

5220

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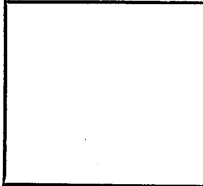
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5220

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. 1 5220
~~Hydrographic~~ }

LOCALITY

South Of Norwalk Islands

Long Island Sound

1932

CHIEF OF PARTY

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

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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REG. NO. 5220

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. 1

REGISTER NO. 5220

State Connecticut

General locality Long Island Sound

Locality South of Norwalk Islands

Scale 1:20,000 Date of survey June 8 - July 5, 1932

Vessel Project HT-103

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

Surveyed by S. B. Grenell and 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

Verified by

Instructions dated April 18, 1932

Remarks: Survey using NA REIDIN

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET NO. 1

Project HT - 103, Long Island Sound

1932

INSTRUCTIONS: This survey was made in accordance with instructions dated April 18, 1932.

CONTROL & SURVEY METHODS: All hydrographic lines were controlled by the usual three-point fix method with double sextant angles to triangulation and topographic signals located in 1931 and 1932. All soundings were taken aboard the launch MARINDIN with a hand lead from a sounding chair just forward of amidships on the starboard side.

JUNCTIONS: The southern and eastern limits of the sheet are determined by the limits of chart # 221. On the west the sheet makes a junction with hydrographic sheet # 3 (1932) and on the north with sheet # 2 (1932) and sheet # 3937 (R.P. Strough - 1916)

COMPARISON WITH PREVIOUS SURVEYS: The general comparison with previous surveys was very good. The old hydrography in this region was run on lines very widely spaced so that the new survey gives a much better delineation of depth curves. All junctions with adjoining hydrographic sheets were excellent.

No attempt was made to search for least water on the shoals found on this sheet because the wire drag surveys of 1931 - 1932 determined the least water over all shoal areas encountered.

LEAD LINE CORRECTIONS: In reviewing this sheet, reference should be made by the reviewer to the attached copy of a report by the hydrographer


to the Director dated June 27, 1932, relative to the excessive shrinkage of the lead line while in use.

In applying lead line corrections to soundings, a careful investigation of each days work was made by the chief of party and the corrections applied in such a way as to give the most probable values for the days work. Due to the fact that the greater part of the shrinkage occurred while the lead line was in use, it was necessary to apply some arbitrary sliding scale to the reducers.

A field review of the sheet, after the reduced soundings were applied, seemed to indicate that the method of determining reducers was in most cases very good considering the excessive daily shrinkage of the lead line.

STATISTICS:	Mileage (stat.)	Soundings	Positions
Vol. # 1.	73.3	972	337
Vol. # 2.	87.5	1391	466
	<hr/>	<hr/>	<hr/>
TOTALS	160.8	2363	803

Respectfully submitted,


S. B. Grenell,

Jr. H. & G. Engineer,
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.

January 26, 1933

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
2 volumes of sounding records for

HYDROGRAPHIC SHEET 5220

Locality South of Norwalk Islands, Long Island Sound

Chief of Party: S. B. Grenell 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 ft.

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.

Report on H 5220

Chief Party S. B. Grenell

Protracted by H. J. Seaborg

Verified & Labeled by J. Walker

Surveyed in June-July 1932

Surveyed by S. B. Grenell
and W. F. Deane

Soundings plotted by H. J. Seaborg

The sounding records were neat and complete.

The protracting was excellent. There was no close development on the sheet so that the boat sheet was compared throughout as an additional check.

The soundings were neatly penciled in and were correctly spaced with few exceptions.

at position 4 "e" (Lat. $41^{\circ}02\frac{1}{4}$ Long. $73^{\circ}23\frac{1}{2}$)
a 49 foot sounding is recorded between a 54 and a 56 which looks as though it may have been recorded one fathom too shoal. No information on any old sheets was found that indicated a shoal in this spot but sufficient evidence is lacking to disprove the 49. (retained) p. 29

Between 67 and 68 "j" (Lat. $41^{\circ}00'$ Long. $73^{\circ}26'$)
a 12 fathom sounding (unreduced) ⁽⁶⁸⁴⁾ is questioned in the records (Vol. 2 p. 26). No evidence was found to disprove it. (retained)

The only bad crossing found was between 51-52 "f" and 80-81 "e". The slope of the bottom probably accounts for this.

None of the overlapping sheets have as yet been verified or inked in except W.D. 5142. The soundings and groundings from this sheet were transferred in green and the groundings were enclosed in a green circle. As no attempt was made to find the least water on H 5220 it is not surprising that WD 5142 showed several spots with shoaler water than H 5220.

A comparison with chart 221 was made and good agreement was found.

Respectfully submitted
J. J. Walker
2/6/33

SECTION OF FIELD RECORDS

REVIEW of Hydrographic Sheet No. 5220.
South of Norwalk Islands, Long Island Sound, Connecticut
Surveyed in 1932.
Hand lead soundings.
Instructions dated April 18, 1932. (Lieut. S. B. Grenell).

Chief of party - S. B. Grenell.
Surveyed by - S. B. Grenell, W. F. Deane.
Protracted and soundings plotted by - H. J. Seaborg.
Verified and inked by - J. T. Walker.

1. The records conform to the requirements of the Hydrographic Manual.
2. The plan, character and extent of the survey fully satisfy the specific instructions.
3. There are practically no cross lines on this work but the agreement of adjacent lines is generally good. A 68 ft. sounding in Lat. $41^{\circ}00.1'$, Long. $73^{\circ}25.9'$ appears questionable. This sounding was originally questioned in record but later a note was added "Sounding probable O.K.". This sounding has been passed by the wire drag with an effective depth of 47 ft.
4. The information is sufficient for completely drawing the usual depth curves.
5. The junction on the west with H. 5222 is satisfactory. The junction on the north with H. 5221 is satisfactory but the 27 ft. soundings in Lat. $41^{\circ}02.7'$, Long. $73^{\circ}23.4'$ lie on a shoal which is shown on H. 5221 and will be discussed more fully in the review of that sheet.

The junction on the north with the survey of 1916, H. 3937 is satisfactory.

There is no junction with any contemporary surveys on the southern and eastern limits of this work which are governed by the limits of Chart 221.

6. Comparison with previous surveys.

There is very little overlap with H. 1698, H. 1698a, H. 1751 and H. 1751a but the soundings agree well with these surveys.

H. 1731 surveyed in 1886 agrees very well with the work on this sheet.

^{and H 1732g}
H. 1732^g surveyed in 1886 and 1914 agree perfectly with the new work. ~~Also H. 1732a, surveyed at the same time agrees.~~

The older surveys of 1835 and 1836, H. 8, H. 9 and H. 18 were examined but are of little value for comparison.

While it is evident that little change has occurred in this area and the work agrees very well with practically all of the old sheets, they should generally be superseded by the recent survey, H. 5220.

7. The prescribed amount of field plotting was well done by the field party.

H. 5220.

8. Character and scope of surveying.--

The character of the work is very good except for the fact that the lead line was evidently defective. See letter to the Director dated June 27, 1932 (attached to this report) relative to the excessive shrinkage in the lead line.

The data regarding the leadline is unsatisfactory.

The leadline is noted OK at the beginning of all days except j day. It is noted OK at the ending of a, d, f and g days and no corrections were applied on these days. It is noted 2 to 6 feet short at the endings of b, c, e, j, k and l days as follows:

c,	b	2' in 10 fms.	4', in 20 fms.
e.	1' " " "	2' " " "	
j.	2' " " "	3' " 15 "	
k, l.	4' " " "	6' " " "	

Although the leadline was always OK at the beginning of the day's work yet the full amount of the correction was applied throughout the day. On k day, for instance, a four foot correction was applied to the first sounding.

The party had two leadlines, but it is not clear whether one or both lines were defective. If only one was bad why was its use continued? If both were bad the notations OK at endings of a, d, f and g days must be erroneous.

It appears that there is doubt as to the accuracy of all of the reduced soundings on a, d, f and g days and also the earlier parts of the balance of the days. Lack of cross lines makes it impossible to apply the usual check. In view of the fact that all corrections are minus any errors in reduction of soundings are on the side of safety.

The scope of the survey is considered sufficient. No close development was done because practically the entire area was covered by the wire drag and the least depth on shoals established.

9. On account of the very serious question of leadline corrections it is recommended that cross lines be run in the following manner over the entire sheet:

Inside of the 10 fathom curve, 3 cross lines to the mile.

Between 10 and 20 fathom curves, 2 cross lines to the mile.

The original boat sheet of H. 5220 is available to the field party for running these lines.

10. Reviewed by R. L. Johnston - March 10, 1933.

Inspected: E. P. Ellis
E. P. Ellis

Approved: L. O. Gilbert, Chief, Field Records Section.

E. W. Papenhus
Ch. Alw. Charts

H. Borden
Chief, Section Field
G. H. Hulse
Chief, Div. of H & C.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 5220

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

Number of positions on sheet <u>803</u>
Number of positions checked <u>122</u>
Number of positions revised <u>1</u>
Number of soundings recorded <u>2363</u>
Number of soundings revised <u>6</u>
Number of signals erroneously plotted or transferred <u>0</u>

Date: Feb. 4, 1933

Cartographer: J. Walker

Chart 220 Feb 1972 R. D. Sawicki

Fully applied after Inspection via
dwg #25. - Applied to area of
chart extension.