

# WIRE DRAG 7719

6/8/53  
9/28/53

Diag. Cht. No. 1207-2

Form 504

U. S. COAST AND GEODETIC SURVEY  
DEPARTMENT OF COMMERCE

## DESCRIPTIVE REPORT

Type of Survey WIRE DRAG

Field No. Wa-H1 1348WD Office No. H-7719WD

### LOCALITY

State MASSACHUSETTS

General locality

Locality BOSTON HARBOR

194 8

CHIEF OF PARTY

W. E. MALNATE

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DATE JUN 15 1950

B-1870-1 (1)

WIRE DRAG  
7719

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

*L. O. Colbert, Director*

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. Wa-H1 1348WD

REGISTER NO. H-7719WD

State MASSACHUSETTS

General locality ~~APPROACHES TO BOSTON HARBOR~~

Locality ~~NANTASKET ROADS & HINGHAM BAY~~

Scale 1:10,000 Date of survey 4 Aug. to 6 Oct., 1948

Vessel WAINWRIGHT & HILGARD

Chief of Party W.F. MALNATE

Surveyed by W.F. MALNATE, W.J. CHOVAN & C.F. CHENWORTH

Protracted by A. KAUPA

Soundings penciled by A. KAUPA

Soundings in ~~fathoms~~ feet

Plane of reference MLW

Subdivision of wire dragged areas by A. KAUPA

Inked by A. KAUPA

Verified by

Instructions dated 17 FEB., 1940

Supplemental Instructions 15 Mar. 1948

Remarks:

DESCRIPTIVE REPORT

To Accompany

WIRE DRAG SURVEY FIELD NO. 1348 (WAHI)

PROJECT CS-246 BOSTON HARBOR, MASS.

Scale 1:10,000

1948

Ships WAINWRIGHT & HILGARD

W.F. Malnate, Comdg.

AUTHORITY

The survey was made in accordance with Supplemental Instructions Project CS-246 dated 15 March 1948 and Instructions for Project H.T. 246 dated 17 February 1940.

DATE OF SURVEY

Field work was begun on 4 August 1948 and ended on 6 October 1948. It consists entirely of wire dragging except for a small amount of hydrography done on 10 and 25 August in Hypocrite Channel and on 25 August in the Narrows.

SCOPE AND JUNCTIONS

This survey covers the areas of Boston Harbor and Approaches that had not been completed in previous seasons and specified in paragraphs 5 (a), (b), (c) and (d) and the areas specified in paragraphs 6 (a) and (b) of the Supplemental Instructions of 15 March 1948.

The deeper water area between Spectacle Island and Sculpin Ledge and the area between Sunken Ledge and Hingham Island, the most frequently used passage from Hingham Bay to Boston, were also wire dragged. Junctions were made at each end of these additional strips with areas of the survey in progress.

CONTROL

Natural objects previously located by triangulation, objects identified on published topographic sheets or previously used hydrographic sheets, and objects located by sextant angles were used for control.

## SURVEY METHODS

The area dragged consisted principally of channels and narrow passes, with either shoal water or dangers close to the edges, and marked with frequent navigational aids.

This made it necessary to use a short drag. The Ships WAINWRIGHT and HILGARD could not be slowed down enough to prevent excessive lift while towing a short drag and still remain maneuverable so were utilized only for laying out and picking up the drag.

The actual towing was done with two shallow draft mine yawls, that were borrowed from the U.S. Army. The 30' Mine Yawl #M-300 was used as the Guide Launch and the 26' Mine Yawl #M-306 was used as the End Launch throughout the season. A 16' skiff, powered with an outboard motor, was used to tend the drag until 18 August when a 20' motor launch was received from the U.S. Coast Guard. The 20' motor launch was used for the remainder of the season to tend the drag and proved considerably more satisfactory, particularly for investigating groundings and changing buoy settings.

Standard dual control methods were used. Lift was determined by tests from the tender, using a graduated rod coated with a mixture of white lead and tallow. Groundings were investigated, from the tender, with a hand lead. Additional investigations of several groundings were made, subsequent to the groundings, with the 808 type Fathometer.

## RECORDS

Standard records were kept.

Tide reducers and lift are entered to 0.5 feet, the diagrams are drawn in the record books and show effective depths in integral feet.

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

Boat sheets available at the beginning of the season did not cover the entire areas to be wire dragged. The small area in Hypocrite Channel was completely detached from the general area so old sheets of the Hypocrite Channel area, found at the Boston Field Station, were used for the field work there. As only a few days work was done in Hypocrite Channel, the records were kept as part of the complete seasons work and it is recommended that that area be plotted as an insert on the smooth sheet. The recommended layout for the smooth sheet is indicated on the Guide Launch boat sheet.

The additional investigations of groundings, by fathometer, are plotted on <sup>tracings in this report</sup> the End Launch boat sheet. Standard hydrographic records were kept for this part of the survey.

Predicted tides were used for the field reductions. Actual tide reducers and fathometer corrections have been entered in 0.2 feet for the final reductions. ~~These records have not been reduced.~~

### TIDES

Portable automatic tide gages were installed at Fort Dawes, Deer Island and at Windmill Point, Hull and were in operation continuously throughout the period of wire dragging. A staff gage was installed at Boston Light, Lighthouse Island and was read every fifteen minutes, when actual field work was in progress in Hypocrite Channel, in The Narrows and in Black Rock Channel.

Mean low water on the staff at these stations was determined by leveling to previously established bench marks.

All tide and leveling records have been forwarded to the Washington Office.

MLW as determined on the staff

at Fort Dawes, Deer Island is 3.0 feet;  
at Windmill Point, Hull is 2.5 feet;  
at Boston Light, Lighthouse Id. is 2.2 feet.

Values from the records at these stations were used without time or range corrections as follows:-

- (a) From Boston Light, Lighthouse Island Station, from 4 August to 25 August for the Hypocrite Channel area.
- (b) From the Fort Dawes, Deer Island Station, from 11 August to 2 September for the Black Rock Channel, The Narrows and Dorchester Bay areas.
- (c) From the Windmill Point, Hull Station from 3 September to 6 October in the Nantasket Roads, Quincy Bay and Hingham Bay areas.

In the few cases where drag strips continued into adjacent tidal areas, such as in the vicinity of Moonhead, tidal reducers were used from the station that was used for the major portion of that days work. An examination of the tides which occurred during these periods of the survey indicate that any corrections for time or height differences is practically negligible.

CURRENTS:

Currents in the channels and narrow passages were strong and made effective dragging difficult at certain stages. The narrowest passes, such as Nantasket Gut, West Gut, etc. were dragged during the short periods of slack current.

LOBSTER POTS:

Boston Harbor and its Approaches are areas of lobster fishing, particularly during the time of the year when it is most practicable for surveying, and is consequently heavily planted with lobster pots.

The area to be dragged was divided into sections. Charts showing these sections were posted at the principal lobster dealers and wharfs frequented by lobster fishermen. Sketches of the sections and notices of sections to be dragged were mailed to all the registered lobster and crab fishermen. Additional notices in the form of "Local Notices to Mariners" were posted from time to time, sufficiently in advance of dragging operations in definite sections, to permit removal of gear from that section. Regardless of notices, there was never a section from which all of the gear was fully cleared while dragging was in progress. This caused considerable delay because of time required to move visible gear or loss of time due to fouling on gear not visible on the surface.

Good Weather, ~~which occurred~~, made it possible to complete all work in a definite section before starting in another section. Clearances for resumption of normal fishing activities in the completed sections were promptly posted or advertised.

MISCELLANEOUS:

A new sludge disposal line, from Nut Island to Long Island in Quincy Bay, was being laid this season. The position of this line is indicated on the Guide Launch boat sheet. A blue print of the plan and list of co-ordinates of the pipe line, furnished by the Metropolitan District Water Supply Commission of Massachusetts, is being submitted as a part of the survey records.

*Print not with records, but sewerline is now charted.*

GROUNDINGS AND CLEARANCES:

HYPOCRITE CHANNEL

The following paragraphs marked with an asterisk (\*) can be disregarded. They report statistical information which is adequately revealed on the survey sheets.

LAT.  $42^{\circ}-20'-48''$ .6, LONG.  $70^{\circ}-53'-43''$ .9 - A  $7\frac{1}{2}$  foot sounding, rocky bottom (Pos. <sup>5-6</sup> a-day Lnch #306) was found while investigating the 16 foot sounding (1 c-day) obtained when investigating the drag grounding at position 34 C. A special investigation of this detached area was made with fathometer and handlead on c-day <sup>(bivac)</sup> (10 Aug. 1949) and again, near low water, on a-day <sup>(red)</sup> (25 August) to determine the

least depth. Due to its relative shoal depth and proximity to shore this shoal was not covered by the wire drag but was adequately investigated and the least depth found.

The grounding at position 20 B (Lat.  $42^{\circ}-20'-47''.2$ , Long.  $70^{\circ}-53'-52''.7$ ) with the drag at an effective depth of 30 feet, was also investigated on the above dates, with negative results. This position was cleared during the 1946 field season with a drag depth of 26 feet and was subsequently cleared with an effective depth of 23 feet during the current season. No shoal, of less depth than the maximum depth cleared through the passage through Hypocrite Channel, exists at this position. The grounding was probably caused by fouling on lobster fishing gear which was plenty in evidence in the general area. (Investigation by two launches found least depth of 40 ft.)

\* IAT.  $42^{\circ}-20'-58''.2$ , LONG.  $70^{\circ}-53'-44''.1$  - A depth of 18 feet was hung with the end weight dragging at 30 feet (Pos. 13 B) at outer edge of area to be dragged. This shoal sounding was not subsequently cleared.

\* IAT.  $42^{\circ}-20'-48''.6$ , LONG.  $70^{\circ}-53'-45''.2$  <sup>46.5</sup> - A 21 foot sounding (Pos. 2 b) hung on position 23 B was cleared by an effective depth of 20 feet. (not cleared - 16-ft sdg here on c-day)

\* IAT.  $42^{\circ}-20'-49''.2$ , LONG.  $70^{\circ}-53'-31''.2$  - A 28 foot sounding (Pos. 1 a) is outside the drag area and was not cleared this season. This sounding falls inside of the charted 30 foot curve.  
*Unimportant - Not shown on present survey*

#### THE NARROWS AND BLACK ROCK CHANNEL

D-day (11 August) - Groundings on this date were caused by bottom wire fouling lobster fishing gear. Soundings taken at the indicated groundings were all greater than depth of drag.

F-day (16 August) - Grounding <sup>(hang)</sup> at position 16 F (Lat.  $42^{\circ}-19'-11''.9$ , Long.  $70^{\circ}-55'-11''.3$ ) dragging 24 feet, least depth found by sounding was 28 feet. Area subsequently cleared by drag with effective depth of <sup>23</sup>24 feet. Line from lobster gear was found on bottom wire when drag was picked up.

\* J-day (20 August) - Grounding at position 65 J (Lat.  $42^{\circ}-19'-25''.2$ , Long.  $70^{\circ}-56'-11''.6$ ) was at outer edge of drag strip. A sounding of 17 feet (position 1 j) was found and falls inside the charted 18 foot curve.

K-day (21 August) - Grounding <sup>(hang)</sup> at position 6 K/dragging 19 feet, least depth found 33 feet. Covered with drag at effective depth of 19 feet. Grounding believed to have been caused by lobster pots which were prevalent in this area. (Not conclusive). <sup>Lat.  $42^{\circ}20.2$ , Long.  $70^{\circ}56.26$</sup>

\* L-day (23 August)-- Grounding at position 24 L with an effective depth of 24 feet (Lat.  $42^{\circ}-19'-48''$ .4, Long.  $70^{\circ}-54'-28''$ .8). Least depth of 22 feet found and cleared with drag at 21 feet.

\* M-day (24 August) - Groundings of end buoys at position 14 to 16 M are intentional groundings caused by carrying a deep drag through as far as possible.

\* Grounding at position 68 M (Lat.  $42^{\circ}-19'-29''$ .7, Long.  $70^{\circ}-55'-17''$ .7) is on an 8 foot shoal, position 3 m, and was cleared with an effective depth of 7 feet.

N-day (25 August) - Additional investigation, with fathometer only, was made during the period of low water in the vicinity of the 23-ft grounding which occurred on N-day at lat.  $42^{\circ}19'28''$ , long.  $70^{\circ}55'37''$ . Least depth of 27ft.

\* Grounding at position 21 N was an intentional ground on a known shoal. The shoal had been cleared previously on M-day.

#### DORCHESTER AND QUINCY BAY

P-day (26 August) - The groundings at positions numbers 19,28 and 24 P were in the identical spot and this was hung again at position 38 P and cleared when the hang was found to be on a log which was brought to the surface and disposed of.

The grounding at position 70 P was caused by trying to drag too close to the bottom so that the end weight which extended about one foot below the bottom wire would not pull through a known shoal area with a general depth of about 9 feet.

\* The grounding at position 86 P (Lat.  $42^{\circ}-18'-30''$ .6, Long.  $70^{\circ}-58'-50''$ .8) was on a 7½ foot spot which was not immediately found but was hung again on 33,40 and 47 T and cleared with an effective depth of 6 feet on W-day (8 September).

\* Q-day (27 August) - The groundings on this date were in known depths. Investigations of the groundings did not disclose anything less than charted depths. The groundings were due primarily to trying to drag as wide and as deep a strip as possible through a narrow channel.

\* R-day (30 August) - Grounding at position 25 R was due to same condition as on Q-day.

\* The grounding on 41 R was in general depth of 11 feet and was probably due to a sag in the drag while trying to make a turn. This area was cleared with an effective depth of 9 feet.



\* T-day (2 September) - The grounding at 11 <sup>F</sup> with an effective depth of 9 feet was not investigated as this area had been covered with an effective depth of 8 feet, <sup>in 9' depths</sup>

\* The grounding at position 33,40 and 47 T were in the same spot (Lat. 42°-18'-30".6, Long. 70°-58'-50".8) hung at position 86 P. A 7 foot sounding (position 3 t) was obtained when investigating the ground on this day. See P-day.

\* U-day (3 September) - At the grounding at position 20 U (Lat. 42°-17'-44".4, Long. 70°-58'-45".3) a depth of 14 feet was found (position 1 u). This was cleared with an effective depth of <sup>12</sup>13 feet.

\* The grounding at position 35 U was an intentional ground that occurred in carrying as deep an effective drag as far as possible in the area.

The charted 7 foot sounding (Lat. 42°-17'-51".8, Long. 70°-58'-12".8) and the 7 foot sounding (Lat. 42°-17'-38".2, Long. 70°-57'-56".0) from the hydrographic survey of 1945 were cleared in two directions with an effective depth of 9 and 10 feet on W-day (8 September) and Y-day (10 September). See Review, pars. 3a(2), 3b(1)

#### NANTASKET ROADS AND HINGHAM BAY

\* Z-day (13 September) - The grounding at position 42 Z was in a large area of 30 foot soundings (positions 1 to 4 z day) and was cleared with an effective depth of 28 feet.

\* At the grounding at 57 Z a 26 foot sounding, rocky bottom (position 5 z) was found (Lat. 42°-17'-56".4, Long. 70°-57'-02".6) and was cleared with an effective depth of <sup>25</sup>24 feet.

\* AA-day (14 September) - A 17 foot sounding at position 2 aa (Lat. 42°-17'-20".0, Long. 70°-55'-41".4) was cleared with an effective depth of 16 feet.

\* BA-day (15 September) - A 17 foot sounding, hard bottom (position 1 ba) the ground at position 14 BA was cleared with an effective depth of <sup>16</sup>16 feet.

\* A <sup>23</sup>24 foot sounding, rocky bottom at position 4 ba (Lat. 40°-17'-39".8, Long. 70°-57'-00".0) was cleared with an effective depth of 21 feet.

\* The 21 foot soundings on the edge of the channel (positions 8 & 9 ba) <sup>18</sup>the grounding at 65 BA were cleared with an effective depth of 17 feet.

\* CA-day (16 September) - The <sup>23</sup>22 foot sounding, rocky bottom in Lat. 42°-18'-09".8, Long. 70°-56'-46".0 (position 1 ca) grounding position 15 CA was cleared with an effective depth of 21 feet.

\* DA-day (17 September) - The grounding at 49 DA was an intentional ground throughout the drag for the purpose of wrapping a shoal.

\* The positions subsequent to <sup>64</sup>65 DA were rejected as the drag grounded in a charted shoal area which was not indicated in last hydrographic survey. A preliminary investigation with handlead (positions 1 to 3 da day) proved the existence of this shoal area and it was developed by fathometer soundings on Sheet (Field Number WAHI 1248).  
H-7715

<sup>15</sup>15 1/2 \* FA-day (23 September) - The grounding at position 6 FA was on a 16 foot spot (position 1 fa) and was near the north edge of a known shoal that fell outside of the area to be dragged.

\* The grounding at position 49 FA was an intentional ground on the 29 foot shoal in Lat. 42°-18'-30", Long. 70°-55'-36" which had been cleared the previous season.

\* GA-day (27 September) - The grounding at position 30 GA was caused by trying to widen the dragged area through West Gut and was in a known shoal area. The least depth found was 10 feet (position 1 ga) which was not cleared with the drag.

\* The grounding at position 43 GA was on a small shoal with a least depth of 14 feet (positions 2, 3 & 4 ga) and was cleared with an effective depth of 14 feet.

\* HA-day (28 September) - The grounding at position 9 HA was on a 25 foot spot, hard bottom (position 1 ha) and a 24 foot spot, rocky bottom (position 2 ha). Both depths were cleared with an effective depth of 23 feet.

\* The grounding at position 24 HA is an intentional ground in wrapping the 16 foot shoal in Nantasket Gut. The 16 foot shoal was subsequently cleared with an effective depth of 14 feet.

\* The grounding at 36 HA is on the shoulder of the <sup>15</sup>19 foot shoal about 400 meters S x E of Windmill Point. No investigation was made of this grounding as the shoal had been completely investigated and cleared in the previous drag season.

\* The grounding at position 47 HA was an intentional ground due to carrying a deep effective depth as far as possible in the area.

\* JA-day (29 September) - A <sup>23</sup>28 foot handlead sounding (position 1 ja) was found when investigating the grounding at position 10 JA and was cleared with an effective depth of 24 feet.  
42° 16.91, long 70° 56.32'

\* A 23 foot handlead sounding (position 2 ja), rocky bottom was found at the grounding at position 22 JA and was cleared with an effective depth of 21<sup>1</sup>/<sub>2</sub> feet.

\* The groundings at position 34 and 37 JA were on the north side of the 15 foot shoal about 400 meters S x E of Windmill Point and were the result of trying to pass a deep drag to close to the shoal.

\* On investigating the grounding at position 61 JA a 22<sup>1</sup>/<sub>2</sub> foot, hand lead sounding (position 4 ja) was found. This was cleared with an effective depth of 19<sup>1</sup>/<sub>2</sub> feet on two separate occasions.

\* KA-day (30 September) - The groundings at positions 6 KA and 33 KA were groundings on the 23 foot shoal (position 2 ja).


\* The grounding at 44 KA was an intentional ground carrying a deep effective depth as far as possible.

\* The grounding at 55 KA was in 26 feet, mud bottom (position 1 ka) and was cleared with an effective depth of 23 feet.

ADDITIONAL:

\* A 26 foot sounding (position 1 aa), rocky bottom, in Lat. 42°-18'-15".5, Long. 70°-56'-14".0 found when drag grounded at the beginning of AA day (14 September) was cleared with an effective depth of 20<sup>1</sup>/<sub>2</sub> feet.

WFM/1

  
W. F. Malnate,  
Lt. Comdr., USC&GS  
Commanding Ships  
HILGARD & WAINWRIGHT.

SHIPS WAINWRIGHT & HILGARD - USC&GS

COPY

10 th Floor Customhouse - Boston 9, Mass.

12 August 1948.

To: THE DIRECTOR,  
US Coast and Geodetic Survey  
Washington 25, DC.

Through: Supervisor, Northeast District - USC&GS.

Subject: Condition of Measured Mile Course, Peddocks Island.

Reference: SUPPLEMENTAL INSTRUCTIONS, PROJECT CS-246,  
15 March 1948 ; Page 5, Paragraph 24.

The triangulation stations marking both ends of the measured mile were recovered and found in good condition.

NORTHEAST MILE, 1936 and RM No. 1 were recovered as described in 1936. The front range is a 4" x 4" pole, painted with black and white horizontal stripes on the seaward face and is set vertically 1.5 meters northwesterly of RM No. 1 and on range with the marks. The rear range is a 6 x 6 foot diamond shaped target, painted white with a 4" black vertical stripe in the center and is set 1.87 meters southeastward of the station mark on range with the marks. The distance between the range targets is approximately 26.2 meters.

SOUTHWEST MILE, 1936 was recovered as described in 1936 with the following exceptions; RM No. 1 is 84.54 feet, not meters, (25.76 m.) from the station. The front range is marked by an iron pipe, painted white and set vertically 2.76 meters northwesterly of RM No. 1 and on range with the marks. The rear range is marked by two 6 x 6 foot diamond shaped targets set on range with the marks. One target is painted half red and half white, divided vertically and is set 32.95 meters southeastward of the station mark. The second and aftermost target is painted white and is 61.15 meters southeastward of the station mark. The distance between the front and second rear range target is approximately 89.7 meters.

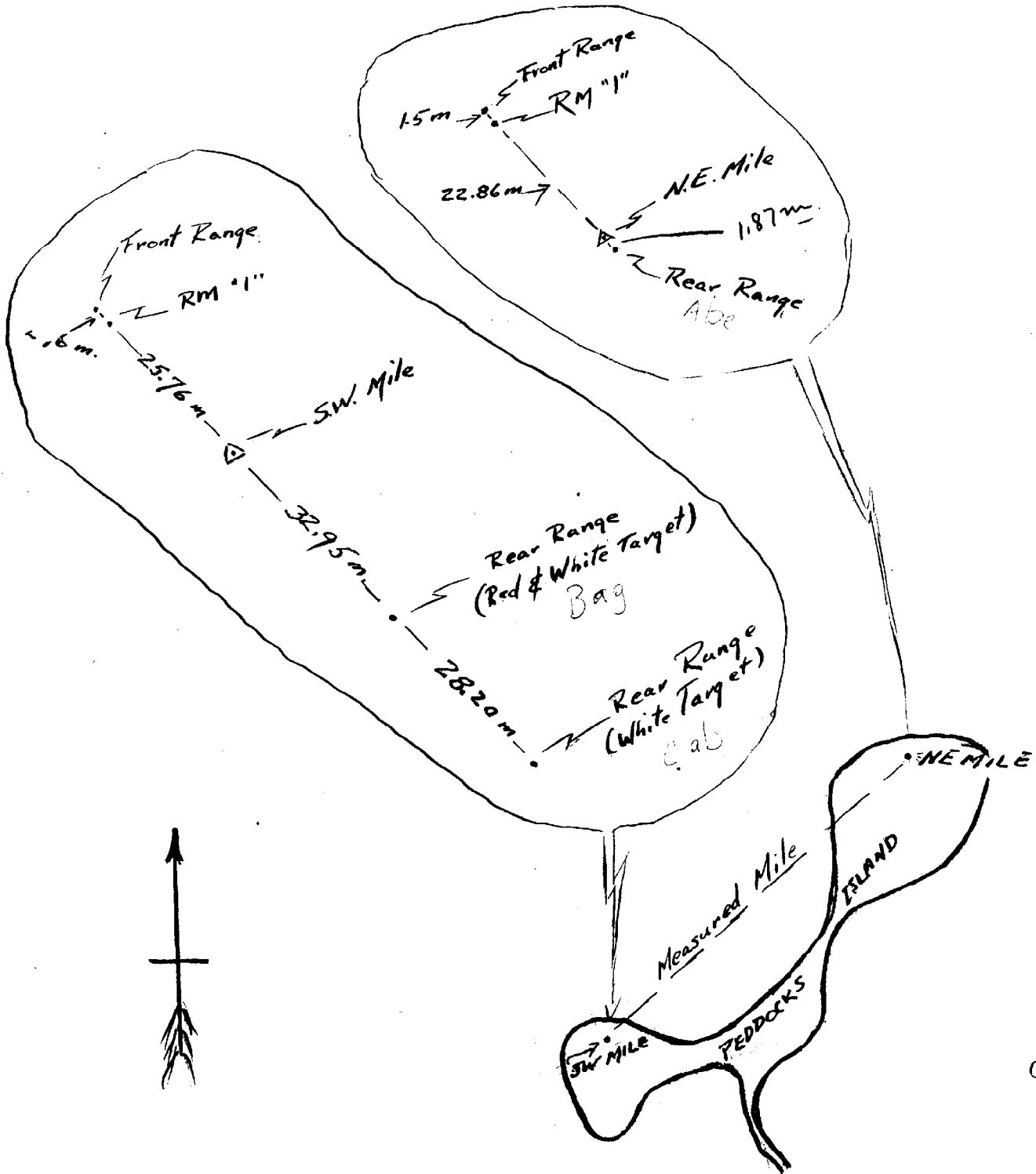
Encl: Sketch  
Form 526 (2) - <sup>Sent to 43</sup> <sub>12/21 - 6.F.d.</sub>  
c/c Sup. NED.

W. F. Malnate,  
Lt. Comdr., USC&GS  
Commanding Ships  
WAINWRIGHT & HILGARD.

COPY

SKETCH TO ACCOMPANY  
 REPORT  
 CONDITION OF MEASURED MILE  
 PEDDOCKS ISLAND

COPY



COPY

1948  
 STATISTICS  
 for  
 WIRE DRAG SHEET # WA-HI 1348  
 PROJECT CS-246

	DATE	DAY LETTER	NO. OF POSITIONS	SOUNDINGS H.L.	STAT. MI. WIRE DRAG
Aug.	4	A	47	2	0.4
"	9	B	82	2	0.9
"	10	C	105	1	2.2
"	11	D	72	4	1.1
"	13	E	43	0	0.7
"	16	F	38	3	0.7
"	18	G	65	0	2.2
"	19	H	90	1	2.5
"	20	J	143	1	4.1
"	21	K	33	1	0.8
"	23	L.	49	1	1.0
"	24	M	198	3	4.5
"	25	N	49	3	1.0
"	26	P	177	10	5.3
"	27	Q	73	10	1.7
"	30	R	91	10	1.9
"	31	S	20	0	0.6
Sept.	2	T	160	4	4.9
"	3	U	141	1	3.3
"	7	V	174	0	4.1
"	8	W	124	0	1.7
"	9	X	144	1	3.3
"	10	Y	77	2	1.7
"	13	Z	108	6	1.8
"	14	AA	158	4	3.3
"	15	BA	148	11	1.6
"	16	CA	186	1	6.2
"	17	DA	140	4	2.7
"	22	EA	65	3	1.4
"	23	FA	97	1	1.9
"	27	GA	150	5	3.9
"	28	HA	142	2	4.0
"	29	JA	122	7	2.9
"	30	KA	250	1	6.1
Oct.	1	LA	36	0	1.0
"	5	MA	89	0	2.6
"	6	NA	88	0	2.8
TOTALS			3947	103	92.8

Total square statute miles dragged - 9.5

(Continued)

## INVESTIGATIONS WITH FATHOMETER

DATE	DAY LETTER	LAUNCH NO.	NO. OF POSITIONS	STAT. MI.
Aug. 10	c	M-300	48	3.7
" 25	n	M-300	49	3.9
" 25	a	M-306	<u>38</u>	<u>3.5</u>
		TOTALS	135	11.1

FLOATING AIDS TO NAVIGATION

H- 7719

<u>BUOY</u>	<u>LAT.</u>	<u>LONG.</u>	<u>DEPTH</u>	<u>POS. NO.</u>	<u>DATE</u>
WC "A" (discontinued)	42-19.3✓	70-56.14✓	-	35G	8/18/48
WC "B" ( " )	42-19.27✓	70-56.23✓	-	34G	"
SEVENTY-FOUR BAR BUOY 14	42-20.0✓	70-56.28✓		18K	8/21/48
NARROWS CHANNEL BUOY 7	42-19.27✓	70-55.44✓		8H	8/19/48
NARROWS BUOY 12	42-19.31✓	70-55.27✓		1H	"
KELLEYS ROCK BELL BUOY 10	42-19.24✓	70-54.71✓		40H	"
GEORGES ISLAND ROCKS LIGHTED BUOY 5	42-19.15✓	70-55.03✓		10F	8/16/48
BOSTON MAIN CHANNEL LIGHTED BUOY 1	42-19.87✓	70-59.57 <sup>4</sup> ✓		1P	8/26/48
THOMPSON ISLAND FLATS BUOY 3	42-19.07✓	70-59.37✓	17.5✓	87P	"
SPECTACLE ISLAND SOUTH SPIT BUOY 6	42-19.09✓	70-59.26✓	15.0✓	88P	"
MOONHEAD BUOY 1 (disc.)	42-18.54✓	70-58.73	13.6✓	5P	"
LONG ISLAND SOUTH OBSTRUCTION BUOY 4	42-18.56✓	70-58.75✓	10.5✓	7P	"
LONG ISLAND SHOAL BUOY 2	42-18.49✓	70-58.47✓	<del>16.4</del> <sup>19</sup>	1V	9/7/48
SCULPIN LEDGE BUOY 2	42-18.85✓	70-58.69✓		31R	8/30/48
*LOWER MIDDLE CHANNEL BUOY	42-18.19✓	70-56.81✓		1x	9/9/48
*PEDDOCKS ISLAND CHANNEL BUOY 1	42-17.66✓	70-57.01✓	28 <sup>1</sup> / <sub>2</sub> <sup>23</sup>	4ba	9/15/48
*PEDDOCKS ISLAND CHANNEL BUOY 2 (discontinued)	42-17.53✓	70-57.84✓		62w	9/8/48
PEDDOCKS ISLAND/BUOY 3 CHANNEL	42-17.29✓	70-57.29✓	26.5	36NA	10/6/48
PEDDOCKS ISLAND CHANNEL LIGHTED BUOY 5	42-16.98✓	70-57.03✓	28.5	76GA	9/27/48
PEDDOCKS ISLAND CHANNEL BUOY 6	42-16.88✓	70-56.85✓	30.0	30MA	9/22/48
*WRECK ROCK BUOY 4	42-17.17✓	70-57.58✓	28.0	2x	9/9/48
WEST CUT LIGHTED BUOY	42-17.16 <sup>6</sup>	70-57.37 <sup>4</sup>	28.5	65BA	9/15/48
NANTASKET GUT BUOY 2	42-18.16✓	70-55.55✓		20HA	9/28/48
WC "A" (discontinued)	42-17.58✓	70-55.09✓	37.0	25MA	10/5/48
SIXTEEN FOOT SPOT BUOY 1	42-17.25 <sup>7</sup>	70-55.69✓	17.5	54DA	9/17/48
BUMPKIN ISLAND LIGHTED BUOY 1	42-17.44	70-55.87	35.0	1MA	10/5/48
BINGHAM CHANNEL BUOY	42-16.46	70-53.88	20.5	181A	10/1/48
BINGHAM CHANNEL BUOY 4	42-16.44	70-53.97	15.5	161A	10/1/48
CROW POINT FLATS N. BUOY	42-16.88	70-54.68	17.5	51A	10/1/48

NOTE: Buoys not marked by an asterisk were located by cuts from the Guide and End launches.

† The positions of the buoys were estimated while dragging. Disregard in favor of positions on H-7715



LIST OF SIGNALS  
To Accompany

WIRE DRAG SURVEY H-7719WD (Field No, Wa-Hi 1348WD)

TRIANGULATION STATIONS

ANT	DEER ISLAND, LIGHTHOUSE, 1902-34
AT	SPECTACLE ISLAND, REAR RANGE, 1904-34
BOS	BOSTON LIGHTHOUSE, 1834-1934
CUP	LONG ISLAND, CUPOLA, 1934
EAR	SQUANTUM, TANK, 1934
EAT	GREAT QUINCY, (MOON HEAD) TANK, 1916-34
GAL	GALLUPS ISLAND, EAST LIGHT, 1934
HAR	HARRYS ROCK, LIGHT, 1934
HEAD	LONG ISLAND HEAD, LIGHTHOUSE, 1902-34
IN	SPECTACLE ISLAND, FRONT RANGE, 1904-34
IT	FALSE SPIT, BEACON, 1934
LA	GALLUPS ISLAND, CUPOLA, 1934
LED	SUNKEN LEDGE, LIGHT, 1934
LONG	LONG ISLAND, STACK, 1934
LOT	WINDMILL POINT, LIGHT, 1934
MATE	NIX*MATE, BEACON, 1847-1934
MON	CASTLE ISLAND, MONUMENT, 1934
NAR	NARROWS, BEACON, 1934
NUT	QUINCY, NUT ISLAND, STACK, 1934
PIG	PIG ROCK, LIGHT, 1934
RAV	THE GRAVES, LIGHTHOUSE, 1909-34
RAW	HULL, STRAWBERRY HILL TANK, 1934
RIV	FORE RIVER, LIGHT NO. 2A, 1934
SON	THOMPSON ISLAND, STACK, 1934
SOUTH LT.	GALLUPS ISLAND, SOUTH LIGHT, 1934
STACK	SPECTACLE ISLAND, SMALL STACK, 1934
SUN	SUNKEN LEDGE, BEACON, 1934
TOW	NANTASKET, TELEGRAPH HILL, TOWER, 1934
HOW	NANTASKET, W.B.Z. RADIO, WEST TOWER, 1943
	N.E. MILE, 1936- <del>48</del>
	S.W. MILE, 1936- <del>48</del>

LIST OF SIGNALS  
To Accompany

WIRE DRAG SURVEY H-7719 WD (Field No. Wa-Hi 1348 WD)

TOPOGRAPHIC STATIONS

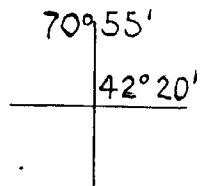
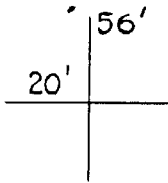
SOURCE	<u>T-5775</u>	<u>T-5776</u>	<u>T-5771</u>	<u>T-5774</u>	<i>Present Survey</i> <u>D.R.</u>
	GIN	KIN	AQUA	WAX	ABE
	SUM	YELP		MID	CAB
	SUD				BAG
	DUD				
	RID				
	OWN				

PRICKED TOPOGRAPHIC POINTS

SOURCE	<u>T-5775</u>	<u>T-5776</u>	<del>H-7066</del> <del>CHART 246</del>
	PEG	PIG ROCK	PEN
	AND		
	LAB		

HYDROGRAPHIC STATIONS

SOURCE	<u>H-7715</u>	<u>H-7066</u>
	COO	PEN
	CUE	
	FUN	
	YAM	
	DOC	
	POD	



# THE NARROWS

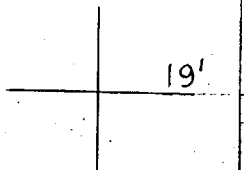
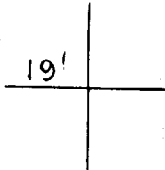
H-7719 (1948) W.D.

scale 1/10,000

(necessary soundings transferred  
to smooth sheet and H-6643 (1940))

△ GAL

△ NAR



42° 21' 54'

53'

*least depth 2170 (a-day)*



⊙ Mid

H-7719 (1948) W.D

scale 1/10,000

HYPOCRITE CHANNEL

(necessary soundings transferred  
to smooth sheet and H-6643(1940))

20'

54'

70° 53'

ADDENDUM  
To Accompany

WIRE DRAG SURVEY H-7719WD (Field No. Wa-Hi-1348WD)

GENERAL

Positions of floating aids to navigation were taken from survey H-7715 where needed to supplement data furnished on this survey. *No - not inked*

Drag strip 85 to 94M was not smooth plotted as the path of the End Vessel appeared irregular and unlikely. The area was adequately covered on other drag lines.

Hydrographic development, recorded in the smooth tender records (positions 2 to 48c and 1 to 49n), is being submitted on two separate overlays, *attached.*

In order to minimize congestion in certain areas the following 17 drag strips are being submitted on an overlay: *(filed with fathograms)*

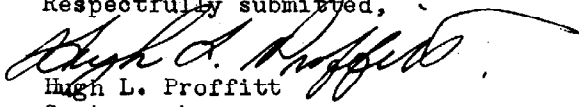
28 to 41H	51 to 58W	7 to 21FA	34 to 44KA
1 to 11T	59 to 64W	1 to 14GA	56 to 74KA
34 to 40T	21 to 24BA	15 to 20GA	
41 to 47T	20 to 31CA	35 to 37JA	
75 to 83T	57 to 65CA	1 to 6KA	

DISCREPANCIES

Lat. 42-17.75' Long. 70-56.85' The 17½ foot sounding, obtained on tender position lba, does not appear to be cleared on line 15 to 20BA. *cleared by 15 ft. strip 57-65CA*

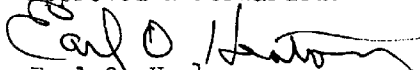
Lat. 42-16.82' Long. 70-55.98' Grounding at this point, at 19-23 feet was in an inclined section. This grounding was cleared on line 34 to 44KA at 21 feet. *Section rejected - cleared at 23 ft. over 23 ft sounding on H-7715*

Respectfully submitted,

  
Hugh L. Proffitt  
Cartographer

Norfolk, Va.  
7 June 1950

Approved & Forwarded:

  
Earl O. Heaton  
Captain

C  
C  
P  
Y

CORPS OF ENGINEERS, U. S. ARMY  
Office of the Division Engineer  
New England Division  
Post Office Box 2316

Address reply to: Boston, Mass.  
Division Engineer

Refer to file No. NEDGW

16 January 1951

The Director  
U. S. Coast and Geodetic Survey  
Washington, D. C.

Dear Sir:

This office expects to conduct surveys and investigations in Weymouth Fore River, Massachusetts preparatory to possible future dredging. It is believed that the locations of the shoals outlined in yellow on the enclosed photostat of U.S.C.&G.S. Chart 246 have been determined from your field surveys.

It would be greatly appreciated if this office could obtain copies of your field sheets of these shoal areas.

FOR THE DIVISION ENGINEER:

Very truly yours,

/s/ J. E. ALLEN  
Chief, Engineering Division

1 incl:  
Photostat,  
U.S.C.& G.S. Chart 246

GEOGRAPHIC NAMES

Survey No. H-7719 WD

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
<u>Massachusetts</u>			(for title)							USGB	1
<u>Boston Harbor</u>			"	"							2
											3
<u>Hypocrite Channel</u>											4
<u>Black Rock Channel</u>											5
<u>Lovell Island</u>											6
<u>The Narrows</u>											7
<u>Georges Island</u>										USGB	8
<u>Nantasket Roads</u>										"	9
<u>Nantasket Gut</u>										"	10
<u>Hingham Bay</u>											11
<u>West Gut</u>											12
<u>Pedlocks Island</u>										USGB	13
<u>Quincy Bay</u>											14
<u>Moon Head</u>											15
<u>Long Island</u>											16
<u>Western Way</u>											17
<u>Dorchester Bay</u>											18
<u>Spectacle I</u>											19
<u>Weymouth Fore River</u>											20
											21
											22
											23
											24
											25
											26
											27

Names underlined in red are approved. Have listed names used in descriptive report and those of principal waterways or channels. 6-29-50

L. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7719 WD

Records accompanying survey:

Boat sheets .4...; sounding vols. 4.....; wire drag vols. 21.....;  
 bomb vols. ....; graphic recorder rolls 1 envel.;  
 special reports, etc. 1 A&D sheet; 2 Overlays, Hydrography; 1 Overlay, Wire Drag;  
 1 Envel., containing drag strip overlays; 4 Misc. prints, vicinity of Logan Airport

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

Number of positions on sheet	4002
Number of positions checked	57
Number of positions revised	6
Number of soundings revised (refers to depth only)	2
Number of soundings erroneously spaced	
Number of signals erroneously plotted or transferred	
Topographic details (includes adding Sounding to A&D sheet)	Time 16
Junctions	Time 48
Verification of soundings from graphic record	Time

Verification by *J. Evans* Total time 319 Date 29 Dec. 1950

Reviewed by *J. F. Jordan* Time 68 Date 3 Jan 1951

269  
60  
311



RHC

# TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~

5 July 1950

Division of Charts: R. H. Carstens

Plane of reference approved in  
25 volumes of sounding ~~records~~ and wire drag records for

HYDROGRAPHIC SHEET 7719

Locality Boston Harbor, Massachusetts

Chief of Party: W. F. Malnate in 1948

Plane of reference is mean low water, reading  
2.5 ft. on tide staff at Hull (Windmill Pt.)  
13.5 ft. below B. M. 1 (1940)

2.2 ft. on tide staff at Boston Light, *Lighthouse Island*  
25.5 ft. below B. M. 8 (1916)

3.0 ft. on tide staff at Fort Dawes, Deer Island  
15.0 ft. below B. M. 1 (1945)

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

Hull (Windmill Pt.)	= 9.2 feet
Boston Light, Lighthouse Island	= 8.9 feet
Fort Dawes, Deer Island	= 9.3 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-7719 W.D.

FIELD NO. WA-HI 1348 W.D.

Massachusetts, Boston Harbor

Surveyed from August to October, 1948

Scale 1:10,000

Project No. CS-246

Wire Drag:

Control:

(Soundings by 808 Fathometer  
and leadline)

Visual fixes on shore signals

Chief of Party - W. F. Malnate

Surveyed by - W. F. Malnate, W. J. Chovan and C. F.  
Chenworth

Plotted by - A. Kaupa

Verified by - L. V. Evans

Reviewed by - G. F. Jordan, 23 January 1951

Inspected by - R. H. Carstens

1. Shoreline and Signal Control

The shoreline is from air photographic surveys T-5771, T-5774, T-5775 and T-5776 of 1938 to 1940 except for the revised shoreline (red) taken from contemporary survey H-7715 (1948) in the vicinity of lat.  $42^{\circ} 16.8'$ , long.  $70^{\circ} 57.3'$ .

The control originates with triangulation stations of 1834 to 1943 and with topographic stations on the air photographic surveys mentioned above. Hydrographic stations located by sextant angles on the present and contemporary hydrographic surveys furnished additional control.

2. Junctions with Wire Drag Surveys

Adequate junctions were effected with H-7158 (1946) W.D. and H-6609 (1940) W.D. except for small splits in lat.  $42^{\circ} 18.25'$ , long.  $70^{\circ} 58.6'$  and at the navigation buoys in lat.  $42^{\circ} 19.28'$ , long.  $70^{\circ} 56.25'$  and lat.  $42^{\circ} 19.85'$ , long.  $70^{\circ} 59.55'$ . Slight overlaps were also effected with H-7059 (1945) W.D. and H-3780 (1915) W.D.

3. Comparison with Hydrographic Surveys

a. Effective depths on this wire-drag survey do not conflict with depths on hydrographic surveys H-7066 (1945), H-6642 (1940), H-6643 (1940) and unverified survey H-7715 (1948) except for minor 1-ft. discrepancies as follows:

- (1) A 14-ft. sounding on H-6643 in lat.  $42^{\circ} 18.02'$ , long.  $70^{\circ} 58.32'$ , was cleared by 15 feet on the present survey. The graphic record reveals that the sounding was possibly on a boulder. The sounding has been retained. ✓
- (2) A 7-ft. sounding on H-6643 in lat.  $42^{\circ} 17.64'$ , long.  $70^{\circ} 57.93'$ , was cleared by 18 feet on the present survey. A drag with 9-ft. effective depth grounded in the vicinity before hanging 50 meters westward. This uncharted sounding has been retained. ✓
- (3) A 14-ft. sounding retained from H-2163 (1893) on Chart 246 in lat.  $42^{\circ} 17.3'$ , long.  $70^{\circ} 55.62'$  in accordance with recommendations in the Review of H-6642 is one of several 14-ft. soundings on a shoal cleared by two 16-ft. strips on the present survey. The 14-ft. sounding should be retained on the chart. ✓ follow  
H-6642  
(1940)

b. Other discrepancies disposed of during verification and review are as follows:

- (1) A 7-ft. sounding on H-6643 (Chart 246) in lat.  $42^{\circ} 17.87'$ , long.  $70^{\circ} 58.22'$ , is a definite stray recording on the fathogram and has been deleted from the smooth sheet of that survey. The area was cleared with effective depths of 8 and 10 feet. ✓
- (2) An 8-ft. sounding on unverified survey H-7715 (Chart 246) in lat.  $42^{\circ} 16.77'$ , long.  $70^{\circ} 56.5'$ , is a stray recording on the fathogram and has been deleted from the smooth sheet. The area was cleared with an effective depth of 12 ft. ✓

4. Comparison with Chart 246 (Print of June 19, 1950)

a. Hydrography

Conflicts with charted hydrography are considered in part in paragraph 3 above. The remaining discrepancies concern information applied to the chart from the present

survey before verification, as follows:

- Applied to 246*
- (1) The 30-ft. grounding charted in lat.  $42^{\circ} 20.79'$ , long.  $70^{\circ} 53.87'$ , has been corrected to 40 ft. The hang at 30-ft. effective depth was probably caused by lobster trap gear, as stated in the Descriptive Report. Subsequent hydrography by two launches, including one-half hour drifting over the shoal failed to reveal depths less than 40 ft.
- Applied to 246*
- (2) The 14-ft. grounding charted in lat.  $42^{\circ} 18.17'$ , long.  $70^{\circ} 55.42'$ , is 80 meters south of the verified position. The grounding occurred in the vicinity of the position of the 16-ft. sounding on H-6643.
- Was superseded by new survey Sp. 49915-18*
- (3) The 24-ft. grounding charted in lat.  $42^{\circ} 19.45'$ , long.  $70^{\circ} 55.7'$ , has been rejected. According to the records the grounding was on lobster trap gear.
- Applied to Ch 246*
- (4) The 12-ft. grounding charted in lat.  $42^{\circ} 19.68'$ , long.  $70^{\circ} 55.1'$ , has been rejected. According to the records the grounding was on lobster trap gear.
- Applied to Ch. 246*
- (5) The 22-ft. grounding charted in lat.  $42^{\circ} 18.11'$ , long.  $70^{\circ} 55.45'$ , has been revised on the smooth sheet to 23 ft.
- Applied 246*
- (6) The 25-ft. clearance depth charted in lat.  $42^{\circ} 17.94'$ , long.  $70^{\circ} 57.08'$ , is 40 meters west of its correct position, and the clearance depth is actually 24 ft.
- Superseded by H-7715 falls on H-7715*
- (7) The 23-ft. grounding charted in lat.  $42^{\circ} 16.69'$ , long.  $70^{\circ} 55.9'$ , has been deleted from the survey. The grounding was on a 23-ft. shoal 50 meters east.

b. Aids to Navigation

The floating aids on the chart and the present survey are in substantial agreement. The following buoys were removed subsequent to the survey and do not appear on the current chart:

- N-4 in lat.  $42^{\circ} 18.55'$ , long.  $70^{\circ} 58.72'$  (H.O. Notice 48-1950)  
 C-1 in lat.  $42^{\circ} 18.53'$ , long.  $70^{\circ} 58.83'$  (H.O. Notice 13-1950)  
 C-3 in lat.  $42^{\circ} 19.07'$ , long.  $70^{\circ} 59.37'$  (H.O. Notice 2-1950)  
 C-A in lat.  $42^{\circ} 19.31'$ , long.  $70^{\circ} 56.13'$  (H.O. Notice 31-1949)

C-B in lat. 42° 19.26', long. 70° 56.23' (H.O.  
Notice 31-1949)  
N-2 in lat. 42° 17.52', long. 70° 57.83' (H.O.  
Notice 2-1950)

5. Condition of the Survey

- a. The Descriptive Report and sounding records are complete and comprehensive. The numerous paragraphs on groundings in the Report were unnecessary except where recommendations for disposal were made or where information not in the sounding records nor on the hydrographic surveys is furnished.
- b. The survey was accurately and neatly smooth-plotted. The hydrography plotted on the two tracing paper overlays should have been on tracing cloth.
- c. The presence of lobster trap gear in the areas dragged caused numerous temporary groundings and hangs. Those groundings investigated and disposed of by appropriate notes in the wire-drag records caused no trouble during verification. Other notes in the records reveal that many groundings were investigated, but the results of these investigations were not recorded.

The reasons for the following groundings were not ascertained:

- (1) The 24-ft. grounding (hang) in 28-ft. depths at lat. 42° 19.34', long. 70° 55.39', in a buoyed passage.
- (2) The 24-ft. grounding (hang) in 28-ft. depths at lat. 42° 19.20', long. 70° 55.19', in the same passage. Neither the hydrography on the present survey (shown on tracing) nor on a Corps of Engineers survey of June 1949 (Bp. 45438) reveal depths less than 28 feet here. The grounding could have been on a boulder, however.
- (3) The 12-ft. temporary grounding on a 17-ft. shoal in lat. 42° 19.64', long. 70° 55.08'.
- (4) The 19-ft. grounding (hang) in 33-ft. depths at lat. 42° 20.2', long. 70° 56.26', on the south side of President Roads.

55.35  
17.35

Op 48119 L 676(1951)

- (5) The 30-ft. temporary grounding in 42-ft. depths in lat.  $42^{\circ} 18.52'$ , long.  $70^{\circ} 56.18'$ . Lobster trap markers were reported to be in the vicinity on another drag strip.
- on H-7715* (6) The 23-ft. grounding (hang) in 28-ft. depths at lat.  $42^{\circ} 17.33'$ , long.  $70^{\circ} 57.31'$ , in a buoyed passage.
- on H-7715* (7) The 24-ft. temporary grounding in 28-ft. depths at lat.  $42^{\circ} 17.18'$ , long.  $70^{\circ} 57.26'$ , in a buoyed passage.
- on H-7715* (8) The 23-ft. temporary grounding in 28-ft. depths at lat.  $42^{\circ} 16.94'$ , long.  $70^{\circ} 56.42'$ , in a buoyed passage.
- on H-7715* (9) The 23-ft. grounding (hang) in 27-ft. depths at lat.  $42^{\circ} 16.91'$ , long.  $70^{\circ} 56.32'$ , in a buoyed passage.
- (10) The 26-ft. temporary grounding in 41-to 51-ft. depths in lat.  $42^{\circ} 17.52'$ , long.  $70^{\circ} 54.96'$ .
- (11) The 24-ft. temporary groundings in 26-to 27-ft. depths in lat.  $42^{\circ} 17.5'$ , long.  $70^{\circ} 55.27'$  and lat.  $42^{\circ} 17.47'$ , long.  $70^{\circ} 55.34'$ .
- (12) The 14-ft. temporary grounding on a 16-ft. shoal at lat.  $42^{\circ} 18.21'$ , long.  $70^{\circ} 55.46'$ , in Nantasket Gut, resulting in no clearance depth being shown over this important shoal.

6. Compliance with Project Instructions

The survey covers the areas specified in the project instructions except for five small splits. At some of the groundings the clearance depths were not within 2 feet of the least depth sounded as specified in the instructions; for example, at lat.  $42^{\circ} 20.2'$ , long.  $70^{\circ} 56.26'$ , a 33-ft. sounding at the hang of a 19-ft. strip was cleared by 19 feet. The questionable 19-ft. grounding was not disposed of.

7. Additional Field Work Recommended

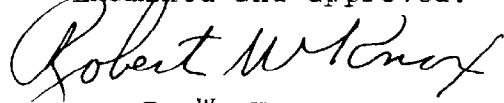
This survey obtained a very good coverage, considering the difficulties encountered with currents and lobster trap gear. Consideration should be given, however, to the

deficiencies noted in paragraphs 5c and 6 above. Adequate disposal of the groundings noted in paragraphs 5c (1), (2), (6), (8), (9) and (10) is particularly desirable. It should be noted, however, that the Corps of Engineers has indicated an interest in the shoal soundings charted in Weymouth Fore River and West Gut and is planning surveys and investigations in those areas, according to their letter of 16 January 1951, a copy of which is attached. Their investigations and possible dredging may dispose of the items in paragraphs 5c (6), (7), (8) and (9).

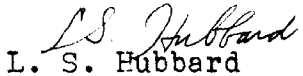
Examined and approved:



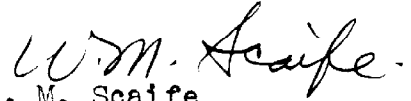
H. R. Edmonston  
Chief, Nautical Chart Branch



R. W. Knox  
Chief, Division of Charts



L. S. Hubbard  
Chief, Section of Hydrography



W. M. Scaife  
Chief, Division of Coastal Surveys



# NAUTICAL CHARTS BRANCH

SURVEY NO. H 7719 WD.

## Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
6/20/50	246	J. A. McGinn	<del>Before</del> After Verification and Review <i>Examined but not applied even in part.</i> <del>Before</del> After Verification and Review
6/20/50	246	H.F.S.	Before <del>After</del> Verification and Review <i>Partially</i>
3-22-51	1207	P.K. Andrews	Before After Verification and Review <i>Partially applied - Instructions from chief of Section.</i> <del>Before</del> After Verification and Review
7-15-53	246	C.R. Wittman	<del>Before</del> After Verification and Review
3/23/60	1207	Helmer	<del>Before</del> After Verification and Review <i>Fully Applied thru chart #246</i>
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
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			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-1155-1

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.