

3976

Diag. Cht. No. 1206-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey ... HYDROGRAPHIC

Field No. ... Office No. H-3976

LOCALITY

State ... NEW HAMPSHIRE & MAINE

General locality ... PORTSMOUTH HARBOR

Locality

1917

CHIEF OF PARTY

Peters  
J. H. ~~Hawley~~

LIBRARY & ARCHIVES

DATE ... OCTOBER 11, 1917

3976

# PROGRESS CHART

SHOWING CONDITION OF RECORDS OF

Hydrographic Sheet No. 6216 Field No. 1

Wire drag survey of Portsmouth Outer Harbor

Scale 1-10,000 Date of Survey \_\_\_\_\_

Surveyed by J. H. Peters

Day	DATE	Signaled angles compared	Distances entered	Distances checked	Length of upright entered	Length of upright checked	Correction entered	Correction checked	Drag depth entered	Drag depth checked	Reducers entered	Reducers checked	Effective depth entered	Effective depth checked	Effective depth diagram entered	Effective depth diagram checked	Positions plotted	Dragged strip traced	Tracing checked	Area subdivided	Subdivision checked	Transferred and inked	Compared with chart
A	May 11	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	not plotted	not plotted	not plotted				
B	" 12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	not plotted	not plotted	not plotted				
C	" 18	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
D	" 21	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
E	" 26	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
F	June 8		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
G	" 12		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
H	July 10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
I	" 18	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
J	" 19	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
K	" 20	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
L	" 27	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
M	" 27	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
N	Aug 25	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
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Descriptive Report to accompany  
Hydrographic Sheet # 3976

Wire Drag Party no. 1

J. H. Peters, Chief of Party 1717

Locality and limits of sheet -

This sheet embraces the examination by means of the wire drag of Portsmouth Outer Harbor, on the coast of Maine and New Hampshire.

The Eastern limit is the meridian  $70^{\circ} 40'$ , the Southern the parallel  $43^{\circ} 02'$ . On the north and west the 3 fathoms curve along the shores of the harbor as far up the river as Seavers island.

Depth dragged -

In this harbor work the attempt was made to drag as close to bottom as possible, the effective depths varying from 40 feet in the outer portions to 15 or 18 feet effective depth in the bays and work close inshore. The main channel was dragged to an average depth of 30 feet, m. L. W.

## Shoals -

M.L.W.

a 30 foot spot was found 100 meters S.S.E. of buoy N 2, on the East side of the channel, between Whaleback Light and Wood Island. This was not subsequently covered, being out of the main channel.

A sounding of 28 feet, M.L.W. was obtained on the East side of the channel. This was covered by a drag set at 27 feet effective depth.

A sounding of 31 feet M.L.W. was obtained in the channel 230 meters E.N.E. of Portsmouth Harbor Light. A 30 foot drag was taken over it.

A 25 foot (M.L.W.) spot was found one west of the southernmost point of Green Island and 700 meters S x E from Portsmouth Harbor Light. A 24 foot drag was taken over it.

A shoal with a least depth of 25 feet was located off Front Point. A 21 foot drag passed over it.

## Control —

The control for this sheet was from previously established hydrographic signals located by triangulation.

## Total Reductions -

The total reductions were made from semi-hourly readings of a staff gauge placed in Peppell cove at Waters Point. The datum used was mean low water, as established at Portland, Maine.

## Currents -

No current observations were made within the harbor. The current here is exceedingly strong and treacherous which made it very difficult to ~~locate~~<sup>get</sup> soundings with the lead after the drag caught, especially as the majority of the shoals appear to be small boulders or rocky spots surrounded by muddy bottom.

## Miscellaneous -

Practically all the work on this sheet had to be done with very short drag lengths, and was much hindered by the strong current and by obstructions - impossible to locate with the lead.

In making up the effective depths arbitrary rules were applied for left.

For drag depths over 40 feet a one foot was taken off for lift, below 40, no correction. In addition, when adjacent borings were looked at different depths, a correction for lift was made as follows: when the slope of the ground wire was greater than  $\frac{1}{40}$  the lesser depth was carried along for enough to bring the slope within  $\frac{1}{40}$ , except where such a correction would affect more than two of the deeper sections, in which case the mean of the two depths was carried from the second section on.

The sudden disbanding of the party made it necessary to leave some of the work ~~in~~ uncompleted.

Respectfully submitted

Edward M. Wilson

Aid C. & G. S.

~~To the Superintendent  
Coast and Geodetic Survey  
January 8, 1918.~~

Statistics for Win Drag Sheet # 8976

<u>Day</u>	<u>No. Angles</u>	<u>No. Flat. miles</u>	<u>No. sdgs</u>
C	96	2.0	1
D	150	3.6	0
E	107	2.2	4
F	306	4.2	4
G	112	2.0	0
H	205	1.0	2
J	82	1.0	6
K	162	1.2	10
L	377	4.0	13
M		3.0	0
N	236		
	<u>1833</u>	<u>24.2</u>	<u>42</u>

~~Total Area~~

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

REFER TO NO.

5-VEC

LIBRARY *cut*

Place with descriptive report  
of hydrographic sheet No. 3976

*Y. S. J.*  
HYDROGRAPHY ETC., (HT)

CHARTS (H) ✓

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

February 26, 1918.

Division of Hydrography & Topography:

Division of Charts:.

Tidal reductions have been approved in  
4 volumes of Wire Drag record & Soundings for

HYDROGRAPHIC SHEET 3976

Approaches to Portsmouth, N.H.  
J.H.Peters in 1917.

Plane of reference is  
Mean low water, reading

3.0 ft. on tide staff at Kittery Point, Maine.

*L. P. Shidy*

Acting Chief, Section of  
Tides and Currents.



DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

September 1, 1923.

SECTION OF FIELD RECORDS

Report on Wire Drag Sheet No. 3976

Portsmouth Harbor

Surveyed in 1917.

Instructions dated April 13, 1917.

Chief of Party, J. H. Peters.

Surveyed by J. H. Peters.

Protracted by L. D. Graham and A. L. Shalowitz.

Inked by A. L. Shalowitz.

Verified and Area and Depth Sheet by A. L. Shalowitz.

1. The depth of dragging satisfies the specific instructions except that the main channel was not dragged to an effective depth of 40 feet. 34 feet is the maximum effective <sup>setting of the drag</sup> ~~depth that can be~~ safely carried from the southward through the main channel. In many cases the drag could have been set at a deeper depth as there was nothing on the original sheets to indicate any shoal water. This was particularly true of the area to the northwest of Wood I., where effective depths of 29, 30, 31 and 32 feet were obtained. The chart shows depths of over 45 feet in this locality. Further, in the area southeast of Pulpit Rock the drag should have been set much deeper too. In the area south of Whale I. Reef the drag was set at an effective depth of 12 and 13 feet. It seems incredible that with a controlling depth of not less than 22 feet the drag should have been set to such a shoal depth. It would appear that an error might have been made in the hookup.

The extent of dragging satisfies the specific instructions except that the drag should have been carried at least to the Navy Yard. This was undoubtedly caused by the sudden termination of the work.

This sheet will be further taken up in conjunction with the reviews for H. 3974 and 3975.

2. The Area and Depth sheet represents the result of a very careful study of the various shoals that were discovered and reference should be made to the notes on the tracing for information as to whether the least water was found on these shoals.

Perhaps the most important shoal that was discovered on this sheet is the 29 foot spot about 1/2 mile southwest of Phillips Rocks (Chart 0329). An 18 foot drag grounded here but 29 feet was the least water obtained. As the records are very clear on this point (See Vol. 3., p. 36) there can be no question about the grounding nor about the effective depth. 18 feet should be charted here until such time when it will be disproved. This place should, however, be investigated as soon as practicable for possible shoaler water.

The soundings obtained along the limits of the drag and not subsequently passed over generally conform to the surrounding depths as shown on the chart and hence need not be investigated.

3. The overlaps are sufficient except as shown on the Area and Depth sheet. For junction with W. D. 3975 see review of that sheet.
4. Two of the splits shown on the area and depth sheet were covered in the work on H. 3975. The split in the work about 1/4 mile S.E. x S. of Odiornes Pt. (Chart 0329) and where 15 feet was obtained should be covered and the least water obtained on the 15 foot spot, as the depths surrounding are greater. *Cor. by 1924 work*

The area south of Whale I. Reef should be dragged to a deeper depth and also the other places mentioned in Paragraph 1 should be re-dragged.

The places mentioned in Paragraph 2 should all be investigated.

5. This sheet was turned in from the field with only the limits of the drag plotted in pencil, and the drag strip tracings prepared. The plotting of the depth diagrams and the inking of the sheet was done in the office. Although the depth diagram tracings were all marked as checked in the field, practically all of them had to be replotted on account of errors due to carelessness or poor interpretation of the records.
6. The work on the whole seemed to lack the quality of understanding and handling of the drag. Hookups were changed time and again for no apparent reason. In fact there are many instances where the hookup was changed from one depth to another and then changed back again to the original depth before actual dragging was begun. The records while clear and legible, lacked completeness. Bights of drag at the beginning of a line were never given. Throughout the records there is note after note of the computed distance being greater than the actual length of drag plus the tow-line length. Furthermore in many cases where the drag grounded at a certain depth, a deeper drag was subsequently passed over. It is such defects as these which tend to discredit the work on the entire sheet, and it is recommended that too great reliance, aside from the actual soundings obtained, should not be placed in this work.
7. Reviewed by A. L. Shalowitz, August, 1923.

E. P. E.

ADDRESS THE DIRECTOR  
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No. 4-DEM

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

September 27, 1924.

SECTION OF FIELD RECORDS

Report on Wire Drag Sheet No. H. 3976 (Additional Work)

Approaches to Portsmouth Harbor

Surveyed in 1924

Instructions dated May 29, 1924

Chief of Party, J. H. Hawley.

Surveyed by J. H. Hawley.

Protracted and inked by A. L. Shalowitz.

Area and Depth Sheet by H. R. Edmonston.

Verified by A. L. Shalowitz.

1. This work was to cover certain areas that were dragged in 1917, where the drag grounded and the least water was not obtained. The detailed instructions were given to the chief of party verbally in the office.
2. In the areas examined the depth at which the drag was set was the same as the depth at which the drag grounded in 1917. This indicates that there is no shoaler water than the clearance depth, but it does not wholly disprove the previous groundings, so that the previous grounding depths must be charted as indicated by appropriate notes on the Area and Depth Sheet.
3. The work was plotted on the smooth sheet for H. 3976 and the day letters indicated in blue in contradistinction to those in red representing the 1917 work.
4. A separate Area and Depth sheet has been prepared covering only the work of 1924, so that a ready reference can be had for this work. This new work has also been incorporated in the regular Area and Depth sheet for H. 3976.
5. Reviewed by A. L. Shalowitz, September, 1924.

June 20, 1924.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in

- 1 volumes of ~~sounding~~ records for  
wire drag

HYDROGRAPHIC SHEET 3976

Locality: Portsmouth Harbor Entrance, Maine.

Chief of Party: J. H. Hawley in 1924

Plane of reference is mean low water reading  
2.6 ft. on tide staff at Pepperell Cove

For reduction of soundings, condition of records satisfactory.  
except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks



Chief, Division of Tides and Currents.