

5221a
H05221b

U. S. COAST & GEODETIC SURVEY
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5221a
5222
5223

Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. Patton, Director

State: Conn.

DESCRIPTIVE REPORT

Topographic | Sheet No. 2 5221a
Hydrographic | ~~Includes additional~~
~~work done in 1932~~

LOCALITY

Norwalk Islands

Long Island Sound

1932

CHIEF OF PARTY

H05221b
Q1750H

U.S. GOVERNMENT PRINTING OFFICE: 1928

S.B. Grenell, Jr H. & G. E.

ON ORIGINAL
DOCUMENT

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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REG. NO. 5221

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. 2

REGISTER NO. 5221 **A**

State Connecticut

General locality Long Island Sound

Locality Norwalk Harbor and Approaches

Scale 1:10,000 Date of survey June 28 - Sept 17, 19 32

Vessel Project HT-103

Chief of Party S. B. Grenell, Jr. H. & G. E.

Surveyed by S. B. Grenell, J. C. Partington, William F. Deane

Protracted by H. J. Seaborg

Soundings penciled by H. J. Seaborg

Soundings in ~~fathoms~~ feet

Plane of reference M. L. W.

Subdivision of wire dragged areas by

Inked by J. F. Walker

Verified by J. F. W.

Instructions dated April 18, 19 32

Remarks: Launch #66 used in this work

Descriptive Report
to Accompany
Hydrographic Sheet No. 2
Project HT-103, Long Island Sound
1932

Date of Instructions:

April 18, 1932.

Control:

Third order triangulation signals of the surveys of 1931, 32 supplemented by topographic signals located on aluminum mounted sheets, scale 1:10,000, during June, 1932.

Survey Methods:

All hydrography on this sheet was done aboard launch #66 by the usual hand lead method with three-point sextant angle control. Due to the fact that the direction of the current was generally at right angle to the lines, ranges were run wherever possible in preference to compass courses.

When possible, the work was so arranged as to take advantage of the most favorable tide conditions in shoal water and channel development.

Limits and Junctions:

The sheet extends along the north shore of Long Island Sound in the vicinity of the Norwalk Islands from Cedar Point to Fish Islands.

On the east and southeast a junction was made with sheet #3937 (R.P. Strough-1916); on the south with hydrographic sheet #1, 1932 and on the west with hydrographic sheet #3, 1932. All junctions with adjoining sheets show excellent agreement in soundings and depth curves.

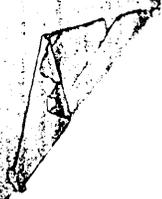
↑ except as noted in the review. *x*

General:

Work was begun on the east end of the sheet and progressed to the

H 5220

← 45222



westward. A system of 100 meter lines was run throughout the sheet with splits and cross lines added where the character of the bottom warranted additional development.

The channel at the entrance to the Saugatuck River was found very much the same as charted and developed as well as possible. Considerable development work has been done around Compo Beach and Cedar Point; the main feature being a small yacht basin with approach channel 1/4 mile northwest of Cedar Point. (See topographic sheet "A" for shoreline detail.) The channel to the basin is marked during the summer by small can buoys maintained by the owners of the basin, but the channel shoals and shifts so rapidly that seasonal maintenance is necessary.

The development around the reef east of Cockenoe Island is in addition to work done on sheet #3937 and gives a better delineation of depth curves around this area.

The two parallel lines east and south of Cockenoe Island are run approximately on a range through the pole on the south end of Goose Island and the old lighthouse tower on Sheffield Island. These lines were run at the request of local yachtsmen who use the inside channel between Cockenoe Shoal and Cockenoe Reef.

The area south of the Norwalk Islands and west of Greens Ledge offers few features worthy of special note. The area between the islands and the mainland, however, is so broken in character that no definite line system could be carried out but development had to be varied to meet conditions of depth and shoreline character. Lines were run in to as shoal water as possible with every effort made to use the high tides for important shoal development.

Channel lines with an approximate spacing of 50 meters were run through all natural channels. No attempt was made to develop dredged

channels maintained by the Army Engineers except as regular sounding lines crossed these channels.

A blue print attached to this report shows the location of a private dredged channel into the bight between Cedar Hammock and Manesa Island.

Special Notes:

At the mouth of the Saugatuck River about 1/8 mile SSE of Stony Point chart #221 shows a controlling depth of 6 ft. The hydrography on this sheet indicates a controlling depth at this point of not more than 3 ft. Local yachtsmen consider 4 feet as the controlling depth.

The final development of this area (pos. 1u to 23u) indicates an average depth of one foot less than the lines run on "d" day. This discrepancy is due to the effect of the river level on the tide reducers taken from the So. Norwalk gage.

U day
Sept. 17
9:20-10:20
Pos 77-96d
1121-2:50
July 8
8'

Cockenoe Reef is indicated on chart #221 by the sunken rock symbol. A careful comparison with topographic sheet "A", on which the reef was rodded in at low water, will show the true character of this reef. The rocks which bare at various stages of the tide are black and very prominent.

Pecks Ledge between Goose Island and Pecks Ledge L.H. should be shown as charted on chart #221. Neither this sheet nor topographic sheet "A" show this ledge but it appears as charted during low water.

Described in
1933 W.C. x

The 4 ft. sounding shown about 1/4 mile N.E. of Capp Island (first sounding after Pos. 105f) should be shown as a detached shoal. A search for this rock was made on "q" day but it was not found. It should, however, be charted because the sounding was checked at the time. The bottom in this area is covered with large boulders.

Beers Rocks, between Goose Island and Capp Island, is shown on chart #221 as a shoal area with one small rock islet. This islet is not in existence and should be removed from the chart. All area on this shoal which bares at low water is accurately shown on topographic sheet "A".

Area developed in 1935 - xxmm.

Channel Rock, 1/5 mile east by north from Pecks Ledge L.H. although not indicated on this sheet, is correctly shown as charted.

located on 1935 wh.

Old Pelt, the rock on Greens Ledge about 1/4 mile WSW from Sheffield Island, although not shown on this sheet or on topographic sheet "B", is correctly shown on chart #221.

located on 1935 wh.

The 2 foot spot 3/8 mile NE of Fish Islands is marked by a black iron rod (Signal "Black" on this sheet). The charted depth of 2 feet is correct as shown. *Sounding is on sunken rock (D.R.T. 4697, 1932, page 3). xxmm.*

The reviewer will note that two leadlines were used on this sheet; one for shoal and one for deep water. The line used in shoal water kept its length very well, but the longer line had a high factor of shrinkage. See copy of attached report on lead line dated June 27, 1932.

Pipe Drag:

Chart ²²¹~~#331~~ shows a rock awash 300 meters south of the south tangent of Cockenoe Island. This rock was never noted at low water so a search was made for it with the pipe drag. The rock does not exist and should be removed from the chart. The area covered by the pipe drag is shown in blue on this sheet. *Rh removed from chart - 6' least depth. xxmm.*

Statistics:

Vol.	Miles stat.	Soundings	Positions
1	47.2	2033	398
2	45.7	1815	360
3	53.7	1950	406
4	52.6	2137	383
5	57.0	2055	389
6	<u>30.2</u>	<u>1564</u>	<u>294</u>
Totals	286.4	11554	2230

Respectfully submitted,


S. B. Grenell,
Chief of Party.

So. Norwalk, Conn.,
June 27, 1932.

To: The Director,
U. S. C. & G. Survey,
Washington, D. C.

From: Lieut. (j.g.) S. B. Grenell.

Subject: Mahogany lead line. (A report.)

On my requisition of March 23, 1932, there was forwarded to me at Stamford, Conn. two coils of mahogany lead line. This line was made up in 15 and 20 fathom lengths as described below.

Sections of the required length were cut off, coiled and suspended in sea water for 24 hours, then straightened out and marked while wet. It was noted that the line shrank about 1 foot in 10 fathoms during the preliminary soaking and that when dry after marking retained the length as marked.

This line after 7 hours of sounding was again checked and was found to have shrunk an additional amount of 2 feet per 10 fathoms with an interesting development; the fabric covering had shrunk so much that the compression had forced out small bights of the wire core through the covering at intervals of 1 to 2 feet.

Thinking that this was probably the limit of shrinkage I had the line remarked and used it the following day with the result that there was a further shrinkage of 1 foot per 10 fathoms with more of the wire bights being forced through the covering. This made a total shrinkage of 4 feet per 10 fathoms and seemed to be the limit of shrinkage but the leadline was now useless as the bights of wire projecting through the covering tore the leadsman's hands.

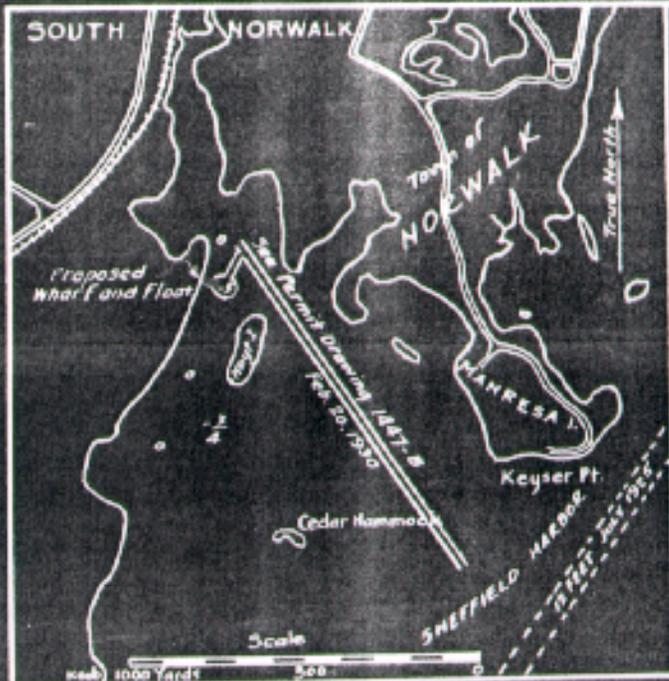
This is my first experience with this type of leadline having so much shrinkage. In 1931 a similar type of line was used by the wire drag tender the entire season with a shrinkage for the entire season of only 0.2 or 0.3 foot per 10 fathoms.

I am forwarding under separate cover a sample of the line discussed above the maker's label attached.

Upon examining the sample it will be noted that an attempt was made to cover the wire bights with leather but this was too confusing to the leadsman to be practicable. The wire bights not covered by leather came through after the line was marked the second time.

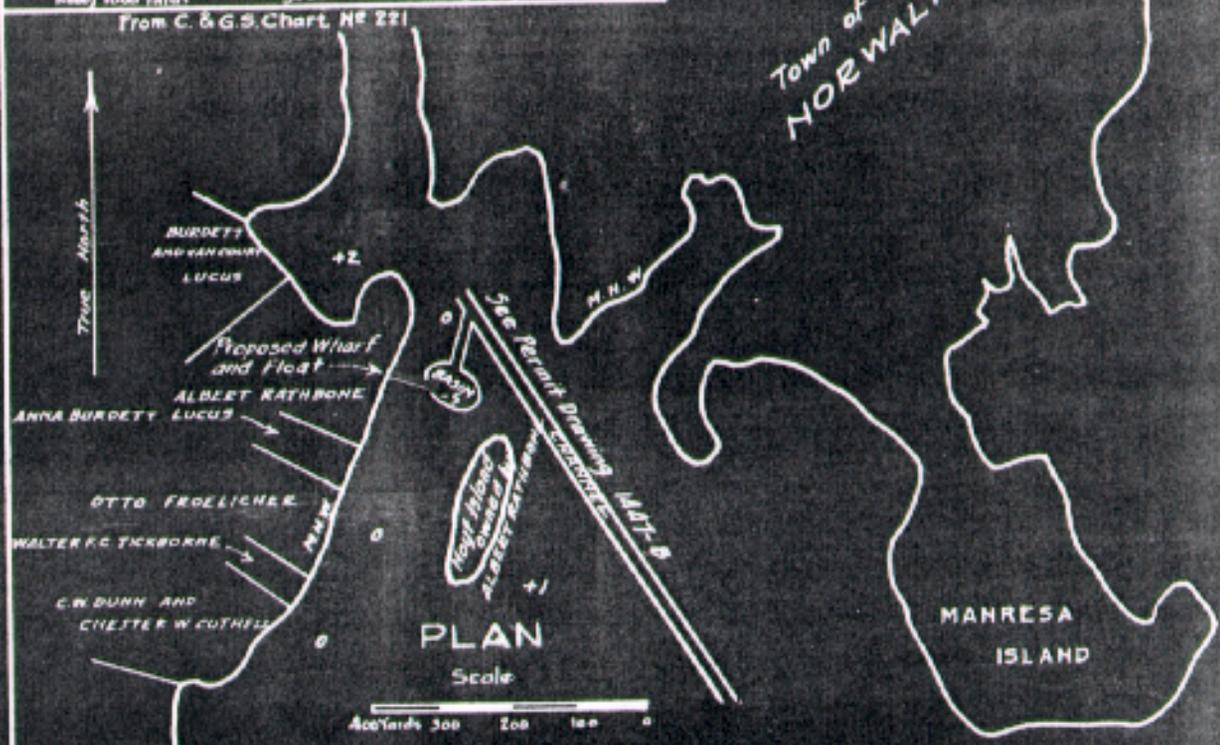
There is forwarded herewith a requisition including one coil of leadline with a reference note to this communication.

S. B. Grenell,
Chief of Party.



Soundings are in feet and refer to Mean Low Water

*Albert Rathbone
Sept 5, 1930*



PROPOSED WHARF and FLOAT
IN SHEFFIELD HARBOR, LONG ISLAND SOUND
AT NORWALK, CONN.
APPLICATION BY MR. ALBERT RATHBONE.

SEPT. 5, 1930

J. S. ENGINEER OFFICE,
Providence, R. I.
SEP 9 - 1930.

Section of Field Records

Report on H 5221
Chief of Party S B Grenell
Protracted by H. J. Seaborg
Verified & inked by J. Walker

Surveyed in 1932
Surveyed by S B Grenell,
J. C. Partington, W. F. Keane
Soundings plotted by H. J. Seaborg.

The sounding records were neat, legible, and complete. The protracting was the most accurate the writer has found. Only one mistake was detected. The boat sheet was legible and was compared with the smooth sheet. Because of the accuracy of the plotting and the legibility of the boat sheet, fewer positions than usual were checked.

The soundings were also carefully and accurately plotted. Only 18 mistakes were found.

Some of the crossings disagree by about two feet. This is particularly noticeable where the 12 and 18 foot curves cross the channel in Sheffield Island Harbor.

The sheet when received was neat and clean and conformed with General Instructions.

The overlap with H 5220 is sufficient but the agreement is not particularly good.

The overlap with H 5222 is shown on that sheet and should be discussed by the verifier of that sheet.

Two wire drag sheets (5142 & 5219) cover the area of H 5221 and the soundings and groundings from them were transferred to H 5221 (see notes under title of smooth sheet).

attention is called to the undeveloped shoal Lat. $41^{\circ} 02\frac{2}{3}$ Long. $73^{\circ} 23\frac{1}{2}$. a pencil note appears on the smooth sheet (put there by the field men) relating to this shoal and says, "This shoal was not developed by hand lead because it was to be covered later by wire drag but it was later found impossible to drag this spot due to the great number of submerged oyster stakes. See development on sheet H 1751; SC Paine, 1885." Discussed in review. X. 1900.

Many differences are noted between chart 221 and H 5221.

Chart 221 shows a rock awash 300 meters south of the south tangent of Cokenos Island. It was not found by a pipe drag. Its source was found to be a note in the sounding records of H 1751a at position 91 (blue) f day. However, based on H 5221 it appears that the line 91-93 f (H 1751a) is incorrectly plotted. The acceptance of position 92 as originally recorded and a replotting of position 91 with the sun angles, time and course

seem to satisfy all conditions. It has been so replotted on H1751a by authority of Capt. S. O. Colbert, chief of the section of Field Records. As replotted, the new position of the rock awash falls quite close to the position of Haycock Rock as shown on H5221 and undoubtedly is the same rock. Also, the elevation as given in the 1914 note agrees closely to that given on the 1932 topo sheet. The pipe drag survey of this area, ^{the purpose of which was to locate the circumstantially drilled rock mentioned above} as shown on H5221, was not verified by the writer. ^{This drag site investigated by Mr. Mac Cormick and found to be of little value. It was removed from the sheet by authority of Lt. Green. 7/20/35}

Several groups of rocks, no other authority for which were found, were transferred from the boat sheet (where some appeared in pencil and some in ink) to the smooth sheet. ^{Revised in Rev. 7/20/35}

Respectfully submitted
 J. Walker
 3/9/33

February 7, 1933.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
6 volumes of sounding records for

HYDROGRAPHIC SHEET 5221 a

Locality **Norwalk Harbor and Approaches, Long Island Sound**

Chief of Party: **S. B. Grenall in 1932**

Plane of reference is **mean low water reading**

2.8 ft. on tide staff at **South Norwalk**

20.3 ft. below B. M. 3

Height of mean high water above plane of reference is 7.1 feet.

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.



Chief, Division of Tides and Currents.

SECTION OF FIELD RECORDS
Preliminary Review of H. 5221.
Long Island Sound, Conn.
Surveyed in 1932
Instructions dated April 18, 1932 (Grennell).

In view of the fact that additional work is to be done in this area this sheet has not been finally reviewed. A comparison was made with all the previous surveys and a boatsheet prepared showing the rocks and shoal indications from the old work which are to be further examined and finally disproved or verified. Areas requiring more development were also marked on the boatsheet.

No rocks or dangers shown on the chart at the present time should be removed until the additional work is received. A 29 ft. spot shown on Chart 221 in Lat. $41^{\circ}-01.7'$, Long. $73^{\circ}-27.6'$, has been disproved not only by the hydrographic surveys H. 1698b and H. 5221 but also by the wire drag surveys H. 5142 and H. 5219, and may be removed from the chart.

This sheet will be reviewed when the new work is completed. *Sheet reviewed.*
✓ *HWM 5/20/35*

Reviewed by - R. L. Johnston. Inspected by A. L. Shalowitz.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5221a (1932) and 5221b (1933) FIELD NOS. 2

Norwalk Harbor and Approaches, Long Island Sound, Conn.

Surveyed in 1932 and 1933.

Instructions dated April 18, 1932 (S. B. Grenell)

Supplemental Instructions dated March 23, 1933 (H. A. Cotton)

Hand Lead Soundings.

Pipe and Rope Drag.

3 Point Control on Shore Signals.

Chief of Party - S. B. Grenell and H. A. Cotton.

Surveyed by - S.B.G., J. C. Partington, W. F. Deane, and F. E. Okeson.

Protracted and plotted by - H. J. Seaborg.

Verified and Inked by - J. F. Walker, S. E. Perkins, and J.A. McCormick.

1. Condition of Records.

The records are neat, legible and conform to the requirements of the Hydrographic Manual, except as follows:

- a. No chart containing objects for locating aids to navigation for use by the Lighthouse Bureau was received by this office.
- b. Recorded soundings obtained at drag groundings on H-5221b (1933) were not always accompanied by a bottom characteristic.
- c. On the cover label and title page of the sounding records of H-5221b (1933), the position and day letters were not consistently inked in the proper color. Those incorrectly shown were changed in the office (Par. 138).
- d. A number of rocks (awash and sunken), reefs and ledges are shown on the 1932 boat sheet which are not substantiated by appropriate remarks in the sounding records. These matters were referred to the field party and their recommendations in respect to charting are contained in the letter (dated Nov. 18, 1935) attached to this Descriptive Report.

Note:
This work
superseded
Rocks def-
initely
located on
H-5221a(1932
-34)
H.W. V:
12/16/36

2. Compliance with Instructions for the Project.

The character and extent of H-5221a (1932) did not closely conform to the original instructions and necessitated additional work, which was accomplished on H-5221b (1933). However, the latter work satisfies the instructions as of March 23, 1933, and the results have been transferred to H-5221a (1932) in color.

In several inshore areas on H-5221a (1932), hydrography was not sufficient to adequately define the low water and 6 foot curves. However, the more important of such areas are covered in part by U. S. Engineers' surveys.

3. Sounding Line Crossings.

Such cross lines as were run or result from the work are in general satisfactory. However, differences are noted on H-5221a (1932) in the vicinities of latitude $41^{\circ}03.0'$, longitude $73^{\circ}25.9'$ and latitude $41^{\circ}03.6'$, longitude $73^{\circ}25.0'$, where soundings of j and k days (blue), respectively, which were practically run at right angles to the channel here, vary 1 to 2 feet deeper.

4. Depth Curves.

Within the limits of the survey, the usual depth curves may be satisfactorily drawn including portions of the low water and 6 foot curves. Where agreement permitted, soundings of H-1698b (1914), H-1732a (1914), and H-1751a (1914) discussed in paragraph 6c of this review, were utilized in supplementing the delineation on the present survey.

5. Junctions with Surveys.

- a. The junction with H-5222 (1932) on the west is satisfactory except that in the vicinity of Fish Island and northward, the hydrography and topography on the present surveys are not as detailed as on H-1698 (1886) and T-1737 (1885). For charting purposes, the compilation as shown on the chart from the 1885-86 surveys should be retained until such time as it is practical to make a closer development of this area.
- b. The junction with H-5220 (1932) on the south is adequate, however, the handlead soundings of the latter survey vary in general from 1 to 5 feet shoaler than those of the present survey in some areas, and 1 to 3 feet deeper in others. The discrepancies may be due to the use of a Mahogany lead line on both surveys which was subject to excessive shrinkage (discussed in detail in both descriptive reports), and necessitated arbitrary corrections in the field.
- c. The junction on the east with H-3937 (1916) as prescribed in the instructions for the project has been made. However, the hydrography in this area has been supplemented by soundings from H-1751a (1914).
- d. In Norwalk River, a fair junction may be made between the present survey and U. S. Engineers' survey, blue print 23549 (1930).

6. Comparison with Prior Surveys.

- a. H-8 (1836), H-9 (1836), H-18 (1835) and H-19 (1835).

Soundings of the above surveys, which surveys were among the first made by this Bureau when methods and equipment used were in a developmental stage, are generally in good agreement with those of the present survey.

- (1) The sunken rock of H-9 (1836) in latitude $41^{\circ}03.5'$, longitude $73^{\circ}25.5'$, falling in depths of 7 feet on the present survey practically agrees in position with the correct plotting of the $1-1/4$ foot sounding on H-1751 (1885-94) discussed in paragraph 6b of this review (sounding incorrectly protracted on 1885-94 survey). While the sunken rock and sounding were not adequately disproved on H-5221b (1933), although cleared by a drag with an effective depth of $1-1/2$ feet, two shoal soundings of $2-1/2$ and 3 feet were obtained at a drag grounding (3 feet, effective depth) about 20 m. to the eastward. The shoal soundings of the present survey should be used in future chartings.
- (2) The large reef and ledge on H-19 (1835) in the vicinity of latitude $41^{\circ}03.8'$, longitude $73^{\circ}22.9'$, falling in depths of 2 to 12 feet on the present survey, is evidently a generalized representation of a rocky area for the area in question has been well sounded on H-1751 (1885-94) as well as on the present survey and no rocky ledge observed. In addition, the hydrographer of H-5221b (1933) was in the vicinity of Beers Rocks (just S. E. of the reef) during a minus $1/2$ foot tide and would certainly have observed any prominent dangers to the northwestward if they existed. The reef and ledge should be disregarded in future chartings.
- (3) The 22 foot sounding (charted) of H-19 (1835) in latitude $41^{\circ}02.7'$, longitude $73^{\circ}23.5'$, as well as other charted shoal soundings originating with surveys discussed in paragraphs 6b and c of this review fall in a shoal area with least depth of 25 feet on the present survey. The area was not adequately developed on the present survey because it was the intention of the 1932 party to wire drag it. It was found later that the area could not be dragged because of numerous submerged oyster stakes. The development on H-1751 (1885-94) indicates that this shoaling has changed somewhat in shape and a slight general deepening has occurred. However, in view of the lack of development on the present survey and the importance of this shoal, the least depth, 22 feet, from H-19 (1835), should be retained on the chart in the interest of safety until a more detailed examination is made. The 22 has been carried forward.
- (4) The 7 foot sounding (charted) and the 9 foot sounding (uncharted) from H-9 (1836) in approximate latitude $41^{\circ}03.1'$, longitude $73^{\circ}26.4'$ were cleared by a drag strip with an effective depth of 10 feet on H-5221b (1933) although another uncharted 10 foot drag strip grounded fairly close to the 9. The drag party obtained several soundings of from 7 to $8-1/2$ feet about 50

meters west of the old positions. These soundings should be accepted and the 7 and 9 foot soundings from H-9 (1836), which are considered disproved, should be disregarded in future charting.

- b. H-1698 (1886-93), H-1732 (1886), H-1750 (1885-87), and H-1751 (1885-94).

The above surveys are very detailed in character and soundings generally agree within 1 to 2 feet with those of the present survey. A few discrepancies noted on the above surveys are as follows:

- (1) H-1698 (1886).

The two detached sunken rocks in latitude $41^{\circ}03.3'$, longitude $73^{\circ}26.1'$, falling in depths of about 6 and 9 feet on the present survey, are incorrectly plotted as to character for according to remarks in the sounding records, they were actually seen as rocks awash baring 3 to 5 feet at M. L. W. and are furthermore shown on T-1737 (1885-86), but in different form (bare rocks), and positions (topographic delineation charted). The rocks were not located on the present topographic or hydrographic survey, although the hydrographer was in the vicinity during a 1 to 2 foot tide. The rocks have been carried forward on the present survey as rocks awash, however, as both the old topographic survey and remarks in the old records emphasize the existence of numerous rocks on the inshore side, although not definitely located on either survey, the notation "foul" has been added to the present survey in this area.

- (2) H-1750 (1885-87).

The minus $3/4$ foot sounding (not charted) in latitude $41^{\circ}06.3'$, longitude $73^{\circ}21.8'$, (pos. 4X, blue), falls near the edge of a channel on the present survey and in considerably greater depths. The sounding is probably erroneous as to depth for it was obtained between a 23 and $29-1/2$ foot sounding (unreduced), both of which plot inshore of the minus $3/4$. The error is probably due to an erroneous entry of 5 feet and 2 tenths instead of 5 fathoms and 2 feet, which reduced gives 26 feet and agrees favorably with other soundings in this vicinity on the 1885-87 survey. The sounding should be disregarded in future chartings.

- (3) H-1751 (1885-94).

- (a.) The three sunken rocks (one rock charted) in latitude $41^{\circ}04.6'$, longitude $73^{\circ}22.3'$, falling in an

undeveloped area of about 6 feet on the present survey and 20 m. N. W. of several rocks awash located thereon, could not be located in the sounding records of the 1885-94 survey, but apparently originate from "rocky" bottom characteristics contained therein. They are, therefore, considered non-existent as definite rocks and should be disregarded in future chartings. In this connection, the charted northernmost sunken rock should be expunged from the chart and the present delineation used for charting.

- (b.) The northwesterly rock awash of the group of three rocks awash southward of Calfpasture I. (all charted) in latitude $41^{\circ}04.9'$, longitude $73^{\circ}23.0'$, was apparently plotted from an indefinite note in the sounding records "Rocks awash on south side of island" on line 22 to 23z (blue) run during a 6-1/2 foot tide. In view of the fact that the topographer (T-4696, 1932) located two pairs of two rocks awash (not located on the old survey) bearing 2 to 3 feet at L. W. about 20 and 60 m. respectively, to the southeastward, he must have been in the vicinity during half tides or less and would have seen the rock if it existed. It is, therefore, either non-existent or incorrect plotting of the rocks shown on the present survey. The rock should be expunged from the chart and disregarded in future chartings.
- (c.) The rock awash and bare islet (both charted), immediately southward of Sprite I. and falling in depths of about 2 feet on the present survey in latitude $41^{\circ}05.3'$, longitude $73^{\circ}22.9'$, were for some unknown reason, inadvertently transferred to H-5221a (1932) without being verified and subsequently charted. The bare islet originates with an indistinct 3 foot sounding (pos. 8d, blue), is therefore non-existent, has been expunged from the present survey, and should likewise be expunged from the chart. The rock awash is incorrectly plotted in position on the 1885-94 survey and is now shown on the present survey in its correct position, which position differs slightly from that shown on the chart. No change in the charted position of the rock awash is recommended.
- (d.) The 2 foot sounding (soft mud noted in records) uncharted in latitude $41^{\circ}04.2'$, longitude $73^{\circ}24.8'$, falls in depths of 6 feet on the present survey and 25 m. S. W. of a privately dredged channel (see blue print attached to D. R. of 1932). In view of the

elapse of time between the two surveys, the character of the bottom and the fact that there has been dredging in the immediate vicinity, it seems reasonable to assume that the 2 foot depth is non-existent. The sounding should be disregarded in future chartings.

c. H-1698b (1914), H-1732a (1914) and H-1751a (1914).

Soundings of the above surveys, while not considered as accurate as the present survey because sextant located signals were frequently used for control are generally in good agreement with those of the present survey, although a few areas vary 1 to 5 feet shoaler and others vary 1 to 4 feet deeper than those of the present survey. Wherever necessary and when agreement of soundings permitted, soundings of the 1914 surveys were transferred to and used to supplement the hydrography and delineation of the depth curves on the present survey. Special mention is made of the following items:

- (1) The 1 foot sounding (uncharted) of H-1698b (1914) falling in depths of 6 feet on the present survey in latitude $41^{\circ}02.8'$, longitude $73^{\circ}25.9'$ is considered a leadsman's error for the hydrographer of H-5221b (1933) examined the area during a minus 0.4 feet tide and found no indication. In addition the area was cleared by two drag strips with effective depths of 4 feet run during tides of 2 and 6 feet, respectively. The 1 foot sounding should be disregarded in future chartings.
- (2) The 1 foot sounding (uncharted) of H-1698b (1914) falling in depths of about 8 feet on the present survey and 50 m. S. S. W. of a rock awash bearing 1 foot at L.W. shown thereon, in latitude $41^{\circ}03.2'$, longitude $73^{\circ}27.3'$, is of uncertain accuracy for line 25 to 26t (blue) of the 1914 survey, was run directly over the 1 and a least depth of 9.7 feet obtained. While the area in question is not adequately developed on other surveys covering this area, the proximity of the 1 to the rock awash, which was not located on other surveys, is considered sufficient reason for ignoring the 1 in future chartings.
- (3) The 12 foot sounding (uncharted) on H-1751a (1914), in latitude $21^{\circ}04.2'$, longitude $73^{\circ}21.6'$, falls on the present survey in a closely developed area with general depths of 17 feet. The 12 foot sounding was not verified by the wire drag examination on H-5221b (1933), the 12 being cleared by two drag strips, 14 and 16 foot effective depths, that were run in opposite directions. However, the wire drag examination did locate two 12 foot spots ("Small pinnacles" recorded in records)

and one 14 foot spot about 115 meters to the south-eastward and 80 meters to the northwestward, respectively, of the 12 foot sounding from H-1751a (1914). The 12 foot sounding of the 1914 survey should be disregarded in future charting.

- (4) The above surveys of 1914 are not superseded for charting purposes. However, soundings from these surveys should not be used for charting in areas where a general disagreement with the present depths exists since some artificial improvements as well as minor natural changes have occurred since 1914.

d. H-5219 W. D. (1932) and H-5142 W. D. (1931).

The above wire drag surveys are contemporary with the present survey and all soundings and groundings shown thereon within the limits of H-5221a (1932) have been transferred to that survey in color. In addition, no conflicts exist between soundings of the present survey and the effective depths as dragged on the above surveys.

e. H-1537 (1884) and T-1737 (1885-86).

- (1) The numerous bare and sunken rocks (portions charted) shown on T-1537 (1884) in latitude $41^{\circ}03.4'$, longitude $73^{\circ}23.9'$ are a generalized representation of the rocky area more accurately delineated during low tide on H-5221b (1933). The delineation on the 1933 survey should be used in future chartings.
- (2) The charted low water line beginning at the northeastern end of Bell I. and extending to within 330 m. of Five Mile River and from Butler I. to Fish Is. (in general vicinity of latitude $41^{\circ}03'$, longitude $73^{\circ}27'$) originates principally with T-1737 (1885-86) except as supplemented in a few instances by the present survey and the contemporary topographic survey. Since the low water line was not adequately developed on the latter surveys, the charted information from the 1885-86 survey, except as noted in paragraph 6b (1) of this review, should be retained until such time as it is practical to examine the area during low tides.
- (3) Copp Rocks shown on T-1537 (1884) in latitude $41^{\circ}03.6'$, longitude $73^{\circ}22.8'$, are believed to be a generalized representation of a rocky area which is more accurately delineated on H-5221a (1932-3). The present delineation should be accepted and that on T-1537 (1884) disregarded in future charting.

- (4) The sunken wreck (formerly charted) originating with T-1537 (1884), falling in depths of 2 feet on the present survey in latitude $41^{\circ}02.9'$, longitude $73^{\circ}25.8'$ was not located on H-5221b (1933), although the hydrographer spent 12 minutes searching for it during a $1/2$ to 1 foot tide and found no trace other than two "wood" bottom characteristics about 12 m. to the N.E. and which were questioned in the records at time of entry. The wreck is believed to have disintegrated and should be disregarded in future chartings. (See D. R. of 1933, page 3).

7. Comparison with Chart No. 221 (Edition of Feb. 1935).

a. Hydrography.

- (1) Important information contained on the present survey has already been applied to the chart in advance of the review. Therefore, charted soundings and rocks originate with the present survey, with other surveys discussed in the preceding paragraphs of this review, and with several U. S. Engineers' surveys. Soundings at the mouth of Five Mile River and in the channel in the general vicinity of latitude $41^{\circ}04.6'$, longitude $73^{\circ}24.1'$, originating with blue print 25725 (1932), and blue print 23549 (1930) respectively, vary 1 to 2 feet deeper than those of the present survey in some areas, and are in good agreement in others. Within the area covered, the present survey should supersede previous chartings from the above blue prints. However, blue print 27752 (1934) which is subsequent to the present survey and shows considerable detail in Five Mile River, has been used to supplement the charted hydrography on the present survey for soundings on the two surveys generally agree within 1 foot.
- (2) Several discrepancies in charted rocks and soundings originating with the present surveys are as follows:
- (a) The charted 3 foot sounding blocking the channel in latitude $41^{\circ}03.8'$, longitude $73^{\circ}26.8'$ is a typographical error in printing. The correct sounding is 8 feet, which is shown on H-5221a (1932) and also on the Correction Proof (dated May 27, 1932). The 3 foot sounding should be changed to an 8 on the chart.
- (b) The charted sunken rock (latitude $41^{\circ}04.54'$, longitude $73^{\circ}22.34'$) accompanied by the notation "Rk" was incorrectly plotted on H-5221a (1932) and subsequently charted. The correct representation is a 3 foot sounding accompanied by the notation "Rk" and has been so shown on the present survey. The chart should be corrected accordingly. The sunken

rock just south of the 2 foot sounding in latitude $41^{\circ}03.83'$, longitude $73^{\circ}23.9'$, was incorrectly plotted on the present survey and subsequently charted. The rock has been removed from the smooth sheet and should, furthermore, be expunged from the chart.

- (c) The easternmost rock of the two charted rocks awash in latitude $41^{\circ}05.65'$, longitude $73^{\circ}22.33'$, apparently originates with a rock awash incorrectly inked in position by this office on the boat sheet (now used as the smooth sheet of H-5221b, 1933) sent to the field. The rock is evidently an erroneous plotting of the westernmost rock, for a thorough search of prior surveys made in this vicinity reveals but one rock (from H-1751 (1885-94) and H-1751a 1914), which agrees in position with the latter rock. The easternmost rock has been expunged from H-5221b (1933) and should likewise be expunged from the chart.

b. Controlling Depths in Channels.

- (1) The charted controlling depth in the channel in Sheffield Harbor (latitude $41^{\circ}04.1'$, longitude $73^{\circ}24.5'$) is 12 feet as of June 1930 (from U. S. Engineers' blue print 23549, 1930) and although the area is not covered in detail on the present survey, such soundings as were obtained indicate a controlling depth of 11 feet.
- (2) Attached to the Descriptive Report of H-5221a (1932) is a blue print showing the limits of a private channel dredged to a depth of 5 feet at M. L. W. (1930) in latitude $41^{\circ}04.3'$, longitude $73^{\circ}25.0'$. However, no attempt was made on the present survey to determine the controlling depth but such soundings as were obtained in the channel indicate a controlling depth of 4 feet.
- (3) The source of the charted hydrographic detail in Saugatuck River (north of R.R. bridge), is not known. However, the latest information regarding the channel here is the controlling depth of 2-1/2 feet as of June 1923 (Chart Letter No. 345, 1923), which information is of little value at this time.

c. Aids to Navigation.

- (1) Beacons located on the present survey are in practically the same positions as charted.
- (2) Buoys located on the present survey during the season of 1932 vary in positions in a few cases by as much as

160 m. from their charted positions. However, all mark the features intended fairly well. Several buoys not located on the present survey were established in 1933, red buoy N2, and black buoy C1 in approximate latitude $41^{\circ}03'$, longitude $73^{\circ}27.1'$, and black bell buoy 1 north-east from Goose Island. The numbers on the three black buoys in Cockenoe Harbor were changed in 1933.

8. Field Plotting.

Field protracting and plotting of soundings were excellent and conform to the requirements of the Hydrographic Manual.

9. Doubtful Matters.

The 39 foot sounding (charted) surrounded by depths of about 45 feet on the present survey in latitude $41^{\circ}02.5'$, longitude $73^{\circ}24.2'$ may be a leadsman's error and should have been investigated in the field. Comparison of soundings with other surveys in this area reveals a very uniform bottom and no indications of shoaling. Because of the "rky" characteristic the sounding has been retained.

10. Additional Field Work Recommended.

No additional field work is recommended at this time. However, when work is resumed in this locality, an investigation of the following matters is essential in completing this survey.

- a. Development of the inshore area in the vicinity of Bell and Fish Is. discussed in paragraphs 5a and 6e(2) of this review, including an examination of the rocks discussed in paragraph 6b(1) of this review.
- b. An adequate development of the shoal area in the vicinity of latitude $41^{\circ}02.7'$, longitude $73^{\circ}23.5'$, should be accomplished. (See. par. 6a(3) of this review).
- c. Further development of the northern portion of Saugatuck River discussed in paragraph 7b(3) of this review is desirable.

11. Note to Compiler.

The compiler's attention is directed to the following:

- a. Several rocks and small ledges have been brought forward from old topographic surveys to H-5221a (1932), after that sheet had been applied to the chart. They should be added to the chart in the following areas: Close to the 6 foot curve in Sheffield I. Harbor between Sheffield Island and Ram Island and in the area immediately south of Noroton Pt. These rocks are shown in brown.

- b. Recommendations contained in paragraphs 5a; 6a(4); 6b(1); 6b(3)(a); 6b(3)(b); 6b(3)(c); 6c; 6c(4); 6e(2); 7a(2)(a); 7a(2)(b), and 7a(2)(c).
- c. Notes: 2 and 3 of field letter dated Nov. 18, 1935 attached to this Descriptive Report.

12. Superseding Old Surveys.

Within the area covered the present survey, with the indicated additions from previous surveys, supersedes the following surveys for charting purposes:

H-8	(1836)	in part	
H-9	(1836)	" "	
H-18	(1835)	" "	
H-19	(1835)	" "	
H-1698	(1886-93)	" "	(except as noted in par. 5a).
H-1732	(1886)	" "	
H-1750	(1885-87)	" "	
H-1751	(1885-94)	" "	

Reviewed by - Harold W. Murray, and R. L. Johnston, May 21, 1935.

Inspected by - A. L. Shalowitz.

Examined and approved:


C. K. Green,
Chief, Section of Field Records.


L. O. Robert,
Chief, Division of Charts.


F. J. Borden,
Chief, Section of Field Work.


G. H. S.,
Chief, Division of H. & T.

1933 work applied to
charts 221 + 1213
6/3-36 G.H.S.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 5221

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

Number of positions on sheet	2230
Number of positions checked	368
Number of positions revised	1
Number of soundings recorded	11554
Number of soundings revised	18
Number of signals erroneously plotted or transferred	0

Date: Mar. 9, 1933

Cartographer: J. Walkey

POST-OFFICE ADDRESS: Box 613, Washington, North Carolina.

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

Nov. 18, 1935.

To: The Director,
U. S. C. & G. Survey,
Washington, D. C.

From: Lieut.(j.g.) S. B. Grenell,

Subject: Hydrographic Sheet H-5221a

Reference: Letter, 11/18/35; 82-DRM *and review, per. 1d*

The hydrography on this sheet was done from the 36 ft. wire-drag tender # 66 which was too large and unwieldy to handle in foul areas, hence few positions were taken on individual rocks, either sunken or awash, when these rocks were in foul areas. Most of the symbols shown were "spotted" as carefully as possible on the boat sheet from the adjoining sounding lines.

The following notes are from memory only, but such information as is given is clearly remembered unless otherwise stated. Each note has been numbered on the boat sheet as a reference to the paragraphs following.

Note # 1. Signal LIFE was a temporary pile structure erected from year to year for use during the summer season as a lookout stand for a life-guard. The structure is not permanent and should not be charted.

Note placed on sheet.

Note # 2. The dashed line represents the approximate size and location of a small "turtle back" reef which bares at low water. The exact size and shape would vary considerably with the stage of low water. The sunken rock symbols represent a field of large boulders in shallow water scattered to the eastward and northward of the reef proper. They are not individual rocks and were evidently spotted from adjoining sounding lines. Recommendation: Show the position of the reef as previously charted with the addition of sunken rock symbols as indicated on the boat sheet. (I often swam on the beach near this reef and recall it clearly.)

Rocky ledge symbol placed on sheet.

KUM.

see note above

Note # 3. Although I am not certain, I believe that the five rock awash symbols shown represent the remains of the rock and concrete abutments of a wharf destroyed in a storm several years ago. The outer rock was spotted from position 106j and should be very close to the correct location. Recommendation: Investigate old charts and topo sheets and if a pier or dock appears at this location, spot rock awash symbols along the line of the dock. If no dock appears on old surveys, chart the symbols as shown on the boat sheet.

Dock shown about 15m. to southward on H-1698b (1914).

Rocks moved southward as recommended.

KUM.

*82-CKG
1935 NOV - 21 - PM 3:27*

Applied to ch. 221

reexamined for rocks, reefs + low water detail only

5/9/49 RDC

52210

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES

FEB 23 1934

~~Additional work~~

Acc. No. _____

52210

Q

Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. Patton, Director

State: Connecticut.

DESCRIPTIVE REPORT

Topographic } Sheet No. 2 52210
Hydrographic }

LOCALITY

Long Island Sound

Cedar Point to Fish Island

1933

CHIEF OF PARTY

H. A. Cotton

~~Additional work~~

52210

~~Additional work~~

~~Additional work~~

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

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. 2

REGISTER NO.

5221b

State Connecticut

General locality Long Island Sound

Locality Norwalk Harbor and Approaches

Scale 1:10,000 Date of survey June & Sept., 1933

Vessel Shore Party No. 3

Chief of Party H. A. Cotton

Surveyed by F. E. Oleson and W. F. Deane

Protracted by H. J. Seaborg

Soundings penciled by H. J. Seaborg

Soundings in ~~fathoms~~ feet

Plane of reference

Subdivision of wire dragged areas by F. E. Oleson and W. F. Deane

Inked by H. J. Seaborg

Verified by J. E. Perkins - James Cornick

Instructions dated March 23, 1933

Remarks:

DEPARTMENT OF COMMERCE
U.S. COAST & GEODETIC SURVEY
R. S. PATTON-DIRECTOR.

DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SHEET No.2

PROJECT H.T. 134

LONG-ISLAND-SOUND

1933

HAROLD A. COTTON
CHIEF OF PARTY

DESCRIPTIVE REPORT
To Accompany
Hydrographic Sheet No.2

Project H.T. 134 - Long Island Sound 1933.

Supplemental Hydrography and Dragging, Hydrographic Sheet No.2
Project H.T. 103 - Long Island Sound 1932.

INSTRUCTIONS

This survey was executed in compliance with Directors Instructions dated March 23, 1933 - Project H.T. 134.

LIMITS OF SHEET

This sheet extends along the north shore of Long Island, embracing generally the Norwalk Islands area from Cedar Point to Fish Island. It covers the same area as hydrographic sheet No.2 of the preceding season (1932) by Lieutenant S.B. Grenell. 5221

SCOPE OF WORK

All work on this sheet was supplemental to the above Hydrographic Sheet No.2 of Lieutenant S.B. Grenell. The work desired was indicated on a sheet prepared for this purpose in the Washington Office. Smooth plotting of both hydrography and dragging was done on this same sheet. It is understood that the final smooth plotting will eventually be accomplished on the original hydrographic sheet.

Both the Pipe Drag and the Rope Drag were used for dragging. Positions are shown in green for the Pipe Drag while brown is used to indicate positions of the Rope Drag work.

HYDROGRAPHY

Sounding lines were run as requested by notes on the sheet prepared in the Washington Office. There were but a few short lines regarding which no further comment seems necessary.

PLOTTING DRAG STRIPS

The type of dragging necessary for such verification work as accomplished on this sheet required relatively narrow strips and generally quite a number of strips over the same area. As it is quite confusing to properly plot and interpret such overlapping narrow drag strips, each strip was first plotted separately on a piece of tracing paper and notation made on the same as to what had been accomplished by the particular strip. A study of these strips quickly showed to what extent the area had been covered.

It was inevitable in this type of work but that there would be some duplication of work with different strips and some strips that actually accomplished little or nothing. Such strips were discarded in the smooth plotting.

All of the separate sheets of tracing paper on which the individual drag strips were originally plotted are enclosed in a separate folder and accompanying this report.

DRAGGING AND LOW WATER EXAMINATIONS

Results of dragging and low water examinations are as noted below. For reference purposes, the various locations of work have been indicated by large green figures on the smooth sheet.

1. Hamford Rock Lat. $41^{\circ} 05.5'$ Long. $73^{\circ} 21.3'$
 Dragged from two directions (N.E. and S.W.)
 Found two $3\frac{1}{2}'$ spots close together--Cleared with $3\frac{1}{2}'$ strip (both old red 4 and new $3\frac{1}{2}'$ s).
2. Channel Rock Lat. $41^{\circ} 04.6'$ Long. $73^{\circ} 21.7'$
 Found $1\frac{1}{2}'$ on old red 2..
3. Investigating old green 12 foot sounding: Lat. $41^{\circ} 04.1'$ Long. $73^{\circ} 21.6'$
 Found 12 and $12\frac{1}{2}'$ feet to southward and 14 feet to northward.
 Cleared old 12' with 16'
 Cleared new 12' with 12'
 Cleared new 14' with 14'
 Did not clear new $12\frac{1}{2}'$ *Discussed in review. xxx.*
4. Lat. $41^{\circ} 03.6'$ Long $73^{\circ} 23.5'$
 Covered western half of reef with 2' drag
 Covered major portion (western end) of line of old red rocks with 4' strips.
 Found group ($1\frac{1}{2}'$ -2-2- $3\frac{1}{2}'$) just south of old rocks. *Discussed in Rev. xxx.*
1/2 as on rock work. Drag proves little. Soundings substantiated by soundings.
5. Lat. $41^{\circ} 02.7'$ Long. $73^{\circ} 26.0'$
 Green 5 verified by hydrography ✓
 Green 1 cleared with 4' drag. *Discussed in Rev. xxx.* ✓
 Found two $3\frac{1}{2}'$ spots N.W. green 5..
6. Lat. $41^{\circ} 03.4'$ Long. $73^{\circ} 23.8'$
 Limits of fouled area off shore (east) Ram Island determined by wrapping two long strips about offshore side of area. *Drag proves little.*
 One with effective depth 3'
 Other with effective depth 5'
 Numerous soundings taken along line of grounding for each strip.
7. Lat. $41^{\circ} 03.4'$ Long $73^{\circ} 25.6'$
 Found $2\frac{1}{2}'$ near red $1\frac{1}{2}'$ and blue $4'$. *amber Rk* Cleared $2\frac{1}{2}'$ with $1\frac{1}{2}'$ strip. ✓
Retained as soundings. Evidence insufficient to disprove. Discussed in Rev.

8. Lat. 41° 03.3' Long. 73° 25.8'

Found 8½' on red 9½' cleared with 7' drag.

9. Lat. 41° 03.1' Long. 73° 26.3'

Investigating red 8 and blue 7 and 9' spots.
 Found numerous 7 to 8½' spots
 - 8½' by red 8; 8 by blue 7; 7 and 7½' near by.
 Cleared old blue 7 and 9' spots with 10'
 Cleared new - 7 to 8½' spots with 5' drag.

*unplotted strip 1
grounded near
line 9*

discussed in review.

10. Lat. 41° 03.1' Long. 73° 27.0'

Found 8½' on red 8½' with 9' close by
 Cleared with 6½' - also 8' (small area)

*DR 1432 (page 4) states that 2' only
to NW of 0866 is OK.*

11. Lat. 41° 02.9' Long. 73° 27.1'

Found 11' by old red 10-¾'; cleared with 10'
 Cleared old blue 11 with 15'

12. Lat. 41° 03.4' Long. 73° 26.8'

Entrance Five Mile River

(a) East point entrance - Limits of group of rocks defined
 by wrapping with 2½' drag strip.

(b) Similarly limit of group of rocks 150 meters S.E. defined
 by wrapping with 1½' drag.

13. Lat. 41° 01.7' Long. 73° 25.8'

Pelt rock located - Sounding 2½'

14. Lat. 41° 05.6' Long. 73° 22.3'

Low water line determined south side Seymour Point.
 Also found additional rock awash. *← this is also located on H 1751*

15. Lat. 41° 02.9' Long. 73° 25.8'

Wreck investigated - believed to be broken up. *discussed in Rev. Xym.
accepted*

16. Lat. 41° 03.8' Long. 73° 22.8'

Low water line and rocks located.

"The -3' can not be found ← *erroneously on Rev. Xym.*

This (SW'ly -1' spot) is evidently the edge of the reef. No
 separate rock could be found as indicated. *Comment from Boat Street*

17. Lat. 41° 04.3' Long. 73° 23.0'

Rocks verified as directed.

"Area generally foul." *Comment from Boat Street*

18. Lat. 41° 04.5' Long. 73° 22.2'

Rocks verified as directed. "Tide rips at low water. *discussed in Rev. Xym.*

Three rocks close together about 4 to 5 meters apart. (Westerly
 group). Lone rock about 5 meters in circumference. (E'ly group) Cluster of rocks
 (S'ly group)" *Comment from Boat Street*

19. Lat. 41° 02.7' Long 73° 25.6'

Located a number of rocks sunken and awash. ✓

STATISTICS

	<u>Miles (Statute)</u>	<u>Positions</u>	<u>Soundings</u>
Hydrography	8.95	290	816 ✓
Dragging	6.7	170	63

Respectfully submitted

Harold A. Cotton

Harold A. Cotton,
Chief of Party No. 3

March 30, 1934

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
2 volumes of sounding records ~~for~~ and 2 volumes Wire Drag for

HYDROGRAPHIC SHEET 5221b (~~Additional Work~~)

Locality Norwalk Harbor and Approaches, Long Island Sound

Chief of Party: H. A. Cotton in 1933
Plane of reference is mean low water, reading
2.6 ft. on tide staff at South Norwalk
20.4 ft. below B. M. 3

5.0 ft. on tide staff at Coscob Harbor
10.6 ft. below B.M. 1

Height of mean high water above plane of reference is 7.2 feet.

Condition of records satisfactory except as noted below:

Chief, Division of Tides and Currents

Field Records Section (Charts)

5221b

HYDROGRAPHIC SHEET No. H.5221

~~add~~

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

Number of positions on sheet	.290.
Number of positions checked	...!!..
Number of positions revised	..179.
Number of soundings recorded	..816.
Number of soundings revised13.
Number of signals erroneously plotted or transferred

Date:..... *June 27 1934* } *Wire drag April 20, 1935*
 Cartographer:..... *S.E. Perkins* } *J.A. McCormick*

Verification of protracting
Verification & inking of rocks & shoals) by

S.E. Perkins Time: 16 hrs.
J.A. McCormick Time: 10 1/2 hrs.

Verification of inking by

H.W. Murray H-5221a Time: 22 "
 H-5221b " 46 "

Review by

Inspected by R.L. Johnston H-5221a } 24 hrs
 H-5221b }

5221b

REPORT ON ~~H-5221 Add. Wk.~~

1. This sheet was a boat sheef made up in the office and sent to the field for additional development. When this sheet was received in the office it was filed as a boat sheet. However, it is now considered a smooth sheet and is known as H-5221b ~~Add. Wk.~~
2. The plotting in general was good. In one case signals that were practically in range were confused by the field party.
3. Rocks and reefs were plotted in accordance with the "Treatment of Rocks on Hydrographic Surveys" by A. L. S.
4. The reefs and low water line shown near the vicinity of Fivemile river were transferred from an unnumbered Boat sheet which accompanied H-5221 Add. Wk.
5. The information on this sheet was transferred to H-5221~~a~~ by the verifier, in red, and the depth curves on H-5221~~a~~ were changed to agree with the new information.
6. The rock "Old Baldy" off the East end of Sheffield I. was located by the field party (pos. 17A, Vol. 1). This position is about 10 meters East of the position of this rock as located by T-4697 (1932). The location, as given by the topographic sheet, was considered correct. However, its height above the plane of reference was taken from the hydrographic information.
7. H-5221 Add. Wk. sheet also has Wire Drag plotted on it. This will be verified ^{checked +} at a later date and transferred to H-5221. *Important information, transferred to smooth sheet here.*

Respectfully submitted,

S. E. Perkins
S. E. Perkins

June 29, 1934

Verifier's Report on Wire-Dray H-5221 b.

Plotting was found to be in very good shape. All soundings taken were checked. To avoid confusion on 5221 b no attempt was made to ink dray soundings on this sheet. Positions were transferred to 5221 a and inked on that sheet. The different strips will be discussed under the same numbers used in the descriptive report.

1. Hamford Rock. Three 3 foot spots found. See descriptive report.
2. Channel Rock. O.K. as in descriptive report.
3. O.K. as in descriptive report.
4. Dray proves little. Soundings are substantiated by soundings. Hydrography develops the area very well. Sufficient soundings to remove old sunken rock symbols.
5. O.K. as in descriptive report.
6. Dray proves little. Soundings substantiated by ~~some~~ soundings. Hydrography sufficient to remove old sunken rock symbols.
7. Dray found 2 and 3 foot soundings. Old sunken rock symbol eliminated. Old 1 foot sounding retained. Dray insufficient to disprove.
8. O.K. as in descriptive report.
9. Unplotted strip grounded near old ~~however a 10 foot dray strip cleared~~ ~~Dray~~ ~~marked~~ 9 foot sounding. ~~both the 10 and 9 which is considered sufficient to disprove them.~~ ~~insufficient to disprove old soundings.~~ They were plotted on 5221 a in yellow.
10. O.K. as in descriptive report.
11. O.K. as in descriptive report.

Revised in Rev.

12.

Drag showed two shoal soundings which pushed the one fathom curve farther out from the point. It was necessary to remove a 15 foot sounding from the 1932 work to make room for a 2 foot sounding. Positions 5-6-7 h (blue) page 41 of drag soundings have soundings which are evidently one fathom in error. They were not plotted as these soundings even with one fathom subtracted are substantiated by other soundings.

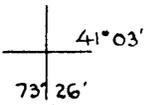
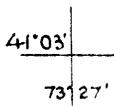
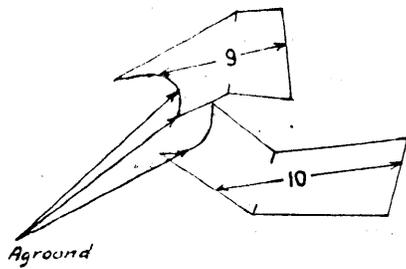
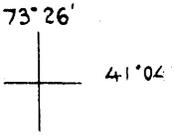
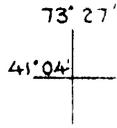
~~13. Plotted as rock awash.~~

Drag party did not get bottom characteristics on all soundings. In at least one case a sounding might have been plotted as a rock awash had the bottom characteristics been rock.

Submitted

April 20, 1935.

J. A. McCormick.



LETTER TRANSMITTING FIELD RECORDS

REFER TO NO.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

62-CKA

Washington, North Carolina

November, 20, 1935

To: The Director, U. S. Coast and Geodetic Survey, Washington, D. C.

From: S. B. Grenell, C. and G. Survey, Chief of Party.

Subject: Records.

The following-named records, computations, sheets, packed in one package, were forwarded to you on Nov. 20, 1935, by ordinary, registered, mail, express (Government bill of lading No.).

✓
✓ Boat Sheet H-5221a

(This sheet was sent to me in the field for notation and is being returned to the Washington Office)

ACKNOWLEDGED
NOV 23 1935
L. & A. SEC.

S. B. Grenell
S. B. Grenell, C. and G. Survey, Chief of Party.

Received the above:

Chief Clerk,
Coast and Geodetic Survey.

This letter and one copy should be sent to the office. The copy will then be returned as a receipt.

Note # 4. The six rock awash symbols shown within the enclosure are not individual rocks but represent a foul area full of large boulders which bare at various stages of the tide. They were spotted from the adjacent sounding lines and represent the correct position of the foul area. Recommendation: Show rock awash symbols on the chart in the area indicated on the boat sheet.

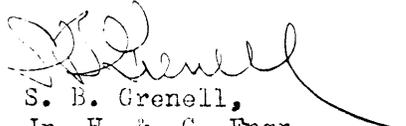
Note # 5. The shoal area extending for three hundred meters east by north and east from Copps I. is dotted with groups of large boulders just below the surface at low water. The eastern cluster are in correct position because I recall that the launch ran aground immediately after position 76f and it took considerable labor to get clear; the rudder being bent in the process. The three sunken rocks shown between position 133f and the island merely represent a shoal area with groups of large boulders just below the surface. Recommendation: Chart sunken rock symbols in the area shown on the boat sheet. The bottom in this area is covered with boulders.

Note # 6. I do not recall this specific rock. It was probably spotted on the boat sheet from the sounding line just after position 134h. It is not in exact position in all probability but it would do no harm to show it because the entire area between the sounding line (134 - 135h) and the island is full of boulders, many of which are bare or awash at low water.

Note # 7. These sunken rock symbols do not represent individual rocks but indicate a group of sunken boulders which appeared just ahead of the launch on position 102h. Recommendation: Show several sunken rock symbols in the area indicated on the boat sheet.

Note # 8. The reef outlined by the dashed line on the boat sheet consists of a heap of large boulders on the end of the sand spit. They bare one or two feet at low water. There are many other boulders surrounding the central pile; some of the larger ones bare or awash at low water, many others just under the surface. You will note that positions 44 and 45h swung out of line to avoid a group of these boulders which were plainly visible in the clear water. The symbols on the boat sheet do not represent actual rocks but indicate the limits of the foul area. To the south east of the main reef are three symbols showing rocks awash. These are very close to the exact positions and represent three of the larger rocks of a group which bare or are awash at low water. Recommendation: Chart the symbols as shown on the boat sheet. Although they do not represent individual rocks, they are the best indication obtainable of the actual conditions surrounding the main reef.

This work superseded. Rocks definitely located on H-61232 (1933-34). H.W.M. 12/16/36


S. B. Grenell,
Jr. H. & G. Engr.,

82-DRM

November 18, 1935.

To: Lieut. (j.g.) S. B. Grenell,
U. S. Coast and Geodetic Survey,
Washington, North Carolina.

From: The Director,
U. S. Coast and Geodetic Survey.

Subject: H 5221a, Norwalk Harbor and approaches, Long Island Sound.

There is being sent to you, under separate cover, the boat sheet of H 5221a, Norwalk Harbor and approaches, Long Island Sound, Connecticut. Indicated in red pencil on the chart are seven groups of sunken rock and rock awash symbols. The records contain no information regarding these symbols nor are the rocks shown on the contemporary topographic surveys. You will please examine these areas and advise this office as to the method used in locating them and also whether they represent a generalization or specific rocks.

Signal LIFE, lat. $41^{\circ} 05.1'$, long. $73^{\circ} 23.5'$, falls in the water area and since the records contain no information regarding the character of the signal you will please advise whether there is a topographic feature at this location which should be charted.

(Signed) R. S. PATTON

Director.

(Signed) R. S. PATTON

ON ORIGINAL DOCUMENT

Applied to ch. 221

reexamined for rocks, reflow low water detail only

5/9/49 RDB

Reapplied to ch 221

8/31/77 WBW