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Department of Commerce and Labor  
COAST AND GEODETIC SURVEY

*O. H. Sittmann*  
Superintendent.

State: *Alaska*

DESCRIPTIVE REPORT.

*H. J. F.* Sheet No. *3046*

LOCALITY:

*Longass Narrows,  
Bar Pt. to Ross Reef  
and Entrance of Ohio  
R.R.*

190

CHIEF OF PARTY:

*R. B. Erickson*

B

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# 3046

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Hydrographic Sheet "D".

General Locality:-

Tongass Narrows, SE. Alaska.

Special Locality:-

From Bar Point to Rosa Reef.

Hydrographers:-

R. B. Derickson, Ass't.  
Com'd'g. U.S.S. Gedney and chief of party.

G. A. Whitehead, Mate.

F. B. T. Siems, Aid.

Recorder: Everett E. Mumaw, D. O.

Scale:-

1/10,000.

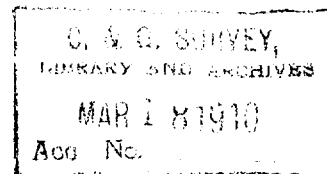
Season:-

October 6, 1909; to October 20, 1909.

Boats Used :-

Cosmos, Launch #27.

# 3046



Hydrographic Sheet "D"-Subsketch.

Locality:-

Vicinity of Ohio Rock. West of Channel Id.

Hydrographers:-

R. B. Derickson, Ass't.  
Com'd'g. U.S.S. Gedney, and chief of party.

G. A. Whitehead, Mate.

F. B. T. Siems, Aid.

Recorder: E. E. Mumaw, D. O.

Scale:-

1/5,000.

Season :-

October 6, 1909; to October 20, 1909.

Boat used:-

Cosmos-drifting.

Descriptive Report to accompany  
Hydrographic Sheet "D" Tongass Narrows,  
S.E. Alaska.  
1909

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The main object of the survey was to determine the existence of a rock, and its position; which was reported by the master of the S.S. "Ohio" in July 1909. As is seldom the case in such reports, the position and draft of the vessel when it struck the rock gave the correct depth and location, and proved to be identical with the position of the rock and least sounding over it, obtained from this hydrographic investigation.

The present chart of Tongass Narrows, which gave but a general idea of the depth, showed no soundings at or in the near vicinity of this rock; as in other large spaces without soundings which are shown on this chart, thruout the Narrows. As the channel is a very important one, it has been closely sounded owing to the irregularity of depths of bottom and the possible existence of further dangers to navigation. A very close development of the rock was made. Reefs extending from the several points were not so thoroly developed, as this was prevented by the closing of the season's work. The work done extended in a general way from about a mile north of Ketchikan to Rosa Reef.

METHODS OF SURVEY

The hydrographic survey was controlled by a tertiary triangulation scheme extending north of the original stations "Isle" and "Spit" E.F.D. 1906, which was used as a base line.

The average depths were so deep that it necessitated the use of the sounding machine in all cases, except in the development of the "Ohio" Rock. When sounding machine was used, positions were generally taken every four soundings. The coxswain was directed to make all runs between two consecutive positions equal, ( 1 minute or 1/2 minute) as ordered by the Officer in charge. The recorder noted only the time of sounding in time column of records. Therefore the difference between these times may differ owing to the difference in length of time of sounding, or at the beginning of a line time was taken in getting range of proposed line. The "Cosmos" sounding machine was used, where a dial attached to the wheel holding the sounding wire, gave the reading, the dial reading zero when bottom of lead was at surface of the water. Time used was 135<sup>0</sup> meridian time. (For more information on the above subject, see descriptive report of hydrography of Cordova Bay, preceding this report. Practically the same methods were pursued as both surveys were conducted by same party).

In the development of "Ohio" Rock a shoal sounding was first obtained near the center of the rock and skiff anchored at that position. A strong current setting to the northward, made it possible for Str. "Cosmos" to drift in parallel lines over the shoal place, at varying distances away from the skiff on both sides. The position of these lines were obtained by noting the exact time at the beginning of a line, the position of the skiff in relation to the shore in back of it and sextant angles. The shoal area was thus covered by beginning line

in deep water and ending again in deep water on opposite side of shoal. The outer lines on both sides showed soundings of deep water, thus giving the limits of the shoal area.

All soundings were plotted in even feet on smooth sheet. In the sub-sketch the 4 fathom curve, 30, 40, 50, and 60 feet curves were drawn to show the character of the rock. This work on the sub-sketch was done on a scale of 1:5000 in order to distinguish clearly the sounding data plotted. Some of the soundings on sub-sketch were plotted on main sheet also, amongst these were the least depths over the rock. The first results verify the positions and least depths as published in the Notice to Mariners No.2920 of November 26, 1909.

Tides were observed on plane tide staff at the Sawm Mill wharf in Ketchikan, and its relation to the benchmarks determining the plane of mean lower-low water, as computed by party of E.F.D. 1906, was ascertained by leveling from the benchmarks to the new tide staff. No new computation of plane of mean lower low water was made, the plane of E.F.D. 1906, being used in the reduction of soundings.

As the work shown on the accompanying sheet is not a complete survey of the Narrows, a full description of the water area cannot be given. In continuing the survey, soundings and continued development will in some cases overlap the work herein shown.

#### GENERAL DESCRIPTION OF THE COAST.

From the part of the Narrows, where they begin to con-

tract, about one mile north of Ketchikan, or at Bar Point on the east, and East Clump on the west shore; the general trend of the coast line is straight on both sides. The west side is parallel to the opposite shore for about two miles up to Peninsula Point forming the narrowest part of the Narrows. A broad point known as Lewis is opposite Peninsula Point, and the coast continues in the same general direction from there on northward.

Considerable beach is exposed at low water on both sides except where the mountains are close to the beach as on the east coast about midway between Point Bar and Peninsula Point. Here there is no beach whatever, the coast being steep to, and mountains literally rise out of the water. Both at Peninsula Point and at Bar Point, and a little northward of the latter, the shore is low and gradually rises in ridges to the mountains that are seen all along this coast.

On the west side of the narrow part of the Narrows, the coast and land in the back are low, in places extending miles inland before the mountains are reached. A small ridge of high hills lie a few hundred yards inland from East Clump. North of this, however, until Point Lewis is reached (where several small ridges appear running from shore to the mountains in back) the low land extends several miles inland, and is covered with thick undergrowth.

Peninsula Point is marked by an island lying off the main shore, and at low water forms part of the shore itself. A neck of land extends from shore almost meeting the island at

High water. Northward of this the shoreline turns in towards the west forming the bight known as Ward Cove. The shoreline north of Ward Cove runs parallel to the general direction of the channel, but the distance from the opposite side is twice that at the narrow part of the Narrows, that is between Point Peninsula and Lewis Point.

The coast on the eastern side of the upper part of the Narrows just described is quite irregular, being indented by three bights including Wards Cove, the largest, There also lie a group of numerous islands with ledges of rocks northwset of Ward Cove and the western most lies in middle of the Narrows. Still further west a small wooded island, known as Center Id. lies in mid channel.

In back of Peninsula Point are numerous high peaks. Three of these in shape of triangle, are close together and between them is a valley with the appearance of a hugh hole having been scooped out. North along the same shore the mountains lie further inland with a gradual sloping from the shore. The stretch of shoreline opposite is very regular especially north of Lewis Point where there is a little beach and the coast is steep to. Further north, however, the condition of the coast changes, There is a long round indentation, terminating in Rosa Reef, shallow water exists at the southern part of this bight and considerable beach shows at low water. Rosa reef ~~consists~~ consists of rocky ledges extending from shore. Uncovered at low tides the numerous projections of rock along this spit have a black appearance. A broad foul bottom also extends from Lewis Point in a true easterly direction which appears



black like those of Rosa Reef and are marked profusely by kelp. This reef is know by mariners using Tongass Narrows as Lewis Reef.

At any point in mid-channel Pennock Island to the southward and the shoreline of Cleveland Island with its mountains to the northward, are visible showing the general straight direction of the Narrows.

OUTLYING AND INSHORE DANGERS AND ISLANDS.

"OHIO" ROCK: consists of two rocky heads approximately 25 yards apart, the western most bearing  $109^{\circ} 30'$  true, (E.  $15/16$  N. mag.) to Channel Island (southern end), and distant  $5/16$  miles nearly. Each of these heads have  $23-1/2$  feet of least water or more nearly 23.8 feet. This is the reduced sounding corresponding to the mean L.L. water datum plane of E.F.D. 1906. At extreme low water this reduces to  $19-3/4$  feet. The rock is directly in the channel that lies to the westward of Channel Island, and can be avoided only by following the west shore closely after the first point is reached; a little over one mile from Rosa Spindle. There is deep water between the rock and Channel Island, but this passage is not safe since the rock lies only a little to the westward of a line drawn from Rosa Reef Spindle and Channel Island.

A kelp patch 4 ft. lies 1000 meters S.E. x E. mag. of Rosa Reef Spindle, and a sunken rock lies about in the same direction but  $7/8$  mile from the Spindle. A 10 ft. sounding is near the sunken rock. This region was not developed.

Rosa Reef is marked on its outer edge by concrete base supporting a spindle. It is a spit of rocky ledges covered at very high tides. The rocks when awash have a black appearance. The extent of the reef is 330 meters from the tree line, outside of which it rapidly slopes off into deep water.

A broad stretch of foul bottom extends off Lewis Point known as Lewis Reef. It is also composed of rocky ledges that appear black when awash at low tides. The area is about 350 meters wide and extends nearly  $1/3$  the way across the channel. It is marked by great bunches of kelp.

Foul ground borders along the same shore about  $1/3$  the way distant to East Clump, here kelp lies  $1/4$  the way across the channel, with 11 feet of water. Another foul spot along the same shore is further south but nearly inside of a small cove.

The shore 2 miles south of Peninsula Point is clear with deep water close in. This shore is followed closely to avoid the foul ground on the opposite side. At Peninsula Point as well as Bar Point expose considerable beach at low water. Bar Point Flats were not developed by hydrography, its extent being roughly estimated by topography.

A ledge of rocks about 100 meters wide extends 200 meters west of the island that lies furthest west of the group lying northwest of Wards Cove. This reef is particularly dangerous in making channel to the eastward of Channel Island. While approaching from the northward ledges of rocks extend to the eastward of Channel Island about 50 meters.

There is a watering place at the eastern entrance to Wards Cove, as indicated on previous charts. The water comes down a steep bank, otherwise it was not examined.

Anchorage can be had at Wards Cove, or in the back of Rosa Reef as described in the Coast Pilot.

The two aids to navigation are the Rosa Reef Spindle and a beacon on Peninsula Point. The spindle was already mentioned, the beacon is a whitewashed tripod and marks the point, it is fairly visible at night when kept whitewashed but is more or less neglected at present.

East Clump is used as a land mark in steering to abreast this island in order to avoid the flats off Bar Point.

SAILING DIRECTIONS FOR PASSING CHANNEL ISLANDS.

Following the sailing directions as given in the Coast Pilot to abreast the whitewashed beacon on Peninsula Point, a course passing either side of Channel Island can be used. Until the "Ohio" Rock is properly buoyed, vessels passing to the westward of Channel Island should head on a westerly course and approach the west shore <sup>of Narrows</sup> to within 200 meters following it until ~~Channel~~ Id. and the first island at entrance to Wards Cove come in range; when the south end of "Ohio" Rock will be abeam and the course can be changed to head for <sup>to position N.W. of Channel Id. and then</sup> mid-channel in a N.N.W. course, taking up the courses given in the Coast Pilot.

The coast west of Channel Island is clear and can be approached to within 50 meters, and by following it till the

islands on starboard hand are abaft the beam, a vessel will keep clear of the rock. The west side of Channel Island is recommended in approaching both from N. and S. as the long ledge extending from the island, 1/2 mile N. of Channel Island, covers at half tide and it is difficult to make the sharp turn in rounding Channel Island with a large vessel.

It is recommended that a whitewashed beacon be placed on the Point west (mag) from Channel Island, which would greatly facilitate the navigation of this channel.

Report compiled by,

*F. B. Sien*

Aid, C. & G. Survey,  
Hydrographer.

Revised and approved,

*R. B. Mendenhall*

Asst., Comdg. *St. Leger*

MEMORANDUM FOR HYDROGRAPHIC SHEET NO. 3046  
TONGASS NARROWS, S.E. ALASKA

The plane of reference for H. S. 3046 is mean lower low water and corresponds to a reading of 4.9 feet on the tide staff at Ketchikan.

*G. Wade*

Chief, Division of Tides and Currents.

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List of Plane Table Positions for

Hydrographic Sheet "D".

Station	Longitude	D.M.	Latitude	D.P.
Nell	55° 23'	1236 <sup>m</sup> .1	131° 45'	931 <sup>m</sup> .9
Huck	55° 22'	775 <sup>m</sup> .8	131° 43'	625 <sup>m</sup> .1

Statistics of Sheet "D".

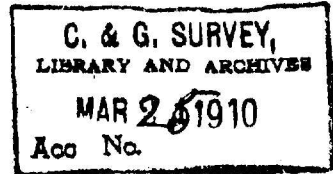
Miles of Sounding Lines 64.5

Number of Soundings 1365.

Number of Angles 1046.

*File with Description Report*

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Statistic Sheet "D"

Tongass Narrows, S.E. Alaska.

R.B. Derickson, Asst., Comdg.

Chief of Party.

Date 1909	Letter	Vol.	Angles	Soundings	Miles Statue	Vessel
	a (red)	1	186	224	9	Cosmos
	b "	1	154	209	8.5	"
	c "	1	224	374	11.75	"
	d "	1	186	246	12.5	"
	e "	1	128	124	7	"
	f (green)	1	90	105	8.25	Launch #27
	g "	1	78	83	7.25	

*Soundings plotted by Field Party  
Checked & ruled by A.L. Simons*

*Soundings are in feet*

*File with the Description Report*

Map Sheet No 3046

June 13, 1910.

With the exception of the shoal between  
△ Sim and △ Babe the survey of this area is  
incomplete. The shoal is very well developed - 24 ft  
being the least water found.

H. L. Simons