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Department of Commerce and Labor
COAST AND GEODETIC SURVEY

E. Lester Jones.
Superintendent.

State: Connecticut.

DESCRIPTIVE REPORT.

Wire Drag
Hydrographic Sheet No. 4008 &
4008a

LOCALITY:

Bartlett's Reef Light Vessel
and the Race Long Island Sound.

Scale 1:20,000

1917
1918
Add'l Work 1934

CHIEF OF PARTY:

R. P. Strough

11-4645

641-182
7203

DESCRIPTIVE REPORT FOR WIRE DRAG HYDROGRAPHIC SHEETS 4008 & 4008 a.

Wire Drag Field Sheets Nos. 1 & 2.

These two sheets are incorporated in one report, since the only reason that two sheets were used was because the work ran beyond the limits of sheet 1; had this sheet been laid out properly, it would have been possible to show all the drag work done in this vicinity this season on the one sheet.

The northern limit of the drag work shown on these two sheets is the parallel of latitude passing thru Bartletts Reef Light Vessel. The eastern limit is longitude $72^{\circ}-03'$ W. The western limit is longitude $72^{\circ} 10'$ North of latitude $41^{\circ}-14'-30''$; south of this latitude the limit is longitude $72^{\circ}-08'$. The southern limit is latitude $41^{\circ}-13'$ east of longitude $72^{\circ}-08'$; west of this longitude the southern limit is latitude $41^{\circ}-14'-30''$.

In general where the chart showed great depths the attempt was made to drag at a maximum depth of 100 feet. Where this was not possible, the drag was set a few feet from the bottom. The southern portion of sheet one, and the middle portion of sheet two, were covered with one sweep of a 6000 foot and 5000 foot drag set at 100 feet. No obstructions were found and the work was completed quickly. A shorter drag was used on the rest of the work, due to the fact that the bottom is very irregular, and it was impossible, due to the strong currents, to clear the drag when it went a-ground. The only thing that could be done was to take up the drag and set out again; it is clear that taking up and setting out a long drag would take much more time than to manipulate a shorter drag.

Notes
On sheet one splits occur at the following approximate positions:
(1) Longitude $72^{\circ}-05'-45''$, Latitude $41^{\circ}-15'-55''$; (2) Longitude $72^{\circ}-05'-30''$, Latitude $41^{\circ}-15'-30''$; (3) Longitude $72^{\circ}-05'-10''$, Latitude $41^{\circ}-14'-45''$. These splits were due to the presence at these points of mines and mooring buoys placed there by the U.S. Army Engineers.

On sheet two splits occur at: (1) Latitude $41^{\circ}-13'-50''$ from longitudes $72^{\circ}-03'$ to $72^{\circ}-04'$; (2) Latitude $41^{\circ}-13'-45''$, longitude $72^{\circ}-04'-30''$. These were not covered because the work done in this vicinity was accomplished in the latter part of the season, when the weather was cold and disagreeable. As these splits occur in the vicinity of Valient Rock where the chart shows numerous soundings of shallow depth, permission was asked and received from the office to discontinue work without covering them, and also the uncompleted area shown just south of these strips.

All the obstructions found were boulders, and after obtaining the least depth on them by sounding with the lead line, the drag was set at about a depth of two feet less than the sounding and carried across the shoal to make sure that the least depth had been obtained. The most important discovery in this locality is the 39 foot spot lying 820 meters west $\frac{1}{2}$ north (true) from Bartletts Reef Light Vessel. There are three of these boulders very close together and one close by with 49 feet on it. Very conspicuous tide rips were observed near this shoal. The chart shows this spot lying between depths of 84 to 108 feet.

DESCRIPTIVE REPORT FOR WIRE DRAG HYDROGRAPHIC SHEETS 4008 & 4008_a.

Wire Drag Field Sheets Nos. 1 & 2.

✓ A sounding of 62 feet was found lying 1210 meters W X S $\frac{3}{4}$ S (true) from the Light Vessel; the chart shows 108 feet in this spot.

✓ A boulder showing 72 feet on it was located 1160 meters S.W. X S. $\frac{3}{4}$ S. (true) from the Light Vessel where the chart shows 108 feet.

✓ A 75 foot spot was found 1020 meters S. ^{E.} ~~W.~~ X S. (true) from the Light Vessel where the chart showed 96 feet.

✓ A sounding of 74 feet was obtained 1530 meters ^{E.} ~~W.~~ X $\frac{1}{2}$ S (true) from the Light Vessel; the chart shows 96 feet here.

✓ A shoal spot of 47 feet was found 1180 meters N. $\frac{1}{4}$ W. (true) from Race Rock Light -house; near by soundings showed depths of 49 feet; 57 feet and 63 feet. The chart shows 84 feet in this vicinity.

✓ A sounding of 53 feet was found 700 meters W.N.W. $\frac{1}{2}$ W. (true) from Race Rock Light-house; near by soundings showed depths of 56 and 58 feet, where the chart shows 60 feet.

✓ A 70 foot spot was found 1080 meters N.W. X N $\frac{3}{4}$ W. (true) from Race Rock Light-house, where the chart shows 84 feet.

A sounding of 61 feet was obtained 2840 meters N.E. X E. $\frac{3}{4}$ E. (true) from Little Gull Island Light-house where the chart shows between 66 and 90 feet.

The control of the survey was obtained from signals located by previous triangulation.

The tidal reduction for the work shown on sheet one was obtained from the readings of an automatic tide gauge set up by Mr. Paul M. Trueblood, H. & G. Engineer, on the Light-house Wharf at New London, Conn. on sheet Two, the tidal reducers, for every day except Q day, November 14, were obtained from readings taken on a tide-staff erected on this wharf. In coming from Saunderstown on November 14, we set out the drag immediately upon reaching the working grounds, under the impression that the tide gauge at New London was still in operation, when in fact it had been taken out several days previously. To obtain the tidal-reducers for Nov. 14 therefore we resorted to the following scheme: The predicted tide readings for Nov. 14, 15 and 16 and the actual tide readings of Nov. 15 and 16 were plotted, on cross section paper. Then by means of a comparison between the actual and predicted tide curves for Nov. 15 and 16, an actual tide curve was drawn for Nov. 14; and the reducers were obtained from the latter curve.

✓ The drag strips shown on the eastern part of sheet one show the drag catching on shoal spots of greater depth than that at which the drag was set. This is accounted for as follows: Whirlpools form around the shoal spots in this vicinity; and when any part of the drag passed over them, it was drawn down to the bottom and hooked on to the obstruction.

A Location for Bartletts' Reef Light Vessel was obtained and plotted.

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DESCRIPTIVE REPORT FOR WIRE DRAG HYDROGRAPHIC SHEETS 4008 & 4008a.

Wire Drag Field Sheets Nos. 1 & 2.

No systematic attempt was made to study the currents in this vicinity; such information as we obtained was merely incidental to the actual drag work, and is incorporated on page 14 of the report of Mr. Strough for season 1917.

The work in this vicinity was fraught with difficulties; a brief statement of these, are incorporated on pages 3 and 4 of Mr. Stroughs' report for season 1917, and need not be repeated here.

Respectfully submitted,

(Signed) H. W. Hemple

Desk Officer,
U. S. C. & G. S.

Approved

Jr. H. & G. Engineer,
Chief of Party.

TABLE OF STATISTICS WIRE DRAG HYDROGRAPHIC SHEETS 4008 & 4008a.

Day	Date	Length of Drag	Miles Statute	Positions	Soundings
	1917	Feet			
A	Sept. 22	6000	4.8	32	3
B	Sept. 26	4200	1.1	8	2
C	Sept. 27	4200	4.0	40	5
D	Oct. 2	3600	2.1	18	2
E	Oct. 3	3600	2.2	13	3
F	Oct. 16	4200	0.6	6	0
G	Oct. 17	3000	1.0	13	0
H	Oct. 18	3000	3.4	45	1
J	Oct. 19	3000	3.1	23	1
K	Oct. 23	3000	1.0	16	5
L	Oct. 26	6000	3.0	45	5
M	Oct. 27	3000	1.0	5	1
N	Oct. 29	3000	1.0	6	0
O	Oct. 31	2500	2.0	19	2
P	Nov. 1	2500	3.0	26	0
Q	Nov. 14	5000	3.4	20	3
R	Nov. 15	3600	6.6	38	1
S	Nov. 16	3000			
S	Nov. 16	2500	3.6	29	0
T	Nov. 17	2500	1.1	12	0
U	Nov. 20	2500	0.8	27	0
V	Nov. 21	2500	3.5	31	3
W	Nov. 24	3000	3.75	18	2
		Total	56.05	490	39

No. of sq. miles = 18.5.

PROGRESS CHART

SHOWING CONDITION OF RECORDS OF

Hydrographic Sheet No. _____ Field No. 1

Wire drag survey of Long Island Sound (off Race Rock)

Scale 1-20,000

Date of Survey 1917

Surveyed by A. P. Strough

Day	DATE	Signaled angles compared	Distances entered	Distances checked	Length of upright entered	Length of upright checked	Correction entered	Correction checked	Drag depth entered	Drag depth checked	Reducers entered	Reducers checked	Effective depth entered	Effective depth checked	Effective depth diagram entered	Effective depth diagram checked	Positions plotted	Dragged strip traced	Tracing checked	Area subdivided	Subdivision checked	Transferred and inked	Compared with chart
A	Sept. 22	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
B	" 26	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
C	" 27	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
D	Oct. 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
E	" 3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
F	" 16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
G	" 17	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
H	" 18	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
J	" 19	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
K	" 23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
L	" 26	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
M	" 27	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
N	" 29	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
O	" 31	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
P	Nov. 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

PROGRESS CHART

SHOWING CONDITION OF RECORDS OF

Hydrographic Sheet No. _____ Field No. 2

Wire drag survey of Long Island Sound (off Race Point)

Scale 1-20,000 Date of Survey 1917

Surveyed by R. P. Stregh

Day	DATE	Signaled angles compared	Distances entered	Distances checked	Length of upright entered	Length of upright checked	Correction entered	Correction checked	Drag depth entered	Drag depth checked	Reducers entered	Reducers checked	Effective depth entered	Effective depth checked	Effective depth diagram entered	Effective depth diagram checked	Positions plotted	Dragged strip traced	Tracing checked	Area subdivided	Subdivision checked	Transferred and inked	Compared with chart
Q	Nov. 14	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
R	" 15	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
S	" 16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
T	" 17	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
V	" 20	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
V	" 21	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
W	" 24	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Department of Commerce,
Coast & Geodetic Survey.

E. Lester Jones, Superintendent.

Connecticut
Bartlett's Reef Light Vessel
and the Race
Long Island Sound

A Description to Accompany
Wire Drag Sheets 4008 + 4008^a

Scale 1:20,000
1917

Wire Drag Party #2

R. P. Strough
Jr. H. & G. Engineer
Chief of Party.

A Description to accompany

Wre Drag Sheets 4008 & 4008a

Field sheets # 1 & 2.

These two sheets are incorporated in one report, since the only reason that two sheets were used was because the work ran beyond the limits of sheet 1; had this sheet been laid out properly, it would have been possible to show all the drag work done in this vicinity this season on the one sheet.

The northern limit of the drag work shown on these two sheets is the parallel of latitude passing thru Bartlett's Reef Light vessel. The eastern limit is longitude $72^{\circ}-03'W$. The western limit is longitude $72^{\circ}10'$ north of latitude $41^{\circ}-14'-30''$; south of this latitude the limit is longitude $72^{\circ}-08'$. The southern limit is latitude $41^{\circ}-13'$ east of longitude $72^{\circ}-08'$; west of this longitude the southern limit is latitude $41^{\circ}-14'-30''$.

In general where the chart showed great depths the attempt was made to drag at a maximum depth of 100 feet. Where this was not possible, the drag was set a few feet from the bottom. The southern portion of sheet one, and the middle portion of sheet two, were covered with one sweep of a 6000 foot ^{and 5000 ft} drag set at 100 feet. No obstructions were found and the

work was completed quickly. A shorter² drag was used on the rest of the work, due to the fact that the bottom is very irregular, and it was impossible, due to the strong currents, to clear the drag when it went aground. The only thing that could be done was to take up the drag and get out again; it is clear that taking up and setting out a long drag would take much more time than to manipulate a shorter drag.

On sheet one splits occur at the following approximate positions: (1) Longitude $72^{\circ}05'45''$, Latitude $41^{\circ}15'55''$; (2) Longitude $72^{\circ}05'20''$, Latitude $41^{\circ}15'30''$; (3) Longitude $72^{\circ}05'10''$, Latitude $41^{\circ}14'45''$. These splits were due to the presence of these points of mines and mooring buoys placed there by the U.S. Army Engineers.

On sheet two splits occur at: (1) Latitude $41^{\circ}13'50''$ from longitudes $72^{\circ}03'$ to $72^{\circ}04'$; (2) Latitude $41^{\circ}13'45''$, longitude $72^{\circ}04'30''$. These were not covered because the work done in this vicinity was accomplished in the latter part of the season, when the weather was cold and disagreeable. As these splits occur in the vicinity of Pelient Rock where the chart shows numerous soundings of shallow depth, permission was asked and received from the office to discontinue work without covering them, and the uncompleted area shown just south of these strips.

All the obstructions found were boulders, and after obtaining the least depth on them by sounding with the lead line, the drag was set at about a depth of two feet less than the sounding and carried across the shoal to make sure that the least depth had been obtained. The most important discovery in this locality is the 39 foot spot lying 820 meters west $\frac{1}{2}$ north (true) from Bartlett's Reef light vessel. There are three of these boulders very close together and one close by with 49 feet on it. Very conspicuous tide rips were observed near this shoal. The chart shows this spot lying between depths of 84 to 108 feet.

A sounding of 62 feet was found lying 1210 meters W x S $\frac{3}{4}$ S ^(true) from the light vessel; the chart shows 108 feet in this spot.

A ~~to~~ boulder showing 72 feet on it was located 1160 meters SW x S $\frac{3}{4}$ S ^(true) from the light vessel where the chart shows 108 feet.

A 75 foot spot was found 1020 meters SW x S ^(true) from the light vessel where the chart showed 96 feet.

A sounding of 74 feet was obtained 1530 meters W x $\frac{1}{2}$ S ^(true) from the light vessel; the chart shows 96 feet here.

A shoal spot of 47 feet was found 1180 meters N $\frac{1}{4}$ W ^(true) from Race Rock light-house; near by soundings showed depths of 49 feet; 57 feet and 63 feet. The chart shows 84 feet in this vicinity.

A sounding of 53 feet was found 700 meters WNW $\frac{1}{2}$ W ^(true) from Race Rock light-house; near by soundings showed

depths of 56 and 58 feet, where the chart shows 60 feet.

a 70 foot spot was found 1080 meters NW x N $\frac{3}{4}$ W (true) from Race Rock Light-house, where the chart shows 84 feet.

a sounding of 61 feet was obtained 2840 meters NE x E $\frac{3}{4}$ E, (true) from ~~Light~~ Little Gull Island Light-house where the chart shows between 66 and 90 feet.

The control of the survey was obtained from signals located by previous triangulation.

The tidal reduction for the work shown on sheet one was obtained from the readings of an automatic tide gauge set up by Mr. Paul M. Trueblood, H. & J. Engineer, on the Light-house Wharf at New London, Conn. On sheet Two, the tidal reducers, for every day except Q day, November 14, were obtained from readings taken on a tide-staff erected on this wharf. In coming from Saunderstown on November 14, we set out the drag immediately upon reaching the working grounds, under the impression that the tide gauge at New London was still in operation, when in fact it had been taken out several days previously. To obtain the tidal-reducers for Nov. 14 therefore we resorted to the following scheme: the predicted tide readings for Nov. 14, 15 and 16 and the actual tide readings of Nov 15 and 16 were plotted on cross-section paper. Then by means of a comparison between the actual and predicted tide curves for Nov. 15 and 16, an actual tide curve was drawn for Nov. 14; and the reducers were obtained from the latter curve.

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The drag strips shown on the eastern part of sheet one show the drag catching on shoal spots of greater depth than that at which the drag was set. This is accounted for as follows: whirlpools form around the shoal spots in this vicinity; and when any part of the drag passed over them, it was drawn down to the bottom and hooked on to the obstruction.

* ~~Current~~ No systematic attempt was made to study the currents in this vicinity; such information as we obtained was merely incidental to the actual drag work, and is incorporated on page 14 of the report of Mr. Strong for season 1917.

The work in this vicinity was fraught with difficulties; a brief statement of these, are incorporated on pages 3 and 4 of Mr. Strong's report for season 1917, and need not be repeated here.

Respectfully submitted,
H. W. Hensley

Deck Officer,
U. S. C. & G. S.

Approved:

Jr. H. + G. S.
Chief of Party

* A location for Bartlett's Reef Light vessel was obtained and plotted

Table of Statistics Sheets 4008 & 4008a

Day	Date	Length of Drag	Miles Statute	Positions	Soundings	
A	Sept. 22	6000 ft.	4.8	32	3	
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D	Oct. 2	3600 ft.	2.1	18	2	
E	Oct. 3	3600 ft.	2.2	13	3	
F	Oct. 16	4200 ft.	0.6	6	0	
G	Oct. 17	3000 ft.	1.0	13	0	
H	Oct. 18	3000 ft.	3.4	45	1	
J	Oct. 19	3000 ft.	3.1	23	1	
K	Oct. 23	3000 ft.	1.0	16	5	
L	Oct. 26	6000 ft. 3000 ft.	3.0	45	5	
M	Oct. 27	3000 ft.	1.0	5	1	
N	Oct. 29	3000 ft.	1.0	6	0	
O	Oct. 31	2500 ft.	2.0	19	2	
P	Nov. 1	2500 ft.	3.0	26	0	
Q	Nov. 14	5000 ft.	3.4	20	3	
R	Nov. 15	3600 ft. 3000 ft.	6.6	38	1	
S	Nov. 16	2500 ft.	3.6	29	0	
T	Nov. 17	2500 ft.	1.1	12	0	
U	Nov. 20	2500 ft.	0.8	27	0	
V	Nov. 21	2500 ft.	3.5	31	3	
W	Nov. 24	3000 ft.	3.75	18	2	
		Total	56.05	490	39	
			No. of sq. miles = 18.5			

REFER TO NO.

5-EMK

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

June 18, 1918.

LIBRARY

Place with descriptive report
of hydrographic sheet No. 11008

Division of Hydrography and Topography: *HCS*

Division of Charts:

Drawing Section. *A*

Tidal reductions have been approved in
4 volumes of Wire Drag and Sounding records for

HYDROGRAPHIC SHEETS 4008 4008a

Long Island Sound, Connecticut
R. P. Strough in 1917

Plane of reference is
Mean low water, reading

4.0 ft. on staff at New London, Connecticut.

L. P. Shidy

Acting Chief, Section of
Tides and Currents.

E. O. E.

ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND REFER TO No. 4-DRM

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

July 9, 1924.

SECTION OF FIELD RECORDS

Report on Wire Drag Sheet No. H-4008

Long Island Sound

Surveyed in 1917, 1918

Instructions dated Sept. 19, 1917 (R. P. Strough) and April 13, 1918,
(J. H. Hawley)

Chiefs of Party, R. P. Strough, J. H. Hawley, F. B. T. Siems.

Surveyed by R. P. Strough, J. H. Hawley, F. B. T. Siems.

Portracted and inked by H. W. Hemple, G. J. Sullivan.

Verified and Area and Depth Sheet by A. L. Shalowitz.

1. There are no specific limits of the work mentioned in the specific instructions, the limits having been sent in the form of portions of charts. It is therefore assumed that the work conforms to those limits. The depth to which the area was dragged conforms generally to the requirements of the specific instructions, although there are various places where the drag should have been set to a much deeper depth.
2. A clearance depth was obtained over all shoals discovered by the drag except the 53 foot sounding 289° true 350 meters from Race Rock Light. A 42 foot drag grounded here but 53 feet was the least water obtained. A 46 foot drag passed close by, but did not cover it sufficiently. The grounding at 42 feet is no indication that depths much less than 53 feet exist here, as the groundings in this locality are explained by the presence of whirlpools around the shoal spots, which pull the drag down and grounds it on an obstruction deeper than the effective depth of the drag. This was true of several places in this locality. (See page 2, descriptive report, this sheet, R. P. Strough.)

The 47 foot spot about 1200 meters north of Race Rock Light and just outside the limits of the drag was not cleared. Close by in this vicinity there are charted depths of over 80 feet.

Just south of the 47 foot spot a 49 foot sounding was found by the drag. The smooth plotting shows a 39 foot drag as having cleared it, but by so small an amount as to be uncertain.

3. The overlaps are sufficient except as shown on the A. and D. sheet. For overlaps with adjoining sheets, see reports for those sheets.
4. There are a number of splits on this sheet that should be covered whenever work is again done in this locality. Most of the large splits fall in comparatively deep water. The small split in the work around the 53 foot spot mentioned in Paragraph 2 is perhaps the most important of all.

Whenever drag operations are resumed in this locality, the areas that have been dragged to but 27, 28 and 30 feet should be redragged to a depth closer to the bottom as in most of these places the charted depths are from 9 to 12 feet greater.

5. Attention is called to the following:

- a. At position 60 P the drag grounded set at 41 feet effective depth. No sounding was obtained. On a subsequent day the drag cleared this same spot set at 43 feet effective depth. As the general depths in this locality are 47 feet it is assumed that the insufficient buoyage of some of the metal floats caused the drag to sag several feet and ground. (See page 2, descriptive report, this sheet, F. B. T. Siems.)

- b. The 35 foot sounding in latitude $41^{\circ} 17'$, longitude $72^{\circ} 06'$ does not represent an actual sounding. The drag grounded at successive depths of 44, 39 and 37 feet, effective depth, and cleared at 34 feet. On account of the small extent of the obstruction and the strong current, no sounding could be obtained. The least possible depth was therefore charted.

- c. The 56 foot sounding located approximately in latitude $41^{\circ} 16'$ longitude $72^{\circ} 05' 30''$ does not represent an actual sounding. The drag grounded here at 57 feet and cleared at 55 feet. The shoalest sounding that could be obtained with the lead was 60 feet. 56 feet is therefore a reasonable depth to chart.

- d. The 24 foot sounding located approximately in latitude $41^{\circ} 16' 30''$ longitude $72^{\circ} 02' 30''$ is not an actual sounding. The drag grounded set at 26 feet and cleared at 23 feet. The least sounding that could be obtained was 32 feet. All indications were that the obstruction was a part of a wreck and not a shoal. The least possible depth was charted.

- e. The 94 foot sounding in latitude approximately $41^{\circ} 13'$, longitude $72^{\circ} 10'$ was accepted as plotted by field party, as there was no note in the record of its position.

- f. At position 6 **B** (black letter) in latitude $41^{\circ} 15' 30''$, longitude $72^{\circ} 03'$, the drag grounded between buoys 1 and 2 at an effective depth of 50 feet. No sounding was obtained. Later on J day the drag set at 54 feet effective depth cleared the same locality. This was considered sufficient justification for not showing a 50 foot sounding.

o.k.d. by
A.L.G. →

g. At position 45 L (black letter) the drag grounded, but no indication is given where. (See Vol. 2, Strough, page 27.) Most of this area, however, was subsequently covered by a deeper drag.

6. There is no verification report for this sheet, the substance having been incorporated in this review.
7. Reviewed by A. L. Shalowitz, July, 1924.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

WIRE DRAG

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 4008 (work of 1918) incomplete

State . . . Connecticut & New York

General locality . . . New England Coast

Locality East part of Long Island Sound

Chief of party . . . F. B. T. Siems (J. H. Hawley, May 1918)

Surveyed by . . . F. B. T. Siems (J. H. Hawley, May 1918)

Date of survey . . . August - November 1918

Scale . . . 1/20,000

Soundings in . . . feet

Plane of reference . . . MLW

Protracted by Sullivan . Soundings in pencil by F. B. T. S.

Inked by Verified by

Records accompanying sheet (check those forwarded):

Des. report, Tide books, Marigrams, Boat sheets,

none Sounding books, 3 Wire-drag books, Photographs.

Data from other sources affecting sheet work of R. P. Strough 1917
of J. H. Hawley 1918. Triangulation, F. B. T. S. 1918. Descriptions
of stations, N. Y & Conn., F. B. T. S., 1918. Lists of directions, trian-
gulation, 1918.

Remarks: This sheet can be used for future wire drag
work in this locality

4008A

4008A

Form 504
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: _____

11-5611

DESCRIPTIVE REPORT.

Hydr Sheet No. *4008^a*

LOCALITY:

191 *8*

CHIEF OF PARTY:

Daniels

DEPARTMENT OF COMMERCE.
U.S. COAST AND GEODETIC SURVEY.
E. LESTER JONES, SUPERINTENDENT.

DESCRIPTIVE REPORT.
to accompany
HYDROGRAPHIC SHEET NO. 4008 A.

John A. Daniels, Jr. H. & G. Engr.

Chief of Party.

1918.

DEPARTMENT OF COMMERCE.

U. S. Coast and Geodetic Survey.

Copy

Descriptive Report: Work of Wire Drag Party No. 5.

Sheet No. 4008A. (Field Letter B)
1918.

The area surveyed and represented upon this sheet is located in the western portion, and the entrance to Fishers Island Sound; also work upon two days was done in the vicinity of The Race.

The scale of the sheet is 1:20,000 and the boat sheet is of the same scale.

In this work, it was the aim to carry the drag to a depth of within 2-4 feet from that of the shoaler soundings, and to verify depths on shoals to within 1 to 2 feet.

The currents were found to be very strong in these localities and at no time could work be done, except with the current, or at slack water.

SHOALS.

None except sharded shoals was found in the vicinity of The Race. Effective depths of 77-101 feet were carried through the main channel and in each approach.

In the western part of Fishers Island Sound, six uncharted shoals were located as follows.

In the Main Channel to the westward of Ram Island Light Vessel a distance of about 3/4 mile, 32 feet was found; about 1 1/2 miles from the same vessel at a point about 1/4 mile southward from Intrepid Rock, a depth of 23 feet was found. Both are boulder shoals. One half mile westward from the buoy off Mumfords' Point; and about 400 meters off shore a depth of 15 feet was found. Slightly more than a mile, further westward along this shore, and southward from Pine Island, two shoals were found, one about 400 meters off shore with a depth of 7 feet, and another about 750 meters from Pine Island with a depth of 14 feet. Off the northwestern extremity of Fishers Island, a depth of 20 feet was found considerably outside the 3-fathom curve and about 350 meters from shore.

The depth upon this last named shoal and that upon the one off Mumfords Point were not verified, as were those, upon the others described. All are made up of boulders, which is the characteristic formation of shoals in this locality.

Statistics.

Date.	Letter.	Positions.	Miles.	Soundings.	
August 116	: A	: 9	: 1/4	: 0	(W.D.P.1)
October 16	: C	: 28	: 2 3/4	: 2	
October 17	: D	: 25	: 3	: 4	
October 18	: E	: 17	: 1 1/2	: 1	
October 21	: F	: 20	: 2 1/4	: 3	
October 25	: G	: 7	: 7/8	: 3	
October 26	: H	: 54	: 9 1/3	: 0	
November 1	: J	: 11	: 1	: 0	
November 2	: K	: 24	: 3 7/10	: 2	
November 6	: L	: 37	: 5 3/4	: 1	
November 9	: M	: 3	: 1/2	: 1	
November 13	: N	: 30	: 3	: 4	
November 14	: P	: 6	: 3/4	: 0	
Total.	:	: 271	: 34.4	: 21	

Respectfully Submitted
John A Daniels
Jr. H. S. Y. C.

LIBRARY

Place with descriptive report
of hydrographic sheet No. 4008

ADDRESS THE SUPERINTENDENT
U. S. COAST AND GEODETIC SURVEY

AND REFER TO NO. 41-EMK

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

Drawing Section. X

April 21, 1919.

Division of Hydrography and Topography: *HC*

Division of Charts:

Tidal reductions have been approved in
3 volumes of Sounding and Wire Drag records for

HYDROGRAPHIC SHEET 4008a

Long Island Sound and Fishers Island Sound
John A. Daniels in 1918.

Plane of reference is
Mean low water reading

1.8 ft. on staff at Chesebro's Wharf, Stonington, Conn.
1.9 ft. on staff at Hallett's Wharf, Stonington, Conn.
2.3 ft. on staff at Little Gull Island, N.Y.

St. Luce

Chief, Section of Tides
and Currents.

E.P.E.

ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No. 4-DEM

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON November 14, 1925.

SECTION OF FIELD RECORDS

Report on Wire Drag Sheet No. 4008^a

Western Part of Fishers Island Sound and Vicinity of The Race.

Surveyed in 1917 and 1918

Instructions dated Sept. 19, 1917 (R. P. Strough) and Apr. 13, 1918
(Hawley)

Chiefs of Party, R. P. Strough, J. A. Daniels and F. B. T. Siems.

Surveyed by R. P. S., J. A. D., and F. B. T. S.

Protracted and inked by Field Party.

Verified and Area and Depth Sheet by A. L. Shalowitz.

1. The depth of dragging is not in conformity with the specific instructions in the following respects:

a. In Fishers Island Sound the drag was not generally set to within 3 feet of the bottom where the drag depths are less than 35 feet. This is noticeably true of the northern half of the dragged area to the north of Fishers Island and westward to the limits of the drag work. The effective depths here range from 11 to 33 feet whereas the charted depths are in most cases ten to twenty feet deeper. For a detailed study of this phase of the work a comparison should be made with chart 359 which is on the same scale as the Area and Depth sheet.

b. In the vicinity of The Race a considerable area was dragged to a depth of 16 ft. where the charted depths are far in excess. This was caused by the discontinuance of the work on account of the unfavorable weather, permission to do so without redragging having been obtained from the office. (See descriptive report of R. P. Strough of this sheet, page 1, paragraph 5.)

c. South of Fishers Island the drag strip of 18 to 26 ft. effective depth is much less than the charted depths.

2. The extent of dragging satisfies the specific instructions except that there are places where the drag was not carried to the 3 fathom curve. These will be discussed in the paragraph relating to additional work.
3. The least water was found over all important shoals discovered with the following exceptions:
 - a. The 15 ft. sounding in lat. $41^{\circ} 18 \frac{1}{2}'$, long. $72^{\circ} 02'$ was not cleared. This is apparently a detached spot, lying about $\frac{1}{4}$ mile off Mumford Pt. and about 150 meters outside of the 18 ft. curve.
 - b. The 19 ft. sounding in lat. $41^{\circ} 16 \frac{1}{2}'$, long. $72^{\circ} 01 \frac{1}{2}'$ was not cleared. This sounding lies close to a charted 16 ft. spot and in all probability is a part of that shoal, but both lie outside the 3 fathom curve and should be dragged over when work is extended inshore.
 - c. The 31 ft. sounding in lat. $41^{\circ} 13 \frac{1}{2}'$, long. $72^{\circ} 04 \frac{1}{2}'$ and shown as not cleared is in approximately the same position as the charted 25. The drag grounded in this vicinity set at an effective depth of 15 ft. but a note in the record says "Aground on lobster pots". This grounding should nevertheless be verified with a drag set at a depth more in conformity with the 25 ft. sounding.
 - d. The 26 ft. sounding in lat. $41^{\circ} 13 \frac{1}{2}'$, long. $72^{\circ} 04'$ is on the charted 18 ft. spot (Valiant Rock) and this accounts for clearing it with only 15 ft.
 - e. There are a number of soundings obtained in the vicinity of Valiant Rock that were not dragged over. None of these are critical and since the area has not been completely dragged and additional work is necessary here, no individual mention will be made of these.
 - f. The 17 ft. sounding (grounding depth) in lat. $41^{\circ} 18 \frac{1}{4}'$, long. $72^{\circ} 00'$ was not cleared. This spot lies well outside of the 3 fathom curve and should be dragged over. 20 ft. was the least depth obtained here by sounding.
4. The following important previously charted shoals were not dragged over:
 - a. The 18 ft. shoal in lat. $41^{\circ} 18'$, long. $72^{\circ} 00'$. This shoal lies about $\frac{1}{3}$ mile NE x N of Intrepid Rock, and is surrounded by much deeper water. It is extremely important that this shoal be dragged over.

b. The 16 ft. shoal in lat. $41^{\circ} 18 \frac{1}{2}'$, long. $72^{\circ} 01 \frac{1}{4}'$ was not cleared. This is an important shoal for boats using Mumford Cove and should be dragged over to determine the least depth whenever work is extended here.

5. The overlaps within the sheet, with a few exceptions, are sufficient. These are appropriately indicated on the Area and Depth sheet.

The junction with H. 4008 on the west is adequate except for a few splits.

No junction was effected with H. 4043 in Fishers Island Sound and in the area south of the west end of Fishers Island nor was a junction effected with H. 3907. The limits of these various adjoining sheets are clearly delineated on the Area and Depth sheet.

6. This sheet can hardly be considered complete. There are a number of important splits (all indicated on the Area and Depth sheet) that should be dragged when work is resumed here, particularly the large split in the vicinity of The Race.

In addition to these and to the various points mentioned in the preceding paragraphs proper junctions should be effected with the adjoining sheets, especially with H. 4043 in Fishers Island Sound and with H. 3907 in the vicinity of The Race.

Too much stress cannot be laid on the necessity of adequately dragging the area from Little Gull Island to The Race. This is the main used channel for entering Long Island Sound.

A suitable junction should also be made with H. 4008 in the vicinity of Race Point and Race Rock Light.

Before outlining any work for this locality a comparison should be made with Chart 359 which is on the same scale.

7. Attention is called to the following:

- a. The strip from 4 to 6 D was plotted using Δ Lon as the right object as recorded. Owing to the grounding that occurred at the end of this strip, falling in an area that had been dragged and cleared at a deeper depth, the correct location of this strip becomes doubtful. After closely analyzing the records and the various maneuvers of the drag, it was decided after a consultation with the Chiefs of Field Records and Field Work that the signal used on the right was in all probability Δ Spin. This gave a more logical location of the drag strip and placed the grounding on an already known shoal.

b. The grounding at 14 F was caused by the tender forgetting to shorten the upright on the N-buoy which had been set to 40 ft. Therefore the grounding occurred in charted depths not inconsistent with the actual length of upright.

c. The strip from 21 to 28 F was rejected on account of the peculiar maneuvering of the drag and the fact that no additional area was covered. However, the grounding at 28 F was retained and is so shown on the smooth sheet.

d. The drag strip from 13 U to 27 U was omitted on account of the uncertainty in the location of the far buoy and the fact that no additional area was covered, the previous dragging also being deeper.

e. The drag strip from 1 to 5 V was rejected on account of the uncertainty of the signals used (See records). The strip from 6 V to 31 V was uncertain as to the exact depth of dragging. As a result of a consultation it was decided to show on the Area and Depth sheet an effective depth of 40 ft. throughout the drag, this being a safe margin over the recorded depths. The smooth sheet, however, is plotted in conformity with the original records.

A small part of this strip which was dragged to 33 ft. was entirely omitted from the Area and Depth sheet.

8. There is no verification report for this sheet, the substance having been incorporated in the review.
9. The field work was distributed as follows:
 - A day - F. B. T. Siems (1918)
 - B to P Days (inclusive) - J. A. Daniels (1918)
 - Q to W days (inclusive) - R. P. Strough (1917)
10. Reviewed by A. L. Shalowitz, November, 1925.

DEPARTMENT OF COMMERCE

U. S. Coast and Geodetic Survey

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey

Register No. 4008^a (Field B)

State New York

General Locality Fishers Island Sound, and The Race

Locality _____

Chief of Party John A. Daniels, Jr. H. & G. E.

Survey by Wire Drag Party No. 5

Date of Survey October 16-- November 14, 1918

Scale 1: 20,000

Soundings in Feet

Plane of reference Mean Low Water

Protracted by N. Duckworth Soundings in pencil N. D.

Inked by N. D. Verified by _____

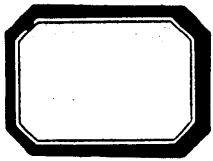
Records accompanying sheet (check those forwarded):

Des. report, Tide books, Marigrams, _____ Boat sheets,

1 Sounding books, 1 Wire-drag books, 2 Photographs, _____

Data from other sources affecting sheet _____

Remarks:



4008^A

725
June 1918

Form 504
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: *Conn. & New York*

11-5613

DESCRIPTIVE REPORT.

Hyd. Sheet No. *4008^a*

LOCALITY:

Long Island Sound,

The Race to Little Gull I.

and Western Part of Fishers

I. Sound

1918

CHIEF OF PARTY:

F. B. J. Siems

4008^A

4008^A

4008^A

Descriptive Report
to
Accompany Hydrographic Sheet No. 4008 (Wire drag)

Limits of work executed during season 1918 by Wire drag party No. 1, comprises an area off New London entrance forming junction with wire drag work to the southward by Party No. 2 during 1917 plotted on this sheet, and to the eastward in Fishers Island Sound, with wire drag work by Party No. 5 during 1918 plotted on another sheet.

The work by Party No. 1, 1918 also includes an area north of Plum Island, Gull Island eastward of Meridian $72^{\circ} 13'$ part of which, however, was executed by Party No. 5 during 1918. This work forms a junction in part with the work of 1917 to the Northeastward. The position numbers of 1917 work are shown in black those of the 1918 work are shown in red.

Color scheme for showing effective drag depths are standard for the 1918 work that is:

0	19 feet is shown	brown
20	29 " " "	yellow
30	39 " " "	blue
40	59 " " "	red
60	79 " " "	purple
80 and above	" "	orange.

There is no record of the color scheme for the 1917 work but it is assumed that the same scheme was used.

Instructions from the Superintendent of April 13, 1918 (to J. H. Hawley) and supplemental instructions of June 7, 1918 and August 22, 1918 were followed in executing these surveys.

Tidal reductions for drag depths and soundings, days A to F were made using tide observations at New London Connecticut. For later work the reductions were made using either tide observations at Stonington, Connecticut or Little Gull Island (See note in tide record regarding determination of datum plane.)

Control. Practically all of the signals used are triangulation stations. The few intermediate signals (natural objects) on Plum and Gull Islands were determined by numerous sextant directions from offshore positions. The triangulation executed during the season has been forwarded to the office together with description of all triangulation and hydrographic signals.

Plotting was done by Mr. George J. Sullivan, apprentice draftsman, and his experience in this work is rather limited, during the field season the positions of the drags were plotted under my supervision; the subdivisions of effective depths were made with the assistance of Mr. John A. Daniels at the Boston Field Station.

Strip 20Q to 27Q is rejected for the reason that the length of drag and depth of drag were not recorded when the drag was set out at that time. However, as the area involved, is effectively covered by other strips this work is not necessary. The draftsman erroneously used the set-ups of the previous strip for strip 20Q to 27Q and is thus indicated on the sheet.

with a safe depth

✓ Results of the survey. An obstruction probably a wreck/ of 23 feet in latitude $41^{\circ} - 16'.5$, longitude $72^{\circ} - 02'.5$ was discovered in a general depth of 40 feet. The least sounding that could be obtained with the lead line on the obstruction was 32 feet and was thought at first to be a clump of boulders (see Vol. 2-p.33, 1918-4008) From the manner in which the drag caught disproved the indication of the hand lead of the existence of a shoal.

✓ An obstruction in latitude $41^{\circ} - 16'$, longitude $72^{\circ} - 07.2$ was encountered by the drag set to a depth of 48 feet and again at 60 feet. Later a drag set at 53 feet cleared the obstruction. It is assumed that the obstruction was submerged mooring buoy of the light vessel nearby which probably drifted away by the ice. The depth over the obstruction changing, depending to the strength of the current.

✓ An obstruction in latitude $41^{\circ} - 17.1$, longitude $72 - 05.8$ is probably also a wreck for the reason that it was exceedingly difficult to clear the drag after grounding. After considerable effort it was impossible to obtain a shoal sounding with the lead line, the obstruction is, therefore, of small area. There is a safe depth of 32 feet over it.

✓ A 40 foot sounding rocky bottom, (boulders) in a general depth of 60 feet was found by the wire drag in latitude $41-16.8$, longitude $72-06'.1$ it was cleared by a drag set to 39 feet. Several other shoal rocky patches were discovered in this locality. A 44 foot sounding being obtained a short distance S.S.W. of the 40 foot spot. (see Vol. 2pp.23, 24, 1918-4008)

✓ An obstruction in latitude $41^{\circ} - 17'.0$, longitude $72^{\circ} - 13'.7$ grounded, drag set to 41 feet after beginning to take up. As it was later dragged with a 43 foot depth and cleared, the assumption is that probable insufficient buoyancy of one of the metal floats caused drag to sag and foul in general depth of 47 feet.

✓ 41° $42^{\circ} - 12'.7$, longitude $72^{\circ} - 12'$, 200 yards from 153 foot depth, was discovered by the drag. The shoal was cleared by a 72 foot drag (see Vol. 1 - p. 20, 1918-4008.) The drag strip 25G to 28G is shown incorrectly by the draftsman where it grounded and parted at the 76 foot obstruction.

✓ A 94 foot sand shoal was discovered in latitude $41^{\circ} - 13'.3$, longitude $72^{\circ} - 00'$.

Survey methods. Drag lengths up to 5000 feet were used, determining the position of drag by the triangle computation method. A navigation sextant was used to determine distance angle accurately.

Very strong currents (2 to 3 knots) were encountered in this locality and it was necessary to drag with the current. Great care was therefore necessary in maneuvering the drag.

The launch engines were unreliable adding to the difficulties in dragging this area.

Splits occasioned in 1918 work are located as follows:

Latitude	41-13.5,	longitude	72-07.5
"	41-13.6,	"	72-07.9

H. Williams
Respectfully submitted,
Chief, Wire Drag Party No.1.

Washington, D.C.,
March 10, 1919.

Table of Statistics,
Wire Drag Sheet 4008- Wire Drag Party No. 1.

<u>Day</u>	<u>Date</u> <u>1918</u>	<u>Length of</u> <u>Drag</u>	<u>Miles stat.</u>	<u>Positions</u>	<u>Retained</u> <u>Soundings.</u>
A	May 9	5000	4.5	16	0
B	" 10	5000	2.6	16	1
C	" 16	5000	4.2	29	1
D "	" 17	5000	4.0	34	0
E	" 18	4000	3.7	30	0
F	" 24	4000	6	46	0
G	Aug. 8	4000	5.2	30	0
H	" 9	4000	0.3	6	0
J	" 27	4000	2.0	18	0
K	Sept. 13	5000	3.5	14	0
L	" 16	4000	0.7	9	2
M	Sept. 18	No results on this day			
N	" 19	4400	3.0	37	1
P	" 25	3600	5.0	60	0
Q	Oct. 2	4500	3.2	20	0
R	" 5	3600	3.	30	0
S	" 7	2800	1.3	22	0
T	" 10	5000	6.3	47	0
U	" 11	2400	3.0	24	0
V	" 17	4000	1.2	12	0
W	" 19	3500	No results		
X	" 25	4000	3.0	14	0
Y	Nov. 2	2800	1.5	25	0
Z	" 22	1600	1.5	8	0

Totals

68.7

547

5

Area dragged, 22 square miles.

Applied to 362 ROE 10/27/49