

6188

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

DESCRIPTIVE REPORT

Trautographic }
Hydrographic } Sheet No. 405

State New Jersey

LOCALITY
New Jersey Coast
East of Barnegat Bay

1937

CHIEF OF PARTY
George D. Cowie

U. S. GOVERNMENT PRINTING OFFICE: 1934

CP

6188

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. 405

REGISTER NO. H 6188

State New Jersey

General locality ~~East Coast of New Jersey Coast~~

Locality ~~East of Barnegat Bay~~ Mantoloking to Barnegat Inlet

Scale 1:40,000 Date of survey Aug. 10 - Sept. 28, 1936

Vessel Ship LYDONIA

Chief of Party G. D. Cowie

Surveyed by G. D. Cowie - E. O. Heaton

Protracted by H. E. Finnegan

Soundings penciled by H. E. Finnegan

Soundings in ~~fathoms~~ feet

Plane of reference M. L. W.

Subdivision of wire dragged areas by ----

Inked by [Signature]

Verified by [Signature]

Instructions dated April 9th, 1936

Remarks: _____

The records for sheet ^{H-6188}(405) have been inspected and approved by Lieut-Commander George D. Cowie and the sheet has been inspected and approved by me.

Earl O. Heaton

Earl O. Heaton
H & G Eng'r

DESCRIPTIVE REPORT

H-6188
HYDROGRAPHIC SHEET No. 405. Project H.T. 207

(LYDONIA 1936)

Coast of New Jersey

Lieut. Com'dr G. D. Cowie, Com'dg., Chief of Party

DATE OF INSTRUCTIONS

This survey was executed in accordance with the Director's Instructions dated April 9, 1936.

LIMITS

This sheet is laid out with central meridian parallel with the edges of the sheet. The survey extends seaward from about one half mile off shore to Longitude $73^{\circ} 36' \text{ W.}$ between the parallels $39^{\circ} 46'$ on the south and $40^{\circ} 00'$ on the north.

The survey joins other surveys as follows:-

Sheet #201, 1936, along shore H-6136.
Sheet #402, 1936, on the north side. H-6190 & 6026
Sheet #404, 1936, on the east side. {Rejected. Resurvey ordered. See
Sheet #3773, 1915, on the south side. {Instructions May 8, 1937 (Oceanographer).

The limits of sheets ^{H-6136} #201, ^{H-6190} #402, and #404 are indicated by dashed pencil line.

All soundings taken on this survey fall well within the limits of the sheet, but three signals, used in executing a small portion of the hydrography, fall off the southern limits of the sheet. Two dog-ears were prepared for these signals, one for triangulation station LOVE, at the inshore limit of the sheet; and one dog-ear for survey buoys - IDLE and IDE, about 13 miles off shore. Positions, in which signals LOVE, IDLE or IDE were used, were omitted until all other positions had been protracted on the smooth sheet. Then the smooth sheet and dog ears were held firmly in place and not moved until the completion of protracting of all positions in which the signals LOVE, IDLE or IDE were used. The dog-ears, on which these signals are plotted, are not secured permanently to the smooth sheet, but are forwarded with the smooth sheet. Dog-ears attached to D.E. in office.

SURVEY METHODS

Visual Fixes

The Ship LYDONIA was used for all hydrography on this sheet. The work was extended to about nine miles off shore by visual fixes on shore signals, located principally by triangulation. The rest of the hydrography, with the exception of that done on "B" and "C" days, was controlled by visual fixes on survey buoys.

R. A. R. Fixes

On "B" and "C" days the hydrography was controlled by R. A. R.

On positions 72, 77, 78, 79 and 81 of "X" day, R. A. R. fixes were obtained, but were not used, due to a discrepancy between the R. A. R. fixes and connecting visual fix work. For further explanation see remarks under "DISCREPANCIES".

Positions 120 "HH" to 129 "HH" inclusive, of sheet #402 ^{H-6190} are shown on this sheet. A portion of the line between these positions, all of which are controlled by R. A. R., falls off the aluminum sheet #401-402(a), on which all R. A. R. work of sheets 401 and 402 is plotted. Positions 120 "HH" to 129 "HH" inclusive, were plotted on a tracing paper dog-ear of the aluminum sheet #401-402(a) and transferred to this sheet #405. ^{H-6188}

Pos. 124 to 129 H are shown on the present survey, the balance being shown on H-6026 H.M.

Sounding

With the exception of "F" day, the fathometer was used to obtain all soundings. On "F" day when the fathometer was not operating hand lead soundings were obtained. Of course the hand lead was used daily for vertical casts, for comparison with the fathometer.

DISCREPANCIES

Protracting

Corrections to fixes where errors in recording were apparent, and also appropriate notes regarding the plotting of fixes where only one or possibly no angles were obtained, were entered in green pencil in the record books and no additional explanation is necessary in the report.

Plotting R. A. R. Fixes

There are but two days ("B" and "C") of R. A. R. work plotted on this sheet. It was noted in plotting the R. A. R.

fixes, that the course steered and the time run between positions frequently do not check well on this sheet. For each line of R. A. R. work, a dead reckoning line was plotted on tracing paper and then laid over the smooth sheet so that the maximum number of intersections of arcs from the radio buoys could be used. In cases where intersections failed to fall satisfactorily close to the line, single arcs were used if possible. On fixes where no arcs were obtained, and also where the arcs which were obtained fell too far off the line, courses and time were used to determine the positions.

The manner of plotting each position has been entered in the record books. Arcs, which failed to plot reasonably close to the final positions selected, were marked rejected in the bomb record, with a green pencil.

Five R. A. R. positions (72-77-78-79 & 81) were obtained on "X" day, but they were not used because they do not check satisfactorily the dead reckoning between positions 70 and 80X, which are visual fixes on survey buoys. Both visual and R. A. R. fixes were obtained on position 81 X, but they do not agree. The dead reckoning line between position 70 X and 80 X was used so that this portion of the work on "X" day would be relatively correct with the visual fix work.

Pos. 72 at
Lat. 39° 54'
Long. 73 38

Hand Lead and Fathometer Soundings

Due to trouble with the fathometer all soundings on "F" day were obtained with a hand lead. Soundings in depths of 10 to 12 fathoms on two adjacent lines of "F" day (positions 1 to 62) appear to be 2 to 3 feet too deep when compared with lines on either side, which were run using the fathometer.

Pos. 1st
Lat. 40° 01'
Long. 74° 01'

The soundings obtained on another line of "F" day, positions 131 - 141 also appear too deep. This was checked in the field by re-running the line (131 F to 140 F) with the fathometer on "G" day (position 32 to 40). On the "F" day line the soundings which were obtained with a hand lead are two to three feet deeper than those on the "G" day line which was run while using the fathometer. Only the fathometer soundings for this line are plotted on the sheet.

Pos. 131 at
Lat. 39° 52'
Long. 74° 04'

Speed 4.5 kn. Field Rejection accepted. H.M.M.

It is possible that on other "F" day lines, soundings obtained with the hand lead are too deep also, but this is not indicated in general, because the lines other than those mentioned above were run between lines of fathometer soundings where the slope of the bottom is sufficiently steep that an error of 2 to 3 feet would not stand out. However the soundings on 97 F and the soundings just before and just after 97 F appear too deep by at least 2 feet.

Lat. 39° 54'
Long. 74° 04'

Three 45' s'gs. Retained on smooth sheet. H.M.M.

It is recommended that, when inking this sheet, two feet be subtracted from the soundings between positions 1F to 62 F, and the line from 131 F to 141 F be rejected.

Field Recommendation accepted in office verification. (See Rev. par. 4).

See page 3 paragraph 4. of *Tidegauge Corrections - Ship LYDONIA - Project 207-1936.*

Acc. No. 5-1457

Crossings - R. A. R.

There are no discrepancies in the crossings of the R. A. R. work. Attention is called to the excellent crossings obtained on the line 120 HH to 129 HH^(blue), which is plotted on this sheet. This line, as mentioned previously in this report, is one which was run on boat sheet #402. *Seven crossings agree within 1-2' or less. Three " " " " 4' or greater H.W.M.*

Crossings - R. A. R. and Visual

A line controlled by visual fixes (172W - 183W) crosses the southern ends of all but two of the lines controlled by R. A. R. fixes, and with the exception noted below all crossings are excellent:

Exception: A crossing difference of only 2.5 feet, where soundings of 110' to 111', between position 176W and 177W, fall between two soundings of 108 feet each, between positions 24C and 25C.

There are many crossings on the turns between lines at the junctions of the R. A. R. and visual fix work, and except as noted below all crossings are satisfactory:

Exceptions: On the turn between 13B and 14B, a 100' ^{Lat. 39°50'} foot sounding falls between soundings of 105 feet and 110 feet, ^{Long. 73 44} which are on line between 215V to 216V. Possibly the turn between 13B and 14B should be further north. *Turn shifted north. Discrepancy smoothed out, L. S.S.*

Two soundings before and the sounding on 92B appear to ^{Lat. 39°50'} be 2 to 3 feet too deep when compared with the sounding before, ^{Long. 73 40} the sounding on and the sounding after 49W.

On the turn between 25C and 26C a sounding of 104' falls ^{Lat. 39°50'} between soundings of 99 and 100 feet on-line between 73W and 74W. ^{Long. 73°40'}

Visual Fix Crossings

With the following exceptions the crossings of the visual fix work on this sheet are satisfactory. Crossings of 2 feet difference or less have not been noted, except as noted in the second paragraph below:

Lat. 39°53.0', Long. 74°01.9 crossing difference of 3' feet where sounding of 61 feet just before position 7G, falls on sounding of 59 feet just after position 51J.

From Lat. 39°54.0', Long. 74° 01.2' (position 113G) to Lat. 39° 52.5', Long. 74°01.5' (third sounding after position 115G) soundings appear to be about 2 feet too deep.

Lat. 39°52.4' Long. 74°01.0 (position 121G) crossing

difference of $2\frac{1}{2}$ feet where sounding of 56 feet (between positions 87 - 88"T") falls between soundings of 58 and 59 feet. The 59 foot sounding is on position 121"G" and the sounding of 58 feet is the one just before position 121"G".

Lat. $34^{\circ} 52.65$ Long. $74^{\circ} 00.9'$, crossing difference of 3 feet, where soundings of 55 - 57 feet (first two before position 77"T") are crossed by soundings of 58-61 feet (on line between positions 121-122"G").

Lat. $39^{\circ} 53.8'$ Long. $74^{\circ} 00.7'$, crossing difference of 4 feet, where sounding of 60 feet on position 124"G" falls between two soundings of 56 feet each on line between positions 55-56"J". Also soundings of 57 feet (second and third after position 124"G") cross soundings of 54 feet on line between 57-58"J".

Lat. $39^{\circ} 57.85'$, Long. $73^{\circ} 59.62'$, crossing difference of 3 feet where sounding of 63 feet (first after position 147"G") falls between two soundings of 60 feet each on line between 162-163"T".

Lat. $39^{\circ} 54.5'$ Long. $74^{\circ} 09.2'$, a sounding of 55 feet on position 120"T" falls between soundings of 58 and 60 feet on line between 195-196"G". However, this does not look bad since the bottom in this area is irregular and a sounding of 54 feet on 45"J" lies just east of and soundings of 60 and 61 feet lie just south and west of the 55 foot sounding.

The preceding eight notes regarding crossing differences all involve "G" day soundings, which in general appear too deep by two to three feet. It is recommended that the "G" day soundings be given less weight than the shoaler soundings where the differences occur.

* Lat. $39^{\circ} 49.3'$ Long. $73^{\circ} 48.55'$, crossing difference of $4\frac{1}{2}$ feet, where soundings of 78 - 79 feet, (between positions 121-122"V"), are crossed by soundings of 84 - 82 feet (between positions 197-198"W").

* Lat. $39^{\circ} 49.52'$ Long. $73^{\circ} 47.75'$, crossing difference of 4 or 5 feet where sounding of 86 feet on position 196"W" falls between soundings of 79 - 83 feet, (79 feet just before and 83 feet on position 144"V").

* In these last two cases the difference in crossings may be due to a slight change in the position of survey byoys, caused by a possible difference in the current on succeeding days. Only a slight shifting of positions 196 and 197"W" to the northward would make the crossings satisfactory.

Lat. 39° 48.75', Long. 73° 44.37', sounding of 104 feet (first sounding after 208"V") falls very close to 97 foot sounding between 10 - 11"U" day. This may be correct since the 97 foot sounding is followed by a depth of 102 feet on "U" day.

C.R. see note in Sdg. Vol. 4.2.5.

JUNCTIONS WITH ADJOINING SURVEYS

R. A. R. Control Sheet 402 ^{H-6190} 402H6190 , 402a H-6026

The crossings with the R. A. R. work on sheet 402 are excellent as noted previously in this report.

R. A. R. Control Sheet 404

Sheet 404 is an R. A. R. sheet executed by the "OCEANOGRAPHER" and it joins the R. A. R. of this sheet (405) on the east. There are twenty crossings, twelve of which differ by 3 feet or less and eight of which differ by 5 to 12 feet, the soundings on sheet #404 being deeper. The large differences of 5 to 12 feet are probably due to questionable soundings obtained with the "OCEANOGRAPHER's" fathometer, which was operating unreliably near the end of the season. *Sheet 404 Rejected - Resurvey Ordered. Instructions to Oceanographer May 8, 1937*

Visual Fix Control

Sheet 402 ^{H-6190} On the North

The crossings at the junction of the visual fix work on this sheet (405) with sheet #402 are satisfactory except as noted below:

Lat. 40° 01.08', Long. 74° 01.0', a crossing difference of 3½ feet, where a sounding of 69 feet on position 62"F" of sheet 405, falls between two soundings of 65 feet each on sheet 402. The 65 foot soundings of sheet 402 lie on a turn between positions 43KK and 44KK. The 69 foot sounding, on position 62F of sheet 405 was obtained by hand lead and as noted previously in this report on page 3, it appears that the hand lead soundings on position 1 to 62F are 2 to 3 feet too deep.

Lat. 40° 00.35', Long. 73° 53.42' a difference in crossing of 3 feet, where the first sounding (69 feet) after position 144R, sheet 405, falls almost on a sounding of 72 feet, which lies on the turn between positions 101 - 102LL of sheet 402. *Turn on (402) H-6190 probably a little too far south.*

JUNCTION WITH SHEET # 201 ^{H-6136} H6136

Sheet #201, which joins sheet 405 on the westward, was completed and forwarded to the Washington Office a few months before the smooth sheet for 405 was completed. A copy of the soundings adjoining sheet 405 was not retained on the ship, and there-

fore no comparison of the crossings of the soundings on the smooth sheets may be compared at this time. However, a day by day comparison of boat sheets was made in the field and probably all discrepancies were adjusted during the progress of the field work. This junction satisfactory. H.W.M.
(pages 8 to 13).


SHEET H-3773, 1915

^{H-405} The limits of H-3773 - 1915, are not indicated on sheet 405, since sheet 3773 will be entirely superseded by work to be taken up this coming field season. The shoal depths on H-3773 which are given on chart #1216, and which fall within the area of sheet ^{H-405} 405, have been compared with the present survey and differences are noted under "Comparison With Charts", a list of which is attached to this report.

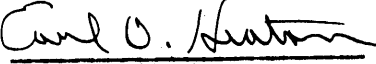
FATHOMETER & R A R CORRECTIONS.

Special reports by Lieut (jg) E B Brown cover corrections to the fathometer soundings; velocity determination on R A R work; and lag corrections to sono-buoy distance.

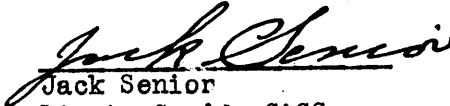
Respectfully submitted,


H. E. Finnegan
Lieut. C&GS

Approved.


Earl O. Heaton
Executive Officer
Ship LYDONIA C&GS

Forwarded.


Jack Senior
Lieut. Com'dr C&GS
Commanding Ship LYDONIA

Note: A note on H-106 (1840) states that no record of tides was kept in 1840 and that the hydrographer assumed a constant quantity of 6 feet at H.W. and reduced accordingly. Therefore a portion of the differences noted with H-106 (1840) and associated 1840 surveys: H-102, H-104 and H-105.

Except as noted below the present survey supersedes the following information for charting purposes. (See Rev., par. 7 and 8a).

COMPARISON WITH CHARTS

Sheet #405

ITEM	Lat.	Chart 1216 Charted	H-6188 Sheet 405	Remarks
	Long.	Depth(Ft)	Depth(Ft)	
		Authority:		
1.	40°-00.87' 73 -59.15	60	65	These soundings are part of the same shoal area on chart 1216. The present survey indicates a detached shoal area in this vicinity with least depths of 61-62 feet.
2.	40 -00.60 73 -59.04	60	63-65	
3.	40 -00.30 73 -58.73	57 H-106	62	
4.	40 -59.90 73 -59.15	60	62	
5.	39 -59.55 73 -58.37	52 H-106	60	There is a detached shoal area indicated on the chart and on the present survey in this vicinity. The least depth on the present survey is 55 feet.
6.	39 -59.50 73 -54.88	60	56-57	
7.	39 -59.30 73 -57.22 7	60 H-106	60-67	A sounding of 58 feet on present survey was obtained about 0.1 mile, 70° true from position of charted 60 foot sounding.
8.	39 -58.35 73 -57.87	60 H-106	63-65	A sounding of 59 feet on present survey was obtained about 0.8 mile, 62° true from position of charted 60 foot sounding. Also 61' about 0.6 M. 195° true.
9.	39 -58.42 73 -58.92 one of 3 sdgs on line spaced 200 m. apart Probably misplaced. Disregard H.W.M.	54 H-105	68	The least soundings in this vicinity on the present survey are given as follows, with approximate distances and directions from charted 54 feet:- 60 feet 0.52 mile, 200° true. 59 feet 0.60 mile, 250° true. 60 feet 0.55 mile, 272° true.
10.	39 -58.3 74 -00.40 Portions of other sdgs on line vary as much as 8 feet too deep. Probably displaced to westward. Disregard H.W.M.	57 H-106	68	On present survey there are two soundings, one of 57 feet about 0.60 mile, 133° true and one of 58 feet about 0.45 mile, 108° true from charted 57 foot sounding.
11.	39 -57.5 74 -00.27	60 H-106	60	On present survey a sounding of 59 feet was obtained about 0.17 mile, 90° true from charted 60 foot sounding.

ITEM	Lat.	Chart 1216 Charted Depth(Ft)	H-6188 Sheet 405 Depth(Ft)	Remarks
	Long.	Authority:		
12.	39°-56.25' 74 -01.40	60 H-106	63-64	On present survey a sounding of <u>62</u> feet was obtained about 0.10 mile, 142° true from charted 60 foot sounding.
13.	39 -56.40 74 -00.85	58 H-106	62	On present survey a depth of <u>59</u> feet was obtained about 0.30 mile, 45° true from charted 58 foot depth.
14.	39 -56.50 74 -00.26	60 H-106	60-65	On present survey a depth of <u>60</u> feet was obtained about 0.1 mile, 0° true from charted 60 feet.
15.	39 -56.66 73 -59.00	58 H-106	60-61	On present survey a depth of <u>60</u> feet was obtained about 0.09 mile, 310° true from charted 58 feet.
16.	39 -56.88 73 -58.10	60 H-106	64	On present survey depths of <u>60</u> feet each were obtained, one 0.60 mile, 347° true and one 0.65 mile, 210° true from charted <u>60</u> feet.
17.	39 -56.08 73 -55.38	63 Authority unknown (See Rev., par. 8a) Do not chart	72	On present survey a shoal area, with least depth of <u>58</u> feet was obtained about 0.90 mile 167° true from charted 63 feet.
18.	39 -56.87 73 -54.20	54 Chart Letter 47(1909)	81 wreck of Barge Retain on Chart (See Rev., par. 8 & C1).	On present survey the nearest shoal area, with a least depth of <u>58</u> feet, lies 1.7 mile 200° true from the charted position of 54 feet.
19.	39 -55.52 73 -53.78	66 H-106	80-81	On the present survey there is a shoal area with a least depth of 58 feet, lying between the charted positions of the 66 foot soundings.
20.	39 -55.32 73 -55.80	66 Probably H-1550	72-73	
21.	39 -55.80 73 -57.17	60 ? No sdg charted here	69 ?	On present survey the following depths were obtained:- 62 feet 0.65 mile, 346° true; 62 feet 0.55 mile 285° true, and 63 feet 0.35 mile, 206° true from the position of the charted 60 foot sounding.
22.	39 -55.34 73 -57.50	60 H-106	63-65	On present survey a shoal area, with least depths of <u>60</u> feet, lies about 0.4 mile, 235° true from the charted position of the 60 foot depth.
23.	39 -55.05 73 -57.70 80	60 H-106	60-67	On the present survey a shoal area, with least depths of <u>60</u> feet, lies from 0.1 to 0.3 mile, 270° true from the position of the charted <u>60</u> foot depth.

No sdg
charted
here

ITEM	Lat. Long.	chart 1216	H-6188	Remarks
		Charted Depth(Ft) Authority:	Sheet 405 Depth(Ft)	
24.	39°-55.74' 73 -59.05	57	60-63	On present survey, near the N. E. end of a shoal area, a depth of 57 feet was obtained about 0.3 mile, 220° true from the charted 57 foot depth. ✓
25.	39 -55.40 73 -59.40	54 H-106	57	On present survey a depth of 56 feet was obtained about 0.1 mile, 90° true from the charted 54 foot sounding. ✓
26.	39 -54.08 73 -00.6 4	51 H-106	54	On present survey a depth of 50 feet was obtained about 70 meters, 270° true from the charted 51 foot depth. ✓
27.	39 -52.72 73 -59.40	51 H-106	57-58	In this vicinity on the present survey the 60 foot curve indicates a shoal point with least depths of 56 feet. A depth of 50 feet was obtained about 1.45 miles, 257° true from the charted 51 foot depth. ✓
28.	39 -51.80 74 -02.20 Probably displaced since other confirming depths on old survey are not verified by the present survey in the position shown. H.W.M.	48 H-106	58	On present survey the 48 foot curve is about 1.35 miles inshore from the charted 48 foot sounding. Depths which indicate shoal spots on the present survey, and which are nearest to the charted 48 foot depth, are noted below with distances and directions referred to the charted 48 foot depth:- A 53 foot depth about 0.58 mile, 114° true. A 54 " " " 0.7 " 142° " The northermost sounding of a line of 54 and 55 foot soundings about 0.1 mile, 137° true. ✓
29.	39 -53.30 73 -57.10 Three 63 (10 1/2 fms) here on H-106. Other sdgs on line to NW too deep.	61	69-71	On the present survey a depth of 62 feet was obtained about 0.7 mile, 304° true from the charted 61 foot depth. ✓
30.	39 -53.65 73 -52.60	76 H-106	78-80	On present survey a depth of 75 feet was obtained about 0.6 mile, 213° true from charted 76 foot depth. ✓
31.	39 -53.80 73 -52.32	78 H-106	79	On present survey numerous depths of 78 feet were obtained in this vicinity. ✓
32.	39 -52.00 73 -52.70	78	78	On present survey numerous depths of 78 feet were obtained in this vicinity. ✓

ITEM	Lat.	Long.	Chart 1216 Charted Depth(Ft) Authority:	H-6188 Sheet 405 Depth(Ft)	Remarks
33.	39°-51.30' 73 -56.77		64 H-106 other s'dgs on line to SW are also too deep.	75-76 67-75	In this vicinity on the present survey there are no depths as shoal as or even approaching the charted 64 foot depth. ^{Incorrect. This statement based on erroneous transfer of 64. H.W.M.} The 75 foot curve outlines a shoal ridge extending into deeper water in this vicinity. There is a depth of 72 feet on this ridge in Lat. 39° 52.2', Long. 73° 54.25'; and a depth of 68 feet in Lat. 39° 50.6', Long. 73° 56.78'. Also a 67 spot 0.3 M. W of 64.
34.	39 -52.04 73 -47.00		54 Chart Letters 593(1908) Disregard. See Rev. Par. B2.	91	There are no depths in this area on the present survey as shoal as or even approaching the charted 54 foot depth. A shoal area with a least depth of 48 feet was obtained in Lat. 39° 51.7', Long. 73° 48.3'.
35.	39 -53.60 73 -44.40		66 Chart Letters 482+460(1911) Disregard. See Rev. Par. B2.	99-101	A short distance due east of this point on the present survey is the western edge of a valley, which is defined by drawing the 100, 110 and 120 foot curves, and which is about 3.5 miles wide between the 100 foot curves. Six soundings, (93 to 96 feet) on a line of the present survey, <u>indicate a shoal area between the edge of the valley and the soundings of 99-101 feet</u> , where the charted 66 foot depth plots.
36	39 -50.00 73 -59.42		57 H-106	61-62	In this general vicinity on the present survey two shoals are indicated by:- 59 feet about 0.4 mile, 223° true; and 60 feet about 0.14 mile, 65° true, from the position of the charted 57 foot depth.
37.	39 -48.84 73 -01.96		46 H-106 Other s'dgs on line consistent 14 2 to 8' dec per.	53	A 52 foot depth about 0.15 mile, 105° true from the charted 46 foot depth, is the northerly one of several 52 foot depths, which are surrounded by deeper water. <u>and a 51 ft. 0.2, 218° true.</u>
38.	39 -49.95 73 -40.30		87 H-1558	98	On the present survey these depths plot on the NW'ly slope of a shoal area, which is well outlined by drawing the following curves:- 100 ft., 95 ft., 90 ft., 80 ft., and 75 ft.,
39.	39 -49.87 73 -41.65		84 H-1558 On same line. Probably displaced	102	On a ridge, which extends in a northerly direction from the highest part of the shoal area, a depth of 87 feet was obtained in Lat. 39° 49.6', Long. 73° 39.1'. A depth of 74 feet was obtained on the shoal area in lat. 39° 47.8', Long. 73° 39.9'.

ITEM	Lat. Long	Chart 1216	H-6188	Remarks
		Charted Depth(Ft)	Sheet 405 Depth(Ft)	
40.	39 ⁵⁰ -49.50 [✓] 73 -46.45	66 Authority: Source not known. See Rev., par. 82. Disregard. H.W.M.	93	There are numerous shoal areas indicated on the present survey between the 90 and 95 foot curves. 85 feet, which is the least depth on the nearest shoal area, was obtained about 0.6 mile, 60° true from the position of the charted 66 foot depth. A depth of 75 feet, on the NE end of a long shoal area was obtained about 1.8 miles, 262° true from the position of the charted 66 foot depth.
41.	39 - 47.95 73 -54.90	70 close to 70' depth on H-3773	79	On present survey a depth of 72 feet was obtained 0.5 mile, 250° true; and a depth of 70 feet was obtained 1.2 miles, 213° true from the position of the charted 70 foot depth.
42.	39 -49.40 73 -57.75	* 56 carried forward on present survey	60-65	On present survey a depth of 58 feet was obtained about 0.2 mile, 240° true from the position of the charted 56 foot depth. ✓
43.	39 -47.90 73 -58.30	* 57 carried forward on present survey	60	On the present survey this position plots on the SW end of a shoal, which has a least depth of 58 feet near its NE end.
44.	39 -47.46 73 -58.10	* 59 carried forward on present survey	66	On present survey this position plots on the southern slope of a shoal, the highest part of which is 0.5 to 1.0 mile north of the charted 59 foot depth. This shoal has a least depth of 58 feet.
45.	39 -47.00 73 -58.90	* 58	66-67	On present survey depths of 64 and 65 feet, about 0.1 to 0.2 mile, 160° true from the position of the charted 58 foot depth, indicate a shoal area.
46.	39 -46.95 73 -59.85	* 58 carried forward on present survey	61	On present survey a depth of 59 feet was obtained about 0.1 mile, 260° true from the position of the charted 58 foot depth. ✓
47.	39 -46.96 74 -00.33	* 55	59-60	On present survey a depth of 56 feet was obtained about 0.14 miles, 275° true from position of charted 58 foot depth. ✓
48.	39 -48.98 73 -59.54	* 58	61-66	In this area on the present survey a shoal is indicated by a 61 foot depth which was obtained about 0.15 mile, 110° true from the position of the charted 58 foot depth. ✓

* Note:- The source of these charted depths is sheet H-3773, 1915.
(See Rev., par. 7b for add'l information).

ITEM.	Lat.	Charted	⁴⁻⁶¹⁸⁸ Sheet 405	Remarks
	Long.	Depth(Ft)	Depth(Ft)	
49.	39°-46.10'	54	59	A shoal developed on the present survey has a least depth of <u>56</u> feet about 0.1 mile, 313° true from the position of the charted 54 foot depth.
	74 -00.20'	H-106 H-105		

The source of this charted 54 foot depth is sheet H-105, 1840

The above charted depths were all obtained from Chart No. 1216.

The following charted depth was obtained from Chart No. 1108.

50.	39 -53.70	84	92	On the present survey, about 0.2 mile, 260° true from the position of the charted 84 foot depth, there is a depth of 84 feet, which is near the northeast end of a shoal area. This shoal area has a least depth of <u>80</u> feet in Lat. 39° 52.70& Long. 73° 38.1'.
	73 -37.20			

STATISTICS FOR SHEET # 405

PROJECT HT # 207

Day	Date	No. of Positions	No. of Soundings	Stat. Mi.	Vol. No.
A	Aug. 10	7	157	11.0	1
B	Aug. 20	92	843	80.1	1
C	Aug. 21	131	1232	115.0	1 & 2
D	Aug. 22	222	1309	121.7	2
E	Aug. 23	140	837	48.6	2 & 3
F	Aug. 24	157	717	56.6	3
G	Aug. 25	227	1372	117.2	3 & 4
H	Aug. 26	2	21	0.1	4
J	Sept. 2	176	1085	74.6	4
K	Sept. 3	66	485	40.6	4 & 5
L	Sept. 4	34	219	15.9	5
M	Sept. 10	204	1353	112.3	5
N	Sept. 11	141	1023	75.9	5 & 6
P	Sept. 12	22	129	8.5	6
Q	Sept. 13	8	86	5.6	6
R	Sept. 14	228	1188	113.1	6 & 7
S	Sept. 15	257	1512	132.3	7
T	Sept. 16	266	1509	128.9	8
U	Sept. 24	39	253	24.2	8
V	Sept. 25	237	1448	119.1	8 & 9
W	Sept. 26	204	1207	103.3	9 & 10
X	Sept. 27	88	344	31.5	10
Y	Sept. 28	33	196	17.4	10
Totals		<u>2981</u>	<u>18525</u>	<u>1553.5</u>	<u>10</u>

LIST OF SIGNALS - SHEET 405 - 1936

Triangulation

Hydro. Name WORKS	Station Name	Source	D. M. s & D. P. s		
			Lat.	Long.	Meters
	Point Pleasant Water Works Standpipe 1934	Adjusted Positions 1927 N. A. Datum N. J. page 294	40 05	74 02	476.1 1168.9
BAY	Bayhead water tank 1932 (N.J.)	" " N, J. page 27	40 04 74 02		188.4 1048.8
APEX	Point Pleasant Municipal tank 1934	" " N. J. page 288	40 05 74 02		300.6 1184.4
LAV	Lavallette standpipe 1926 - 1932	" " N. J. page 28	39 58 74 04		219.3 444.9
POLE	Flag, 1934	" " N. J. page 287	40 01 74 03		1219.7 268.8
TOW	Chadwick, C. G. watchtower, 1935	" " N. J. page 337	39 59 74 03		485.5 1117.3
HE	Seaside Heights standpipe, 1926-1932	" " N. J. page 28	39 56 74 04		1120.0 968.4
CHAD	Chadwick 1932	" " N. J. page 16	39 59 74 03		475.8 1118.9
BEACH	Island Beach C. G. Sta. 1926 - 1932	" " N. J. page 29	39 53 74 04		1356.6 1336.9
SIDE	Seaside Park water tank 1926	" " N. J. page 37	39 54 74 04		1595.3 1410.7
CREEK	Cedar Creek Coast Guard Sta. 1926	" " N. J. page 37	39 51 74 05		216.7 367.6
BARN	Barnegat Lt. 1872 - 1932	" " N. J. page 22	39 45 74 06		1578.4 568.7
CEDAR	Cedar Creek C. G. flagtower 1935	" " N. J. page 339	39 51 74 05		214.9 393.2
RIV	Forked River C. G. watchtower 1935	" " N. J. page 340	39 48 74 05		271.4 915.4

Hydro. Name	Station Name	Source	D. M. s & D. P. s		
			Lat.	Minutes	Meters
FORK	Forked River C. G. flagtower 1935	Adjusted Positions 1927 N. A. Datum N. J. page 340	39 74	48 05	283.9 911.0
TOMS	Toms River C. G. cupola - 1935	" " N. J. page 338	39 74	56 04	183.8 569.4
WEST	Barneгат C. G. west gable cupola 1935	" " N. J. page 340	39 74	45 06	923.6 462.3
GET	Barneгат C. G. flag- tower 1935	" " N. J. page 340	39 74	45 06	901.4 448.1
LOVE	Loveladies C. G. cupola 1935	" " N. J. page 340	39 74	43 07	1510.0 523.7
LONE	Lone building cupola 1935	" " N. J. page 339	39 74	53 05	1414.9 154.8
FLY	Fly, 1932	" " N. J. page 17	39 74	50 05	4.0 659.2
INLET	Inlet 1932	" " N. J. page 17	39 74	46 05	1144.1 1106.4

LIST OF SIGNALS - SHEET 405 - 1936Survey Buoys

Hydro. Name	Station Name	Source	Latitude & Longitude		
			Degrees	Minutes	Meters
XES	XES	Field Computation	40	02	412
			73	47	281
YET	YET	" "	40	00	270
			73	47	664
ZIP	ZIP	" "	39	57	1327
			73	47	1304
ALSO	ALSO	" "	39	55	680
			73	48	524
BALM	BALM	" "	39	53	42
			73	48	1168
BOSH	BOSH	" "	39	52	1719
			73	48	1362
BO	BO	" "	39	52	1707.3
			73	48	1383.7
COAT	COAT	" "	39	50	1275
			73	49	383
CAT	CAT	" "	39	50	1222.2
			73	49	405.9
GUT	GUT	" "	39	48	797.5
			73	49	825.5
GUTH	GUTH	" "	39	48	781
			73	49	837
HILL	HILL	" "	39	46	175
			73	49	1282
ILL	ILL	" "	39	45	1472.3
			73	50	79
IDLE	IDLE	" "	39	43	1424
			73	50	302
IDE	IDE	" "	39	43	669.8
			73	50	551.7

Hydro. Name	Station Name	Source	Latitude & Longitude		
			Degrees	Minutes	Meters
DUNN	DUNN	Field Computations	Lat. 39	51	1240
			Long. 73	44	94
JOHN	JOHN	" "	39	48	1164.5
			73	45	1357.5
KICK	KICK	" "	39	48	1435.6
			73	42	961.8
LAMB	LAMB	" "	39	48	1778.5
			73	39	517.4

LIST OF SIGNALS - SHEET 405 - 1936Sono - Buoys

Hydro. Name	Station Name	Source	Latitude & Longitude		
			Degrees	Minutes	Meters
No. 12	Radio Buoy #12	Field Computations	39 73	50 49	1565 248
No. 13	Radio Buoy #13	" "	40 73	00 41	782 1317
No. 14	" " 14	" "	39 73	50 36	1302 433
No. 17	" " 17	" "	39 73	50 49	1130.9 87.5
No. 18	" " 18	" "	39 73	48 35	1629.0 1292.3

DOG EAR
SHEET 405

H-6188

1-3 "R" inc 3
257-266 "7" inc 16
13-19 "V" inc 7
38-44 "V" " 7
69-76 "V" " 8
101-106 "V" " 6
133-139 "V" " 7
154-159 "V" " 6

54

39° 44'

44'

IDLE ○

IDE ○

42'

42'

52'

73° 50'

48'

6188

475

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES

APR 1957

DOG EAR
SHEET 405

H-6188

39° 44'

44'

△ LOVE

7-Positions — at Jellison

19 "P" day

*1-6 "Y" day
(1903)*

42'

42'

08'

74° 06'

04'

6188

80
92-C.K.G.

POST-OFFICE ADDRESS:

c/o Postmaster, Norfolk, Va.

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

Ship LYDONIA

October 21, 1956

1956 OCT 22 10 08 44

The Director
U S Coast & Geodetic Survey
Washington, D. C.

From: Commanding Officer
Ship LYDONIA

Subject: Shoal soundings along coast of New Jersey.

This acknowledges receipt of your letter of the 19th inst. - ref. 82 LEF - regarding the above subject.

Your assumption that the information is desired in connection with reports on surveys is correct. This is particularly so as paragraph 15 of our instructions for project No. 207 calls for "definite recommendations - - for the retention or rejection of the dangers (reported shoals, wrecks, etc., ?) on the charts." Unless we know something regarding the reliability of the source of shoal soundings we will be handicapped in making "definite recommendations" regarding them. For example a shoal sounding found by a previous survey and checked by adjacent soundings would naturally be more reliable than a report by some mariner based on a single sounding and a dead reckoning position.

The only information now available to this party is a photostat copy of a survey of this area made in 1883, and the soundings mentioned in my letter of October 15th were not located by that survey.

If the reviewer of the hydrographic sheets will bear in mind that our "definite recommendations" are made without full knowledge of the origin of the shoal soundings it will be unnecessary to furnish us with the data requested.

George D. Cowie

George D. Cowie
Lieut-Commander C&GS
Commanding Ship LYDONIA

POST-OFFICE ADDRESS: c/o Postmaster, Norfolk, Va.

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

80 CKG 82

20

22 8:48

1936 OCT -17- AM 8:48

ANSWERED

OCT 19 1936

DIVISION OF CHIEFS

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

Ship LYDONIA

October 15, 1936

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

From: Commanding Officer
Ship LYDONIA

Subject: Shoal soundings along coast of New Jersey.

It is requested that the party on the LYDONIA be advised as to the source of the following shoal soundings not found in their charted locations:

Depth	Lat.	Long.
54 feet	39° - 52'	73° - 47'
54 "	" 39° 57'	" 73° 54'
63 "	39° 56'	" 73° 55.5'
54 "	39° 58.5'	" 73° 59'
51 "	39° 52.7'	" 73° 59.5'
52 "	39° 51.3'	" 74° 01'
48 "	39° 51.8'	" 74° 02.2'
46 "	39° 49.0'	" 74° 02'
66 "	39° 53.5'	" 73° 44.4'

George D. Cowie

George D. Cowie
Lieut-Commander C&GS
Commanding Ship LYDONIA

82-LEF

October 19, 1936.

To: Commanding Officer,
Coast and Geodetic Survey,
Ship LYDONIA,
c/o Postmaster,
Norfolk, Virginia.

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

Subject: Shoal soundings along coast of New Jersey.

In acknowledging the receipt of your letter of October 15, 1936, requesting the source of charted shoal soundings along the New Jersey coast, this office desires to furnish such information in all cases when the requests are submitted during the progress of the field work. Since your field season in the area in question is closed, it is assumed that the information is desired in connection with the preparation of the reports which will accompany your surveys when submitted to the office.

Considerable investigation and research would be necessary to furnish this material, which would have to be more or less duplicated at the time your surveys are taken up for review. It is not, therefore, considered economical to investigate the requested shoal soundings for your use in preparing reports.

If there are other reasons why the information is desired at this time, please so advise and your request will be reconsidered.

Acting Director.

cc to H. & T. Division

C. H. G.
K. H. A.
4/11

C.K.G.
KTA
GHC

82-LEF

October 23, 1936.

To: Commanding Officer,
Coast and Geodetic Survey,
Ship LYDONIA,
c/o Postmaster,
Norfolk, Virginia.

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

Subject: Shoal soundings along coast of New Jersey.

Your letter of October 21, 1936, regarding the above subject, is acknowledged.

In considering the recommendations which you will make regarding the retention or rejection of charted shoals, cognizance will be taken of the fact that the sources of the charted shoal soundings were not available to the field party. Your letters of October 15 and October 21, 1936, will be attached to your descriptive report covering the area in question upon receipt of the report.

(Signed) J. S. [unclear]

Asting Director.

FWC

TIDE NOTE FOR HYDROGRAPHIC SHEET

May 4. 1937.

Division of Hydrography and Topography:

Division of Charts: Attention Mr. E. P. Ellis

Tide Reducers are approved in
10 volumes of sounding records for

HYDROGRAPHIC SHEET 6188

Locality East of Barnegat Bay, New Jersey

Chief of Party: G. D. Cowie in 1936
Plane of reference is mean low water, reading
4.1 ft. on tide staff at Atlantic City
15.8 ft. below B.M. 32

Height of mean high water above plane of reference 4.1 feet.

Condition of records satisfactory except as noted below:

Atty *Stam*
Chief, Division of Tides and Currents.

GEOGRAPHIC NAMES
 Survey No. **H6188**

Name on Survey	On Chart No. 1216		On previous survey		On U. S. quadrangle Maps		From local information		On local Maps		P. O. Guide or Map		Rand McNally Atlas		U. S. Light List	
	A,	B,	C,	D	E	F	G	H	K							
<u>New Jersey</u>	✓ app'd															1
<u>Barnegat Inlet</u>	✓ app'd															2
<u>Island Beach</u>	✓ app'd															3
<u>Mantoloking</u>	✓ app'd															4
																5
																6
																7
																8
																9
																10
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																19
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																21
																22
																23
																24
																25
Names underlined in red approved																26
by <u>SAE</u> on <u>4/29/37</u>																27

Remarks

Decisions

	Remarks	Decisions
1		
2		<i>see T-5097</i>
3		<i>see T-5329</i>
4		<i>see</i>
5		
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27		

Field Records Section (Charts).

HYDROGRAPHIC SHEET NO. **H6188**
.....

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

Number of positions on sheet	2981.
Number of positions checked	...21.
Number of positions revised0.
Number of soundings recorded	18525
Number of soundings revised10
Number of signals erroneously plotted or transferred0.

Date: *July 22, 1937.*

Verification by } *Edith K. ...*
Trakling

Time: *106 hr.*

Review by *Harold W. Murray*

Time: *40 "*

Ver. Cor. by " "

12 "

HYDROGRAPHIC SURVEY NO. H-6188

Smooth Sheet Yes

Boat Sheet Yes

Sounding Records 10 Vols. _____

Bombing Records 1 Vol. _____

Descriptive Report Yes

Title Sheet Yes

List of Signals Vol. #1

Landmarks for Charts (Form 567) Yes

Statistics Yes

Approved by Chief of Party Yes

Recoverable Station Cards (Form 524) None

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

HYDROGRAPHY

Remarks _____ Total Days 23

_____ Last Date Sept. 28, 1936

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
 DESCRIPTIVE REPORT } No. H -6188
~~PHOTOSTAT OF~~ } ~~No. 11~~

{ received April 23, 1937
 { registered April 28, 1937
 { verified
 { reviewed
 { approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
24			
25			
26			
30			
40			
62			
63			
82	<i>Capt. Ellis</i>	<i>ELE</i>	<i>page 4</i>
83			
88			
90			

RETURN TO

82	C. K. Green
----	-------------

✓

Report
Verification of Hydrographic Survey 6188 (1936) Field No.405.
Offshore New Jersey Coast.

Surveyed by G. D. Cowie (LYDONIA)

1. Condition of Records.

The records conform to the requirements of the Hydrographic Manual except as noted in the review.

2. Shore line and Control.

No shore line is shown on this survey. The control was established by hydrographic signal buoys, S. R. buoys and the following topographic surveys: T-6216b, T-6375, T-6396, T-6397a&b, and T-6398b. See Rev. for origin of Hydro. and air photo signals.

3. Aids to Navigation.

Barnegat Light Ship Lat. $39^{\circ}45.9'$ Long. $73^{\circ}56.55'$ is plotted on this survey by several cuts from sounding lines on R and S days volumes 6 and 7.

Lightship buoy, Lat. $39^{\circ}46.4'$ Long. $73^{\circ}56.47'$ was located from sounding line, see position 36-37S, volume 7, page 24.

4. Sounding line Crossings.

The agreement in depth at sounding line crossings is generally very good throughout the limits of this survey. However, the relatively few differences that occur are not considered excessive. Add'l remarks in Rev., par. 3

5. Depth Curves.

The depth curves can be completely drawn within the limits of this survey.

6. Junctions with Contemporary Surveys.

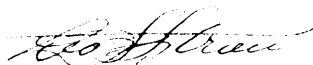
The junctions with H-6190(1936) and H-6026(1936) on the north are satisfactory.

The junction with the inshore survey H-6136(1936) on the west is satisfactory. It is to be noted that the fish traps are not in agreement with the present survey as to number, location or extent from shore seaward. Mostly due to different traps not common to both surveys. Others improved in some cases by replottting based on information in records, H.W.M.

7. Field Plotting.

The field plotting is satisfactory.

Verified by



July 22, 1937.

Leo S. Straw

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6188 (1936) FIELD NO. 405

Mantoloking to Barnegat Inlet, New Jersey Coast, New Jersey
Surveyed in August - September, 1936, Scale 1:40,000
Instructions dated April 9, 1936.

Hand Lead and Dorsey Fathometer
Soundings.

3 Point fixes on shore and
buoy signals.
RAR control.

Chief of Party - G. D. Cowie.
Surveyed by - G. D. Cowie - E. O. Heaton.
Protracted by - H. E. Finnegan.
Soundings plotted by - H. E. Finnegan.
Verified and inked by - L. S. Straw.

1. Condition of Records.

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

- a. Position numbers and day letters were shown on the smooth sheet in green. This color should be avoided wherever possible as it has a tendency to fade out if the ink is not absolutely fresh.
- b. The names of the Sono Radio buoys were indicated by numbers on the smooth sheet. In the office these have been spelled out in order to avoid a possibility of confusion with soundings if the sheet is photographed.

The Descriptive Report is clear and very comprehensive and satisfactorily covers all items of importance. See Special Report No. 1 of 1938 for velocity and lag computations.

2. Compliance with Instructions for the Project.

The plan, character and extent of the survey satisfy the Instructions for the Project except as follows:

- a. One or more split lines run just eastward of the 93 foot sounding in latitude $39^{\circ} 53.4'$, longitude $73^{\circ} 44.1'$ would have defined the eastern limit of this shoal feature.

3. Shoreline and Signals.

- a. This is an offshore survey and no shoreline is shown.

- b. The shore signals are from graphic control sheets: T-6216b (1934), T-6375 (1935), T-6396 (1935), T-6397a and b (1935), T-6398b (1935), and air photo sheets: T-5285 (1932) and T-5286 (1932).

The buoys used for control (including sono radio buoys) were located by taut wire, sun azimuths, bomb distances, bearings and combinations thereof and supplemented by several 3 point fixes on established shore or hydrographic objects, the data being filed in cahier marked "COMPUTATIONS OF BUOY POSITIONS" (LYDONIA, G. D. Cowie, 1936 - Library No. S-1457).

The cuts for hydrographic signal "YEL" in latitude $40^{\circ} 00.6'$, longitude $74^{\circ} 03.5'$ are indexed in the index of Volume 3 of the sounding records.

4. Sounding Line Crossings.

Agreement of such cross lines as were run or result from the work generally agree within 1 to 2 feet. A number of 2 to 4 foot differences, however, are noted in the Descriptive Report (pages 3 to 6). These occur in areas of slightly changing bottom and similar depths are generally shown on the main system of lines just close by. No adjustments were made in the office except that small changes were made in plotting of soundings in the vicinity of some of the turns.

In the vicinity of latitude $39^{\circ} 52'$ to latitude $40^{\circ} 01'$ and longitude $74^{\circ} 02'$ the hand lead sounding line 1 to 62F varied 2 to 3 feet deeper than the adjacent parallel fathometer lines and introduced improbable irregularities in the depth curves. The field party was of the opinion that these differences are due to the existence of a bow wave when the ship is underway and recommended that 2 feet be subtracted from the hand lead soundings (see discussions in Descriptive Report pages 3 and 4 and Report on Fathometer Corrections pages 3 and 4 - Accession No. S-1457). While the difference may be due to the height of the bow wave (not actually determined) it is possible that the discrepancies may be traceable to the speed of the boat which in this case was 5 to 6 knots. However, in order not to have a gap in the work and to show that no shoal spots exist in the area, the correction as recommended was applied. The corrected soundings have been entered in the sounding volumes and are shown on the smooth sheet in brown.

5. Depth Curves.

The usual depth curves may be completely drawn. Some of the irregularities in the 10 fathom curve, however, are accentuated by small differences in sounding line agreement.

6. Junctions with Contemporary Surveys.

- a. The junction on the west with inshore sheet H-6136 (1936) is excellent.
- b. The junctions on the north with H-6190 (1936) and H-6026 (1936) are excellent. Some minor discrepancies, however, are mentioned in the Descriptive Report (page 6).
- c. The Descriptive Report (page 6) discusses a junction on the east with Field Sheet No. 404 (1936). The fathometer operation was unreliable and a resurvey has been authorized. (See instructions to OCEANOGRAPHER dated May 8, 1937). This junction will be considered when the new survey is received in the office.
- d. Junctions with surveys to the south (authorized by the instructions) will be considered when that work is received from the field.

7. Comparison with Prior Surveys.

- a. H-100 (1842), H-101 (1844), H-102 (1840), H-104 (1840)
H-105 (1840), H-106 (1840), H-108 (1840), H-111 (1841)
H-112 (1841), H-113 (1847), H-670 (1859), H-749 (1861)
H-1498a(1880-83), H-1531 (1882), H-1558 (1882-3), H-1578b (1883)

The above surveys are on various scales varying from 1:10,000 to 1:400,000. Portions of each taken singly or together cover the entire area of the present survey. Of these, the 1840 surveys: H-102, H-104 and H-105 are each replottings on larger scales of portions of H-106 (1840).

The Descriptive Report (pages 8 to 13) lists 50 comparisons of critical soundings (charted), 37 of which originate with the above surveys but principally with H-106 (1840). Inasmuch as these comparisons include the main features of the above surveys, a further office comparison would serve no useful cartographic purpose and is omitted. Agreement of the above listed soundings is varied. A few agree closely in position and depth with the present survey. Some agree fairly well in position but vary several feet shoaler than the present survey's least depths. These differences are partly accounted for by a note on H-106 (1840) which states that since no record of tides was kept in 1840, the hydrographer "assumed a constant quantity of 6 feet at H.W. and reduced accordingly". A number of other critical soundings vary as much as 14 feet shoaler and also as much as 0.8 miles in position with the nearest shoal area on the present survey. These differences are probably due to a combination of the arbitrary 6 foot tide correction just mentioned, possible changes in depths and displacement of sounding lines, H-106 (1840) being mainly controlled by angles measured to the ship by observers on shore stations. This is borne out by the fact that these shoal areas are of such extent that the present survey develop-

ment could not fail to show an indication of them if they existed.

The present survey with its better control and closer development should supersede these surveys in future chartings.

b. H-3773 (1915).

A portion of this 1:50,000 scale sheet covers a small portion of the present survey on the south. Depths of 13 fms. or less are hand lead and those greater than 13 fms. are trolley soundings. Control is by 3-point fixes on shore or buoy signals.

The depths on this survey are generally borne out by the present survey, no general differences being noted except in some least depths in the vicinity of lat. $39^{\circ} 48'$, long. $73^{\circ} 58'$. (See D. R. (page 12, items 42 to 48) for comparison of several specific soundings.) Of these, two 56's and one 57 foot sounding fall within the limits of a shoal area defined by the 60 foot curve and in depths about 4 feet deeper on the present survey. The present survey development does not disprove their existence and they have therefore been carried forward. Just south-south-westward of the above shoal area, a 58 and 59 foot sounding fall in depths about 6 feet deeper on the present survey. Both are single soundings on line. Inasmuch as the present survey development is not sufficiently close to disprove the existence of the 58 and 59, and since adjacent depths on both surveys are in good agreement, they are being carried forward and should be used in future chartings.

Except as noted above the present survey should supersede this 1915 survey in future charting.

8. Comparison with Charts 1216 (New Print dated Oct. 7, 1936) and 1108 (New Print dated Oct. 10, 1936).

a. Hydrography.

Hydrography shown on the charts originate with surveys discussed in preceding paragraphs of this review and the following miscellaneous sources:

- (1). The 54 foot sounding in lat. $39^{\circ} 56.9'$, long. $73^{\circ} 54.2'$ falling in depths of 76 to 81 feet on the present survey and between sounding lines spaced 190 m. apart, originates with Chart Letter 47 of 1909 received from the Revenue Cutter Service. The 54 is the least depth over the hull of a wrecked barge (name unknown), the masts of which were showing above water and were removed and towed near the beach. The present survey development is not sufficient to disprove the existence of so small an obstruction as a barge and since there is no certainty that the barge has disintegrated, the 54 should be retained on the chart pending an examination of the area with a wire drag. (See par. 10, this review.)

- (2) The 66 foot sounding (Chart 1216), in latitude $39^{\circ} 53.6'$, longitude $73^{\circ} 44.4'$ and a 54 in latitude $39^{\circ} 52'$, longitude $73^{\circ} 47'$ fall in depths of 100 and 92 feet respectively on the present survey. The 66 originates with Chart Letters 452 of 1911 and 460 of 1911 reported by the British Steamer DUNSTAN and the 54 with Chart Letter 593 (1908) reported by the S.S. PRINZ JOACHIM. The source of the 66 foot sounding (Chart 1216) in latitude $39^{\circ} 49.5'$, longitude $73^{\circ} 46.4'$ could not be ascertained. It is shown on the Standard of July 1922 (Chart 1216) but does not appear on the previous Standard of Nov. 1921. It falls in depths of 90 feet on the present survey. The present survey development consisting of soundings lines spaced 220 to 250 m. apart shows no evidence of a shoal of these depths in the positions as reported. It does show, however, a shoal area with least depth of 67 feet (not charted, no indication on prior surveys) about 1 mile WSW of the 54 (latitude $39^{\circ} 51.7'$, longitude $73^{\circ} 48.3'$). These reported soundings are probably displaced or inaccurate values of the 67 foot shoal and should be disregarded in future charting.
- (3) The source of the 63 foot sounding (Chart 1216) in latitude $39^{\circ} 56.1'$, longitude $73^{\circ} 55.4'$, could not be ascertained but the sounding is shown on the first Standard of Chart 1216 in 1914. It falls in depths of 72 feet on the present survey and is about 1 mile north of a shoal area with least depth of 58 feet and 0.4 mile SSE of a 69 foot sounding. In view of its uncertain origin and the shoal shown nearby on the present survey, the 63 should be disregarded in future charting.
- (4) The charted fish trap boundary limits on Chart 1216 originate with blue print 21168 which is a copy of Chart 1216 containing the boundary limits approved by the Secretary of War on Feb. 2, 1927. The fish traps located on the present survey fall within the areas designated except the fish trap in latitude $39^{\circ} 56'$, longitude $74^{\circ} 04'$ which falls in the center of a restricted area averaging about 1 mile in width.

b. Aids to Navigation.

Barnegat Lightship and marker buoy were located approximately 0.4 miles W X N and 0.25 miles NW respectively of their charted positions (Chart 1216). The charted position originates with Lighthouse Notice to Mariners 38 (Sept. 1935). The position of these aids in either case satisfactorily mark the general features intended.

9. Field Plotting.

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

10. Additional Field Work Recommended.

This survey is complete except that a wire drag examination should be made of the wrecked barge (least depth 54 feet) in latitude 39° 56.9', longitude 73° 54.2' discussed in paragraph 8a (1) of this review. ~~S4 not found~~ but wrecks found 1 and 2 mi. distant.
 Par. 2a(2), Rev. H-6462.

11. Note to Compiler.

The compiler's attention is called to the following:

- (a) Paragraphs 8a (2) and (3), this review, relative to reported soundings that should be expunged from the chart.
- (b) Paragraph 8a (4), this review, relative to a fish trap which falls outside areas designated by the War Department.

12. Superseded Prior Surveys.

Within the area covered, the present survey supersedes the following surveys for charting purposes:

H-100 (1842)	in part	H-112 (1841)	in part
H-101 (1844)	" "	H-113 (1847)	" "
H-102 (1840)	" "	H-670 (1859)	" "
H-104 (1840)	" "	H-749 (1861)	" "
H-105 (1840)	" "	H-1498a (1880-83)	" "
H-106 (1840)	" "	H-1531 (1882)	" "
H-108 (1840)	" "	H-1558 (1882-83)	" "
H-111 (1841)	" "	H-1578b (1883)	" "
		H-3773 (1915)	" "

13. Reviewed by - Harold W. Murray - Aug. 25, 1937.

Inspected by - A. L. Shalowitz.

Examined and approved:

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

K. T. Adams
 Acting Chief, Division of Charts.

Fred. L. Peacock
 Chief, Section of Field Work.

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

Applied to drawing of Chart 1216 - Jan 19, 1938 - JFW.

" " " " 1000 July 1938 Z.M.A.

" " " " 1108 April 1938 R.M.Z.

" " " " 825 Oct. 1939 B.R.

Z.M.A.