

8350

Diag. Cht. Nos. 1208-2 and 1209-3.

Also Diag. Cht. Form 504 No. 1107.

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. GI-4156 Office No. H-8350

LOCALITY

State Massachusetts

General locality Atlantic Ocean

Locality East Approaches to Nantucket Sound.

1945

CHIEF OF PARTY

R. A. Marshall

LIBRARY & ARCHIVES

DATE June 19, 1958

8350

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-8350

Field No. G1-4156

State MASSACHUSETTS

General locality ATLANTIC OCEAN

Locality EAST APPROACHES TO NANTUCKET SOUND

Scale 1:40,000 Date of survey 3 May to 12 June 1956

Instructions dated 14 Jan. 1955; 27 Feb. 1955; 27 Dec. 1955

Vessel GILBERT

Chief of party R.A. MARSHALL

Surveyed by R.A. MARSHALL, N.E. TAYLOR & M.B. MILLER

Soundings taken by ~~XXXXXX~~, graphic recorder, hand lead, ~~XXX~~

Fathograms scaled by SHIP PERSONNEL

Fathograms checked by NORFOLK DISTRICT OFFICE PERSONNEL

Protracted by R.D. LYNN

Soundings penciled by R.D. LYNN

Soundings in ~~XXXXXX~~ feet at MLW ~~XXXXXX~~ *and are some depths*

REMARKS: _____

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SURVEY H-8350

(Field No. GI-4156)

East Approaches to Nantucket Sound -- Cape Cod, Mass.

Ship GILBERT

Robert A. Marshall, Cdg.

Scale 1:40,000

Surveyed by	CDR.	R.A. Marshall
	LCDR.	N.E. Taylor
	ENS.	M.B. Miller

A. PROJECT

Work covered by this report was accomplished on project 13690 under Instructions dated 24 May 1954 ref. 22-rct s-2-PARKER issued to C.O. PARKER; Supplemental Instructions dated 14 January 1955 ref. 22-SRO S-2-GI, modified 27 February 1955 ref. 22/MEK S-2-GI; Supplemental Instructions dated 27 December 1955 ref. 22/MEK S-2-GI.

B. SURVEY LIMITS AND DATES

The area covered by this offshore survey is in the Atlantic Ocean east and southeast of the mainland of Massachusetts and is bounded approximately by latitude $41^{\circ} 30'$ and $41^{\circ} 41'$ and by longitude $69^{\circ} 41'$ and $69^{\circ} 54'$.

Field work was started 3 May 1956 and completed 12 June 1956.

The area covered by this sheet includes area previously surveyed on the following sheets:

<u>No.</u>	<u>Scale</u>	<u>Date</u>
H-5750 ⁵⁷⁰	1:40,000	1856
H-5276	1:100,000	1932
H-3031	—	—
H-2597	1:20,000	—
H-1285	1:40,000	1875
H-2121	1:40,000	1892
H-2101 A & B	1:20,000	1931

*See also
Review P5*

This sheet junctions with sheet GI-1156 (H-8349) and sheet PAR-2154 (H-8171) on the west and with sheet GI-2.5/156 (H-8409) on the south. Sheet GI-2.5/156 is incomplete at this time.

C. VESSELS AND EQUIPMENT

The ship GILBERT using 808 type depth recorders was used for this entire survey. Soundings are in feet except in depths greater than the range of the 808 recorder when the fathom scale was used. The fathom scale was used only in the northeast corner of the sheet but all boatsheet soundings are plotted in feet.

Two shoran stations were established for horizontal control of this survey and were located at Chatham Lighthouse and Point Gammon.

The GILBERT based at Woods Hole, Mass, during this survey anchoring nights on or near the working grounds when weather permitted.

D. TIDE AND CURRENT STATIONS

No tide stations were established for this survey and reducers for the boat sheet were obtained from predicted tide tables using Boston as base station corrected by + 25 minutes and -2.8 feet on high water and 0.0 feet on low water. Final reducers were furnished by the Washington D.C. office. *See Norfolk P.O. Addendum re changes.*

No current stations were occupied.

E. SMOOTH SHEET

The smooth sheet is to be constructed and plotted by the Norfolk Processing Office.

F. CONTROL STATIONS

This survey was shoran controlled from two stations one being located on Chatham Lighthouse, its position given as Chatham South Lighthouse, 1880, with the G.P. on page 135 of Accession No. of Computation G 3656 and the other station being located on Point Gammon its position being obtained by computing an inverse azimuth from Bishop and Clerks Lighthouse 1887, 1943, (page 144 of Accession G 3692) to Point Gammon Lighthouse, 1934, (page 145 of Accession G 3692), and then projecting this azimuth northwestward from Point Gammon a Measured Distance. Both of these stations were used in 1954 and the station on Point Gammon was established in 1954.

Control for the aluminum Shoran Test Plate was obtained from Cape Cod Triangulation G.P.'s, Topo Station Card T 5738 and Chart Letter No. 257, Ship HILGARD, 22 July 1949.

Location of the Shoran stations are as follows:
CHAT Lat. 41-40-16.672 Long. 69-57-01.571
GAMM Lat. 41-36-37.85 Long. 70-16-01.89

G. SHORELINE AND TOPOGRAPHY

No shoreline or topography extended into the area of this survey.

See Review

H. SOUNDINGS

All soundings were recorded in feet on 808 type depth recorders No. 161 and No. 159 except where depths exceeded the foot scale and the recorder was shifted to fathoms. The fathom scale was used only on the northeast corner of the sheet and were converted to feet for plotting the boat sheet.

No unusual methods, equipment or corrections were applied except converting fathoms to feet for the boatsheet.

I. CONTROL STATIONS

The two shoran stations given in "F" of this report CHAT and GAMB were used exclusively for control of the hydrographic positions. ✓

The shoran arc from CHAT was followed and the distance along the arc was obtained from station GAMB. Positions approaching the baseline extension of CHAT - GAMB were at times difficult to obtain and due to approaching this base line the sounding positions at the north edge of the sheet are believed less accurate. Positions at the northeast corner of the sheet were at the maximum distance from station GAMB and difficulty was encountered in obtaining steady positions in this area. ✓

J. ADEQUACY OF SURVEY

This survey is complete and is considered adequate to supersede prior surveys for charting. ✓

H-8349 Adequate junctions were made on the west with boatsheets GI-1156 and PAR-2154 and on the south with GI-2.5/156. No holidays or excessive differences exist and depth curves can be adequately drawn. H-8371 H-8409 Review IP4

K. CROSSLINES

Crosslines total about 10% for this survey and crossings are adequate except for the crossline run from 29-35 R-day where crossing differences average 3 to 4 feet which is $3\frac{1}{2}$ - 5% of the depth. Review IP2

L AND M. COMPARISON WITH PRIOR SURVEYS COMPARISON WITH CHART

Prior surveys were encompassed on chart 1209 and comparison will be made on chart 1209 corrected through 17 March 1956.

Depth curves and soundings from this survey are in general agreement with the chart. Specific differences are as follows:

1. The 60 foot sounding on chart 1209 in latitude $41^{\circ} 37. '95$ longitude $69^{\circ} 46. '05$ refers to the least depth over the remains of a wreck after demolition by the Corps of Engineers, Chart letter 371 (1915).

L AND M. (con't)

This depth is not substantiated by this survey since two lines were run over the sounding and a system of lines were run in the general area with no indication of this depth. It is recommended that this sounding be deleted from the chart.

Retain 60
Review
P 6-A (1)

2. The 60 foot sounding shown on chart 1209 in latitude $41^{\circ} 35.70'$ longitude $69^{\circ} 46.40'$ originated from H-5276 (1933) from a fathometer dial reading and is not substantiated by this survey since development of the area gave no indication of this depth. It is recommended that this sounding be deleted from the chart.

Review
P 5

3. The 57 and 58 foot soundings on chart 1209 in approximate latitude $41^{\circ} 35.10'$ longitude $69^{\circ} 50.12'$ are in agreement with depths on this survey and it is believed that the depth curve on 1209 in this area is misplaced slightly.

4. The 60 foot sounding on chart 1209 in latitude $41^{\circ} 36.18'$ longitude $69^{\circ} 49.19'$ is not substantiated by the general system of sounding lines on this survey although no special investigation was made.

Review
P 6

5. The ⁴⁸49 foot sounding on ^{H-8350}beatsheet GI-4156 in latitude $41^{\circ} 38.13'$ longitude $69^{\circ} 51.9'$ is not indicated on chart 1209. This depth was obtained between position 89-90 F-day on GI-4156 and from an examination of the fathogram it was believed to be a true sounding. Development of the area between positions 95-97 F-day and positions 16-26 R-day gave no indication of this depth. It is believed that there is a possible wreck in this area.

Trace strong
and considerably
good.

6. The ⁵¹48-foot sounding on ^{H-8350}GI-4156 in latitude $41^{\circ} 30.16'$ longitude $69^{\circ} 45.12'$ is not shown on chart 1209. Depths on adjacent lines on GI-4156 are in general agreement with this ⁵¹48-foot sounding.

7. the ³⁴32 foot sounding on ^{H-8350}GI-4156 in latitude $41^{\circ} 29.18'$ longitude $69^{\circ} 44.10'$ is in general agreement with depths and curves on chart 1209. This sounding was again obtained while this vessel surveyed on GI-2.5/156 at the junctions of these sheets.

N. DANGERS AND SHOALS

No dangers or shoals were discovered and no dangers, shoals or bare rocks are charted except those listed in "M" above.

O. COAST PILOT INFORMATION (not applicable)

P. AIDS TO NAVIGATION

Retain in charted position, as that is the correct station position 7102 10/9/58

Pollock Rip Lightship in latitude $41^{\circ} 36.'1$ longitude $69^{\circ} 51.'1$ according to the 1956 Light List was the only aid to navigation in the area covered by this survey and it was located in latitude $41^{\circ} 36.'~~1~~^{85}$ longitude $69^{\circ} 50.'~~35~~^3$ by this survey on 18 May 1956 on position 43 G-day in 68 feet of water.

No information pertaining to position of L.S. was recorded in sdg udl.

This is an offshore survey and no cables, bridges or ferry routes are in the area.

Q & Y No remarks under these headings

Z. TABULATION OF APPLICABLE DATA

Statistics, tide note, velocity correction abstract, shoran corrections and temperature and salinity observations are included in this report.

Corr'ns

Respectfully submitted,

Norman E. Taylor

Norman E. Taylor
LCDR C&GS

Approved and Forwarded:

Robert A. Marshall
Robert A. Marshall
CDR C&GS
Commanding GILBERT

STATISTICS FOR HYDROGRAPHIC SURVEY H-8350 (1956)

Date 1956	Day Letter	Vol.	Positions		Naut. Mi. Sounding
			Sdg.	Wire	
5/3	A	1	51	--	46.0
5/4	B	1	31	--	21.0
5/8	C	1	37	--	15.5
5/15	D	1-2	76	--	68.9
5/16	E	2	66	--	57.5
5/17	F	2	110	--	88.0
5/18	G	2-3	46	--	39.0
5/22	H	3	101	--	77.8
5/24	J	3	21	--	15.1 7
5/28	K	3	54	--	40.7
5/29	L	4	44	--	35.2
5/30	M	4	25	--	22.0
6/6	N	4	--	12	---
6/7	P	4	70	4	48.4
6/8	Q	4	47	4	36.0
6/12	R	<u>5</u>	<u>70</u>	<u>2</u>	<u>39.0</u>
TOTALS		5	849	22	650.1

AREA IS 105.7 SQUARE NAUTICAL MILES

TIDE NOTE SHEET H-8350 (1956)

Tide reducers for boatsheet ~~GL~~-4156 were obtained from the predicted tide tables using Boston as the base station and applying + 25 minutes to time and - 2.8 to high water height. *

Hourly heights for the reduction of soundings for the smooth sheet were furnished by the Washington D.C. office. *

No tide gages were established or maintained for soundings on this survey.

** See Norfolk Processing Office Addendum*

SHORAN CORRECTIONS

Corrections for the shoran readings were obtained from a comparison of the zero checks taken during this survey with the zero check settings when the shoran set was calibrated by visual fixes .

Final Shoran Corrections

<u>Date</u>	<u>Day</u>	<u>Corr'n to CHAT</u>	<u>Corr'n to GAMM</u>
5/3	A	+ 0.006	+ 0.002
5/4	B	0.002	- 0.001
5/8	C	0.005	+ 0.007
5/15	D	0.001	0.000
5/16	E	0.001	-0.004
5/17	F	0.002	+ 0.002
5/18	G	0.007	0.003
5/22	H	0.004	0.006
5/24	J	0.006	0.007
5/28	K	0.010	0.006
5/29	L	0.006	0.010
5/30	M	0.004	0.012
6/6	N	0.004	0.002
6/7	P	0.004	0.005
6/8	Q	0.007	0.007
6/12	R	+ 0.003	+ 0.005

VELOCITY CORRECTIONS

The bar check taken on 6 and 7 June 1956 was used for obtaining total correction to soundings on this sheet to the effective bar check depth of 110 - 120 feet. Soundings below this depth were corrected by adding the difference of temperature and salinity correction to the bar check correction.

Fathometer No. 161SPX

A-scale

<u>Depth</u>	<u>Corr'n</u>
0-26 ft.	0.0 ft.
26 - 30.5	+ 0.2
30.6 - 31.5	0.0
31.6 - 33.0	- 0.2
33.0 - 35.0	0.4
35.1 - 37.0	0.6
37.1 - 38.5	0.8
38.6 - 41.0	1.0
41.1 - 44.0	1.2
44.1 - 50.0	- 1.4

B-scale

40.0 - 44.0	- 0.8
44.1 - 47.0	1.0
47.1 - 49.0	1.2
49.1 - 52.0	1.4
52.1 - 54.5	1.6
54.6 - 57.0	1.8
57.1 - 59.0	2.0
59.1 - 80.0	- 2.2

C-scale

70.0 - 75.0	- 1.4
75.1 - 78.0	1.6
78.1 - 80.5	1.8
80.6 - 82.5	2.0
82.6 - 84.0	2.2
84.1 - 85.5	2.4
85.6 - 87.0	2.6
87.1 - 88.5	2.8
88.6 - 93.0	3.0
93.1 - 97.0	2.8

C-scale (con't)

<u>Depth</u>	<u>Corr'n</u>
97.1 - 112.0	- 2.6
112.1 - 115.5	2.8
115.6 - 118.0	3.0
118.1 - 119.5	3.2
119.6 - 120.0	- 3.4

D-scale

110 - 111	0.0	* 4.8
111 - 113	0.2	4.6
113 - 115	0.4	4.4
115 - 117	0.6	4.2
117 - 118	0.8	4.0
118 - 119	1.0	3.8
119 - 120	1.2	+ 3.6

Not in agreement with bar check which was poor. Used -1 ft. as being more realistic

VELOCITY CORRECTIONS (con't)

Fathometer No. 159

A-scale

<u>Depth</u>	<u>Corr'n</u>
0 - 6 ft.	0.0 ft.
6 - 12	+ 0.2
12 - 37	0.0
37 - 45	- 0.2
45 - 50	- 0.4

B-scale

40 - 46.5	+ 0.4
46.5 - 52.5	+ 0.2
52.5 - 58.5	0.0
58.5 - 65	- 0.2
65 - 71.5	0.4
71.5 - 77.5	0.6
77.5 - 89	0.8
89 - 90	- 0.6

C-scale

70-74	- 0.2
74 - 105.5	0.4
105.5 - 110	0.6

D-scale

110	+ 0.2
-----	-------

Corrections applied below the bar check depths should be changed by -0.2 foot for each 9 foot depth change to compensate for temperature and salinity change. ✓

VELOCITY CORRECTIONS - FATHOM SCALE

G1-4156

<u>FATHOMS</u>		
<u>FROM</u>	<u>TO</u>	<u>CORR.</u>
0.0	9.0	0.0
10.0	20.0	-0.2
21.0	29.0	-0.4
30.0	39.0	-0.6
40.0	48.0	-0.8
49.0	60.0	-1.0

These corrections were derived from T & S observations of
6 June 1956.



100 YEARS OF SERVICE
1807 - 1957

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON 25

IN REPLY ADDRESS THE DIRECTOR
COAST AND GEODETIC SURVEY
AND NOT THE ADDRESS OF THIS LETTER

AND REFER TO NO.
36-45-267

13 February 1958

To: Norfolk District Office
Coast and Geodetic Survey
102 West Olney Road
Norfolk 10, Virginia

Subject: Tide Zones, Project CS-369

Listed below are tide zones referred to Boston that should be used along the outer coast for the above project. This zoning supersedes that which was previously furnished you.

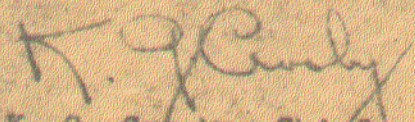
Lat. 41° 42' to Lat. 41° 39'
Time Difference = + $\frac{1}{2}$ Hr.
Ratio of High Water Heights = 0.7

Lat. 41° 39' to Lat. 41° 32'
Time Difference = + $\frac{1}{2}$ Hr.
Ratio of High Water Heights = 0.6

Lat. 41° 32' to Lat. 41° 23'
Time Difference = + $\frac{1}{2}$ Hr.
Ratio of High Water Heights = 0.4

Lat. 41° 23' to Lat. 41° 19'
Time Difference = 0 Hr.
Ratio of High Water Heights = 0.2

Enclosed are the hourly heights referred to mean low water at Boston.


K. G. Crosby, Chief
Tides and Currents Division

Enclosures:

NORFOLK PROCESSING OFFICE
 LIST OF
 FLOATING AIDS TO NAVIGATION

H-8350

<u>BUOY</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>	<u>DEPTH</u>	<u>POS. NO.</u>	<u>DATE</u>
NANTUCKET SOUND POLLOCK RIP CHANNEL					
Lighted Bell Buoy 2	41-34.08	69-54.23	36'	10R	6/12/56 ✓
Lighted Whis. Buoy 1	41-33.77	69-54.58	32'	9R	" ✓
Lighted Buoy 3	41-33.52	69-55.67	33'	8R	" ✓
Lt'd. Gong Buoy 4	41-33.62	69-55.90	38'	7R	" ✓
Ltd. Bell Buoy 5	41-33.15	69-56.75	33'	6R	" ✓
Lighted Buoy 6	41-33.08	69-57.54	66'	5R	" ✓
Lt'd. Bell Buoy 7	41-32.83	69-58.26	50'	4R	" ✓
Lt'd. Bell Buoy 9	41-32.10	69-59.59	74'	2R	" ✓
Stone Horse Shoal Lightship	41-32.73	69-59.14	78'	3R	" ✓
*Pollock Rip Lightship	41-36. ⁸⁵ 92	69-50. ³³ 26	66'	43G	5/18/56 *
Pollock Rip Entr. Lighted Whistle Buoy	41-34.70	69-52.22	52'	11R	6/12/56 ✓

* See position 43 G for location of light ship
 by Verifier - SHORAN FIX, D.S.K.

NORFOLK PROCESSING OFFICE
ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-8350 (Field No. G1-4156)

GENERAL

The northern half of this survey falls on the baseline extension of the two shore stations. The control is necessarily weak as most of the positions in this area had to be plotted on the arc from CHAT and time. Crosslines and development in this area were plotted on the arc from CHAT, time, course and surrounding hydrography.

A considerable amount of time was required to adjust these positions in order to smooth out depth curves and to bring the soundings into agreement at crossings. This agreement is considered fairly good considering the bottom irregularities and the wave action encountered. One major discrepancy exists where line 44 to 45, crosses 32 to 33A, at lat. 41-31.70 and long. 69-46.00 *Resolved - see sdg. records.*

DISCREPANCIES

Pollock Rip Lightship was plotted at position 43G in compliance with paragraph "P" of the descriptive report. The lightship was not mentioned in the sounding volumes and the position does not agree with the charted position.

A -2.0 ft was applied to sdgs pos 38 to 51 G on basis of differences at several crossings

φ 41° 38.2' λ 69° 51.9'

The shoal indication appearing on the fathogram between positions 89 and 90F was not smooth plotted. This item should be disposed of in the Washington Office as there is a probability it is a good sounding. *sdg of 48' appeared as a good trace possibly from wreckage*

TIDES

All tide corrections were re-entered by the Processing Office to comply with the latest tide zone lay-out. See copy of the Tide Division letter dated 13 Feb. 1958 (copy included in Desc. Report).

All fathograms were check scanned and the soundings reduced with templates by personnel of this Office.

Norfolk, Va.
13 June 1958

Respectfully submitted,

Hugh L. Proffitt
Hugh L. Proffitt
Cartographer.

GEOGRAPHIC NAMES

Survey No. H-8350

Name on Survey	Source										
	A	B	C	D	E	F	G	H	K		
<u>Massachusetts</u>				(title)							1
<u>Cape Cod</u>											2
<u>Monomey Point</u>										BGN	3
<u>Nantucket Sound</u>										"	4
<u>Stone Horse Shoal Lightship</u>											5
<u>Pollock Rip Channel</u>											6
<u>Pollock Rip Lightship</u>							Names approved 6-26-58				7
<u>Tide Station off sheet:</u>							L. Heck				8
<u>Boston</u>											9
											10
											11
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											13
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											27

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. ...8350.

Records accompanying survey:

Boat sheets .1...; sounding vols. ~~5~~.....; wire drag vols.;
 bomb vols.; graphic recorder rolls .46...;
 special reports, etc.

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

Number of positions on sheet		863.
Number of positions checked		.154.
Number of positions revised		..40.
Number of soundings revised (refers to depth only)		..710.*
Number of soundings erroneously spaced		..190..
Number of signals erroneously plotted or transferred	0.....
Topographic details	Time	...4 hrs
Junctions	Time	...8 hrs
Verification of soundings from graphic record	Time	...40 hrs

Verification by D. J. KENNON..... Total time 198 hrs Date 8-1-58

Reviewed by [Signature]..... Time 54... Date 12/8/58

largely corrected by crossing difference comparisons and phase changes along lines

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8350

FIELD NO. GI-4156

Massachusetts, East Approach to Nantucket Sound

Surveyed: May-June 1956

Scale 1:40,000

Project No. 13690

Soundings:

Control:

Graphic Recorder

Shoran

Chief of Party - R. A. Marshall

Surveyed by - R. A. Marshall, N. E. Taylor, M. B. Miller

Protracted by - R. D. Lynn

Soundings plotted by - R. D. Lynn

Verified and inked by - D. J. Kennon

Reviewed by - L. V. Evans III

Date: 12/8/58

Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline originates with advance prints of photogrammetric surveys T-11208 (1952-54) and T-11203 (1952-57) and with shoreline determined by the hydrographic party on H-8349 (1956).

The sources of control are given in the report.

2. Sounding Line Crossings

The final inked soundings are in adequate agreement at most crossings, but the agreement is not consistently as good as would generally be expected in such an area of sand and gravel bottom. The lack of better crossing checks is thought to be due to varying combinations of the following factors:

A. Control: The northern half of this survey falls close to the baseline of the shoran stations, resulting in rather extensive areas controlled by a single shoran arc and time. Considerable time was spent by the smooth plotter and verifier in adjusting such control for the best apparent crossing agreement. The use of an additional shoran station to provide more positive control would have been justified if only to increase the authoritative value of this survey for future studies of bottom changes. It also would have eliminated much of the additional time required to arrive at a satisfactory plot of the survey.

B. Depths: Erratic functioning of the fathometer phasing heads is suspected although the wave action throughout the survey precludes a conclusive check from the fathograms. Since only two bar checks were made for each fathometer during the survey such phasing irregularity, if present, could well go undetected on this survey, except through crossing discrepancies. The verifier applied phasing corrections, either from study of the fathograms or empirical corrections from study of crossing discrepancies, to resolve most of the disagreements of 2 to 4 feet.

3. Depth Curves and Bottom Configuration

The standard depth curves are adequately delineated.

The sand and gravel bottom in the survey area is generally fairly even with smooth slopes except at the southern and southwestern limits where the survey includes the outer lumps of Monomoy Shoals.

4. Junctions with Contemporary Surveys

The junction with H-8349 (1956) to the west revealed some discrepancies similar to the internal crossings. Some soundings from the present survey have been omitted to avoid clashing with soundings on H-8349, and inshore survey at larger scale. The resulting junction is considered adequate for continuity of hydrography for charting.

Junctions with project surveys on the south and southwest will be considered in the reviews of those surveys. On the north and east the present survey is the project limit. Present depths are in general harmony with charted depths at those limits.

5. Comparison with Prior Surveys

A.	bp 17784 (1784) Various	H-1573 (1883) 1:20,000
	H-569 (1856) 1:40,000	H-2101 (1891) 1:20,000
	H-570 (1856) 1:40,000	H-2121 (1892) 1:40,000
	H-961 (1868) 1:40,000	H-2224 (1895) 1:20,000
	H-1149 (1872) 1:20,000	H-2426 (1899) 1:20,000
	H-1195 a (1873) 1:20,000	H-2597 (1902) 1:20,000
	H-1285 (1875) 1:40,000	H-3031 (1909) 1:40,000
	H-1305 (1854-75) various	

These surveys, comprising the earlier coverage of the present survey area, were all controlled largely by dead reckoning except near the western limits of the present area where visual control could be used. In addition to their weak control, their widely spaced lines of leadline or wire soundings revealed much less detail information on bottom configuration than is found on the present survey. A comparison shows broad general agreement between the prior and present surveys in the western part of the present area where the old control was at its best, but with many localized differences in depths.

Farther offshore the differences become more pronounced, especially in the comparison with H-1285 on which the offshore control appears quite weak. The following comparison shows some examples of the differences that exist:

<u>Prior Depth (ft.)</u>	<u>Lat.</u>	<u>Long.</u>	<u>Present Depth(ft.)</u>
204 (H-570)	41°40'	69° 41.5'	231
100-110 (H-570)	41° 37.2'	69° 46.9'	94
60 (H-570)	41° 38.8'	69° 52.8'	50-53
60 (H-569)	41° 33.9'	69° 50.3'	52
78 (")	41° 33'	69° 47.6'	70-72
96 (H-1285)	41° 35.5'	69° 41'	118
87 (")	41° 36'	69° 45'	96
81 (")	41° 30.5'	69° 44'	71
102(")	41° 31.8'	69° 41.3'	91

The present survey is adequate to supersede these prior surveys within their common areas.

B. H-5141 (1931) 1:20,000	H-5276 (1932) 1:100,000
H-5249 (1932) 1:40,000	H-6559 (1940) 1:40,000

Of these later prior surveys, all controlled by RAR, the principal coverage was by H-5276 which included something more than half of the present area, all of that common area falling offshore from the 10-fm. curve. The comparatively small scale of H-5276 precluded developing the bottom configuration in the detail revealed by the present survey. However, a comparison between the present and these prior surveys shows agreement that is generally quite good. There are scattered, small areas of conflict between the old and new depths, examples of which are shown by the following comparisons:

<u>Prior Depth (ft.)</u>	<u>Lat.</u>	<u>Long.</u>	<u>Present Depth(ft.)</u>
90 (H-5276)(Charted)	41° 38.4'	69° 47.7'	99-100
120 "	41° 38.1'	69° 46.6'	102
216 "	41° 39.7'	69° 42.2'	199
84 "	41° 31.9'	69° 41.4'	91
90 (H-6559)	41° 30.1	69° 41.9'	80-83

Attention is called to these specific items:

(1) The 38 ft. soundings charted in lat. 41°30' long. 69°43.8' and lat. 41° 29.9' long. 69° 44.1' from H-5249 should be disregarded. These soundings were positioned in error by the RAR control or else the shape and extent of the shoal have changed. In either case the present survey provides adequate data for charting.

(2) The 60-ft. sounding charted in lat. $41^{\circ} 35.7'$ long. $69^{\circ} 46.40'$ and the 72 ft. sounding charted in lat. $41^{\circ} 35'$ long. $69^{\circ} 46.45'$ from H-5276 are discredited by the present hydrography and should be disregarded. The 60 ft. dial reading, questioned in the sounding records, and the 72 ft. shortly after on the same line were probably faulty soundings.

(3) The 62 ft. sounding charted in lat. $41^{\circ} 30.32'$ long. $69^{\circ} 46.1'$ is discredited, in its position on H-5276, by the present hydrography and should be disregarded. Present depths in the area adequately reveal the bottom configuration.

The present survey is adequate to supersede the prior surveys within the common areas.

6. Comparison with Chart 250 (print of 2/17/58)
Chart 1209 " " 9/29/58)

A. Hydrography

The charted hydrography originates with the prior surveys and is revised and supplemented by soundings from a copy (sp 55025) of the boat sheet of the present survey. Many of the latter have been changed, some as much as 6 ft., on the final smooth sheet as exemplified by the following typical comparisons:

Lat.	Long.	Charted Depth (from boat sheet)	Smooth Sheet Depth
$41^{\circ} 29.8'$	$69^{\circ} 44.0'$	32	34
$41^{\circ} 30'$	$69^{\circ} 48.45'$	59	65
$41^{\circ} 29.95'$	$69^{\circ} 48.15'$	59	62-63
$41^{\circ} 30.35'$	$69^{\circ} 50.45'$	34	38
$41^{\circ} 38.25'$	$69^{\circ} 51.9'$	uncharted	48

Attention is called to the following:

(1) The "60 ED" Charted in lat. $41^{\circ} 37.95'$ long. $69^{\circ} 46.05'$ is a wreck (CL 376, 1914 & CL 371, 1915). The doubtful label "ED" was charted from the present survey Descriptive Report L-M 1. The present hydrography is not adequate to disprove the existence of the wreck, particularly since there was uncertainty as to its position such that it might well be outside the limited area investigated. It is recommended that the 60 ft. depth be retained on the charts until conclusively disproved by wire drag or other means, and that "wreck PA" be substituted for the present "ED".

(2) The 60-ft. sounding charted in lat. $41^{\circ} 36.9'$ long. $69^{\circ} 49.9'$ from an early source not readily identified ("ED" added on strength of the present survey) is discredited by the present hydrography and should be disregarded. The present development adequately reveals the bottom configuration in this case.

Except as noted in the foregoing (1), the present survey supersedes the charted hydrography.

B. Aids to Navigation

As noted in the Descriptive Report, Pollack Rip Lightship was found to be about a mile northeast of its official (charted) station. Other aids located by this survey were found to be in substantial agreement with their charted positions.

7. Condition of Survey

A. The field records are complete and comprehensive.

B. The smooth plotting, considering the difficulties indicated in the Addendum and in Review Item 2, was satisfactory.

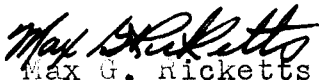
8. Compliance with Project Instructions

This survey adequately complies with the instructions.

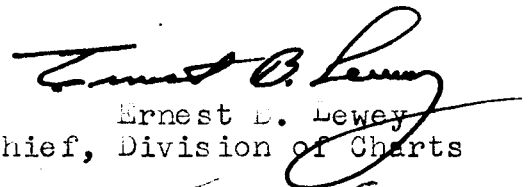
9. Additional Field work Recommended

This survey is considered basic for charting purposes and no additional field work is recommended.

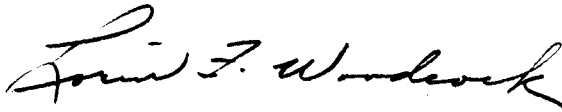
Examined and approved:



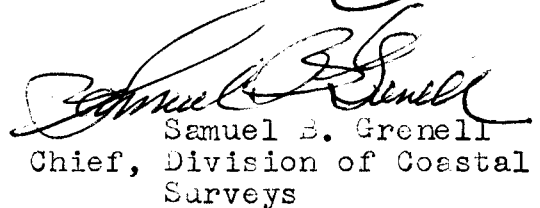
Max G. Ricketts
Chief, Nautical Chart Branch



Ernest D. Lewey
Chief, Division of Charts



Lorin F. Woodcock
Chief, Hydrography Branch



Samuel B. Grenell
Chief, Division of Coastal Surveys

TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens:

26 June 1958

Plane of reference approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 8350

Locality Nantucket Sound Approaches, Massachusetts

Chief of Party: R. A. Marshall in 1956

Plane of reference is mean low water

ft. on tide staff at

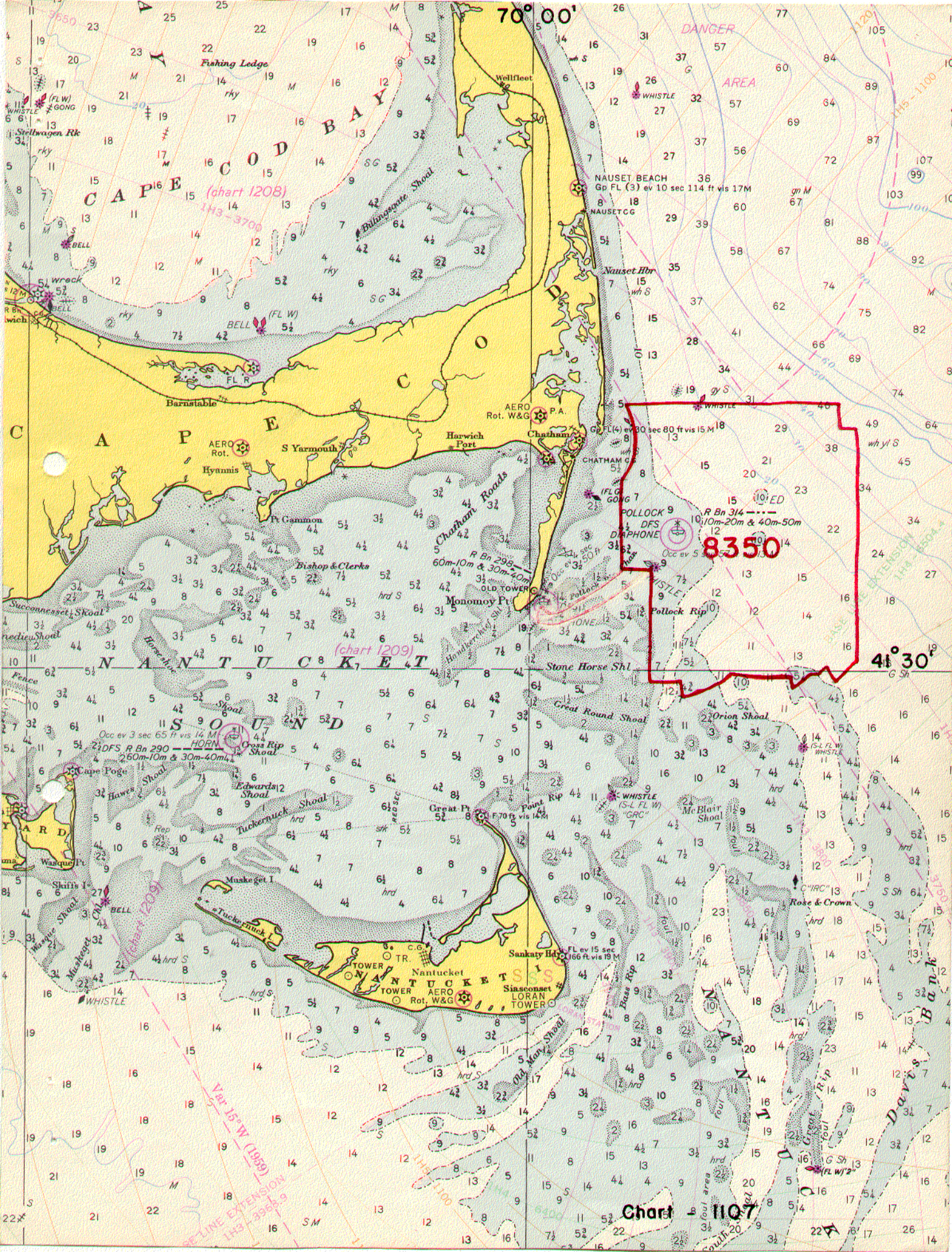
ft. below B.M.

Height of mean high water above plane of reference is as follows:
3.8 feet for the area using 0.4 ratio of the high water heights
at Boston.
5.7 feet for the area using 0.6 ratio of the high water heights
at Boston.
6.6 feet for the area using 0.7 ratio of the high water heights
at Boston.

Condition of records satisfactory except as noted below:


Signature

Chief, Tides Branch



CAPE COD BAY (chart 1208)
1H3-3700

NANTUCKET (chart 1209)

Chart 1107

8350

Vid. 15° W (1959)
SE-LINE EXTENSION
1H3-3982.9

DANGER AREA
1H5-1100

41° 30'

Chart 1107

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8350

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
8-6-58	1209	R.K. DeLander	Before After Verification and Review ^{before} . No correction.
8-19-58	1208	T.A. Dinsmore	Before After Verification and Review ^{before}
8-28-58	1108	T.A. Dinsmore	Before After Verification and Review ^{before} No correction <u>Partial application</u> ←
10/17/58	270	Steu. Gann	Before After Verification and Review ^{before} Verification made after review on 2-17-59 sma
1-13-59	70	R.E. EIKINS	Before After Verification and Review ^{before} Examined after review Consider completely applied sma Examined thru the partial application for chart 1209 Aug 58. Nov 58.
3/2/59	1209	JFWalker	Before After Verification and Review Completely
4/2/59	250	HCA & JFW	Before After Verification and Review Completely
5/11/59	1107	J.H. EATON	Before After Verification and Review Fully applied thru ch 1209
5/11/59	1108	JHEATON	Before After Verification and Review Fully applied thru ch 1209
5/14/59	71	JHEATON	Before After Verification and Review Thru Chart 1107
5/14/59	1000	JHEATON	Fully applied thru chart 71
7-9-59	120E	R.K. DeLander	Fully appld after V&R. The area covered by ch 1209 appld thru that Dept. also used ch 270

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.