

6350

U. S. COAST & GEODETIC SURVEY

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6350

Form 504  
Rev. Dec. 1933  
DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. **H-6350**  
Hydrographic }

State Massachusetts

LOCALITY

Southern coast of Cape Cod

Nantucket Sound

1938

CHIEF OF PARTY

C. M. Thomas H. & G. E.

Mc

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.

Field No. 6350

REGISTER NO. H6350

State MASSACHUSETTS

General locality Southern Coast of Cape Cod

Locality Nantucket Sound

Scale 1:20,000 Date of survey Aug.-Oct., 19 38

Vessel MOTOR VESSEL GILBERT

Chief of Party Chas. M. Thomas

Surveyed by C. M. Thomas, C. A. George, J. P. Lushene

Protracted by C. M. Thomas, D. M. Whipp

Soundings penciled by J. A. Ferguson

Soundings in fathoms feet

Plane of reference Mean Low Water

Subdivision of wire dragged areas by

Inked by G.H. Everett

Verified by G.H. Everett

Instructions dated January 17, ' 38

Remarks:

*X.W.W. 10/23/91*



POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

June 17, 1940

TO: The Director  
U.S. Coast and Geodetic Survey

FROM: Lieut. (j.g.) Joseph P. Lushene  
U.S. Coast and Geodetic Survey

THROUGH: Commanding Officer  
M.V. Gilbert U.S.C. & G.S.

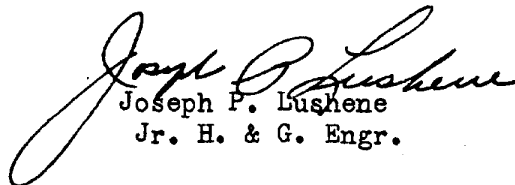
SUBJECT: Descriptive Report Sheet No. 6350

I herewith submit a descriptive report for sheet number 6350 covering the survey of Nantucket Sound, Massachusetts.

The hydrographer on this sheet was not readily available to prepare this report and at the suggestion of Lieut. H.C. Warwick, Comdg. M.V. Gilbert I have been requested to prepare a report to accompany this sheet.

Being unfamiliar with the detailed operations carried on aboard the M.V. GILBERT during the hydrography of this area this report is as accurate as circumstances permit. I hope it will be of value and meet with your approval.

Respectfully Submitted,

  
Joseph P. Lushene  
Jr. H. & G. Engr.

~~top~~ June 18, 1940  
Respectfully forwarded  
H.C. Warwick

DESCRIPTIVE REPORT TO ACCOMPANY SHEET NO. 6350

DATE OF INSTRUCTIONS

The work was executed in accordance with instructions dated  
January 17, 1940

LOCALITY

This sheet comprises the survey of Nantucket Sound between latitudes 41-29' and 41-32'; longitudes 70-28' and 70-39'. The L'Hommedieu Shoal and Hedge Fence Shoal are the principal dangers in this area.

SURVEY METHODS

The sheet was surveyed nearly in its entirety by the Motor Vessel GILBERT using the Dorsey Fathometer No. II. Soundings were taken every 20 seconds with 2 minute sextant fixes. The shoals and dangerous areas were surveyed with launch #37 using hand lead soundings. Launch #37 was a Navy motor-sailor loaned to the Gilbert by the Lighthouse Service. The signals used were triangulation stations or plane-table positions taken from aluminum sheets except signals DOME and PENT. These two signals were located by cuts. The ship was anchored, its position determined by sextant angles and cuts taken to DOME and PENT. The ship was anchored at six various points with numerous ~~###~~ check cuts taken at each anchorage. Serial temperatures and comparisons were taken frequently for the reduction of the echo soundings. The fathometer read approximately one foot in error in depths from 18 to 12 feet. Comparisons were taken at various depths between 12 and 18 feet to determine the exact corrections. It is assumed a report has been prepared showing the determination of the fathometer corrections as used in the record books. The fathometer was set for the draft

so that the correction for this term was nil.

DESCREPANCIES

Upon the completion of this project a severe hurricane swept over this area on September 21, 1938. This storm may have made some changes on the ~~\*\*\*\*~~ L'Hommedieu shoal. However, no information is available as to the extent of shoaling or deeping if such took place. It is believed that deeping rather than shoaling should be expected. Hedge Fence shoal was surveyed after the storm and therefore no change as shown should be expected. During the storm the portable tide gage at Falmouth Heights was destroyed and lost but the tide staff remained intact and tide staff readings were used in the reduction of soundings for period after the storm.

COMPARISONS

Upon reviewing the boat sheet it appears off hand that little change has occurred in the deep water areas. The change is noticeable over the shoals. On the L'Hommedieu shoal the previous survey shows 2 and 3 foot spots and an uneven bottom. The present survey shows the least depth to be about <sup>3+</sup>4 feet with a bottom much more even. Hedge Fence shoal was surveyed after the hurricane and has a least depth of about <sup>5</sup>6 feet. The least depth shown on chart was 3 feet. Apparently the water over the shoal is deepening. The wreck on the western end of Hedge Fence was not found and no indications noted. However, from local knowledge there is known to have been a wreck <sup>Retain</sup> <sub>See Rev, par. 6a</sub> there in the past. The depth curves of the present survey may vary from those previously shown since more sounding lines were run and more detail obtained. <sub>See Rev, par. 6a</sub>

DANGERS

No dangers were found. A thorough search was made for the wreck at edge of Hedge Fence with the launch. The strong current in this vicinity possibly accelerated the destruction or removal of the wreck. Even tho it was not found there is no assurance that it is not in the vicinity. A wire drag would have to be used to verify its removal.

Retain.  
See Rev. Par. 62.

TIDAL NOTE

A tide gage for this work was maintained at Falmouth Heights. All Hydrography west of longitude 70°-35' was reduced for tide as of Falmouth Heights tide station. Hydrography east of longitude 70°-35' was reduced for tide as of Falmouth Heights tide station times one point five ( Falmouth Heights X 1.5 ) Tides were observed with the Dorsey Fathometer II at the eastern end of Hedge Fence.

REMARKS

For the area surveyed it is believed that the work accomplished is sufficient and hoped that no additional work will be required. The fixes along Hedge Fence shoal are not of the strongest type. Personally it is felt that accuracy would have been gained if the shoal was surveyed on a 10,000 scale altho it is realized that it would necessitate additional control and signals on the shoals. The major part of this sheet was accomplished by one officer ( Lieut. Thomas ) and part of the crew. The major part of the crew being engaged on topography and launch hydrography. Lt. Thomas is to be commended in taking up this work by himself with the small available crew which to a large extent was inexperienced.

Respectfully Submitted;

*Joseph P. Lushene*  
Joseph P. Lushene  
Jr. H. & G. Engr.

*Approved and forwarded  
H. W. Smith*

H6350

GILBERT - SHEET #3

DAY	DATE	MILAGE	SOUNDINGS	POSITIONS	VOLUME
A	AUGUST 12, 1938	32.8	785	135	1
B	" 16, 1938	40.7	952	165	1
C	" 19, 1938	18.8	498	102	1&2
D	" 22, 1938	44.0	966	174	2
E	" 23, 1938	33.0	604	145	2
F	" 24, 1938	12.0	315	61	3
G	" 25, 1938	39.0	900	181	3
H	" 26, 1938	46.4	977	182	3&4
J	" 29, 1938	33.0	678	128	4
K	" 30, 1938	38.3	817	170	4
L	SEPTEMBER 2, 1938	31.0	714	123	5
M	" 6, 1938	33.7	715	133	5
N	" 9, 1938	NONE	NONE	21	5
P	" 10, 1938	NONE	120HL 120FR	4	5
Q	" 12, 1938	NONE	36	36	5
R	" 16, 1938	39.7	836	170	6
S	" 20, 1938	15.4	390	61	6
T	" 28, 1938	23.5	488	108	6
U	" 29, 1938	5.3	151	26	7
V	OCTOBER 1, 1938	15.3	401	76	7

TOTALS

501.9 11343 FR 2201  
120 HL

SHEET #3

501.9 MILES  
11343 ~~HL~~ SOUNDINGS Fath.  
120 ~~FR~~ SOUNDINGS H.L.  
2201 POSITIONS

STATISTICS LAUNCH-SHEET # 3

H6350

DAY	DATE	MILAGE	SOUNDINGS	POSITIONS	VOLUME
A	SEPT 12	20.40	617	150	B
B	SEPT 14	15.2	443	117	B
C	SEPT 26	22.1	613	169	B&B
TOTALS		57.7	1673	436	

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. ... **H6350**

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

Number of positions on sheet	..... <b>2637</b>
Number of positions checked	..... <b>114</b>
Number of positions revised	..... <b>61</b>
Number of soundings recorded	..... <b>13136</b>
Number of soundings revised	..... <b>4</b>
Number of soundings erroneously spaced	..... —
Number of signals erroneously plotted or transferred	..... —

Date: *12/16/40*

Verification by *G.H. Everett*

Review by *Harold W. Murray*

Time: *127 hrs*

Time: *31* "



VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H 6350

Verified and Inked by *G.H. Everett*

Date *12/16/40*

1. The descriptive report was consulted and appropriate action taken. ✓
2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude. ✓
3. All references to survey sheets mentioned in the descriptive report include the registry number and year. ✓
4. Geographic names of hydrographic features are in slanting lettering and of topographic features in vertical lettering.
5. All items effecting 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. ✓
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. ✓
17. The notation "JOINS H " was added for all contemporary adjoining or overlapping sheets now registered.
18. The depth curves have been drawn to include the significant depths. ✓
19. All triangulation stations and transfer of topographic and hydrographic signals were checked by the field party. ✓
20. Heights of rocks were checked against range of tide. *No rocks*
21. Rocks transferred from topographic survey have a dotted curve where shown thereon. —
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 (see letter of October 20, 1934). *No shore line shown as this is an offshore survey*
25. Degree and minutes values and symbols have been checked. ✓
26. Source of ~~shoreline~~ and signals (When not given in report).  
T 6622 (1938) } *Plane table surveys*  
T 6623 (1938) }  
T 6624 (1938) }
27. Depth curves were satisfactory except as follows: ✓

28. Sounding line crossings were satisfactory except as follows:

$\Delta$ 41°-30.3' 71 ft (153B) Plotted	$\Delta$ 41°-29.7' 44 ft (63-64J) Note also 40' just north
$\phi$ 70°-39.3' 75" (3-4B) N.P. ✓	$\phi$ 70°-28.55' 70" (71-72T) probably an error in recording but shown
$\Delta$ 41°-30' 50 ft. (94-95C) Plotted weak fixes	on B.S. If correct sdgs should have
$\phi$ 70°-29' 57" (65-66D) N.P. ✓	been OK'd in records. Mentioned in Rev. par. 2
	on both lines
$\Delta$ 41°-28.75' 43 ft (100-101M) N.P. ✓	$\Delta$ 41°-29.8' 70 ft. (78-79R) fair fix
$\phi$ 70°-28.75' 36" (67-68K) plotted ✓	$\phi$ 70°-29.1' 75" (66-67D) } very poor control ✓
	Probably slight displacement of
	one or both lines

29. Junctions with contemporary surveys were satisfactory except as follows: H 6349 at eastern end was generally 2' to 5' deeper than fath. sdgs of H6350. The deeper sdgs on H6349 were rejected. ✓

H6533 had several differences with a maximum difference of 12'. H6533 had poor control in area of junction and lines evidently out of place. Greater depths of H6533 were rejected. ✓

H6532 generally a fair junction. The S.E. portion of H6350 was weak in control ✓  
Line 110-120 K (H6350) was rejected because of weak fixes and apparent displacement of soundings.

30. Condition of sounding records was satisfactory ~~except as follows:~~

31. The protracting was satisfactory except as follows: A large number of swingers and weak fixes were plotted without considering course and time which caused obvious displacements of soundings. This accounts for large number of revised positions made. ✓

Many positions were not numbered making it difficult to pick out a line with out replotting ✓

32. The field plotting of soundings was satisfactory ~~except as follows:~~

33. Notes to reviewer: ✓

The eastern end and particularly the south eastern end of survey has very weak control. The irregular curves and differences in adjacent lines are no doubt due in large part to weak fixes used, also irregular bottom.

HYDROGRAPHIC SURVEY NO. H6350

Smooth Sheet One

Boat Sheet One

Records; Sounding 9 Vols., Wire Drag     Vols., Bomb     Vols.

Descriptive Report Yes

Title Sheet Yes

List of Signals Yes

Landmarks for Charts (Form 567)    

Statistics Yes

Approved by Chief of Party Yes

Recoverable Station Cards (Form 524)    

Special Chart for Lighthouse Service Yes Nov. 20, 1939  
(Circular Nov.30, 1933)

Hydrography: Total Days 23; Last Date Oct. 1, 1938

Remarks

215  
HOC

## TIDE NOTE FOR HYDROGRAPHIC SHEET

August 10, 1940

Division of Hydrography and Topography:

✓ Division of Charts: Attention: Mr. H. R. Edmonston

Tide Reducers are approved in  
9 volumes of sounding records for


HYDROGRAPHIC SHEET 6350

Locality Nantucket Sound, Southern Coast of Cape Cod

Chief of Party: C. M. Thomas  
Plane of reference is mean low water reading  
1.8 ft. on tide staff at Falmouth Heights  
9.7 ft. below B.M. 1

Height of mean high water above plane of reference is 1.3 feet.

Condition of records satisfactory except as noted below:

  
Acting Chief, Division of Tides and Currents.

Remarks

Decisions

	Remarks	Decisions
1		
2		U.S.G.B
3		415705 "
4		414705
5	Location of tide gage	415706
6		
7		
8		
9		
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25		
26		
27		
M 234		

GEOGRAPHIC NAMES

Survey No. **H6350**

Name on Survey	Source											
	A	B	C	D	E	F	G	H	K			
<u>Cape Cod</u>												1
<u>Nantucket Sound</u>												2
<u>L'Hommedieu shoal</u>												3
<u>Hedge Fence</u>												4
<u>Falmouth Heights</u>												5
												6
												7
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												27

by L. Heck on 1/6/41

# MEMORANDUM

## IMMEDIATE ATTENTION

SURVEY  
 DESCRIPTIVE REPORT  
 PHOTOSTAT OF

No. H **H6350**  
~~XXXX~~

{ received July 25, 1940  
 registered Aug. 1, 1940  
 verified  
 reviewed  
 approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
24			
25			
26			
30			
40			
62			
63			
82			
83			
88			
90			

RETURN TO

82	T. B. Reed
----	------------

✓ *TBR*



DIVISION OF CHARTS

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6350 (1938) FIELD NO. 6350

Massachusetts, Southern Coast of Cape Cod, Nantucket Sound

Surveyed August - October, 1938

Scale 1:20,000

Instructions dated January 17, 1938 (GILBERT)

Soundings:

Handlead, Fathometer

Control:

Three-point fixes on shore signals

Chief of Party - Charles M. Thomas.

Surveyed by - C. M. Thomas, C. A. George and J. P. Lushene.

Protracted by - C. M. Thomas and D. M. Whipp.

Soundings plotted by - J. A. Ferguson.

Verified and inked by - G. H. Everett.

Reviewed by - Harold W. Murray.

Inspected by - H. R. Edmonston.

1. Shoreline and Signals.

This is an offshore survey and no shoreline is shown.

The signals originate with triangulation stations, topographic signals on T-6622, T-6623 and T-6624 of 1938 and two hydrographic signals recorded in the sounding volumes (Vol. 5).

2. Sounding Line Crossings.

General agreement of sounding line crossings is very good.

The 40 and 44 foot soundings (line 62-64J) in latitude  $41^{\circ}29.7'$ , longitude  $70^{\circ}28.5'$  falling in depths of 62 to 70 feet are possibly erroneous since the original soundings were 7 fathoms plus and may have been mistaken for 11 fathoms. They were not specifically investigated and have been retained.

See Ad. Wk.  
Rev. Part I.

3. Depth Curves.

The usual depth curves may be satisfactorily drawn.

4. Junctions with Contemporary Surveys.

- a. The present survey joins H-6532 (1939) and H-6533 (1939) on the east. These surveys were made the following season after the hurricane of September 21, 1938. The area blocked in red on the present survey in latitude  $41^{\circ}31.5'$ , longitude  $70^{\circ}28.3'$  is common to all three surveys. H-6532, however, is more intensely developed and shows more irregularity in bottom. For charting purposes, H-6532 should be used to its limits including such soundings as have been transferred, and charting then continued from the other two sheets.

- b. The area on the northeast will probably be resurveyed in 1941. The sheet covering this area was lost in the fire on the MIKAWA.
  - c. The junction on the north, westward of longitude 70°33' with H-6349 (1938) is satisfactory. In latitude 41°31', longitude 70°36', the development in H-6349 is quite intense. This adjoining survey, including such soundings as have been transferred, should be used to its limits and charting then continued from the present survey.
  - d. The junction on the west with H-6348 (1938) is satisfactory.
  - e. The southern limit of the present survey is the limit of the present project. A satisfactory agreement exists with charted hydrography in this area.
5. Comparison with Prior Surveys.

- a. H-222 (1846), H-239 (1848-50), H-455a (1854), H-455b (1883-84) and H-527 (1855-56); scales 1:10,000 to 1:40,000.

These early surveys taken together or singly cover the entire area of the present survey. The development, consisting of zig-zag sounding lines, is quite sparse and reveals no important information not adequately covered by closer developed later surveys. It is noted, however, that the principal shoal areas are in substantially the same positions as shown on the present survey. The more detailed present survey supercedes these surveys.

- b. H-1829 (1887), H-1832 (1887) and H-1880 (1888-94); scales 1:10,000 and 1:20,000.

These surveys taken together cover the entire area of the present survey. The general nature of the bottom on the shoal areas is discussed in more detail in Paragraph d. below. General agreement of depths is good. Differences, however, do exist in the vicinities of the shoal areas and are due to both irregularity and changes in bottom. The most outstanding difference is on H-1880 in latitude 41°31.7', longitude 70°31.2' where the old survey shows depths of 29 to 41 feet and the present survey shows an extensive shoal area with a least depth of 11 feet. The 11 foot depth was in fact obtained almost directly over the old survey 41 foot depth.

A number of soundings were carried forward. An 11 foot depth (not charted) from H-1880 in latitude 41°31.3', longitude 70°29.3' is actually 11.8 feet reduced and was carried forward as 12 feet. The 26 foot sounding carried forward in latitude 41°32.3', longitude 70°31.6' and falling in depths of 35 to

49 feet is the correct plotting of an erroneous 29 foot depth on H-1880. The 44 foot sounding carried forward from H-1829 in latitude  $41^{\circ}30.2'$ , longitude  $70^{\circ}35.4'$  was not verified as the sounding records are in the new Archives Building.

*26' sdg superseded by development on H-6468 (1938-42). See item 5 D of review of that survey RAC. 7/8/43*

*Ok in Rec. #MM11/24/42*

The bottom characteristics in the deeper unchanged areas may be used to supplement the present survey fathometer work. The present survey, with the above additions, supersedes these surveys.

c. H-2538 (1901), scale 1:20,000.

This survey contains four short sounding lines in the vicinity of latitude  $41^{\circ}31'$ , longitude  $70^{\circ}36'$ . Those that fall outside the area blocked in red on the present survey and considered in the review of H-6349 (1901) are in very good agreement. The present survey is adequate to supersede this 1901 work.

d. H-2851 (1906), scale 1:20,000.

This survey covers the long shoal areas, L'Hommedieu Shoal and Hedge Fence. The development and intensity of soundings is of an exceptionally high quality since over 23,000 soundings were obtained on the shoal areas whereas the present survey shows only about 1,500.

Agreement of depths is good in many areas but in some cases the present survey depths vary as much as 27 feet shoaler in some instances and 10 feet deeper in others. The general outlines of the shoals have changed but little. The bottom on top of these shoals is of a hard (sometimes rocky) or loose sand formation. In some places, the sides of these shoals are quite steep since differences of as much as 30 feet exist between successive soundings. The largest differences noted are attributed to differences in intensity of development and to changes in the loose or unconsolidated portions of the bottom.

Several soundings were carried forward. The present survey, with these additions, supersedes this survey.

6. Comparison with Charts 347 (New print dated August 3, 1939), 1209 (New print dated July 7, 1940).

a. Hydrography.

Hydrography shown on the charts originates with surveys discussed in the preceding paragraphs. Some discrepancies, however, are noted in charting on chart 1209. The 11 foot sounding in latitude  $41^{\circ}31'$ , longitude  $70^{\circ}29'$  is an erroneous plotting of an indistinct 17 foot sounding on H-1880 (1888-94).

Likewise, the 28 in latitude  $41^{\circ}31'$ , longitude  $70^{\circ}32'$  is actually 29 feet (carried forward) and the 18 in latitude  $41^{\circ}30.5'$ , longitude  $70^{\circ}35'$  is 19 feet on H-2851 (1906).

Two charted wrecks originate with outside information. The one in latitude  $41^{\circ}30.1'$ , longitude  $70^{\circ}33.6'$  (Charts 347 8148 and 1209) is from H. O. N. to M. 30 of 1924 and was the wreck of a steamer with two masts showing when reported. It falls in depths of 19 feet on the present survey. The other wreck (Chart 1209) in latitude  $41^{\circ}30.6'$ , longitude  $70^{\circ}35.6'$  originates with Chart Letter 57 of 1924 from the Steamboat Inspection Service. This sailing vessel, RUTH 8139 E. MERRILL, loaded with 4,500 tons of coal sprung a leak and sank in 40 feet of water. Its position was located by bearings to two lighthouses. The fact that the wreck falls in depths of 54 feet on the present survey instead of 40 feet as reported is probably due to some discrepancy in position rather than changes in bottom. The present survey development is not sufficient to confirm or disprove the existence of these wrecks and they should, therefore, be retained on the chart. See Rev. B-4  
+5 of Ad. WK

b. Aids to Navigation.

Buoys located on the present survey agree closely with the charted positions and satisfactorily mark the features intended except Buoy N in latitude  $41^{\circ}30'$ , longitude  $70^{\circ}34'$ , which is about 370 m. SE x E of the charted position and the Whistle Buoy N14 and Buoy N16 outside the present survey limits in the vicinity of longitude  $70^{\circ}24'$  which vary 270 to 400 m. from their charted positions. These buoys were located prior to the hurricane of September 12, 1938. Buoy N16 was relocated the following season on H-6533 (1939). The later position agrees closely with the charted position. In verifying the positions after the storm, it is quite likely that the other buoys were also placed back on position. Buoy N20 in latitude  $41^{\circ}32'$ , longitude  $70^{\circ}34.7'$  is located on H-6349 (1938).

7. Condition of Survey.

- a. The sounding records are neat and legible and conform to the requirements of the Hydrographic Manual.
- b. The field protracting and plotting were accurate.
- c. The Descriptive Report is clear and comprehensive and satisfactorily covers all matters of importance.

8. Compliance with Instructions for the Project.

The plan, character and extent of the survey satisfy the instructions for the project.

9. Additional Field Work Recommended.


The Descriptive Report, pages 2 and 3, states that the charted wrecks (see review, par. 6a) may still exist and that a wire drag investigation is necessary to definitely prove or disprove their existence. On page 2, mention is also made that L'Hommedieu Shoal was developed before the hurricane of September 21, 1938 whereas the shoal water development on Hedge Fence Shoal was accomplished after the storm. See Ad. Wk. Rev., Par. 4+5

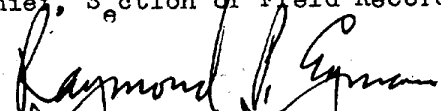
Future development on these shoals should be intense because of the lumpy character of the bottom. When the present project is extended southward, the 40 and 44 foot depths discussed in paragraph 2 above should be investigated. It would also be advisable to decrease the sounding line spacing on the present survey at the eastern end of Hedge Fence Shoal. See Ad. Wk. Par. 7 to 9

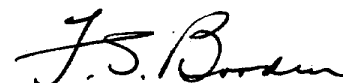
10. Superseded Surveys.

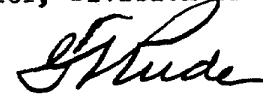
H-222	(1846)	in part	H-1829	(1887)	in part
H-239	(1848-50)	"	H-1832	(1887)	"
H-455a	(1854)	"	H-1880	(1888-94)	"
H-455b	(1883-4)	"	H-2538	(1901)	"
H-527	(1855-6)	"	H-2851	(1906)	"

Examined and approved:

  
T. B. Reed  
Chief, Section of Field Records

  
Raymond L. Gunn  
Chief, Section of Hydrography

  
J. S. Brown  
Chief, Division of Charts

  
G. H. Hude  
Chief, Division of Coastal Surveys

Applied to chart 1107 April 10, 1941 Sam

Applied to Chrt. 347 Aug. 6, 1941 X.K.  
" " " 1108 " " 3.M.A.

" " " 70 " " 2.M.A.

" " " 259 Nov. 21, 1941 J.W.

Partially applied to Chrt 1210 Dec. 24, 1942 J.H.S.

Applied to chart 249 Feb. 6, 1943 Sam.

" " " 348 2nd 6-43 J.H.S. & Sam

" " " Ch. 1209 Aug. 1941 by H.S.G. (see history sheet)

" " " 348 Recovst. 2-6-57 Benson

" " " 261 New Oct. 6, 1961 G.B. Johnson

" " " 260 " 1-6-62 R.K. Dehander

Additional work

6350

Additional work

6350

Form 504  
Rev. April 1935

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

SUPPLEMENTAL  
DESCRIPTIVE REPORT

*Topographic* } Sheet No. H - 6350  
*Hydrographic* }

U. S. COAST & GEODETIC SURVEY  
LIBRARY AND ARCHIVES

AUG 19 1942

Acc. No. \_\_\_\_\_

State ..... Massachusetts

LOCALITY

Nantucket Sound

1942

CHIEF OF PARTY

John Bowie, Jr.

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REG. NO.

H6350

Additional work

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. H6350

REGISTER NO Additional work

State Massachusetts

General locality Southern Coast of Cape Cod

Locality Nantucket Sound

Scale 1:20,000 Date of survey June-July 1942, 19

Vessel Motor Vessel GILBERT

Chief of Party John Bowie, Jr.

Surveyed by "

Protracted by J. K. Hartsock

Soundings penciled by J. K. Hartsock

Soundings in ~~fathoms~~ feet

Plane of reference MLW

Subdivision of wire dragged areas by

Inked by A. R. STIRNI

Verified by A. R. STIRNI

Instructions dated Mar. 9, 1942, 19

Remarks:



Supplemental Descriptive Report  
to  
Accompany Sheet H - 6350  
Nantucket Sound, Mass.

H6350  
Additional work

Motor Vessel GILBERT

John Bowie, Jr., Chief of Party

June - July 1942

AUTHORITY:

The additional work executed on this sheet was done in accordance with the Supplemental Instructions, Project HT - 217, dated March 9, 1942.

PURPOSE OF WORK:

The purpose of the additional work is to prove or disprove certain soundings and wrecks indicated in large red figures on the boat sheet.

CONTROL:

The same control was used as appeared on the boat sheet with the addition of two signals "ED" and "JET" which were located during the present season by topography. The DMs and DPs of these signals are tabulated with the accompanying list of signals.

SURVEY METHODS:

Standard survey practices for development were used throughout. The hydrography was accomplished with a portable 808-A depth recorder mounted in launch No. 75. The depths were verified with a bar check at the beginning and close of each day's work and during the noon hour. The depths were found to be correct, so no depth recorder corrections are applied.

The soundings were recorded every 30 seconds during the work and the fathograms were later scaled and corrections entered in the record book. The soundings were scaled to one half foot. Tide reducers were also entered to one half foot.

Launch No. 75 and a dinghy with an outboard motor were used as towing launches for the wire drag strip. An additional dinghy was used for testing the drag. (See descriptive report for Sheet No. 2142 for construction of the short wire drag).  
*Probably H 6707 (1941)*

RESULTS OF INVESTIGATIONS:

1. A close system of lines failed to verify the 40 and 44 foot spots at Lat.  $41^{\circ} 29'.7$ , Long.  $70^{\circ} 28'.55$  and Lat.  $41^{\circ} 29'.6$ , Long.  $70^{\circ} 28'.55$ , respectively. A 54 foot sounding was obtained 55 meters north of the 40 and a 64 foot sounding 45 meters NW of the 44. It is recommended that the 40 and 44 be deleted and the soundings as shown on the current development substituted.

Retain  
See Rev. Band

RESULTS OF INVESTIGATIONS: (Cont'd)

2. The 24 foot sounding at Lat.  $41^{\circ} 28'.84$ , Long.  $70^{\circ} 28'.57$  was substantially verified by obtaining a 22 foot sounding 45 meters NNE of the spot, and a 26 foot sounding just SE of the position. It is recommended that the 22 foot sounding be charted in lieu of the old 24.

Ntm

3. The group of soundings whose center is located at Lat.  $41^{\circ} 28'.8$ , Long.  $70^{\circ} 29'.5$  were substantially verified with the same or less water in close proximity to the positions indicated, with two exceptions. Twenty feet was obtained just north of the 17 and 15 feet just north of the 12.

Twenty minutes were spent drifting and feeling over the 12 foot spot and a least depth of 16 feet was obtained just north of the position. However a 15 foot sounding was recorded on the fathogram on the regular system of lines just north of the indicated 12. Due to the ruggedness of the bottom, and the fact that similar soundings were obtained in close proximity to the old soundings, it is recommended that all soundings be retained.

4. The wreck symbol shown at Lat.  $41^{\circ} 30'.8$ , Long.  $70^{\circ} 33'.65$  was thoroughly covered with a ten meter system of lines without revealing any indication of a wreck on the fathogram. The current development shows that the 16 to 17 foot shoal extends about 300 meters farther to westward than shown on the previous survey. This puts the wreck symbol just on the edge of the shoal so that it was impossible to wire drag with effective depth of any consequence.

Retain but mark "P.D." See Rev. Par. 5

It is recommended that the wreck symbol be deleted and the shoal soundings obtained with the depth recorder showing an extension of the reef to the westward be added.

8148

5. A ten meter system of lines that was run over the area covered by the wreck symbol at Lat.  $41^{\circ} 30'.63$ , Long.  $70^{\circ} 35'.55$  failed to show any indication of a wreck on the fathogram.

8139

The entire wreck symbol was covered with an effective depth of 35 feet with a short wire drag. It was intended to enlarge the dragged area, but an increasing Ely current made further drag operations impossible on the day the investigation was made.

The fathogram profile disclosed a fairly sharp rising shoal with a least depth of 36 feet, 200 meters ESE of the wreck symbol.

Retain but mark "P.D." See Rev. Par. 5

It is recommended the wreck symbol be deleted.

SMOOTH PLOTTING:

As per instructions, all data is forwarded to the Washington office to be plotted on the original smooth sheet. Four small overlays used for boat sheet plotting are attached. (Now filed in sdg rec.)

Respectfully submitted,

*Harry F. Garber*  
Harry F. Garber,  
Lieutenant,  
C. & G. Survey

Approved and forwarded:

John Bowie, Jr.  
Commanding Officer,  
U.S.C. & G.S. MV GILBERT

TIDAL DATA  
to  
Accompany Supplemental Report  
on  
Sheet No. 6350

**H6350**  
**Additional work**

For the development east of Longitude  $70^{\circ} 31'$  the tide gage at Cotuit Highlands, Lat.  $41^{\circ} 36'.4$ , Long.  $70^{\circ} 26'.2$ , was used for the reduction of soundings.

M.L.W. of 0.7 feet on the staff was determined by spirit levels from B.M.'s. (See Director's letter dated May 26, 1942.)

For development in the area of the wreck symbols between Long.  $70^{\circ} 33'$  and  $70^{\circ} 36'$ , the tide gage at Falmouth Heights, Lat.  $41^{\circ} 32'.7$ , Long.  $70^{\circ} 35'.6$ , was used direct, for the reduction of soundings.

M.L.W. of 2.8 feet on the staff was determined by spirit levels from B. M.'s. (See Director's letter dated May 26, 1942 (34 mlh) for verification.

STATISTICS

for  
Additional work on Sheet 6350

DATE	Day Letter	No. of Sndgs.	No. of Positions	Stat. Mi. Sndg. Lines
1942				
June 18	a	931	131	29.5
July 23	b	454	92	17.7
31	c	<u>288</u>	<u>71</u>	<u>13.8</u>
	Totals	1,673	294	61.0

Area - Square Statute miles 1.4

WIRE DRAG

"A" day	Stat. Mi. of	
10 Positions	Wire Drag Strip	1.0

H6350

LIST OF SIGNALS  
to  
Accompany Sheet 6350

Additional work

<u>HYDROGRAPHIC NAME</u>	<u>LOCATION</u>
HOLE	Woods Hole, 1934
WEST	West Chop L. H., 1904
EAST	East Chop L. H., 1904
HAR	Oyster Harbor Tank, 1934
NOB	Nobska Pt. L. H., 1904
MON	As on boat sheet from previous Survey
JET	*1942 - Topographic Sheet A
ED	* " " " "

\*For advance information, signals JET and ED have been scaled  
and checked from the topographic sheet as follows:-

JET (Lat.  $41^{\circ} 32'$  +1673 M (178.8m) ✓  
(Long.  $70^{\circ} 31'$  +1125.0 m (265.5m) ✓

ED (Lat.  $41^{\circ} 33'$  + 209.5 m (164.5m) ✓  
(Long.  $70^{\circ} 29'$  + 928.0 m (462.5m) ✓

Scaled by H.F.G. *H.F.G.*  
Checked by L. G. T.



No 5

WIRE DRAG

Sheet 6350

July 31, 1942

70°-35'

41°-31'



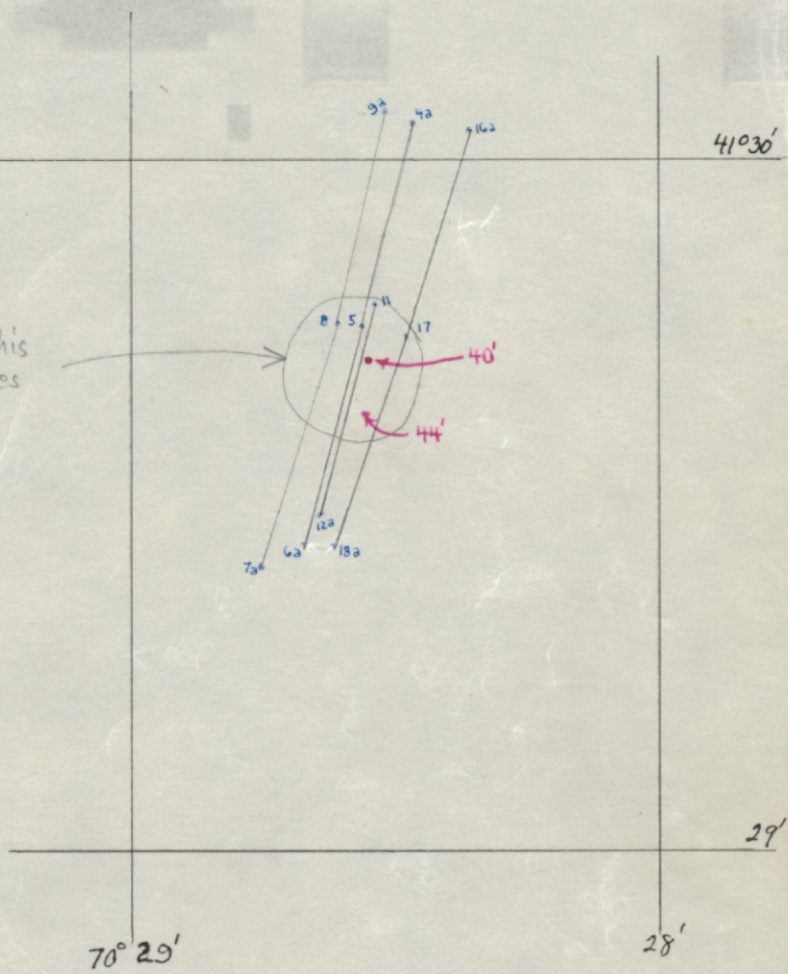
41°-30'

70°-36'

~~4014~~



Running time in this  
area = 6 minutes



Overlay tracing showing sounding lines in  
immediate vicinity of 40 and 44 foot depths  
Scale 1-20,000

OVER




Cl. clay; Co. coral; G. gravel; Grs. grass; M. mud; Rk. rock; S. sand;  
 bk. black; br. brown; bu. blue; gn. green; gy. gray; rd. red; wh. white  
 hrd. hard; rky. rocky; sft. soft; stk. sticky.  
 Obs. obstruction.

HEIGHTS in feet above high water.

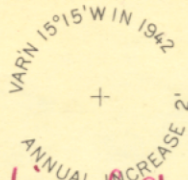
**AUTHORITIES**

Surveys to 1939  
 Surveys by U. S. Engineers to 1941 and other sources

**Fish Trap Areas**  
 Boundary lines of fish trap areas  
 are shown thus 

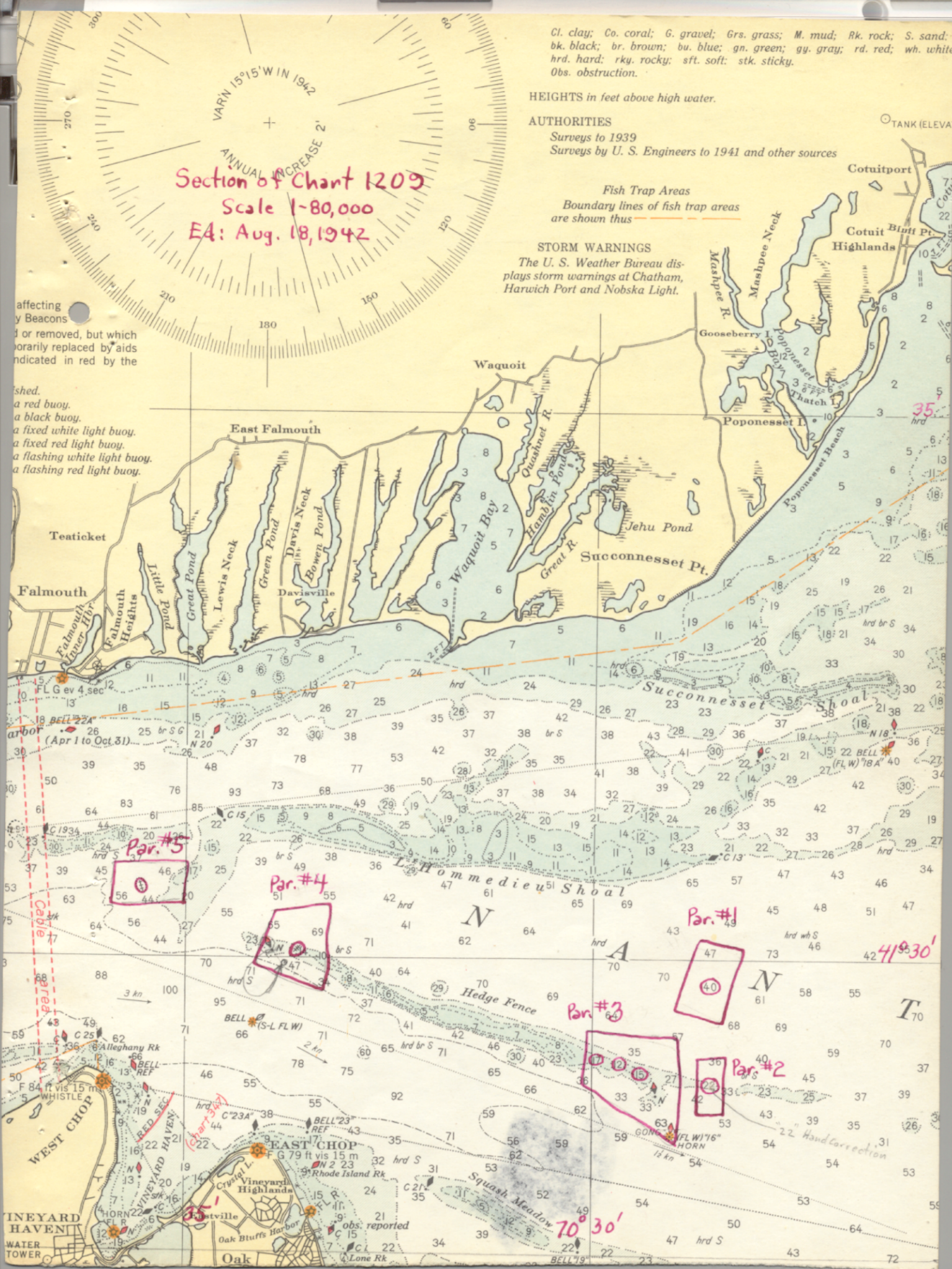
**STORM WARNINGS**  
 The U. S. Weather Bureau displays storm warnings at Chatham, Harwich Port and Nobska Light.

Section of Chart 1209  
 Scale 1-80,000  
 EA: Aug. 18, 1942



affecting  
 Beacons  
 or removed, but which  
 are temporarily replaced by aids  
 indicated in red by the

- sh. a red buoy.
- a black buoy.
- a fixed white light buoy.
- a fixed red light buoy.
- a flashing white light buoy.
- a flashing red light buoy.



TANK (ELEVATION)

Cotuitport  
 Cotuit Bluff Pt.  
 Cotuit Highlands

Mashpee R.  
 Mashpee Neck  
 Gooseberry I.  
 Popponesset Pt.  
 Popponesset I.  
 Popponesset Branch

Waquoit

East Falmouth

Teaticket

Falmouth

Succunnesset Pt.

Succunnesset Shoal

L'Annonciade Shoal

N

Par. #1

Hedge Fence

Par. #3

Par. #2

WEST CHOP

EAST CHOP

VINEYARD HAVEN

Vineyard Highlands

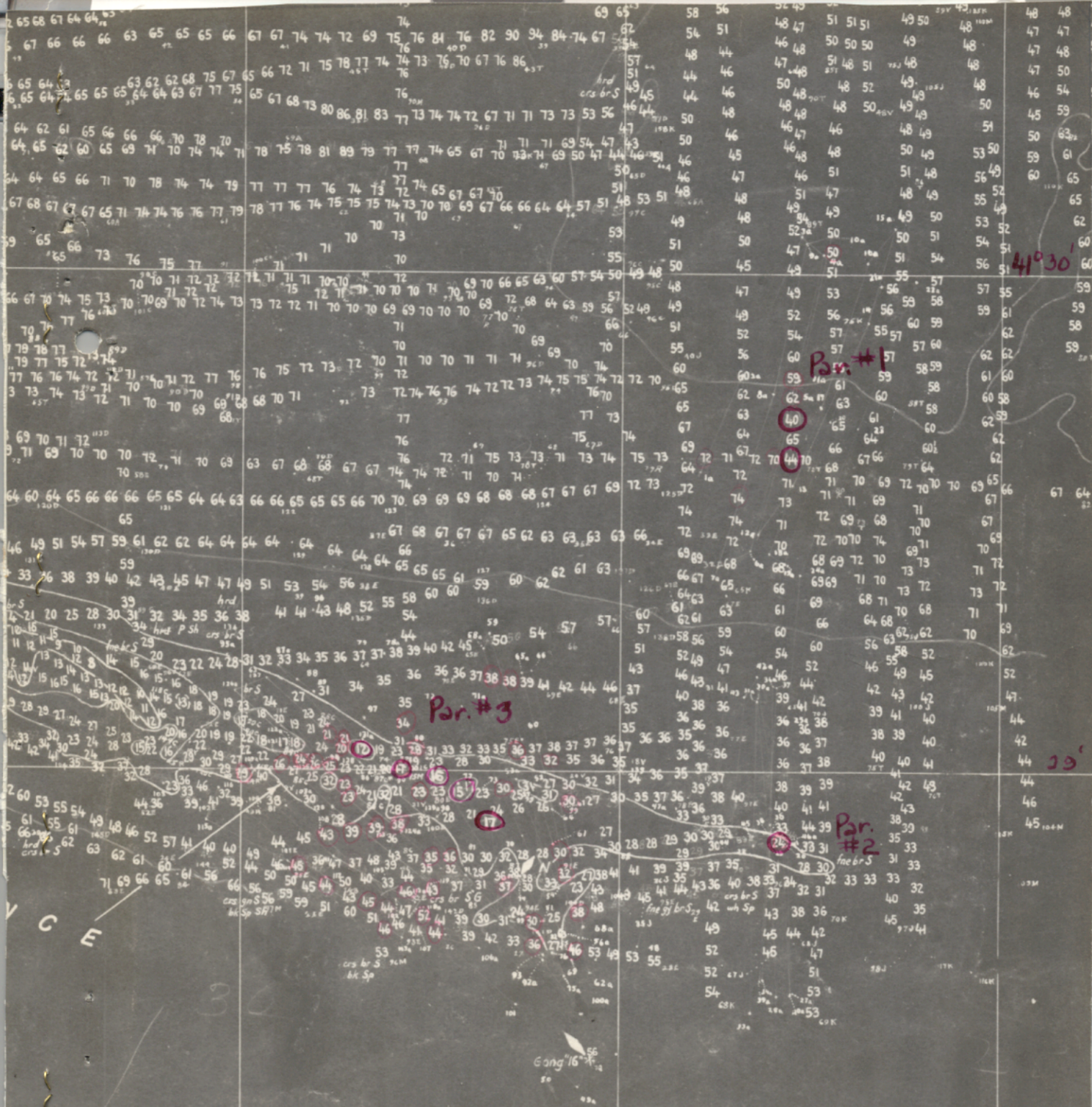
Oak Bluffs Harbor

Oak

70° 30'

Hand Correction





Copy of H-6350(1938) before plotting of Add'l Wk.  
Scale 1-20,000

1 of 4

1 of 4

70° 30'

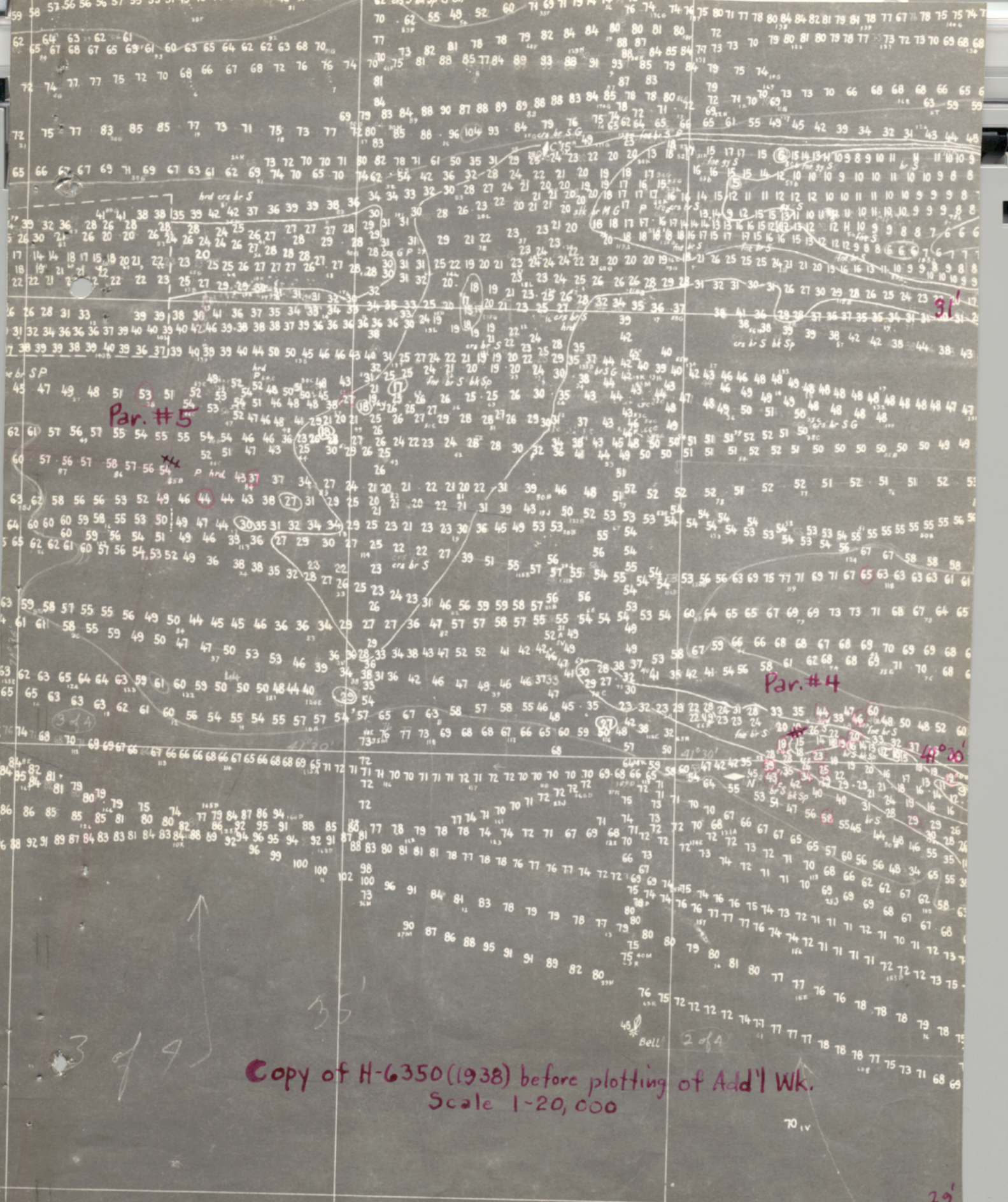
29'

70° 28'

28'

28'





Copy of H-6350(1938) before plotting of Add'l Wk.  
Scale 1-20,000

70 IV

29'

78 35'

34'

WEST CHOP L.H. 1904

Bell 2 of 4



xac  
8712

## TIDE NOTE FOR HYDROGRAPHIC SHEET

August 27, 1942.

~~Division of Hydrography and Topography:~~

✓ Division of Charts: Attention: Mr. H. R. Edmonston.

Plane of reference approved in  
2 volumes of sounding records for

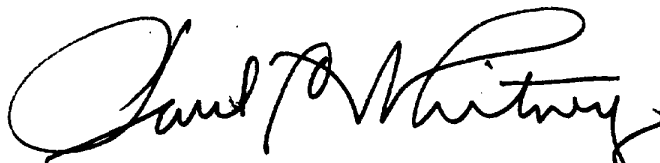
HYDROGRAPHIC SHEET 6350

Locality Nantucket Sound, Southern Coast of Cape Cod, Massachusetts.

Chief of Party: John Bowie, Jr. in 1942  
Plane of reference is mean low water reading  
2.8 ft. on tide staff at Falmouth Heights  
9.7 ft. below B. M. 1  
0.7 ft. on tide staff at Cotuit Highlands  
6.4 ft. below B. M. 1

Height of mean high water above plane of reference is 1.3 feet  
at Falmouth Heights and 2.6 feet at Cotuit Highlands.

Condition of records satisfactory except as noted below:

  
Chief, Division of Tides and Currents.

Surveys Section (Chart Division)

HYDROGRAPHIC SURVEY NO. ....

Records accompanying survey:

Boat sheets <sup>4 Tracings</sup> ....; sounding vols. 2...; wire drag vols. ....;  
 bomb vols. ....; graphic recorder rolls 3....;  
 special reports, etc. ....  
 .....

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

Number of positions on sheet	..294.
Number of positions checked	..34.
Number of positions revised	..2..
Number of soundings recorded	..1673.
Number of soundings revised (refers to depth only)	..12..
Number of soundings erroneously spaced	..18..
Number of signals erroneously plotted or transferred	.....
Topographic details	Time ..... .....
Junctions	Time ..... .....
Verification of soundings from graphic record	Time ..7..

Verification by A. P. STIRNI..... Total time 46.. Date 11/19/42.

Review by Harold W. Murray..... Time 17.. Date 11/23/42..

# MEMORANDUM

## IMMEDIATE ATTENTION

SURVEY  
 DESCRIPTIVE REPORT  
~~PHOTOSTAT OF~~

No. H **H6350**  
~~No. H~~ **Additional work**

received **August 20, 1942**  
 registered **August 25, 1942**  
 verified  
 reviewed  
 approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
24			
25			
26			
30			
40			
62			
63			
82			
83	<i>Pg. 18 2</i>	<i>#24</i>	<i>835 Plot setup and consider for n.t.m + Annual Con.</i> <i>XBP</i>
88			
90			

RETURN TO

82	R. W. Knox
----	------------

*✓R.W.K.*

DIVISION OF CHARTS

SURVEYS SECTION

REVIEW OF HYDROGRAPHIC SURVEY REGISTER NO. 6350 Ad. Work

Massachusetts, Southern Coast of Cape Cod, Nantucket Id.  
Surveyed in June - July 1942, Scale 1:20,000  
Instructions dated March 9, 1942 (GILBERT)

Soundings:  
Graphic Recorder

Control:  
Visual Fixes on Shore Signals

Chief of Party - John Bowie, Jr.  
Surveyed by - John Bowie, Jr.  
Protracted by - J. K. Hartsock  
Soundings plotted by - J. K. Hartsock  
Verified and inked by - A. R. Stirni  
Reviewed by - Harold W. Murray, November 24, 1942  
Inspected by - H. R. Edmonston

This additional work consists of investigations of shoal soundings and wrecks within the limits of H-6350 (1938). The more important of these items were specifically discussed in the review of that survey (Par. 2, 5, 6 and 9). The order in which these features are discussed in the present review is the same as that used by the hydrographer in the accompanying Descriptive Report.

Appended to the Descriptive Report as a part of this review are:

1. Two photostats of H-6350 (1938) before application of additional work
  2. Section of current chart No. 1269
  3. Tracing accompanying comments in Par. 1a
1. 40- and 44-ft. soundings in depths of 62-72 feet;  
Lat. 41°29.7'; Long. 70°28.56'
    - a. 40-ft. depth

Investigation of the 40 originating with the 1938 work (H-6350) reveals a lump with a least depth of 54 feet.

Development of the lump on the present survey, which rises about 8 feet off the bottom, is confirmation of shoaler depths existing in this vicinity and therefore tends to lend validity to the original sounding. Since the sounding records reveal no evidence of drift sounding, and the present smooth plotted sounding line spacing consists of two lines spaced 10 meters apart, passing just west of the 40 whereas the nearest adjacent lines are 70 meters distant (see tracing in D. R.), the development is accordingly not definitely conclusive. In the interests of safety, it is considered advisable to retain the 40.

b. 44-ft. depth

Two sounding lines spaced 80 meters apart pass on either side of the 44. This spacing is approximately equal to the sounding interval on which the 44 was originally obtained. This development reveals that the 44, if authentic, has a small base of not over 80 meters in extent. In the absence of drift sounding or a closer line spacing, it is advisable in the interests of safety to retain the 44.

2. 24-ft. depth, Lat. 41°28.84'; Long. 70°28.6'

The 24 was confirmed, a least depth of 22 feet being found in the same spot. The 22 now replaces the 24 on the smooth sheet. The 30-ft. curve outlining the easterly extension of Hedge Fence Shoal is now better developed.

3. Shoal soundings centered in Lat. 41°28.8'; Long. 70°29.5'

These shoal soundings indicating a lumpy bottom were substantially verified. Considerable irregularity, with depths as much as 6 feet shoaler, was also disclosed on the side slopes of the long shoal. The development was very intense and only a small portion of the soundings could be shown.

4. Reported wreck; Lat. 41°30.1'; Long. 70°33.6'

This wreck as reported by the U.S.S. TOUCEY in H.O. N. to M. 30 of 1924 is described as "the wreck of a steamer with the stubs of two masts showing 400 yards eastward of Hedge Fence West End Buoy."

3148

Sounding lines spaced 10 to 70m. apart did not reveal any indication of the wreck. The Descriptive Report, page 2, states that the vicinity of the wreck was not dragged because the edge of Hedge Fence shoal just southward would not permit effective depths of any consequence.

Considering the reported position in more detail, the direction "eastward" does not necessarily imply "due East" as charted. If it is further assumed that the reporting vessel was enroute in a general east or west direction and passed some distance to the south or north of the shoal, one could not be necessarily certain whether the wreck was due east, east-southeast, etc. of the charted buoy. This allowance is sufficiently large to permit the grounded vessel actually lying on the south side of the shoal and which area falls near the outer limits of the present development. In the interests of safety, it is recommended that the charted wreck symbol be retained as plotted but labeled "Position Doubtful."

5. Reported wreck, Lat. 41°30.63'; Long. 70°35.55'

This wreck (Chart Letter 57 and H.O. N. to M. 7 of 1924) is described as the wreck of the schooner RUTH E. MERRILL laden with 4,500 tons of coal. The schooner sprang a leak, sailed to an anchorage and sunk in 40 feet of water. The position is located by bearings to two lighthouses.

✓  
8139

Sounding lines spaced 10m. apart and one drag strip (900 feet wide) with an effective depth of 35 feet (10-15 feet off the bottom) failed to reveal any evidence of the wreck which as plotted appears to lie in depths of 55 feet. Enlargement of the dragged area was prevented by an increasing easterly current.

The fact that the schooner is reported to lie in depths of 40 feet whereas the position as plotted is actually 55 feet implies that one or both of the reported bearings may be slightly inaccurate. The discovery of a 36-ft. lump about 180m. ESE of the wreck (outside dragged limit) may represent a shoal covering the wreck but since this lump lines up with a group of 15-18 foot shoal spots to the northeast, the lump in turn may represent a resistant part of an old ridge which has been partly worn away.



The field examination is considered adequate to definitely disprove the wreck in the position as reported. However, since the wreck may conceivably lie outside the actual dragged limits, it is recommended that the wreck symbol be retained on the chart but marked "Position Doubtful" so as to caution navigators to give this area a wide berth.

6. Aids to Navigation


Buoys in the vicinities of the investigated areas were verified as to position and agree substantially with the 1938 locations and with the current copy of chart 1209 (New Print date August 18, 1942), except that the buoy marking the western end of Hedge Fence Shoal was found (July 23, 1942) to be about 300m. southeast of its charted position.

Mention is made that the buoy marking the western end of Hedge Fence Shoal has been located twice by this Bureau about 300m. to the south and eastward of the charted position which is practically on the axis of the shoal. The nun buoy near the eastern end of this same shoal would better mark the axis and extent of the shoal if it were shifted approximately 1/2 mile eastward.

Examined and approved:



Chief, Surveys Section



Chief, Division of Charts



Chief, Section of Hydrography



Chief, Division of Coastal Surveys

Applied to drawing of Chart 249.	February 6, 1943.	SA.M.
" " " " " 347	" 10 "	JFW
" " " " " 1209	" 19 "	JHE
" " " " " 1107	July 26, 1943	J.H.S.
" " " " " 259	Sept. 28 "	JFW
" " Worksheet " " 261 new	Oct. 6, 1961	G.R. Johnson
" " dwg " " 260 "	1-6-62	RK Dehewer