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U. S. COAST AND GEODETIC SURVEY.

Henry S. Pritchett, Superintendent.

State: *Maryland*

DESCRIPTIVE REPORT.

Hydrographic Sheet No. *(23 56 & 23 57 &)*

LOCALITY:

*Baltimore Harbor Wharf
Line*

1898.

CHIEF OF PARTY:

*E. Simpson, U.S.N.S. Mainwright, Asst
Prepared by C. C. Yates*

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1
"Descriptive Report accompanying Hydrographic Sheets
Nos 1 and 2 of Baltimore Harbor Wharf line Soundings."

History:-

Instructions for taking soundings along the wharf lines of Baltimore Harbor were contained in letters from the Superintendent and Hydrographic Inspector to Lieut. Comdr. C. F. Forse, U. S. Navy, dated December 21st and 27th, 1897, respectively.

Following is a copy of the Superintendent's instructions of December 21st and of that portion of the Hydrographic Inspector's detailed instructions of December 27th, relating to wharf line soundings.

"Instructions"

U. S. Coast & Geodetic Survey
Office of the Superintendent
Washington, D. C.

December 21st, 1897

Lieut. Comdr. C. F. Forse, U. S. N.

Comd'g C & G. Survey Str. Endeavor

% Chas. Keeler & Sons, Baltimore, Md.

Sir:-

While the steamer Endeavor is undergoing

repairs, the party under your command will execute such hydrography in Baltimore Harbor as practicable, detailed instructions and the necessary data for which will be furnished you by the Hydrographic Inspector.

These instructions will cover the necessary expenses for local transportation incurred in their execution.

Very respectfully
(Signed) Henry S. Pritchett
Superintendent

"Detailed Instructions"

U. S. Coast & Geodetic Survey,
Office of Hydrographic Inspector,
Washington, D.C.

December 27th, 1897

Lieut. Comdr. C. T. Forse U.S.N.

Comdg. Cr. & G. Survey Str. Endeavor

Co Charles Reeder & Sons, Baltimore Md.

Sir:-

Referring to the Superintendent's Instructions of December 21st, 1897, your attention is called to the importance of accuracy in the soundings of the basin,

the vicinity of the wharves and of the dredged channels x .

The soft bottom of the basin will necessitate special expertness on the part of the leadsman, and you will assure yourself of the reliability of the leadsman, by running sufficient practise lines to accustom the leadsman to the character of the bottom.

It is believed that, owing to the sewage, the soft bottom is of considerable depth and it is desired to ascertain, by pole or other device, the depth of the soft sediment x x x x x .

Tidal observations will be taken alongside the vessel during the day, and soundings will be reduced to the mean low water of tide staff nearest Fell's Point.

The wharf line on the projection, is sufficiently accurate to be used in placing signal poles and flags.

Advantage should be taken to run lines of soundings about wharves whenever they are clear of vessels, even if only a part of the wharf is clear. The lines of soundings about wharves should be taken about fifteen (15) feet from the outer pilings. x x x x x x x .

It is believed that the health of the hydrographic parties will be best cared for by doing this work during the winter, and while it is not expected that soundings will be taken in bitter cold weather or when the

harbor is obstructed by ice, advantage will be taken of all favorable opportunities to continue the work. x x x x x

Very Respectfully
(Signed) E. D. Taussig.

Lieut. Comdr U. S. N.

Hydrographic Inspector C & G Survey.

Before this work was commenced, however, Lieut. Comdr. Furse was relieved of the command of the "Endeavor" and the first work was actually executed by the party in charge of Lieut. E. E. Simpson, U. S. N., on February 25th, 1898.

On March 31st, 1898, Lieut Simpson was detached from the "Endeavor" and Chief Yeo. C. L. Green, U. S. N., was kept in charge until relieved in May, 1898, by Asst. D. B. Wainwright U. S. C. & G. S.

While Mr. Green was in charge, no wharf line soundings were taken.

On May 19th, 1898, the wharf soundings were resumed and finally completed on May, 31st, 1898, by the party in charge of Asst Wainwright

On July 14th, 1898, Asst. D. B. Wainwright was relieved of the command of the "Endeavor" by Asst. Charles C. Yates, by whose party the records

and draughting were completed and sent to the Office.

Methods

The work executed by the party of Lieut. Simpson was apparently done with the greatest care, according to the following plan.

The working party consisted of the officer in charge who sat in the stern of a whaleboat with the wharf line sheet before him; a recorder; a crosswain; three oarsmen; a leadsman; a man in the bow with a pole to measure the distance of 15 feet from the wharf at which all the soundings were taken; two extra men with a measuring line marked with knots every 10 metres and a tide observer located at the nearest tide station.

When a wharf along which soundings were desired was found to be clear or partly clear of vessels, the two extra men with the measuring line were placed upon it. One end of the line was held at some well defined point such as a corner, an angle or a jog which could be readily located on the sheet and the line was then stretched along the front or side of the wharf, as the case might be. Soundings were then taken

abreast of the starting point and all the 10 metre knots. The distance of the soundings from the wharf of 15 feet, which was assumed to be the position of the keel of the average vessel, was maintained by the man with the pole at the bow.

The location of the beginning and end of the lines were described to the recorder in the following terms:

1st — Name of wharf if on sheet, or known by any one on the wharf, or if name could not be learned it was located by its position in relation to nearby wharves that were known.

2^d — Magnetic bearing of points such as N.E. corner, W. face of wharf; S.W. angle; 15 feet off N.W. corner E. face etc, etc.

3^d — By distances measured with line from points capable of description.

The positions of the ends of the line were sketched on the sheet by the officer in charge, as the work progressed. This was easily done quite accurately and aided greatly in the understanding of the descriptions when the plotting on the smooth sheet was done.

When Asst. Wainwright became chief of party, the time remaining in which it was desirable to complete all, Baltimore Harbor

soundings, became short and it was deemed proper to adopt some shorter method of operation for the wharf work.

The new method was identical with that previously used, except, that the measuring of the ten metre distances on the wharves were left out and fewer soundings were taken. The position of each sounding was located by description and its sketched position on the sheet.

The distance between the soundings were partly regulated by the importance of the wharf being surveyed. Soundings along portions of some wharves, were taken at more than 15 feet off, on account of small barges, vessels, etc. tied alongside. The distance off, however, was always either measured or estimated. Portions of a few wharves were found to always be occupied by large vessels, on every one of several visits and soundings were omitted altogether.

Under Lieut. Simpson, soundings had been taken on eight days and one third of the wharf line finished. After the adoption of the revised method, soundings were taken on five days and the remaining two thirds of the wharf line covered.

The latter work cannot be considered as complete as the former, but when the many changes in the wharf line of Baltimore Harbor and the

Constant dredging by the city and private parties are taken into account, the work for all practical purposes, is as good as the permanence of the conditions would warrant.

In both methods, whenever a sounding was taken, the boat was either standing still or moving very slowly. This enabled the leadsmen to obtain very good and reliable soundings, notwithstanding the extremely soft bottoms found along most of the wharves. In general, therefore, all soundings can be considered as correct although no checks such as cross lines were practical.

Bottoms:-

The bottom of Baltimore Harbor in general seems to be composed of soft black mud or slime. It is especially soft and nasty about the wharves.

In an ordinary cast of the lead in depths from two to five fathoms, the leadsmen testify; that it was necessary to haul in the lead from one to four feet out of the bottom, in order to obtain the correct depth of water above the bottom, or rather the top of the bottom. This required especial expertness and experience on the leadsmen's part and it should be considered very creditable.

to them, that sounding lines crossed within a reasonable percentage in the main body of the work.

Alongside of one wharf it was noticed that a large ocean going steamer was actually drawing at her bow some six feet more than the depth obtained by the leadman. This was verified by a sounding taken directly under the bow of the steamer. It is doubtful, whether this fact was ever discovered by the officers of the vessel, it being probable that she slid off the mud when leaving the dock without the slightest jar.

Practically a soft bottom of the character described, might effect such information as is furnished by the survey in the following manner.

1st - That the chart of Baltimore Harbor, independent of changes due to dredging and other causes, gives depths in the main channels and alongside the wharves that are generally from one to four feet and sometimes six feet less than a safe navigable depth.

2^d - A vessel taking cargo alongside a wharf where the depth to the top of half fluid or slimy bottom is less than the draft of vessel when loaded, will take on a greater load before reaching the load line, than she would if

floating freely in water. The float line of a loaded vessel or Plimsoll's mark is fixed by law or insurance regulation for many vessels for the safety of the vessel and the people aboard. Therefore, to load a vessel so that it will sink below this line when moved away from a wharf, might result disastrously to the vessel. At least it may sometimes be used to evade a law or regulation, which, although ensuring safety, may entail a loss due to a smaller cargo than might seem desirable to the vessel owners.

It does not seem practicable or advisable to obtain the thickness of this layer of soft bottom. Even if it were obtained, it would be difficult to represent it on a chart, so as to be useful to a navigator.

It is therefore suggested that a note of somewhat the following character be printed on the new chart of Baltimore Harbor.

Note

Bottom of harbor is in many places composed of a extremely soft or half fluid material. All depths indicated are to the top of the soft bottom. Therefore, vessels are sometimes moved without injury through channels and to wharves where the depths shown on chart are less than the draft of the vessel.

In loading vessels where loaded draft is greater than depth to top of soft bottom or the depth given on chart; the extra buoyant effect of the half fluid bottom by which the hull is partly supported should be taken into account.

Hydrographic Sheets

The two sheets furnished with this report are not accurate projections, but only copies of old tracings of the original projections.

Only the positions are plotted. It was not considered necessary to plot the soundings, for if they were plotted it would be necessary to transfer them to the sounding sheets covering the main body of the harbor, before they would be of use.

Consecutive days and even consecutive positions on the same day are often widely scattered over the wharf line. This will be troublesome when the soundings are plotted, but was unavoidable from the nature of the work.

A wharf map published by the City of Baltimore is inclosed with the sheets. The names of the wharves are given upon it and it may be of use in plotting, although many of the names are different now from what they were at the time

of its publication

Titles & Statistics

Are to be found in ink on the
face of Sheet No. 1.

Some statistics are also to be found on the
following sheet (Form. 11)

General Remarks.

Notes on dry docks, marine railways, ship yards, fresh water, coal, etc. such as required for the Coast Pilot would necessitate an elaborate and separate study and no attempt has been made to cover these subjects in this report.

U. S. C. & G. Survey Str "Endeavor"
Baltimore Harbor, Md
January 15th 1899

Respectfully submitted
Charles C. Yates
Asst U S C & G Survey
Comdg.

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Descriptions of

Hydrographic Signals

Baltimore Harbor

(Upper sheet).

D. B. W.

1898

2357

Diag. Lht. No 177-1

Department of Commerce and Labor
COAST AND GEODETIC SURVEY

H. S. Pritchett
Superintendent.

State: *Md.*

DESCRIPTIVE REPORT.

H. S. P. Sheet No. *2357^b*

LOCALITY:

See

2356^b

~~1898~~
~~190~~

CHIEF OF PARTY:

Wainwright

1000

Descriptions of Hydrographic Signals

- Bow is signal built on S. W. corner of Bowley's wharf near Δ Bowley
- Chet. is signal built on East end of Chester River S. W. Co's wharf.
- Quay is built signal on Hughes Quay
- Stat. is derrick on Stablers wharf.
- Vul. is signal built nearly over Δ Vulcan triangulation point not recovered.
- Johnson is Δ Johnson found in good condition
- Reed is centre of Reeder & Son machine shop derrick
- B. W. is small signal built on N. E. corner of detached wharf due north of Δ B. W. L. S.
- Duff. is north corner of Duffies Ice House
- Bagd. is N. E. corner post of Moore & Brady's packing house shed.
- Shed is flag staff on ferry house at foot of Hughes Street

- South is signal built on S. E. corner of Reeder's south ship yard wharf
- Boo. is signal pole on extreme end of row of piles at Booze Marine Railway
- Skin. is signal pole on S. E. corner of Skinner's Marine R. St. wharf
- Gar. is signal pole on Pearson's old wharf
- Pear is large flagpole on north end of The Pearson Packing Co's wharf
- Hood is signal pole on N. St. corner of West wharf of St. E. Hoodall & Co's dry dock.
- Shaw is signal pole on N. St. corner of Shaw's upper coal pier
- Cow is signal pole near a consolidated on N. St. corner of Consolidated Coal Co's pier. Δ not found.

- ① Ober is the flag staff on The Ober Fertilizer works
- ① New is signal pole on S. St. corner of Hendersons Wharf
- ① Fell is the flag staff on Fell's point station (R. R.)
- ① New is signal pole on Newells Wharf
- ① Press is " " " " Old Cotton Press Wharf S. E. corner.
- ① Mill is signal pole on S. St. corner Millers Wharf
- ① Why is large flag pole on Whyocks Lumber wharf and is A. Whyock.
- ① Gill is red derrick nearest water edge on south end of Gill's Lumber wharf.
- ① East is signal pole on extreme S. St. corner of Taylors Lumber wharf at Jones Falls.
- ① Dav is signal pole on S. E. corner of Savannah (Merchants & Miners) Transportation line
- ① Mead is signal pole very near & S. St. of A Block, & found in good condition

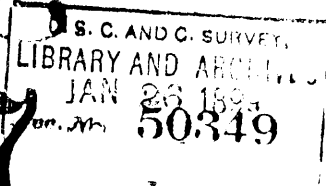
o Bay. is signal pole on S.W. corner of Old Bay
Line wharf.

o Dow. is signal pole on S.E. corner of Dugans
Wharf.

o Penn is flagstaff on Penna R.R. station
house on O'Donnell's wharf.

o Pat is flagstaff on Pattersons wharf
near water front.

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Descriptions of
Hydrographic Signals
Baltimore Harbor
(Middle Sheet)

L.B. 91
1898

Description of Hydrographic Signals.

- Com. is a lightning rod on tall eastern chimney on officers quarters nearest sea wall Fort Mc Henry.
- Bo. is a flagstaff on B + O pier 8 and 9.
- Ton. is a flag (rh) placed near a Canton wharf. A tripod was built later.
- Brick. is a tall brick chimney 130 metres east of ○ Ton.
- Youngs is a tall black chimney near ○ Brick.
- Chim is a brick chimney just to right of ○ Youngs.
- Hat is a flagstaff of Wm Hat Packing Company.
- Tall is a tall brick chimney, with white on it near gas works.
- Three is a flagstaff N.C.R. pier No 3.

- △ Baker is a flag nailed to upright (where old flagstaff was) on Baker Whiteley & Co's pier.
- Bag is a flag on pole against wall back of garbage whf.
- Gar is a flag on stump of piles on corner of garbage whf.
- Hen is a flag on pole on Fort Mc Henry seawall.
- △ Flag is Fort Mc Henry's flagstaff.
- Lum is a flag on pole nailed to tall house over boiler shop, Columbian Iron Works.
- Pier is a flagstaff of pier 31+32.
- Col is a flag (wh) erected on pier of Columbian Iron Works.
- New is a corner of burnt wharf rebuilding near ○ Youngs.
- Dock is a white flag erected on pier south side floating dry dock near ○ Youngs.
- Pole is a pole with bell on it near ○ Elm.

- Pen is a small pole just to left of bell on end of most northern Pennsylvania freight pier.
- Fin is a pole with flag nailed to fence.
- Sil is a flag on pole near end of railroad pier.
- See is a pole with flag nailed to fence to east of ○ Fin
- △ Chipmans is top of division wall on Chipman's chair factory. Cupola has been removed.
- △ Green is a cupola marked as green on projection on B & O pier 8 & 9. This cupola is now brown.
- △ Dis is central flagstaff on Black's distillery (now a fertilizer works)
- Mac is a flag on a pole on Fort. McHenry seawall.
- △ Bact. is a flagstaff on Baltimore Storage and Lighterage Company's pier.

- Vane is a flag nailed to north west corner, second story of large Pennsylvania coal pier.
- Sal. is a tall pole with flag on wharf in slip to east of large coal pier. P. R. R.
- Loon is the top of flag pole (with flag) on saloon near ⊙ "B"
- Dir. is flag on south west corner of large coal pier.
- Vis is a pole and flag on wharf near ○ sal.
- Son is a flag nailed to trestle back of ○ Vis..
- Cant is the north west corner of main part of elevator. N. E. R. no 1
- Cap. is a flag on pole on end of Baltimore Copper Company.
- Corner is a flag on pole on Fort Mestany sea wall.
- Ober is a flag staff on Ober and Co's wharf.

- Gutter is a long vertical galvanized gutter on brick house.
- Gib. is a flagstaff on Gibb's Insurance Co's wharf
- Ice and ○ Nail are flags on pole on corners of wharves.
- Box is a tripod on wharf near site of Abbatts Rolling Mill
- Pratt is a flagstaff on house on Merchants Coal Co pier No 4.
- Henderson's is a flag on a pole built by "Endeavour's" party on Henderson's wharf.
- Pac and ○ Mill are flags on poles on wharves.