAY, so called since a Mr. Ryus, of Ketchikan, requested a survey of the same, lies on the northern side of Duke Island. Vessels can approach with deep water within 1/2 mile of the bay, and with care a small vessel may follow the chart into the bay. It should be entered only at low water, and a vessel should not lie over night at anchor.

Respectfully Submitted

C. J. Quillian

Asst. C. & G. Survey.

Chief of Party.

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

REFER TO No.

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

January 20th, 1916

The Superintendent,
U.S.Coast and Geodetic Survey,

Sir:

In re; Additions to Coast Pilot of S.E. Alaska.

Harbors; Ryus Bay on the North side of Duke Island is an excellent harbor for vessels not exceeding 150 feet in length. It is easy of access and is well sheltered from all southerly weather while northwest winds are broken by Hotspur and Annette Islands some two to three distant. Anchorage may be had in ten fathoms of water, muddy bottom and good holding ground. For sailing directions see the hydrographic sheet of the survey during 1915 on scale of 1/10 000.

Dog Bay is sheltered from East through South to West. Is open to Northerly breezes. Is open and easy of access. Bottom soft. Depths are about thirty fathoms. See survey sheets 1915 on scale of 1/20 000.

Pond Bay Good shelter and depths but difficult of access and not recommended. See survey 1915 on scale of 1/10 000.

Custom House Cove and Mary Island Anchorage additional development was done in course of surveys during 1915. See sheets of this work on scale of 1/10 000.

Hassler Harbor, an excellent harbor oh the north shore of Annette Island. For small vessles. Additional sounding lines were run and the harbor developd on a scale of 1/5 000. See sheets of 1915.

North side of Bold Island; Anchorage may be had about 1/4 mile off shore of the North side of Bold Island in depths of 30 fathoms. Is well sheltered.

Moth Bay for small vessels only. Is well sheltered. Additional development during 1915 on scale of 1/10 000.

Dangers; Report has previously been made of dangers located in Sealed Passage.

There are numerous rocks and reefs southward of Cat Island.

New dangers were not found in Danger Passage.

A sunken rock was located on the west side of Mary Island about 1/4 mile off shore and northward from Custom house Cove.

The area between Indian Rock and Bostwick Reef was developed

and found to be of irregular bottom but no dangers were discovered.

Indian Rock consists of several rocky pinacles two of which bare at lowest tides. Are covered with Kelp in the late fall. This kelp is hard to distinguish and is not vissible to a vessel following the courses recommended which keep a vessel close to the Annette Island shore.

Passages; Sealed Passage was developed as ordered. The bottom is very irregular and this passage cannot be recommended for other than small vessels. Several dangers near the sailing line have been previously reported. The course recommended in entering by this passage is to bring (the North Tangent of Vegas Islands in line with the southern tangent of Annette Point) and hold this range until abreast HAIR ROCK or until abreast the southern end of Hotspur Island whence a midchannel course can be steered between Hotspur Island and Vegas Islands.

46° true

A passage eastward of Walker Island was developed and found to be clear. For futher details see the survey 1915 scale 1/20 000.

Respectfully Submitted

C. G. Calkins

Assistant, C.& G.Survey.

VEC
Apr.5,1915
L. P. S.

HYDROGRAPHIC SHEET 3711.

Nichols Passage, South East Alaska, by Assistant C. G. Quillian in 1914.

TIDES.

	Port Chester, ft.
Mean lower low water, or plane of reference on staff	6.3
Lowest tide observed " "	2.1
Highest " " "	25.8
Mean range of tide	12.7

Hyd. Sheet No. 3711.

The rocks awash south of Blank Islands were shown on the sheet in pencil by field party and mentioned in the sounding records. Therefore they were inked on this sheet although they were not on the Top. sheet or boat sheet.

The projection on Hyd. sheet number 3323 would not agree with that on this sheet and was corrected.

The ground is very well covered.

Lyman C. Bolinger.

Verified; May 11, 1915.
R. L. Johnston

Soundings in fathoms.

Protracted by field party.
Plotted & inked by L. C. B.
Verified by R. L. J.

chart 8080 1:40 applied 4/67 Clarence Muhfeldt

3712

Diag. Cht. No. 8102-2

Department of Commerce and Labor
COAST AND GEODETIC SURVEY

O. H. Tittmann
Superintendent.

State: Alaska

DESCRIPTIVE REPORT.

Hydrographic *Sheet No.* 3712

LOCALITY:

Approaches to
Pelican Strait

1914

CHIEF OF PARTY:

C. J. Williams

11—4645

3712

Original

DESCRIPTIVE REPORT

OF

LAUNCH DELTA WORK

IN

HYDROGRAPHIC SURVEY

of Approaches to

FELICE STRAIT and NICHOLS PASSAGE

S.E. ALASKA

PARTY OF U.S.S. McARTHUR

C.G. QUILLIAN, Ass't., Com'g.

D. Karr - Aid.

1914

PERSONNEL

OF

HYDROGRAPHIC PARTY

U.S.S.McARTHUR

1914

SHEET NO.4

Workvof Launch Delta.

Officers	-D.Karr	Aid	Observing and Plotting
	-M.O.Nelson	Aid	Observing and Recording
Recorder	-M.D.Graves	Ch.Writer	
Coxswain	-Wm. Westbrook	M.at A.	
Engr.	-Samuel Lawson	A. to E.	
Leadsmen	-Lars Haugsett	Sea	
	-Ingvald Loseth	Sea	
	-G.R.Morris	Sea.	

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET NO. 4

Hydrographic Sheet No.4 covers work in Nichols Passage - from Canoe Cove to Pt. Davison, in Felice Strait - from Pt. Davison to Grass Rocks, Harris Island anchorage, and some work along the shore of Annette Island just north of Survey Point.

The party consisted of two officers, the ship's writer as recorder, and five men. The steam launch Delta equipped with C.& G.S. hand sounding machine No.6 was used. In all shoal work, under ten fms, the sounding was done with a hand l lead. From △ ~~Cove~~ Canoe south to △ Duncan no evidence of shoals or dangerous rocks was found. Just north of the group of islets about △ Duncan is a shelter used by the smaller gas boats. There is considerable kelp and many rocks in the entrance of the little bay. South and east of △ Duncan is a larger bay where the water is of considerable depth. Lying off the entrance on bothe sides there are numerous rocks and a great deal of kelp. Many small boats in running from Nichols Passage to Felice Strait keep as close as a few hundred meters to shore even after passing △ Duncan and run in behind the group of rocks on the westerly one of which △ Davis is located. A great deal of kelp was found growing about these rocks.

DESCRIPTIVE REPORT

Hydrographic Sheet No 4

Southwest of △ Davis 1300 to 1600 meters there are shoal spots on which the launch party obtained soundings of 11 and 12 fms. Numerous soundings were made to locate less water without success. The area was later dragged with the drag set at effective depth of ft. The drag was grounded and the sounding tender obtained a sounding of 9 fms. which reduced by the tide tables gives approximately 7 fms. It is recommended that ships leave this spot well inside. Going north from Felice Strait, when △ Davis (or the little island it is on)bears N.E. (true) and is distant a mile and a half or more, a course can be made for Hid Reef Buoy lying off Canoe Cove. Passaing close to Hid Reef Buoy, coming south, a safe course is to head for Pt. Percy. The northerly side of Felice Strait from Grass Rocks to Pt. Davison is foul with kelp and rocks that cover and uncover. Harris Island can be passed very close - within a hundred meters. The anchorage just east of Harris Island was used by the U.S.S.McArthur whenever in that vicinity. A few hundred meters east of the island there is from 7 to 15 fms of water A swift current sweeps passed this anchorage and west around Harris Id. There is plenty of water close to Survey Pt and ships can run as close as 75 meters from shore off this point. There is a fairway between Mule Rock and the Mainland of Annette Id. lying east of it - soundings of 19 fms. being obtained within a few meters of the rock. The shore of the Island is regular and steep in this vicinity - soundings of 3o to 35 fms were recorded

DESCRIPTIVE REPORT

Hydrographic Sheet No. 4

close to the shore north of Mule Rock. The shore line about Pt. Davison is extremely irregular and rocky. Numerous islands, rocks and a great deal of kelp make the waters close to the north shore of Felice Strait dangerous. Kelp grows on pr practically all the reefs that cover and uncover.

Tides were observed at Metlakatla by an Automatic Tide Gauge continously during the progress of the work. On the follo w- ing dates a recorder read tides at the Harris Id. anchorage tide staff; September 23, 24, 25, 26, 29, 30, Oct. 1, 2, 3, 7, 8, 9, 10, 11, 16, 17, 19, 20, 21, 22.

DESCRIPTIVE REPORT

HYDROGRAPHIC SHEET NO. 4

A shoal bearing 180° from Duncan and a distance of 1200 meters was found as shown on the charts. The least sounding obtained by this season's party reduced to 14 ft. The shoal was carefully gone overin an effort to locate any s spot of less depth. There is an abundance of kelp growing over the shoal.

Respectfully submitted

D Karr Reid

Hyd. 3712

DESCRIPTIVE REPORT OF SHIP'S WORK,

APPROACH TO FELICE STRAIT, ALASKA.

The inshore work on this sheet was executed by the Launch "DELTA" under the charge of Aid Douglas Karr. The work which was executed by the Launch in general extended about a mile offshore.

Attached hereto will be found Mr. Karr's Descriptive Report for the work done by the Launch.

The ship joined onto this work and extended the same a further distance offshore. The lines were spaced reasonably close, according to the depths. Soundings were all taken by a Cosmos Hand Sounding Machine. Localities giving indication of irregular bottoms were sounded more closely than the regular work.

Off Point Davison considerable irregular bottom was encountered and was sounded over partly by both boats; also, an attempt was made to drag the section immediately off Point Davison. Please see the drag sheet of this work. The lines included the development of the approach to Felice Strait between Percy Islands and Annette Island. This was found clear, and deep water. The survey did not extend off of the main channel.

On a couple of days the weather was too squally to permit work in Felice Strait, and the ship sounded along the eastern shore of Tamgas Harbor. The western shore was not developed by this survey. The orders for the season's work did not assign Tamgas Harbor as a section to be surveyed.

For further notes on this neighborhood you will refer to my General Descriptive Report of Nichols Passage and Felice Strait.

Respectfully submitted,

C. L. Quillian

Assistant, C. & G. Survey,
Commanding.

CGQ/MDG.

TABLE OF STATISTICS
FOR
HYDROGRAPHIC SHEET OF
APPROACH TO FELICE STRAIT AND INSHORE HYDROGRAPHY
FROM HID REEF TO SURVEY POINT

1914

DATE	DAY	VOL.	MILES	SOUNDINGS	POSITIONS	HOURS	DISTANCE OF WORK TO	DISTANCE OF WORK FROM	
9/13	E	I	18.5	81	81	7:30	8	8	"McARTHUR"
16	G	I	9.6	61	61	4:47	4	25	"
~~15~~	~~F~~	~~III~~	~~16.5~~	~~87~~	~~87~~	~~7:40~~	~~5~~	~~6.5~~	"
~~16~~	~~K~~	~~III~~	~~17.8~~	~~56~~	~~56~~	~~4:02~~	~~1~~	~~5.0~~	"
22	L	IV	12.0	86	86	7:00	3.5	9.5	"
23	M	IV	7.0	53	53	4:00	0.5	0.75	"
24	N	IV	5.25	42	42	3:00	0.75	1.	"
25	O	IV	19.5	143	143	8:00	4	1	"
26	P	IV & V	19.5	171	171	8:30	0.5	-	"
Total 9/13 to 26			~~118.85~~ 115.65	~~747~~ 780	~~747~~ 780	~~55.54~~ 54 03	~~38.25~~ 27.25	~~59.75~~ 52 75	
9/17	A	I	8	111	91	4:10	11.5	12	DELTA
19	B	I	14	150	103	4:25	1	1	"
22	C	I	12.5	169	89	4:51	4	9	"
23	D	I	7	119	74	2:58	2	4.5	"
24	E	I	6	126	68	2:14	0.25	0.25	"
25	F	I &II	15.5	225	128	6:29	3	7	"
26	G	II	18	247	140	7:11	4	5	"
29	H	II	8.75	101	82	3:23	0.5	0.25	"
30	J	II	14	252	115	6:23	2.0	2.0	"
10/ 1	K	II	14	234	116	6:20	1	1	"
2	L	II&III	18.75	238	113	7:10	2	4.5	"
3	M	III	5	116	55	4:39	1.5	1.	"
Total 9/17 to 10/3			141.50	2068	1074	60:13	32.75	47.50	
Total this Sheet			~~257.15~~ ~~260.35~~	~~2643~~ ~~2815~~	1881	~~114.17~~ ~~115.67~~	~~60.0~~ ~~71.00~~	~~160.25~~ ~~107.35~~	
	12								

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS OFFICE:

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

VEC
Apr. 3,1915
L. R. S.

HYDROGRAPHIC SHEET 3712

Nichols Passage and Clarence Strait, Alaska,

by Asst C. G. Quillian in 1914.

TIDES.

	Port Chester ft.	Hotspur Id. ft.
Mean lower low water, or plane of reference on staff	6.3	5.3
Lowest tide observed " "	2.1	3.5
Highest " " " "	25.8	24.9
Mean range of tide	12.7	12.7

Hyd Sheet No 3712

At the time this sheet was plotted, the boat sheet could not be found. A great many positions had been incorrectly protracted; these mistakes were frequently carried to the end of the line on which they were made. The only way these errors could be caught and corrected was by reprotracting such lines, as appeared suspicious.

Several rocks were shown on the sheet, which were neither shown on the Top. sheet nor mentioned in the sounding record.

R. L. Johnston

verified – L.C.Bolinger

Junction not developed

Soundings in fathoms.

Protracted by field party.
Plotted and inked by R.L.J.
Verified by L.C.B.

New chart 6-15-60 M. Rogers Hydrography completely applied
8086

3717

Diag. Cht. No. 8102-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. ..... Office No. H-3717

LOCALITY

State ALASKA

General locality FELICE STRAIT

Locality .....

194 14

CHIEF OF PARTY

C. G. Quillian

LIBRARY & ARCHIVES

DATE MARCH 16, 1915

8-1870-1 (1)

3717

DESCRIPTIVE REPORT

OF

LAUNCH DELTA WORK

IN

HYDROGRAPHIC SURVEY

OF

FELICE STRAIT, S.E.ALASKA.

PARTY OF U.S.S.McARTHUR

C.G.QUILLIAN, Ass't.,Com'd'g.

D.KArr - Aid

1914

PERSONNEL

OF

HYDROGRAPHIC PARTY

U.S.S.McARTHUR

1914

SHEET NO. 5

Work of Launch Delta.

Officers -	D.Karr	Aid	Observing and Plotting
	M.O.Nelson	Aid	Observing and Recording
Recorder -	M.D.Graves	Ch.Writer	
Coxswain -	Wm. Westbrook	M.at A.	
Engr. -	Samuel Lawson	A to E	
Leadsmam -	Lars Haugsett	Sea	
	Ingvald Loseth	Sea	
	G.R.Morris	SSea	

Hyd. 3717.

DESCRIPTIVE REPORT, FELICE STRAIT.

The greater part of this work was done by the "McARTHUR," using Cosmos Hand Sounding Machine.

The orders specified that the northern part of Felice Strait should be surveyed; but that the work should not extend to the Duke Island side. At a later date supplemental orders were issued to survey a small bay on the northern shore of Duke Island, which was done. The soundings were spaced thickly in the main channel south of Annette Island, and some work was done outside of the channel; but I do not consider that a complete survey was made.

The bottom is irregular; and in addition to the half-dozen distinct dangers shown, there are indications which would make it important that this entire channel be dragged, if the same should develop any commercial importance.

The channel between Ajax Reef and Annette Island, and Wallace Reef and Annette Island, was dragged to an effective depth of 22 feet.

The lateness of the season prevented a thorough development of Indian Rock and Bostwick Reef.

Indian Rock is correctly ~~marked~~ located on Chart 8075. There are 3 heads which bare at the lowest tides, and there are some half-dozen patches of kelp which form in the late fall. However, these patches of kelp were not observed until the latter part of July.

Bostwick Reef was not investigated; and in passing, kelp was not seen in the vicinity of this shoal, although I believe that kelp will grow on the same in the late fall.

Wallace Reef is an isolated rocky shoal, with a least depth of 3 feet at mean lower low water. This shoal consists of several rocky heads close together, and in the late fall a heavy growth of kelp covers the shoal. 5/6 fath. on H.3717

While the survey did not extend to Duke Island, yet several dangers were noted in the bay just westward of Dog Island, which make the same dangerous for anchorage.

A strong current sweeps through Felice Strait--current being strongest off Annette Point, and Harris Island. At Annette Point the ebb current sweeps southwestward around the point and directly toward Snipe Island and Wallace Reef. ~~After~~ passing Wallace Reef, however, the current sweeps through the regularly used channel. Around Harris Island the current sets fair with the channel.

Anchorage may be had immediately north of Hotspur Island, in the bight between Hotspur and Harris Islands, in a current of about two knots, and sheltered from all save easterly winds. At the anchorage southeasterly winds draw along the eastern tangent of Hotspur Island and create considerable tidal sea.

The "McARTHUR" anchored off Annette Point a number of times. There is a moderate tidal sea with the moderate breezes, which makes it uncomfortable with small boats or launches alongside.

Directions for anchorages will be found in my General Descriptive Report of Nichols Passage and Felice Strait.

For any further information you are referred to my General Descriptive Report of Felice Strait.

Respectfully, submitted,

C. M. Reeves

Assistant, C. & G. Survey,
Commanding.

CGQ/MDG.

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET NO. 5

Hydrographic Sheet No. 5 covers Felice Strait from Survey Point east to Indian Rocks. The work was done by the launch Delta and the Str. McArthur - the former doing most of the work close to shore and the latter developing the fairway. The following description covers the work performed by the Delta.

The party consisted of two officers,- observing and plotting, two petty officers,- engineer and coxswain, and three seamen as leadsmen, and for part of the work the chief writer as recorder.

Along the south shore of Annette Island the lines of soundings were run as close to shore as the thick growing kelp and the numerous rocks would permit. Further than 400 meters from the shore no soundings less than 10 fms were obtained, except on Wallace Reef and Ajax Reef. In several places that are indicated on the sheet kelp was found growing as far as 300 meters off shore.. When making a run from Survey Point to Annette Point it is recommended that vessels keep at least a quarter of a mile off shore. Ajax Reef lying three miles east of Harris Island is marked on its northerly edge by a red nun buoy which can be safely

DESCRIPTIVE REPORT

Hydrographic Sheet No. 5

passed within 175 meters. The position of this buoy was located by the topographer from a plane table position on Ajax Reef - It bears 197° from Namur a distance of 1225 meters. The extent of the reef is about 300 meters north and south, and 300 meters east and west. An area of 100 meters sqaure is bare at low water. The ship's (McArthur) hydrography shows no dangers, south of this reef. Wallace Reef is marked by a red nun buoy (#4). It lies 1200 meters west of Snipe Island. Both the McArthur and the Delta parties located the buoy. The Delta's fix at the buoy(strong tidal current running S.W.) is as follows:

Snipe	109°	30'
Flat		
Lord	55°	40'

This position checks with its position as determined by the McArthur. It bears from △ Snipe 279° a distance of 1200 meters. None of this reef bares at loww water. The least sounding obtained was 1 fm. 3 ft., which reduces approximately to 3½ ft. The kelp on this reef covers an area about 150 meters square. The launch work on this sheet along Annette Id. extends to a point just north of Snipe Id. A fish trap is located on Annette Point - its position is shown on the sheet. Trap was built near the outside end of the trap. The outfit is owned by Davis and Son, a well known native fishing company, whoc also operate floating fish traps in the vicinity of Annette

DESCRIPTIVE REPORT

Hydrographic Sheet No. 5

Point.

On the north shore of Duke Island bearing 205° from △ Snipe (or the center of Snipe Island) a distance of 4000 meters is Ryus Bay which is named after Mr. Ryus of Ketchikan, Alaska, who plans to develope a cattle range on Duke Island and to build a wharf in this bay. Off the entrance to the bay there are numerous rocks covered with kelp that bare at about ½ tide. There is a fairway nearly 300 meters wide where no soundings less than 12 fms. were obtained.

Respectfully submitted

D Karr Asst

Nov. 2, 1934.

The rock shown on the sheet 300 meters 160° from position 186 (Vol. 4) is considered to be non existant. Its source is the note in the Volume (Vol. 4, page 4) which undoubtedly refers to the rock ledge extending NE'ward from Vegas Id. (see ~~topo~~ sheet). The survey of 1915 (sheet 3781) shows 28 fathoms which further verifies the rocks non existance. It has been charted as a "P.D" rock. This rock will no longer be charted.

Chas. H. Green
Chief Div.

TABLE OF STATISTICS
FOR
HYDROGRAPHIC SHEET OF
NORTHERN PART OF FELICE STRAIT
FROM SURVEY POINT TO INDIAN ROCK
1914

DATE	DAY	VOL.	MILES	SOUNDINGS	POSITIONS	HOURS	TO	FROM	
9/29	A	I	8	62	62	3:25	2	2	McARTHUR
30	B	I	20.9	203	195	8:40	2	4	"
10/ 2	C	I &II	14.1	239	183	6:00	2	4	"
3	D	II	13	345	155	6:00	2	4	"
7	E	III	12.8	200	131	5:00	19	2	"
8	F	III	21.0	300	176	9:00	2	2.5	"
16	G	IV	7.0	80	77	3:30	30	5	"
17	H	IV	4.0	49	49	2:00	8	8	"
20	K	IV	2.0	21	21	1:15	12	12	"
Total 9/29 to 10/20			102.8	1499	1049	44:50	79	43.4	"
10/ 7	a	I	11	224	97	5:11	1.5	3	DELTA
8	b	I	16	320	131	7:12	5	2.5	"
16	c	I	3.5	112	38	2:11	9	9	"
17	d	I	8.	175	87	3:10	9	9	"
18	e	I	0.5	7	4	0:10	4	4	"
19	f	I	1	37	19	1:00	5	5	"
20	g	II	8	176	67	3:18	7	5	"
Total 10/7 to 10/20			56	1228	500	22:12	40.5	37.5	"
Total this sheet			158.8	2727	1649	67:02	119.5	80.9	

POST OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS OFFICE:

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

VEC

Apr.13,1915
L.P.A.

HYDROGRAPHIC SHEET 3717.

Felice Strait, South East Alaska, by Assistant C. G. Quillian in 1914.

TIDES.

	Hotspur Island ft.
Mean lower low water, or plane of reference on staff	5.3
Lowest tide observed " "	3.5
Highest " " " "	24.9
Mean range of tide	12.7

Hyd ~ 3717

The work was done in the Northern part of Felice Strait, South of Annette Id., and in addition the small Bay on the northern shore of Duke Id. was surveyed.

The positions were plotted in the field. A considerable number of them were verified in the office, where the soundings were plotted and inked.

With the exception of a small strip along the shore of Annette Id. the area has not been as completely developed as the numerous shoal indications would seem to warrant.

At V^{22}_{F} a rock is recorded giving the bearing, but no distance, and for lack of definite information as to the exact location of the rock, the latter has not been plotted.

At V^{18}_{G} there is recorded "Rocky ledge, 300 m. bearing 160° off the North end of Vegas Id." The question arises whether the 300 m. refer to the length of the ledge or to the distance from the position. It was decided to plot it as a rock awash (P.D.) 300 m. away from the position, bearing 160° (mag.)

During day "D" soundings were taken with the hand lead and machine. The hand lead soundings were accepted and plotted in

preference to the machine soundings.

Comparing this work with the drag survey in the same locality (Hyd ≈ 3708) it was found that a $7\frac{3}{4}$ fathom sounding was obtained where the drag-party sounded a $4\frac{4}{6}$ fathom shoal. This shoal, located 460 m S.W. of Δ Stub should be more carefully investigated.

The depth curves indicate clearly how irregular the bottom is and it was suggested by the Chief of the party to have the entire channel dragged, if the same should develop any commercial importance.

J.B. Shklair

Soundings plotted in fathoms.

Soundings platted and inked by J.B. Shklair
Verified and found correct J.D. Sowers 11/8/15

ADDRESS ALL COMMUNICATIONS TO
"SUPERINTENDENT, COAST AND GEODETIC SURVEY,
WASHINGTON, D. C."

Department of Commerce and Labor
COAST AND GEODETIC SURVEY
Washington

Hydrographic Sheet 3717

Information noted in sounding records are deficient. See Gen. Instr. ¶ 286, 290 and 297.

The numbering and lettering of positions was poorly done. Apparently no effort was made to attain either neatness or legibility.

On only 2 or 3 days was the name given of the officer who protracted the positions.

The sounding records should be made with a hard pencil (about 4 H).

3718

Diag. Cht. No. 8102-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. ..... Office No. H-3718

LOCALITY

State ALASKA

General locality NICHOLS PASSAGE

Locality WALDEN ROCKS TO HID REEF

1914

CHIEF OF PARTY

C. G. Quillian

LIBRARY & ARCHIVES

DATE .....

B-1870-1 (1)

3718

Hyd. 3718

DESCRIPTIVE REPORT, HYDROGRAPHIC SHEET, NICHOLS PASSAGE,

FROM WALDEN ROCKS TO HID REEF.

This entire area was surveyed by the Launch "DELTA," Aid R. L. Schoppe in charge, Aid M. O. Nelson, left angleman, Dr. L. I. Condit and Writer M. D. Graves, Recorders. The Launch "DELTA" was equipped with a Cosmos Hand Sounding Machine which was used for the greater portion of these soundings. The lines were closely spaced. At no time were soundings allowed to be over 250 meters apart. The survey of the various bays was even closer than the main channel, and all of these bays are taken up in detail on my General Descriptive Report of Nichols Passage, to which you are respectfully referred.

The most dangerous rock discovered was the rock about two miles 1° from Warburton Island Light, on which a least depth of 14 feet was found by this party, which later was reduced to 10 feet by the wire drag party in charge of Aid J. A. Daniels.

The Tide Gauge for this work was located at Port Chester (Metlakatla).

Respectfully submitted,

C. G. Quillain

Assistant, C. & G. Survey,
Commanding.

CGQ/MDG.

TABLE OF STATISTICS
FOR
HYDROGRAPHIC SHEET OF
N I C H O L S P A S S A G E
FROM BARE ROCK TO HID REEF
- 1 9 1 4 -

DATE	DAY	VOL.	MILES	SOUND-INGS	POSITIONS	HOURS	DISTANCE OF WORK TO	DISTANCE OF WORK FROM	
6/23	a	I	14.8	110	110	4:37	-	7.5	"DELTA"
24	b	I	22.0	150	150	6:46	6.0	8.5	"
29	c	I	4.0	187	115	4:59	13.0	12.0	"
7/ 3	d	I	4.2	121	29	2:00	5.0	10.0	"
7	e	I	6.5	59	59	2:06	12.0	19.0	"
14	f	I &II	18.5	152	126	5:58	12.0	3.0	"
27	g	II	20.2	172	161	6:19	12.0	3.5	"
28	h	II	21.3	190	187	7:11	4.0	6.0	"
29	i	II	13.5	165	107	4:05	4.5	10.0	"
8/ 3	k	II&III	13.2	308	116	4:09	12.5	8.0	"
7	l	III	14.5	165	131	5:45	14.5	4.0	"
8	m	III	15.5	185	130	6:26	2:3	22.0	"
11	n	III	10.8	119	88	3:29	1.0	2.0	"
12	o	III	4.5	35	34	1:56	2.0	6.0	"
17	p	III&IV	14.0	167	117	4:34	4.0	11.0	"
18	q	IV	8.5	74	60	4:22	2.0	2.0	"
19	r	IV	15.0	247	116	7:14	2.0	2.5	"
20	s	IV	17.5	150	113	7:27	6.5	4.0	"
21	t	IV	18.0	117	144	7:52	2.5	3.0	"
22	u	IV	10.2	126	77	4:21	2.0	18.0	"
25	v	V	19.2	146	113	6:17	4.0	5.0	"
26	w	V	11.2	244	120	6:00	9;5	7.5	"
27	x	V	7.0	216	84	3:40	8.0	7.0	"
28	y	V	11.0	296	131	6:45	4.0	9.0	"
29	z	VI	7.0	143	77	3:26	7.0	20.0	"
31	aa	VII	5.5	132	60	3:34	0.5	1.0	"
9/ 2	bb	VII	15.2	293	135	8:05	7.5	2.0	"
3	cc	VII	15.0	250	147	8:03	0.5	3.0	"
4	dd	VII	7.5	93	66	4:16	1.5	3.0	"
11	ee	VII&VIII	12.5	140	103	5:37	1/0	3.0	"
12	ff	VIII	4.5	80	48	2:11	3.0	1.0	"
14	gg	VIII	8.5	124	81	4:54	7.0	14.0	"
15	hh	VIII	11.5	194	106	4:29	11.5	12.5	"
16	jj	VIII	14.0	213	128	5:40	12.5	12.5	"
TAL	34		423.3	5,853	3,569	206:33	197.3	284.5	"DELTA"
9/11	C	II	18.7	74	74	6:31	14.0	6.5	"McARTHUR"
12	D	II		24	24	2:00	3.0	5.0	"
TOTAL	2		18.7	98	98	8:31	17.0	11.5	"McARTHUR"
GRAND TOTAL	36		442.0	5,941	3,667	215:04	214.3	295.0	

VEC
Apr.17,1915
L.P.S.

HYDROGRAPHIC SHEET 3718.

Nichols Passage, S.E. Alaska, by Assistant C. G. Quillian in 1914.

TIDES.

	Port Chester ft.
Mean lower low water, or plane of reference on staff	6.3
Lowest tide observed " "	2.1
Highest " " " "	25.8
Mean range of tide	12.7

Hyd Sheet No 3718

Within the limits of the work the ground has been uniformly covered. The bottom is very broken and the numerous shoals have been fairly well developed.

Most of the important rocks have been well located, but a good many are located only by a general direction and approximate distance from some sounding line. The rock about 700 me E. of △ McCarty is located in this manner.

There are a number of discrepancies between the Hyd and Top. sheet, in the manner of showing islands, reefs and features outside of the high water line.

R. L. Johnston

Soundings shown in fathoms.

Protracted by field party
Plotted and inked by R.L.J.
Verified by Colin R. Lamont Nov. 13-18, '15

NAUTICAL CHARTS BRANCH

SURVEY NO. 3718

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
6-6-60	New Chart 8086	M. Rogers	Completely applied ~~Before~~ After Verification and Review
5/67	8080	Clarence Musfeldt	~~Before~~ After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.