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4001

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

State: *S.E. Alaska*

11-5613

DESCRIPTIVE REPORT.

71 Sheet No. **4001**

LOCALITY:

West Coast

Chickof Bay

Island

1917

CHIEF OF PARTY:

C. G. Julian

original

Descriptive Report

of

Hydrographic Sheet No. 4001

Hydrographic Reconnaissance of Approaches

to

Dovian Bay

S. E. Alaska.

West Coast Chukozoff Island.

Sts Patterson

1917

W. G. Quillen
Chief of Party

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DESCRIPTIVE REPORT

To Accompany

Hydrographic Sheet No. 4001. . .

Mirror Harbor, Davison Bay and Approaches. W. Coast of Chichagoff I.

Surveyed by H. R. Bartlett, Jr. H. & G. E.
Chief of Party. C. G. Quillian, H. & G. E.

Steamer Patterson 1917

General
Description

This sheet includes the shoreline from Cape Seaborn to Ilin Bay and extends about one mile offshore in general. The shoreline is very rugged and irregular with numerous outlying rocks and breakers. Immediately back of the shoreline it is mostly gently rolling with very few trees and numerous lakes and ponds. Two or three miles back from the coast the mountains rise to 2,000 or 3,000 ft. In general the mountains are bare above about 1,200 ft. but there is one notable exception. Bearing north (true) from Mirror Harbor is a 2,000 ft. peak known as North Mountain. This mountain is well wooded to 1,800 ft. and shows dark against the mountains beyond. There is a small shoulder showing to the right and just below the peak. Bearing about N.E. (TRUE) from Mirror Harbor is a 2,200 ft. peak, designated Peak V by this party. This is a double rounded peak and is grass covered in the summer months.

Cape Seaborn is bold and rocky with several small rocky islets close inshore.

Outlying
Dangers and
Islands

Very little current was noticed close to shore and no tide rips. There was no work done offshore in this vicinity. There are numerous rocks and breakers off the entrance to Mirror Harbor but close to Cape Seaborn the channel seems to be clear. There are two breakers, reported by Mr. W.S. Flemming of Nickel, which were not seen to break. The positions shown on the sheet are those indicated by Mr. Flemming as the most probable.

Landmarks

The two mountains described in the first paragraph are good landmarks. Triangulation station North is on the peak of North Mountain, and Peak V is located by triangulation but is too indefinite for inshore work. All mountain peaks are in clouds a greater part of the time. As a rule good seeing conditions will be accompanied by a fairly smooth sea.

There are no regularly established aids to navigation in this vicinity. Mr. Flemming of Nickel has erected a triangular wooden beacon on Shultz Pt. and likewise one on Kinky Island. Mr. Flemming also established several beacons on either side of the narrow channel entering Mirror Harbor. Each of these consists of an iron pipe set in a drill hole in rock. The pipe carries a sheet iron flag bearing a number. Those on the port hand entering are black and on the

Tide
Reducers

For the reduction of soundings in this vicinity the tides at Dry Pass were used. However there were no tidal observations in Dry Pass at the same time as the hydrography. From simultaneous observations a relation with Miner Island (Lisianski Inlet) was obtained and the latter tides used as a basis for determining the reducers as follows.

At Dry Pass tides were read continuously for 48 hours and used with the simultaneous Miner Island tides to obtain the relation between the two. The plane of reference, M.L.L.W., was found to be 2.72 on the Dry Pass staff, and the zero on that staff 3.60 ft. above the zero on the staff on the Miner Island tide gauge. The sum of these, 6.3 ft. was taken as the Dry Pass datum on the Miner Island Staff. Subtracting 6.3 from the hourly readings at Miner Island and multiplying by 0.943 the ratio of ranges, the approximate hourly tides for Dry Pass were obtained. These were plotted and connected by smooth curves for the times of soundings and the reducers scaled directly therefrom. These curves are secured in the back of the sounding record. The tides for Miner Island were changed from 135 meridian time to 120 meridian time which was used in the sounding record. The times of HW and LW were practically the same at both places so no correction for time was made.

The results obtained as above are within one tenth of a foot of various values resulting from the use of formula number 58 in the 1916 tide tables.

For all hand lead work the reducers were entered to tenths of feet, for machine soundings, to even feet. All soundings were plotted on the sheet in integral feet.

The SE end of Dry Pass opening into Portlock Harbor is all comparatively deep water, and the tides there should be very nearly the same as outside, as little current noted thru the shoaler NW entrance.

Dry Pass Staff

Highest tide observed	14.20
Lowest " "	4.10
M L L W (computed)	2.72

starboard hand red, but the numbers do not follow the accepted practice in this country.

Inshore
Dangers

All inshore dangers as far as located are shown on the sheet. Very little work was done on this sheet so there may be many dangers not located.

Bays and
Channels

A draft of six feet may be carried into Mirror Harbor at half tide or better and if the boat used handles quickly and the pilot has sufficient local knowledge he may carry six feet in on the plane of reference but not at a minus tide. The Cosmos, drawing six feet, used Mirror Harbor as headquarters for some time and used the channel at nearly all stages of the tides.

The entrance to Dry Pass is dangerous unless one has local knowledge. There are several pinnacle rocks which nearly close the entrance and no ranges are established. Such ranges can easily be established at a minus tide when all dangers are plainly visible. Once inside Dry Pass the channel is fairly clear. The Cosmos used Dry Pass two or three times and sounded carefully each time but discovered nothing to prevent carrying four feet thru at the plane of reference if the boat handles quickly and is proceeding at slow speed. The sounding line thru Dry Pass was run without taking positions and the boat was not always in the best channel* which is very narrow in places.

See H. 4527.
J.W.M.

Anchorage

Mirror Harbor is a good anchorage in three or four fathoms sticky bottom and will accommodate about three launches of fifty foot length. It is landlocked and affords least protection to north winds. These are said to be very severe in this locality.

Dry Pass affords anchorage in 7 to 8 fathoms sticky bottom in the deep bight on the south side and likewise the bay on the north side affords anchorage in 7 fathoms sticky bottom. For small boats of 60 feet or under good anchorage may be had in the small cove on the south side of Dry Pass in 4 fathoms sticky bottom. The tide staff was located in this cove which is protected from all winds, while the larger part of Dry Pass would be exposed to northerly and westerly winds.

Change of
Coast line
or depths

The coast line and bottom are of such character as to make changes very improbable, and there are no large streams carrying sand or silt.

Survey
Methods

The survey of the West Arm, Mirror Harbor, and Davison Bay was controlled by signals located with the Plane Table. In nearly all cases, claim-stakes or old survey stakes with small flags attached were used as signals and their nature rendered permanent marking infeasible. The exceptions were station Nickel in Mirror Harbor and the Mineral Monument set by the location surveyors. Sounding in this area was carried on by hand lead from a skiff under oars.

The channel leaving Davison Bay and from there extending to sea past Cape Seaborn was sounded by machine from launch Cosmos. Each sounding was an up and down cast. The signals for this work were located partly by Plane Table and partly by Triangulation. The positions were in all cases determined by two sextant angles.

SIGNALS USED FOR HYDROGRAPHY

See list of stations with report on topographic sheet ~~XXXXXX~~

Established 1917 Chief of Party C. G. Quillian, H. & G.E.

Triangulation

Hill

Topographic

Dry	Wharf	End
Star	Flag	Top
Twin	Gull	Tree
Tide	Red	Joe
Nar	Shults (beacon)	Mid
Ro	Kink	Mon
Pock	Tip (beacon)	Lava
Kay	Ant	Ti
Cor	Log	Ed
Mink	Sloan	Pod
Grace	Water	Beach
Dave	Cloth	Nickel
	West	Mine

STATISTICS
ONE VOLUME

Date 1917	Letter	Posi tions	Soun dings	Miles Statute	Vessel
August 23	a a	57	220	3.5	skiff
Sept. 10	b	19	132	3.3	"
" 11	c	37	194	3.2	"
" 13	d	92	161	10.0	Cosmos
" 14	e	109	191	12.5	"
" 21	f	11	78	1.2	"

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TOTALS 325 971 33.7

Respectfully submitted,

H. P. Bartlett,

Lieut. (j.g.) U. S. N. R. F.

*Approved
C. G. Quillian
Chief of Party*

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

REFER TO NO.
5-EMK

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

LIBRARY

CHARTS

June 20, 1918
See with descriptive report
of hydrographic sheet No. 4601

Drawing Section.

Division of Hydrography and Topography: *HC9*

Division of Charts:

Tidal reductions have been approved in
1 volume of Sounding records for

HYDROGRAPHIC SHEET 4001

Mirror Harbor and Davison Bay,
W. Coast of Chicagof Island, S.E. Alaska
C. G. Quillian in 1917.

Plane of reference is
Mean lower low water, reading

6.4 ft. on auto tide staff at
Miner Island, Alaska.

L. P. Shidy

Acting Chief, Section of
Tides and Currents.

Hydrographic Sheet # 4001.
Hill Id. to Mirror Harbor, SE Alaska,
West coast of Chichagof Id.

Within the limits of the covered by this sheet the ground appears sufficiently well sounded to develop Mirror Harbor proper and also the west arm yet it does not develop the approach to this harbor sufficient to show conditions to the east + west of the one line 6-10 7. If Mirror Harbor is of any importance it would appear quite necessary that additional work be done in the Channel approach.

It would also appear desirable to have the work in Mirror Harbor developed on a larger scale as the scale of 1-50000 appears too small for a good development.

The work on the sheet was done by the field party and can be criticised only so far as to the number of soundings plotted and the position numbers. In the harbor proper only about one half the soundings were penciled and a proper development could not be made with so few soundings as the bottom is very rocky and broken.

The position numbers were in most cases placed too close to the position

J. D. Torrey

Oct. 6, 1914

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

April 23, 1924.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4001

West Coast of Chicagof Island, Alaska

Surveyed in 1917

Instructions dated March 12, 1917

Chief of Party, C. G. Quillian.

Surveyed by H. R. Bartlett and W. O. Hinkley.

Protracted and soundings plotted by P. V. Lane.

Inked by G. W. Clarvoe and J. D. Torrey.

Verified by J. D. Torrey and R. L. Johnston.

1. The records conform to the requirements of the General Instructions.
2. The plan and character of development conform to the requirements of the General Instructions, except that the time intervals between positions were frequently too great, amounting to as much as 14 minutes. The eccentricity of the depth curves in Mirror Harbor and West Arm, where these excessive time intervals occurred most frequently, is probably partly due to this cause. The fact that two officers, and sometimes only one, had to take both angles and record accounts for the long intervals of time between positions.
3. The plan and extent of development satisfy the specific instructions.
4. The sounding line crossings are adequate.
5. The information is sufficient for drawing the usual depth curves.
6. The field plotting was completed to the extent prescribed in the General Instructions.
7. No surveying has yet been done adjoining this one.

8. There are numerous indications of probable dangers approaching the harbors on this sheet which should be dragged. The shoreline and hydrographic details of Mirror Harbor and West Arm are very intricate and they should be more completely developed on a larger scale if their importance warrants it. The unsurveyed areas on this sheet should be surveyed.
9. The nomenclature of this locality is uncertain. Most of the names are not on the chart, but are based upon local usage. Cape Seaborn on the sheet is charted as Cape Dearborn.
10. The character and scope of the surveying and field drafting are fair.
11. Reviewed by E. P. Ellis, April, 1924.