

6446

6446

Form 504  
Rev. April 1935

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

**DESCRIPTIVE REPORT**

<i>Topographic</i> <i>Hydrographic</i>	}	Sheet No. <u>H 6446</u> <u>H. 6446</u>
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*State* Massachusetts

**LOCALITY**

South Side of Martha's  
Vineyard and Nantucket Islands

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193 9

**CHIEF OF PARTY**

R. P. Eyma

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO. H 6446

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. 44

H6446

REGISTER NO. H 6446

State Massachusetts

General locality South side of Martha's Vineyard and Nantucket Island.

Locality \_\_\_\_\_

Scale 1:40,000 Date of survey Aug. 10 - Sept. 26 1939

Vessel LYDONIA

Chief of Party R. P. Eymen

Surveyed by Ship's Officers *J. H. Brittain*

Protracted by Alfred Kaupa

Soundings penciled by Alfred Kaupa

Soundings in ~~XXXXXX~~ feet \_\_\_\_\_

Plane of reference Mean Low Water

Subdivision of wire dragged areas by \_\_\_\_\_

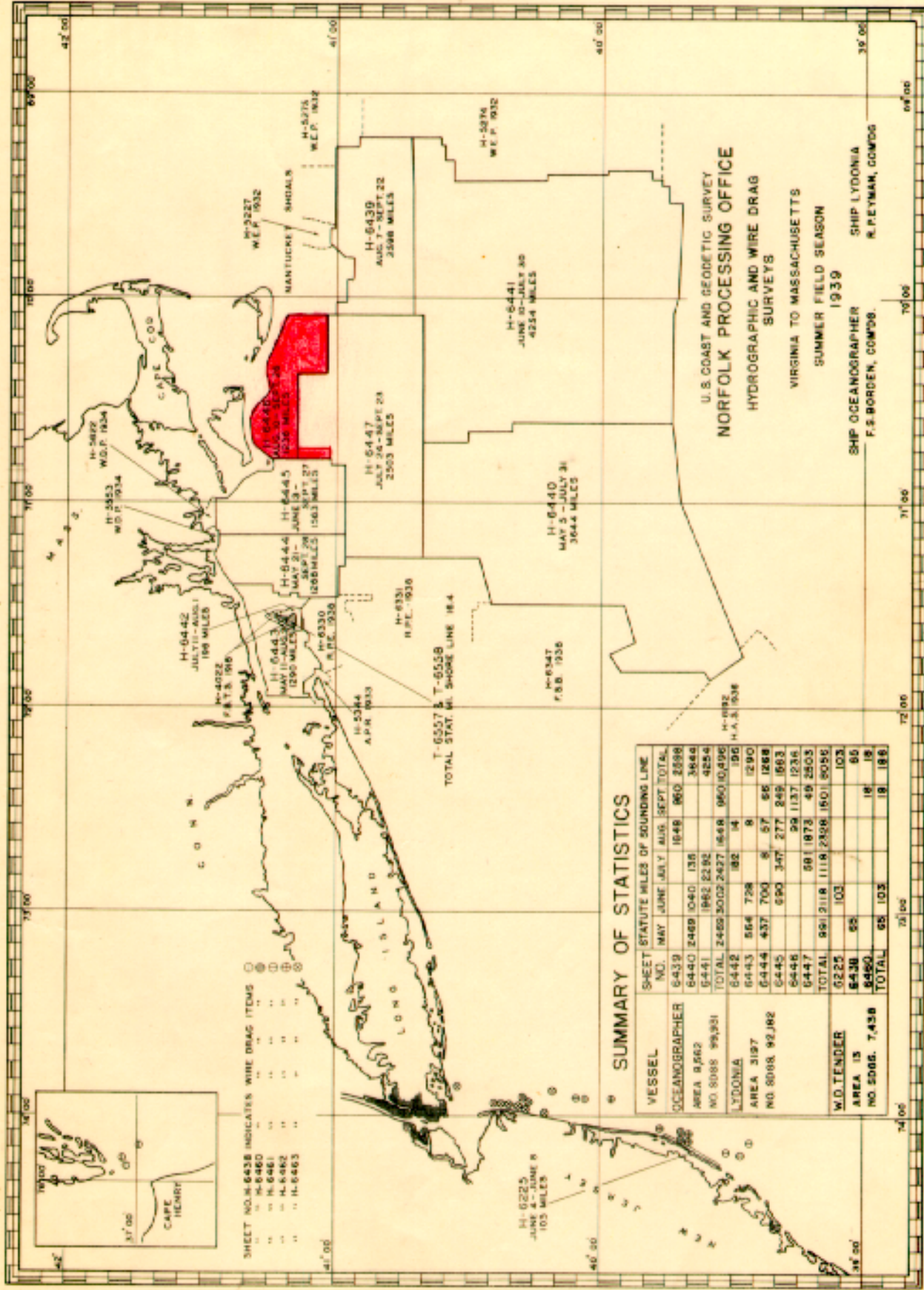
Inked by G. B. Littlepage

Verified by \_\_\_\_\_

Instructions dated March 4, 1939

Remarks: \_\_\_\_\_

*KWW 10/23/91*



SHEET NO. 6438 INDICATES WIRE DRAG ITEMS

- H-6420
- H-6441
- ⊙ H-6462
- ⊕ H-6463

T-6557 & T-6558  
TOTAL STAT. WL. SHORE LINE 18.4

SUMMARY OF STATISTICS

VESSEL	SHEET STATUTE MILES OF SOUNDING LINE					SEPT TOTAL
	NO.	MAY	JUNE	JULY	AUG.	
OCEANOGRAPHER	6439			1648	860	2508
AREA 9,562	6440	2469	1040	135		3644
	6441		1962	2282		4244
TOTAL	2469	3002	2427	568	950	10,496
LYDONIA	6442			82	14	196
AREA 9,197	6443	564	728			1290
NO. 8008, 92,182	6444	437	700	8	57	1202
	6445		690	347	277	1314
	6446				59	1137
	6447				68	1878
TOTAL	991	2118	1118	2428	1501	8056
W.D. TENDER	6225					103
AREA 13	6438	55				55
NO. 5005, 7,438	6450					16
TOTAL	65	103				18

U.S. COAST AND GEODETIC SURVEY  
NORFOLK PROCESSING OFFICE  
HYDROGRAPHIC AND WIRE DRAG SURVEYS

VIRGINIA TO MASSACHUSETTS  
SUMMER FIELD SEASON  
1939

SHIP OCEANOGRAPHER SHIP LYDONIA  
F.S. BORDEN, COMDR. R. PEYMAN, COMDR.

DESCRIPTIVE REPORT TO ACCOMPANY  
SHEET H-6446

DATE OF INSTRUCTIONS

The work on this sheet was done in accordance with Instructions, Project H.T.-207, dated May 16, 1936, and Supplemental Instructions, Project H.T.-207, dated March 4, 1938.

LIMITS

This sheet covers the area southward from the approximate 10 fathom curve along the south side of Martha's Vineyard and Nantucket Island to Latitude  $41^{\circ} 02'$  between Longitudes  $70^{\circ} 04'$  and  $70^{\circ} 22'$ ; to  $41^{\circ} 09'$  between Longitudes  $70^{\circ} 22'$  and  $70^{\circ} 44'$  and to Latitude  $41^{\circ} 03'$  between Longitudes  $70^{\circ} 44'$  and  $70^{\circ} 47'$ . The sheet is joined on the south by sheet H-6447<sup>(1938)</sup> and on the west by sheet H-6445<sup>(1938)</sup>. There are no recent surveys to the north and east. The limits of the sheet are outlined in red on the attached sketch.

SURVEY METHODS

For the greater part of this sheet the control consisted of three point fixes on shore objects. The southeastern corner was controlled by three point fixes on buoys and R.A.R., using sono radio buoys.

All soundings on this sheet were obtained with the Dorsey No. 1 Fathometer.

SMOOTH PLOTTING

The velocities for the R.A.R. distances on this sheet were determined principally by scaling the distances from the sono buoys to positions determined by three point fixes at which bomb distances were also obtained. While these positions were not particularly well distributed and some of the distances were rather short it is believed that fairly good results were obtained. Tests were obtained at 18 positions. The above applied to the R.A.R. to and including P day. For the R.A.R. hydrography on Q, R and S days the velocities were obtained as described for sheet H-6445<sup>(1938)</sup>. Velocities ranging from 1499 to 1507 M/S were used.

Distance circles were drawn for each sono buoy at intervals of 3 seconds corresponding to a velocity of 1500 M/S. These circles were drawn with pencil. Distance arcs to the positions were drawn with colored ink, each sono radio buoy having a distinctive color.

*and should be  
when they line across the R.A.R.  
before  
of day.*

The distance arcs for the positions were plotted in seconds. Each distance was corrected to the uniform velocity of 1500 M/S. For example, position 10R, the distance from buoy LAST of 10.84 seconds at a velocity of 1504 seconds has a correction of 0.03 seconds. The distance was plotted on the sheet as 10.87 seconds.

The R.A.R. sounding lines were dead reckoned on tracing paper and superimposed over the bomb arcs. For small differences the arcs were assumed to be correct but were rejected in the records where they were obviously in error.

The velocity corrections applied to the fathometer soundings were computed in accordance with Field Memorandum No.3, 1936. Monthly average temperature and salinity curves were used.

An index correction based on the average of the fathometer comparisons was applied. These comparisons were averaged by months.

A settlement correction of 0.4 feet was applied to the fathometer soundings. This correction was combined with the index correction under the heading I & S in the sounding records.

#### COMPARISON WITH ADJOINING SURVEYS

Junctions with sheet H-6445<sup>(1932)</sup> to the west and sheet H-6447<sup>(1932)</sup> to the south are satisfactory.

#### COMPARISON WITH PREVIOUS SURVEYS

A comparison with charts Nos. 1209 and 1210 indicates that the soundings agree very well.

#### DISCREPANCIES

The crossings on this sheet are satisfactory. There are no discrepancies in excess of 2 feet.

Respectfully submitted,

*John H. Brittain*  
John H. Brittain  
Norfolk Processing Office

*This sheet was smooth plotted at the Norfolk Processing Office under the supervision of John H. Brittain who had a large part in the operations of the field work. Fog and haze prevented the carrying of several fix work further offshore, and much work was done by R.A.R. on sheet H-6447 which adjoins this sheet.*

*A number of objects along Martha's Vineyard and Nantucket ledges were cut in by sextant, for use as hydrographic signals. Some were located subsequently by theodolite cuts by the party and by the party on the M. V. Gilbert.*  
*Raymond L. Gorman*  
*Chief of Party.*

H6446

STATISTICS FOR SHEET NO. H-6446

LYDONIA 1939

PROJECT HT. - 207

<u>Letter Day</u>	<u>Date</u>	<u>Statute Miles</u>	<u>Soundings</u>	<u>Positions</u>	<u>Volume No.</u>
A	Aug. 10	29.7	310	48	1
B	" 11	12.2	151	25	1
C	" 14	33.0	460	79	1
D	" 16	24.0	280	42	1
E	Sept. 9	32.3	341	61	1
F	" 10	92.1	921	157	1 & 2
G	" 11	60.4	774	134	2
H	" 12	129.8	1295	222	2 & 3
J	" 13	118.5	1435	250	3 & 4
K	" 14	136.6	1388	243	4
L	" 15	80.0	804	132	4 & 5
M	" 20	30.5	313	53	5
N	" 21	100.3	1037	156	5
P	" 22	131.8	1343	215	5 & 6
Q	" 23	80.4	853	153	6
R	" 24	80.4	930	152	7
S	" 25	14.9	239	16	7
T	" 26	49.2	543	105	7
<hr/>					
TOTAL FOR SHEET 18		1236.1	13,417	2243	7

Total Square Statute Miles 416.

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. .... **H6446**

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

Number of positions on sheet	..2243..
Number of positions checked	...53..
Number of positions revised	...12..
Number of soundings recorded	13,417
Number of soundings revised	...18..
Number of soundings erroneously spaced	...67..
Number of signals erroneously plotted or transferred	...0....

Date: 8/26/40

Verification by *G. B. Littlepage*

Review by *Harold W. Murray*

Time: 70 <sup>3</sup>/<sub>4</sub> hrs

Time: 24 hrs.

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H

Verified and Inked by *G. B. Littlepage*

Date *August 26, 1940*

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-6446" 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.
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).
25. Degree and minutes values and symbols have been checked. ✓
26. Source of shoreline and signals (When not given in report).
27. Depth curves were satisfactory except as follows: ✓

28. Sounding line crossings were satisfactory except as follows: ✓

29. Junctions with contemporary surveys were satisfactory except as follows:

Junction with H-6445<sup>(1934)</sup> will be made when that sheet is verified. ✓

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

31. The protracting was satisfactory except as follows:

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

There was no selection of soundings at crossings and invariably the deeper sounding was plotted. ✓

33. Notes to reviewer:

Between pos. 35 D and 36 D (page 45 vol. 1) there is an error in time of 1 minute.

The discrepancy in plotting was apparently between pos 37 D and 38 D ( $\phi 41^{\circ}07'$   $\lambda 70^{\circ}45'$ ) as the speed as plotted was 14 knots instead of 10 knots at which the sounding vessel was running. Replotting with corrected time gives good agreement with surrounding depths. ✓

Location of aids to navigation

Black bell buoy \*1 - three point fix - page 3 Vol 1 ( $\phi 41^{\circ}15.6'$   $\lambda 70^{\circ}46.2'$ ) ✓

Black whistle buoy - cuts - Vol 3 page 35, 36, 59 ( $\phi 41^{\circ}16.1'$   $\lambda 70^{\circ}28.2'$ )

Red bell buoy - cuts - Vol 3 page 35, 36, 37, 59 ( $\phi 41^{\circ}19.4'$   $\lambda 70^{\circ}25.5'$ )

Two 81 ft sounding pos 89  $\mu$  from H-6447 (1939) ~~were~~ not inked in the junction. There is possibly an error of 1 fathom and it is referred to the reviewer ( $\phi 41^{\circ}02.2'$ ) ( $\lambda 70^{\circ}08.5'$ )  
Rejected, see Rev. Par. 4b.

HYDROGRAPHIC SURVEY NO. H6446

Smooth Sheet One

Boat Sheet One

Records; Sounding 7 Vols., Wire Drag      Vols., Bomb 1 Vols.

Descriptive Report Yes

Title Sheet Yes

List of Signals Yes

Landmarks for Charts (Form 567) Yes

Statistics Yes

Approved by Chief of Party Yes

Recoverable Station Cards (Form 524)     

Special Chart for Lighthouse Service No Nov. 20, 1939  
(Circular Nov. 30, 1933)

Hydrography: Total Days 18 ; Last Date Sept. 26, 1939

Remarks

Remarks

Decisions

1		U.S.G.B
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GEOGRAPHIC NAMES  
 Survey No. **H6446**

Name on Survey	A. On Chart No.	B. On previous survey No.	C. On U. S. quadrangle Maps	D. From local information	E. On local Maps	F. P. O. Guide or Map	G. Rand McNally Atlas	H. U. S. Light List	K.
<u>Martha's Vineyard</u>									1
<u>Nantucket Island</u>									2
<u>No Mans Land</u>									3
									4
									5
									6
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Names underlined in red approved  
 by L. Heck on 7/25/40

# MEMORANDUM

## IMMEDIATE ATTENTION

SURVEY  
DESCRIPTIVE REPORT  
PHOTOSTAT OF

No. H **H6446**  
~~No. H~~

received **June 26, 1940**  
registered **July 8, 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	<i>✓ Combs Egan</i>	<i>CE</i>	
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40			
62			
63			
82			
83			
88			
90			

RETURN TO

82	T. B. Reed
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*✓ TBR*

## TIDE NOTE FOR HYDROGRAPHIC SHEET

July 16, 1940

Division of Hydrography and Topography:

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

Tide Reducers are approved in  
7 volumes of sounding records for

HYDROGRAPHIC SHEET 6446

Locality South of Marthas Vineyard and Nantucket Island

Chief of Party: R. P. Eymann in 1939  
Plane of reference is mean low water reading  
2.8 ft. on tide staff at Block Island  
11.4 ft. below B.M. 2

Height of mean high water above plane of reference is 3.0 feet.

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents.

DIVISION OF CHARTS

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6446 (1939) FIELD NO. 44

Massachusetts, South of Martha's Vineyard  
and Nantucket Island  
Surveyed in August 10 - September 26, 1939, Scale 1:40,000  
Instructions dated March 4, 1938 (LYDONIA)

Soundings:  
Dorsey Fathometer

Control:  
Three Point fixes on shore  
and buoy signals.  
R.A.R. with Sono Radio Buoys.

Chief of Party - R. P. Eyman.  
Surveyed by - J. H. Brittain.  
Protracted by - Alfred Kaupa.  
Soundings plotted by - Alfred Kaupa.  
Verified and inked by - G. B. Littlepage.  
Reviewed by - Harold W. Murray, September 18, 1940.  
Inspected by - H. R. Edmonston.

1. Shoreline and Signals.

- a. This is an offshore survey and no shoreline is shown.
- b. The origin of the signals is given in the descriptive report, pages 1 and 2.

2. Sounding Line Crossings.

Agreement of sounding line crossings is very good, the maximum differences being only about 2 feet.

3. Depth Durves.

The usual depth curves may be satisfactorily drawn.

4. Junctions with Surveys.

- a. The junction on the west with H-6445 (1939) is satisfactory. In lat.  $41^{\circ}09'$ , long.  $70^{\circ}47'$ , a 3 foot difference is noted in depths of about 115 feet.
- b. The junction on the south with H-6447 (1939) is satisfactory. In lat.  $41^{\circ}02.3'$ , long.  $70^{\circ}08.4'$



two 81 foot soundings from H-6447 falling in general depths of 74 to 77 feet are apparently one fathom too shoal since a line of 76 foot soundings on the present survey was run directly between the two 81 foot depths. The 81 foot depths have been removed from the sheet.

- c. No contemporary surveys adjoin the present survey on the north and east. A satisfactory junction for charting purposes, however, is made with prior surveys covering this area.

5. Comparison with Prior Surveys.

- a.
 

H-223 (1847-48)	H-378 (1853)
H-239 (1848-50)	H-406 (1853)
H-283 (1851)	H-1782 (1887)
H-344 (1853)	

The above surveys are on scales varying from 1:20,000 to 1:400,000. Generally speaking, a fringe of soundings from these surveys fall just within the present survey limits. The surveys contain no important shoal soundings and a detailed comparison will serve no useful cartographic purpose. The more detailed present survey supercedes these 1847 to 1887 surveys.

- b. H-445 (1854) scale 1:40,000.

This survey covers the northeastern portion of the present survey. The development consists of three point fix controlled lines crossing one another at intervals of 1/2 to 1-1/2 miles.

General agreement of depths is good in some areas but decidedly unsatisfactory in other areas as considerable differences are noted between the two surveys. These differences are moreover in direct contrast with the good agreement found in surveys made 35 years later discussed in paragraph d below.

One prominent example of the disagreements noted is in lat. 41°15', long. 70°26' where portions of two lines (pos. 2 - 3b and 3 - 4f) having depths as shoal as 46 and 43 feet respectively are 20 to 48 feet too shoal when compared with the present survey. There is no doubt that the present survey disproves these soundings since, in each case, four lines cross the old survey lines at right angles and show no indication.

It appears from this investigation that the soundings if correct are displaced as much as 1/3 mile to the southward. A similar example is line 42 to 43-1/2c in lat. 41°15', long. 70°20'.

Another form of disagreement noted is a number of shoal soundings of 45 to 69 feet obtained on line which fall in depths of 60 to 85 feet and while not definitely disproved by the present survey are nevertheless uncertain and have not been carried forward because the other deeper soundings on line are either too shoal or too deep by as much as 10 to 20 feet. An example of this group is the 55 (not charted) falling in depths of 76 feet in lat. 41°11.9', long. 70°12.8'.

A more outstanding case is a series of successive soundings: 41, 41, 47 and 56 foot depths on line 36 - 37h in lat. 41°13', long. 70°13' which indicates a shoal area of about 1/3 mile in width. This shoal (not charted) falls in depths of 58 to 66 feet on the present survey but between two shoal areas spaced about 1/2 mile apart. The shoal to the southeastward is shoaler since a least depth of 52 feet was obtained. The present survey development would indicate that the shoal is displaced in position. The two 41 foot depths being originally recorded as 7 fathoms 0 feet (unreduced) could have been mistaken for 11 fathoms which would agree with the depths on the side of the shoal. The 47, originally 8 fathoms unreduced, if correct, may indicate that the shoal has been partially worn down. There is, however, no certainty that the probability advanced for these soundings is the correct one.

In view of the general unreliability noted above, the present survey within the area covered should supersede this 1854 survey.

c. H-670 (1859), scale 1:400,000.

This sheet is a general chart compiled from surveys previous to 1859 discussed in the preceding paragraphs and contain no original information. The present survey supersedes this compilation.

- d. H-1843 (1888), H-1941 (1889) and H-2081 (1891), scales 1:20,000 and 1:40,000.

These surveys taken together cover the entire area of the present survey. General agreement of depths is very good particularly on the north-west and indicates that the common area is an unchangeable one. A 58 foot sounding falling in depths of 66 feet in lat. 41°14', long. 70°15' was not carried forward from H-1941 because a line on the present survey was run directly over the old survey line and shows no indication. In addition, this sounding could not be verified because the original sounding records cannot be readily located. The present survey supersedes these old surveys except for the bottom characteristics which may be used to supplement those of the present survey.

6. Comparison with Chart 1209 (New Print dated July 2, 1940)  
Chart 1210 (New Print dated June 5, 1940)  
Chart 1107 (New Print dated Dec. 15, 1939)

- a. Hydrography.

Hydrography shown on the charts originates with surveys discussed in the preceding paragraphs and no further discussion is necessary.

- b. Aids to Navigation.

The present survey locations of the aids agree closely with the charted positions and satisfactorily mark the features intended.

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 of soundings were accurate.
- c. The descriptive report is clear and satisfactorily covers all matters of importance.
- d. Additional bottom characteristics for charting purposes may be obtained from surveys discussed in paragraph 5d of this review.

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.

This is an excellent survey and no additional field work is required.

10. Superseded Surveys.

H-223	(1847-48)	in part	H-445	(1854)	in part
H-239	(1848-50)	in part	H-670	(1859)	in part
H-283	(1851)	in part	H-1782	(1887)	in part
H-344	(1853)	in part	H-1843	(1888)	in part
H-378	(1853)	in part	H-1941	(1889)	in part
H-406	(1853)	in part	H-2081	(1891)	in part

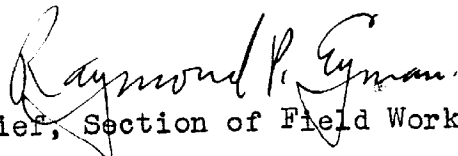
Examined and approved:



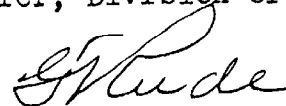
T. B. Reed,  
Chief, Section of Field Records.



Chief, Division of Charts.



Chief, Section of Field Work.



Chief, Division of H. & T.

Applied to chart 1210	Nov. 13, 1940	G.H.S.
" " " 1209	Jan. 18, 1940	G.H.S.
" " " 1108	Feb. 18, 1941	G.H.S.
Applied to chart 1107	April 10, 1941	Jam
" " " 60	Nov. 12, 1941	J.M.A.
Applied to chart 1210 Recon.	10/5/61	MR.
Applied to new chart 265	10-12-61	RKD.
Applied to new chart 264,	10-30-61	G.R.J.
Applied to the south extension of 1210	5-12-64	GRM