

6644

6644

Form 504
Rev. Dec. 1933

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. 2008
Hydrographic }

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES
MAY 24 1941

Acc. No.

State Massachusetts

LOCALITY
Massachusetts Bay
~~Atlantic Coast~~

Approaches to
~~Northwest of the Graves~~, Boston
Harbor.

1930
1940

CHIEF OF PARTY
Fred. L. Peacock

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 2008

REGISTER NO. H6644

State MASSACHUSETTS

General locality ATLANTIC COAST Massachusetts Bay

Approaches to
Locality Northeast of THE GRAVES, Boston Harbor

Scale 1:20,000 Date of survey June, July, 1940

Vessel Subparty, Ship OCEANGRAPHER

Chief of Party Fred. L. Peacock

Surveyed by John C. Bull

Protracted by Lewis L. Lawrence

Soundings penciled by Lewis L. Lawrence

Soundings in fathoms feet

Plane of reference MLW

Subdivision of wire dragged areas by

Inked by L. G. Taylor

Verified by do

Instructions dated February 17, 1940, 19

Remarks:

DESCRIPTIVE REPORT

To Accompany

HYDROGRAPHIC SHEET NO. 2008 (Field)

INSTRUCTIONS:

This survey was executed under authority of the Director's Instructions dated February 17, 1940 for Project No. HT-246. ✓

CONTROL AND SIGNALS:

Control for the hydrography consisted of first order triangulation and intersection stations recovered or established in 1934. In addition, two signals were located by the hydrographic party. ✓

SURVEY METHODS:

The usual standard visual control method of sextant fixes was used throughout. The shoal water portable recording fathometer type 808 was used for depth recording. As a whole excellent results were obtained although some variation in the motor speed was found which required the applying of speed corrections to the recorded depths. All records were scaled for speed variation and the necessary corrections applied. A separate report has been prepared by the office in charge of the sub-party concerning the operation of the fathometer and the various difficulties encountered and no details will be given in this report. ✕

After applying the speed corrections to the soundings when the fathometer motor was found to be operating off speed, the soundings agreed remarkably well. It is thought that no appreciable discrepancies occurred from this source. After applying the necessary corrections, all existing discrepancies were well within the plus or minus one per cent designed speed regulation of this type of instrument. It is theoretically possible to have crossing discrepancies of two per cent of the depth when the fathometer is operating within the limits of its design. However no discrepancies of this magnitude were found which could be attributed to lack of proper speed regulation or of failure to apply the proper speed correction. ✓

The main system of sounding lines was run in an east and west direction and all development lines were run at an angle of about forty-five degrees to the main system of lines. ✓

DISCREPANCIES:

No apparent discrepancies were found in the smooth plotting. Crossings agreed very well. In some areas the very uneven rocky bottom makes it appear that discrepancies exist which is not the case when all the records are consulted. ✓

DANGERS:

No new dangers or obstructions were found on this sheet. ✓

CHANNELS:

No channels are found on this sheet. ✓

ANCHORAGES:

Anchorage recommended in the Coast Pilot are in agreement with the results of this survey. No additional recommendations are submitted. ✓

COMPARISON WITH PREVIOUS SURVEYS:

All previously determined shoal indications were reported to have been plotted on the boat sheet and developed by hydrography. ~~In all cases the shoals were found.~~ As no information on the amount of wire drag done or the dangers and least depths obtained from this source are at hand in this office, no comparison can be made between these two sources. The more important shoals are listed on a separate sheet of this report, and the least depth obtained on this survey and the least charted depth is given. It is recommended that shoal areas not previously wire dragged be investigated by wire drag when this work is resumed. /

The 18½ ft. shoal in Lat. 42 - 22.37 Long. 70 - 51.65 is probably the charted wreck at this point. 13 ft. over wreck on H-6609 (1940) W.D. ✓ ✓

No evidences of the wreck charted in Lat. 42 - 23.03 Long. 70 - 50.81 were found in plotting the smooth sheet. It is recommended that this area be investigated by wire drag, particularly as no development work was done in this area to prove or disprove the existence of this wreck. Rev. par. 7a. ✓

WIRE DRAG GROUNDINGS:

All wire drag groundings and least depth on shoals was furnished to the office by the wire drag party in a separate report. ✓

GEOGRAPHIC NAMES:

No new geographic names appear on this sheet. The names appearing on the latest copy of chart No. 246 are correct. ✓

STATISTICS:

Statistical data is attached. ✓

MISCELLANEOUS:

Several positions are given for buoy locations. The average of the positions given was taken as the location of the buoy. ✓

This report is prepared from notes submitted by the field party. ✓

Respectfully submitted

H. Arnold Karp
H. Arnold Karp

Norfolk, Virginia, May 22, 1941.

HYDROGRAPHIC SHEET NO. 2008 (Field)

SHOALS

Latitude	Longitude	Least Depth	Least Charted Depth.
42 - 23.56	70 - 50.70	76 feet. ✓	66 feet (SW)
42 - 23.37	70 - 51.46	48 " ✓	46 " (42' W & NW) Rev. par. 7a.
42 - 22.51	70 - 51.39	40½ " ✓	36 " From H-3780 (1915) W.D. Carried.
42 - 22.37	70 - 51.65	18½ " ✓	23 " (Probably wreck) 13 ft. wreck transferred from H-6609 (1940) W.D.
42 - 21.90	70 - 51.88	59 " ✓	60 "
42 - 21.88	70 - 51.60	56 " ✓	58 "
42 - 21.89	70 - 51.01	54 " ✓	58 "
42 - 21.99	70 - 51.30	38½ " ✓	48 " (38' NW)
42 - 22.24	70 - 50.99	52 " ✓	45 " 45 is from H-3780 W.D. Carried.
42 - 22.13	70 - 50.90	54 " ✓	45-59 " (Between)
42 - 21.99	70 - 50.83	55 " ✓	59 "
42 - 22.85	70 - 50.77	72 " ✓	84 " (77' NW)
42 - 22.42	70 - 50.73	63 " ✓	72 "
42 - 23.64	70 - 52.70	66 " ✓	
42 - 23.44	70 - 52.72	73 " ✓	78 "
42 - 23.66	70 - 53.37	44 " ✓	
42 - 22.43	70 - 51.50	38 " ✓	

STATISTICS, HYDROGRAPHIC SHEET NO. 2008

H6644

Date	Letter Day	Vol. No.	Positions	Soundings	Miles, Statute	Boat Used
6/18/40	A	1	123	1230	34.0	Rodgers
6/20/40	B	1	49	588	13.2	"
6/27/40	C	1	14	126	2.5	"
6/27/40	C	2	198	1782	47.7	"
6/28/40	D	3	222	1998	56.1	"
6/22/40	a	4	18	10		Surf Boat
7/29/40	b	4	155	1150	23.7	Launch #40126
7/31/40	c	4	105	702	17.3	" "
7/31/40	c	5	46	315	7.8	" "
8/5/40	d	5	147	1225	27.8	" "
Totals-----			1077	9126	230.1	

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. **H6644**

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet	1077..
Number of positions checked	115..
Number of positions revised	..2..
Number of soundings recorded	9126
Number of soundings revised	..36..
Number of soundings erroneously spaced	..20..
Number of signals erroneously plotted or transferred	NONE..

Date: *July 14, 1941*

Verification by *Lina G. Taylor*

Time: *125 hrs.*

Review by *J.A. McCormick 8/7/41*

Time: *35 hrs.*

HYDROGRAPHIC SURVEY NO. H6644

Smooth Sheet One

Boat Sheet One

Records; Sounding 5 Vols., Wire Drag Vols., Bomb Vols.

Descriptive Report Yes

Title Sheet Yes

List of Signals Yes (in vol. #1)

Landmarks for Charts (Form 567) Yes

Statistics Yes

Approved by Chief of Party No

Recoverable Station Cards (Form 524) None

Special Chart for Lighthouse Service Yes (Chart #246)
(Circular Nov.30, 1933)

Hydrography: Total Days 8; Last Date Aug. 5, 1940

Remarks _____

Remarks

Decisions

1		423709
2		
3		423708
4	For title	
5	Location of tide staff.	
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M 234		

GEOGRAPHIC NAMES
 Survey No. **H6644**

Name on Survey	A	B	C	D	E	F	G	H	K
<u>Broad Sound</u>									1
<u>Massachusetts Bay</u>									2
<u>The Graves</u>									3
<u>Boston Harbor</u>									4
<u>Boston Light</u>									5
									6
									7
									8
									9
									10
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									27

Names underlined in this approved
 by L. Heck on 8-11-41

Verified and Inked by

S. G. Taylor

Date

July 14, 1941
~~1940~~

1. The descriptive report was consulted and appropriate action taken.
YES
2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude.
YES
3. All references to survey sheets mentioned in the descriptive report include the registry number and year.
YES (No sheets mentioned.)
4. Geographic names of hydrographic features are in slanting lettering and of topographic features in vertical lettering.
YES
5. All items effecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken.
YES
6. All positions verified instrumentally were check marked in the sounding records.
YES
7. All critical soundings are clear and legible.
YES
8. The metal protractor has been checked within the last three months.
YES
9. The protracting and plotting of all bad crossings were verified.
YES
10. All detached positions locating critical soundings, rocks or buoys were verified.
YES
11. The boat sheet was compared with the smooth sheet.
YES
12. The spacing of soundings as recorded in the records was closely followed.
YES
13. The bottom characteristics were shown on outstanding shoals.
None shown in sounding records
14. The reduction and plotting of doubtful soundings were checked.
YES

15. The transfer of contemporary topographic information was carefully examined. *yes*
16. All junctions were transferred.
yes
17. The notation "JOINS H- " was added for all contemporary adjoining or overlapping sheets now registered.
yes except wire drag sheets.
18. The depth curves have been drawn to include the significant depths.
yes
19. All triangulation stations and transfer of topographic and hydrographic signals were checked by the field party.
yes (No topog. signals)
20. Heights of rocks were checked against range of tide.
yes
21. Rocks transferred from topographic survey have a dotted curve where shown thereon.
yes
22. Unnecessary pencil notes have been removed.
yes
23. Objects on which signals are located and which fall outside of the low water line have been described on the sheet.
None
24. The low water line and delineation of shoal areas have been properly shown (see letter of October 20, 1934).
25. Degree and minutes values and symbols have been checked.
yes
26. Source of shoreline and signals (When not given in report).
Shoreline Taken from T- 5774 (1938)
27. Depth curves were satisfactory except as follows:
Only minor changes made

28. Sounding line crossings were satisfactory except as follows:

Crossings very good

29. Junctions with contemporary surveys were satisfactory except as follows:

No junctions except on very old surveys.
H-6643 (1940) on south not verified.

30. Condition of sounding records was satisfactory except as follows:

✓

31. The protracting was satisfactory except as follows:

✓

32. The field plotting of soundings was satisfactory except as follows:

✓

33. Notes to reviewer:

when using signal COTT some of the positions
did not check the original plotting due to distortion.

ALC.

TIDE NOTE FOR HYDROGRAPHIC SHEET

Coastal Surveys

June 18, 1941

Division of ~~Hydrography and Topography~~

Division of Charts: Attention: Mr. H. R. Edmonston

Plane of reference approved in
5 volumes of sounding records for

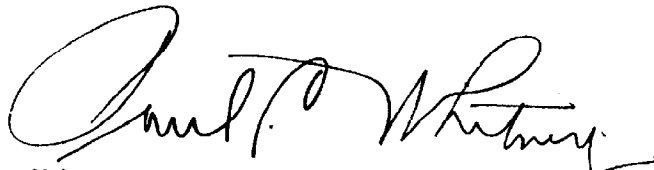
HYDROGRAPHIC SHEET 6644

Locality Entrance to Boston Harbor

Chief of Party: Fred L. Peacock
Plane of reference is mean low water reading
3.1 ft. on tide staff at Boston Light
25.2 ft. below B. M. 1

Height of mean high water above plane of reference is 8.9 feet.

Condition of records satisfactory except as noted below:


Chief, Division of Tides and Currents

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
 DESCRIPTIVE REPORT
~~PHOTOGRAPHIC~~

No. H **H6644**
~~No. H~~

received **May 26, 1941**
 registered **May 26, 1941**
 verified
 reviewed
 approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
24			
25	✓		<i>Page 2</i>
26			
30			
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62			
63			
82			
83			
88			
90			

RETURN TO

82	T. B. Reed
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DIVISION OF CHARTS

SURVEYS SECTION

REVIEW OF HYDROGRAPHIC SURVEY NO. 6644 (1940) FIELD NO. 2008

Massachusetts; Massachusetts Bay; Approaches to Boston Harbor
Surveyed in June - July 1940, Scale 1:20,000
Instructions dated February 17, 1940 (OCEANOGRAPHER)

Soundings:

Type 808 Recorder

Control:

Sextant Fixes on Shore Signals

Chief of Party - F. L. Peacock
Surveyed by - J. C. Bull
Protracted by - L. L. Lawrence
Soundings plotted by - L. L. Lawrence
Verified and inked by - L. G. Taylor
Reviewed by - J. A. McCormick, August 8, 1941
Inspected by - H. R. Edmonston

1. Shoreline and Signals

Topographic detail in the vicinity of the lighthouse is from topographic map T-5774. Fixes locating the two hydrographic signals are recorded in the sounding volumes.

2. Sounding Line Crossings

Satisfactory.

3. Depth Curves

Satisfactory.

4. Junctions with Contemporary Surveys

The junction with H-6643 (1940) on the south will be considered in the review of that survey. Project instructions require new surveys on the west but not on the north or east. The area on the west was not surveyed in 1940.

5. Comparison with Prior Surveys

a. H-221 (1846-48), 1:20,000; H-516 (1854-55), 1:80,000

A 34-foot depth in Lat. $42^{\circ} 21.7'$, Long. $70^{\circ} 52.5'$ and several depths of 90 feet and over in the vicinity of Long. $70^{\circ} 50'$ on H-221 are still being shown on the latest charts. These depths are shoaler by 10 feet than those of the present survey but their continued retention on the charts is not considered advisable in view of the age and probable inaccuracies of H-221. The 34 falls sufficiently close to shoal depths on the present project that its omission will be of no consequence. H-516 is purely reconnaissance in this area.

- b. H-2129 (1892), 1:10,000; H-2129b and c (1909-10), 1:20,000; H-2146 (1892), 1:10,000

The 1892 surveys were well executed and, in general, agree quite closely with the present work. The 1909-10 surveys were developments of a shoal in Lat. $42^{\circ} 23.3'$, Long. $70^{\circ} 51.5'$ which was removed in 1911 to a project depth of 42 feet. Least depth on the old surveys was 28 feet; least depth on the present survey, 48 feet (see par. 7a).

Several soundings of 54 to 59 feet (charted) in Lat. $42^{\circ} 22.3'$ to Lat. $42^{\circ} 23.0'$, Long. $70^{\circ} 53.8'$ to Long. $70^{\circ} 54.0'$ on H-2129 average about 10 feet shoaler than depths on the present survey. All are shown by the old records to be unverified soundings. They are not considered important enough to carry forward, particularly as they were cleared with effective depths of 48 to 49 feet on H-3780 (1915) W.D.

A depth of 32 feet in Lat. $42^{\circ} 21.8'$, Long. $70^{\circ} 52.5'$ on H-2146 is sufficiently close to shoaler depths on the present survey to be disregarded. A 24-foot depth 200 meters to the southeast on the same survey falls in the overlap of the present survey with H-6643 (1940). Development on H-6643 shows 20 feet at this point.

6. Comparison with Wire Drag Surveys

H-3780 (1915) W.D., H-6609 (1940) W.D.

All shoal soundings obtained by the drag parties in this area were added to the present survey. There are no conflicts between effective drag depths and regular hydrographic development.

7. Comparison with Chart 240 (New Print of Aug. 26, 1940)
Chart 246 (New Print of Mar. 26, 1941)
Chart 1207 (New Print of Sept. 17, 1940)

a. Hydrography

Depths charted in this area are mostly from surveys discussed in the foregoing paragraphs.

The shoal in Lat. 42° 23.3', Long. 70° 51.5' and several of the deeper soundings in the vicinity are from Chart Letter 257 of 1912 which purports to show the condition of the area subsequent to dredging of the shoal to a project depth of 42 feet in 1911 (Chart Letter 394 of 1911). The present survey shows a shoal of much smaller extent and with a least depth of 48 feet. The accuracy of the Engineers' information is somewhat discredited by the fact that H-3780 (1915) W.D. shows the reported position of one of the Engineers' 42's cleared with an effective depth of 46 feet. It is possible, however, that the 42's, being plotted on a 1:40,000 scale chart section, may be inaccurate as to position but perfectly reliable as to depth. Under the circumstances, the shoaler depths should be retained as charted until the area can be investigated further. Surrounding depths should be charted from the present survey.

The wreck charted in Lat. 42° 23.0', Long. 70° 50.8' was reported in Chart Letter 363 of 1919 as that of a sunken coal barge. The reported position is only approximate but, as no investigation was made either on the present survey or on H-6609 (1940) W.D., the wreck should be retained as charted. There is little likelihood of its being a menace to navigation as the reported position falls in depths of 94 feet.

b. Aids to Navigation

The survey found floating aids in the area to be as much as 150 meters from the charted positions. The differences constitute no serious problem to safe navigation.

8. Condition of Survey

Satisfactory except as noted in following paragraph.

9. Compliance with Instructions for the Project

Project instructions are quite specific as regards investigation of critical depths and obstructions such

as those discussed in par. 7a; also as regards definite recommendations in the Descriptive Report concerning retention or rejection of such features for charting. Instructions also require general verification of bottom characteristics on previous surveys and systematic augmenting of their distribution. No bottom characteristics were obtained on the present survey.

10. Additional Field Work Recommended

The 42-foot shoal charted in Lat. $42^{\circ} 23.3'$, Long. $70^{\circ} 51.5'$ and the wreck charted in Lat. $42^{\circ} 23.0'$, Long. $70^{\circ} 50.8'$ (both discussed in par. 7a) should be investigated by wire drag. Investigations should be extended to include a 41-foot depth charted in Lat. $42^{\circ} 23.8'$, Long. $70^{\circ} 51.8'$. The 41 falls just outside the limits of the present survey and is the depth reported over the wreck of the S.S.ROMANCE (L.H.N. to M. 24 of 1937).

11. Superseded Surveys

H- 221 in part
H- 516 " "
H-2129 " "
H-2129b entirely
H-2129c in part
H-2146 " "

Examined and approved:



Chief, Surveys Section



Chief, Division of Charts



Chief, Section of Hydrography



Chief, Division of Coastal Surveys

Doc. Ref. 6644

Examined for applic. to Chs. 50 by H.E. Melner - no correction.

Partially applied to Chs. 246 3/20/40 G.R.

" " " " 1207 3/20/40 G.R.

Completely applied to reconstruction of Chs. 246 11/2/44 g.H.S.