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

State: *Wash*

11-5413

DESCRIPTIVE REPORT.

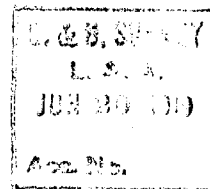
Hydr. Sheet No. *4079*

LOCALITY:

Tacoma Harbor
Washington

1915

CHIEF OF PARTY:
John W. Maupin



Descriptive Report to Accompany Hydrographic Sheet No.

Tacoma Harbor, Wash., Waterfront and Waterways

Season December 23, 1918 to March 31, 1919.

Scale 1/5000
by

Land Party using Borrowed Navy Launch No. 6312

Under Direction of

John W. Maupin,

Chief of Party.

Instructions Dated November 5, 1918.

SYSTEM OF CONTROL.

Only two old triangulation stations could be recovered which were intervisible, namely Gull and Bos. Using this line as a base the quadrilateral Gull, Bos, Mac, and Cliff was determined by tertiary triangulation methods. From this quadrilateral a number of intersection triangulation stations were determined at points which were advantageous for the plane table survey. One hundred and thirty-two topographic stations were determined along the waterfront for use in the hydrographic resurvey.

METHODS.

The hydrography was done on a scale of 1-5000. With several exceptions the method used in the hydrographic work was the usual Coast Survey procedure. It was found necessary to run the sounding lines in one direction, against the prevailing wind and current, from deep water inshore, in order to employ ranges to keep on the lines which averaged about twenty-five meters apart. At a number of places the waterways were choked with logs and it was necessary to walk over these logs taking detached soundings, which proved slow and tedious work. The low line was determined by sextant angles in many places.

WEATHER CONDITIONS.

The weather conditions were very adverse. Southerly storms lasting several days at a time were frequent. Heavy rains, often accompanied by hail or snow, and generally thick weather, consumed about two-thirds of the working time. Dense smoke from the many factory chimneys almost constantly settled over the tide flats, making survey instrument work very difficult.

GENERAL DESCRIPTION.

(a) City Waterway.

By comparing the depths of the present survey in the City Waterway with those shown on C. & G. S. Chart No. 6451, it will be seen that this waterway has been deepened, particularly in the upper part, since the old survey was made. Many of the soundings at the head of this waterway were taken from log rafts which obstructed the fairway. The Wheeler-Osgood Waterway, which is a branch of the City Waterway, is privately owned and is mostly bare at low water.

(b) Middle Waterway.

Since the old survey was made the Middle Waterway has been dredged from a depth of three to five fathoms for a distance of about one third its length, so as to permit vessels to dock at the Seaborn Outfitting Yard. The mouth of the Waterway between the Milwaukee and Puyallup Waterways has also been dredged to about the same depth to permit vessels to go alongside the Tacoma Shipyard docks.

(c) Puyallup Waterway.

This waterway is still very shoal and a depth of only about two feet can be carried to the 11th Street Bridge. There are many snags above the bridge, and the swift current is causing the shoal at the entrance to build out.

(d) Milwaukee Waterway.

Since the old survey this waterway has been dredged to a depth of about seven fathoms. Vessels usually dock on the west side and it is reported that thousands of pieces of matting are thrown overboard here from the Japanese vessels which will eventually decrease the depths shown on the sheet.

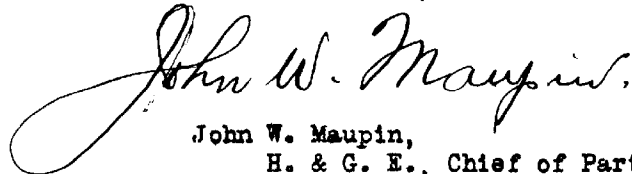
(e) Hylebos Waterway.

This is a new waterway which has been constructed by dredging out Hylebos Creek since the old survey was made. Vessels enter this waterway to go alongside the docks at the Todd and Foundation Shipyards. The entrance to this waterway is contracted by shoals on the east side and it is necessary to exercise precaution, keeping close to the N. E. corner of the Todd docks. A buoy should be placed on the east side of the entrance. The Lincoln Avenue Bridge is out of repair, its use having been discontinued, and as the waterway is nearly bare at low water and choked with logs, sounding lines were not carried above this bridge. A narrow channel has also been dredged on the west side of the Todd and Foundation Shipyards.

MISCELLANEOUS REMARKS.

Three mooring buoys were located by sextant angles. The mooring buoy, formerly located off of Old Tacoma, has been discontinued and the other three have been shifted since the old chart was made. A fixed red light (Δ Box), 175 feet above the water, on top of the grain elevator on the Milwaukee dock, with 500 watts and 600 candle power, visible from all points of the entrance to Commencement Bay, has been established and is maintained by the Milwaukee R. R. Co.

Respectfully Submitted,



John W. Maupin,
H. & G. E., Chief of Party.

Table of Statistics
to Accompany Hydrographic Sheet No.

Tacoma Harbor, Wash.

Date, 1919	Letter	Volume	Positions	Soundings	Miles, statute	Vessels
Jan.						
March 11	A	I	73	163	6.3	Navy Launch #1263
March 12	B	I	95	329	6.8	"
March 14	C	I	88	293	9.5	"
March 15	D	II	51	162	5.0	"
March 17	E	II	41	104	2.8	"
March 18	F	II	86	222	6.3	"
March 19	G	II	87	337	7.1	"
March 20	H	III	52	192	3.8	"
March 21	J	III	58	188	3.5	"
March 24	K	III	70	146	5.0	"
March 25	L	III	96	411	7.3	"
March 26	M	IV	72	217	4.0	"
March 27	N	IV	69	161	2.0	"
March 28	O	IV	<u>55</u>	<u>138</u>	<u>4.3</u>	"
Total			993	3063	73.7	

Note.

Zero of tide gauge set to mean lower low water.
 Lowest reading on staff 0.6 ft. March 21.
 Highest reading on staff 11.1 ft. March 14.

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

REFER TO No 41-ACC

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON July 28, 1919.



Division of Hydrography and Topography:

Division of Charts:

Tidal reductions are approved in
4 volumes of Sounding records for

HYDROGRAPHIC SHEET 4079

Commencement Bay, Tacoma, Wash.
J. W. Maupin in 1919.

Plane of reference is
Mean lower low water, reading

0.0 ft. on tide staff at Municipal Dock, Tacoma.

Records as received from field were satisfactory.

G. J. Rude

Chief, Section Tides
and Currents.

Hyd. Sheet No. 4079

Within the limits of the work the ground has been systematically covered. Practically all of the lines are started off shore and run in, in order to take advantage of ranges. With the exception of one line on the outside limits of the work, no cross lines were run.

The positions were protracted and the soundings plotted by the field party. The protracting was accurately done; only about eight or nine positions were found to be wrong. The soundings were well spaced, except in a few cases where the time interval changes between positions; in these cases the soundings were equally spaced instead of giving each its proper value. The soundings were neatly plotted but were faced normal to the shore line instead of being oriented with the projection.

The title sheet was glued on to the smooth sheet instead of being attached by fasteners or pinned on. In scraping it off the sheet was somewhat defaced.

It is stated in the sounding record that the large number of no bottom soundings were for the purpose of developing the twenty fathom curve. It is difficult to see just why no bottom soundings would develop it any better or even as well as bottom soundings.

There are some soundings which do not agree very well with the adjacent sounding lines, but as most of this bottom has been artificially constructed, no adjustments were attempted or liberties taken with the soundings which are shown throughout in the position in which they plot.

The low water line was taken from the topographic sheet and changed when necessary to agree with the hydrography.

R. L. Johnston

Review of hyd. sheet No. 4079

Tacoma Waterfront, Wash.

J.W. Maupin, Chief of Party

Surveyed by J. W. Maupin, and A.P.Ratti

in 1919

This survey is an excellent piece of work and its character and scope comply with the instructions.

The records were well kept.

Both the protracting and plotting of soundings were well done. The former was by H. W. Pease and the latter by C. S. Harvard and W. J. Chovan, Field Draftsman attached to the party.

The only criticisms worthy of note are:

The soundings and lettering were not normal to the meridian as directed by par. 343 of General Instructions.

The soundings should be upright instead of slanting.

Titles of original sheets should be on Form 537 or 537^a, instead of being placed on the sheet itself.

August 13, 1919.

Check sounding lines were not run across the main system of sounding lines as directed in General Instructions.

The large number of no bottom soundings are objectionable. A smaller number of soundings showing the actual depths would have given more information. See Par. 301 of Gen. Insts.

E.P.E.