

8403

TT#2

Spec. Ght. nos. 1000-2 and 1107.

Form 504

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey **HYDROGRAPHIC**

Field No. **HY-4157** Office No. **H-8403**

LOCALITY

State **Massachusetts**

General locality **Georges Bank**

Locality **Northeast of Georges Shoal**

~~1957~~
1958

CHIEF OF PARTY

Walter J. Chovan - Gilbert R. Fish

LIBRARY & ARCHIVES

FEB 19 1958

DATE

8403

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-8403**

Field No. **HY-4157**

State **Massachusetts**

General locality **Georges Bank**

Locality **Northeast of Georges shoal**

Scale **1:40,000** Date of survey **5 June - 6 October, 1957**

Instructions dated **28 November 1956** **Supplemental 28 February 1957**

Vessel **HYDROGRAPHER**

Chief of party **Walter J. Chovan - Gilbert R. Fish**

Surveyed by **G.W. Moore, W.R. Kachel, D.L. Campbell, V.C. Ahlrich, J.J. McCoy
P.L. Rotondo, J.J. Benning**

Soundings taken by ~~11111111~~, graphic recorder, ~~111111111111~~

Fathograms scaled by **Ship's Personnel**

Fathograms checked by **Ship's Personnel**

Protracted by **P.L. Rotondo**

Soundings penciled by **P.L. Rotondo**

Soundings in fathoms ~~744~~ at MLW ~~11111~~

REMARKS: **Offshore Survey**

This survey not completed

DESCRIPTIVE REPORT

To Accompany Hydrographic Survey H-8403 (Field No. HY-4157)

Georges Bank

Northeast of Georges Shoal

1957

Ship HYDROGRAPHER

Scale 1:40,000

Walter J. Chovan - Gilbert R. Fish

Chiefs of Party

A. PROJECT:

Project No. CS-401. Original Instructions dated 28 November 1956. Supplemental Instructions dated 28 February 1957.

B SURVEY LIMITS AND DATES:

This survey covers the area to the Northeast of Georges Shoal on Georges Bank in the Gif of Maine. The approximate limits of the field work done this season are: Lat. $41^{\circ} 44'$ N to Lat. $42^{\circ} 02'$ N, Long. $67^{\circ} 12'$ W to Long. $67^{\circ} 31'$ W. The remainder of the sheet with limits as follows will be done during the 1958 field season: Lat. $41^{\circ} 49'$ N to Lat $42^{\circ} 02'$ N, Long. $67^{\circ} 31'$ W to Long. $67^{\circ} 50'$ W.

Field work on this sheet began on 5 June 1957 and ended on 6 October 1957.

This survey makes a junction with the following prior surveys:

H-5167	1:100,000	1931
H-5173	1:100,000	1931
H-5196	1:40,000	1931
H-5218	1:10,000	1932

This survey makes a junction with the following contemporary surveys:

H-8404 (HY-4357)
(HY-10257)
H-8401 (HY-1157)

C. VESSEL AND EQUIPMENT

The hydrography on this survey was accomplished by the ship HYDROGRAPHER.

The turning radius at sounding speed (120 RPM or approximately 10 knots) of the Hydrographer is 80 to 120 meters depending upon the prevailing wind and current.

808 J type fathometers were used for this entire survey. The following serial numbers were used: 153 SPX and 156 SPX.

D. TIDE AND CURRENT STATION

Tide reducers for this survey are referenced to the Standard Tide Gage at Boston, Massachusetts. Time difference of minus one hour and ratio of ranges of 0.5 was furnished by the Washington Office.

No current stations were observed on this sheet.

E. SMOOTH SHEET:

The smooth sheet projection and Raydist arcs were ruled by the Washington Office.

This is an offshore survey and contains no shoreline or topographic details.

F. CONTROL STATION:

All hydrography on this sheet was controlled by Raydist using two stations as follows:

R₂ also (EPIA) at Southwest Harbor, Maine, Lat. 44° 14' 47.65" N, Long. 68° 17' 37.61" W.

The G.P. of this station was determined by F.B. Quinn, Boston District Officer, in 1955.

R₂ (also EPIB) at Southwest Harbor, Maine, Lat. $44^{\circ} 14' 47.65''$ N, Long. $68^{\circ} 17' 37.61''$ W.

The G.P. of this station was determined by F.B. Quinn, Boston District Officer, in 1955.

R₁ (also EPIB) at Wellfleet, Cape Cod, Massachusetts, Lat. $41^{\circ} 56' 31.426''$ N, Long. $69^{\circ} 59' 11.305''$ W.

The G.P. of this station was determined by K.S. Ulm, Boston District Officer, in 1957. It is the same as R.M.I. of Triangulation Station FRAZIER 1957.

G. SHORELINE AND TOPOGRAPHY:

No shoreline or topography is shown on this sheet as this is an off-shore survey.

H. SOUNDINGS:

All depths were measured using 808 J type fathometers. These fathometers are old and proved rather unreliable at times. However, adequate checks and tests were made to verify the accuracy of the soundings see separate report on Velocity and Fathometer Corrections.

I. CONTROL OF HYDROGRAPHY:

Raydist control was used for all ship work on this sheet. The Raydist dials were set at the Texas Tower and an abstract of Raydist corrections for this sheet are included at the end of this report. The Raydist stations were located as indicated in Section F of this report. A complete explanation of Raydist control and calibration is included in the Raydist Report submitted to the Washington Office 12/9/57. *Frequency 3280 kc.*

J. ADEQUACY OF SURVEY:

This survey is about 60% complete. The remainder of the survey will be completed during the 1958 field season.

The portion of the survey this report covers is complete and adequate to supersede prior surveys for charting, except for a few additional lines required in the vicinity of latitude $41^{\circ} 48'$, Longitude $67^{\circ} 32'$. *Storm warnings for a storm moving up the coast on the last day of the field season made it advisable to run to shelter and leave these lines for the next field season.*

Junctions with the adjoining surveys are satisfactory.

The depth curves can be adequately drawn at the junctions.

Nonstandard depth curves at 5 fathom intervals, 15, 25, etc., were added to the smooth sheet in addition to the standard depth curves because of the extremely rough character of the bottom.

K. CROSSLINES:

Crossline were run to approximately 5-10% of the regular system of sounding lines.

L. COMPARISION WITH PRIOR SURVEYS:

This survey was compared with prior surveys H-5112B, 1:40,000, 1930 and H-5196, 1:40,000, 1931. It was difficult to compare this survey with prior surveys due to the rugged character of the bottom. On the old surveys the sounding lines and soundings were spaced rather widely and unevenly and the depth curves as drawn bear little resemblance to the bottom configuration on this survey. However, the depths in general are in good agreement, and the shoalest areas agree very well in position and depth. The 10 fm sounding shown in Lat. $41^{\circ} 50.5'$ N, Long. $67^{\circ} 13.4'$ W was not substantiated. The shoalest sounding found in the vicinity was 12 fms. in Lat. $41^{\circ} 50.1'$ N, Long. $67^{\circ} 13.3'$ W. There are several 13 and 14 fm. soundings in the same area but no indication of anything shoaler. The ridges appear regular and even.

This is a modern electronically controlled survey using close line spacing and continuously recording fathometers and it is recommended that the new depths and contours be used.

Many new shoals are developed in this survey and some of the shoalest of these are tabulated in Section M & N of this report.

M. COMPARISION WITH CHART:

This survey was compared with chart No. 3075, scale 1:220,000; the largest scale survey of the area available. The comparison was very good considering the difference in scale between the chart and the smooth sheet.

Two shoal soundings shown on the chart in the area of this survey were not verified. They are:

10 fm. Lat. $41^{\circ} 50.5'$, Long. $67^{\circ} 13.4'$.

The shoalest sounding obtained on this survey in this vicinity was 12 fm. in Lat. $41^{\circ} 50.1'$ N, Long. $67^{\circ} 13.3'$ W.

$5\frac{1}{2}$ fm. Lat. $41^{\circ} 50.7'$, Long. $67^{\circ} 29.7'$.

The shoalest sounding obtained on this survey in this vicinity was 5.5 fm in Lat. $41^{\circ} 50.7'$, Long. $67^{\circ} 30.1'$.

It is recommended that the depths shown on the new survey be used.

N. DANGERS AND SHOALS:

The following shoal soundings are in addition to those mentioned in Section L & M of this report:

<u>Least Depth (fms)</u>	<u>Lat.</u>	<u>Long.</u>
4.9	$41^{\circ} 45.7'$	$67^{\circ} 48.0'$ ✓ 5-66
6.6	$41 45.9'$	67 40.1
5.6	$41 50.1$	67 29.4
7.2	$41 48.1$	67 32.1
6.2	$41 46.5$	67 27.2
6.9	$41 45.9$	67 26.7
7.4	$42 00.0$	67 26.3
6.2	$41.55.4$	67 22.8

All charted dangers and shoals were found as charted or shoaler depths were obtained. Exceptions are listed in sections L, M and N.

P. AIDS TO NAVIGATION:

No fixed or floating aids to navigation are located within the limits of this survey.

Q. LANDMARKS FOR CHARTS

No landmarks for charts are located within the limits of this survey.

R. GEOGRAPHIC NAMES:

No investigation of geographic names was made.

U. MISCELLANEOUS:

Preliminary Review Item No. 7 states; "Refer to the 7½ fm. sounding charted from H-5196 in Lat. 41° 55.5', Long. 67° 22.8'. A note in the sounding records mentions depths probably less than 5 fms. here. The uncertainty is due to the fathometer initial obscuring the bottom echo. The plotted sounding was obtained by leadline on another sounding line."

The shoalest sounding obtained in this area was 6.2 fm. in Lat. 41° 55.2', Long. 67° 22.8'. This is a modern electronically controlled survey using continuously recording fathometers and close line spacing in the area of the shoal. No additional development is considered necessary and it is recommended that the 6.2 fm. depth be accepted as the shoalest in the area.

Z. TABULATION OF APPLICABLE DATA:

	<u>To W.O.</u>
Season's Report	12/9/57
Raydist Report	12/9/57
Addendum to Raydist Report	12/9/57
Fathometer and Velocity Correction Report	12/10/57
Oceanographic Report and Records	12/9/57
Current Buoy and Current Pole Observation, forms #270	7/5/57
Water samples from oceanographic stations	10/14/57

Abstracts of the various corrections used in this survey are attached to the end of this report.

William R. Kachel
William R. Kachel
LT, USGS

WRK/r

STATISTICS FOR HYDROGRAPHIC SURVEY

H-8403 (HY-4157)

USC&GSS HYDROGRAPHER

1957

Project CS-14010 (CS-401)

Day Ltr.	Vol. No.	Date	No. of Posit.	Naut. mi. Sound.
A	1	5 June 1957	154	100.2
B	1 & 2	6 June 1957	288	167.4
C	2 & 3	7 June 1957	201	125.5
D	3 & 4	8 June 1957	282	206.3
E	4 & 5	9 June 1957	221	142.1
F	5 & 6	10 June 1957	239	140.2
G	6	11 June 1957	209	123.0
H				
J	6 & 7	12 June 1957	57	42.2
K	7	26 Aug. 1957	63	41.0
L	7	9 Sept. 1957	7	4.4
M	7	12 Sept. 1957	54	29.5
N	7	19 Sept. 1957	41	30.0
P	7	21 Sept. 1957	44	29.5
Q	7 & 8	23 Sept. 1957	140	87.6
R	8 & 9	24 Sept. 1957	208	124.3
S	9	25 Sept. 1957	139	94.3
T	9 & 10	26 Sept. 1957	167	109.1
U	10	3 Oct. 1957	132	77.3
V	10 & 11	4 Oct. 1957	224	117.5
W	11	5 Oct. 1957	157	90.0
X	11	6 Oct. 1957	271	14.0

TOTAL FOR SHEET- 3054

1895.4

TIDE NOTE

To Accompany

Hydrographic Survey H-8403

Standard Tide Station: Boston, (Commonwealth Pier) Massachusetts

Plane of Reference: Mean Low Water 3.3 feet on Tide Staff

Time Correction: Minus one hour

Height Correction: Ratio of ranges 0.5

Area Covered: Entire Survey

Above time and height corrections furnished by
Washington Office.

The hourly heights were furnished from the Washington
Office.

APPROVAL SHEET

The field work accomplished on this survey after 1 August 1957 was under my immediate supervision. Daily inspections of the records, fathograms, boat sheets, and smooth sheet were made as the survey progressed.

The records, boat sheet, and smooth sheet as submitted to the Washington Office have been reviewed and are approved by me.

The portion of this survey completed in 1957 is complete and adequate. The remaining portion of the survey will be completed during the 1958 field season.

G R Fish

G.R. Fish

CAPT, C&GS

Comdg., Ship HYDROGRAPHER

WRK/r

RAVDIST CORRECTIONS FOR SHEET HY-4157

Field corrections for this sheet were based on preliminary positions of the Texas Tower and the buoys planted in the survey area. The following table gives the tower and buoy positions on the several datums.

Object	Datum A		Datum B		Datum NA 1927	
	R ₁	R ₂	R ₁	R ₂	R ₁	R ₂
Texas Tower (Center)	4071.2	6251.1	4073.5	6266.8	4069.0	6264.0
Texas Tower (SW Leg or Shore Ant. Pos. #1)	4070.8	6251.5	4073.1	6267.2	4068.6	6264.4
Buoy A	4495.6	5960.0	4497.9	5975.7	4493.4	5972.9
Buoy D	5115.5	5860.8	5117.8	5876.5	5113.3	5873.7
Buoy E	5110.0	6261.3	5112.3	6277.0	5107.8	6274.2
Buoy F	4463.9	6088.1	4466.2	6103.8	4461.7	6101.0

In general sheet HY-4157 was plotted using Datum A. In some instances a buoy position different from the above was used to set the dials. The following table gives the additional corrections to be applied to R₁ and R₂ to reduce the dial readings to NA 1927 values.

Object	Value used to set dials		Additional Corrections	
	R ₁	R ₂	R ₁	R ₂
Texas Tower (Center)	4071.2	6251.1	-2.2	+12.9
" "	4073.5	6266.8	-4.5	-2.8
" "	4070.8	6251.5	-2.2	+12.9
" "	4073.1	6267.2	-4.5	-2.8
Buoy A	4495.6	5960.0	-2.2	+12.9
" "	4494.8	5958.7	-1.4	+14.2
Buoy D	5117.8	5876.5	-4.5	-2.8
" "	5118.6	5876.7	-5.3	-3.0

Object	Value used to set data		Additional Corrections	
	R ₁	R ₂	R ₁	R ₂
Buoy E	5112.3	6277.0	-4.5	-2.8
Buoy E	5111.5	6277.0	-3.7	-2.8
Buoy F	4463.9	6088.1	-2.2	12.9
Buoy F	4463.8	6088.5	-2.1	12.5

Datum A to B, R₁ = 12.3, R₂ = 15.7 : Datum B to NA 1927, R₁ = -4.5, R₂ = -2.8

Datum A to NA 1927, R₁ = -2.2, R₂ = 12.9 :

RAVDIST CORRECTIONS FOR SHEET HY-4157

Date	Day	Positions	Field Corr.		Final Corr.		Az corr.	Total R ₂	
			R ₁	R ₂	R ₁	R ₂			
June 5	A	1 - 154	0.0	0.0	-1.5	∠13.2	-1.4	∠11.8	R ₂ lost 1 lane
6	B	1 - 227	0.0	0.0	-1.5	∠13.2	-1.4	∠11.8	R ₂ added 1 lane
		228 - 230	0.0	∠1.0	-1.5	∠14.2	-1.4	∠12.8	R ₂ lost 1 lane
		231 - 287	0.0	0.0	-1.5	∠13.2	-1.4	∠11.8	R ₂ added 1 lane
		288	0.0	∠2.0	-1.5	∠14.2	-1.4	∠12.8	R ₂ lost 1 lane
7	C	1 - 6	0.0	∠1.0	-1.5	∠14.2	-1.4	∠12.8	R ₂ lost 2 lanes
		7	0.0	∠3.0	-1.5	∠16.2	-1.4	∠14.8	R ₂ recalcd = 0.0 but added 20 lanes before Pos. #11
		11 - 17	0.0	0.0	-1.6	∠5.8	-1.4	-7.2	R ₂ added 11 lanes
		18	0.0	0.0	-1.6	-16.8	-1.4	-18.2	R ₂ added 27 lanes
		19	0.0	0.0	-1.6	-43.8	-1.4	-45.2	R ₂ added 19 lanes
		20 - 23	0.0	0.0	-1.6	-62.8	-1.4	-64.2	R ₂ took out 58 lanes
		24 - 32	0.0	0.0	-1.6	-4.8	-1.4	-6.2	R ₂ put in 2 lanes
		33 - 36	0.0	0.0	-1.6	-6.8	-1.4	-8.2	R ₂ took out 20 lanes ship anchored for minor repairs to R ₂ Station
		37	0.0	0.0	-1.6	∠13.2	-1.4	∠11.8	R ₂ dial reset. Tape shows 3 lanes (Approximately) taken off R ₂ when shore station is again operating.
		38	0.0	0.0	-1.6	∠16.2	-1.4	∠14.8	Recalibrated
39 - 146			0.0	0.0	-1.4	∠16.2	-1.4	∠14.8	

RAWDIST CORRECTIONS FOR SHEET HY-4157

Date	Day	Positions	Field Corr		Final Corr.		Az Cor	Total R2	
			R1	R2	R1	R2			
June 7	C	148 - 174	0.0	0.0	-1.6	14.6.2	-1.4	14.8	Checked R2 dial
		175 - 177	0.0	0.0	-1.6	14.8.2	-1.4	14.8	R2 added 8 lanes
		178 - 187	0.0	0.0	-1.6	14.6.2	-1.4	14.8	took out 8 lanes R2
		188 - 195	0.0	0.0	-1.6	14.2.2	-1.4	14.8	R2 lost 4 lanes
		196 - 201	0.0	0.0	-1.6	14.2.2	-1.4	14.8	R2 lost 1 lane
8	D	2 - 47	0.0	0.0	-1.6	14.5.2	-1.4	14.8	Recalibrate Reset R2 dial
		48 - 50	0.0	0.0	-1.6	14.6.2	-1.4	14.8	R2 lost 1 lane
		51 - 55	0.0	0.0	-1.6	14.7.2	-1.4	14.8	R2 lost 1 lane
		60 - 277	0.0	0.0	-1.6	14.5.0	-1.4	13.6	Reset R2 dial
		278 - 291	0.0	0.0	-1.6	14.2	-1.4	12.8	Reject
9	E	294 - 298	0.0	0.0	-1.6	14.2	-1.4	12.8	Recalibrate R2
		7 - 188	0.0	0.0	-1.6	14.2	-1.4	12.8	
		191 - 202	0.0	0.0	-1.6	14.2	-1.4	12.8	Checked Calib
		203	0.0	-2.0	-1.6	14.2.2	-1.4	10.8	R2 added 2 lanes
		204 - 217	0.0	0.0	-1.6	14.2	-1.4	12.8	Took out 2 R2 lanes
10	F	218 - 221	0.0	-2.0	-1.6	14.2.2	-1.4	10.8	R2 added 2 lanes
		7 - 222	0.0	0.0	-1.6	14.0	-1.4	12.6	
		226 - 238	0.0	0.0	-1.6	14.0	-1.4	12.6	
11	G	5 - 122	0.0	0.0	-1.6	14.0	-1.4	12.6	
		139 - 167	0.0	0.0	-1.6	14.0	-1.4	12.6	Took 2 lanes from R1 at Texas Tower
		170 - 209	12.0	0.0	-1.6	14.0	-1.4	12.6	Check at Buoy A
20 July 12	J	1 - 57	-1.1	-11.7	-3.3	-1.4	0.0		

RADIST CORRECTIONS FOR SHEET HY-4157

Date	Day	Positions	Field Corr		Final Corr		Az Corr	Total		
			R ₁	R ₂	R ₁	R ₂		R ₁	R ₂	
Aug 26	K	1 - 63	-2.4	-14.5	-4.6	-1.6	-1.4	-3.0		
Sept 9	L	1 - 7	-2.2	-13.6	-4.4	-0.7	-1.4	-2.1		
12	M	54	-3.2	-14.4	-5.4	-1.3	-1.4	-2.7		
19	N	36	-1.4	-14.7	-3.6	-1.8	-1.4	-3.2		
21	P	44	-1.4	-15.9	-3.6	-3.0	-1.4	-4.4		
23	Q	67	-3.0	-14.7	-3.5	-1.7	-1.4	-3.1		
		68 - 106	-1.3	-14.6	-3.5	-1.7	-1.4	-3.1		Use TP callb
		107 - 125	-1.3	-12.6	-3.5	-0.3	-1.4	-1.1		R ₂ lost 2 lanes
		126 - 135	-1.3	-9.6	-3.5	-2.3	-1.4	-0.9		R ₂ lost 2 lanes
		136 -	-1.3	-7.6	-3.5	-4.8	-1.4	-7.9		R ₂ lost 2 lanes
		137	-1.3	-5.6	-3.5	-6.3	-1.4	-4.9		R ₂ lost 2 lanes
		138	-1.3	-5.6	-3.5	-8.3	-1.4	-6.9		R ₂ lost 2 lanes
		139	-1.3	-1.6	-3.5	-10.3	-1.4	-8.9		R ₂ lost 2 lanes
		140	-1.3		-3.5					
24	R	1 - 208	-0.6	-2.6	-2.7	-5.1	-1.4	-3.7		
25	S	1 - 142	-0.4	-1.9	-2.6	-4.7	-1.4	-3.3		
26	T	1 - 167	-0.2	-1.4	-1.9	-3.9	-1.4	-2.5		
Oct 3	U	1 - 15	-0.1	-0.5	-2.3	-2.4	-1.4	-1.0		
		16 - 132	-0.1	-13.5	-2.3	-0.4	-1.4			R ₂ added 12 lanes due to power failure
4	V	1 - 200	-0.2	-0.9	-2.4	-13.8	-1.4	-2.4		
		201 - 224	-0.2	-2.9	-2.4	-18.8	-1.4	-3.4		R ₂ lost 1 lane

Date	Day	Positions	Field Corr		Final Corr		Az Cor	Total			
			R ₁	R ₂	R ₁	R ₂		R ₁	R ₂		
Oct 5	W	1 - 98	-1.6	0.8	-3.7	13.3	-1.4	11.9		R ₂ added 1 lane	
		99 - 101	-1.6	-0.2	-3.7	12.3	-1.4	10.9			
		102 - 104	-1.6	-1.2	-3.7	11.3	-1.4	9.9			R ₂ added 1 lane
		105 - 106	-1.6	-0.2	-3.7	12.3	-1.4	10.9			R ₂ lost 1 lane
		107 - 157	-1.6	0.8	-3.8	12.3	-1.4	10.9			
6	X	1 - 10	-1.6	0.8	-3.7	12.3	-1.4	10.9			
		11 - 27	-3.2	0.7	-5.3	13.2	-1.4	11.8		Dials reset	

VELOCITY CORRECTIONS (All in fms)

1st. Trip 1 - 10 May

TABLE 1

HY-10257

HY-10157

All other sheets

0.0 to 3.3	0.0 to 8.0	0.0 to 7.0
-0.1 to 8.8	-0.2 to 20.0	-0.1 to 11.0
-0.2 to 16.8	-0.4 to 29.5	-0.2 to 25.5
-0.4 to 27.0	-0.6 to 39.0	-0.4 to 44.5
-0.6 to 38.0	-0.8 to 47.5	-0.6 to 62.5
-0.8 to 48.0	-1.0 to 56.0	-0.8 to 80.5
-1.0 to 59.0	-1.2 to 65.0	-1.0 to 98.5
-1.2 to 69.0	-1.4 to 74.0	
-1.4 to 80.0	-1.6 to 82.5	
-1.6 to 92.0	-1.8 to 91.0	
-1.8 to 106.0	-2.0 to 100.0	
-2.0 to 120.0	-2.2 to 109.0	
	-2.4 to 118.0	

Trip 2 31 May - 12 June

Same as Trip 1

Trip 3 19 - 28 June

TABLE 2

None

-0.6 to 8.8	0.0 to 12.5
-0.8 to 18.6	-0.2 to 69.0
-1.0 to 25.8	-0.4 to 122.0
-1.2 to 37.4	-0.6 below
-1.4 to 47.0	
-1.6 to 56.0	
-1.8 to 65.4	
-2.0 to 74.4	
-2.2 to 83.8	
-2.4 to 93.4	
-2.6 to 103.0	
-2.8 to 113.0	
-3.0 to 123.0	

VELOCITY CORRECTIONS (Cont.)

Trip 4 6 - 14 July *TABLE 3*

<u>HY-10157</u>	<u>HY-10257</u>	<u>All other sheets</u>
Same as Trip 3	0.0 to 29.8	0.0 to 21.9
	-0.2 to 40.2	-0.2 to 40.2
	-0.4 to 50.8	
	-0.6 to 61.2	
	-0.8 to 71.8	
	-1.0 to 82.2	
	-1.2 to 92.8	
	-1.4 to 105.6	
	-1.6 to 110.0	

Trip 5 19 - 29 July *TABLE 4*

	Same as Trip 4	
Same as Trip 3		0.0 to 30.0
		-0.2 to 40.2
		-0.4 to 50.8
		-0.6 to 61.2
		-0.8 to 71.8
		-1.0 to 82.2
		-1.2 to 92.8
		-1.4 to 105.6
		-1.6 to 110.0

Trip 6 5-15 August *TABLE 5*

0.0 to 12.5	0.0 to 16.4	0.0 to 10.9
-0.2 to 22.5	-0.2 to 30.7	-0.2 to 20.0
-0.4 to 32.7	-0.4 to 41.0	0.0 to 25.2
-0.6 to 42.9	-0.6 to 51.2	-0.2 to 30.7
-0.8 to 52.5	-0.8 to 61.7	-0.4 to 41.0
	-1.0 to 72.0	-0.6 to 51.2
	-1.2 to 82.3	
	-1.4 to 92.7	
	-1.6 to 103.0	
	-1.8 to 113.0	

VELOCITY CORRECTIONS (Cont.)

Trip 7 20 - 27 August

TABLE 6

HY-10157

HY-10257

All other sheets

Same as Trip 6

Same as Trip 6

0.0 to 9.2
~~0.2~~ to 20.0

Trip 8 3 - 13 September

TABLE 7

0.0 to 18.0
 -0.2 to 30.5
 -0.4 to 42.7
 -0.6 to 54.7
 -0.8 to 66.0
 -1.0 to 88.0

0.0 to 25.0
 -0.2 to 39.5
 -0.4 to 51.0
 -0.6 to 62.5
 -0.8 to 74.0
 -1.0 to 86.5
 -1.2 to 100.0
 -1.4 to 115.0
 -1.6 to 130.0

0.0 to 24.6
 -0.2 to 39.5
 -0.4 to 51.0

Trip 9 18 - 27 September

Same as Trip 8

Same as Trip 8

Same as Trip 8

Trip 10 30 September - 10 October

Same as Trip 8

Same as Trip 8

Same as Trip 8

Tabulation of Instrument corrections for ship hydrography as entered in Sounding Records (This correction is the algebraic sum of the Instrument, Draft, Settlement and Squat and Phase Corrections):

EDO #205

(Used only for Position 151 thru 175 J day HY-1157
10 July)

-1.8 fms. all soundings

808 #132

Used only for Launch work.

808 #105

Used only the following days

<u>Date</u>	<u>Positions</u>	<u>Sheet No.</u>
26 July	1R - 66R	HY-4357
11 August	1S - 347S	HY-1157
13 August	1T -11T	HY-1157
13 August	1A - 256A	HY-2157
14 August	1G - 27G	HY-4257
14 August	1U - 179U	HY-1157

Corrections for the above days:

A scale	0.1 fm.
B scale	-0.4 fm.
C scale	-1.2 fm.

Inst. Corrections for Ship Hydrography Cont.

808 #156

	A	B	C	D
<u>Trip No.1</u> <u>1-10 May</u>				
Begin to 0700 6 May	-0.1	42.7	44.7	44.3
0700 6 May to end	-0.2	42.6	44.6	44.2
<u>Trip No.2</u> <u>31 May-6 June</u>				
Begin to 1800 8 June	-0.1	42.7	44.7	44.3
1800 8 June to end	-0.2	42.6	44.6	44.2
<u>Trip No.3</u> <u>19-28 June</u>				
Begin to 0000 20 June	0.0	42.8	44.8	44.4
0000 20 June to 0000 27 June	-0.1	42.7	44.7	44.3
0000 27 June to end	-0.2	42.6	44.6	44.2
<u>Trip No.4</u> <u>6-16 July</u>				
Begin to 1200 11 July	-0.1	42.7	44.7	44.3
1200 11 July to end	-0.2	42.6	44.6	44.2
<u>Trip No.5</u> <u>19-29 July</u>				
Begin to 1500 20 July	-0.1	42.7	44.7	44.3
1500 20 July to end	-0.2	42.6	44.6	44.2
<u>Trip No.6</u> <u>8-15 August</u>				
Begin to 1500 10 August	-0.1	42.7	44.7	44.3
1500 10 August to end	-0.2	42.6	44.6	44.2
<u>Trip No.7</u> <u>20-27 August</u>				
Begin to 1200 25 August	-0.2	42.7	44.7	44.3
1200 25 August to end	-0.2	42.6	44.6	44.2
<u>Trip No.8</u> <u>3-13 September</u>				
Begin to 1500 11 September	-0.2	42.6	44.6	44.2
1500 11 September to end	-0.3	42.5	44.5	44.1
<u>Trip No.9</u> <u>18-27 September</u>				
Begin to 1800 20 September	-0.1	42.7	44.7	44.3
1800 20 September to end	-0.2	42.6	44.6	44.2
<u>Trip No. 10</u> <u>30 Sept.-7 Oct.</u>				
Begin to 4 October	-0.1	42.7	44.7	44.3
1600 4 October to end	-0.2	42.6	44.6	44.2

Inst. Corrections for Ship Hydrography Cont.

808 #153

<u>Trip No.</u>	<u>Period</u>	A	B	C	D
<u>Trip No. 1</u>	<u>1-10 May</u>				
	Begin to 0700 6 May	0.0	1.2	1.2	1.2
	0700 6 May to end	-0.1	1.1	1.1	1.0
<u>Trip No. 2</u>	<u>31 May-12 June</u>				
	Begin to 1800 '8 June	0.0	1.2	1.2	1.2
	1800 8 June to end	-0.1	1.1	1.1	1.0
<u>Trip No. 3</u>	<u>19-28 June</u>				
	Begin to 0000 20 June	1.0	1.3	1.3	1.3
	0000 20 June to 0000 27 June	0.0	1.2	1.2	1.2
	0000 27 June to end	-0.1	1.1	1.1	1.0
<u>Trip No. 4</u>	<u>6-14 July</u>				
	Begin to 1200 11 July	0.0	1.2	1.2	1.2
	1200 11 July to end	-0.1	1.1	1.1	1.0
<u>Trip No. 5</u>	<u>19-29 July</u>				
	Begin to 1500 20 July	0.0	1.2	1.2	1.2
	1500 20 July to end	-0.1	1.1	1.1	1.0
<u>Trip No. 6</u>	<u>8-15 August</u>				
	Begin to 1500 10 August	0.0	1.2	1.2	1.2
	1500 10 August	-0.1	1.1	1.1	1.0
<u>Trip No. 7</u>	<u>20-27 August</u>				
	Begin to 1200 25 August	0.0	1.2	1.2	1.2
	1200 25 August to end	-0.1	1.1	1.1	1.0
<u>Trip No. 8</u>	<u>3-13 September</u>				
	Begin to 1500 11 September	-0.1	1.1	1.1	1.0
	1500 11 September to end	-0.2	1.0	1.0	0.0
<u>Trip No. 9</u>	<u>18-27 September</u>				
	Begin to 1800 20 September	0.0	1.2	1.2	1.2
	1800 20 September to end	-0.1	1.1	1.1	1.0
<u>Trip No. 10</u>	<u>30 Sept - 7 Oct.</u>				
	Begin to 1600 4 October	0.0	1.2	1.2	1.2
	1600 4 October to end	-0.1	1.1	1.1	1.0

Tabulation of Instrument Corrections for Launch Hydrography as entered in sounding records. These were determined by bar-checks each day:

Launch #114:

<u>Sheet No.</u>	<u>Day Ltr.</u>	<u>Date</u>	<u>Fath. No</u>	<u>Correction</u> (fms)	<u>Depth</u> (fms)
HY-1157	A	22 June	1058	-0.2 -0.4 -0.6	to 8.5 to 12.6 below
HY-1157	B	23 June	1058	-0.4	All
HY-1157	C	26 June	1058	-0.2	All
HY-1157	D	8 July	1058	-0.2	All
HY-1157	E	27 July	1058	0.0 -0.2	to 13.4 below
HY-1157	F	28 July	1058	-0.2	All
HY-1157	G	7 Aug.	1058	0.0	All
HY-2157	A	9 Aug.	1058	0.0	All
HY-2157	B	10 Aug.	153	-0.1 -0.2	to 11.0 below

Launch #117

<u>Sheet No.</u>	<u>Day Ltr.</u>	<u>Date</u>	<u>Fath. No.</u>	<u>Correction</u> (fms)	<u>Depth</u> (fms)
HY-1157	A	23 June	132	-0.2 -0.3 -0.4 -0.6	to 7.6 to 11.0 to 13.4 below
HY-1157	B	23 June	132	-0.2 -0.3 -0.4 -0.6	to 7.6 to 11.0 to 13.4 below
HY-1157	C	26 June	132	0.0	to 0.3
and HY-2157	A	26 June	132	-0.1 -0.2 -0.3 -0.4 -0.5 -0.6 -0.7 -0.8 -0.9	to 1.0 to 1.7 to 2.3 to 2.8 to 3.5 to 4.3 to 5.2 to 6.4 to 7.8

Tabulation of Launch Instrument Corrections Cont.

<u>Sheet No.</u>	<u>Day</u>	<u>Ltr.</u>	<u>Date</u>	<u>Fath. No.</u>	<u>Correction</u> (fms)	<u>Depth</u> (fms)
					-1.0	to 9.2
					-1.2	to 12.0
					-1.4	to 13.7
					-1.6	to 14.7
					-1.8	to 15.8
					-2.0	to 17.0
					-2.2	to 18.2
					-2.4	to 19.5
					-2.6	to 20.7
					-	
HY-2157	B		8 July	132	-0.2	to 6.0
					-0.1	to 7.6
					0.0	to 12.5
					0.1	to 15.6
					0.2	to 16.6
HY-1157	D		27 July	132	-0.1	to 7.6
					0.0	below
HY-1157	E		25 July	132	0.0	All
HY-2157	C		7 August	132	-0.2	All
HY-2157	D		9 Aug.	132	-0.2	to 5.9
					-0.1	to 7.5
					0.0	below
HY-2157	E		10 Aug.	132	0.0	All

TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens:

21 February 1958

Plane of reference approved in
11 volumes of sounding records for

HYDROGRAPHIC SHEET 8403

Locality Georges Bank, Atlantic Ocean

Chief of Party: G. R. Fish in 1957

Plane of reference is mean low water

ft. on tide staff at

ft. below B.M.

Height of mean high water above plane of reference is 4.9 feet.

Condition of records satisfactory except as noted below:


Signature

Chief, Tides Branch

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8403...

Records accompanying survey:

Boat sheets ..1...; sounding vols. .11...; wire drag vols.;
 bomb vols.; graphic recorder rolls .7-Envelopes
 special reports, etc. .1-Smooth sheet and 1 Cahier-Raydist
 .Plotting Abstracts, .1-Descriptive Report.....
 21-Envelopes Raydist Tape Records.

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

	Thomas
Number of positions on sheet	3054
Number of positions checked	-
Number of positions revised	2
Number of soundings revised (refers to depth only)	10
Number of soundings erroneously spaced	3
Number of signals erroneously plotted or transferred	-
Topographic details	Time -
Junctions	Time 1/2
Verification of soundings from graphic record	Time 1 hr.
Section 42° 44' to 42° 48' 67° 40' 30" to 67° 50' 15" E. Thomas	18 hrs.
Verification by.....	Total time Date
Reviewed by.....	Time Date

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H- 8403

The verifier should deal with the present hydrographic survey only, as the reviewer considers its relation to previous surveys and published charts. He should be thoroughly familiar with Chapters 3, 7 and 9 of the Hydrographic Manual.

1. The descriptive report was consulted and appropriate notes were made in soft pencil regarding action taken.
2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude.
3. All reference to survey sheets mentioned in the descriptive report include the registry number and year.
4. Geographic names of hydrographic features if on sheet are in slanting lettering and of topographic features in vertical lettering.
5. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken.
6. All positions verified instrumentally were check marked in the sounding records.
7. All critical soundings are clear and legible and are a little larger than the adjacent soundings.
8. The metal protractor has been checked within the last three months.
9. The protracting and plotting of all bad crossings were verified.
10. All detached positions locating critical soundings, rocks or buoys were verified.
11. The boat sheet was compared with the smooth sheet.

12. The spacing of soundings as recorded in the records was closely followed.
13. The bottom characteristics were shown on outstanding shoals.
14. The reduction and plotting of doubtful soundings were checked.
15. The transfer of contemporary topographic information was carefully examined.
16. All junctions were transferred and overlapping curves made identical.
17. The notation "JOINS H- (19--)" was added in ink for all contemporary adjoining or overlapping sheets now registered. Those not verified are shown in pencil.
18. The depth curves have been inspected before inking.
19. All triangulation stations and transfer of topographic and hydrographic signals were checked.
20. Heights of rocks were checked against range of tide.
21. Rocks transferred from topographic surveys have a dotted curve where shown thereon. Rocks located accurately by hydrographer are encircled by dotted red curve.
22. Unnecessary pencil notes have been removed.
23. Objects on which signals are located and which fall outside of the low water line have been described on the sheet.
24. The low water line and delineation of shoal areas have been properly shown.
25. Degree and minutes values and symbols have been checked.
26. Questionable soundings have been checked on the fathograms.

27. Source of shoreline and signals (when not given in report).
28. All notes on sheet are in accordance with figure 171 in the Hydrographic Manual.
29. All aids located, with those on contemporary topographic sheets, have been shown on survey.
30. Depth curves were satisfactory except as follows:
31. Sounding line crossings were satisfactory except as follows:
32. Junctions with contemporary surveys were satisfactory except as follows:
33. Condition of sounding records was satisfactory except as follows:
34. The protracting was satisfactory except as follows:
35. The field plotting of soundings was satisfactory except as follows:
36. Notes to reviewer:

Verified by

Date

TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens

11 March 1959

Plane of reference approved in
7 volumes of sounding records for

HYDROGRAPHIC SHEET 8404 Add. Wk.

Locality Georges Bank

Chief of Party: G. R. Fish in 1958

Plane of reference is mean low water

ft. on tide staff at

ft. below B.M.

Height of mean high water above plane of reference at the working
grounds is 4.9 feet.

Condition of records satisfactory except as noted below:



Signature

Chief, Tides Branch

GEOGRAPHIC NAMES

Survey No. H-8403

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
<u>Massachusetts</u>			(font title)							B.G.N.	1
<u>Georges Bank</u>			"	"						"	2
<u>Georges Shoal</u>			"	"							3
											4
					Names approved						5
					3-12-58. L. Heck						6
											7
<u>Boston</u>			(tide station)								8
											9
											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

8403

Diag. Cht. No. 1000-3 and 1107.

Form 504 U. S. COAST AND GEODETIC SURVEY DEPARTMENT OF COMMERCE DESCRIPTIVE REPORT	
<i>Type of Survey</i> HYDROGRAPHIC	
<i>Field No.</i> HY-4157 <i>Office No.</i> H-8403	
LOCALITY	
<i>State</i> MASSACHUSETTS	
<i>General locality</i> GEORGES BANK	
<i>Locality</i> NORTHEAST OF GEORGES SHOAL	
<hr/> 194 58	
CHIEF OF PARTY	
GILBERT R. FISH	
LIBRARY & ARCHIVES NOV 20 1958	
DATE	

8403

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-8403

Field No. HY-4157

State MASSACHUSETTS

General locality GEORGES BANK

Locality NORTHEAST OF GEORGES SHOALS

Scale 1:40,000 Date of survey 1957 & 1958

Instructions dated 28 November 1956, Supplementals 28 Feb. 1957, 23 October 1957,
29 April 1958, 17 July 1958

Vessel HYDROGRAPHER

Chief of party G. R. Fish

Surveyed by D.M. Whipp, W.R. Kachel, W.D. Barbee, D.L. Campbell, R. F. Shoolbred
J.R. Schwartz

Soundings taken by ~~fathometer~~, graphic recorder, ~~hand lead, etc.~~

Fathograms scaled by Ship's Personnel

Fathograms checked by Ship's Personnel

Protracted by D.L. Campbell, R.F. Shoolbred

Soundings penciled by D.I. Wolsk

Soundings in fathoms ~~feet~~ at MLW ~~MLLW~~

REMARKS: Off Shore Survey.

21

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SURVEY H-8403 (FIELD NO. HY-4157)

GEORGES BANK

NORTHEAST OF GEORGES SHOAL

1958

SHIP HYDROGRAPHER
GILBERT R. FISH

SCALE 1:40,000
CHIEF OF PARTY

A. PROJECT:

Project No. CS-401 original instructions dated 29 November 1956, supplemental instructions dated 28 February 1957, 23 October 1957, 28 April 1958, 17 July 1958.

B. SURVEY LIMITS AND DATES:

This survey covers the area to the northeast of Georges Shoal on Georges Bank in the GULF OF MAINE. The approximate limits of the field work done this season are Latitude $41^{\circ} 49.4'$ North to Latitude $42^{\circ} 02.4'$ North, Longitude $67^{\circ} 31.6'$ West to Longitude $67^{\circ} 49.5'$ West.

A Descriptive Report was submitted previously for the area of this sheet covered during the 1957 field season. This report covers only the portion of the sheet completed in the 1958 field season.

Field work on this sheet for this season began on 26 April 1958 and ended on 27 May 1958.

The 1958 portion of this survey makes a junction with the following prior surveys:

H-5196	1:40,000	1931
H-5173	1:100,000	1931

This survey makes a junction with the following contemporary surveys:

H-8402	(HY-2157)
H-8452	(HY-4257)
H-8404	(HY-4357)
H-8414	(HY-10257)

C. VESSELS AND EQUIPMENT:

The hydrography on this survey was accomplished by the Ship HYDROGRAPHER.

The turning radius at sounding speed (120 RPM or approximately 10 knots) of the HYDROGRAPHER is 80 to 120 meters depending upon the prevailing wind and current.

808 J type fathometers were used for this entire survey. The following serial numbers were used:

153-SPX
57-31

D. TIDE AND CURRENT STATION:

Tide reducers for this survey are referenced to the Standard Tide gage at Boston, Massachusetts. Time difference of minus one hour and ratio of ranges of 0.5 was furnished by the Washington Office.

No current stations were observed on this sheet.

E. SMOOTH SHEET:

The smooth sheet projection and Raydist arcs were ruled by the Washington Office.

F. CONTROL STATIONS:

All hydrography on this sheet was controlled by Raydist using two stations as follows:

R₂, also EPIA, at Southwest Harbor, Maine, Latitude 44° 14' 47.65" North, Longitude 68° 17' 37.61" West.

The G. P. of this station was determined by F. B. Quinn, Boston District Officer, in 1955.

R₁, also EPIB, at Wellfleet, Cape Cod, Massachusetts, Latitude 41° 56' 31.426" North, Longitude 69° 59' 11.305" West.

The G. P. of this station was determined by K. S. Ulm, Boston District Officer, in 1957. It is the same as R.M.I. of Triangulation Station FRAZIER, 1957.

G. SHORELINE AND TOPOGRAPHY:

No shoreline or topography is shown on this sheet as this is an off-shore survey.

H. SOUNDINGS:

All depths were measured using 808 J type fathometers. These fathometers are old and proved rather unreliable at times. However, adequate checks and tests were made to verify the accuracy of the soundings (see separate report on velocity and fathometer corrections).

I. CONTROL OF HYDROGRAPHY:

Raydist control was used for all ship work on this sheet. The Raydist dials were set at the Texas Tower and at survey buoys located by runs from the Texas Tower, and an abstract of Raydist corrections for this sheet ^{is} included at the end of this report. The Raydist stations were located as indicated in Section F of this report. A complete explanation of Raydist control and calibration is included in the Raydist Report submitted to the Washington Office 9 December 1957 and 15 August 1958 and the Addendum to the Raydist Report submitted 28 October 1958.

On this particular sheet the boat sheet was plotted on a slightly different datum due to an error in position of a survey buoy located from the Texas Tower.

The proper corrections have been applied to the Raydist distances in the Volumes and the smooth sheet is plotted correctly (on the North American 1927 Datum (Provisional)).

An additional correction may have to be applied to the entire project due to (1) a change in lane width of the R₂ lane during the 1958 season and (2) an error in the Texas Tower position in R₂ distance discovered near the close of the 1958 ^{← revise} season. _{only for this}

These discrepancies are discussed in the Raydist Report for 1958 and the Addendum to the 1958 Raydist Report previously submitted to the Washington Office and also in personal contact between Captain G. R. Fish, Chief of Party, and the Division of Coastal Surveys.

J. ADEQUACY OF SURVEY:

This survey is complete.

The portion of the survey this report covers is complete and adequate to supersede prior surveys for charting.

Junctions with the adjoining surveys are satisfactory.

The depth curves can be adequately drawn at the junctions.

Non-standard depth curves at 5 fathom intervals, 15, 25, et cetera, were added to the smooth sheet in addition to the standard depth curves because of the extremely rough character of the bottom.

K. CROSSLINES:

Crossline were run to approximately 5 - 10% of the regular system of sounding lines.

L. COMPARISON WITH PRIOR SURVEYS:

This portion of the survey was compared with prior surveys H-5196, 1:40,000, 1931 and H-5173, 1:100,000, 1931. It was somewhat difficult to compare this survey with the prior surveys *due* to the ragged character of the bottom. On the prior surveys the sounding lines and soundings were spaced rather widely and unevenly and the depth curves as drawn on the new survey differs considerably from those as shown on the prior surveys. In general, the depths are in good agreement and the shoalest areas agree very well in depth and position.

The 10 fathom sounding shown on H-5173 at Latitude $41^{\circ} 53.3'$ North, and Longitude $67^{\circ} 43.9'$ West is discussed in section M.

This is a modern electronically controlled survey using close line spacing and continuously recording fathometers. It is recommended that the new depths and contours be used.

Shoals were more completely developed and some of the shoalest of these are tabulated in Section M & N of this report.

M. COMPARISON WITH CHART:

This survey was compared with chart No. 3085 scale 1:220,000 the largest scale survey of the area available. The comparison was very good considering the difference in scale between the chart and the smooth sheet.

The 10 fathom sounding shown on the chart at Latitude $41^{\circ} 53.3'$ North, and Longitude $67^{\circ} 43.9'$ West was not verified. Two 12 fathom soundings were obtained in the area. The note on prior survey H-5173 indicates this sounding has been carried forward since 1837 without being verified. It is recommended that the new depth of 12 fathoms be accepted. This item is mentioned in the preliminary review.

The 12 fathom sounding at Latitude $41^{\circ} 57.3'$ North, and Longitude $67^{\circ} 38.7'$ West on this chart is also mentioned in the preliminary review. The shoalest sounding obtained in the area during this survey was 13 fathoms. It is recommended that the new depth be accepted.

The 10 fathom sounding shown at Latitude $41^{\circ} 55.0'$ North, and Longitude $67^{\circ} 34.1'$ West was not verified. There is a 10.8 fathom sounding in the immediate area and a 10.2 fathom sounding about 1.0 mile WNW at Latitude $41^{\circ} 55.4'$ North, and Longitude $67^{\circ} 35.2'$ West.

Additional splits were run this year, in the vicinity of the $5\frac{1}{2}$ fathom sounding at Latitude $41^{\circ} 50.6'$ North and Longitude $67^{\circ} 29.7'$ West. Nothing shoaler than the 5.5 fathom sounding obtained in 1957 at Latitude $41^{\circ} 50.7'$ North, and Longitude $67^{\circ} 30.1'$ West was found. It is again recommended that the depths found on the new survey be used.

The 7 fathom sounding at Latitude $41^{\circ} 49.6'$ North, and Longitude $67^{\circ} 37.6'$ West was verified by a 7 fathom sounding obtained this year. The $7\frac{1}{2}$ fathom sounding shown on the chart just to the west of the ^{was} were not verified. The shoalest sounding obtained in that area was an 8.2 fathom spot at Latitude $41^{\circ} 49.0'$ North, and Longitude $67^{\circ} 39.0'$ West.

Other comparisons were made between specific areas and the agreement in position and depth was very good. The general position agreement between shoals was very good and, of course, the closer line spacing and more accurate control gives a much more comprehensive delineation of depth contours than previously obtained.

It is recommended that the depths found on the new survey be used.

N. DANGERS AND SHOALS:

The following shoal soundings are in addition to those mentioned in Sections L & M of this report:

Least Depth (fm)	Latitude	Longitude
7.0	41° 49.8 ⁶ '	67° 37.7'
8.2	41 49.6	67 39.0
9.6	41 50.1	67 39.8
6.8	41 51.6	67 32.0
7.6	41 51.9	67 32.3

All charted dangers and shoals were found as charted or shoaler depths were obtained. Exceptions are listed in Sections L, M, and N.

P. AIDS TO NAVIGATION:

No fixed or floating aids to navigation are located within the limits of this survey.

Q. LANDMARKS FOR CHARTS:

No landmarks for charts are located within the limits of this survey.

R. GEOGRAPHIC NAMES:

No investigation was made of geographic names.

U. MISCELLANEOUS:

In the preliminary review, two undeveloped shoals were marked within the area of this survey with the note that they had been specifically mentioned for further development in the reviews of prior surveys. These and other similar areas were covered and developed normally as the survey progressed. These two specific items are discussed in Section M.

Z. TABULATION OF APPLICABLE DATA:

	To Washington Office
Season's Report - 1958	28 October 1958
Raydist Report - 1958 Season	15 August 1958
Annual Statistical Report	30 June 1958
Fathometer and Velocity Correction Report	28 October 1958
Oceanographic Activities Report	To be submitted 10 Nov. 1958
Addendum to Raydist Report	28 October 1958
Bathythermograph Slides	10 November 1958
Oceanographic Log Sheets "A"	10 November 1958
Oceanographic Log Sheets "B"	10 November 1958
Shipboard Wave Observation Logs	10 November 1958
Water Samples - (sent to the HYDROGRAPHIC OFFICE)	To be sent

Abstracts of the various corrections used in this survey are attached to the end of this report.

David I. Wolsk

David I. Wolsk
ENS., C&GS

STATISTICS FOR HYDROGRAPHIC SURVEY

H-8403 (HY-4157)

USC&GS SHIP HYDROGRAPHER

1958

PROJECT CS-14010

(CS-401)

<u>Day Letter</u>	<u>Volume No.</u>	<u>Date</u>	<u>No. of Positions</u>	<u>Naut. Mi. Soundings</u>
Y	12	26 April 1958	106	60.9
Z	12-13	27 April 1958	241	137.7
AA	13	28 April 1958	103	49.4
BA	13-14	29 April 1958	174	117.7
CA	14	10 May 1958	212	112.4
DA	14-15	11 May 1958	187	111.7
EA	16	13 May 1958	257	143.6
FA	16-17	14 May 1958	202	110.2
GA	17	27 May 1958	45	24.2
		Total for 1958	1527	867.8
		Total for 1957	3082	1897.5
		Total for Sheet	4609	2765.3

TIDE NOTE

To Accompany

HYDROGRAPHIC SURVEY H-8403

STANDARD TIDE STATION: Boston (Commonwealth Pier) Massachusetts

LOCATION: Latitude $42^{\circ} 21' N$; Longitude $71^{\circ} 03' W$.

PLANE OF REFERENCE: Mean Low Water 3.3 feet on Tide Staff

TIME CORRECTION: Minus One hour (1 hr)

HEIGHT CORRECTION: Ratio of Ranges 0.5

AREA COVERED: Entire Survey

Above time and height corrections furnished from the
Washington Office.


The hourly heights were furnished from the Washington Office.

APPROVAL SHEET

The field work accomplished on this survey was under the supervision of G. R. Fish, Capt, C&GS, Comdg., Ship HYDROGRAPHER. Daily inspections of the records, boat sheet, and smooth sheet were made as the survey progressed.

The records, boat sheet, and smooth sheet as submitted to the Washington Office have been reviewed and are approved by me.

The survey is complete and adequate and no additional field work is recommended.


M. E. Wennermark
CDR, C&GS
Comdg., Ship HYDROGRAPHER

FINAL RAYDIST CORRECTIONS FOR SHEET HI-1197

Date	Day Ltr.	Positions	Final Corr.		Remarks
			R ₁	R ₂	
26 April	Y	1 - 9	-6.8	12.9	
26 April	Y	10	-4.8	10.9	R ₁ lost 2 lanes - R ₂ gained 2 lanes
26 April	Y	11 - 48	-3.8	9.9	R ₁ lost 1 lanes - R ₂ gained 1 lane
26 April	Y	49 - 68	-3.8	11.9	R ₂ lost 2 lanes
26 April	Y	69 - 71	-4.1	8.3	Recalibrated
26 April	Y	72 - 94	-4.1	10.3	R ₂ lost 2 lanes
26 April	Y	95	-4.1	11.3	R ₂ lost 1 lane
26 April	Y	96 - 106	-4.1	10.3	R ₂ gained 1 lane
27 April	Z	1 - 241	-2.7	13.1	
28 April	BA	1 - 103	-1.3	10.4	
29 April	BA	1 - 174	-1.6	12.0	
10 May	CA	1 - 212	-1.0	12.4	
11 May	DA	1 - 187	-3.0	10.1	
13 May	EA	1 - 257	-3.2	12.2	
14 May	FA	1 - 15	-3.2	10.4	
14 May	FA	16 - 202	-26.3	35.1	R ₁ gained 23 lanes - R ₂ lost 24 lanes
27 May	GA	1 - 45	-6.6	-2.2	Calibrated on HI-1197 ₃

NOTE:

No ship's head correction applied to this sheet.

TABULATION OF FINAL INSTRUMENT CORRECTIONS IN FATHOMS FOR 1958

This final correction is the algebraic sum of the instrument, phase, draft and settlement and squat corrections.

TRIP NOs.	DATE	FATH NO.	A	SCALE E	E	D
I thru III	22 Apr 51 thru 27 May	57-31	-0.2	/0.2	/1.0	/1.6
		153	-0.2	/0.8	/0.8	/0.4
IV	4 June thru 1200 11 June	57-31	-0.2	/0.2	/1.0	/1.6
		153	-0.2	/0.8	/0.8	/0.4
	1200 11 June thru 13 June	57-31	-0.4	0.0	/0.8	/1.4
		153	-0.4	/0.6	/0.6	/0.2
V and VI	20 June thru 17 July	57-31	-0.2	/0.2	/1.0	/1.6
		153	-0.2	/0.8	/0.8	/0.4
VII thru XII	21 July thru 7 Oct.	57-31	-0.2	/0.2	/1.0	/1.6
		153	0.0	/1.0	/1.0	/0.6

**FINAL VELOCITY CORRECTIONS (FVS)
1958**

Trip 1 (23-29 April 1958)

<u>HY-4157</u>	0.0 to 2.5	<u>HY-10257</u>	0.0 to 2.4
TABLE 1	-0.2 to 12.4		-0.2 to 11.6
	-0.4 to 22.3		-0.4 to 21.6
	-0.6 to 30.2		-0.6 to 30.2
	-0.8 to 39.8		-0.8 to 39.8
	-1.0 to 49.0		-1.0 to 49.0
	-1.2 to 58.8		-1.2 to 58.8

Trip 2 (6-15 May 1958)

<u>HY-4157, HY-4257, HY-4357</u>		<u>HY-10157</u>	
TABLE 2	0.0 to 2.8		0.0 to 3.4
	-0.2 to 14.0		-0.2 to 15.0
	-0.4 to 22.0		-0.4 to 23.7
	-0.6 to 31.3		-0.6 to 31.6
	-0.8 to 40.4		-0.8 to 39.5
	-1.0 to 50.0		-1.0 to 47.6
	-1.2 to 59.5		-1.2 to 56.5
	-1.4 to 69.0		-1.4 to 65.5
	-1.6 to 78.2		-1.6 to 75.5 *
	-1.8 to 88.5		-1.8 to 85.5 *
	-2.0 to 97.0		-2.0 to 95.5 *
			-2.2 to 105.5 *
			-2.4 to 115.5 *
			-2.6 to 125.5 *

* Extrapolated

Trip 3 (20-28 May 1958)

<u>HY-4157, HY-4357</u>		<u>HY-10157</u>	
TABLE 3	0.0 to 3.5		Same as Trip 2
	-0.2 to 17.2		
	-0.4 to 25.6		
	-0.6 to 35.0		
	-0.8 to 45.0		
	-1.0 to 54.8		
	-1.2 to 64.5		
	-1.4 to 74.5		
	-1.6 to 84.0		
	-1.8 to 95.2		
	-2.0 to 109.4		

FINAL VELOCITY CORRECTIONS (FMS) 1958 --Continued:

Trip 4 (6-13 June 1958)

HY-4257, HY-4357, HY-2158,
HY-4158, HY-10158

HY-10157

0.0 to 4.6
-0.1 to 11.0
-0.2 to 20.0
-0.4 to 30.2
-0.6 to 40.1
-0.8 to 49.8
-1.0 to 59.2
-1.2 to 69.4
-1.4 to 79.6
-1.6 to 90.8
-1.8 to 102.7
-2.0 to 109.4

Same as Trip 2

Trip 5 (19-26 June 1958)

HY-2158, HY-4257

HY-10157

0.0 to 4.7
-0.1 to 13.7
-0.2 to 22.0
-0.4 to 31.2
-0.6 to 40.4
-0.8 to 49.4
-1.0 to 58.5
-1.2 to 68.5
-1.4 to 78.6
-1.6 to 89.6
-1.8 to 102.0
-2.0 to 115.8

0.0 to 7.6
-0.1 to 11.0
-0.2 to 18.7
-0.4 to 27.0
-0.6 to 35.1
-0.8 to 43.6
-1.0 to 52.8
-1.2 to 62.7
-1.4 to 72.9
-1.6 to 83.5
-1.8 to 94.0 *
-2.0 to 104.5 *
-2.2 to 115.0 *

* Extrapolated

Trip 6 (7-17 July 1958)

HY-4257, HY-4158, HY-10158

HY-10157

0.0 to 10.0
-0.1 to 11.0
-0.2 to 25.0
-0.4 to 30.2
-0.6 to 39.9
-0.8 to 50.2
-1.0 to 60.0

0.0 to 13.7
-0.2 to 26.0
-0.4 to 35.9
-0.6 to 45.5
-0.8 to 55.0
-1.0 to 64.5
-1.2 to 74.0 *
-1.4 to 83.5 *
-1.6 to 93.0 *

* Extrapolated

FINAL VELOCITY CORRECTIONS (FMS) 1958--Continued:

Trip 7 (22-31 July 1958)

HX-4158, HX-10158

0.0 to 19.0
-0.2 to 50.0

HX-10157

No hydro this trip

Trip 8 (5-15 August 1958)

Oceanographic trip - No. hydro.

Trip 9 (20-29 August 1958)

HX-4158, HX-10158

0.0 to 30.0
-0.2 to 43.0

HX-10157

0.0 to 8.4
-0.1 to 11.0
-0.2 to 17.4
-0.4 to 26.0
-0.6 to 34.7
-0.8 to 45.5
-1.0 to 56.7
-1.2 to 65.3
-1.4 to 72.0 *
-1.6 to 79.5 *
-1.8 to 87.0 *
-2.0 to 94.5 *

* Extrapolated

Trip 10 (4-11 September 1958)

HX-4158

0.0 to 30.0
-0.2 to 43.0

HX-10157

0.0 to 10.2
-0.1 to 11.0
-0.2 to 23.0
-0.4 to 32.5
-0.6 to 41.5
-0.8 to 50.5
-1.0 to 60.7
-1.2 to 70.8 *
-1.4 to 81.0 *
-1.6 to 91.2 *
-1.8 to 101.4 *
-2.0 to 111.6 *

* Extrapolated

FINAL VELOCITY CORRECTIONS (FMS) 1958—Continued:

Trip 11 (16-25 September 1958)

HY-4158, HY-10158

0.0 to 30.0
-0.2 to 43.0

HY-10157

Same as Trip 10.

Trip 12 (1-6 October 1958)

HY-4158, HY-4258, HY-10158

0.0 to 30.0
-0.2 to 35.0
-0.4 to 40.0
-0.6 to 45.3

HY-10157

0.0 to 17.0
-0.2 to 34.7
-0.4 to 46.7
-0.6 to 57.5
-0.8 to 68.0
-1.0 to 78.5 *
-1.2 to 89.0 *
-1.4 to 99.5 *
-1.6 to 110.0 *
-1.8 to 120.5 *

* Extrapolated

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8403(1958 Work)

Records accompanying survey:

Boat sheets; sounding vols. ⁶.....; wire drag vols.;
bomb vols.; graphic recorder rolls ~~4~~¹-Envelopes
special reports, etc.~~1~~¹-Descriptive report. ~~1~~¹-Cahier-Raydist
~~1~~¹-Plotting Abstracts, and ~~1~~¹-Envelope-Brush and Printers Tapes...

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.....	Total time Date
Reviewed by.....	Time Date

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8403

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
4/2/58	3052	N.W. Burgoyne	Before After Verification and Review ^{before} Completely Applied H-8403 was verified only for area covered by Cl 3052
7-3-58	3076	C.R. Wittmann	Before After ^{partial} Verification and Review Exam for crit con. Used photostat of smooth sheet - giv
7-14-58	3075	C.R. Wittmann	Before After ^{partial} Verification and Review Exam for crit con. Used photostat copy of smooth sheet
7-15-58	71	M. Rogers	Before After ^{partial} Verification and Review Critical con. appld thru chart 3075-3076
12/10/58	1000	J. Walker	Before After Verification and Review Partially Examined - no con. (including ad wk)
5/11/59	1107	Eaton	Before After Verification and Review
12/14/59	1106	J. du	Before After Verification and Review added (7 1/2)
13003			Before After Verification and Review Dry 61, Adequately
2-14-90	13003	Ed Martin	applied, no further processing required Before After Verification and Review
2-22-90	13260	Russell Plunz	Before After Verification and Review Dry 39, Adequately applied, no further processing required

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.