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Diag. cht. No. 2554-1 & 2576-1

Department of Commerce and Labor
COAST AND GEODETIC SURVEY

W. T. Mann
Superintendent.

State: *Alaska*

DESCRIPTIVE REPORT.

Hyd Sheet No. *2918*

LOCALITY:

Chugach Islands
so Barren Islands

1907

CHIEF OF PARTY:

S. W. Rhodes

U. S. COAST AND GEODETIC SURVEY
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DESCRIPTIVE REPORT to accompany Hydrographic

Sheet "Chugach Islands to Point Banks"

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The hydrography shown on this sheet was executed by the Steamer "McArthur", using a hand-sounding machine, with the registering device from a Tanner Hand-Machine; the wire was fitted with an 18-lb. lead, to which was attached a Stillwagen specimen-cup. A few soundings were made by hand lead, in the vicinity of the Chugach Islands, where the depths were shoal enough to admit of its use.

Signals Banks, Otter, Tonki, and Marmot, are new triangulation-stations, the positions for which were determined from the 1907 triangulation.

Signals Jag, Lump, Block, West, Spur, North, Point, Cone, Mid, Green, Rock, Perry and Black are natural objects cut in from the 1907 triangulation and from sounding-positions. All other objects were determined by the 1906 triangulation.

The shore line of Ushagat, North, Mid and Green Islands was determined by a plane table survey in 1907.

The shore line of East and West Amatuli Islands and Cone Island is sketched in by the aid of tangent cuts from the triangulation and hydrography; points and outlying rocks at the North end of Shuyak Island, as well as Tonki Cape, have been located in the same manner.

Except in the case of Elizabeth Island, no attempt has been made to delineate the shore line of the Chugach

Islands, as that can best be located from the triangulation of 1906.

The sheet was originally laid out in two, to cover all the territory from Chugach Islands to Marmot Island, but was later made into one sheet on a scale of 1/60,000, as thick weather frequently made it necessary to use signals which were off the single sheet, in order to secure a fix.

Soundings were made between August 14th. and October 10th, whenever possible, but so unfavorable was the weather during this period, that only eleven days could be devoted to the work, outside of the four or five days which were devoted to triangulation-work.

Strong tidal currents over the whole field of the work rendered it impracticable to run lines of soundings in thick weather, when positions could not be continuously determined.

The lines between the Barren Islands and the North end of Shuyak Island, while indicating some irregularities of the bottom, tend to disprove the existence of the breakers reported in that locality.

No outlying dangers were found during the progress of the work, excepting a rock awash at low tide about one mile N.N.W'ly from the North end of West Amatuli Island, and Dora Reef, lying 2-1/2 miles South of the Southeastern point of Elizabeth Island; both of these dangers were located.

A rock awash at extreme low tide in the channel between the center of Pearl Island and the Main land, and at

about 1/3 the distance from the island shore, has been reported by Capt. Humphreys of the S.S. "Portland". As no indication of this rock has been seen by the "McArthur" party during frequent passages through the channel during the past two years, it seems probable that the report has confused the position of the rock considerably further North and West, and just off the Southerly end of a prominent reef always above water.

The usual route for all except the larger steamers bound from the Eastward to Seldovia, is inside of Pearl and Elizabeth Islands, keeping the Northerly point of Pearl Island close aboard, and holding the course until well over toward the Elizabeth Island shore, in order to avoid the dangers off the Southwesterly point of the mainland shore.

During the Summer and Fall months, E.N.E'ly winds with heavy rain prevail. Gales from the same direction are frequent. Fresh S.W.'ly breezes with clear sky are frequent during the Fall months.

The tidal currents run with great velocity during spring tides and are particularly strong in and around the Chugach and Barren Islands, and off the North end of Shuyak Island. During extreme tides with heavy weather, tide rips, dangerous to small craft, occur in the channels among the islands and in the wake of many projecting points. With an ocean-swell setting in, and spring tides, very heavy seas will be found in mid-channel on either side of Barren Islands.

ANCHORAGES.

A good anchorage for moderate sized vessels in S.E.'ly weather can be had in the bight on the West side of East Amatuli Island; considerable sea makes in to the anchorage from heavy N.E.'ly weather unless a vessel is well up into the bight. Entrance may be had in mid channel from the Eastward or Southward. In coming from the Southward leave Cone Island one-half mile on the starboard hand and keep mid channel between the Amatuli Islands; the least depth found by hand lead and kite was about 7 fathoms, off center of West end of East Amatuli Island; the least depth found in the East entrance was about 12 fathoms. Anchorage is abreast or inside the North point in from eleven to six fathoms, mud and rock bottom.

A good anchorage for all Easterly weather may be had in the North bight on the West side of Ushagat Island. Leave "West Rock" about one-half mile on the port hand and steer in to center of bight with "Table Mountain" showing ahead, course about N.N.E. (mag.). Anchor about one-third mile off shore in six to eight fathoms, hard bottom.

An anchorage for S.E.'ly weather in ten fathoms, mud bottom, may be had in the mouth of "Signal Cove" at the North end of Shuyak Island; there are no known dangers which do not show in the entrance to this anchorage.

Port Chatham is the only harbor in the vicinity of Barren Islands, although a good anchorage in any weather may be had at the head of West Tonki Cape Bay. There is no

bottom at twenty fathoms on a mid channel course in entering, until within $1/4$ mile of the beach in the bight of the port-hand shore-line, $3/4$ mile below the head of the Bay. Anchor in 12 fathoms, hard bottom, about $1/8$ mile off shore.

An attempt was made to observe tides on Ushagat Island; but, as the tide staff could not be maintained in the continuous heavy sea which prevailed, the station was abandoned. The tides for the days when soundings were taken have been deduced by applying a ratio and time correction to the Kodiak tides.

Respectfully Submitted,

H. W. Rhodes

Assistant, C. & G. Survey,
Commanding "McArthur".

Hyd. Sheet No. 2918.

June 3, 08.

The records were kept in a satisfactory manner.

The numbers were placed to close to the positions

H. L. Simons.