

9533

Mag. Cht. No. 1218-2

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT (HYDROGRAPHIC)

Type of Survey **HYDROGRAPHIC**
Field No. **AHP-20-4-75**
Office No. **H-9533**

LOCALITY

State **NEW JERSEY**
General Locality **DELAWARE BAY**
Locality **CAPE MAY POINT TO EAST POINT**

1975

CHIEF OF PARTY
J. O. ROLLAND

LIBRARY & ARCHIVES

4-12-77

DATE

*Area 2 7/28/77
Charts 1218 applied?
1219
applied pp 826-25 "B"*

9533

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✓: Items removed from the D.R. and filed with the field records

HYDROGRAPHIC TITLE SHEET

H-9533

INSTRUCTIONS - 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.

AHP-20-4-75

State New Jersey

General locality Delaware Bay

Locality Cape May Point to East Point

Scale 1:20,000 Date of survey May 19 to Oct. 16, 1975

Instructions dated April 18, 1975 Project No. OPR-492

Vessel AHP- Launch 1260, Launch 1002

Chief of party LCDR John O. Rolland

Surveyed by LTJG William E. George, S. Bradford, L. Gilden, R. Snow, W. Sprye, S. Weisner

Soundings taken by echo sounder, hand lead, pole

Graphic record scaled by W. E. George, S. Bradford, R. Snow

Graphic record checked by Verification Branch, AMC

Protracted by _____ Automated plot by Calcomp plotter # 618

Verification by B. J. Stephenson

Soundings in ~~fathoms~~ feet at MLW MHW

REMARKS: See paragraphs "G" and "Q" for information about hand plotted work as well as automated plotting which appears on this survey.

Approved to state 7/27/77
[Signature]

1.

RWW 8/27/92

DEPTH	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45
50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65
70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

H-9533
(1:20,000)
1975

PROJECT LIMIT SKETCH
OPR-492-AHF-75
DELAWARE BAY

EAST POINT T.G.

KYABLES BEACH T.G.

JACKSON PIER T.G.

CAPE MAY BEACH T.G.

LAUREL

DELAWARE BAY

DELAWARE BAY

UNION BRIDGE - LAUREL CANYON
 NEW JERSEY - DELAWARE

DELAWARE BAY

SOUNDINGS IN FEET

1:20,000

1975

OPR-492-AHF-75

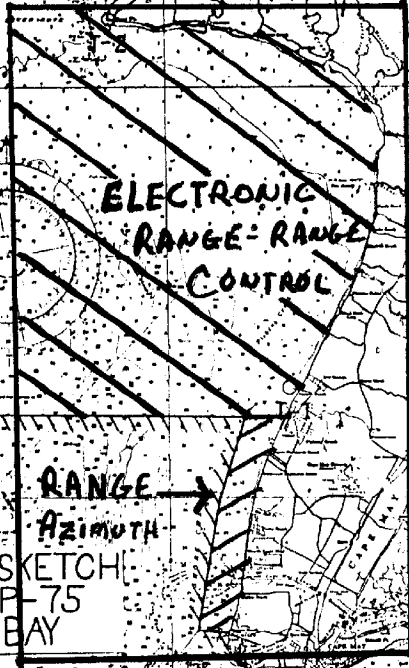
DELAWARE BAY

2.

4

DEPTH	10	20	30	40	50	60	70	80	90	100
10	10	10	10	10	10	10	10	10	10	10
20	20	20	20	20	20	20	20	20	20	20
30	30	30	30	30	30	30	30	30	30	30
40	40	40	40	40	40	40	40	40	40	40
50	50	50	50	50	50	50	50	50	50	50
60	60	60	60	60	60	60	60	60	60	60
70	70	70	70	70	70	70	70	70	70	70
80	80	80	80	80	80	80	80	80	80	80
90	90	90	90	90	90	90	90	90	90	90
100	100	100	100	100	100	100	100	100	100	100

H-9533



PROJECT LIMIT SKETCH:
OPR-492-AHP-75
DELAWARE BAY

RANGE →
AZIMUTH →

ELECTRONIC
RANGE-RANGE
CONTROL


 UNITED STATES COAST AND GEODETIC SURVEY
 NEW JERSEY - DELAWARE
DELAWARE BAY

DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SURVEY H-9533 (AHP-20-4-75)

SCALE: 1:20,000
VESSEL: Atlantic Hydrographic Party

1975
Chief of Party John O. Rolland

✓
A. Project

The project number of this survey is OPR-492-AHP-75. The date of the original project instructions is 18 April 1975.

Supplemental instructions were issued as Change No. 1 to Project Instructions, and dated 6 May 1975.

The Chief, Hydrographic Data Section, assigned this survey's registry number on 5 June 1975.

✓
B. Area Surveyed

The area covered by this survey is the eastern shore of the Delaware Bay from Cape May Point, New Jersey north to East Point, New Jersey.

The general locality of this survey is the western shore of southern New Jersey.

The northern limit of this survey is at Latitude $39^{\circ} 12.3' N$. The southern limit of this survey is at Latitude $38^{\circ} 56.1' N$. The eastern limit of the survey is at Longitude $74^{\circ} 52.6' W$. The western limit of the survey is at Longitude $75^{\circ} 05.1' W$.

This survey began on 19 May 1975 and terminated on 16 Oct. 1975.

✓
C. Sounding Vessel

The following survey vessels were used to obtain soundings during this survey:

<u>Vessel</u>	<u>Letter Designations</u>	<u>EDP Number</u>
AHP Launch 1260	28' Monark	1260
MI-5	28' Jensen	1002

✓
D. Sounding Equipment and Corrections to Echo Soundings

The following echo sounding equipment was used aboard AHP Launch 1260:

Raytheon Fathometer, No. 1279 Type DE 723

The following echo sounding equipment was used aboard MI-5:

Ross Fineline 5000, No. 1053

The general depths encountered by Launch 1260 were from 3 to 28 ft. When depths less than 3 ft. were taken, a sounding pole was used.

The general depths encountered by MI-5 were from 5 to 45 ft.

All echo sounding equipment worked in a satisfactory manner during the survey.

The methods used to determine, evaluate and apply the following listed corrections to echo soundings are as follows:

- (1) Velocity of sound through water -- not used.
- (2) Variations in the instrument's initial -- this error was detected by careful scanning of the fathograms for initial error. When the initial of a fathometer was found to be off, an appropriate correction was entered to all soundings through the TRA correction on the electronic corrector tape.
- (3) Other instrument corrections -- during this survey, frequent digital phase checks were performed. Frequent F-scale checks on the DE 723 fathometer were made as hydrography progressed.
- (4) Corrections determined from direct comparisons-- Daily bar checks were taken to establish separate tables of corrections to depth for each echo sounding unit. Draft correction is included in velocity tables. No draft was used on Master Tapes. All bar check gear and lead lines were checked before and after the survey to insure that no changes in the length of the gear occurred.
- (5) Settlement and Squat -- previously determined correctors for settlement and squat were used as a source for this correction for each boat. In addition, settlement and squat tests were performed on Launch 1002.

An abstract of the settlement and squat corrections will accompany this report for each vessel.

✓
E. Hydrographic Sheets

The field sheet for the part of this survey where the range-azimuth positioning method was used was produced by the Atlantic Marine Center. The remaining section of the survey was done by the Electronic Range-range method. The hydrographic sheets used for this part of the survey were produced by Launch 1002's complot system.

All field records will be sent to the Atlantic Marine Center for automated smooth plotting and verification. Information on the projection and electronic control parameters will be placed at the end of the Descriptive Report.

The field sheet used to plot the range-azimuth part of the survey is a 1:20,000 polyconic projection. The remainder of the survey has been plotted on an automated system which used a 1:20,000 modified transverse mercator projection.

✓
F. Control

All of the following horizontal positions listed below were used for hydrographic signals and stations. All control stations were located by third order ground survey methods and provided by Photo Party 62.

<u>Station No.</u>	<u>Name</u>	<u>Latitude</u>	<u>Longitude</u>
002	Cape May LH, 1859- 1932 1972	38-55-58.383 ✓	74-57-38.759 ✓
019	Cape May Canal West entrance south jetty Light, 1975	38-57-56.615 ✓	74-58-01.058 ✓
022	Calibration Point "Alpha" CROW SHOAL	38-58-03.653 ✓	74-57-31.667 ✓
023	Cape May Ferry Terminal Range Rear Light, 1975	38-58-24.781 ✓	74-57-27.903 ✓
024	JG-10B	39-05-01.221 ✓	74-54-22.376 ✓
026	Calibration Point "Beta"	39-05-51.677 ✓	74-54-11.510 ✓
031	GE-02	39-11-08.638 ✓	74-56-42.421 ✓
032	GE-01	39-07-36.792 ✓	74-53-29.322 ✓
025	GE-03	39-11-26.440 ✓	75-00-14.864 ✓

✓JR 815

The following is a list of inverse distances for calibration provided by Photo Party 62.

<u>Station Pair</u>	<u>Inverse Distance</u>
019 to 022	760.860 meters
024 to 026	1577.670 meters
025 to 026	13,516.920 meters
031 to 026	10,424.448 meters
032 to 026	3396.217 meters

Copies of appropriate geodetic abstracts were provided by Photo Party 62 and will accompany this report.

✓
G. Hydrographic Position Control

Methods of sounding line position control used for this survey were range-range and range-azimuth.

The electronic control equipment used was Del Norte distance measuring gear.

The following list specifies the different Del Norte components used during this survey.

<u>Unit</u>	<u>Model</u>	<u>Serial No.</u>	<u>Used at/or Aboard</u>
Distance Measuring Unit	202-R01A	122	1002/1260
Distance Measuring Unit	202-R01A	123	1002/1260
Shore Station A	Vega	163	025/024
Shore Station B	Vega	164	025/024
Shore Station C	Vega	165	Not used
Shore Station D	Vega	225	025
Master	Vega	162	Not used
Master	Vega	163	1260/1002
Master	210	187	1002
Shore Station "B"	210	Unknown	025

Whenever a Del Norte unit was suspected of improper performance or showed signs of malfunction, the unit was replaced at once with a spare unit. All hydrography was performed using good quality electronic control that was checked twice daily for proper calibration.

The method of checking and or setting in the proper calibration on the Del Norte gear was to bring the survey launch **up** to a known point such as a pipe or piling. Then the dials were set to the proper reading which was determined previously by Photo Party 62.

All calibrations were recorded in the sounding volumes with the beginning and end of day stamps. An exhibit of this stamp is included with this report.

On the following Julian days, all calibrations were erroneously recorded due to a lack of team work between the launch chief and the recorder: J.D. 190, 196, 198, 223, 224, 225, 226, 227, 238, 251, 252, 253 and 258.

The recorder was told if the calibration was good (meaning zero correction). The actual values were not called out. The recorder filled out the calibration stamp with values which were not correct.

In all cases, the calibrations were good and no correction should be applied. However, to keep the records uniform, all calibrations which were erroneously recorded have been rejected and the proper entries made in their place by the OIC.

A copy of the Abstracts of Corrections to Electronic Position Control will be included in the Electronic Control Report which is appended to this report.

CALIBRATION OF ELECTRONIC CONTROL

CAL. PAIR.	025 to 026	024 to 026
CHANNEL	A	B
TRUE DIST.	13,517 m	1578 m
OBS. DIST.	13,517 m	1576 m
CORR.	<u> </u>	<u> </u>

Readings recorded as observed.

✓
H. Shoreline

The following shoreline manuscripts were used to show all shoreline detail on the field sheets:

TP-00126
TP-00132
TP-00131
TP-00127
TP-00130

Shoreline details appear to be adequate on manuscripts to be used without any additional editing.

✓
I. Crosslines

Crosslines were run in excess of 10% of the regular system of hydrography. The magnitude of discrepancy is normally 1 to 1 1/2 feet. With properly zoned smooth tides, these discrepancies should disappear. It should be noted that no discrepancies appear where crosslines cross hydrography that was run on the same Julian day.

It should also be noted that where range-azimuth work was performed, no velocity corrections were applied. All other soundings on the field sheet have velocity corrections applied.

✓
J. Junctions

The junction survey furnished for this survey was H-9241(1:20,000) 1971.

No contemporary surveys junction with this survey.

This survey junctions with general good agreement with H-9241(1:20,000) 1971.

✓
K. Comparison with Prior Surveys

No prior surveys of the area surveyed were provided.

The following Presurvey Reviews have been investigated and will be discussed here.

Pre-survey Review Item #1

Described as: Piles charted in Lat. $39^{\circ} 08.80'$, Long. $74^{\circ} 55.97'$, the remains of an abandoned Army and Navy bomb target covered at high water. (Originate with Bp 50093 of 1953)

Instructions: The present existence of this feature should be verified or this feature should be verified or disproved recognizing that these piles may now be broken off or submerged.

✓
Results of Investigation:

A thorough investigation of the area was made at MLW. No sounding lines were run. No trace of any pilings was found. It is recommended that this item be ~~deleted from~~ the chart. ^{retained on} *The piles are neither verified nor disproved by the present survey.*
Retained on chart as 25 x 40 ft pile.

✓
Pre-survey Review Item #2

Described as: Obstruction reported charted in Lat. 39° 10.40', Long. 75° 02.40'. The source of report of the structure is from an undetermined nature. This obstruction is charted at the entrance to Maurice River dredged channel in depths of 7 to 8 feet. *The Obstr. originates with LNM 31/61.*

Instructions: The area should be thoroughly investigated to verify or disprove the existence of the obstruction. Investigation may be implemented by use of an improvised drag.

Results of Investigation:

A thorough development (Day 252 positions 2783 to 2793) was run in the reported area of this obstruction. Nothing on the bottom was found. In the area reported, however, there are numerous fish stakes which are unlighted. It is very possible that these stakes could be hit at night when making an approach to the Maurice River Channel.

It is recommended that this item be retained on the charts with an appropriate explanation of the possible hazards. Concur

✓
Pre-survey Review Item #4

Described as: Sunken wreck charted in Lat. 39° 06.79', Long. 75° 03.70' from H.O.N. to M. 28 of 1951, has been reported to be a barge.

Instructions: No specific investigation of this wreck is necessary. However, the fathograms on sounding lines should be examined for indications of the wreck and any found should be investigated.

Results of Investigation:

A complete development (Launch 1002 Day 288 position 8223-8249) was run over this area, where the wreck is charted. Nothing was found. It is recommended that this item be ~~deleted from~~ the chart. ^{retained on}

Dashed-circled Un-numbered Pre-survey Review Items

The following is a list of unnumbered Pre-survey Review Items which appear on this survey:

<u>Charted as</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Results</u>
2 ft. sounding	39° 17.00 ^{0.95'}	75° 03.10 ^{4'}	Not found
5 ft. sounding	39° 05.60'	75° 02.50'	Not found
6 ft. sounding	39° 07.90'	74° 56.43 ^{39'}	Not found
6 ft. sounding	39° 07.10'	74° 57.08 ^{3'}	Not found
6 ft. sounding	39° 06.64 ^{0'}	74° 57.29'	Not found
6 ft. sounding	39° 07.51 ^{03'}	74° 55.71'	Not found
11 ft. sounding	39° 03.18'	75° 01.32'	Not found
12 ft. sounding	39° 02.75 ^{80'}	75° 01.21 ^{20'}	Not found

Note: All above locations were approximately 2 to 4 ft. deeper than the chart shows. The overall bottom outside the 6 ft. depth curve that follows the shoreline has changed. The above soundings could have been sand ridges which have moved or flattened out over the years, and should be disregarded.

L. Comparison with the Chart

The survey was compared with Chart No. 1218 (N.O. 12304), 21 st. ED., Nov. 23, 1974, scale (1:80,000). The following charted features have been compared with the survey. The results of the comparison are as follows:

1. Sunray Beach Fishing Pier, located at Lat. 39° 03.7', Long. 74° 56.2⁵'. This pier does not exist and should be deleted from the chart. In addition, an interview with the owner pointed out that all the commercial fishing piers from Cape May Point to East Point are seasonal and ~~that~~ decking of these piers are removed during the winter. The reason ~~for~~ taking in the piers decking is that the Delaware Bay ice tears down all the pilings during the winter. These piers are known as "match stick" piers and are rebuilt seasonally commencing at the end of May.

Anyone not familiar with this local custom when navigating along the shoreline in the winter could be misled by the piers as they are charted. It is strongly recommended that a note be placed on the chart stating that the piers in this area are subject to change with the seasons.

2. Priv maintd, FLR 4 sec 15 ft. "2", located at Lat. 39° 07.6', Long. 74° 54.0' does not exist as described. What does exist is a wooden stake 15 ft. high with a small amber or yellow highway road flasher on it. This aid does not equal in any way what is actually charted.

3. Bidwell Creek, located at Lat. 39° 07.6', Long. 74° 53.6' is supposedly marked by item #2 above. This creek could be used as a safe harbor refuge during a storm, but a caution note should be placed on the chart about the

severely strong currents at and inside the entrance breakwaters to this creek. After interviewing local people, it was found out that during the past few years several people have lost their boats and lives trying to come into this creek at night in bad weather. In addition, a shoal runs across the entrance to this creek at MLW. There is only 1 ft. covering this shoal.

4. Maurice River Channel in Lat. $39^{\circ} 11.0'$, Long. $75^{\circ} 02.3'$ was surveyed between buoys #3 to #5 (Launch 1260, Day 252, position 2761-2781). The results of the survey indicate that the charted depth as of 1971 is conservatively correct, but the chart should show the actual condition of this leg of the channel, to be approximately $7\frac{6}{5}$ ft. at MLW.

5. Deadman Shoal, ~~located~~ ^{charted} at Lat. $39^{\circ} 05.5'$, Long. $75^{\circ} 00.3'$ was extensively investigated and developed (Launch 1002, Day 295, positions 8319-8355). The shoal no longer exists as charted. What is now the center of the shoal is located at Lat. $39^{\circ} 04.8'$, Long. $75^{\circ} 00.3'$ and the least depth is $\frac{6}{5}$ ft. at MLW.

The chart should be changed to reflect the new shape and depths in this area.

The buoys marking this shoal will be discussed in section N., Aids to Navigation, of this report.

6. Crow Shoal Channel, at Lat. $38^{\circ} 56.0'$, Long. $75^{\circ} 00.0'$ was investigated for least depth of marked channel (Launch 1260, Day 142, positions 283-328). The least depth was found to be 10 ft. ^{in the vicinity of} at Lat. $38^{\circ} 59.88'$, Long. $75^{\circ} 00.44'$. ~~Agreement with the chart is excellent.~~ Please note that the boatsheet on which Crow Shoal was plotted had no velocity corrections applied. Therefore 1 ft. must be added to the 9 ft. sounding which appears on the boatsheet.

7. Cape May Canal West Entrance, located in Lat. $38^{\circ} 01.05'$, Long. $74^{\circ} 58.8'$. A 6 ft. shoal extends from the north breakwater to approximately 30 meters of the centerline of the canal. A special inset of the canal will accompany this survey. (Plotted as Inset on Smooth Sheet)

8. Breakwater Harbor Channel in Lat. $38^{\circ} 51.8'$, Long. $75^{\circ} 07.0'$; a development was run to check for the least depth of the $12\frac{1}{2}$ ft. channel. This channel is accurate as charted, a special inset will accompany this survey. (Not verified or smooth plotted)

9. Wrecked Helicopter, see section P. of this report.

(Not verified or smooth plotted.)

(Not within limits of this survey)
See page 16, 2-4
26.

M. Adequacy of Survey

This survey is complete and adequate to supersede prior surveys for charting.

✓
N. Aids to Navigation

A comparison was made to see if the aids to navigation which appear on the chart adequately serve the apparent purpose for which they were intended.

All aids adequately serve their intended purpose except Deadmans Shoal buoys. Due to the fact that Deadmans Shoal has shifted approximately 1 NM in a southeasterly direction, the buoys marking it should also be shifted to safely lead traffic clear of the shoal. A Notice to Mariners was reported to the USCG, Group Cape May, N.J., on 30 Oct. 1975 about this item.

✓
O. Statistics

Launch 1260

a. Total No. of pos.	2925
b. Total lineal nautical miles sounding line	759.5
c. Total square nautical miles sounding line	44.2

Bottom Samples 55

Launch 1002

a. Total No. of pos.	3319 Total both launches
b. Total lineal nautical miles sounding line	995.6
c. Total square nautical miles sounding line	58.1

Bottom Samples 45

Total Bottom Samples 100

Copies of NOAA Form 75-44 "Oceanographic Log Sheet - M, Bottom Sediment Data", are appended to this report.

✓
P. Miscellaneous

1. On 29 May 1975 a small helicopter crashed into Delaware Bay approximately 1 NM, s.w. of the west end of the Cape May Canal. After confirming the facts about the crash with the U.S.C.G., AHP- Launch 1260 proceeded to locate the wreck. A Notice to Mariners was issued by the U.S.C.G. the day of the crash.

On 30 May 1975, a development and wire drag was performed, At no time was the survey party able to foul the wire drag gear in the wreckage, although several obstructions appeared on the fathogram. Additional attempts were made to foul an anchor on the obstructions which appeared on the fathogram, but these attempts were also negative.

A comparison of depth on survey H-9241 (1:20,000) 1971 were made with those of the investigation. All general depths agreed except for the obstructions which appear to be from ²3 to 4 feet less.

The obstructions (possible helicopter wreckage) are shown on the boatsheet in the following positions:

Lat. $38^{\circ} 59.36'$	20 ft.	} (See Q.C. Report - item 12)
Long. $74^{\circ} 59.00'$		
Lat. $38^{\circ} 59.29'$	20 ft.	
Long. $74^{\circ} 58.95'$		
Lat. $38^{\circ} 59.31'$	20 ft.	
Long. $74^{\circ} 58.95'$		

The records for this investigation are listed as J.D. 150. The object of the investigation was to find and pin point the least depth of the wreckage. All information was recorded on the fathogram. Only four fixes were placed in the volume because they were the most pertinent. The rest of the fix information is on the fathogram. Fixes were only taken when an obstruction appeared. No sounding lines were run or recorded. The spacing of the search pattern was by use of Del Norte distance arcs. All fixes taken were range-visual. The left object was 019, right 002 with the Del Norte at 019.

2. Insets of the west entrance of Cape May Canal, and Breakwater Harbor Channel at Lewes Delaware were performed in addition to the survey. These insets were made to scale from Dredging Plans supplied by the Cape-May Lewes Ferry Authority. All positioning control was by the range azimuth method. Both insets had all soundings corrected for settlement and squat, tides and velocity corrections.

- (a) Inset - West entrance of Cape May Canal. Purpose of investigation was due to reported shoaling.

Vessels used were Launch 1260 and Launch 1002.

All of Launch 1260's work was run range-azimuth with the Del Norte observer at 019 and all angles were turned from the initial object at 023.

All of Launch 1002's work was run range-azimuth with the Del Norte on the sw corner of the ferry pier shooting angles from 019 to the boat. Launch 1002 was used to gain additional information which helped to better define the shoal.

- (b) Inset - Breakwater Harbor Channel. *Filed as Blueprint No. Bp-10021* The purpose was to check the *Not within limits of the survey* channel and Lewes Ferry Terminal's turning basins for shoaling.

All work run on the inset was done with Launch 1002 using the range-azimuth method. The Del Norte gear was located at point D on the corner of positively identified pier ruins. All angles were measured with the observer at pt. D and the initial object at pt. A which was a fixed aid to navigation.

Both insets are intended to aid the cartographer to compile an accurate chart. In no way are these insets intended to meet all NOS standards for hydrographic surveys especially in the area of line spacing and position control for a survey of this scale.

✓
Q. Recommendations

None

✓
R. Automated Data Processing

Automated programs used to acquire data and process this survey in the field are:

<u>Program Name</u>	<u>Number</u>	<u>Version Date</u>
Tides(Predicted)	AM 500	11/10/72
Range-Range Real Time	RK 111	8/7/74
Range-Range Non-Real Time Plot	RK 211	8/16/74
Electronic Abstract	RK 360	
Unscrambler	RK 337	8/8/74
Elinore	AM 602	3/10/72

✓
S. References to Reports

For a complete understanding of this survey the following reports have been appended to this report.

1. Electronic Control Report -- by Atlantic Hydrographic Party Launch 1260 for OPR - 492 Delaware Bay 1975.
2. Horizontal Control Report -- by Photo Party 62.

Respectfully Submitted

William E. George
William E. George
LT, NOAA
OIC, Launch 1260

4/2/76

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center:

Hourly heights are approved for Form 362

Tide Station Used (NOAA Form 77-12): East Point, N.J.
Jackson Pier, Villas, N.J.

Period: May 19 - October 22, 1975

HYDROGRAPHIC SHEET: H-9533

OPR: 492

Locality: Delaware Bay

Plane of reference (mean ~~lower~~ low water): East Point 0.0 ft.
Jackson Pier 1.7 ft.

Height of Mean High Water above Plane of Reference:

East Point = 5.7 ft; Jackson Pier = 5.3 ft.

Remarks: Recommended zoning:

<u>ne</u>	<u>Station</u>	<u>Time Correction</u>	<u>Range Ratio</u>
(1) South of 39°00'	Jackson Pier	-10 min.	x0.94
(2) 39°00' - 39°02'	Jackson Pier	Direct	Direct
(3) 39°02' - 39°05'	Jackson Pier	Direct	x1.04
(4) 39°05' - 39°08'	East Point	-30 min.	Direct
(5) 39°08' - 39°10'	East Point	-15 min.	Direct
(6) North of 39°10'	East Point	Direct	Direct

James R. Hubbard
for Chief, Tides Branch

FIELD TIDE NOTE

Field tide reduction of soundings was based on predicted tides from Breakwater Harbor, Delaware, corrected to Miami Beach, New Jersey and were interpolated by PDP 8/e computer utilizing AM 500. All times of both predicted and recorded tides are GMT.

The following gages were installed by party personnel:

<u>SITE</u>	<u>LOCATION</u>	<u>PERIOD</u>
Jackson Pier, Villas, NJ	39° 01.40' 74° 56.07'	5-20-75 8-28-75
East Point, N.J.	39° 12.00' 75° 01.22'	5-16-75 10-23-75

Jackson Pier, Villas N.J.

Gage was installed and in operation May 20, 1975. The staff was installed and leveled May 20, 1975. Excellent records were obtained with the exception of 50 hours loss from 1100 hrs, 12 July to 1200 hrs, 14 July. The trace was lost due to the paper jamming on the take-up reel.

The Jackson Pier tide gage and its box were thrown overboard by vandals on 8/28/75. The bubbler tubing parted and the staff was not disturbed. Because hydrography had already progressed north of the Jackson Pier area, this gauge was not reinstalled.

East Point, N.J.

Gage was installed and in operation May 16, 1975. The staff was installed and leveled May 15, 1975.

Adequate records were obtained with the exception of 0100 22 May to 1700 26 May and 0400 01 June to 1700 02 June. In addition three standard gages were running during this survey.

Breakwater Harbor (#1805)	Lat. 38° 47', Long. 75° 06'
Kimble Beach	Lat. 39° 06', Long. 74° 54'
Cape May Ferry Term (#1762)	Lat. 38° 58', Long. 74° 58'

Levels

In a comparison of level records, the greatest observed difference, at a station, was a 0.031 raise in the east point tide staff. The Jackson Pier Gage had negligible shift of less than 0.009 ft. in its staff.

Zoning

Zoning will be applied by Rockville smooth Tides Branch.

Electronic Control Report

To Accompany

Survey H-9533

Delaware Bay

Launch 1260/1002

✓
The Del Norte Trisponder electronic position system was used to control positions of hydrographic survey H-9533.

At no time were survey operations conducted when the Del Norte's performance was unsatisfactory.

Calibration was by the following methods:

The survey vessel was brought alongside a calibration point. A comparison in reading between the geodetic inverse distance (true distance) and the observed reading was made. If the observed reading was more than 3 meters from the true distance, the Distance Measuring Unit was adjusted. The observed distance and true distances were the same after adjusting the Distance Measuring Unit.

Calibrations were performed twice daily, once before work commenced and again at the end of the work day.

The geodetic inverse distance (true distance) between slave stations and the calibration point was provided by Photo Party 62.

In a few instances, errors were carried that were greater than 3 meters. This was due to the fact that the true distance was not yet available for that calibration point. In these instances the survey vessel was brought alongside the calibration point and the observed readings were recorded. The corrector was computed after the inverse distance was provided by Photo Party 62.

All calibrations were recorded in the sounding volumes of the survey. A calibration stamp was made to facilitate this method of recording calibrations.

The morning and end of day calibrations were used to determine the corrector to be applied that day.

An abstract of the calibration corrections accompanies this report.

Electronic corrector tapes were made from the abstract of calibration corrections, and a copy of these corrector tape abstract accompanies this report.

The following specifies the different Del Norte components used during this survey:

<u>Unit</u>	<u>Model</u>	<u>Serial No.</u>	<u>Used at/or Aboard</u>
DMU	202-R01A	122	1260/1002
DMU	202-R01A	123	1260/1002
Shore Station A	VEGA	163	025/024
Shore Station B	VEGA	164	025/024
Shore Station D	VEGA	225	025
Master	VEGA	163	1260/1002
Master	210	187	1002
Shore Station B	210	Unknown	025

During the field season, difficulties were experienced with the older Vega Del Norte units. Much downtime occurred due to the operational range of the units being diminished.

The problem was determined to be weak magnetrons in the master unit and shore stations.

The units were returned to the manufacturer for an estimate of repairs as these Vega Units are no longer repaired by Electronics at AMG.

Two of the five units sent in can be repaired. The repair of the other three units is cost prohibitive.

Note that the survey could not be completed using the Vega Del Norte units. A combination of Vega and model 210 was used to complete the survey.

A record of daily electronic control correctors and electronic corrector abstracts follow.

POSITIONS OF CONTROL STATIONS FOR HYDROGRAPHY
 JOB PH-7002
 DELEWARE BAY, N.J.

CAPE MAY LIGHTHOUSE, 1859-1932	38-55-58.383	74-57-38.759
BRANDYWINE SHOAL LIGHTHOUSE 1932	38-59-10.030	75-06-48.818
JOE 1971	38 56 25.001	74 58 16.975
CAPE MAY CANAL WEST ENTRANCE SOUTH JETTY LIGHT 1975	38 57 56.615	74 58 01.958
CAPE MAY CANAL WEST ENTRANCE NORTH JETTY LIGHT 1925	38 58 03.307	74 58 01.119
<i>CROW SHOAL</i> CAPE MAY FERRY TERMINAL RANGE REAR LIGHT 1975	38 58 24.781	74 57 27.903
<i>CROW SHOAL</i> CAPE MAY FERRY TERMINAL RANGE FRONT LIGHT 1975	38 58 10.607	74 57 43.092
CALIBRATION POINT "ALPHA"	38 58 03.653	74 57 31.667
JG-02	38 59 37.263	74 57 31.852
JG-03	39 00 29.846	74 57 10.450
JG-06	39 01 52.606	74 56 27.495
JG-07	39 02 20.211	74 56 09.446
JG-09	39 03 49.627	74 55 11.177
- JG-10B (Hydro Tower at Pierces Pt.)	39 05 01.221	74 54 22.376
JG-11	39 05 29.917	74 54 06.748
JG-13	39 06 58.358	74 53 31.466
CALIBRATION POINT "BETA"	39 05 51.677	74 54 11.510
GE-01	39 07 36.792	74 53 29.322
GE-02	39 11 08.638	74 56 42.421
GE-03	39 11 26.440	75 00 14.869
EAST 1933	39 11 46.142	75 01 30.553
EAST POINT LIGHT 1933	39 11 44.786	75 01 39.678
GE-09	39 11 37.176	75 01 35.032

FOURTEEN FOOT BANK LIGHT 1933	39 02 53.294	75 10 57.273
MAH MAULL SHOAL LIGHT 1933	39 07 35.526	75 12 32.583
ELBOW OF CROSS LEDGE LIGHT 1933	39 10 55.596	75 16 07.717

ALL CONTROL STATIONS WERE LOCATED BY THIRD ORDER GROUND SURVEY METHODS.

39.

25

INVERSE DISTANCES FOR CALIBRATION
JOB PH-7003
Delaware Bay, N.J.

CALIBRATION POINT ALPHA	to	CAPE MAY CANAL WEST ENTRANCE SOUTH JETTY LIGHT 1975	760.860 meters
"	to	CAPE MAY CANAL WEST ENTRANCE NORTH JETTY LIGHT 1975	709.107 meters
"	to	CAPE MAY FERRY TERMINAL RANGE REAR LIGHT 1975	657.794 meters
"	to	CAPE MAY FERRY TERMINAL RANGE FRONT LIGHT 1975	348.773 meters
CALIBRATION POINT BETA	to	GE-01	3396.217 meters
"	to	GE-02	10,424.448 meters
"	to	GE-03	13,516.920 meters
"	to	EAST 1933	15,186.605 meters
"	to	JG-13	2270.200 meters
"	to	JG-11	680.681 meters
"	to	JG-10B	1577.670 meters

0 +1 (Let 1/2 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

CORRECTIONS IN FEET, FATHOMS

NOAA FORM 15-21 (10-72) U.S. DEPARTMENT OF COMMERCE
NOAA NATIONAL OCEAN SURVEY

VELOCITY CORRECTIONS

Ship: AHP-LAUNCH 1260
LCDR John O. Rolland, NOAA Comdg.
 These corrections are to be used
 between MAY 1975 and OCT 1975
 in the locality CAPE MAY TO EAST POINT
DELAWARE BAY
 for hydrographic surveys Nos. #-9333

Table #1

CORRECTION TO DEPTH

-0.6	3.0
-0.8	7.5
+1.0	14.0
+1.2	22.5
+1.4	29.0

For deep water add 0 to these figures)

DEPTHS IN FATHOMS FEET

(61)

0 +1 (Let 1/2 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

CORRECTIONS IN FEET FATHOMS

NOAA FORM 75-21 (11-72)	U.S. DEPARTMENT OF COMMERCE NOAA NATIONAL OCEAN SURVEY
VELOCITY CORRECTIONS	
Ship <u>AHE- LAUNCH 1002</u>	
LCDR <u>John O. Rolland</u> NOAA Comdg.	
These corrections are to be used	
between <u>MAY</u> 19 <u>75</u> and <u>OCT</u> 19 <u>75</u>	
in the locality <u>Gape May to East Point</u>	
<u>Delaware Bay</u>	
for hydrographic surveys Nos. <u>H-9533</u>	

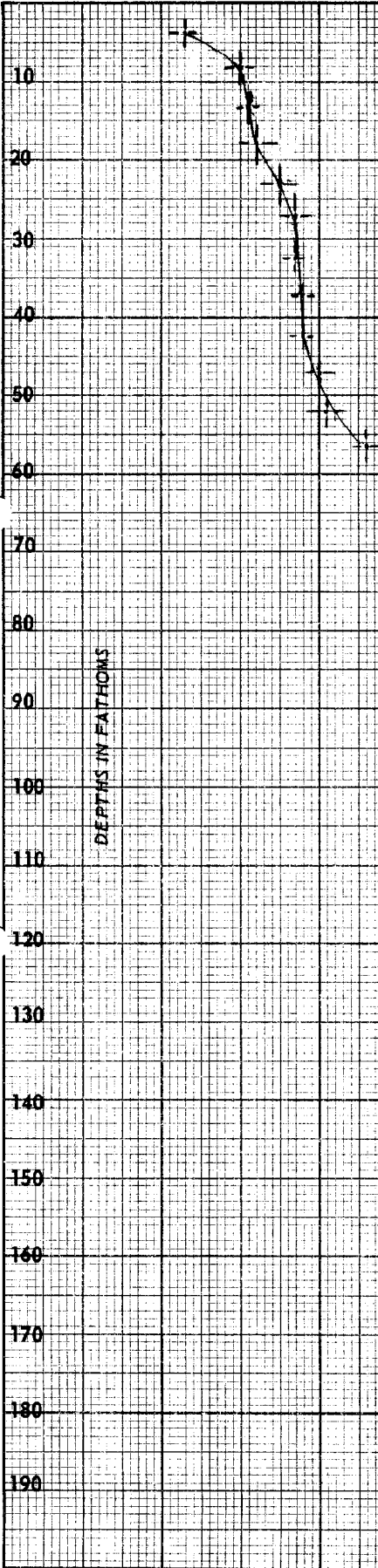
Table #2

CORRECTIONS TO DEPTH

+1.4	5.0
+1.6	6.0
+1.8	7.5
+2.0	13.5
+2.2	20.0
+2.4	23.0
+2.6	29.0
+2.8	46.0
+3.0	50.2
+3.2	53.5
+3.4	56.0
+3.6	57.0

For deep water add a 0 to these figures)

DEPTHS IN FATHOMS



(62)

VESNO: 1260

H-9533

VELOCITY TABLE #1

FY-75

000030 0 0006 0001 000 126000 009533

000075 0 0008

000140 0 0010

000225 0 0012

000290 0 0014

999999 0 0014

(63)

28A

VESNO 1002

H-9533

VELOCITY TABLE #2

FY-75

000050 0 0014 0002 000 100200 009533

000060 0 0016

000075 0 0018

000135 0 0020

000200 0 0022

000230 0 0024

000290 0 0026

000460 0 0028

000502 0 0030

000535 0 0032

000560 0 0034

000570 0 0036

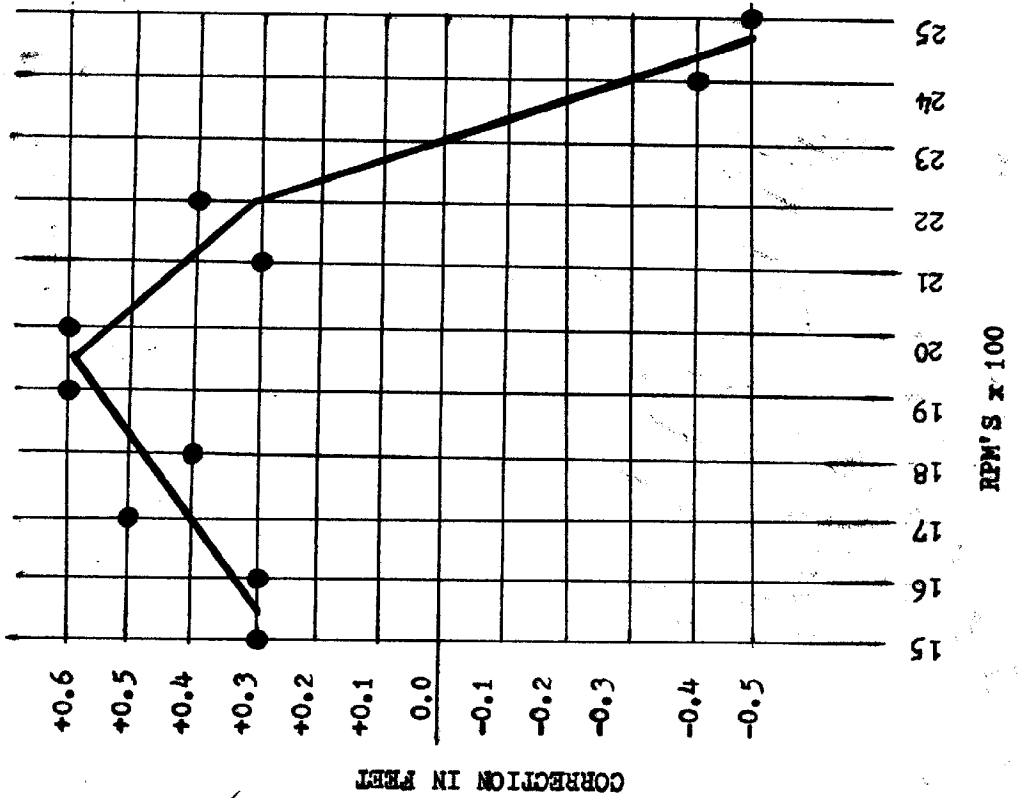
999999 0 0036

(64)

LAUNCH 1002

SETTLEMENT AND SQUAT TEST

22 OCT., 1975



(65)

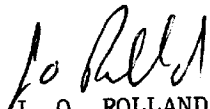
Settlement & Squat Correction Table

RPM'S	correction
1500 to 1850	+0.4 ft
1850 to 2050	+0.6
2050 to 2200	+0.4
2200 to 2275	+0.2
2275 to 2350	0.0
2350 to 2400	-0.2
2400 to 2500	-0.4

NOTE: Boat was loaded as needed to run Hydro. Fuel tanks were full, three men were aboard. 22 x 22 propeller was used.

APPROVAL SHEET
SURVEY H-9533 AHP-20-4-75

The hydrographic records transmitted with this report are complete and adequate.



J. O. ROLLAND
LCDR, NOAA
Chief, Atlantic Hydrographic Party

(68)

GEOGRAPHIC NAMES

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
	ON CHART NO.	ON PREVIOUS SURVEY NO.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	GRAND McNALLY ATLAS	U.S. LIGHT LIST			
BIDWELL CREEK ✓										1	
CAPE MAY ✓										2	
CAPE MAY CANAL ✓										3	
CAPE MAY POINT ✓										4	
COOKS BEACH ✓										5	
DEADMAN SHOAL										6	
DENNIS CREEK ✓										7	
DELAWARE BAY										8	
EAST POINT ✓										9	
FISHING CREEK SHOAL										10	
GOSHEN CREEK ✓										11	
HIGBEE BEACH ✓										12	
HIGHS BEACH ✓										13	
KIMBLES BEACH ✓										14	
KING CRAB LANDING ✓										15	
MIAMI BEACH ✓										16	
MOORES BEACH ✓										17	
NORBURYS LANDING ✓										18	
NORTH CAPE MAY ✓										19	
NORTH HIGHLANDS BEACH ✓										20	
PIERCES POINT ✓										21	
REEDS BEACH ✓										22	
SUNRAY BEACH ✓										23	
SUNSET BEACH ✓										24	
THOMPSON BEACH ✓										25	

APPROVED

Chas. E. Hammer

STAFF GEOGRAPHER 25142

23 MAY 1977

GEOGRAPHIC NAMES

Name on Survey	Source of Name											
	A	B	C	D	E	F	G	H	K			
	ON CHART NO.	ON PREVIOUS SURVEY NO.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	RAND McNALLY ATLAS	U.S. LIGHT LIST				
TOWN BANK ✓												1
VILLAS ✓												2
WEST CREEK ✓												3
WILDWOOD HIGHLANDS BEACH ✓												4
												5
												6
												7
												8
												9
												10
												11
												12
												13
												14
												15
												16
												17
												18
												19
												20
												21
												22
												23
												24
												25

APPROVED

Chris E. Harrington

STAFF GEOGRAPHER - C51x2

23 MAY 1977

ATLANTIC MARINE CENTER
APPROVAL SHEET
FOR
AUTOMATED SURVEY H- 9533

- A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position printout has/~~has not~~ been made. A new final sounding printout has/~~has not~~ been made.

Date: 3-17-77

Signed: William J. Jones
Title: Chief, Verification Branch

- B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Hydrographic and AMC Manuals. Exceptions are listed in the verifier's report.

Date: 3-21-77

Signed: RAT
Title: Chief, Processing Division

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-9533

RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET with smooth PNO & excess overlay		1	BOAT SHEETS (2 parts) ³		1	
DESCRIPTIVE REPORT		1	OVERLAYS (prelim. & misc.)		28	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ACCORDION ENVELOPES	2		1			
CAHIERS	4-with printouts		2			
VOLUMES	27					
BOXES			1-smooth & misc. P/O			
T-SHEET PRINTS (List) TP-00126, 00127, 00130 thru 00132 not received at registration 4/21/77 MCR						
SPECIAL REPORTS (List)						

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				3319
POSITIONS CHECKED		372		
POSITIONS REVISED		37		
DEPTH SOUNDINGS REVISED		700		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		---		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		---		
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		16		
JUNCTIONS		6		
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		6		
SPECIAL ADJUSTMENTS				
ALL OTHER WORK		282		
TOTALS		310		
PRE-VERIFICATION BY		BEGINNING DATE	ENDING DATE	
F. Lamison, B. J. Stephenson		09/15/76	12/06/76	
VERIFICATION BY		BEGINNING DATE	ENDING DATE	
B. J. Stephenson		01/10/77	01/27/77	
REVIEW BY		BEGINNING DATE	ENDING DATE	
B. J. Stephenson		01/28/77	02/28/77	

a.c. By X. W. Wellman
- 28 1/2

76 hrs.
12

4-12-77
U.S. G.P.O. 1972-769-562/439 REG.#6
5-19-77
6-9-77

Barnes from 6-24-77
4 hrs

35

Reg. No. _____

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey the following shall be completed:

CARDS CORRECTED

DATE _____ TIME REQ'D _____ INITIALS _____

REMARKS:

Reg. No. H-9533

The magnetic tape containing the data for this survey has not been corrected to reflect the changes made during evaluation and review.

When the magnetic tape has been updated to reflect the final results of the survey, the following shall be completed:

MAGNETIC TAPE CORRECTED

DATE _____ TIME REQ'D _____ INITIALS _____

REMARKS:

Items for Future Presurvey Reviews

The variable pattern of depth differences noted in section 6 of the Verifier's Report is attributed to natural causes and such change is expected to continue in this area.

The items discussed in section K of the Descriptive Report were searched for but not found. They should be finally disposed of by wire drag at some appropriate future time. In addition, the status of the items discussed in sections 8 and 11 of the Quality Control Report should be determined during future work in the area.

<u>Position</u>	<u>Index</u>	<u>Bottom Change</u>	<u>Use</u>	<u>Resurvey</u>
<u>Lat.</u>	<u>Long.</u>	<u>Index</u>	<u>Index</u>	<u>Cycle</u>
385	0751	2	9	25 years
385	0750	4	9	10 years
390	0751	4	9	10 years
390	0750	2	2	50 years
391	0751	2	2	50 years
391	0750	2	2	50 years

ATLANTIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO. H-9533

FIELD NO. AHP-20-4-75

New Jersey, Delaware Bay, Cape May Point to East Point

SURVEYED: May 19, 1975 through October 16, 1975

SCALE: 1:20,000

PROJECT NO.: OPR-492

SOUNDINGS: Raytheon Fathometer
DE-723
Ross Fineline 5,000
Pole

CONTROL: Electronic
Range-Range
Range-Azimuth

Chief of Party J. O. Rolland
Surveyed by W. E. George
..... S. Bradford
..... L. Gildea
..... R. Snow
..... W. Sprye
..... S. Weisner
Automated Plot by Calcomp Plotter #618 (AMC)
Verified and Inked by B. J. Stephenson

1. Introduction

No unusual problems were encountered during verification; however, the Projection Parameter was revised and the red changes in the Descriptive Report were made by the verifier.

2. Control and Shoreline (See Q.C. Report - item 1)

a. The origin of control is adequately described in Section F of the Descriptive Report.

b. The shoreline originates with reduced Class I, unreviewed Photogrammetric Manuscripts TP-00126, 00127, 00130, 00131, and 00132 (1970-71/1972-75). The chart compiler should pay strict attention to Section L, Paragraph 1 in regard to the piers along the shoreline.

3. Hydrography

a. Depths at crossings are in good agreement.

b. The standard depth curves were adequately delineated. The three foot supplemental curve was added to emphasize the inshore hydrography.

c. The low-water line was adequately delineated in most areas.

d. The development of the bottom configuration and the investigation of least depths are considered adequate.

4. Condition of Survey

The smooth sheet and accompanying overlays, hydrographic records, and reports are adequate to conform to the requirements of the Provisional Hydrographic Manual, ... (See Q.C. Report-item 11)

5. Junctions (See Q.C. Report-item 5)

An adequate junction has been made with H-9241 (1971) on the south and west, (South of latitude $39^{\circ} 02.00'$).

There are no other junctional contemporary surveys at this time.

6. Comparison with Prior Surveys

H-1632 (1884)	1: ² 10,000
H-1677 (1885)	1: ¹ 20,000
H-1678 (1885)	1:20,000
H-1679 (1885)	1:20,000
H-3693 (1914)	1:30,000

These prior surveys cover the area of the present survey. A comparison between the present and prior surveys reveals a variable pattern of depth differences of \pm one to ten feet, *with 2 ft. differences with stable depths* throughout the majority of the survey. *The greatest differences are in the southwest quadrant. Deadman Shoal, which is located in this area, has shifted in a south-easterly direction approximately one nautical mile. These differences are mainly attributed to the redistribution of bottom sediments made by artificial and natural means.

* The channel in lat. $39^{\circ} 03.0'$ long. $75^{\circ} 02.3'$ has shoaled as much as 20 ft. since the early surveys

The Presurvey Review Items are adequately described in Section K of the Descriptive Report.

The more completely developed present survey is adequate to supersede the prior surveys within the common area.

7. Comparison with Chart, ¹²³⁰⁴(C&GS 1218,) ^{21st} Edition, ^{November 23, 1974} September ~~5~~, 1971

a. Hydrography (See Q.C. Report-items 7, 8 and 9)

The majority of the charted hydrography originates with the previously discussed prior surveys; however, the source

could not be readily ascertained for the remaining depths. It is apparent that the Corps of Engineers has done extensive work in the area since the prior survey, so the chart was probably revised from their surveys and other miscellaneous sources.

Attention is directed to Sections ^{K,}L, (Paragraphs one through nine) and ~~Section P~~, (Paragraph one) of the Descriptive Report. The chart compiler could be interested in this information.

The present survey is adequate to supersede the charted information in the common area.

b. Controlling Depths

The controlling depths in Maurice River Channel should be revised to six feet (chart shows eight feet - 1957). *Disregard. The proper edition of the chart shows 5 ft for this channel. (See Q.C. Report - item 7)*

The controlling depths in Crow Shoal Channel should be revised to ten feet (chart shows nineteen feet - 1970). *Presently charted with a controlling depth of 10 ft. (See Q.C. Report - item 7)*

c. Aids to Navigation

All federally maintained aids adequately serve their intended purpose with the following exceptions:

The Deadman Shoal buoys should be relocated to better mark the shoal which is now located approximately one mile southeast of its charted position.

8. Compliance with Instructions

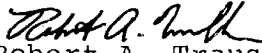
This survey adequately complies with the Project Instructions.

9. Additional Field Work


This is a good basic survey. Additional field work is not recommended.

Approval Sheet for H-9533

Examined and Approved:
Hydrographic Inspection Team
Date: March 13, 1977


CDR Robert A. Trauschke, NOAA
Chief, Processing Division

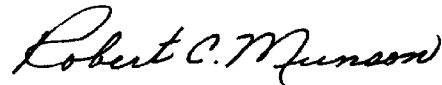

CDR Jeffrey G. Carlen, NOAA
Chief, Coastal Mapping Division


C. Douglas Mason, LT, NOAA
Chief, EDP Branch


William L. Jones
Chief, Verification Branch


Dorothy C. Calland
Verification Branch

Approved/Forwarded



Robert C. Munson
RADM, NOAA
Director, Atlantic Marine Center



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
 NATIONAL OCEAN SURVEY
 Rockville, Md. 20852

C352

May 19, 1977

A. J. Patrick
 TO: A. J. Patrick
 Chief, Marine Surveys Division

THRU: Chief, Quality Control Branch

FROM: K. W. Wellman *K. W. Wellman*
 Quality Evaluator

SUBJECT: Quality Control Report for H-9533 (1975), New Jersey, Delaware Bay, Cape May Point to East Point

A quality control inspection of H-9533 has been accomplished to evaluate the accuracy and adequacy of the survey with respect to data acquisition, delineation of the bottom, determination of least depths and navigation hazards, junctions, shoreline transfer, decisions and actions by the verifier, and cartographic presentation of data.

In general, the present survey was found to conform to National Ocean Survey standards and requirements except as follows:

1. During quality control inspection, the following items were added to the smooth sheet from TP-00132:

<u>Item</u>	<u>Latitude</u>	<u>Longitude</u>
Wreck	38°56.65'	74°58.35'
Pipe	38°56.59'	74°58.24'
Groin	38°56.65'	74°58.27'
Range Light	38°58.18'	74°57.71'

2. Electronic control station No. 23 (Crow Shoal Range Rear Light) was misidentified as Crow Shoal Range Front Light. The note identifying this feature was revised during quality control inspection.

3. A dotted low-water line was delineated on the smooth sheet between latitude 39°08.42' and latitude 39°09.20' (in the vicinity of longitude 74°53.35'), thereby implying the source to be TP-00130. Inasmuch as no such dotted low-water line exists on the T-sheet, it is considered to



have been improperly applied to the smooth sheet (see provisional manual--section 7.3.5). Appropriate revisions were made during the quality control inspection.

4. The area designated as bare at MLW, in the vicinity of latitude $39^{\circ}11.40'$, longitude $75^{\circ}01.70'$, was delineated on the smooth sheet by a dashed black line, thereby implying the source to be TP-00126. This area is not depicted as such on the T-sheet and originates with the boat sheet of the present survey. This area, therefore, would have been more appropriately delineated by a dashed zero-depth curve on the smooth sheet and was revised accordingly during quality control inspection.

5. Contrary to the statement in section 5 of the Verifier's Report, an adequate junction was not effected with H-9241 (1971). During the quality control inspection, it was necessary to rescan and revise or excess numerous soundings on both smooth sheets to reconcile the depth curves within the common area. In addition, the junctions with H-9153 (1970) and H-9311 (1972) on the south were not considered during verification.

During quality control inspection, adequate junctions, and/or partial butt junctions, were effected with H-9153 (1970), H-9241 (1971), and H-9311 (1972) on the south.

The bottom in the vicinity of latitude $38^{\circ}56.00'$, longitude $75^{\circ}00.00'$ is considered to have changed sufficiently (due to natural causes) to render the 1970-72 depths presently invalid. Accordingly, the area has been appropriately demarcated on the junctional smooth sheets and is superseded by the present survey.

No contemporary surveys junction with the present survey on the west (north of latitude $39^{\circ}02.00'$) or north; however, present depths are in general harmony with charted depths in those areas.

6. Prior survey H-3693 (1914) was not compared with the present survey during verification, thus necessitating a comparison during quality control inspection. The comparison revealed depth differences consistent with those noted in section 6 of the Verifier's Report and is, therefore, adequately discussed therein.

7. During verification, no comparison was made between the present survey and chart 12316 (formerly 826-SC). This larger scale chart should have been used for the common area of coverage. Further, the wrong edition of chart 12304 (formerly 1218) was used during verification (see provisional manual--sections 5.3.4(L) and 6.3.10). During quality control inspection, the present survey was compared with the following charts:

Chart 12304 (formerly 1218) 21st edition, November 23, 1974
12316 (formerly 826-SC) 12th edition, December 7, 1974

8. Section 7-a of the Verifier's Report is supplemented by the following:

Attention is directed to the following:

(1) The submerged jetty charted in the vicinity of latitude $38^{\circ}56.75'$, longitude $74^{\circ}58.30'$ originates with CL 387/51 and is designated therein as a water intake pipe. The charted feature, extending approximately 130 meters seaward of the end of the pipe shown on the present survey, is not disproved by the present survey and should be retained as charted.

(2) The jetty charted in the vicinity of latitude $38^{\circ}56.63'$, longitude $74^{\circ}58.30'$ originates with CL 196/55. It is neither verified nor disproved by the present survey and should be revised to indicate a submerged jetty inasmuch as it is not shown on TP-00132 or the present survey and submerged remnants may be extant.

9. Specific recommendations in the Descriptive Report, regarding the disposition of charted items, are customarily checked and appropriately annotated during verification. Section K of the Descriptive Report contains several recommendations which were not appropriately annotated during verification (see provisional manual--section 6.6(12)). Two of the items are not considered disproved by the present survey and, therefore, should not be deleted from the chart as recommended by the hydrographer. These items should be disposed of by future wire-drag investigation. Section K of the Descriptive Report was appropriately annotated during the quality control inspection.

10. The chart used for comparison with the present survey during verification was not forwarded with the survey records as required by sections 6.3.10 and 8.3(12) of the provisional manual.

11. Section 4 of the Verifier's Report is supplemented by the following:

. . . except that the hydrographer did not provide detached positions for the stakes referred to in sections K (Presurvey Review Item No. 2) and L-2 of the Descriptive Report.

12. Reference section P-1 of the Descriptive Report:

The 20-foot depths referred to by the hydrographer are not considered to represent the helicopter wreckage inasmuch as they fall in various positions, separated by approximately 170 meters and, further, are generally compatible with depths on H-9241 (1971). The indicated soundings are considered representative of the general bottom; however, inasmuch as they are beyond the present survey limits of hydrography, they are not considered necessary for inclusion on the present smooth sheet.

13. Numerous landmarks and accompanying descriptive notes were added to the smooth sheet during quality control inspection (see provisional manual--section 7.3.11.1).

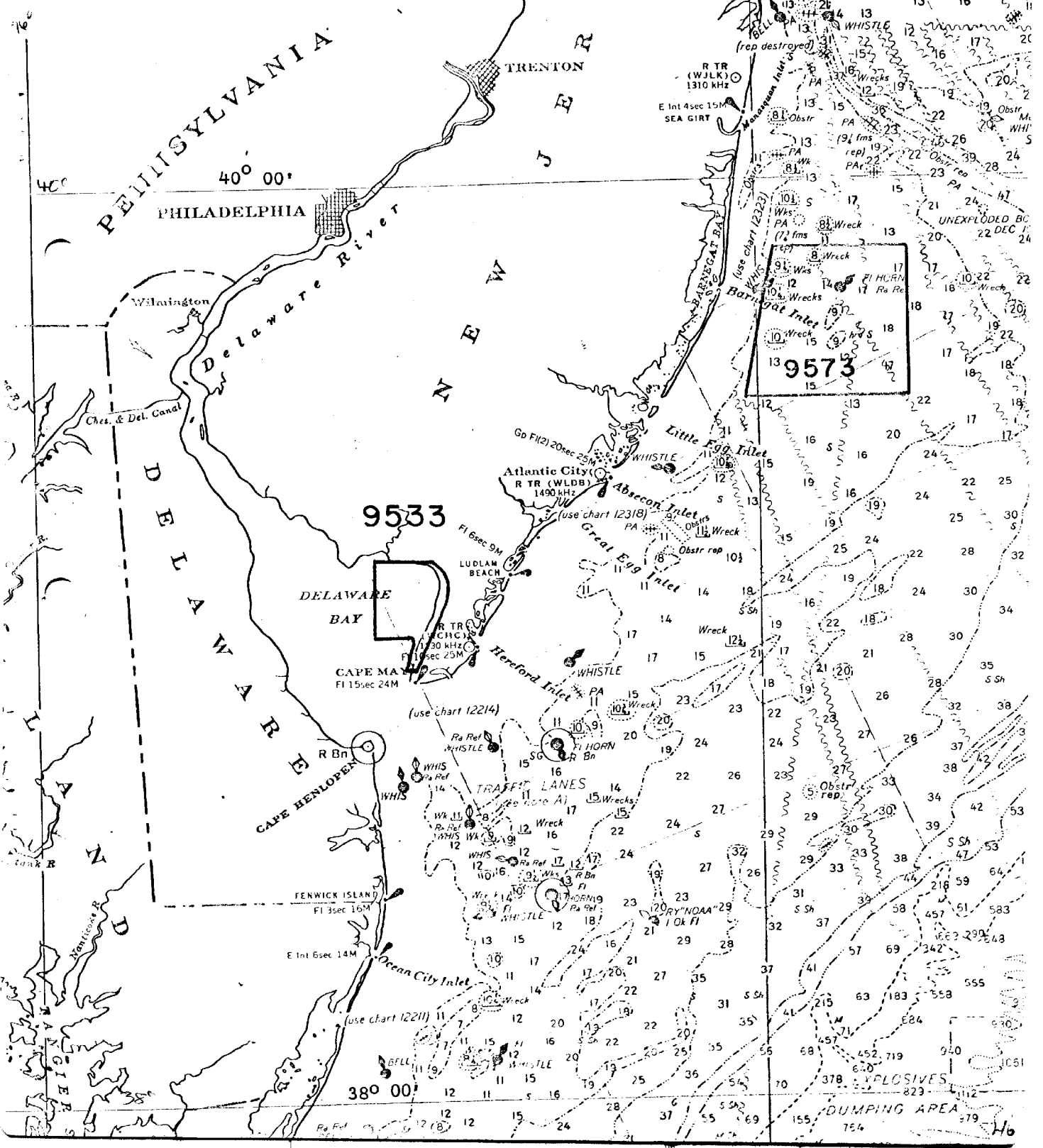
14. The Verifier's Report is not accompanied by a Hydrographic Inspection Team Report as required by section 8.1 of the provisional manual.

15. Two electronic control stations (stations 19 and 23) were improperly identified with slanted lettering on the smooth sheet during verification. Control stations should be identified with vertical red lettering (see provisional manual--section 7.2.5.2). In cases where aids to navigation are used as control stations and not obviously identified by the control station name, the published light list name can be added in slanted red lettering below the station name (see provisional manual--section 7.3.11.1).

cc:
C351

traffic lanes in the Bay of Fundy and at the approach to Saint John established by the Department of Transport, Canada. For positions radian charts and National Ocean Survey chart 13260

Cht. 1000



RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 9533

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

- 1. Letter all information.
- 2. In "Remarks" column cross out words that do not apply.
- 3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
8268(B)	7/19/77	Pirrone	Full Part Before After Verification Review Inspection Signed Via Drawing No. 16 B
1218	7/26/77	Pirrone	Full Part Before After Verification Review Inspection Signed Via Drawing No. 48
12A	11/2/77	Richard H. Hogen	Full Part Before After Verification Review Inspection Signed Via Drawing No. 43 THRU CHART 1218
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
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