

8010

Diag. Cht. No. 1207-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. ECSP-05252 Office No. H-8010

LOCALITY

State MASSACHUSETTS

General locality BOSTON HARBOR

Locality SCITUATE HARBOR

19 52

CHIEF OF PARTY

CLARENCE R. REED

LIBRARY & ARCHIVES

DATE MAR 12 1953

8010

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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.

REGISTER No. H-8010

Field No. ECSP 05252

State Massachusetts ✓

General locality Boston Harbor ✓

Locality Scituate Harbor ✓

Scale 1:5000 ✓ Date of survey 29 Sept.- 6 October 1952 ✓

Instructions dated 9 May 1952

Vessel East Coast Shore Party

Chief of party Clarence R. Reed ✓

Surveyed by H.S. Foote ✓

Soundings taken by fathometer, ~~graphic recorder~~², hand lead, ~~wire~~

Fathograms scaled by Party Personnel

Fathograms checked by C.R. Reed, H.S. Foote, R.H. Houlder ✓

Protracted by W.W. Feazel

Soundings penciled by W.W. Feazel

Soundings in ~~fathoms~~ feet at MLW MLLW and are true depths ✓

REMARKS: This survey was smooth plotted in the Hydrographic Section of the Norfolk Processing Office.

712

NOTES FOR
DESCRIPTIVE REPORT
TO ACCOMPANY (1952)

HYDROGRAPHIC SHEETS H-8008, H-8009, H-8010 (Field Nos. ECSP 1152, 05152, 05252)

COHASSET AND SCITUATE HARBORS, MASSACHUSETTS

EAST COAST SHORE PARTY

CLARENCE R. REED, CHIEF OF PARTY

PROJECT CS-349

1952

SCALES: 1:5000 & 1:10000

* * * * *

PROJECT This survey was accomplished under instructions dated 9 May 1952 calling for a basic hydrographic survey of Cohasset and Scituate Harbors and in the immediate offshore vicinity.

SURVEY LIMITS AND DATES The survey on Sheet H-8008 (FIELD NO. ECSP 1152) covers the area bounded by the shore line and longitude 70-46 on the west latitude 42-16.30 on the north, latitude 42-12.50 on the south and a line running from latitude 42.12.5 longitude 70-43 to latitude 42-16.30 longitude 70-46 on the east. Junctions were made with contemporary surveys shown on Sheet No. H-8009 (FIELD NO. ECSP 05152) on the west, Sheet No. H-8010 (FIELD NO. ECSP 05252) on the south. The field work began 12 August and was concluded 29 Sept. 1952.

The survey on Sheet H-8009 (FIELD NO. ECSP 05152) covers the area bounded by Cohasset Harbor on the south longitude 70-48 on the west, latitude 42-16.58 on the north and longitude 70-46 on the east. Junctions were made with contemporary surveys shown on Sheet No. H-8006 (FIELD NO. ECSP 1252) on the west, Sheet No. H- (FIELD NO. HI-25/152) on the north and with Sheet No. H-8008 (FIELD NO. ECSP 1152) on the east. The field work began 24 July and was concluded 25 September 1952.

The survey on Sheet No. H-8010 (FIELD NO. ECSP 05252) covers the area bounded by Scituate Harbor on the west, latitude 42-12.50 on the north longitude 70-42.70 on the east and latitude 42-11.50 on the south. Junctions were made with contemporary surveys shown on Sheet No. H-8008 (FIELD NO. ECSP 1152) on the north and Sheet No. H-~~8008~~ (Field No. HI 1152) on the east. The latter was performed by the Ship Hilgard. The field work began 29 Sept. and was concluded 6 October 1952.

Not applicable to present survey

VESSEL AND EQUIPMENT Aluminum Launch No. 168 was used for the survey.

The launch operated from moorings at Cohasset and Scituate Harbors.

The launch has a turning radius of 15 meters while running at the sounding speed of 5 knots at 1500 R.P.M.

For Sheets H-8008 and H-8009, all echo soundings were obtained with Graphic Recorders Nos. 139 SPX and 150 SPX. For Sheet H-8010 all echo soundings were obtained with Graphic Recorder No. 139 SPX.

The transducers were mounted inboard.

TIDES AND CURRENTS The tide note is attached to this report. No currents were observed.

SMOOTH SHEET The smooth sheet is to be plotted by the Norfolk Processing Office.

CONTROL STATIONS The control consisted mainly of triangulation stations and photogrammetric stations. The latter were transferred from Air Compilation Sheets T-9512, T-9512A, T-9513 and T-9513A. Where hydrographic stations were necessary, their positions were determined by sextant fixes at each station site.

*Only T-9513 & T-9513A. used on this sheet
(unreviewed advance copies)*

SHORELINE AND TOPOGRAPHY The shoreline and topographic details were transferred from Air Compilation Sheets T-9512, T-9513 and T-9513A.

Any inaccuracies were resolved in the field and sketched directly on the boat sheet.

SOUNDINGS The depths were measured with graphic recorders and hand leads. Bottom samples were obtained with armed hand leads.

CONTROL OF HYDROGRAPHY The sounding lines of this survey were controlled by the three-point-sextant-fix method. There were no unusual jumps when changing control stations. Fixes were taken at 1 to 2 minute intervals. In the upper reaches of the harbors where hydrographic control was lacking, positions of sounding lines were referred to distinctive shore line details. Appropriate remarks were entered in the sounding volumes.

ADEQUACY OF SURVEY This survey is completed and considered adequate to supersede prior surveys. The junctions with adjoining sheets are satisfactory as depth curves can be drawn and there are no holidays.

Review, par. 9

CROSSLINES Sufficient crosslines were run as prescribed.

COMPARISON WITH PRIOR SURVEYS A comparison of Sheet H-8008 and charts 246 and 1207 showed no major discrepancies. Those items mentioned in the Preliminary Review as prepared by the Division of Charts were investigated and are listed below.

A comparison of Sheet H-8009 and Chart 242 showed considerable variance in the location and description of shoals and rocks. The major discrepancies and those items listed in the Preliminary Review are listed below. Also noted was the great difference in the topographic features as shown on the chart and as shown on Air Photo Compilation Sheet T-9512A.

Not applicable

A comparison of Sheet H-8010 and Chart 232 showed no major discrepancy; however it was noted that there was a wide variance between the topographic features as shown on the chart and those shown on Air Photo Compilation Sheet T-9513A.

COAST PILOT NOTES Line 43 on page 349 and line 16 on page 350 of the 1950 Edition of U.S.C.P. - Atlantic Coast - Section A should be deleted as the reported 2 ft. shoals are non-existent.

AIDS TO NAVIGATION Aids to navigation are to be scaled from the smooth sheet.

LANDMARKS FOR CHARTS No landmarks not already charted are recommended.

GEOGRAPHIC NAMES No changes or additions were found.

MISCELLANEOUS Detached positions located by sextant angles from an aluminum skiff were recorded in two sounding volumes numbered 1 and 2. The information contained in these two volumes pertains variously to sheets numbered H-8006, H-8008, H-8009 and H-8010. The index at the front of each volume relates the information to the proper sheet or sheets.

Approved and Forwarded

Clarence R. Reed
CDR, USC&GS
OinC, East Coast Shore Party

APPROVAL SHEET - HYDROGRAPHIC

SURVEYS H 8008 - H 8009 - H 8010

The records and boat sheets for Hydrographic surveys Numbered H-8008, H-8009 and H-8010 have been inspected by me and are approved. A separate report (in addition to the descriptive report) has been prepared by Ensign D. F. Romero for his work in connection with location of topographic features and signals on air photo topographic sheets in the area.

Clarence R. Reed
CDR, USC&GS
OinC, East Coast Shore Party

TIDE NOTE TO ACCOMPANY

HYDROGRAPHIC SURVEY SHEETS H-8008, H-8009, H-8010
(FIELD NOS. ECSP 1152, 05152, 05252)

Observations were obtained at two tide stations where portable tide gages were maintained. The gage at White Head (Cohasset Harbor) was used for reducing soundings on Sheets H-8008 and H-8009. The gage at Scituate was only used for reducing soundings on Sheet H-8010. No differences in time or height were applied to the observed tides. Planes of reference were furnished by the Washington Office or computed from elevations of previous tidal bench marks.

<u>STATIONS</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>	<u>MLW ON STAFF</u>
White Head (Cohasset Harbor)	42-14.88	70-47.04	3.0 Feet
Scituate	42-11.88	70-43.53	2.8 "

FATHOMETER CORRECTIONS

H-8008 (FIELD NO. ECSP 1152)
 HYDROGRAPHIC SURVEY H-8009 (FIELD NO. ECSP 05152)
 H-8010 (FIELD NO. ECSP 05252)

The corrections tabulated below are based on an initial set with a correct sounding of twelve feet. Where the initial on the fathogram varies from the correct setting, INDEX CORRECTIONS must be entered in the sounding volumes. All depths were obtained on the (A) or (B) Range, FOOT SCALE.

FATHOMETER NO. 150 SPX

22 July - 14 Aug.

(A) Scale

Corr.	From	Depth	To
-1.0	2.8		2.9
-0.8	3.0		3.1
-0.6	3.2		3.3
-0.4	3.4		3.5
-0.2	3.6		3.9
0.0	4.0		19.5
-0.02	19.6		34.0
-0.4	34.1		48.5
-0.6	48.6		Sdg. limit

(B) Scale

Corr.	From	Depth	To
-1.8	34.5		48.5
-2.0	48.6		62.5
-2.2	62.6		76.5
-2.4	76.6		Sdg. limit

(Cont. from page 1)

FATHOMETER NO. 139 SPX

15 Aug. - 14 Oct.

(A) Scale

Corr.	From	Depth	To
-1.0	2.8		2.9
-0.8	3.0		3.1
-0.6	3.2		3.3
-0.4	3.4		3.5
-0.2	3.6		3.9
-0.0	4.0		19.5
-0.2	19.6		34.0
-0.4	34.1		48.5
-0.6	48.6		Sdg. Limit

(B) Scale

Corr.	From	Depth	To
2.0	35.0		48.5
1.8	48.6		62.0
1.6	62.1		Sdg. Limit

STATISTICS TO ACCOMPANY HYDROGRAPHIC SHEET H-8010

(FIELD NO. ECSP 05252)

Date 1952	Day Ltr.	Vol. No.	Lead Lines	No. of Positions	Stat. Mi. Sdgs.
29 Sept.	a	1	0	39	4.1
30 "	b	1	3	61	5.0
1 Oct.	c	1	2	44	2.7
6 "	d	1&2	8	110	6.9
TOTALS -----			13	254	18.7

Area in statute miles: 4

Additional work ~~done~~ recorded
in separate volumes and transferred and indexed in
sounding volumes of this sheet.

<u>DATE</u>	<u>VESSEL</u>	<u>DAY LETTER</u>	<u>VOL. NO.</u>	<u>L.L. SDGS.</u>	<u>POS.</u>	<u>STAT. MI.</u>
8/15/52	Skiff	e (blue)	2	0	43 42	0
9/29/52	"	q "	2	0	2	0
10/9/52	"	t "	2	0	7	0
GRAND TOTALS				13	306 305	18.7

OFFICIAL
FLOATING AIDS TO NAVIGATION
H-8010

<u>BUOY</u>		<u>LAT.</u>	<u>M.</u>	<u>LONG.</u>	<u>M</u>	<u>DEPTH</u>	<u>POS.</u>	<u>DATE</u>	<u>CHART</u>
Scituate Channel Buoy	1	42-12	175.9	70-42	1001.5	12'	17e	8/15/52	232-1207
"	2	42-12	294.5	70-42	971.5	12'	16e	"	232
"	3	42-12	235.0	70-42	1166.5	12'	15e	"	"
"	4	42-12	291.0	70-42	1291.5	12'	14e	"	"
"	5	42-12	237.0	70-43	22.0	10'	13e	"	"
"	6	42-12	298.5	70-43	86.5	12'	12e	"	"
"	7	42-12	211.5	70-43	223.0	12'	11e	"	"
"	8	42-12	231.0	70-43	259.5	11'	10e	"	"
"	9	42-12	25.0	70-43	444.5	8'	3e	"	"
"	10	42-12	31.5	70-43	497.5	7'	4e	"	"
"	11	42-11	1807.3	70-43	541.5	7'	1e	"	"
"	12	42-11	1815.1	70-43	584.0	5'	2e	"	"

SPECIAL PURPOSE BUOYS

Mooring Buoy R & W Hor. Stripe		42-12	29.0	70-43	390.0	7'	5e	"	
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LIST OF SIGNALS
To Accompany

HYDROGRAPHIC SURVEY H-8010 (Field No. E.C.S.P. - 05252)

TRIANGULATION STATIONS

DAR CEDAR POINT DATUM, 1940
OLD CEDAR POINT TOWER, 1940-50 (SCITUATE LIGHTHOUSE)
TOW SCITUATE, 2ND CLIFF TOWER, (TOWER, U.S.C. & G.S.) 1908-50
WAT CEDAR POINT BREAKWATER LT., 1943-50 (*Scituate North Jetty Lt.*)

MARKED TOPOGRAPHIC STATIONS

C.G. CUPOLA, 1950 (T-9513A)

TOPOGRAPHIC STATIONS (SOURCE T-9513A)

Eso	Gas	Hem	Irk	Jap	Key	Man	Nux	Oak	Paw	Rub
Set	Spi	Tom	Val	Wax	Zag					

HYDROGRAPHIC STATIONS

*For *Sin

*Signals For and Sin were located on sextant cuts observed by Ship HILGARD on survey ^{H-8010} H-1152. In order to plot these cuts it was necessary to use a special projection as the scale of H-8010 was too large to contain the necessary control. These cuts were sent this Office by mail and are transferred and indexed in vol. 2.

ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-8010 (Field No. ECSP-05252)

GENERAL

Most of the positions locating detached rocks were recorded in extra volumes by a sub-party. These volumes contain positions that fall on three separate surveys. In order that the records of each sheet could be complete, the soundings and positions pertaining to this survey were transferred and indexed in *it's* volumes.

DETACHED ROCKS

Lat. 42-11'-30" Long. 70-43'-00" Positions 18 thru 23e
(blue) locating detached rocks, were plotted on rather weak fixes. (*positions verified*)

All detached rocks located by the hydro party are plotted on the smooth sheet in pencil.

Rocks shown on compilation T-9513A are inked on the smooth sheet with the exception of those located by the field party.

Rocks shown on chart 232 are not on the smooth sheet unless they appear on compilation T-9513A or were located by the field party.

Old Sow uncovers 8' at MLW instead of 3' as charted. See notes
(*Chart has been corrected*)
at positions 25 & 28d (red).

Elevations of detached rocks on 1 thru 7t (blue) were referenced to predicted tides as the gage at Scituate was dismantled before 9 Oct. 1952.
(*actual tides subsequently used*)

Respectfully submitted,

Hugh E. Proffitt
Hugh E. Proffitt
Cartographer.

Norfolk, Va.
9 Mar. 1953

Approved & Forwarded:
Earle A. Deily
Earle A. Deily
Supervisor, S.E. District.

GEOGRAPHIC NAMES

Survey No. H-8010

Name on Survey												
	A	B	C	D	E	F	G	H	K			
<u>Massachusetts</u>												1
<u>Boston Harbor</u>												2
												3
<u>Scituate Harbor</u>												4
<u>Cedar Point</u>												5
<u>First cliff</u>												6
<u>Town Pier</u>												7
<u>Scituate</u>												8
												9
												10
												11
												12
												13
												14
												15
												16
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												25
												26
												27

On Chart No.

On previous survey No.

On U. S. quadrangle Maps

From local information

On local Maps

P. O. Guide or Map

Rand McNally Atlas

U. S. Light List

} for title

Names underlined in red are approved.
3-19-53. L. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-8010....

Records accompanying survey:

Boat sheets ..1.; sounding vols. ...2...; wire drag vols.;
bomb vols.; graphic recorder rolls 1 Env.;
special reports, etc. 1. Smooth Sheet; 1. Descriptive Report;
.....

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

Number of positions on sheet	.....	305
Number of positions checked	.....	92
Number of positions revised	.....	1
Number of soundings revised (refers to depth only)	.....	3
Number of soundings erroneously spaced	.....	2
Number of signals erroneously plotted or transferred	.....	0
Topographic details	Time	..... 4
Junctions	Time	..... 1
Verification of soundings from graphic record	Time	..... 16
Verification by <i>J. E. Gearhart</i>	Total time	<i>134</i> Date <i>7-14-53</i>
Reviewed by <i>J. A. Dinsmore</i>	Time	<i>16</i> Date <i>14 Aug. 1953</i>

Stirni 18 hrs

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8010

FIELD NO. ECSP-05252

Massachusetts, Boston Harbor, Scituate Harbor

Project No. CS-349

Surveyed - September - October 1952

Scale 1:5,000

Soundings:

Control:

808 Fathometer
Hand lead

Sextant fixes
on shore signals

Chief of Party - C.R. Reed
Surveyed by - H.S. Foote
Protracted by - W.W. Feazel
Soundings plotted by - W.W. Feazel
Verified and inked by - J.E. Gearhart
Reviewed by - T.A. Dinsmore 14 August 1953
Inspected by - R.H. Carstens

1. Shoreline and Signals

The origin of the shoreline and signals is given in the Descriptive Report.

2. Sounding Line Crossings

Depths at crossing are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated.

This survey covers Scituate Harbor and approaches. Except for the entrance channel and the anchorage area within the harbor, the area is generally foul with rocks and boulders.

4. Adjoining Surveys

The junction with H-8008 (1952) on the north will be considered in the review of that survey. The contemporary survey on the east has not yet been received in this office.

5. Comparison with Prior Surveys

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

These early reconnaissance surveys have been entirely superseded by H-4370 of 1924. No further consideration of the early surveys is deemed necessary.

- b. H-4370 (1924) 1:5,000

This prior survey covers the area of the present survey. A comparison of the prior and present surveys reveals appreciable changes in bottom. Considerable dredging has apparently been done within the harbor. The piers located in lat. $42^{\circ}12.04'$, long. $70^{\circ}43.59'$, and lat. $42^{\circ}11.95'$, long. $70^{\circ}43.24'$, have been constructed since the time of the prior survey. Depths of 5 and 8 ft., respectively, can now be carried to the above piers where mud flats uncovering at M. L. W. previously existed. The anchorage area within the harbor has been widened considerably. This is particularly exemplified in lat. $42^{\circ}12.22'$, long $70^{\circ}43.17'$, where prior depths of 0-1 ft. are now superseded by depths of 9-11 ft. Silting is indicated in the southern tip of the harbor where prior depths of 10-11 ft. in lat. $42^{\circ}11.84'$, long. $70^{\circ}43.47'$, have since shoaled to present depths of 4-5 ft.

On the outer coast, present depths are generally several feet less than the prior depths. In lat. $42^{\circ}11.64'$, long $70^{\circ}42.77'$, the present 6-ft. depth curve is about 100 meters offshore from its prior position. Dredged spoil from the inner harbor has probably been dumped in the offshore areas.

The present survey reveals many more rocks and critical depths than the prior survey. However, a few rocks have been retained from the prior survey. With the indicated additions, the present survey is adequate to supersede the prior survey within the common area.

6. Comparison with Chart 232 (Latest print date 4/27/53)A. Hydrography

Charted hydrography originates principally with the previously discussed survey supplemented by various surveys by the Corps of Engineers the latest of which is shown on Bp. 46553 (1950), and information contained in Chart Letter 371 (1950). The present survey has been partially applied to the chart prior to verification and review.

The present survey entirely supersedes the charted information.

B. Aids to Navigation

Most of the channel buoys located on the present survey differ from 20 - 40 meters from their charted positions. The charted positions adequately mark the channel.

The survey and charted positions of the Cedar Point Breakwater Light are identical.

7. Condition of Survey

- a. The sounding records and Descriptive Report are complete and comprehensive.
- b. The smooth plotting was adequate except that the fathograms were incorrectly interpreted on sounding lines crossing over or adjacent to submerged rocks. The recorded traces from the rocks were interpreted by the Processing Office to be strays, kelp or grass. The verifier spent considerable time rescanning the fathograms in order to resolve these errors.
- c. The signal at the Coast Guard station was apparently identified in error by one angleman in several instances where the signal was used in check angles locating the positions of offshore rocks. In these instances, the positions from three-point fixes were accepted and the check angles were disregarded.

8. Compliance with Project Instructions


The survey adequately complies with the Project Instructions.


9. Additional Field Work


The 10-ft. sounding falling in depths of 13-17 ft. in lat. $42^{\circ}12.10'$, long. $70^{\circ}42.67'$, originates with a ~~questionable~~ fathogram recording which appears to be a side echo presumably from a boulder or rock. Further development of this sounding is recommended.

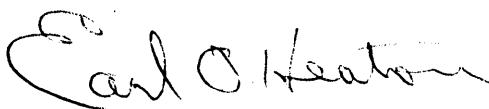
Except as noted, the survey is considered to be complete and basic.

Examined and approved:


H.R. Edmonston
Chief, Nautical Chart Branch


H. Arnold Karo
Chief, Division of Charts


G.R. Fish
Chief, Section of Hydrography


Earl O. Heaton
Chief, Division of Coastal Surveys

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~

24 March 1953

Division of Charts: R. H. Carstens

Plane of reference approved in 2
volumes of sounding records for

HYDROGRAPHIC SHEET 8010

Locality Boston Harbor, Massachusetts

Chief of Party: C. R. Reed in 1952

Plane of reference is mean low water, reading

2.8 ft. on tide staff at Scituate

16.5 ft. below B. M. 4 (USE)(1924)

3.0 ft. on tide staff at White Head (Cohasset Harbor)

18.3 ft. below B. M. 1 (1940)

3.3 ft. on tide staff at Boston

16.3 ft. below B. M. 13 (1939)

Height of mean high water above plane of reference is as follows:

Scituate = 9.0 feet

White Head (Cohasset Harbor) = 8.8 feet

~~Condition of records satisfactory except as noted below~~

NOTE: Tide reducers for positions 1t - 7t inclusive in volume 2 have been revised in red, these revisions have been verified. The revised tide reducers are based on observations at Boston, using a height correction -0.7 foot for high waters at the working grounds.

E.C. McKay

Section of Tides

Chief, Division of Tides and Currents.



MASSACHUSETTS

BAY

(chart 232)

OLD TOWER
Scituate Harbor
(Aband LT)
Buoys in Scituate Harbor
are not shown on this chart.

8010

NEAR INTERPOLATOR

Chart-1207

STANDPIPE

