

6443

6443

Form 504
Rev. April 1935

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

~~X~~ *Topographic* } Sheet No. H - 6443
Hydrographic }

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES
APR 26 1940

Acc. No.

State New York, Connecticut & Rhode Island
LOCALITY
Block Island Sound

1939

CHIEF OF PARTY
Raymond P. Eyma

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REG. NO. H - 6443

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

H6443

Field No. 41

REGISTER NO. H - 6443

State Connecticut, Rhode Island and New York

General locality East of Long Island
Block Island Sound

Locality Block Island Sound

Scale 1 : 40,000 Date of survey May 11 - Aug. 2, 1939

Vessel LYDONIA

Chief of Party Raymond P. Eyma

Surveyed by Ship's Officers

Protracted by James T. Burke

Soundings penciled by James T. Burke

Soundings in ~~100000~~ feet

Plane of reference Mean Low Water

Subdivision of wire dragged areas by

Inked by Harold W. Murray

Verified by "

Instructions dated March 4, 1938

Remarks:

XWW 11/1/91

A few fixes were taken using navigation buoys, when other objects were not obtainable for short intervals.
R.S.

This line was later rerun on Sheet 6444 with entirely different results which, in themselves, appeared doubtful, and other lines were run to verify this. In all this section of line was covered by "D" day sheet 6443 and "D", "E", "H" days sheet 6444. It was finally discovered that there was a very steep sided submarine valley in this vicinity, and after development, practically all the soundings that had been previously questioned could be replotted with only minor discrepancies apparent.
Raymond E. Guman.
C.O. Lydonia.

DATE OF INSTRUCTIONS

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

LIMITS

This sheet covers the area in Block Island Sound eastward from Longitude $71^{\circ}57'$, to Longitude $71^{\circ}24'$, and north & east of Montauk Point where a junction is made with sheets H-5334 and H-6330. The northern limit of the sheet parallels the Connecticut Shore north-east from Lat. 41-15, Long. 71-57, to about 4 miles east of P.T. Judith L.H., Lat. 41-22 & Long. 71-24. This sheet joins sheet H-6444 to the eastward. The limits are outlined in red on the sketch attached to this report.

SURVEY METHODS

The control for this sheet consists of sextant fixes on shore signals located by triangulation, topography and sextant cuts from the ship. The soundings were taken with the Dorsey No. 1 Fathometer.

While the area of the Endeavor Shoal, northeast of Montauk Point, was extensively developed with the ship there is no assurance that the least depths were obtained as the bottom is very irregular. It is recommended that this area be covered with the wire drag. See Rev. Par. 10

Part of the soundings in the areas of the Endeavor Shoal and Southwest Ledge were plotted on an overlay attached to this sheet.
Important soundings applied to smooth sheet and overlay destroyed.

FATHOMETER CORRECTIONS

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 ft. was applied to the fathometer soundings. This correction was combined with the index corrections under the heading I & S in the sounding records.

DISCREPANCIES

* The soundings between positions, 42D and 45D along the eastmost line on this sheet did not agree with the soundings on sheet 6444. Apparently a stray was read on the fathometer. These soundings were rejected in the sounding record, and were not plotted on the sheet. This area was well developed on sheet No H-6444.

COMPARISON WITH ADJOINING SURVEYS

Except as previously noted the junctions with adjoining sheets are satisfactory.

Moderate to heavy tide rips are found in the area northward
of Block Is. in the vicinity of the lighted Bell buoy. }
J.B.

Deep holes surrounded by much shallower water in
general. J.B.

DANGERS

The only dangers within the area covered by this sheet are on Endeavor Shoals as previously mentioned in this report.

COMPARISON WITH PREVIOUS SURVEYS

A comparison with chart 1210 & 1211 indicates that the soundings in general check very well. The exceptions noted are as follows:

| <u>LOCATION (LAT. & LONG.)</u> | <u>CHART</u> | <u>SHEET H-6443</u> |
|------------------------------------|---------------|-------------------------------|
| 41-06.1 71-50.0 | 21 ft. H-2262 | 25 FT. |
| 41-05.1 71-49.3 | 34 ft. ✓ | 24 ft. |
| 41-06.0 71-47.35 | 27 ft. H-2262 | 31 ft. |
| 41-07.0 71-43.0 | 30 ft. | 34 ft. |
| 41-07.0 71-47.8 | 31 ft. | 41 ft. |
| 41-07.0 71-39.9 | 25 ft. | 23 ft. |
| 41-07.6 71-39.0 | 27 ft. WD | 30 ft. |
| 41-09.4 71-37.6 | 29 ft. WD | 41 ft. |
| 41-09.4 71-31.4 | 78 ft. | 105 ft. |
| 41-09.5 71-40.3 | 46 ft. | 52 ft. |
| 41-10.9 71-38.3 | 97 ft. | 111 ft. -120 ft. |
| 41-14.0 71-54.6 | 306 ft. | 326 ft. |
| 41-15.5 71-55.4 | 172 ft. | 237 ft. |
| 41-20.0 71-32.0 | 52 ft. | 66 ft. |
| 41-18.0 71-27.5 | 55 ft. | 59 ft. |
| 41-10.0 | 78 ft. | 84 ft. Disposed off H.W.M. |

TIDES

H6443

The tide reducers for sheet H-6443 are based on three tide gages as follows:

Watch Hill tide gage

North of Latitude 41-09
West of Longitude 71-44

Montauk tide gage

South of Latitude 41-09
West of Longitude 71-44

The Block Island Tide Gage was used for the remainder of the sheet

The dates and gages used for the reductions of soundings on this sheet are tabulated as follows:

| <u>DAY</u> | <u>DATE</u> | <u>POSITION NOS.</u> | <u>TIMES 60th M.T.</u> | <u>TIDAL AREA</u> | <u>REMARKS</u> |
|------------|-------------|----------------------|------------------------|-------------------|----------------|
| A | May 11 | 1A- 43 | 6:17 to 9:13 | Block Island | (All day) |
| B | May 12 | 1 - 31 | 10:13 to 13:00 | Block Island | |
| | | 31 - 62 | 13:00:30 to 15:02 | Watch Hill | |
| | | 62 - 138 | 15:02:30 to 19:51 | Block Island | |
| C | May 13 | 1 - 48 | 5:33 to 8:39:30 | Block Island | |
| | | 49 - 86 | 8:40 to 10:35:30 | Watch Hill | |
| | | 86 - 117 | 10:36 to 12:07 | Block Island | |
| D | May 16 | 1 - 158 | 8:01 to 20:30 | Block Island | (All day) |
| E | May 17 | 1 - 249 | 6:00 to 20:25 | Block Island | (All day) |
| F | May 19 | 1 - 173 | 6:04 to 15:16 | Block Island | (All day) |
| G | May 20 | 1 - 28 | 7:47 to 10:45 | Block Island | (All day) |
| H | May 21 | 1 - 19 | 8:08 to 9:59 | Block Island | (All day) |
| J | May 24 | 1 - 99 | 5:24 to 10:40 | Block Island | (All day) |
| K | May 25 | 1 - 73 | 6:12 to 10:36 | Block Island | (All day) |
| L | June 1 | 1 - 6 | 8:02 to 8:29 | Montauk | |
| | | 6 - 35 | 8:29:30 to 9:54:30 | Watch Hill | |
| | | 35 - 44 | 9:55 to 10:25:30 | Montauk | |
| | | 44 - 55 | 10:26 to 10:59:30 | Watch Hill | |
| | | 55 - 82 | 11:00 to 13:50:30 | Montauk | |
| | | 82 - 118 | 13:51 to 15:50 | Watch Hill | |
| | | 118 - 127 | 15:50:30 to 16:18 | Montauk | |
| | | 127 - 148 | 16:18:30 to 17:21:30 | Watch Hill | |
| | | 148 - 158 | 17:22 to 17:53:30 | Montauk | |
| | | 158 - 168 | 17:54 to 18:18:30 | Watch Hill | |
| | | 168 - 176 | 18:19 to 18:53 | Montauk | |
| | | 177 - 187 | 19:43 to 20:13 | Watch Hill | |
| M | June 2 | 1 - 31 | 6:04 to 8:57 | Watch Hill | |
| | | 31 - 49 | 8:57:30 to 9:50:30 | Montauk | |
| | | 49 - 74 | 9:51 to 11:24:30 | Watch Hill | |
| | | 74 - 92 | 11:25 to 12:34 | Montauk | |
| | | 92 - 116 | 12:34:30 to 13:48 | Watch Hill | |
| | | 117 - 149 | 13:48:30 to 15:58:30 | Montauk | |
| | | 149 - 182 | 15:59 to 17:59 | Watch Hill | |
| | | 182 - 204 | 17:59:30 to 19:18:30 | Montauk | |
| | | 204 - 230 | 19:19 to 20:44 | Watch Hill | |

| <u>DAY</u> | <u>DATE</u> | <u>POSITION NOS.</u> | <u>TIMES 60th M.T.</u> | <u>TIDAL AREA</u> | <u>REMARKS</u> |
|------------|-------------|----------------------|------------------------|-------------------|----------------|
| | | 230 - 234 | 20:44:30 to 20:59:30 | Montauk | |
| | | 234 - | 21:00 to 21:40 | Watch Hill | |
| N | June 3 | 1 - 31 | 5:25 to 7:30 | Block Island | |
| | | 31 - 33 | 7:30:30 to 7:35:30 | Watch Hill | |
| | | 33 - 275 | 7:36 to 20:28 | Montauk | H6443 |
| P | June 4 | 1 - 16 | 6:14 to 7:14 | Watch Hill | |
| | | 16 - 42 | 7:14 to 9:21 | Montauk | |
| Q | June 7 | 1 - 113 | 7:05 to 12:55:30 | Block Island | |
| | | 114 - 148 | 12:59:30 to 14:38 | Montauk | |
| | | 148 - 160 | 14:38:30 to 15:17:10 | Block Island | |
| | | 160 - 256 | 15:17:30 to 20:13 | Montauk | |
| R | June 8 | 1 - 28 | 5:45 to 7:29:30 | Watch Hill | |
| | | 28 - 33 | 7:30 to 7:42 | Block Island | |
| | | 33 - 101 | 7:42:30 to 12:11 | Montauk | |
| S | June 21 | 1 - 101 | 8:43 to 13:54:30 | Block Island | |
| | | 102 - 195 | 13:55:30 to 19:04 | Watch Hill | |
| | | 195 - 231 | 19:04:30 to 20:40 | Block Island | |
| T | June 22 | 1 - 107 | 5:16 to 11:16:20 | Block Island | |
| | | 107 - 203 | 11:16:30 to 16:02 | Montauk | |
| | | 204 - 216 | 16:22 to 17:22 | Watch Hill | |
| | | 217 - 269 | 17:32 to 20:46 | Block Island | |
| U | June 23 | 1 - 25 | 5:00 to 6:34 | Block Island | (All day) |
| V | July 11 | 1 - 5 | 9:45 to 10:41 | Block Island | (All day) |
| W | August 2 | 1 - 22 | 7:50 to 10:12 | Block Island | (All day) |

Where the local tide reducers for Montauk Point and Watch Hill were not available the following factors were used with the Block Island Gage.

For Montauk Point area a time correction of $1\frac{1}{2}$ hrs. later with a range factor of 0.7.

For Watch Hill area a time correction of 1 hr. later of and a range factor 0.9.

The authority for dividing the sheet as above was contained in the Directors' letter to the commanding officer, LYDONIA, dated August 29, 1939.

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Respectfully submitted

*John H. Brittain
Jr. H. & S. Co.*

STATISTICS FOR SHEET NO. 6443

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 | May 11 | 23.0 | 237 | 43 | 1 |
| B | " 12 | 70.3 | 912 | 138 | 1 |
| C | " 13 | 66.5 | 673 | 117 | 1 & 2 |
| D | " 16 | 83.4 | 906 | 158 | 2 |
| E | " 17 | 116.6 | 1445 | 248 | 2 & 3 |
| F | " 19 | 96.0 | 986 | 173 | 3 |
| G | " 20 | 08.0 | 126 | 28 | 3 |
| H | " 21 | 08.0 | 99 | 19 | 3 |
| J | " 24 | 35.2 | 531 | 99 | 3 & 4 |
| K | " 25 | 46.8 | 406 | 73 | 4 |
| L | June 1 | 88.2 | 1013 | 187 | 4 |
| M | " 2 | 132.0 | 1448 | 249 | 4 & 5 |
| N | " 3 | 131.2 | 1607 | 274 | 5 & 6 |
| P | " 4 | 23.2 | 245 | 42 | 6 |
| Q | " 7 | 101.9 | 1394 | 256 | 6 & 7 |
| R | " 8 | 46.4 | 564 | 101 | 7 |
| S | " 21 | 96.7 | 1188 | 231 | 7 & 8 |
| T | " 22 | 96.6 | 1237 | 269 | 8 |
| U | " 23 | 12.3 | 140 | 25 | 8 |
| V | July 11 | - | 5 | 5 | 8 |
| W | Aug. 2 | 8.0 | 118 | 22 | 8 |

| | | | | | |
|-----------------------|----|--------|--------|------|---|
| TOTAL FOR SHEET | 21 | 1290.3 | 15,280 | 2757 | 8 |
|-----------------------|----|--------|--------|------|---|

Total Area 338 Square Miles Statute.

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. **H6443**

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

| | |
|--|--------|
| Number of positions on sheet | 2757 |
| Number of positions checked | 32 |
| Number of positions revised | 2 |
| Number of soundings recorded | 15,280 |
| Number of soundings revised | 18 |
| Number of soundings erroneously spaced | 6 |
| Number of signals erroneously plotted or transferred | ✓ |

Date: *June 26, 1940*

Verification by *Harold W. Murray*

Review by *(do)*

Time: *11 days, 4 hrs.*

Time: *7" 2"*

HYDROGRAPHIC SURVEY NO. H6443

Smooth Sheet Yes

Boat Sheet Yes

Records; Sounding 8 Vols., Wire Drag Vols., Bomb Vols.

Descriptive Report Yes

Title Sheet Yes

List of Signals Yes

Landmarks for Charts (Form 567) No

Statistics Yes

Approved by Chief of Party Yes

Recoverable Station Cards (Form 524) No

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

Hydrography: Total Days 21; Last Date Aug. 2, 1940

Remarks _____

GEOGRAPHIC NAMES

Survey No. **443**

Name on Survey

On Chart No.
 On previous survey No.
 On U. S. Quadrangle Maps
 From local information
 On local Maps
 P. O. Guide or Map
 Rand McNally Atlas
 U. S. Light List

| | A | B | C | D | E | F | G | H | K | |
|---|---|---|---|---|---|---|---|---|---|----|
| <u>Block Island</u> ✓ | | | | | | | | | | 1 |
| <u>Block Island Sound</u> | | | | | | | | | | 2 |
| <u>Southwest Lodge</u> | | | | | | | | | | 3 |
| <u>Endeavor Shoals</u> | | | | | | | | | | 4 |
| <u>Great Eastern Rock</u> ✓ | | | | | | | | | | 5 |
| <u>Cerberus Shoal</u> ✓ | | | | | | | | | | 6 |
| <u>Shagwong Reef</u> ✓ | | | | | | | | | | 7 |
| <u>Shagwong Rock</u> ✓ | | | | | | | | | | 8 |
| <u>Montauk Point</u> | | | | | | | | | | 9 |
| <u>Watch Hill Point</u> ✓ | | | | | | | | | | 10 |
| <u>Point Judith</u> ✓ | | | | | | | | | | 11 |
| | | | | | | | | | | 12 |
| Names underlined in red approved by L. Heckon 7/8/40 | | | | | | | | | | 13 |
| | | | | | | | | | | 14 |
| | | | | | | | | | | 15 |
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| | | | | | | | | | | 26 |
| | | | | | | | | | | 27 |

Remarks

Decisions

| | | |
|----|--|--------|
| 1 | | 411715 |
| 2 | | 411718 |
| 3 | | 411716 |
| 4 | | 411717 |
| 5 | | " |
| 6 | | 411719 |
| 7 | | " |
| 8 | | 410719 |
| 9 | | 410718 |
| 10 | | 413718 |
| 11 | | 413714 |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |
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| 26 | | |
| 27 | | |

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
DESCRIPTIVE REPORT
PHOTOSTAT OF

No. H **H6443**
~~No. T~~

received April 26, 1940
registered April 27, 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 | Comdr. Eymon | PEY | Will have some additional notes for D.R. |
| 24 | | | |
| 25 | | | |
| 26 | | | |
| 30 | | | |
| 40 | | | |
| 62 | | | |
| 63 | | | |
| 82 | | | |
| 83 | | | |
| 88 | | | |
| 90 | | | |
| | | | |
| | | | |

RETURN TO

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

✓ TBR

PAC
ME.

TIDE NOTE FOR HYDROGRAPHIC SHEET

May 6, 1940

Division of Hydrography and Topography:

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

Plane of reference approved in
8 volumes of sounding records for

HYDROGRAPHIC SHEET 6443

Locality Block Island Sound, East of Long Island, N. Y .

Chief of Party: R. P. Eymen 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
1.4 ft. on tide staff at Watch Hill
11.2 feet below B. M. 1
2.8 feet on tide staff at Montauk Harbor
8.1 feet below B. M. 1

Height of mean high water above plane of reference is 3.0 feet at
Block Island; 2.5 feet at Watch Hill; 1.9 feet at Montauk Harbor.

Condition of records satisfactory except as noted below:



Acting Chief, Division of Tides and Currents.

DIVISION OF CHARTS

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6443 (1939) FIELD NO. 41.

Rhode Island, East of Long Island, Block Island Sound
Surveyed in May 11 - August 2, 1939, Scale 1:40,000
Instructions dated March 4, 1938 (LYDONIA)

Soundings:
Dorsey Fathometer No. 1

Control:
Three Point fixes on shore signals

Chief of Party - Raymond P. Eymann.
Surveyed by - Ship's Officers.
Protracted by - J. T. Burke.
Soundings plotted by - J. T. Burke.
Verified and inked by - Harold W. Murray.
Reviewed by - Harold W. Murray, June 26, 1940.
Inspected by - H. R. Edmonston.

1. Shoreline and Signals.

- a. This is an offshore survey and no shoreline is shown.
- b. Signal control is furnished by triangulation stations, topographic and hydrographic signals. The topographic signals originate with T-4767 and T-4768 of 1933 and T-6557 and T-6558 of 1939. The cuts for the hydrographic signals are recorded in the sounding volumes.

2. Sounding Line Crossings.

Agreement of sounding line crossings is satisfactory.

In lat. $41^{\circ} 11.5'$, long. $71^{\circ} 56.2'$, a 141 foot sounding falls practically on a 179 foot depth and is apparently too shoal. The 141 is on a detached position (1R) obtained at the beginning of the day's work and was perhaps used to determine the ship's position since the regular sounding line was begun about 0.3 miles eastward. Although changes in the sextant angles would shift the sounding to comparable depths such a procedure is not justified and the position has been rejected.

In lat. $41^{\circ} 16'$, long. $71^{\circ} 46'$, a 147 and 148 foot sounding fall in depths of about 125 feet. These

soundings were obtained on line just before the fathometer was temporarily out of order. It is quite possible that these depths are justified and they are therefore being retained.

3. Depth Curves.

The usual depth curves may be satisfactorily drawn. The 48 foot curve was added in purple in the area between Montauk Point and Block Island to emphasize the irregular character of the bottom and serve as an aid to both the reviewer and the compiler. The 180 foot curve was added in pencil for use on the small scale Chart 1108.

4. Junctions with Surveys.

- a. The junctions on the south with H-6330 (1939) and on the southwest with H-5344 (1933-34) are satisfactory.
- b. The junction in the vicinity of the north and south side of Block Island with H-6442 (1939) is satisfactory.
- c. The junctions with H-3562 (1915) and H-4022 (1918) on the west side of Block Island and with H-3562 (1915) on the east side of the island are satisfactory. No soundings were transferred in the junction area because the 1915-18 work is not contemporary with the present survey.
- d. The junction on the east with H-6444 (1939) will be considered in the review of that survey.
- e. There are no contemporary surveys to the north and westward of the present survey limits. Satisfactory junctions for charting purposes, however, are made with older surveys covering this area.

5. Comparison with Prior Surveys.

- a. H-84 (1839), H-86 (1839), H-153 (1844), H-162 (1845), H-206 (1847-48) and H-238 (1851). Scale 1:20,000 and 1:40,000.

Each of the above sparsely covered surveys cover portions of the present survey. They are among the first surveys made by this Bureau and contain no important information not adequately covered by the present survey. They should be superseded by the present survey. Mention is made, however, of the

12 and 13 fathom soundings (charted) shown on H-86 in lat. $41^{\circ} 10.6'$, long. $71^{\circ} 45.5'$, which are about 25 feet shoaler than the present survey depths of 90 to 110 feet. These soundings were selected from a series of soundings of equal depth obtained on the same line. Since the present survey shows not only similar but slightly shoaler depths on a ridge about 1/2 mile to the south, it seems probable that these older soundings are either too shoal or perhaps displaced in position and should be disregarded. A 48 foot sounding (charted) from H-84 in lat. $41^{\circ} 19.2'$, long. $71^{\circ} 28.1'$, falls in depths of about 53 feet on the present survey. The 48 is one of two soundings of like depth obtained on line. The present survey, however, shows a small shoal area with a least depth of 49 feet about 0.3 miles northward which is possibly a more correct position of the same shoal. The 48 foot sounding should be superseded. None of the above mentioned old survey soundings were verified because the original sounding records could not be located. It is significant that all these soundings are plotted in whole fathoms and that many of them may, therefore, be slightly deeper.

- b. H-100 (1842), H-101 (1844), H-283 (1851), scales 1:400,000, 1:400,000 and 1:100,000.

These are small scale reconnaissance surveys which contain no information that is not covered by later larger scale surveys. The present survey supersedes these surveys.

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

This sheet is a general chart compiled from surveys previous to the year 1859 and contains no original information. The present survey supersedes this compilation.

- d. H-780 (1863), scale 1:20,000.

A few soundings from this survey fall within the limits of the present survey in the vicinity of lat. $41^{\circ} 06'$, long. $71^{\circ} 50'$, and are in good agreement. Two shoal depths were carried forward in lat. $41^{\circ} 06'$, long. $71^{\circ} 50'$. The present survey with these additions supersedes this 1863 survey.

- e. H-1396a (1878), H-1396b (1878) and H-3562 (1913-15).
Scales 1:10,000.

The above 1878 surveys taken together completely encircle Block Island. H-3562 covers only the middle and northern portion of the island and is also considered as a junction in paragraph 4c of this review. Only a fringe of soundings fall within the present survey limits and are in good agreement with the present survey depths except on the northeast side of the island where differences of several feet in depths of 80 to 120 feet are noted on H-1396a. An example is line 66 to 68G, red. A 79 foot depth obtained on this line in lat. $41^{\circ} 15.4'$, long. $71^{\circ} 33.3'$ falls in depths of 104 feet on the present survey but is 0.3 miles southeast of a similar depth on the present survey. Since this sounding is plotted on a turn a small variation in position is possible. The present survey depths should be accepted. A 90 foot sounding (charted) in lat. $41^{\circ} 15.2'$, long. $71^{\circ} 33.2'$ falls in depths of 120 feet, is 0.25 miles south of the previously mentioned sounding and was obtained on the same line. The 90 is the first sounding obtained after the leadman was relieved and is, therefore, somewhat questionable. The 90 is not being carried forward on the present survey. The present survey supersedes these surveys.

- f. H-1397 (1878), H-2227 (1896), H-2228 (1895),
H-2261 (1896), H-2262 (1896), H-2313 (1897),
scales 1:10,000; 20,000 and 40,000.

*These surveys
to be used to
supplement*

These surveys cover the present survey in the area between Montauk Point and Block Island. Most of the critical depths on H-2261 and H-2262 have been re-plotted on H-2228 and H-2227 respectively. The common area is characterized by narrow sand and rocky ridges with least depths of 23 to 30 or more feet which drop immediately to depths of 40 to 60 feet on either side. Because of this irregularity in the bottom neither the old surveys nor the smaller scale present survey portray a complete picture of actual conditions, except that all the surveys be considered together. While the transfer of critical information (charted) to the present survey would be a convenience to the compiler and also contribute in making the present survey a basic survey, the actual transfer of the critical old survey soundings will in many cases necessitate the complete removal of the shoal indication on the

present survey which, after all, is the sole basis of evidence that the shoal is still in existence. These old surveys should, therefore, be used to supplement the present survey.

- g. H-1312 (1874), H-1529a (1882) and H-1787 (1887), scales 1:20,000; 1:40,000 and 1:40,000

These surveys taken together cover the entire area of the present survey. The development consisting of sounding lines spaced about 1 mile apart is sparse. General agreement of depths is good in some areas but in other areas, the old survey depths vary up to 20 feet deeper in some cases and 10 feet shoaler in others. A case in point is line 4 to 23B, red on H-1529a. This line beginning in lat. $41^{\circ} 17'$, long. $71^{\circ} 48'$ extends across the present survey in a S x E direction. The soundings (depths of 80 to 130 feet) from Pos. 4 to 18B are in general consistently shoaler at the crossings with the present survey work. The soundings (depths of 52 to 110 feet) from Position 18 to 23B are consistently 8 feet in error because the tide reducer of 4 feet was added to instead of subtracted from the original soundings. The corrected soundings are in good agreement with the present survey depths. A 9 fathom sounding, Pos. 25B in lat. $41^{\circ} 08.3'$, long. $71^{\circ} 45.0'$ is also 3 fathoms too shoal because of an incorrect reduction. The correct reduction is 12 fathoms which agrees with the present survey depths of 71 feet.

In lat. $41^{\circ} 18'$, long. $71^{\circ} 27'$, two 56 and one 57 foot soundings (charted) were carried forward from H-1787. These transferred soundings differ slightly in position and in depth (two 56's only) from that shown on the chart and on the old survey because the spacing of soundings has been improved and the soundings have been reduced directly from the sounding records, recorded in fathoms and feet, instead of from the smooth sheet where they are plotted in fathoms and quarter fathoms.

The present survey with the indicated additions should supersede the above surveys.

- h. H-1529b (1884), H-1789 (1887) and H-3521 (1913), scales 1:10,000, 1:10,000 and 1:5,000.

A few soundings from each of the above surveys fall just within the present survey limits off Point Judith (lat. $41^{\circ} 20'$, long. $71^{\circ} 29'$).

H-1529b contains no projection. The more important soundings, however, have been transferred to H-1789 and this old survey can, therefore, be superseded.

H-1789 and H-3521 are both intensely developed on large scales. The common area is somewhat irregular and characterized by a hard or rocky bottom. H-1789 and H-3521 should, therefore, be used to supplement the present survey.

i. H-1577a (1883), scale 1:10,000.

A fringe of soundings from this survey fall within the present survey limits on the northwest and are in good agreement. The present survey supersedes this survey.

6. Comparison with Wire Drag Surveys.

H-3380 (1912)W.D., H-3907 (1916)W.D., H-4005 (1917)W.D., H-4006 (1917)W.D., H-4041 (1918-19)W.D., H-4042 (1918-19)W.D., H-4043 (1918) W.D., and H-4098 (1919) W.D., scales 1:10,000 to 1:50,000.

- a. These wire drag surveys taken together cover practically the entire area of the present survey. Complete reliance in this drag work is not advisable because of the numerous splits, holidays, insufficient clearance depths, and the lack of clear notes and remarks in the sounding records which are necessary for the plotting of effective drag strips and positions of groundings with confidence.
- b. Approximately 90 hand lead or wire soundings and drag groundings including bottom characteristics were carried forward on the present survey. In several instances bottom characteristics are shown adjacent to drag groundings. The characteristics were obtained from actual soundings which were not transferred because they were always several feet deeper and too close in position to the drag grounding to show accurately on the present survey. The transferred soundings and groundings in Block Island Sound which occur in depths up to 138 feet and which in some cases vary as much as 50 feet shoaler than the present survey depths are probably on obstructions.

In the vicinity of lat. $41^{\circ} 16'$, long. $71^{\circ} 34'$, the drag was aground in three areas on H-4041. Since the general depths vary from 65 to 125 feet and no position of the groundings were determined, no further investigation or disposition is being made.

- c. The effective drag depths in general do not conflict with the present survey depths. No consideration is given to conflicts of 1 or 2 feet because the drag could easily have an undetermined lift equal to this amount.
- (1) A conflict of 6 feet exists with H-3038 in lat. $41^{\circ} 07.1'$, long. $71^{\circ} 46.0'$. The present survey shows a least depth of 36 feet on a ridge which is covered by a 42 foot drag strip. There appears to be no reason to question the survey work because of the possibility that the conflict indicates shoaling subsequent to the 1912 drag work.
 - (2) A conflict of 4 to 5 feet exists with H-4098 in lat. $41^{\circ} 18.5'$, long. $71^{\circ} 35.5'$. The present survey shows depths of 82 and 83 feet in an area covered by an effective drag depth of 87 feet. The drag while proceeding westward subsequently grounded about 350 m. west by north of these two soundings and a sounding of 71 feet (carried forward) was obtained. An inspection of the sounding records shows that no tests for lift were recorded nor were any arbitrary corrections applied. It therefore appears evident that the net effective drag depth was actually less than 87 feet.
7. Comparison with Chart 1210 (New Print dated Dec. 14, 1939)
Chart 1211 (New Print dated Aug. 1, 1939)
- a. Hydrography.
Hydrography shown on the chart originates with surveys discussed in the preceding paragraphs of this review and no further consideration is necessary except that the notation "breaks in heavy weather" applied to Southwest Ledge in lat. $41^{\circ} 07'$, long. $71^{\circ} 40'$ should be retained on the chart.
 - b. Aids to Navigation.
Aids to navigation located on the present survey agree closely with the charted positions and satisfactorily mark the features intended except as noted below. It is also noted that several of the marker buoys located on the present survey are not charted.
 - (1) The buoy in lat. $41^{\circ} 06'$, long. $71^{\circ} 40'$ was located approximately 0.3 miles south of its charted position but still satisfactorily marks the position of the shoal area on the north.

- (2) The buoy in lat. $41^{\circ} 15.6'$, long. $71^{\circ} 35.0'$ was located about 0.3 miles west of its charted position. A better position for this buoy would be about 1/2 mile eastward.

8. Condition of Survey.

- a. The sounding records are neat and legible and conform to the requirements of the Hydrographic Manual.
- b. The descriptive report is clear and satisfactorily covers all matters of importance.
- c. The field protracting and plotting were satisfactory and conform to the requirements of the Hydrographic Manual.
- d. Additional bottom characteristics for charting purposes may be obtained from prior surveys covering this area.

9. Compliance with Instructions for the Project.

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

10. Additional Field Work Recommended.

The descriptive report, page 1, states that "While the area of Endeavor Shoals (lat. $41^{\circ} 06'$, long. $71^{\circ} 49'$) was extensively developed with the ship there is no assurance that the least depths were obtained as the bottom is very irregular. It is recommended that this area be covered with the wire drag." It seems advisable to reiterate several items concerning the entire area of the present survey.

The area off Point Judith, off the north end of Block Island, and between Block Island and Montauk Point is characterized by lumpy, irregular bottom. The last mentioned area in particular has countless detached shoal areas or long narrow ridges composed of hard sand, boulders or rock. The least depths on these features vary from 23 to 36 or more feet and drop immediately to depths of 40 to 60 feet on either side. By using the better older surveys to supplement the present survey, a truer picture of the actual least depths is available for charting purposes.

Approximately 90% of the area of the present survey was wire dragged in 1912-19. Complete reliance in this drag work is not advisable because of the numerous splits,

holidays, insufficient clearance depths and the lack of clear and sufficient notes and remarks in the sounding records which are necessary for the plotting of effective drag strips and positions of groundings with confidence.

Many of the drag groundings occurring at depths of 74 to 94 feet in general depths of 90 to 140 feet were not cleared. It is not likely that these groundings (probably on obstructions) are a menace to surface navigation.

11. Superseded Surveys.

| | | | | | |
|-------|-----------|---------|---------|-----------|---------|
| H-84 | (1839) | in part | H-780 | (1863) | in part |
| H-86 | (1839) | " " | H-1312 | (1874) | " " |
| H-100 | (1842) | " " | H-1396a | (1878) | " " |
| H-101 | (1844) | " " | H-1396b | (1878) | " " |
| H-153 | (1844) | " " | H-1529a | (1882) | " " |
| H-162 | (1845) | " " | H-1529b | (1884) | " " |
| H-206 | (1847-48) | " " | H-1577a | (1883) | " " |
| H-238 | (1851) | " " | H-1787 | (1887) | " " |
| H-283 | (1851) | " " | H-3562 | (1913-15) | " " |
| H-670 | (1859) | " " | | | |

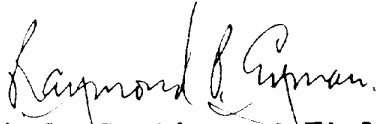
Examined and approved:



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



Chief, Division of Charts.



Chief, Section of Field Work.



Chief, Division of H. & T.

Applied to Ch 276 9/18/40 P.C.

| | | | |
|------------------|------|---------------|--------|
| Applied to Chart | 1210 | Oct. 30, 1940 | J.H.S. |
| " | " | Nov. 26, 1940 | J.H.S. |
| " | " | Feb. 15, 1941 | J.H.S. |
| Applied to chart | 358 | June 7, 1941 | Jam |
| " | " | July 23, 1941 | J.M.A. |
| " | " | Oct. 13, 1949 | RDC |
| " | " | 1951 | L.A.M. |

Applied to Chart 1210 Reconst 9/24/61 M.C.

Ampl to extension of chart 1210 6-2-64 G.R.M.C / R.K.D

Applied to chart 1322 (358) 10-12-82 only applied 120' Curve B.A.L.

APP'd to Extension of Chart 13221 2/15/95 Jim Barton