6440

Form 504
Rev. April 1935

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

~~Topographic~~ / Hydrographic } Sheet No. H 6440

H6440

6440

State New York ~~Massachusetts~~ ; Rhode Island.

LOCALITY

~~South of Block Island~~

~~Offshore, Block Island~~

~~to Nantucket Shoals~~

Continental Slope,

South of Block Island.

1939.

CHIEF OF PARTY

F. S. Borden

U. S. GOVERNMENT PRINTING OFFICE 102221

Form 537
Ed. Dec. 1930

REG. NO. H 6440

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. 121 H6440

REGISTER NO. H 6440

State New York ~~Massachusetts~~, Rhode Island.

General locality Continental Slope ~~So of Block Island to Nantucket Shoals~~

Locality ~~South of Block Island~~ South of Block Island ~~Offshore Block Island to Nantucket Shoals~~

Scale 1:120,000 Date of survey May 5 - July 31, 1939

Vessel OCEANOGRAPHER

Chief of Party F. S. Borden

Surveyed by Ship's Officers E. H. KIRSCH

Protracted by J. C. Mathisson, J. H. Brittain & H. W. D. Hunter

Soundings penciled by L. W. Paul, Jr.

Soundings in fathoms ~~feet~~ and sixths

Plane of reference Mean Low Water

Subdivision of wire dragged areas by

Inked by R. H. Carstens

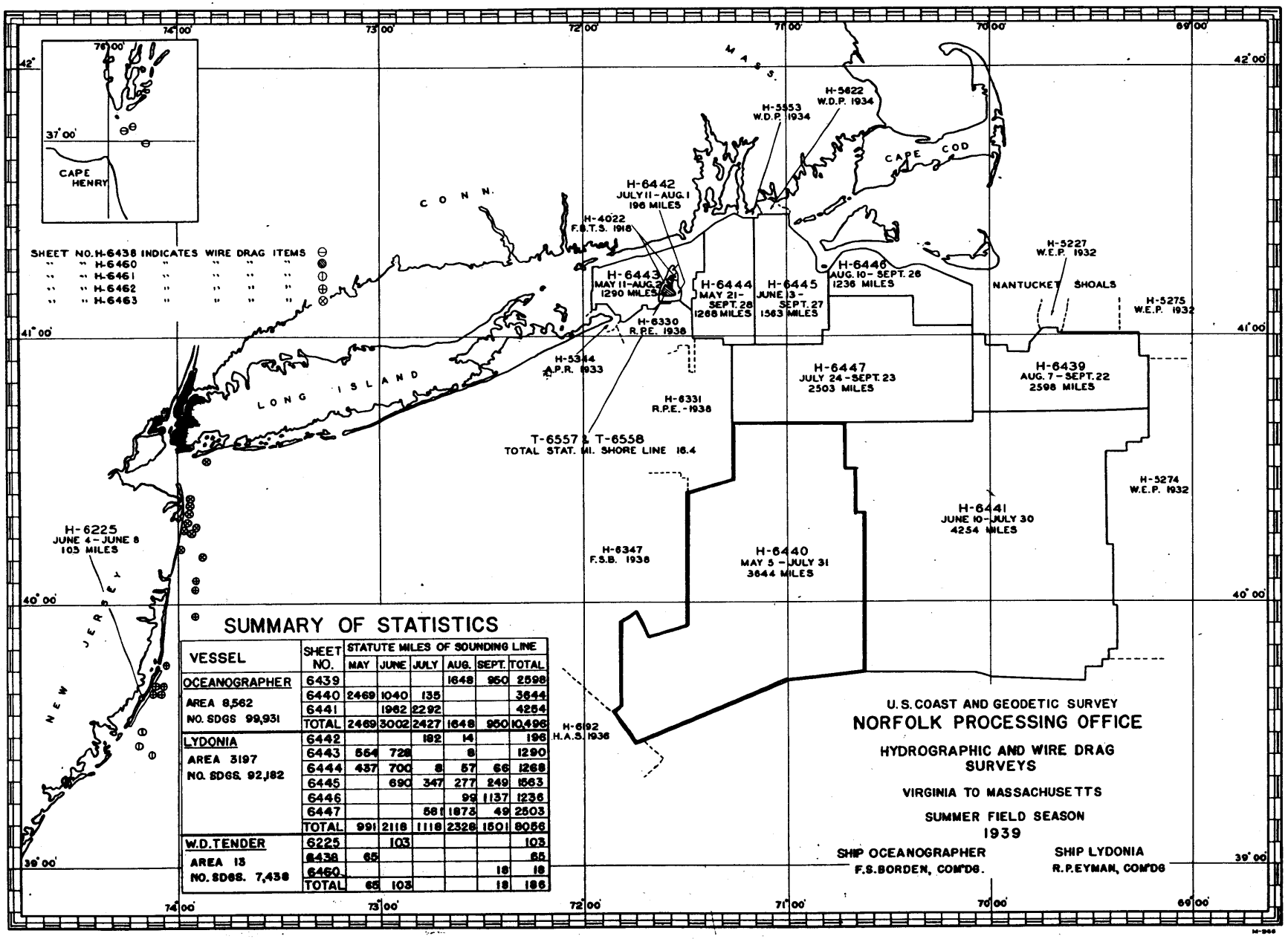
Verified by R. H. Carstens

Instructions dated March 4, 1938

Remarks:

KWW 9/15/92

U. S. GOVERNMENT PRINTING OFFICE



SUMMARY OF STATISTICS

VESSEL	SHEET NO.	STATUTE MILES OF SOUNDING LINE					
		MAY	JUNE	JULY	AUG.	SEPT.	TOTAL
OCEANOGRAPHER	6439				1648	950	2598
AREA 8,562	6440	2469	1040	135			3644
NO. SDGS 99,931	6441		1962	2292			4254
	TOTAL	2469	3002	2427	1648	950	10496
LYDONIA	6442			192	14		196
AREA 3197	6443	564	728		8		1290
NO. SDGS. 92,182	6444	437	700	8	57	66	1268
	6445		690	347	277	249	1563
	6446				99	1137	1236
	6447			581	1873	49	2503
	TOTAL	991	2118	1118	2328	1501	8056
W.D. TENDER	6225		103				103
AREA 13	6438	65					65
NO. SDGS. 7,438	6460					18	18
	TOTAL	65	103			18	186

U.S. COAST AND GEODETIC SURVEY

NORFOLK PROCESSING OFFICE

HYDROGRAPHIC AND WIRE DRAG SURVEYS

VIRGINIA TO MASSACHUSETTS

SUMMER FIELD SEASON

1939

SHIP OCEANOGRAPHER
F.S. BORDEN, COM'DG.

SHIP LYDONIA
R.P. EYMAN, COM'DG

844
SIAS
6440
1939
B

DESCRIPTIVE REPORT
TO ACCOMPANY
SHEET H-6440

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

The area covered by this sheet is part of the offshore area between Block Island and Nantucket Shoals, and lies between Latitudes 39° 30' and 40° 40' and Longitudes 70° 40' and 71° 50'. The limits are outlined in red on the attached sketch. It joins sheet H-6447 (1939) on the North, sheet H-6441 (1937) on the east, and sheets H-6347 (1938) and H-6331 (1938) & 6192 (1936) on the west. Part of the off shore area of sheet H-6347 was resurveyed on this sheet.

SURVEY METHODS

This sheet is controlled by R.A.R. using sono radio buoys along a taut wire-sun azimuth traverse and with three additional sono buoys located off the line by bombed distances.

The soundings were taken with the Dorsey No. 2 Fathometer from May 5 (4 days) through May 11 (6 days) with the Dorsey No. 3 Fathometer for the remainder of the sheet.

SMOOTH PLOTTING

Theoretical Velocities of sound in sea water as given in the British Admiralty tables were used for the R.A.R. distances on this sheet. The velocities for the distances were computed fromtthe lowest temperature and corresponding salinity in each serial inside the 100 fathom curve, the bottom temperature and salinity between the 100 and the 300 fathom curves and from the temperature and salinity at 300 fathoms beyond that depth. The "cold front" temperature used inside the 100 fathom curve occured at depths varying from 10 to 25 fathoms below the surface.

The velocities were plotted on overlays (one for each trip) of the boat sheet at the positions where the serials were taken and curves of equal velocity then drawn on these overlays. Over these sheets were placed overlays on which the buoys were located. From each buoy used for the corresponding trip radial lines were drawn along which average velocities from the buoy were plotted and then through these points average velocity curves were drawn. These sheets were then laid over the boat sheet and the velocity taken off for each position for the buoy concerned.

For the location of the off-lying sono buoys MAN, QUE, and HOG, a projection was made on an aluminum mounted sheet, scale 1:120,000. On this sheet were plotted the buoys located by taut wire-sun azimuth

traverse from which bombed distances were obtained. From these positions the theoretical distances were swung to locate the off-lying buoys. The location of buoy QUE is primarily controlled by a taut wire distance to buoy NAN, the bomb distance arcs being swung to other buoys to determine its position along the taut wire distance arc. Buoys MAN and HOG are located entirely by bomb distances.

The locations of the buoys were satisfactory except that the distance from LET to QUE was short indicating, possibly, that a higher velocity should have been used in this area.

Distance circles were drawn for each sono buoy at intervals of 10 seconds corresponding to a velocity of 1475 M/S. These circles were drawn with pencil. Distance arcs to the positions were drawn with colored ink, each sono buoy having a distinctive color. Gyro bearings to buoys are shown by a black dashed line.

The distance arcs for the positions were plotted in seconds, corrected to the uniform velocity of 1475 M/S. For example, Position 77 M, the distance from buoy LET of 20.55 seconds at a velocity of 1468 M/S had a correction of -0.10 seconds. The distance was plotted as 20.45 seconds.

The 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 sounding record where obviously in error.

The sounding lines run on Y and Z days were entirely by dead reckoning. These were plotted on tracing paper and fitted to the sounding lines already plotted. Position 1 Y is the same as position 16 AA on Sheet H-6441.

Soundings were plotted in fathoms and feet (the line under the foot digit being omitted) to 100 fathoms and in fathoms for greater depths.

The bottom characteristics were recorded on the temperature form. For convenience they have been entered on page 2 of Sounding Volume No. 1.

FATHOMETER CORRECTIONS

Due to the fact that temperatures differed considerably between the inshore and offshore limits, velocity corrections could not be computed satisfactorily in accordance with Field Memorandum No. 3, 1936. There was a great difference between the temperature at the bottom near the inshore limits of the work and at the same depth near the middle of the sheet and dividing the sheet into areas would cause a large discrepancy at the junctions of the areas. Therefore the corractions were computed as follows. The mean temperature and salinity from the surface to the bottom was computed for each serial. Mean temperature depth curves and mean salinity-depth curves were then plotted, the depths being taken as

the depth at the point the serial was taken. These curves were drawn by trips. The temperature and salinity were then taken off for each 5 fathoms to 100 fathoms, every 10 fathoms between 100 and 200 fathoms and every 200 fathoms for greater depths. The velocities and factors for the corrections were then computed from these mean temperatures and salinities. These computations are being submitted with other miscellaneous data related to the work on this project.

The Dorsey No. 2 Fathometer was used for the first trip on this sheet. For the first few days the initial was set at 13 feet for the fast keying which changed to 5 fathoms near depths of 200 fathoms when the fathometer was shifted to slow keying. Corrections of +1 foot for the fast keying and -3 fathoms for the slow keying over 200 fathoms were applied for for this period. The +1 foot was used for the shoal depths as the fathometer velocity corrections have been combined with the draft corrections on the basis of 14 feet. The -3 fathoms was used for depths over 200 fathoms as corrections were applied to fathoms only. The above was used through C day.

For the period D day to G day inclusive the initial was at 13 feet for the fast and slow keying, and 16 fathoms for the slow keying with the sonic oscillator. A correction of +1 foot was used for the fast and slow keying and -14 fathoms for the slow keying with the sonic oscillator. The correction of -14 fathoms was applied as this was to the nearest fathom and in depths where the corrections were entered to fathoms only.

After G day the Dorsey No. 3 Fathometer was used with the initial set at 14 feet for both methods so the corrections applied were only for draft and combined with the velocity corrections.

No settlement or index corrections was applied as observations for the index corrections indicated that this correction was approximately the same as the settlement correction but with opposite sign.

Tide, Velocity and draft corrections were applied to soundings up to 200 fathoms and velocity corrections only for depths greater than 200 fathoms except as noted for the initial corrections on the Dorsey No. 2 Fathometer.

COMPARISON WITH ADJOINING SURVEYS

(1938) Junctions with sheets H-6441 (1939) to the east, H-6447 (1939) to the North and H-6331 to the west are satisfactory. This sheet also joins H-6347 (1938) to the west, the junction being satisfactory to the vicinity of the 200 fathom curve. In the deep water area this sheet overlaps Sheet H-6347 from Latitude 39° 30' to Latitude 39° 50'. The agreement is somewhat erratic in this area due to steep slopes making it difficult to obtain good soundings and good R.A.R. control. Sdg's on H-6440 supersede those on H6347

COMPARISON WITH PREVIOUS SURVEYS

A comparison with chart 1108 shows a fair agreement in the shoal part of the sheet but for the deep water the soundings on the previous surveys are too few to show the irregularities of the depth curves.

DISCREPANCIES

In general the crossings are satisfactory in depths to 200 fathoms. In the greater depths the crossings are made over irregular bottom and on steep slopes so that these are rather large discrepancies. In many instances a slight shift of the sounding lines would give good crossings but there are places where it appears that there may be erroneous soundings. The principal discrepancies noted where shifting the lines slightly would not help were as follows: 1. Positions 43 - 44K (692 fathoms) and 78 - 79D (747 - 767 fathoms); 2. Positions 51K (755 fathoms) and 79 - 80D (827 - 877 fathoms). Par. 2, Rev.

1. Lat. 39°47.0, Long. 71°13.8
2. Lat. 39°45.6 Long. 71°13.8

Respectfully submitted,

John H. Brittain

John H. Brittain
Norfolk Processing Office

Approved:—

Frank D. Gordon
Chief of Party.

STATISTICS FOR SHEET H-6440
OCESNOGRAPHER 1939
PROJECT HT. 207

Letter Day	Date	Statute Miles	Soundings	Positions	Volume Number
A	May 5	50	481	61	1
B	" 6	199	1807	112	1
C	" 7	222	2068	125	2
D	" 8	190	1625	113	2 & 3
E	" 9	114	900	68	3
F	" 10	101	916	58	4
G	" 11	127	1184	104	4
H	" 18	137	1028	87	5
J	" 19	92	777	66	5
K	" 20	167	1592	115	6
L	" 21	89	641	58	6
M	" 22	144	1336	85	7
N	" 23	182	2151	142	7 & 8
P	" 24	119	1121	84	8
Q	" 25	247	2219	159	8 & 9
R	" 26	135	1068	87	10
S	" 27	154	822	108	10
T	June 4	194	1876	129	11
U	" 5	200	1776	118	11 & 12
V	" 6	242	2116	142	12 & 13
W	" 7	290	2145	156	13 & 14
X	" 8	114	617	75	14
Y	July 30	99	913	52	14
Z	" 31	36	249	19	14
TOTALS FOR SHEET		3644	31,428	2323	

Area Square Statute Miles 3168

C O P Y

SEASON'S REPORT 1939 NO. 90

Title - Rhode Island, Mass.

Ship OCEANOGRAPHER

By - Borden, Frank S.

Dates - May 2 - September 25, 1939.

LIMITS: The OCEANOGRAPHER sailed from Norfolk for the working ground off the coast of Rhode Island and Massachusetts on May 1, 1939 and started field work on May 2. Offshore surveys were extended from the meridian of Block Island eastward to a junction with the Georges Bank project, thence northward over the outer portion of Nantucket Shoals. In general these surveys extended from the 1000-fathom curve northward to a junction with the work of the LYDONIA along parallel 40° 40', except on Nantucket Shoals where they were extended northward to latitude 41° 00'. The limits of the work and the junctions made with previous surveys are shown on the accompanying layout of OCEANOGRAPHER and LYDONIA sheets. The OCEANOGRAPHER'S surveys, embracing an area of 8,562 square miles, are shown on sheets Nos. 6439, 6440 and 6441. Considerable overlap was made with Georges Bank survey No. 5274 in order to obtain better development in the vicinity of Nantucket Lightship and Veatch Canyon.

CONTROL: The sounding lines were controlled almost entirely by radio sono buoys, although bearings to buoys were often obtained to supplement weak fixes when passing through the buoy lines. To locate the buoys 271 miles of taut wire-sun azimuth traverses were run. The principal loop, which started with one of the LYDONIA'S buoys near Block Island, ran directly offshore to about the 50-fathom curve, thence 53 miles eastward and thence inshore to a tie-in off Nantucket Island. The loop was approximately 150 miles in length and closed with an error of 0.61 meters per mile. The control schemes of both the OCEANOGRAPHER and LYDONIA are shown on an accompanying plate.

In general the performance of the radio sono buoys was more satisfactory than during the previous season. This was due largely to complete rebuilding of all five sono buoys and to the adoption of the circuit used in the buoys of the LYDONIA. The principal obstacles to satisfactory bomb distances were the erratic water temperatures and the steep slopes on the outer portions of the project. Inside of the 50-fathom curve, where normal surface to bottom temperature gradients exist, no trouble was experienced. At about the 50-fathom curve the bottom water is warmer than the water above it.

As the season advances and the surface water warms the coldest water is then found at varying depths between surface and bottom. The sound wave seems to travel with a velocity corresponding to the temperature of this "cold front" but since the "cold front" varies rapidly both as regards season and locality it is impossible to determine exact velocities of the sound wave.

In an effort to obtain as much information as practicable for determining velocities an unusually large number of observations were made. Complete temperature-salinity serials were obtained at 135 stations during the season. In addition 10 sets of experimental velocity observations were obtained when running taut wire lines on which sono buoys were located. It was by comparing the results of these observations with theoretical values that the "cold front" theory of sound travel originated. The season's records contain a large amount of valuable data that can be used in the study of sound transmission. Lieutenant (j.g.) J. C. Mathisson who has had charge of processing the OCEANOGRAPHER'S records has made considerable study of the data and no doubt will be able to render a valuable report on this subject.

SOUNDINGS: Just before sailing for the working ground a new Dorsey No. 3 Fathometer was installed. During the first trip the Dorsey No. 2 was used while Mr. Hickley completed adjustments to the new instrument. Beginning with the second trip the No. 3 instrument was used exclusively for record soundings and under his expert attention was further developed and simplified. The results obtained with it were very satisfactory. In general, super sonic soundings could be carried out to about 500 fathoms. There the bottom became so irregular that it was difficult to follow the soundings and the sonic method was used. Considerable difficulty was experienced in obtaining accurate soundings on the steep slopes of the submarine canyons although depths of 1100 fathoms could be obtained where the bottom was more regular. It seems unlikely that any echo sounding apparatus will obtain reliable soundings over some of the terrain in this region. The one weakness of the Dorsey No. 3 instrument is the very small scale used for reading sonic soundings. In this one respect the No. 2 excells the No. 3.

During the season a Hughes Deep Water Recorder was installed. This instrument demonstrated again and again the value of recording depth finders. The Dorsey No. 3 Fathometer, supplemented with the Hughes Recorder, gave the OCEANOGRAPHER an ideal combination of instruments. The No. 3 with its unexcelled accuracy, was necessary to determine exact depths over critical areas and over smooth featureless terrain, also, it served as a yardstick to control the less accurate Hughes Recorder. The Hughes Recorder, on the other hand, served best over irregular bottom, where a profile is desirable and where a confusion of echoes from side slopes renders impossible the reading of accurate visual sonic soundings. This was demonstrated

clearly by the fact that often when reading soundings from the Hughes machine in deep water several traces would appear on the record and it would be necessary to wait until the profile had been drawn for some distance before the correct trace could be identified. On Nantucket Shoals the recording instrument was very helpful not only in picturing the interesting sand ridge formation, but also in giving warning of the approach of ridges on which it was important that the exact depth over their narrow crests be obtained.

* * * * * *

(Signed) Frank S. Borden
Commanding

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. .H6440

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

Number of positions on sheet	2323
Number of positions checked	118
Number of positions revised	88
Number of soundings recorded	31428
Number of soundings revised	19
Number of soundings erroneously spaced	—
Number of signals erroneously plotted or transferred	—

Date: Febr 1, 1941

Verification by R.H. Carpenter Time: 270 h.

Review by J.A.McCormick, 2/20/41 Time: 40 hrs.

2629

HYDROGRAPHIC SURVEY NO. H6440

Smooth Sheet One

Boat Sheet One

Records; Sounding 14 Vols., Wire Drag ___ Vols., Bomb 7 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) None

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

Hydrography: Total Days 24 ; Last Date July 31, 1939

Remarks _____

	Remarks	Decisions
1		
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GEOGRAPHIC NAMES

Survey No. H6440

Name on Survey	On Chart No. A,	On previous survey No. B,	On U. S. quadrangle Maps C,	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K.	
Block Island										1
~~Nantucket Shoals~~										2
Block CANYON										3
										4
										5
										6
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Approved

by L. Heck on 7/25/40

M 234

FORM M-238

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
DESCRIPTIVE REPORT
PHOTOSTAT OF

No. H H6440
~~No. T~~

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			
24			
25			
26			
30			
40			
62			
63			
82			
83			
88			
90			
80	Coast Border	BB	

RETURN TO

82	T. B. Reed

✓ TBR

LCC
HRE.

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Ed. Feb. 1935

TIDE NOTE FOR HYDROGRAPHIC SHEET

July 15, 1940

Division of Hydrography and Topography:

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

Tide Reducers are approved in
14 volumes of sounding records for

HYDROGRAPHIC SHEET 6440

Locality South of Block Island to Nantucket Shoals

Chief of Party: F. S. Borden 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.

U. S. GOVERNMENT PRINTING OFFICE

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H 6440 (1939)

Verified and Inked by R. H. Carstens Date Febr 1, 1941

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.

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). This is an offshore sheet and no shoreline appears on it. The location of buoys is found in the field computations for the season

27. Depth curves were satisfactory ~~except as follows:~~

28. Sounding line crossings were satisfactory except as follows:
Discrepancies listed on separate sheet

29. Junctions with contemporary surveys were satisfactory except as follows:
Overlap on H-6347 (1938) was unsatisfactory and soundings on H6440 accepted as superseding those on H-6347. A butt junction was made with H6347. A butt junction was also made with H-6192 (1936) which joined unsatisfactorily on overlapping lines.

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~~: except that 4½ ft. was plotted as next whole fathom. This was changed in the office.

33. Notes to reviewer:

Discrepancies

	Line	Sdg	Line	Sdg	Lat.	Long.	
1.	78-79 D	757	43-44 K	692	39-47.0	71-13.8	692 and adjacent K-day sdgs omitted as they conflict with curves
2.	79-80 D	897	51-52 K	766	39-45.6	71-13.8	several K-day sdgs omitted. The crosses a valley and evidently true sdgs were not gotten
3.	91-92 D	715	42-43 K	670	39-45.8	71-18.0	D-day sdgs omitted
4.	6 H	650	64-65 K	612	39-44.9	71-31.0	H-day sdgs omitted steep slope may partially account for discrepancy
5.	8-9 H	697	32-33 K	654	39-43.5	71-29.3	K-day sdgs omitted - conflict with curves
6.	28-29 H	806-799			39-32.4	71-45.0	2 sdgs in 900 fm. canyon appear erroneous and were omitted
7.	33-34 H	903	55-56 J	846	39-36.0	71-34.5	903 omitted - steep slope in canyon probably accounts for discrepancy
8.	43-44 H	1181			39-34.2	71-33.6	1181 conflicts with curves and was omitted Rejected on boat sheet by P.A. Smith
9.	44-45 H	876			39-33.5	71-35.5	876 conflicts with curves and was omitted ? on boat sheet.
10.	46-47 H	942	45-46 J	907	39-33.0	71-37.0	942 omitted
11.	26-27 J	612			39-35.0	71-49.0	612 conflicts with curves and was omitted
12.	32-33 J	707	14-15 L	786	39-39.0	71-37.0	707 omitted - conflicts with curves and was last sdg before fathometer was adjusted
13.	35-36 J	717	62-63 K	739	39-41.0	71-31.0	717 and adjacent sdgs omitted - conflict with curves
14.	13-14 K	425-415	93 D	462	39-49.5	71-17.0	425-415 omitted - conflict with curves. Rough bottom
15.	37-39 K	742-751	29-30 E	777	39-42.0	71-27.7	K-day sdgs omitted - conflict with curves
16.	48-49 L	315	12-13 E	294	39-52.0	71-25.0	315 omitted - rough bottom may account for discrepancy
17.	89-90 G	534	8-9 L	499	39-41.0	71-41.0	534 omitted - conflicts with curves
18.	73-74 R	411-418	53-54 S	421-~~425~~ 448	39-51.0	71-05.5	R-day sdgs omitted - conflict with curves
19.	70-71 V	996	111-112 U	1035	39-44.0	70-50.5	996 omitted - appears erroneous
20.	30-31 R	583	80-81 W	611-624	39-49.3	70-55.5	R-day sdgs omitted
21.	37-38 S	856	94-95 W	896	39-47.0	70-58.0	896 omitted
22.	17-18 X	705	31-32 Y	661	39-48.5	70-54.5	several X-day sdgs omitted - conflict with curves
23.	34-35 H	1065			39-36.6	71-33.0	1065 omitted - appears erratic
24.	92-93 W				39-45.0	71-04.0	W-day sdgs left in pencil appear to be 100 fms in error

DIVISION OF CHARTS

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6440 (1939) FIELD NO. 121

New York - Rhode Island; Continental Slope;
South of Block Island
Surveyed in May - July 1939, Scale 1:120,000
Instructions dated March 4, 1938 (OCEANOGRAPHER)

Soundings: Dorsey II and III Fathometer

Control: R.A.R.

Chief of Party - F. S. Borden
Surveyed by - F. S. Borden
Protracted by - J. C. Mathisson; J. H. Brittain; H.W.D. Hunter
Soundings plotted by - L. W. Paul, Jr.
Verified and inked by - R. H. Carstens
Reviewed by - J. A. McCormick, February 20, 1941
Inspected by - H. R. Edmonston

1. Shoreline and Signals

The nearest shoreline is well outside the limits of the smooth sheet. Survey buoys were located by taut wire, sun azimuth traverse.

2. Discrepancies

The verifier's report lists several crossing discrepancies in addition to the two mentioned in the descriptive report. Disregarding discrepancies which result from apparently "wild" readings there are about 15 averaging around 40 fathoms, each of which would require an average shift of 1/2 mile in one or the other of the lines involved to obtain good agreement. All but two are outside the 500-fathom curve.

The season's report (copy attached to descriptive report) states probable causes of discrepancies to be irregular bottom and steep slopes and difficulties in determination of proper velocities. Mention also is made of the very small scale used for reading sonic soundings on the Dorsey III Fathometer.

Office disposition of discrepancies consisted, in most cases, of arbitrary omission of depths conflicting

with Lt. Smith's boat-sheet contouring. As Comdr. Borden states in the season's report, "It seems unlikely that any echo-sounding apparatus will obtain reliable soundings over some of the terrain in this region."

3. Junctions with Contemporary Surveys

Satisfactory junctions were effected with H-6331 (1938) on the northwest, H-6447 (1939) on the north and with H-6441 (1939) on the east. Overlaps with H-6192 (1936) and H-6347 (1938) on the west showed discrepancies similar to those discussed in the preceding paragraph. Satisfactory adjustments being practically impossible, the present survey is accepted as superseding the overlapping portions of the two older surveys.

4. Comparison with Prior Surveys

H-100 (1842), 1:400,000; H-101 (1844), 1:400,000; H-289 (1851), 1:100,000; H-670 (1859), 1:400,000; H-1458a (1880), 1:1,200,000; H-1498a (1880-83), 1:1,200,000; H-1531 (1882); 1:1,200,000; H-1558 (1882-1905), 1:300,000; H-1782 (1887), 1:300,000; H-2920a (1882-87), 1:1,200,000

Occasional depths on the old surveys are weakly fixed and consequently somewhat displaced but, in general, agreement with the present survey is fairly good. Some of the track soundings plotted on copies of Sailing Chart A (obsolete) are in surprisingly close agreement. The present survey is adequate, however, without retention of any of the old depths.

5. Comparison with Chart 1108 (New Print of Aug. 17, 1940)

Depths now charted in this area are from surveys discussed in the foregoing paragraphs. Depth curves on the continental slope were added from the boat sheet of the present survey.

6. Condition of Survey

Satisfactory.

7. Compliance with Instructions for the Project

Satisfactory.

8. Additional Field Work Recommended

None.

9. Superseded Surveys

H- 100	in	part	H-1498a	in	part
H- 101	"	"	H-1531	"	"
H- 289	"	"	H-1558	"	"
H- 670	"	"	H-1782	"	"
H-1458a	"	"	H-2920a	"	"

Examined and approved:

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

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Applied to chart	1108	Feb. 27, 1941 G.H.S.
Applied to chart	1107	April 10, 1941 L.A.M.
" " "	70	July 23, 1941 J.M.A.
" " "	60	Nov. 10, 1941 J.M.A.