

7158

WIRE DRAG

Diag. On Diag Ch. No. 1207-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey WIRE DRAG
Field No. WAHI-1146 Office No. H-7158 W. D.

LOCALITY
State Massachusetts
General locality
Locality Boston Harbor

194 6

CHIEF OF PARTY

R.L.Pfau

LIBRARY & ARCHIVES

DATE July 14, 1947

B-1870-1 (1)

7158

WIRE DRAG

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 17158

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-7158 WD

Field No. WA HI 1146

State MASSACHUSETTS

General locality MASSACHUSETTS BAY

Locality BOSTON HARBOR & APPROACHES

Scale 1:10,000 Date of survey 6 May - 11 Oct. 1946

Instructions dated 17 February 1940

Vessel HILGARD & WAINWRIGHT

Chief of party RALPH L. PFAU

Surveyed by RALPH L. PFAU

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

Protracted by A. Kaupa

Soundings penciled by A. Kaupa

Soundings in fathoms feet at MLW ~~MLLW~~

REMARKS: This sheet was processed in the Hydrographic Section of the S.E. District at Norfolk, Va.

DESCRIPTIVE REPORT

TO ACCOMPANY

WIRE DRAG SURVEY FIELD NO. 1146 H-7158 WD

HILGARD & WAINWRIGHT

Ralph L. Pfau, Comdg.

AUTHORITY

This survey was executed under Instructions for Project H.T. 246 dated 17 February 1940. ✓

DATE OF SURVEY

Field work was begun on the 6 May 1946 and ended on 11 October 1946. The party was engaged on launch hydrography during part of the months of August and September. ✓

SCOPE AND JUNCTIONS

This survey covers the following areas of Boston Harbor and Approaches, which for convenience of reference have been designated by letter. The letter designations are not consecutive but are those assigned in notices to lobstermen, since notes on the project were kept under these designations. ✓

SECTION "E"--- This section includes the President Roads area from a junction with the wire drag survey shown on sheet H-709^{59 (1945)} in the vicinity of the junction of North and South channels westward to buoys Nos. 3 and 4, the Dorchester Bay Channel southward to buoys Nos. 3 and 4, and the channel between Spectacle Island and Long Island southward to 42 - 19.

SECTION "B"--- This section includes the area between South Channel and Great Brewster, Calf, and Little Calf Islands, the area between Green Island and the Roaring Bulls on the north to Middle and Outer Brewster Islands on the south, Black Rock Channel, and the Narrows southward to the southerly end of Lovell Island. ✓

The survey joins previous survey shown on sheet H-709^{59 (1945)} along South Channel and along a line drawn approximately from Commissioners Ledge to the northerly point of Green Island, and thence to the Roaring Bulls. The survey also joins previous work (Sheet H-3780^{49 (1945)}) in the area between the Roaring Bulls and Middle and Outer Brewster Islands and H-6609 (1940) WD

SECTION "D"--- This section includes the Nantasket Roads area from a junction with previous work - roughly along a line from Georges Island to Windmill Point* - thence to the northeasterly point of Peddocks Island, thence to buoy No. 1 off Rainsford Island, thence approximately along the 18 foot curve to the vicinity of the southwesterly point of Long Island, and thence easterly along the 18 foot

* where it joins H-6609 (1940) WD

curve to the vicinity of the southwesterly point of Long Island, and thence easterly along the 13 foot curve to a junction with the Narrows.

SECTION "F"--- The portion of this section surveyed during this season consists of a small detached area immediately southward of Windmill Point and covers the reported 13 foot sounding which has been added to the charts of the area. Chart Letter No 63 (1946) - 13 superseded by 15 ft. on this survey.

CONTROL

Natural objects previously located by triangulation or radial plot were used for control. ~~which was furnished by [REDACTED] and should be treated as [REDACTED]~~

SURVEY METHODS

The HILGARD was used as Guide Launch and the WAINWRIGHT as End Launch throughout the season. A mine yawl loaned by the Army was used as tender until the middle of August when it was recalled and a similar yawl obtained from the Supervisor, Southeastern District received and put into service.

Standard dual control methods were used. The drag strips were controlled by three point fixes on shore objects. Lift was determined by tests from the tender using a graduated rod coated with a mixture of white lead and tallow.

RECORDS

Tide reducers and lift were entered to 0.5 ft. and the diagrams drawn in the record books show effective depths to 0.5 ft. Lift, tide reducers, and effective depths have been checked.

On beginning the processing of the records prior to turning them over to the Norfolk Office, it was learned that the strips were desired to integral feet only. The strips shown in the record book have not been changed since if it is desired to carry the lift and tide reducers to 0.5 ft., as is my understanding, it is only necessary to disregard the 0.5 ft. wherever it appears on the strips. However, this is not true if it is desired that the lift and tide reducers be entered to integral feet. (No)

Drag strips were drawn on the boat sheet at the close of each days work and using predicted tides. For this reason the effective depths shown on the boat sheet will sometimes differ from those shown on the diagrams in the record books,

All references to effective depths in this report refer to corrected depths as shown in the record books.

TIDES

A portable automatic tide gage was installed and maintained on U.S. Army wharf at Fort Dawes, Deer Island. Mean low water on the staff as determined by leveling to previously established bench marks is 2.1 ft. Values from this gage without time or range correction were used for the reduction of all records.

DEVELOPMENT

Because of the absence of any development of shoal indications on the 1940 hydrographic survey of the area, the proper initial setting for drag strips was difficult to determine. During the latter part of the season the practice of developing shoal indications with the survey vessels prior to dragging was adopted and resulted in a saving of time and drag gear.

The record of these developments are in Vols. 1 and 2 of the sounding records and the results are either shown on the End Launch boat sheet or the least depth obtained shown on the Guide Launch sheet. In the case of the development near the south end of the Narrows, the soundings have been reduced but have not been plotted on the sheet. These soundings are shown on tracings in this report. The soundings were transferred to H-6642 and H-6643 of 1940. Important soundings are shown on the Smooth and A&D sheets of this survey.

LOBSTER POTS

Before wire dragging was begun in the area, the State Bureau of Fisheries was contacted relative to clearing certain areas of lobster pots for the period of drag operations. The area to be dragged was divided into sections and charts showing these sections were posted at the piers of the principal lobster wholesalers. Printed notices of wire drag operations in a section were mailed to all licensed lobstermen in the area. When one section was completed a new notice was mailed releasing the completed section and indicating the new section to be dragged.

In spite of these notices considerable difficulty was experienced in getting the areas cleared of pots, and considerable delay was caused by failure to remove the pots promptly.

CURRENTS

Since the area dragged consisted principally of channels, strong currents were encountered and made effective dragging impossible at certain stages.

SECTION "E"

Lat. 42-20.17. Long. 70-56.82 --- On strip 1-11B, drag set to 38.5 ft. effective hung in approximate position shown above, and a hand lead sounding of 38.5 ft. was obtained by the tender. (Pos. 2b)

On position 6G, drag set to 39 ft. effective hung at the same position and a hand lead sounding of 38 ft. was obtained by the tender. (Pos. 1g)

On J day the HILGARD ran a series of fathometer lines over the area and picked up a small object with a least depth of 37 ft. (Pos. 1j in tender record). Due to the small size of the object and the depth of surrounding water it is believed to be a small pinnacle rock or sunken object.

37 Obstr
36j

On strip 33-48 M the area was cleared to 36.5 ft. effective .

Lat. 42-20.09, Long. 70-58.10 — On Strip 16-22 D, drag set to 39 ft. effective hung in approximate position shown above. Drag parted before a sounding and position could be obtained.

On strip 1-6 F, drag set to 40.5 ft. effective hung in approximately the same position. The exact point of hang was not well indicated by the buoys. Tender obtained a hand lead sounding of 41 ft. (Pos 2 f)

Strip 7-10 F, 38.5^{ft} effective, hung, as did strip 11-15 F, set to 36 ft. effective. The End Launch reported that in clearing the drag on the latter strip it felt as though the obstruction had broken off thereby releasing the drag.

40-42 ft
40j

Strip 16-23 F, 34.5 ft. effective, cleared.

Strip 1-7^F 38.5 ft. effective, cleared.

Strip 16-23 U, 38 ft. effective, cleared.

Strip 1-9 V, 40.5 ft. effective, cleared.

Strip 10-13 V, 41 ft. effective hung. Tender obtained a least sounding of 41.5 ft. (Pos. 2v) ^{*general depths}

Since this area was cleared in four directions at a greater depth after the obstruction was hung on strip 11-15 F, it is believed that the obstruction broke off or toppled over when the drag was being cleared.

~~SPRINT 18-27 E.~~

Lat. 42-20.50, Long. 70-58.03 — On strip 18-27 E, drag set to 36 ft. effective grounded. This grounding may be due to sag, as the tender was unable to find any sounding less than the drag setting.

36
35j

Strip 28-39 E set to 35 ft. effective cleared.

Tests showed 0-to 2-ft lift; 4-ft sag was necessary for grounding in 40-ft. depths here.

Lat. 42-20.04, Long. 70-57.38 — On strip 26-32 M, drag set to 35.5 ft. effective grounded, and a hand lead sounding of 34.5 was obtained by the tender. (Pos. 1m)

34
32j

Strip 33-48M, 32 ft. effective, cleared.

Lat. 42-19.98, Long. 71-00.04 — Strip 1-5 U, 15.5 ft. effective grounded. Hand lead soundings were taken at the buoys, and a sounding of 12 ft. reported at buoy No. 1. Since there was some doubt as to the correctness of this sounding, the End Launch spent considerable time

ADDENDA-- SECTION E.

Lat. 42-19.85, Long. 71-00.10 -- The position of the bow and stern of the wrecked barge BRINA D. PENDLETON is determined by positions 3s and 4s respectively. These positions are in Vol. 1, page 53 of the smooth tender record.

The vessel is resting on the bottom on a fairly even keel and the deck is above high water except for a short section at the bow.

This wreck is shown on the latest edition of chart No. 246 by the sunken wreck symbol.

wreck and
bow were
removed.
See H.S. 16th
Edition
No. 4, 1947

Corrected LAM. 10/5/47

sounding over the area and a least sounding - hand lead - of 18 ft. was obtained. (Pos 9 u in tender record) The tender sounding of 12 ft. was rejected as the area was later cleared with a deeper drag. Strip 14-19 V, 14.5 ft. effective, cleared.

Soundings are comparable to depths on H-7066(1945)

SECTION "B"

Lat. 42-20.47, Long. 70-54.14--- Strip 1-4 BA, 25.5 ft. effective grounded. Tender obtained a hand lead sounding of 26 ft. at indicated point of grounding and a sounding of 23 ft. just ahead of the drag. (Pos 1 ba and 2 ba). Chart 246 shows a depth of 27 ft. Strip 4-11 CA, 20.5 ft. effective, cleared.

23
120

Lat. 40-21.00, Long. 70-54.55--- Strip 1-7 AA, 18 ft. effective, hung on charted 15 ft. spot. On account of strong currents and proximity to dangers it was impossible to hold position while tender obtained sounding and position. Several attempts to take a drag over the spot failed because of current conditions. Strip 1-10 GA, 13 ft. effective, cleared.

17ft sounding by tender - 15ft on H-2146 (1893)
13

Lat. 42-20.94, Long 70-54.73--- Strip 1-7 AA, 18 ft. effective, grounded. Since the drag was also grounded on the charted 15 ft. spot, and the launches having difficulty in the current, a sounding and position was not obtained. Strip 1-10 GA, 17 ft. effective, cleared.

strip rejected, per hydrographer

Lat. 42-20.7⁵8, Long 70-54.36--- Strip 1-9 Z, 22 ft. effective, grounded between buoys N and 1. "K" note shows drag aground also between buoys 2 and 3 one minute before position 8 Z. When drag was picked up buoy No. 3 was found to have slipped, causing grounding noted by "K". Tender obtained a hand lead sounding of 22 ft. at indicated position of grounding between N and 1. (Pos. 1 z) Strip 45-49 EA, 21 ft. effective, covers both of these groundings and cleared.

on point of 24-ft curve

Lat. 42-20.80, Long. 70-54.6⁵⁸0--- Strip 1-4 FA, 12.5 ft. effective, grounded on charted 10 ft. shoal. Strip 5-14 FA, 10.5 ft. effective, cleared.

10-H-6643
10

Lat. 42-19.75, Long 70-55.03--- Strip 7-22 EA, shown on the boat sheet indicates that a 24 ft. effective drag was taken over the charted 18 ft. sounding. The drag caught on a lobster pot just before it should have grounded, which probably lifted the drag over the shoal. Positions 18-22 EA have been rejected in the record book because of lobster pots in the vicinity of the shoal.

Lat. 42-20.89, Long. 70-52.79 --- On strip 1-9 MA, section of drag set to 27.5 effective, should have grounded on charted 24 ft. spot. However, N buoy bumped over the shoal. This shoal falls within the limits of previous wire drag surveys, and was not topped this season.

Section rejected over shoal - 24 1/2 ft grdg on H-6609 (1940) W.D.

Lat. 42-20.62, Long 70-53.14 --- On Strip 10-15 MA, section of drag

set to 19.5 ft. effective grounded on known shoal.

On strip ⁶12-22 MA, section of drag set to 18 ft. effective grounded at the same position.

18 ft.

(14) by H-6609

This shoal falls within the limits of previous wire drag surveys and was not topped this season.

Lat. ⁴42-20.5³⁸, Long. 70-53.4⁰ --- On strip 23-25 MA, section of drag set to 28 ft. effective grounded on charted 29 ft. spot. Tender obtained a hand lead sounding of 25 ft. (Pos. 2ma) Drag grounded before lift tests were taken in the section and strip was plotted on boat sheet to show position of hang only.

25 ft

(22)

On strip 4-10 PA, section of drag set to 22 ft. effective cleared.

Lat. 40-20.53, Long. 70-53.50 --- Strip 1-3 PA, 23 ft. effective, grounded on ~~charted 29 ft. shoal~~. Tender obtained a hand lead sounding of 21 ft. (Pos. 1 pa)

21 ft

on point of 24-ft curve

~~On strip 4-10 PA, section of drag set to 18 ft. effective cleared.~~

SECTION "D"

Lat. 40-19.13, Long. 70-57.1⁰⁸ --- On Sept. 6, a drag strip which was rejected hung at this point. Tender was unable to obtain any sounding less than the drag setting. On Sept. 18, the HILGARD planted a small buoy and ran a series of lines over the area. A least sounding of 20 ft. was obtained on a small object. (Pos 1 B in sounding records)

20 ft

(14)

On strip 5-13 SA, 20 ft. effective, the N buoy bumped and cleared.

Strip 1-21 WA, section of drag set to 14 ft. effective passed over the spot.

Lat. ⁶42-18.7⁸, Long. 70-55.7⁰ --- On strip 1-17 TA, inclined section of drag between buoys 2 and 3, set to 29.5 and 35.5 respectively, grounded. Tender obtained a least sounding of 32.5 ft. (Post. 2ta)

On Sept. 20, the HILGARD planted a buoy and ran a series of lines over the area. A least depth of 30.5 was obtained. (Post 4 C of sounding records)

30 ft

(29)

The 1940 survey shows a sounding of 38 ft. near this point, and Chart No. 246 indicated a depth of approximately 40 ft.

Strip 11-17 UA, 29.5 effective, cleared.

Lat. ⁵42-18.5⁷, Long. 70-57.7⁶ --- On strip 1-21 WA, section of drag set to 17 ft. effective grounded. Tender obtained a least sounding of 16 ft. (Post. 1 wa)

16 ft

(14)

On strip 22-27 YA, section of drag set to 14 ft. cleared.
Chart 246 shows a depth of 18 ft.

Lat. 42-18.47, Long. 70-57.75--- Strip 12-21 YA, 14.5 ft. effective grounded. Tender obtained a hand lead sounding of 14 ft. (Pos. 1 ya) Chart 246 indicates a depth of about 18 or 19 ft.

14ft
13

Strip 19-24 ZA, 13 ft. effective, cleared.

Lat. 42-18.42, Long 70-57.63--- Strip 19-24 ZA, 13 ft. effective, grounded on charted 12 ft. shoal. In picking up the drag the Gude Launch obtained a fathometer sounding of 7 ft. (Pos 1 za in tender record)

7 ft

This sounding falls inside of navigating buoy and very close to a rocky ledge, and was not topped by drag.

SECTION "F"

This section is roughly defined by a line from can buoy No. 1-off the southeasterly point of Rainsford Island - to the northeasterly point of Peddocks Island, thence to Windmill Point, and thence approximately along the 18 ft. curve to the south and westward to the point of beginning.

Only a small area of this section immediately southward of Windmill Point was dragged this season. This area was dragged to investigate a reported*13 foot sounding in Lat. 42-17.95, Long. 70-55.25 which is now shown on charts of the area. *See page 2

Because this rock constitutes a danger to navigation, and because of the inconsistency in results obtained, the operations in this area are given considerable detail.

On October 3, working about the period of morning slack, three drag strips were taken over the position. A 1500-ft. drag consisting of five 300 ft. sections was used, and strips laid out so that the courses of the launches would parallel the current as closely as possible and so that the approximate center of the drag would pass over the position of the reported 13 ft. sounding. These strips, 1-5 ZA, 6-12 ZA, & 13-18 ZA - of 13½ ft. 14½ ft. and 15 ft. effective depth respectively, failed to hang or to show any indication of hanging and slipping over the rock.

On the afternoon of October 3, again working about the period of predicted slack, four strips were taken over the position.

Strip 35-40 ZA, 16.5*effective, failed to hang or to show any indication of hanging and slipping over. *Reduced to 15.5ft.

Strip 25-34 ZA, 17.5 ft. effective, hung but pulled clear before the tender could obtain soundings.

Strip 41-44 ZA, 15.5 ft. effective, failed to hang or show any indication of hanging and slipping over.

Strip 45-50 ZA- approximately 17.5 ft. effective - hung the rock but pulled clear before soundings could be obtained. This strip was rejected because of too great a variation in the lift tests obtained in the different sections of the drag.

On October 7, a development of the area was made to determine the least depth and extent of the rock. This development was made by the HILGARD, steering by ranges and using 808 fathometer. Bar checks were taken before and after the sounding. Tide reducers from the Deer I. gage, without time or range correction, were used. The record of this development is in Vol. 2 of the sounding records, Pos. 1 - 69 D. ~~Characteristic Soundings~~ have been plotted on the ~~end-launch boat sheet~~. *tracing in this report, on sheets and on H-6642, H-6643 (1940)*

A least depth of 15.5 ft. was obtained at the charted position of the 13 ft. sounding and a least depth of 22 ft. was obtained at the charted position of the 24 ft. shoal. (Approximately 90 meters N.E. of the charted 13 ft. sounding.)

On October 9, the tender spent one and one-half hours feeling out and drifting over the vicinity of the charted 13 ft. spot with hand leads. The least depth obtained was 16.5 ft. (Pos. 3cb).

On October 11, again working about the period of slack, strips 1-4 DB, 5-10 DB, 11-16 DB and 17-23 DB, of 14.5, 14.5, 16.5 and 17 ft. effective depth respectively were taken over the position without any indication of a hang. These strips have not been plotted on the boat sheet in order to avoid confusion, as all strips cover approximately identical areas. *reduced to 15 ft.

This is an area of strong currents which vary in intensity and sometimes in direction within the area of the drag strips. The current reverses quickly, and there is no appreciable period of weak currents at the time of predicted slack. This necessitated the use of sea anchors on one or both of the launches. Lift tests were not consistent across the drag, probably due to current conditions. Near the period of predicted slack -- the only period during which it is feasible to drag in the area -- it is probable that surface and sub-surface currents differ materially.

It will be noted that the least depth obtained by fathometer and that obtained by hand lead differ by one foot. The fathogram is definite and clear, and bar checks before and after sounding are in good agreement. I know of no reason to question the accuracy of the fathometer sounding.

The discrepancy between the least depth indicated by soundings

on the ^{reef} and that ^{the effective depth} indicated by drag must be due to variation in the lift between the time of the tests and the time the drag passed over the rock.

HOLIDAYS AND ADDITIONAL WORK

Because of the presence of lobster pots or other causes, some additional work remains to be done to complete the survey within the area of this seasons work. The necessary additional work is listed below by sections.

SECTION "E" --

(1) Channel between Spectacle I. and Long I. to be dragged to a junction with work south of Long I.

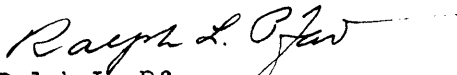
SECTION "B"

- (1) Black Rock Channel to be dragged to a junction with the Narrows.
- (2) Charted 14 ft. sounding - hung with 15.5 ft. effective on position 31 DA - to be cleared. (Lat. 42-19.85, Long. 70-54.68)
- (3) Hypocrite channel to be dragged to a junction with this seasons work to the eastward and westward.
- (4) Dragging of Narrows to be completed to a junction with previous surveys in the vicinity of Kelly Rock.

SECTION "D"

- (1) Split in vicinity of two buoys south of Gallups I. to be covered.
- (2) Additional strip off N.W. point of Georges I.
- (3) Work to southward of Georges Island to be completed to a junction with previous surveys and with the detached area to southward of Windmill Point dragged this season.

Respectfully submitted,


Ralph L. Pfau,
Lieut. Comdr. USC&GS

SIGNALS - SHEET WAHI 1146

TRIANGULATION

- ✓ ARMY - Army, East Stack, 1934
- ✓ BOSTON - Boston L. H. 1834
- ✓ CASTLE - Castle I. Monument, 1934
- ✓ CUP - Long Island Cupola, 1934
- ✓ DEER - Deer Island L. H. 1902
- ✓ EAST - Gallups Island, East Light, 1934
- ✓ FRONT - Spectacle I., Front Range 1904
- ✓ FALSE - False Spit Beacon, 1934
- GRAVES - Graves Island L. H.
- GREEN - Green Island Bolt. U.S.E.
- ✓ HEAD - Long I. Head, L. H., 1902
- ✓ LONG - Long I. Stack, 1934
- LUPS - Gallups I. Water Tank, 1941
- ✓ NIX - Nix Mate Beacon, 1847
- ✓ REAR - Spectacle I., Rear Range, 1904
- ✓ ROWS - Narrows Beacon, 1934
- ✓ ROCK - HARRY'S ROCK LIGHT, 1934
- STATION - Boston Degausing Station, 1943
- STACK - Spectacle Island Small Stack, 1934
- ✓ SON - Thompson I. Stack, 1934
- ✓ SQUA - Squantum Tank, 1934
- ✓ SOUTH - Gallups Island, South Light, 1934
- ✓ STONE - Narrows Stone Beacon, 1934
- ✓ STRAW - Hull Strawberry Hill Tank 1934
- TACK - (Incinerator Stack)
- TOW - Outer Brewster Island - 1943
- ✓ TEL - Nantasket Telegraph Hill Tower, 1934
- ✓ WIND - Windmill Point Light, 1934

TOPOGRAPHIC

- FOO ✓ - (Small Lookout House) T-5772
- FRO ✓ - (Mast on Georges Island) T-5775
- ✓ RIG ✓ - (Peak of roof of small house) T-5774
- ✓ SOP ✓ - (Cupola on House) T-5774

 POSITION

△ TOW (Outer Brewster I. 1943)

△ TOW (Outer Brewster I. SCR 1943)

Lat. 42° 20' 29.303 (904.1)
Long. 70° 52' 48.522 (1110.7)

1946
 STATISTICS - PROJECT 246
 SHEET WA-HI 1146

I	E	DAY LETTER	POSITIONS *	H.L. SDGS.	FATH. SDGS.	STA. MI. DRAG.
May	13	B	11	2	0	0.6
May	16	C	22	0	0	1.9
May	20	D	22	0	0	2.2
May	22	E	39	0	0	2.7
May	24	F	34	5	0	3.0
May	31	G	7	1	0	0.7
June	3	H	15	0	0	1.3
June	4	J	16	0	4	0.9
June	7	K	39	0	0	3.7
June	11	L	30	0	0	2.1
June	14	M	33	1	0	3.1
June	17	N	14	0	0	1.0
June	19	P	18	12	0	3.1
June	20	Q	11	1	0	0.7
June	21	R	24	0	0	2.3
June	24	S	26	6	0	2.6
June	25	T	17	0	0	0.9
June	26	U	36	8	0	2.6
June	27	V	31	15	0	1.7
June	28	W	11	0	0	0.8
July	5	X	21	0	0	1.5
July	9	Y	31	4	0	2.0
July	12	Z	18	1	0	0.6
July	16	AA	8	1	0	0.2
July	17	BA	4	2	0	0.3
July	18	CA	11	0	0	0.8
July	19	DA	32	0	0	2.4
July	24	EA	49	0	0	2.8
July	25	FA	21	0	0	1.0
July	26	GA	10	1	0	0.6
July	29	HA	10	0	0	0.7
July	30	JA	19	0	0	1.1
August	5	KA	11	0	0	0.6
August	6	LA	11	0	0	0.7
August	9	MA	25	1	1	1.6
August	12	NA	8	0	0	0.7
August	21	PA	28	1	0	2.4
August	26	QA	20	0	0	1.4
Sept.	17	RA	10	0	0	1.8
Sept.	19	SA	9	0	0	0.9
Sept.	20	TA	17	2	0	1.0
Sept.	23	UA	25	0	0	2.0
Sept.	24	VA	17	0	0	0.9
Sept.	25	WA	47	1	0	3.1
Sept.	26	XA	35	8	0	2.2
Sept.	27	YA	27	1	0	2.0
Oct.	3	ZA	44	0	1	3.0
Oct.	4	AB	18	0	0	1.4
Oct.	7	BB	6	0	0	0.7
Oct.	9	CB	0	3	0	0
Oct.	11	DB	23	0	0	1.0
TOTALS			1071	75	6	79.3
Total Square Statute Miles Draggd			7.5			

A D D E N D U M

to accompany


HYDROGRAPHIC SURVEY H-7158 WD (Field No. WA-HI 1146)

The soundings recorded in sounding volumes Nos. 1 and 2 have been plotted on overlays.

Wire Drag Strip 10-13 V (red), Latitude 42°20.07' and Longitude 70°58.07'. This strip which has an effective depth of 41 feet grounded on a spot where a sounding of 42 feet was obtained. (See Smooth Tender Record Vol. 1, page 60.)


40
see page 4

Respectfully submitted,


Isadore M. Zeskind
Cartographic Engineer

Norfolk, Va.
June 23, 1947

Approved and forwarded


George L. Anderson
Supervisor S.E. District

GEOGRAPHIC NAMES

Survey No. **H7158**

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
Massachusetts			(for title)						USGB	1	
Massachusetts Bay <i>not used</i>			— — — — —							2	
Boston Harbor			" "							3	
										4	
Outer Brewster										5	
Middle Brewster										6	
Great Brewster										7	
Calf Island										8	
Green Island										9	
Lovell Island										10	
Georges Island									USGB	11	
Peddocks Island									"	12	
Gallups Island									"	13	
Rainsford Island										14	
Long Island										15	
Spectacle Island										16	
Thompson Island										17	
Deer Island										18	
Windmill Pt.										19	
										20	
										21	
										22	
Appraisers Wharf			(location of tide staff)							23	
										24	
										25	
										26	
										27	

Names underlined in red are approved. 2/20/48 L. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. **H.7158**

Records accompanying survey:

Boat sheets ..²..; sounding vols.; wire drag vols. 21....;
bomb vols. 0....; graphic recorder rolls 0....;
special reports, etc. .2 overlays - soundings, 1 A & D sheet
.....

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

Number of positions on sheet
Number of positions checked
Number of positions revised
Number of soundings revised (refers to depth only)
Number of soundings erroneously spaced
Number of signals erroneously plotted or transferred
Topographic details	Time
Junctions	Time
Verification of soundings from graphic record	Time

Verification by *J. F. Jordan* Total time *.167..* Date *July 26, 1949*

Reviewed by *J. F. Jordan* Time *..23..* Date *July 26, 1949*

740M

TIDE NOTE FOR HYDROGRAPHIC SHEET

19 August 1947

~~Division of Hydrography and Topography:~~

Division of Charts: H. W. MURRAY

Plane of reference approved in
21 volumes of sounding records for

HYDROGRAPHIC SHEET 7158

Locality - Massachusetts Bay, Boston Harbor, Massachusetts

Chief of Party: Ralph E. Pfau in 1946
Plane of reference is mean low water reading
3.3 ft. on tide staff at Boston Harbor
16.3 ft. below B. M. 13 at Appraisers Wharf.

Height of mean high water above plane of reference is 9.5 feet.

Condition of records satisfactory except as noted below:

E.C. McKay
Section
Chief, ~~Division~~ of Tides and Currents.

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7158 W.D.

FIELD NO. WA HI 1146

Massachusetts, Boston Harbor
Surveyed from May to October, 1946 Scale 1:10,000
Project No. HT-246

Wire Drag
(Soundings by 808
Fathometer and leadline)

Control:
Visual fixes on shore signals

Chief of Party - R. L. Pfau
Surveyed by - R. L. Pfau
Plotted by - A. Kaupa
Verified by - G. F. Jordan
Reviewed by - G. F. Jordan, July 25, 1949
Inspected by - R. H. Carstens

1. Shoreline and Control

The control for this survey originates with triangulation stations of 1834 to 1943 and with topographic stations on air photographic surveys T-5772, T-5774 and T-5775 of 1938 to 1940.

The shoreline is from these air photographic surveys.

2. Junctions with Wire Drag Surveys

An adequate junction was effected with H-6609 (1940) W.D. in Nantasket Roads and in the area north of Middle Brewster and Outer Brewster Islands, except for the split in lat. $42^{\circ} 20.58'$, long. $70^{\circ} 53.28'$ where no overlap was made for a distance of about 20 meters.

An adequate junction was also effected with H-3780 (1915) W.D. east of Green Island and in South Channel.

The junction with H-7059 (1945) W.D. on the north will be considered in the review of that survey.

(H-7719)
 A. 1948 wire-drag survey within the area of the present survey and in areas adjoining on the south has not been received in the office at the present time.

3. Comparison with Hydrographic Surveys

Effective depths of this wire-drag survey do not conflict with depths on hydrographic surveys H-7066 (1945), H-6642 (1940) and H-6643 (1940) except in a minor instance in lat. 42° 19.50', long. 71° 00.26'. The effective depth of a 14-ft. strip here, clearing a 13-ft. sounding on H-7066 (1945), was left unchanged.

Other conflicts with these hydrographic surveys were disposed of during verification as follows:

- a. A 24-ft. clearance over the 17-ft. depth (H-7059) on a reef in lat. 42° 21.38', long. 70° 53.80' was rejected. The area was adequately covered by H-7059 (1945) W.D.
- b. The 10-ft handlead sounding on the present survey at the buoy in lat. 42° 20.51', long. 70° 58.25', falls in depths of 40 feet on H-6643 and was rejected. The position of the sounding and buoy was verified by a check angle, but the mud bottom characteristic obtained with the sounding discredits the possibility of a submerged reef or obstruction here. Soundings by the Corps of Engineers in 1945 (Hse. Doc. No. 244, 80th Cong. 1st Sess.) indicate that no change in the bottom has occurred since the survey of H-6643 in 1940.
- c. Soundings from closely spaced hydrographic lines on the present survey, plotted on overlay sheets in the Descriptive Report, have been carried forward to H-6642 and H-6643 and supersede some depths originating with those surveys together with certain soundings which had been carried forward to H-6643 from H-2146 (1892). The superseded soundings have been deleted from H-6642 and H-6643 and include the following soundings which are charted:

18 ft. in lat. 42° 19.36', long. 70° 56.55'
 24 ft. in lat. 42° 19.30', long. 70° 56.43'
 24 ft. in lat. 42° 19.27', long. 70° 56.70'
 23 ft. in lat. 42° 19.22', long. 70° 56.30'
 18 ft. in lat. 42° 17.94', long. 70° 55.25',
 was superseded on the June 1946 print of chart 246 by the 13-ft. sounding discussed in paragraph 4a (2) below.

Eighteen soundings shoaler than previously revealed depths were obtained on this survey, as for example: The 30-ft. in 38-ft. depths in lat. $42^{\circ} 18.78'$, long. $70^{\circ} 55.70'$, the 7-ft. in 12-ft. depths in lat. $42^{\circ} 18.42'$, long. $70^{\circ} 57.63'$, and the 37-ft. on an obstruction in 43-ft. depths in the channel in lat. $42^{\circ} 20.16'$, long. $70^{\circ} 56.80'$.

The bottom characteristics obtained at the numerous buoys supplement the few bottom characteristics shown on the previous hydrographic surveys.

4. Comparison with Chart 246 (Print date of Sept. 6, 1948)

a. Hydrography

Most of the charted hydrography originates with the surveys already discussed in paragraph 3 above. The following soundings originating with other sources are disproved by the present survey and should be disregarded:

- (1) The 10-ft. sounding charted in lat. $42^{\circ} 20.83'$, long. $70^{\circ} 54.79'$, from a Corps of Engineers survey in 1939 (Bp. 34886) was disproved by a drag strip with 17-ft. effective depth on the present survey. The 10 ft. is one of several soundings on line in disagreement with depths on H-6643 (1940). The 10 ft. falls in depths of 37 feet, and 29-ft. soundings on the same line fall on a reef covered by 3 feet on H-6643. out
10 ✓
- (2) The 13-ft. sounding charted in lat. $42^{\circ} 17.95'$, long. $70^{\circ} 55.27'$, is from Chart Letter No. 63 (1946) which reported the grounding of a tanker and is superseded by $15\frac{1}{2}$ ft. on the present survey. A least depth of $15\frac{1}{2}$ ft. was obtained from wire dragging and from closely spaced sounding lines and drift sounding. The $15\frac{1}{2}$ was cleared by an effective depth of 15 ft.

According to H. O. Notice to Mariners No. 41, 1947, the stranded barge and marking buoy shown on the present survey in the vicinity of lat. $42^{\circ} 19.85'$, long. $71^{\circ} 00.40'$, have been removed and, therefore, are not shown on the chart of print date noted above.

b. Aids to Navigation

Most of the floating aids on the present survey were in positions comparable to the charted positions; some, however, were apparently off-station at the time of the survey or, according to the survey records, were dragged from their stations by the wire drag. Comment regarding the adequateness of the buoys is therefore omitted.

c. Dredged Channels

There are no conflicts between the present survey and the chart with respect to charted controlling depths in channels.

5. Condition of the Survey

- a. The Descriptive Report and sounding records are complete and comprehensive.
- b. Smooth-plotting of the survey was well done.
- c. The attention to detail in the execution of this survey was very good. Soundings were obtained at groundings, and adequate lift tests were generally taken for each drag strip. There are no splits or insufficient overlaps within the area of the survey.

However, considerable difficulty was experienced in some areas because of strong and erratic current action on the drag, as discussed on pages 3 and 8 of the Descriptive Report. Comments on page 8 refer to dragging operations over the critical depth discussed in paragraph 4a (2) above.

The 36-ft. grounding in lat. 42° 20.50', long. 70° 58.02', was not verified by soundings. The tender ✓ found no obstruction here nor depths less than 40 feet. The grounding is plotted however, inasmuch as the drag hung at this position.

6. Compliance with Project Instructions


The survey adequately complies with the project instructions except as noted in paragraph 7 below.

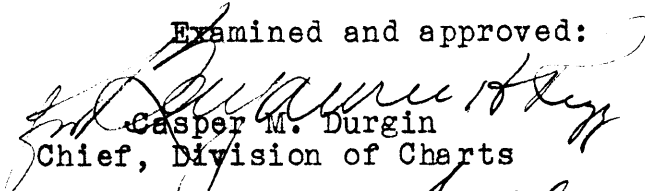
7. Additional Field Work Recommended


Wire drag surveys of 1948 are expected to have covered the splits and other areas at the southern and eastern limits of the present survey, as specified in Supplemental Instructions dated March 15, 1948.

Examined and approved:


H. R. Edmonston
Chief, Nautical Chart Branch

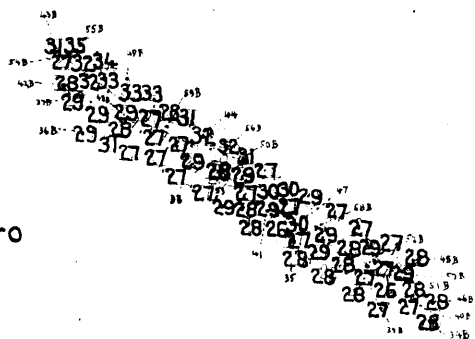

K. G. Crosby
Chief, Section of Hydrography


Casper M. Durgin
Chief, Division of Charts


W. M. Scaife
Chief, Division of Coastal Surveys

42°20'

42°20'



△ STONE

○ Fro

H-7158 (1946)W.D.

Scale 1:10,000

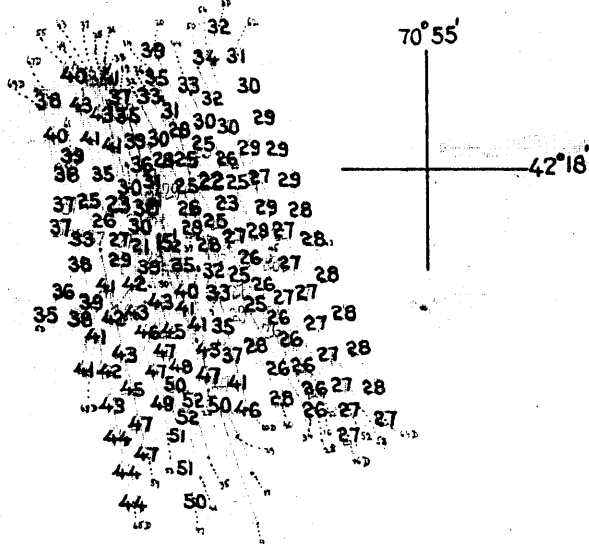
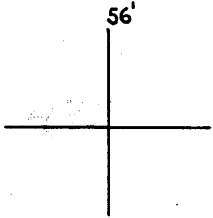
(These soundings are also shown on H-6643(1940))

42°19'

42°19'

70°56'

70°55'

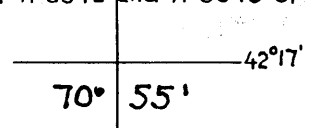
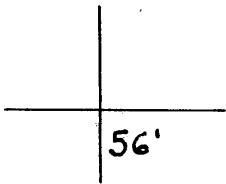


△ ROCK

H-7158 (1946) W.D.

Scale 1:10,000

(These soundings are also shown on H-6642 and H-6643 of 1940)



42° 20' 57

56

70 55 42° 20'

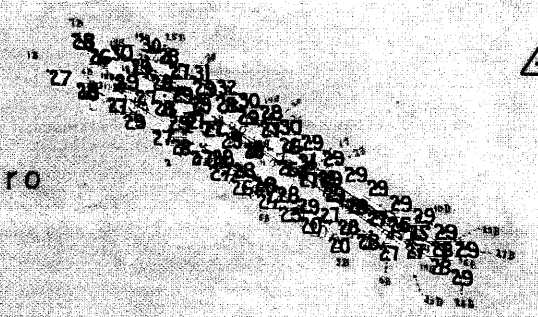
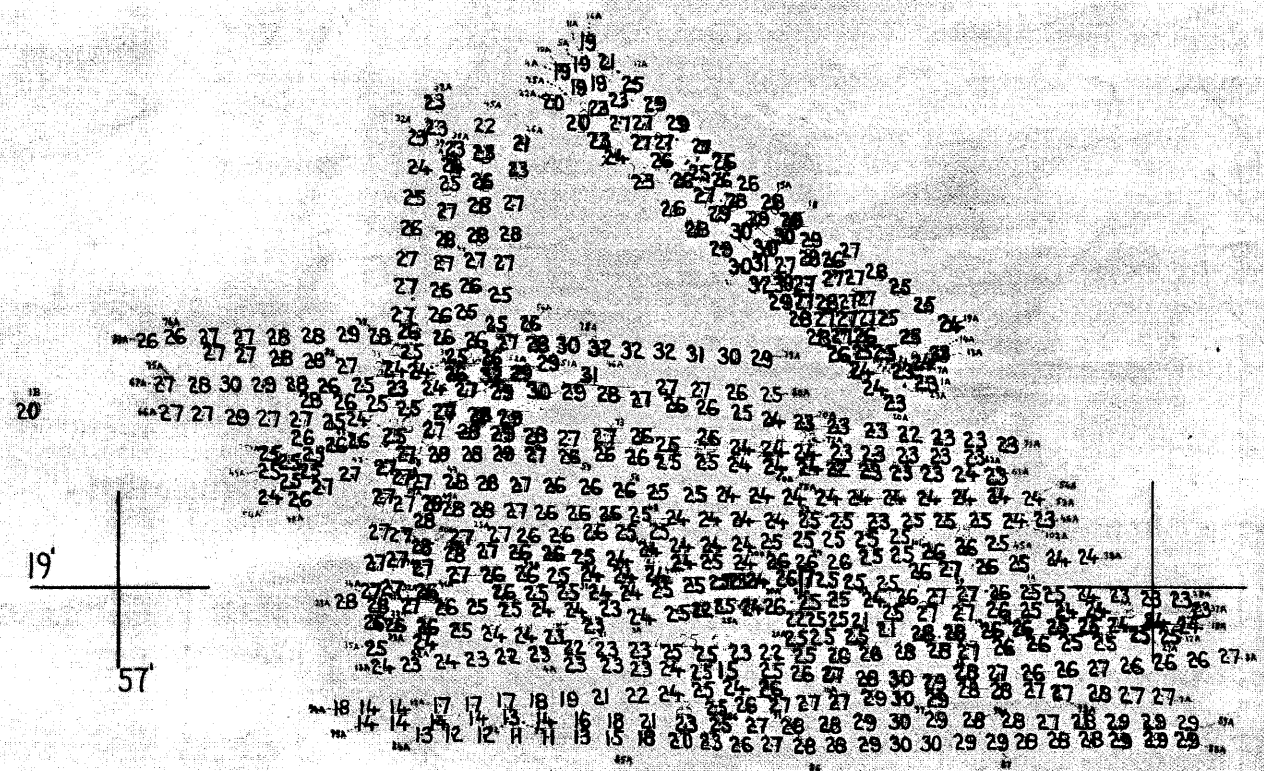
△ NIX

△ LUPS

△ EAST

△ STONE

○ Fro



*For additional
this area
See 7*

For addition
this area

See 7

ON ORIGINAL DOCUMENT

19' 57

42° 19' 70 55'



H-7158 (1946) W.D.

Scale 1:10,000

(These soundings are also shown on H-6643 (1940))

3033

NAUTICAL CHARTS BRANCH

SURVEY NO. *H 7158 W.D.*

H 7158

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
7/16/47	1207	<i>J.F.R.</i>	Before After Verification and Review <i>added 3 edgs. partially applied LAM.</i>
			Before After Verification and Review
10/3/47	246	<i>J.A. McGann</i>	Before After Verification and Review (<i>Gold chart 246</i>)
"	"	"	<i>added 14 edgs. partially applied LAM.</i>
			Before After Verification and Review
8/17/49	246	<i>L.F. Stegman</i>	Before After Verification and Review <i>partially applied</i>
22 Mar 50	246	<i>Wichols</i>	Before After Verification and Review
4/19/50	1207	<i>Reigani</i>	<i>Completely applied.</i> Before After Verification and Review <i>this ch. 246.</i>
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

Examined for chart 1207 - 7/16/47 JFR