9842

Diagram No. 296-2

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. HSB-10-2-79

Office No. H-9842

LOCALITY

State Pennsylvania-New Jersey

General Locality Delaware River

Locality Bridesburg to Echo Beach

1979 & 80

CHIEF OF PARTY
LCDR T.W. Richards & LCDR G.W. Jamerson

LIBRARY & ARCHIVES

DATE April 4, 1986

☆U.S. GOV. PRINTING OFFICE: 1980—766-230

9842

Area 1
CHTS
1R314 - TO SIGN OFF SEE "APPLICATION TO CHART"

INDEX

* Filed with original field records.

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

HYDROGRAPHIC TITLE SHEET

H-9842

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.

HSB-10-2-79

State Pennsylvania ~~and~~ New Jersey

General locality Delaware River

Locality Bridesburg to Echo Beach ~~Beverly to Delair, New Jersey~~

Scale 1:10,000 **Date of survey** 2 Aug to 5 Oct 79

Instructions dated 13 June 1977 **Project No.** OPR-D218-HFP-78

Vessel NOAA Launch 1283 - HFP-3

Chief of party Lt. Cdr. Thomas W. Richards

Surveyed by Lt. Cdr. A. Y. Bryson, A. Armstrong and D. Elliott

Soundings taken by echo sounder, ~~hand lead,~~ pole ~~(All)~~ Raytheon 719-B

Graphic record scaled by AA, AYB, DE, JO, OP

Graphic record checked by AA, AYB, DE, JO, OP

Protracted by N/A **Automated plot by** ~~Field Sheet PDP8/e~~ AMC-Xynetics 1200

Verification by ~~AMC Verification Branch~~ Robert R. Hill

Soundings in ~~fathoms~~ feet **at MLW** ~~MLLW~~

REMARKS: Changes: 1 December 21, 1977; #2 March 14, 1978; #3 April 20, 1978; #4 July 25, 1978; #5 August 1, 1978; #6 September 14, 1978; #7 February 23, 1979; #8 June 12, 1979; #9 July 17, 1979.

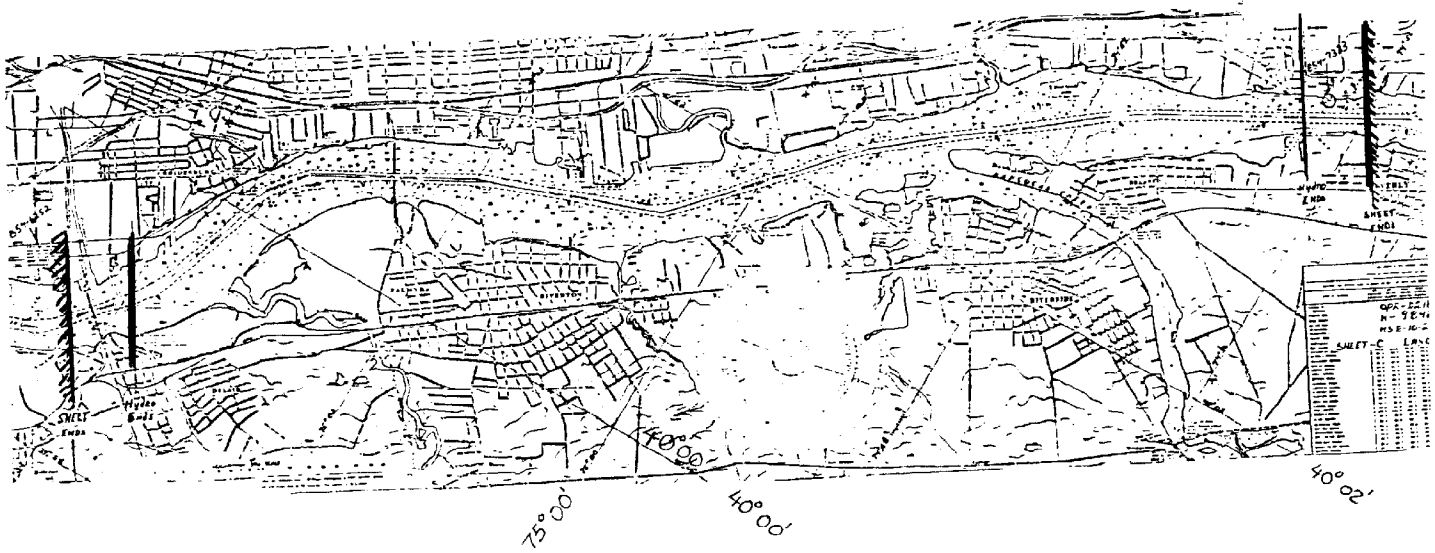
AA = Andrew Armstrong; AYB = A. Y. Bryson; DE = David Elliott; JO = John Oswald; OP = Oscar Palmer Notes in red were made during verification.

Awois/Surf Checks MSM 4/16/86

☆ U.S. GPO: 1974-0-768-081/1207

H-9842
HSB-10-2-79

Reduction of Chart 12314



DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SURVEY H-9842
HSB-10-2-79

Scale 1:10,000
Chief of Party: Lt. Cdr. Thomas W. Richards
Officer-in-Charge: Lt. Cdr. A. Y. Bryson
Hydrographic Surveys Branch, Hydrographic Field Party #3
Launch 1283

A. PROJECT

This survey was accomplished under Project Instructions OPR-D218-HFP-78, dated June 13, 1977, and amended by:

Change No. 1, December 21, 1977
Change No. 2, March 14, 1978
Change No. 3, April 20, 1978
Change No. 4, July 25, 1978
Change No. 5, August 1, 1978
Change No. 6, September 14, 1978
Change No. 7, February 23, 1979
Change No. 8, June 12, 1979
Change No. 9, ~~June~~ July 17, 1979

B. AREA SURVEYED

The area surveyed was the Delaware River and certain adjacent creeks and basins from Beverly to Delair, New Jersey and bounded by the following points:

Latitude 40°04'N, longitude 74°56'W, down river to latitude 39°59'N, longitude 75°04'W.

This survey was conducted from August 2, 1979 to October 5, 1979 (JD214 to 278) inclusive.

C. SOUNDING VESSEL

All soundings obtained on this survey were obtained from NOAA Launch 1283 (EDP #1283). All survey records are annotated with the vessel number 1283.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

The following Raytheon fathometer equipment was used during the survey:

JD214 - 278: Recorder Model #719-B
Serial #5881

No unusual problems were encountered with this equipment. The fathometer was monitored continuously while sounding and was under constant adjustment to insure that no initial corrections were necessary.

Settlement and squat tests on Launch 1283 were run on February 14, 1979 at Kings Bay, Georgia. The results of these tests are included in the appendix of this report. Settlement and squat corrections will be be applied via the TC/TI tape during plotting of the smooth sheet at the Atlantic Marine Center and were not applied to the field sheets.

Velocity and instrument corrections were determined by barcheck. These corrections were not applied to the field sheet and will be applied during smooth plotting at AMC via a velocity corrector table. The lengths of the line on the bar were checked on July 24, 1979 and October 10, 1979. The results of this inspection showed that no correction was necessary.

E. SURVEY SHEETS

The field sheets were prepared in the field using a PDP8/e computer and a DP-3 complot plotter. Work sheets, semi-smooth sheets, smooth field sheets, and overlay sheets are included with this survey. Mainscheme hydrography is plotted on the smooth field sheets while crosslines, developments, splits, bottom samples, prior survey soundings, junctions soundings, charted soundings, pre-survey review items, and aids to navigation are shown on various overlay sheets. Projection parameter tape listing for the field sheets is included in the appendix of this report. The final smooth sheet and verification of this survey will be accomplished at the Atlantic Marine Center on the Harris/7 computer and the Xynetics 1201 plotter.

F. CONTROL STATIONS See Eval. Report sec. 2 a.

Control stations used during this survey were either existing geodetic control stations published by NGS or were established by Photo Party 61 in 1978 to third order or better standards. All stations are referred to the North American 1927 datum. A list of all control stations used during this survey is included in the appendix of this report.

G. HYDROGRAPHIC POSITION CONTROL See Eval. Report sec. 1 and 4g.

The method used to control this survey was Range/Azimuth. The equipment used to control this survey was a wild T-1, s/n 14018, JD214-278; Del Norte Master 78, s/n 278, JD214-235; Del Norte Master 78, s/n 273, JD236-278; Del Norte Remote 72, s/n 256; JD214-277; Del Norte Remote 72, s/n 247, JD277-278, Del Norte Trisponder (DMU) 429, JD214-278; AGA Geodimeter 78, s/n 1036, JD235-242, 250, 263, 277. The control equipment was calibrated by personnel twice daily between control stations using inverse distances computed with program RK407. Del Norte corrections were applied by corrector tapes to the field sheet and will be applied during smooth plotting at AMC.

H. SHORELINE See Eval. Report sec. 2 b.

Shoreline detail for this survey was obtained from Class III photo manuscripts TP-00237, 238, 239 dated August 1975 and Chart #12314, 22nd Edition, dated July 30, 1977, blown up to the scale of the survey.

Shoreline corrections were necessary at latitude 40°03'26", longitude 74°56'55", just north of Delanco where grass in water caused an incorrect photo interpretation and on ~~Cattail~~ Fenton Island in Rancocas Creek at latitude 40°01'45",

longitude 74°55'45" where D.P.s. were taken to delineate the island which has eroded.

Photogrammetric locations of rocks and other salient features from the manuscript were checked by hydrographic control means with the following results and recommendations:

All features were verified correct except for one floating dock in Dredge Harbor at latitude 40°02.2', longitude 74°58.7', which has been repositioned and a wreck at latitude 40°02'19", longitude 74°58'21" which was not searched for and not located. This visible wreck, PA, is no longer charted on the 24th ED., May 8, 1982 of Chart 12314. The position is now behind the charted MHW line.

I. CROSSLINES See Eval. Report sec. 3a.

Crosslines constitute 24% of the mainscheme hydrography. Ninety percent of the crossings agree within 1.0 feet. No soundings are in disagreement at crossings by more than 3.0 feet. The reasons for the disagreement of soundings at crossline is due to steep slope on the edge of the dredged channel.

J. JUNCTIONS See Eval. Report sec. 5.

This survey junctions with Contemporary Survey H-9787 (1978-79) to the northeast during the same season (1979), with the same vessel and sounding equipment. Agreement is good, 0-1 foot, and depth curves can be drawn continuously between the two surveys. Junctions with H-9886 (1980) to the southwest.

K. COMPARISON WITH PRIOR SURVEYS See Eval. Report sec. 4m and 6.

This survey was previously covered by the followings surveys:

H-144 (1844) 1:10,000
H-2183a (1886), 1:4,800 scale
H-2183b (1886) 1:4,800

Comparison showed that significant changes have been made due to dredging to maintain the ship channel and to mine sand and gravel. Strong currents have deepened areas near dredged channels.

Where discrepancies exist, it is recommended that the soundings from the present survey supersede the prior surveys' soundings.

L. COMPARISON WITH THE CHART See Eval. Report sec. 4a. and 7.

The following presurvey review items were investigated during this survey:

PSR Item #18 was searched for on JD247 for two hours. The barge was reported in 1951 to be of a non-dangerous origin. The wreck was investigated by a chain sweep and by a visual search at Mean Low Water. No evidence of this wreck was found. Water clarity at the time of the investigation was 1-2 feet. The chain sweep was conducted with a 75-foot chain and 30 feet of towline in two directions. This item was charted in a shallow area with smooth bottom located near the edge of Mud Island. These conditions enabled the hydrographer to search for this item with confidence with regard to his position and the area covered. All other barges of similiar vintage and older searched for along the river have been found. Charted in Lat. 40°03.41', Long. 74°58.13' from T-8767 (1946-47).

The hydrographer recommends that this wreck symbol be deleted. Concur

PSR Item #19 was searched for on JD248 for a half hour and on JD270 for a half hour. The 20-foot channel was reported in 1965 to be an access waterway to a marine facility. Charted in Lat. 40°02.95', Long. 74°58.15' from CL 257/69.

Water clarity at the time of the investigation was 1-2 feet. Split development arcs and crossline were run in an attempt to locate the 20-foot channel.

Discussions with the Army Corps of Engineers indicated that the permit for this dredged channel was in a three-part package for the Packer Avenue Marine Terminal located in Philadelphia, Pennsylvania across from Gloucester City, New Jersey. Attempts to contact the dredging contractor were unsuccessful, but it appears that a barge loaded with dredge spoils from the Packer Avenue Terminal would offload on Hawk Island, a dredge spoil island. Apparently the barge was able to offload without dredging an access channel or other sites were used. No channel markers exist, and local knowledge indicates no marine facility has been planned for this area.

The hydrographer recommends deleting the "20-foot Chan rep 1965" and charting the area as shown by this survey. Concur

PSR Item 20 was searched for on JD247 for one hour and on JD248 for one hour. The unidentified partially submerged buoy was reported in 1976 to be a dangerous obstruction.

Water clarity at the time of investigation was 1-2 feet. A chain sweep was conducted with a 75-foot chain and an 80-foot towline. The Army Corps of Engineers and U.S. Coast Guard had no additional information on this item.

This item is located just offshore of the Delaware River Yacht Club which has numerous yacht mooring buoys in the area. Perhaps one of these mooring buoys had been set too close to the edge of the channel or was dragged to the channel and slipped under. This area was difficult to drag in due to swift currents and steep slope. No hangs occurred but on JD248 at Pos. 886 while dragging, the fathometer picked up an object which could have been a submerged buoy and chain. This object was not hung. Repeated passes were unsuccessful. The least depth at latitude 40°02'55.74"N, longitude 74°58'30.37"W (Pos. #886), was determined by Range/Azimuth.

The hydrographer recommends that this feature be charted as a submerged obstruction, least depth 34 feet, and delete the charted "OBSTR PA". Do not concur. See Eval. Report sec. 7a.1).

PSR Item 21 was searched for on JD248 for two hours. The 15-foot RK was revised in 1954 from a 17-foot RK charted in 1945.

Water clarity at the time of investigation was 1-2 feet. A chain sweep and fatho search were conducted and a detached position was taken at latitude 40°02'26.4"N, longitude 74°59'26.9"W (Pos. #923). This position was determined by Range/Azimuth. A least depth of 16 feet was located.

Hydrographer recommends no change in the charting of this item. Concur. Also see Eval. Report sec 7a.1).

PSR Item #22 was searched for on JD240. The visible wreck PA was reported in 1972 as a sunken ship. Charted in Lat. 40°02.29', Long. 74°58.81' from CL 1601/72.

Water clarity at the time of investigation was 1-2 feet. A detached position was taken at latitude 40°02'17.2", longitude 74°58'49.6" (Pos. #614), determined by Range/Azimuth. Three wooden barges sunk in a line were located baring 8 feet at mean low water. No other visible wreck was in the area. The chart edition (18th) used to report this PSR did not show the barges as properly delineated on edition 22. These barges are in the same location and orientation as shown by the PSR report (CL1601/72).

The barges have become a part of the shoreline because of filling on and around them to form a dike as shown by TP-00238.

The hydrographer recommends that the charted visible wreck PA be deleted and the three barges in line be charted as shoreline. Concur

PSR Item 23 was searched for on JD236. The visible wreck PA was reported in 1972 to be a barge. Charted in Lat. 40°02.06', Long. 74°58.83' from CL 1601/72.

Water clarity at the time of investigation was 1-2 feet. A detached position was taken at latitude 40°02'02.3", longitude 74°58'45.9" (Pos. #589), determined by Range/Azimuth. A wooden barge which has become part of the shoreline and bares ~~approximately~~ N5 feet at mean low water was located. No other visible wreck was located near the reported PSR.

Hydrographer recommends the charted visible wreck PA be deleted and the barge be charted as shoreline as shown by TP-00238. Concur

PSR Item 24 was searched for on JD250. The rocks PA reported in 1977 were described as uncovering at low tide. Charted in Lat. 40°01.96', Long. 74°59.15' from CL1655/77.

Water clarity at the time of investigation was 1-2 feet. A detached position was taken at latitude 40°01'58.7", longitude 74°59'11.1" (Pos. #944), determined by Range/Azimuth. An 8-foot diameter of small rocks that have a least depth of ~~2 feet~~ 1 foot at mean low water are located here.

The hydrographer recommends that this item be charted as a rock awash near the level of the chart sounding datum ~~submerged rocks with a least depth of 2 feet~~, dangerous to surface navigation. Concur

PSR Item 25 was searched for on JD253 and for one hour on JD276. The pilings PA originated by an unknown source and were charted in 1972 in the vicinity of Lat. 40°01.65', Long. 75°00.58'.

Water clarity at the time of investigation was 1-2 feet. A detached postion was taken at latitude 40°01'39.9", longitude 75°00'35.9" (Pos. #1009), determined by Range/Azimuth. D.P. on a pile uncovering 1 ft. at MLW.

The hydrographer recommends the charted pilings PA be deleted and a single ~~submerged~~ visible pile be charted. Three piles shown on TP-00238 in the vicinity of Lat. 40°01.66', Long. 75°00.58', and just to the SW of the located pile, should also be charted as submerged.

PSR Item 26 was searched for on JD262 for one hour and JD269 for one hour. The dangerous submerged obstruction PA was reported in 1965 to be of a dangerous origin. Charted in Lat. 40°00.28', Long. 75°03.26', from CL 839/65.

Water clarity at the time of investigation was 1-2 feet. A chain sweep with 75-foot chain and 80-foot towline located an obstruction. A detached position was taken at latitude 40°00'15.6", longitude 75°03'16.1" (Pos. #1751),

determined by Range/Azimuth. An obstruction and subsequent hang which slipped off occurred on the fathogram between Pos. 1745 and Pos. 1746. Strong currents and a steep slope caused the drag to slip off when hauling back. Determining a least depth by leadline was not possible. An apparently flat topped object appeared on the fathogram between Pos. 1745 and Pos. 1746 and this was repeated between Pos. 1749 and 1750. The Army Corps of Engineers had no further information on this item.

The hydrographer recommends the charted submerged obstruction PA be deleted and a submerged obstruction dangerous to surface navigation, least depth 3½ feet, be charted at Pos. 1751. Concur

PSR Item 27 was searched for on JD262 for one hour and JD 269 for one hour. The dangerous sunken wreck PA was revised in 1975 to be submerged. Charted in Lat. 39°59.29', Long. 75°03.55', as visible from T-6395 (1935) and revised to submerged from CL 1315/75.

Water clarity at the time of investigation was 1-2 feet. A chain sweep with a 35-foot chain and 20-foot towline hung on the wreck and a detached position was taken at latitude 39°59'17.4", longitude 75°03'33.2" (Pos. #1752), determined by Range/Azimuth. The wreck, a wooden barge in ruins, bares 0.7 foot at mean low water.

The Hydrographer recommends the charted wreck, PA, be charted as a ~~sunken~~ visible wreck dangerous to surface navigation at Pos. 1752. Concur

PSR Item 29 was searched for on JD254. The rock awash originates with T-8747C (1946-50) and is described as being awash at mean high water. Charted in Lat. 40°01.2', Long. 75°01.93'.

Water clarity at the time of investigation was 1-2 feet. A visual search was made and photographs were taken at high and low tide. A detached position was taken at latitude 40°01'12.1", longitude 75°01'55.8" (Pos. #1127), determined by Range-Azimuth. This item is an ice breaker and bares ~~approximately~~ 2 feet at mean low water.

The Hydrographer recommends the charted rock awash be deleted and a platform (ice breaker) bare 2 feet at mean high water be charted. Concur

This survey was compared as the survey progressed with Chart 12314, 22nd edition and with Chart 12314, 22nd edition, blown up to the scale of the survey. No changes in the chart were detected other than those previously discussed as resurvey review items and those shoreline changes discussed in Section H. See Eval. Report sec. 4m and 7a.

No uncharted dangers to navigation were located during the survey.

M. ADEQUACY OF SURVEY See Eval. Report sec. 9.

This survey is complete and adequate to warrant its use to supersede prior surveys for charting in the common areas.

N. AIDS TO NAVIGATION See Eval. Report sec. 4h and 7c.

All floating and fixed aids to navigation in the survey area were located and comparisons between their charted, Light List (Volume IN, 1979), and surveyed positions and descriptions were made. All aids were found to adequately serve the apparent purpose for which they were established.

O. STATISTICS

Number of positions	1904
Nautical miles of main scheme	68.4
Nautical miles of crossline	21.4
Nautical miles of development	9.9
Total miles of hydrography	99.7
Number of bottom samples	30
Number of barchecks	46
Detached positions	294

P. MISCELLANEOUS

Hydrography in Pennsauken Creek continued approximately 1.2 miles past the project limits. There is some small boat traffic in this charted area. Hydrography was plotted on the Pennsauken Creek Extension Sheet. This data is all shown on the present survey smooth sheet.

Q. RECOMMENDATIONS

See Section H, K, and L for specific recommendations.

R. AUTOMATED DATA PROCESSING

Programs used during field data acquisition and field processing of this survey are as follows:

PROGRAM	DESCRIPTION	VERSION DATE
RK201	Grid, Signal, and Lattice Plot	07/10/78
RK212	Visual Station Table Load	07/10/78
RK216	Range-azimuth Non-real time plot	07/10/78
RK300	Utility computations	02/26/76
RK330	Reformat and Data Check	05/04/76
RK407	Geodetic Inverse/Direct Computation	09/25/78
AM500	Predicted Tide Generator	12/09/77
AM602	Elinore-line oriented editor	07/10/78

S. REFERENCE TO REPORTS

Descriptive Report H-9787, 1978, 1:10,000
Control Report for CM-7508, dated 1978.

Respectfully submitted,

Robert Lewis for
LT. Cdr. A. Y. Bryson, NOAA
OIC, HFP-3

FIELD TIDE NOTE

Field tide reduction for Sheet "C", H-9842 was based on predicted tides from Philadelphia using Rockville supplied correctors HW + 39m, LW + 1h5m, ratio X1.21 upriver from Rancocas Creek and HW + 26m, LW + 28m, ratio X 1.03 down river. All times of both predicted and recorded tides from HFP-3 gages are GMT. Tide gages and staffs were installed, operated and observed at the following locations during the periods indicated:

SITE	LOCATION	PERIOD
Burlington, N.J. #853-9094	40°04.8'N 74°52.4'W	Installed 06/18/79 Removed 08/17/79
Cornwell Heights, Pa. #854-7333	40°04.1'N 74°56.3'W	Installed 07/09/79 Removed 10/09/79
Rancocas Creek, N.J. Gage in lieu of staff	40°01.7'N 74°55.9'W	Installed 08/22/79 Removed 09/07/79
Pennsauken Creek, N.J. Tide staff	39°59.1'N 75°00.9'W	Installed 09/20/79 Removed 09/21/79
Bridesburg, Pa. #854-6252	39°59.0'N 75°04.5'W	Installed 07/23/79 Removed 10/09/79

SIGNAL LIST

H-9842
HSB-10-2-79

~~16~~	~~6~~	~~40~~	~~04~~	~~10667~~	~~074~~	~~54~~	~~09938~~	~~139~~	~~0000~~	~~000000~~ ~~Beverly Upper Range R.Lt.1978~~
102	1	40	04	04926	074	56	09448	250	0000	000000 61-10-NJ, 1978
~~103~~	~~1~~	~~40~~	~~04~~	~~14596~~	~~074~~	~~54~~	~~06669~~	~~139~~	~~0000~~	~~000000~~ ~~Beverly Lower R.Fr.Lt. 1978~~
~~104~~	~~1~~	~~40~~	~~03~~	~~59984~~	~~074~~	~~56~~	~~07653~~	~~139~~	~~0000~~	~~000000~~ ~~Mud Island Upper R.Fr.Lt.1978~~
~~105~~	~~1~~	~~40~~	~~03~~	~~41239~~	~~074~~	~~57~~	~~01461~~	~~139~~	~~0000~~	~~000000~~ ~~Andalusia 2, 1935~~
106	6	40	03	11019	074	57	05198	250	0000	000000 Pine 2 1978
107	2	40	03	15153	074	58	19874	250	0000	000000 Torresdale Upper R.Fr.Lt.1978
~~108~~	~~6~~	~~40~~	~~03~~	~~15936~~	~~074~~	~~56~~	~~01454~~	~~139~~	~~0000~~	~~000000~~ ~~Enterprize Lower R.Fr.Lt.1978~~
~~109~~	~~1~~	~~40~~	~~02~~	~~41655~~	~~074~~	~~59~~	~~05446~~	~~139~~	~~0000~~	~~000000~~ ~~Carson 1978~~
~~110~~	~~5~~	~~40~~	~~02~~	~~05076~~	~~074~~	~~58~~	~~40207~~	~~139~~	~~0000~~	~~000000~~ ~~CFP-1~~
~~111~~	~~1~~	~~40~~	~~02~~	~~34647~~	~~074~~	~~55~~	~~05584~~	~~139~~	~~0000~~	~~000000~~ ~~CFP-3~~
112	1	40	02	41353	074	57	30677	250	0000	000000 X75 1978
113	1	40	02	41864	074	57	11319	250	0000	000000 61-15-NJ, 1978
114	6	40	02	07995	074	57	31420	139	0000	000000 Riverside Metal Co.Tank 1935
115	2	40	02	31899	074	56	38124	~~139~~ 250	0000	000000 CFP-2 1978
116	5	40	01	41609	074	55	57031	250	0000	000000 61-14-NJ, 1978
1	6	40	02	13514	074	58	49365	250	0000	000000 61-16-NJ. 1978
118	7	40	01	55149	074	58	38919	250	0000	000000 61-17-NJ. 1978
119	7	40	01	50591	074	58	57022	250	0000	000000 61-18-NJ 1978
120	6	40	02	04966	074	59	57379	250	0000	000000 Filter Plant 2 1935
~~121~~	~~6~~	~~40~~	~~01~~	~~38065~~	~~074~~	~~59~~	~~55556~~	~~139~~	~~0000~~	~~000000~~ ~~Tacony Range FR.Lt. 1978~~
122	1	40	01	45462	075	00	04853	250	0000	000000 Mud Is. Lower R.Rear Lt.1978
123	5	40	01	26691	075	00	50317	250	0000	000000 Torresdale Lower R.Fr.Lt.1978
~~124~~	~~6~~	~~40~~	~~00~~	~~55131~~	~~075~~	~~01~~	~~16755~~	~~139~~	~~0000~~	~~000000~~ ~~Pavilion 1978~~
125	1	40	00	48331	075	00	58151	250	0000	000000 Frankford Pumping No.2 1935
~~126~~	~~6~~	~~40~~	~~00~~	~~34584~~	~~075~~	~~03~~	~~16200~~	~~139~~	~~0000~~	~~000000~~ ~~Delair Range Fr.Lt. 1978~~
127	2	39	59	30100	075	03	54939	250	0000	000000 Hitner 2 1978
~~128~~	~~6~~	~~39~~	~~58~~	~~52478~~	~~075~~	~~04~~	~~07048~~	~~139~~	~~0000~~	~~000000~~ ~~61-19-NJ 1978~~
129	7	39	58	39656	075	04	16977	~~139~~ 250	0000	000000 Fisher Pt. Range Fr.Lt.1978
~~130~~	~~6~~	~~39~~	~~58~~	~~57132~~	~~075~~	~~04~~	~~07465~~	~~139~~	~~0000~~	~~000000~~ ~~Electric RM2 1925~~

FORM CD-26 (12-11-46) 1979

U.S. DEPARTMENT OF COMMERCE

OPR-0218
H-9842
HSB-10-2-79

1283

WORKSHEET

Position DATA Sheet

J.D.	From Pos.#	To Pos.#	Cont.	REMOTE R	I-T T	INITIAL I			Remarks
214	01	48	R-AZ	102	102	106			
	49	116	"	106	106	102			
225	117	149	R-AZ	102	102	106			
226	150	169	R-AZ	102	102	106			
	170	231	"	106	106	102			
227	232	313	R-AZ	107	107	106			
228	314	471	R-AZ	107	107	106			
232	472	494	R-AZ	118	118	117			
234	495	526	R-AZ	118	118	117			
235	527	573	R-AZ	119	119	120			
236	574	594	R-AZ	119	119	120			
240	595	616	R-AZ	117	117	118			
	617	653	"	112	112	114			
241	654	733	R-AZ	113	113	114			
242	734	813	R-AZ	116	116	115			
	814	848	"	112	112	114			
247	849	876	R-AZ	107	107	106			
248	877	942	R-AZ	106	106	107			
250	943	945	R-AZ	120	120	114			
	946	949	"	116	116	115			
253	950	1067	R-AZ	123	123	122			
254	1068	1273	R-AZ	123	123	122			
255	1274	1330	R-AZ	122	122	123			
	1331	1363	"	123	123	122			

☆ U. S. GOVERNMENT PRINTING OFFICE: 1977—769-753

FORM CD-26 (12-11-46) 1979

U.S. DEPARTMENT OF COMMERCE

OAR-0218
H-9842
HSB-10-2-79

WORKSHEET

LAUNCH 1283 POSITION DATA SHEET

J.D.	FROM Pos#	TO pos#	CONT.	REMOTE R	T-1 T	INITIAL I	REMARKS
256	1364	1476	R-AZ	125	125	129	
260	1477	1594	R-AZ	127	127	129	
261	1594	1617	R-AZ	123	123	122	1594 DUPLICATE POS.#
	1618	1649		127	127	129	
262	1650	1686	R-AZ	125	125	129	
263	1687	1729	R-AZ	127	127	129	DUP. POS.#S 1695, 1699, 1701, 1702, 1716 1703, 1706, 1709, 1710, 1711, 1714
269	1730	1752	R-AZ	125	125	129	
	1753	1756	"	123	123	122	
270	1756	1777	R-AZ	107	107	106	1756 DUPLICATE POS.#
	1778	1792	"	106	106	102	
276	1793	1834	R-AZ	123	123	122	
277	1835	1877	R-AZ	125	125	127	
	1878	—		123	123	122	
	1879	1901		107	107	106	
278	1902	—	R-AZ	118	118	117	
	1903	1904	"	117	117	118	

☆ U. S. GOVERNMENT PRINTING OFFICE: 1977—788-753

FORM CD-26 (12-11-46) 1979

U.S. DEPARTMENT OF COMMERCE

OPR-D218
H-9842
HSB-10-2-79

1283

WORKSHEET

Positions Steered on Arcs

J.D.	Vol.	From Pos.#	To Pos.#
214	1	01	09
		13	80
225	1	117	149
226	1	150	163
		170	197
		206	231
227	1	233	313
228	2	314	393
232	2	Ø	
234	2	Ø	
235	2	Ø	
236	3	Ø	
240	3	598	609
241	3	Ø	
242	3	Ø	
247	4	849	854
248	4	917	918
		919	922
250	4	Ø	
253	4	950	1001
		1016	1048
		1050	1059
254	5	1068	1125
		1129	1182
255	5	1278	1330

☆ U. S. GOVERNMENT PRINTING OFFICE: 1977—766-753

FORM CD-26 (12-11-46) 1979

U.S. DEPARTMENT OF COMMERCE

OAR-0218
14-9642
HSB-10-2-79

WORKSHEET

LAUNCH 12 83 — POSITIONS STEERED ON ARCS

J.D.	VOL.	FROM POS #	TO POS #
256	6	1364	1476
260	6	1477	1541
261	6	—	—
262	7	—	—
263	7	—	—
~~270~~			
269	7	—	—
270		1763	1765
		1769	1777
		1780	1791
276	7	1793	1820
277	7	1835	1876
		1879	1901
278	7	—	—

☆ U. S. GOVERNMENT PRINTING OFFICE: 1977—766-753

NOAA FORM 76-40 (8-74)
Replaces C&GS Form 567.

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [ ] HYDROGRAPHIC PARTY
- [XX] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

[XX] TO BE CHARTED
[ ] TO BE REVISED
[ ] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office): HSB-HFP-3
STATE: New Jersey PA.
LOCALITY: Delaware River
DATE: 10/5/79

The following objects HAVE [XX] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.: OPR-D218
JOB NUMBER: ------
SURVEY NUMBER: H-9842
DATUM: NA 1927

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° ′	LATITUDE ″ D.M. Meters	POSITION LONGITUDE ° ′	LONGITUDE ″ D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
LIGHT	Enterprise Lower Range Rear Lt. (Fl.W) LL# 2339	40 04	50.7 28.0	74 55	57.3 03.0		Vis located on chart and Man. or	12314
LIGHT	Enterprise Lower Range Front Lt. (Fl. W.) LL# 2338	40 03	05.936 06.0	74 58	21.484 24.0		" "	" "
LIGHT	Dredge Harbor Range Rear Lt. (FL. W.) LL# 2332.20	40 02	01.47 0	74 58	10.18 0		" "	"
LIGHT	Dredge Harbor Range Front Lt. (Fl. W.) LL# 2332.10	40 02	1.210 00.0	74 58	26.90 24.0		" "	"
LIGHT	Mud Island Lower Range Rear Lt. (Fl.W.) LL# 2331	40 01	45.482 46.0	75 00	24.253 25.0		" "	"
LIGHT	Mud Island Lower Range Front Lt. (Fl. W.) LL# 2330	40 01	56.72 54.0	75 00	05.44 06.0		" "	"
LIGHT	Torresdale Upper Range Rear Lt. (Occ. R.) LL# 2328	40 03	32.05 02.0	74 58	.05 00.0		" "	"
LIGHT	Torresdale Upper Range Front Lt. (Fl.R.) LL# 2327	40 03	15.153 06.0	74 58	19.874 30.0		" "	"
LIGHT	Torresdale Lower Range Rear Lt. (Fl. W) LL# 2325	40 00	54.11 55.0	75 01	04.98 05.0		" "	"
LIGHT	Torresdale Lower Range Front Lt. (Fl. W) LL# 2326	40 01	.631 06.0	75 00	50.317 48.0		" "	"

(32.)

RESPONSIBLE PERSONNEL		
TYPE OF ACTION	NAME	ORIGINATOR
OBJECTS INSPECTED FROM SEAWARD	A.Y. Bryson, LCDR., NOAA	☐ PHOTO FIELD PARTY ☒ HYDROGRAPHIC PARTY XXX ☐ GEODETIC PARTY ☐ OTHER *(Specify)*
POSITIONS DETERMINED AND/OR VERIFIED		FIELD ACTIVITY REPRESENTATIVE
		OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'

(Consult Photogrammetric Instructions No. 64,

OFFICE

I. OFFICE IDENTIFIED AND LOCATED OBJECTS
Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object.
EXAMPLE: 75E(C)6042
8-12-75

FIELD

I. NEW POSITION DETERMINED OR VERIFIED
Enter the applicable data by symbols as follows:

F - Field	P - Photogrammetric
L - Located	Vis - Visually
V - Verified	
1 - Triangulation	5 - Field identified
2 - Traverse	6 - Theodolite
3 - Intersection	7 - Planetable
4 - Resection	8 - Sextant

A. Field positions* require entry of method of location and date of field work.
EXAMPLE: F-2-6-L
8-12-75

*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

FIELD (Cont'd)

B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.
EXAMPLE: P-8-V
8-12-75
74L(C)2982

II. TRIANGULATION STATION RECOVERED
When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery.
EXAMPLE: Triang. Rec.
8-12-75

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH
Enter 'V-Vis.' and date.
EXAMPLE: V-Vis.
8-12-75

**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

NOAA FORM 76-40 (8-74)

SUPERSEDES NOAA FORM 76-40 (2-73) WHICH IS OBSOLETE, AND EXISTING STOCK SHOULD BE DESTROYED UPON RECEIPT OF REVISION.

☆ U.S.GPO:1975-0-665-080/1155

NOAA FORM 76-40 (8-74)

Replaces C&GS Form 567.

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [ ] HYDROGRAPHIC PARTY
- [XX] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [XX] TO BE CHARTED
- [ ] TO BE REVISED
- [ ] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office)	STATE	LOCALITY	DATE
HSB-HFP-3	N.J. & PA.	Delaware River	10/5/79

The following objects HAVE [XX] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-D218	----------	H-9842	NA 1927

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° ′	LATITUDE ″ D.M. Meters	POSITION LONGITUDE ° ′	LONGITUDE ″ D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
LIGHT	Tacony Range Rear Lt. (E. Int.W.) LL# 2322	40 01	34.3 35	74 59	47.2 43		Vis located on chart and/or Man.	12314
LIGHT	Tacony Range Front Lt. (Fl. W) LL# 2321	40 01	32.005 30	74 59	55.55 54		" "	"
LIGHT	Frankford Channel Upper Directional Lt. (Fl. G.) LL# 2320	40 01	18.45	75 01	08.90 12		" "	"
LIGHT	Frankford Channel Lower Directional Lt. (Fl. G) LL# 2318	40 00	12.8	75 03	41.9 42		" "	"
LIGHT	Delair Range Rear Lt. (Fl. G) LL# 2314	40 00	40.74 41	75 03	13.69 10		" "	"
LIGHT	Delair Range Front Lt. (E.Int. G) LL# 2313	40 00	34.584 36	75 03	16.22 12		" "	"
	nc							

(33.)

RESPONSIBLE PERSONNEL		
TYPE OF ACTION	**NAME**	**ORIGINATOR**
OBJECTS INSPECTED FROM SEAWARD	A.Y. Bryson, LCDR., NOAA	☐ PHOTO FIELD PARTY ☒ HYDROGRAPHIC PARTY ☐ GEODETIC PARTY ☐ OTHER *(Specify)*
POSITIONS DETERMINED AND/OR VERIFIED		FIELD ACTIVITY REPRESENTATIVE
		OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'

(Consult Photogrammetric Instructions No. 64,

OFFICE

I. OFFICE IDENTIFIED AND LOCATED OBJECTS
Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object.
EXAMPLE: 75E(C)6042
8-12-75

FIELD

I. NEW POSITION DETERMINED OR VERIFIED
Enter the applicable data by symbols as follows:

F - Field	P - Photogrammetric
L - Located	Vis - Visually
V - Verified	
1 - Triangulation	5 - Field identified
2 - Traverse	6 - Theodolite
3 - Intersection	7 - Planetable
4 - Resection	8 - Sextant

A. Field positions* require entry of method of location and date of field work.
EXAMPLE: F-2-6-L
8-12-75

*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

FIELD (Cont'd)

B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.
EXAMPLE: P-8-V
8-12-75
74L(C)2982

II. TRIANGULATION STATION RECOVERED
When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery.
EXAMPLE: Triang. Rec.
8-12-75

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH
Enter 'V-Vis.' and date.
EXAMPLE: V-Vis.
8-12-75

**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

NOAA FORM 76-40 (8-74)

SUPERSEDES NOAA FORM 76-40 (2-71) WHICH IS OBSOLETE, AND EXISTING STOCK SHOULD BE DESTROYED UPON RECEIPT OF REVISION.

☆ U.S. GPO:1975-0-665-080/1155

APPROVAL SHEET
SURVEY H-9842 (HSB-10-2-79)

The hydrographic records transmitted with this report are complete and adequate to supersede prior surveys for charting and no additional work is recommended. Additional work was required. See attached ADDENDUM.

The fact that photogrammetric field edit was not performed on the T-sheets covering this area, required the hydrographer to spend a great deal of time verifying shoreline detail using hydrographic techniques.

Direct daily supervision was not given by me during the field work.

Approved and forwarded,

Thomas W. Richards
Lt. Cdr., NOAA
Chief, Hydrographic Surveys Branch

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

H-9842

HYDROGRAPHIC TITLE SHEET

(A D D E N D U M)

FIELD NO.

HSB-10-2-79

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State Pennsylvania ~~and~~ New Jersey

General locality Delaware River

Locality ~~Beverly to Delair, New Jersey~~ Bridesburg to Echo Beach

Scale 1:10,000 **Date of survey** 22 July 1980 to 24 July 1980 and * 28 Aug. 1980

Instructions dated 13 June 1977 **Project No.** OPR-D218-HFP-78

Vessel HFP-3 - NOAA Launch 1283

Chief of party Lt. Cdr. George W. Jamerson

Surveyed by Lt. Cdr. A.Y. Bryson

Soundings taken by echo sounder, ~~hand lead, pole~~ XXXXXXXXXX

Graphic record scaled by A.Bryson, D.Elliott, R.Snow, C.Bush

Graphic record checked by A.Bryson

Protracted by N/A **Automated plot by** ~~Field Sheet PDP8/e~~ AMC-Xynetics 1201

Verification by ~~AMC Verification Branch~~ Robert R. Hill

Soundings in ~~fathoms~~ XX **feet at MLW** ~~MLLW~~ XX

REMARKS: Notes in red were made during verification.

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537.

☆ U.S. GPO: 1974-0-768-081/1207

DESCRIPTIVE REPORT
(ADDENDUM)
Hydrographic Survey H-9842(HSB-10-2-79)

Scale: 1:10,000
Chief of Party: Lt.Cdr. George W. Jamerson
Officer-In-Charge: Lt.Cdr. A.Y. Bryson
Hydrographic Surveys Branch, HFP-3

Note: Reference is made to individual lettered paragraphs of the original report. Sections not addressed in this addendum remain unchanged.

B. AREA SURVEYED

Date of additional work, 22 July 1980 to 24 July 1980 and 28 August 1980.

G. HYDROGRAPHIC POSITION CONTROL

Equipment used to control hydro during additonal work:

T-1, s/n 13017	JD 204-206
Del Norte master 78, s/n 278	JD 204-206
Del Norte remote 76, s/n 251	JD 204-206
Del Norte trisponder s/n 123	JD 204-206

H. SHORELINE

The wreck charted at latitude 40° 02'19", longitude 74° 58'51" was searched for visually at MLW on JD 241 with no evidence of wreakage being found. The area in the vicinity of the charted wreck is bare mud flats. This wreck is no longer charted on the 24th Edition, May 8,1982, of chart 12314.

N. AIDS TO NAVIGATION

All floating aids were found to adequately serve the apparent purpose for which they were established with the following exception: Rancocas Creek Buoy 2 on the south side of the entrance to Rancocas Creek. The south edge of the channel passes within 10 meters of the high water line in this area so that the shoreline adequately marks the south edge. Shoaling on the north side of the entrance is extensive, and vessels leaving Rancocas and turning up the Delaware River occasionally turn too soon and ground on this shoal. Rancocas Creek Junction Lighted Buoy is a considerable distance beyond the point where small vessels, which are primary users in this area, could turn upriver.

It is recommended that Rancocas Creek Buoy 2 be removed and a black can, Rancocas Creek Buoy 1 be established in 6 feet of water at latitude 40° 02.45'N, longitude 74° 59.00'W.

O. STATISTICS (Additional work)

Positions	266
Nautical miles of development	25.9
Total hydro (add. work)	25.9
Bar checks	6

FIELD TIDE NOTE

H-9842

ADR gages were installed at Cornwell Heights and Bridesburg, PA for the additional work.

SITE	LOCATION	PERIOD
Cornwell Heights, PA #854-7333	lat. 40° 04.1' lon. 74° 56.3'	7/21/80 - 8/1/80
Bridesburg, PA #854-6252	lat. 39° 59.0' lon. 75° 04.5'	6/12/80 - 8/5/80

DELAWARE RIVER

FORM CD-26
(12-11-46)

U.S. DEPARTMENT OF COMMERCE

OPR - D218
HSB - 10-2-79
H - 9842

WORKSHEET

LAUNCH 1283 POSITION DATA SHEETS

J.D.	FROM POS.#	TO POS.#	CONTROL	REMOTE	T-1	INITIAL		REMARKS	
204	1905	1973	R-Az	107	107	106			
	1974	2001	R-Az	102	102	106			
205	2002	2011	R-Az	106	106	102			
	2012	2019	R-Az	109	109	104			
	2020	2027	R-Az	119	119	120			
	2028	2049	R-Az	122	122	123			
206	2050	2121	R-Az	123	123	122			
	2122	2155	R-Az	125	125	127			
	2156	2170	R-Az	127	127	125			

☆ U. S. GOVERNMENT PRINTING OFFICE: 1977—766-753

DELAWARE RIVER

FORM CD-26
(12-11-46)

U.S. DEPARTMENT OF COMMERCE

OAR - D218
HSB - 10-2-79
H + 9842

WORKSHEET

LAUNCH 1283 POSITIONS STEERED ON ARC

J.D.	VOL.	FROM POS.	TO POS.	REMARKS
204	8	1905	2001	
205	8	2002	2011	
	"	2028	2049	
206	8	2050	2170	

☆ U. S. GOVERNMENT PRINTING OFFICE: 1977—768-753

U.S. DEPARTMENT OF COMMERCE
December 17, 1980 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): 854-7333 Cornwalls Heights, PA

Period: August 15 - October 6, 1979

HYDROGRAPHIC SHEET: H-9842

OPR: D218

Locality: Delaware River, New Jersey and Pennsylvania
(Rancocas Creek)

Plane of reference (mean ~~lower~~ low water): 1.82 ft.

Height of Mean High Water above Plane of Reference is 7.1 ft.

REMARKS: Recommended zoning:

1. From the mouth of Rancocas Creek (Long. 74°59') to Longitude 74°57' apply +15 minute time correction and x0.94 range ratio.

2. From Longitude 74°57' to 74°55' apply +30 minute time correction and x0.90 range ratio.

for Donald Carrier
Chief, Datums and Information Branch

December 17, 1980

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

Tide Station Used (NOAA Form 77-12): 854-7333 Cornwalls Heights, PA

Period: July 22 -24, 1980

HYDROGRAPHIC SHEET: H-9842

OPR: D218

Locality: Delaware River, New Jersey and Pennsylvania

Plane of reference (mean ~~XXXXX~~ low water): 1.82 ft.

Height of Mean High Water above Plane of Reference is 7.1 ft.

REMARKS: Recommended zoning:

(1). Delaware River

a. East of the Entrance to Rancocas Creek (Longitude 74°59') zone direct on Cornwall Heights.

b. From the Entrance to Rancocas Creek (Longitude 74°59') to the Eight Mile Point Bridge apply -15 minute time correction and x0.95 range ratio, on Cornwall Heights.

c. West of Eight Mile Point Bridge to (Latitude 39°59.3') apply -30 minute time correction and x0.92 range ratio on Cornwall Heights.

for Donald L Carrier
Chief, Datums and Information Branch

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-9842

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO.	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
MUD ISLAND										1
DIEHL POINT										2
DELANCO										3
HAWK ISLAND										4
RANCOCAS CREEK										5
RIVERSIDE PARK										6
RIVERSIDE										7
BRIDGEBORO										8
~~CATTAIL ISLAND~~										9
DREDGE HARBOR										10
PLUM POINT										11
WRIGHT POINT										12
WRIGHT COVE										13
RIVERTON COVE										14
RIVERTON										15
EIGHT MILE POINT										16
PALMYRA										17
PENNSAUKEN CREEK										18
DELAIR										19
TACONY										20
TEN MILE POINT					Approved:					21
ECHO BEACH POQUESSING CREEK										22
PENNYPACK CREEK FENTON ISLAND					Chas. E. Harrington					23
BRIDESBURG PHILADELPHIA					[illegible] - N/CG2 x5					24
DELAWARE RIVER (TITLE)					11 APRIL 1983					25

NOAA FORM 76-155 SUPERSEDES C&GS 197

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NO.: H-9842

Number of positions	1938
Number of soundings	6599
Number of control stations	23

	TIME-HOURS	DATE COMPLETED
Preprocessing Examination	14	29 JAN 81
Verification of Field Data	781	2 JUNE 82
Quality Control Checks	79	
Evaluation and Analysis	165	18 APR 84
Final Inspection		24 APR 84
TOTAL TIME	1001	
Marine Center Approval		19 APR 84

Transmittal letter of survey and survey records will be included in the Descriptive Report to identify the records accompanying the survey.

NOAA FORM 61-29
(12-71)

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

REFERENCE NO.
MOA 23-27-86

LETTER TRANSMITTING DATA

DATA AS LISTED BELOW WERE FORWARDED TO YOU BY *(Check)*:

☐ ORDINARY MAIL ☐ AIR MAIL
☑ REGISTERED MAIL ☐ EXPRESS
☐ GBL *(Give number)* _____

TO:

CHIEF, DATA CONTROL SECTION
HYDROGRAPHIC SURVEYS BRANCH, N/CG243
NATIONAL OCEAN SERVICE, NOAA
ROCKVILLE, MD 20852

DATE FORWARDED
10 MARCH 86

NUMBER OF PACKAGES
(3) 1 TUBE, 2 BOXES

NOTE: A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

H-9842 (D218-HFP-78) HSB-10-2-79

DELAWARE RIVER

PKG #1 (TUBE)

1	SMOOTH SHEET
1	SMOOTH POSITION OVERLAY
2	SMOOTH EXCESS OVERLAYS
5	FINAL FIELD SHEETS
6	PRELIMINARY FIELD SHEETS

PKG #2 (BOX)

1 ACCORDIAN FILE CONTAINING ECHOGRAMS, PRINTOUTS FOR FOLLOWING SD'S: VE-66L 1283-~~1979~~ 214, 227, 228 226, 225, 232, 234-236, 240-242, 250, 258-256, 260-263, 264-270, 276-278, ~~1980~~ 204-206

FROM: *(Signature)* for Nora A Wike
CDR DAVID B. MACFARLAND

RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

ATLANTIC MARINE CENTER
HYDROGRAPHIC SURVEYS BRANCH (N/MOA23)
439 W. YORK STREET
NORFOLK, VIRGINIA 23510

NOAA FORM 61-29 SUPERSEDES FORM C&GS 413 WHICH MAY BE USED. ☆U.S.GPO:1980-0-665-115/1005

NOAA FORM 61-29
(12-71)

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

REFERENCE NO.
MOA 23-27-86

LETTER TRANSMITTING DATA

DATA AS LISTED BELOW WERE FORWARDED TO YOU BY (Check):

☐ ORDINARY MAIL ☐ AIR MAIL
☑ REGISTERED MAIL ☐ EXPRESS
☐ GBL (Give number) _____

TO:

CHIEF, DATA CONTROL SECTION
HYDROGRAPHIC SURVEYS BRANCH, N/CG243
NATIONAL OCEAN SERVICE, NOAA
ROCKVILLE, MD 20852

DATE FORWARDED
10 MARCH 86

NUMBER OF PACKAGES
(3) ITUBE, 2 BOXES

NOTE: A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

H-9842 contig

PKG #2 cont

8 SOUNDING VOLUMES

PKG #3 (BOX)

1 ENVELOPE WITH DESCRIPTIVE REPORT
1 ENVELOPE WITH MISCELLANEOUS DATA FROM PRINTOUT
1 ENVELOPE WITH 76-405
1 ENVELOPE WITH FIELD TIDE DATA
1 ENVELOPE WITH DATA REMOVED FROM DESCRIPTIVE REPORT
1 ENVELOPE WITH SUPPLEMENTAL FIELD DATA
1 ENVELOPE WITH DIRECT COMPARISON LOGS
1 FAHIER CONTAINING FINAL SOUNDING PRINTOUT & L-FILE
1 FAHIER CONTAINING FINAL POSITION PRINTOUT

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ATLANTIC MARINE CENTER
EVALUATION REPORT

REGISTRY NO.: H-9842 FIELD NO.: HSB-10-2-79

Pennsylvania -- New Jersey, Delaware River, Bridesburg to Echo Beach

SURVEYED: August 2 through October 5, 1979; July 22 through July 24, 1980 and August 28, 1980

SCALE: 1:10,000 PROJECT NO.: OPR-D218-HFP-78

SOUNDINGS: Raytheon 719-B Fathometer and Sounding Pole CONTROL: Del Norte, Theodolite, Geodimeter (Range/Azimuth)

Chief of Party.....T. W. Richards

Surveyed by.....A. Y. Bryson
.....A. Armstrong
.....D. Elliott

Automated Plot by.....Xynetics 1201 Plotter (AMC)

1. INTRODUCTION

a. Conflicts in depths where the channel lines crossed the main scheme sounding lines occurred in the vicinity of Latitude 40°03'00", Longitude 74°58'15". It was decided during verification that the Theodolite angles for the position fixes on the main scheme lines may have been incorrectly read. In order to bring the conflicting depths into agreement, 30 minutes were subtracted from all position fix angles for the following main scheme positions:

Positions 150-161, 170-171, 173-213 and 215-231.

East of Longitude 74°59'15", the tidal zoning for Dredge Harbor calculated by the Tidal Datums and Information Branch did not prove acceptable for reduction of soundings to Mean Low Water. The recommended zoning on the Bridgeboro, New Jersey tide station (#853-8921) was based on the assumption that Dredge Harbor was open to Rancocas Creek, when in fact it is not. The recommended zoning produced conflicts where the soundings for Dredge Harbor joined the Delaware River soundings. Instead of using the recommended zoning, the tidal reducers for this area were zoned from the Bridgesburg, Pennsylvania tide station (#854-6252) during verification.

No other unusual problems were encountered during verification.

b. Notes in the Descriptive Report were made in red during verification.

2. CONTROL AND SHORELINE

a. The control is described in sections F and G of the Descriptive Report. These sections are supplemented by "Control Report for CM-7508, 1978."

b. The shoreline originates with 1:10,000 scale Class III, Final Reviewed Shoreline Manuscripts TP-00237, TP-00238 and TP-00239, all of 1975. These manuscripts were not field edited. In Rancocas Creek east of Longitude 74°57'00", and Pennsauken Creek east of Longitude 75°02'00", the shoreline was added in brown from a 1:10,000 scale enlargement of 1:20,000 scale Chart 12314, 22nd Edition, July 30, 1977, and is for orientation only.

Shoreline revisions in red were made from information provided by the hydrographer.

The following were not transferred from TP-00238 to the present survey smooth sheet:

1) Ruins located in Latitude 40°02'46.2", Longitude 74°58'24.6".

2) Ruins located in Latitude 40°02'49.2", Longitude 74°58'16.2".

3) An obstruction located in Latitude 40°02'49.8", Longitude 74°58'17.4".

These items were shown in blue ink on the survey field sheet and a penciled note states, "These items are dredge pipes high to dry and no longer on shoreline and is (sic) of no danger. Investigated at MLW."

Dashed areas showing the extent of grass in the water were added from notes on the fathograms.

3. HYDROGRAPHY

a. Crosslines on this survey agree with the main scheme sounding lines within the limits stated in Sections 4.6.1 and 6.3.4.3 of the Hydrographic Manual.

b. The standard depth curves could be drawn in their entirety except for the following:

1) The mean low water line was supplemented by information from the Shoreline Manuscripts.

2) In several areas of very steep slopes, the 12 ft. depth curve was dropped between the 6 ft. and 18 ft. depth curves.

3) Because of inadequate bottom development, several sections of depth curves were dashed as follows:

a. 0 ft. in the vicinity of Latitude 40°00'33", Longitude 75°03'17". OK

b. 6 ft. in the vicinity of Latitude 40°00'43", Longitude 75°03'00", and Latitude 39°59'48", Longitude 75°03'49".

c. 12 ft. in the vicinity of Latitude 40°01'55", Longitude 74°59'15".

d. 18 ft. in the vicinity of Latitude 39°59'48", Longitude 75°03'49".

Dashed curves and brown curves were used to better portray the bottom.

c. This survey adequately delineates the basic bottom and the least depths except as noted above in Section 3.a.3) of this Evaluation Report and as follows:

1) An 8 ft. sounding in Latitude 40°01'27", Longitude 75°00'12.5", should have been developed with a reduced sounding line spacing on its eastern side.

2) A 16 ft. sounding in Latitude 40°02'19", Longitude 74°59'21", should have been developed with a reduced sounding line spacing.

3) An 18 ft. sounding in Latitude 40°02'24", Longitude 74°59'27", should have been developed with a reduced sounding line spacing. A lead line depth and bottom sample should also have been taken. (See Section 7.a.1) of this Evaluation Report).

4. CONDITION OF SURVEY

The smooth sheet and accompanying overlays, hydrographic records and reports comply with the requirements of the Hydrographic Manual except as follows:

a. The original volumes used to record the Theodolite angles were not forwarded to AMC. Also, in the Sounding Volumes the opening and closing values for the initial are not given for the beginning and end of each sounding line.

b. The distance between bottom samples exceeded the 6 cm maximum stated in Section 1.6.3 of the Hydrographic Manual by up to 10.5 cm.

c. When Detached Positions are taken on piers, jetties, outfalls, etc., the direction these features run toward the shore should be noted in the Sounding Volumes and shown on the survey field sheet. In the Sounding Volumes, the short, sketchy notes included with some Detached Positions were ambiguous and compromised their accurate portrayal.

d. The survey vessel speed was apparently too fast for the 15 second sounding interval used for this survey. Numerous intermediate soundings were inserted into the digital hydrographic survey records during verification to better show the bottom configuration.

e. The Field Tide Note is not in the form required by Section 5.3.5.B of the Hydrographic Manual.

f. Rather than indicate pole soundings with two short dashes in the Corrections Column for the Sounding Volume the abbreviation "PS" should be placed in the Remarks Column.

g. The electronic distance measuring equipment should have been calibrated at the beginning and end of each Range/Azimuth control set-up, not just at the beginning and end of the day when more than one set-up was used.

h. On NOAA Form 76-40, the Light List Numbers for the nonfloating aids to navigation were not noted as required in Section 5.5.2 of the Hydrographic Manual. All of the geographic positions given for the sixteen listed nonfloating aids to navigation were incorrect and the entries under "METHODS AND DATE OF LOCATION" do not clearly indicate how these locations were determined.

i. A description of how the chain sweep was rigged should have been included in Section L of the Descriptive Report.

j. The charted submarine cable and pipeline areas were not mentioned in section N of the Descriptive Report as required by Section 5.3.4 N of the Hydrographic Manual.

k. Not all charted features were confirmed or disproved as required by Section 4.12 of the Project Instructions.

l. During verification, Detached Positions taken by the hydrographer on objects in agreement with the Shoreline Manuscripts were deleted from the digital hydrographic survey records and the Shoreline Manuscript information was shown on the present survey smooth sheet. Detached Positions which provided additional information for objects shown on the Shoreline Manuscripts, such as elevations and descriptions, were given a cartographic code of 78 and the additional information was annotated on the smooth sheet.

m. No comparison was made with prior survey H-144 (1844) or H-2183b (1886).

n. Not all charted landmarks were evaluated for adequacy by the hydrographer as required by Section 6.2 of the Project Instructions. (See Section 7.3) A.31 of this Evaluation Report).

o. When describing the work done on Presurvey Review Items, the hydrographer should list at the beginning of each discussion (1) its description (2) its charted location and (3) the source for charting.

5. JUNCTIONS

H-9787 (1978-79) to the northeast
H-9886 (1980) to the southwest

The smooth sheet for survey H-9787 is archived at Headquarters and a standard junction was not made. The comparison between a copy of survey H-9787 and the present survey smooth sheet shows excellent agreement between soundings in the junctional area and the standard junctional curves can be completed.

An excellent junction was made with survey H-9886 and the junctional curves are complete and require no further consideration.

6. COMPARISON WITH PRIOR SURVEYS

a.	H-144	1:10,000	1844
	H-2183a	1:4,800	1886
	H-2183b	1:4,800	1886

These three prior surveys taken together cover the entire area of the present survey.

Extensive bulkheading and landfill, plus pier and bridge construction have radically altered the position of the mean high water line shown on these prior surveys. These man-made changes have also considerably reduced the areas uncovered at Mean Low Water.

The cultural development of this area, coupled with the continual dredging of the maintained channel, do not allow a comparison between the present and prior surveys which would be meaningful for present charting purposes. The above prior surveys should only be viewed as documents of historical interest and the present survey is adequate to supersede these prior surveys in the common area.

b.	T-8747A	1:10,000	1946-50
	T-8749A	1:10,000	1946-49
	T-8767	1:10,000	1946-47

These prior topographic manuscripts and the present survey data were compared with the following results:

1) Major changes to shoreline due to landfill or natural processes were:

a. Accreted 408 meters to the west in the vicinity of Latitude 39°59'30.6", Longitude 75°03'01.2".

b. Accreted 450 meters to the west in the vicinity of Latitude 40°00'03", Longitude 75°02'48".

c. Filled 387 meters to the north in the vicinity of Latitude 40°00'29.4", Longitude 75°01'58.2".

d. Filled 324 meters to the west in the vicinity of Latitude 40°01'01.8", Longitude 75°00'25.2".

e. Filled 270 meters to the southeast in the vicinity of Latitude 40°01'22.8", Longitude 75°01'39".

f. Filled 237 meters to the east in the vicinity of Latitude 40°03'13.2", Longitude 74°58'45.6".

g. Filled 315 meters to the north in the vicinity of Latitude 40°02'25.8", Longitude 74°57'52.8".

2) Dredging and deposition of spoil have significantly altered the configuration of the islands and shoreline in Dredge Harbor.

3) Three piles, presently charted without labels in Latitude 40°00'43.6", Longitude 75°01'45", Latitude 40°00'44.2", Longitude 75°01'45.6", and Latitude 40°00'45.7", Longitude 75°01'47.4", were not mentioned or investigated by the hydrographer and were brought forward to the present survey as submerged piles from T-8747A.

4) A section of piling, charted as a dashed line in Latitude 40°00'45", Longitude 75°01'48", denoting an old ferry slip, was not mentioned or investigated by the hydrographer and was brought forward to the present survey as submerged piling from T-8747A.

5) An unlabeled, dashed line charted in Latitude 40°03'55", Longitude 74°56'51.7", was not mentioned or investigated by the hydrographer and was brought forward to the present survey as pier ruins from T-8767.

Except as noted above, the present survey smooth sheet and Shoreline Manuscripts are adequate to supersede these prior topographic manuscripts.

7. COMPARISON WITH CHART #12314 (22nd Edition, July 30, 1977)

a. Hydrography

All of the charted hydrography originates from not readily ascertainable sources except for the previously discussed prior topographic surveys. In view of the continual dredging of the maintained channel in the survey area, these charted soundings probably originate with U.S. Corps of Engineers Before and After Dredge and Channel Examination Surveys which extended beyond the channel limits shown on the chart. Soundings on the present survey range from excellent agreement to 1-8 feet deeper than charted soundings.

Because of the time which has elapsed between the field collection and office processing of the data on the present survey smooth sheet, comparison was also made with the most recent edition of the above chart to insure that no items already on the chart were once more recommended for charting. The edition used was: 24th Edition, May 8, 1982.

Attention is directed to the following:

1) Eleven Presurvey Review Items (18, 19, 20, 21, 22, 23, 24, 25, 26, 27 and 29) were investigated by the field. The Descriptive Report (Section L) addresses these items and additional information is as follows:

Presurvey Review Item #20, a dangerous submerged obstruction, PA, charted in Latitude 40°02'51.6", Longitude 74°58'37.8", originates with LNM 35 of 1975, and is described as an unidentified partially submerged buoy. During the chain sweep for this object on Year Day 248 of 1979, nothing was hung or visually sighted. The difficulty of making a hang with a chain sweep in this area implies that the buoy could still be in the same approximate position but completely submerged. Three seconds before position 886, in Latitude 40°02'55.7", Longitude 74°58'30.4", a fathogram trace appears which is four feet above and unattached to the continuous bottom profile. Considering that (1) this trace could be given several different interpretations, (2) its position plots upstream, 210 meters northeast of the charted location and (3) the

implication that the partially submerged buoy could have sunk in the approximate position where it was reported, the hydrographer's recommendation should be disregarded and the description "Obstr PA" retained as charted.

Presurvey Review Item #21, 15 Rk, charted in Latitude 40°02'24.6", Longitude 74°59'25.8", was revised in 1954 from a 17 Rk charted in 1945. This feature was not hung during a chain sweep on Year Day 248 of 1979. The positions plotted for this chain sweep on the survey field sheet show that the swept area did not extend far enough to the south for a thorough area search. The search lines stopped just north of the charted position of this rock.

On the same day, a feature rising 7.8 feet from the bottom, with a reduced depth of 16 feet, was located during a fathometer search. A Detached Position, which plots 48 meters northwest of the charted 15 Rk, was taken on this feature at position 923 in Latitude 40°02'26.4", Longitude 74°59'26.9". Only two short lines parallel to each other (positions 919-922), running northwest to southeast and spaced 10 meters apart were run for this fathometer search. This brief fathometer search was not extensive enough for a thorough area search, nor was a leadline least depth or bottom sample to determine bottom consistency attempted.

During additional work on Year Day 204 of 1980, an 18 ft. reduced sounding was located 21 seconds after position 1942 in Latitude 40°02'23.62", Longitude 74°59'27.2". This position plots 54 meters southwest of the charted 15 Rk. No attempt was made to determine a least depth or the bottom consistency in this area. The trace for this sounding rises abruptly, 13.3 feet from the bottom, and has such a narrow base that it probably represents something other than a feature composed of sand or mud. The determination made during verification was that this feature represents part of the charted 15 Rk and is shown within the 18 ft. depth curve on the present survey.

The 15 Rk should be retained as charted and the charted 18 ft. depth curve in this area should be revised as shown on the present survey.

2) The hydrographer makes additional charting recommendations in Section H of the Descriptive Report.

3) The chart comparison in this Evaluation Report identifies numerous recommendations for charting. These recommendations should be followed unless there is subsequent information to the contrary. The recommended charting actions are as follows:

A. DELAWARE RIVER

1. The PIERS and PIER RUINS charted in the vicinity of Latitude 40°03'56", Longitude 74°56'45", should be charted as shown on TP-00237 and the present survey smooth sheet.

2. The PIER charted in Latitude 40°03'40", Longitude 74°57'28", falls behind the MHW line shown on TP-00238 and should be deleted from the chart. Chart the MHW line in this area as shown on TP-00238.

3. The detached MEAN LOW WATER AREA in the vicinity of Latitude 40°03'42", Longitude 74°57'33", should be deleted from the chart.

4. The MARINE RAILWAY charted in Latitude 40°03'27", Longitude 74°58'18", is now in ruins.

5. Uncharted PILES are in Latitude 40°02'55.1", Longitude 74°58'50.4".

6. Uncharted BULKHEAD RUINS are in Latitude 40°02'54", Longitude 74°58'51.2".

7. Three short SOLID LINES, which may represent piers, are charted in the vicinity of Latitude 40°02'50", Longitude 74°58'57". These are not shown on TP-00238 and were not mentioned or investigated by the hydrographer. The charting disposition of these items is deferred to the chart compiler.

8. An uncharted FLOATING PIER is in Latitude 40°02'26", Longitude 74°59'32.5".

9. A DOLPHIN charted in Latitude 40°02'02.5", Longitude 74°59'59.5", is not on TP-00238. It was not mentioned or investigated by the hydrographer when he was in the area taking Detached Positions at a tidal stage 0.4 feet above MLW and should be revised to submerged.

10. Two uncharted DOLPHINS are in the vicinity of Latitude 40°02'02.5", Longitude 75°00'00.5".

11. Uncharted PIER RUINS are in Latitude 40°02'01.2", Longitude 75°00'02.4".

12. The bottom characteristic rky charted in Latitude 40°01'57", Longitude 74°59'32", was not investigated by the hydrographer and should be retained as charted.

13. An uncharted SNAG is in Latitude 40°01'56", Longitude 75°00'09.6".

14. An uncharted OUTFALL is in Latitude 40°01'51.9", Longitude 74°59'34.4".

15. An uncharted PIER IN RUINS is in Latitude 40°01'50.5", Longitude 74°59'35".

16. An uncharted VISIBLE WRECK is in Latitude 40°01'28.6", Longitude 74°59'57.5".

17. The MARKERS charted in Latitude 40°01'19", Longitude 75°01'22", were not mentioned or investigated by the hydrographer and should be retained as charted.

18. The note DREDGED TO 30 FEET charted in Latitude 40°01'17", Longitude 75°01'07", should be revised. The present survey has a least depth of 23 feet in Latitude 40°01'18.8", Longitude 75°01'14.1".

19. The unlabeled pile SYMBOL charted in Latitude 40°01'09", Longitude 75°02'05", is not on TP-00239, was not mentioned or investigated by the hydrographer and should be retained as charted.

20. Two PILES charted in Latitude 40°01'07.5", Longitude 75°02'09", should be revised to three dolphins in ruins.

21. The BULKHEADS and BREAKWATER charted in the vicinity of Latitude 40°01'06", Longitude 75°00'34", are now in ruins.

22. An uncharted OUTFALL is in Latitude 40°01'05", Longitude 75°00'37".

23. An uncharted OBSTRUCTION is in Latitude 40°01'03.4", Longitude 75°02'19.2".

24. The PIER charted in Latitude 40°00'53.8", Longitude 75°02'42", is now in ruins.

25. The three PILES charted in the vicinity of Latitude 40°00'44", Longitude 75°01'45.5", were not mentioned or investigated by the hydrographer when he was taking Detached Positions in the area at a tidal stage 2.8 feet above MLW and should be revised to submerged.

26. A BASCULE BRIDGE charted in Latitude 40°00'43.8", Longitude 75°02'36.6", is shown as a fixed bridge on TP-00239. Since no field edit was done for this Shoreline Manuscript, the photogrammetric interpretation of this bridge could be incorrect. The charting disposition of this bridge is deferred to the chart compiler.

27. An uncharted PIER IN RUINS is in Latitude 40°00'39", Longitude 75°02'25.5".

28. The OUTFALL charted in Latitude 40°00'38", Longitude 75°02'19.5", does not appear on TP-00239 and was not mentioned or investigated by the hydrographer when he was in the area at a tidal stage 2 feet above MLW. The charting disposition of this item is deferred to the chart compiler.

29. Two uncharted DREDGE PIPES, extending offshore of the MHW line, are in Latitude 39°59'52.8", Longitude 75°03'12.3".

30. An uncharted PILE is in Latitude 39°59'51.2", Longitude 75°03'14.9".

31. The following charted LANDMARKS were not evaluated for adequacy by the hydrographer:

a) A TANK in Latitude 40°01'11.2", Longitude 75°02'22".

b) A TANK in Latitude 40°01'36.5", Longitude 75°02'02.4". (No longer charted on the 24th Edition, May 8, 1982 of Chart 12314.)

c) A STACK in Latitude 40°02'09.7", Longitude 75°01'08.3".

d) A TANK in Latitude 40°02'40", Longitude 74°59'44.5".

e) A TANK in Latitude 40°02'34.4", Longitude 74°59'52.8".

The charting disposition of these landmarks is deferred to the chart compiler.

B. RANCOCAS CREEK

1. Uncharted BULKHEAD RUINS are in Latitude 40°02'34", Longitude 74°58'06.5".

2. A PIER charted in Latitude 40°02'41.5", Longitude 74°57'48.5", is not on TP-00238, was not mentioned or investigated by the hydrographer and should be retained as charted.

3. Two PIERS charted in the vicinity of Latitude 40°02'41.5", Longitude 74°57'29.5", are not on TP-00238, were not mentioned or investigated by the hydrographer and should be retained as charted.

4. Three PIERS charted in the vicinity of Latitude 40°02'41.5", Longitude 74°57'24.5", should be deleted from the chart and a line of piles charted as shown on the present survey smooth sheet.

5. Two piers shown on TP-00238 in the vicinity of Latitude 40°02'41.6", Longitude 74°57'21.1", were not shown on the present survey smooth sheet because of the uncharted VISIBLE WRECK in Latitude 40°02'41.6", Longitude 74°57'21.1". The chart only shows one PIER in this vicinity.

6. The RUINS charted in Latitude 40°02'42.5", Longitude 74°57'19", are not on TP-00238, were not mentioned or investigated by the hydrographer and should be retained as charted.

7. Uncharted PILES are in Latitude 40°02'41.4", Longitude 74°57'08.8".

8. A PIER charted in Latitude 40°02'41.5", Longitude 74°57'08", is not on TP-00238, was not mentioned or investigated by the hydrographer when he was in the area at a tidal stage 0.8 feet above MLW when he took the Detached Position on the piles discussed above and should be revised to submerged ruins.

9. Two PIERS charted in the vicinity of Latitude 40°02'40.5", Longitude 74°57'05.5", are not on TP-00238, were not mentioned or investigated by the hydrographer and should be retained as charted.

10. An uncharted FLOATING PIER is in Latitude 40°02'23.6", Longitude 74°56'42.3".

11. In January 1976, Photo Field Party 62, Job CM-7707, recorded the following TRIANGULATION STATIONS AS RECOVERED:

a. BRIDGEBORO SW TRANSM TOWER, 1933 located in Latitude 40°01'40.95", Longitude 74°56'01.67".

b. BRIDGEBORO NE TRANSM TOWER, 1933 located in Latitude 40°01'45.61", Longitude 74°55'54.22".

The National Geodetic Survey list of Horizontal Control Data, revised to February 1980, records these stations as LOST. The transmission towers are still charted in the above locations as TOWER landmarks. The appropriate U.S. Army Corps of Engineers district office should be contacted for confirmation of the existence or removal of these transmission towers.

12. A PIER charted in Latitude 40°01'39.5", Longitude 74°55'47.7", is now in ruins. This pier is not shown at all on the inset "Continuation of Rancocas Creek".

13. An uncharted FLOATING PIER is in Latitude 40°01'49.6", Longitude 74°55'39.2".

14. The BULKHEAD charted in Latitude 40°01'49.4", Longitude 74°55'37.3", is now in ruins. The shape and line weight for this feature as shown on the inset "Continuation of Rancocas Creek" do not match what is shown on the main sheet.

15. The NAME Cattail Island charted in Latitude 40°01'45", Longitude 74°55'40", should be revised to the approved name of Fenton Island. The shoreline for this island shown on the inset "Continuation of Rancocas Creek" does not match what is shown on the main sheet.

16. The spacing between the PIERS charted in the vicinity of Latitude 40°01'39", Longitude 74°55'50", on the main sheet does not match what is shown on the inset "Continuation of Rancocas Creek."

C. DREDGE HARBOR

1. A DASHED LINE charted in Latitude 40°02'04", Longitude 74°59'17", is not on TP-00238 and was not mentioned or investigated by the hydrographer. The charting disposition of this item is deferred to the chart compiler. In this same area, the present survey shows three uncharted DREDGE PIPES extending offshore of the MHW line.

2. Numerous uncharted VISIBLE WRECKS, PILES, ROWS OF PILING, changes in PIER CONFIGURATIONS and MEAN LOW WATER CURVES are within this harbor.

D. PENNSAUKEN CREEK

1. An uncharted PUMP HOUSE is in Latitude 39°59'27.5", Longitude 75°03'03.2".

2. A PIER charted in Latitude 39°59'27", Longitude 75°03'00.5", is not on TP-00239, was not mentioned or investigated by the hydrographer and should be retained as charted.

3. An uncharted ROCK which uncovers 5 ft. at Mean Low Water is in Latitude 39°59'28.6", Longitude 75°03'00.4".

4. A PIER charted in Latitude 39°59'35", Longitude 75°02'35.5", is not on TP-00239, was not mentioned or investigated by the hydrographer and should be retained as charted.

5. The three ISLETS charted in Latitude 39°59'46", Longitude 75°02'19", are not on TP-00239 and should be deleted from the chart.

6. An uncharted FLOATING PIER is in Latitude 39°59'46.5", Longitude 75°02'12".

7. The SHORELINE charted in the vicinity of Latitude 39°59'45", Longitude 75°02'12", should be revised as shown on TP-00239.

8. A VERTICAL CLEARANCE of 10 ft. at MHW was measured for a fixed railroad bridge in Latitude 39°59'45", Longitude 75°02'07.5". This bridge has no clearances presently charted. The field determined vertical clearance of 10 ft. at MHW should be charted with the notation "REPORTED".

9. The BRIDGE RUINS charted in Latitude 39°59'43", Longitude 75°02'04.5", were not mentioned or investigated by the hydrographer. Further investigation is needed on the existence of these ruins and the charting disposition is deferred to the chart compiler.

10. An uncharted OVERHEAD POWER CABLE with a field determined vertical clearance of 29 ft. at MHW was located in Latitude 39°59'42.5", Longitude 75°02'03". The appropriate U.S. Army Corps of Engineers district office should be contacted for confirmation of the existence of this overhead cable and its vertical clearance.

11. An uncharted VISIBLE WRECK is in Latitude 39°59'41.8", Longitude 75°02'00.9".

12. A VERTICAL CLEARANCE of 11 ft. at MHW was measured for a fixed bridge in Latitude 39°59'39", Longitude 75°01'59". This bridge has no clearances presently charted. The field determined vertical clearance of 11 ft. at MHW should be charted with the notation "REPORTED".

13. A VERTICAL CLEARANCE of 7 ft. at MHW was measured for a fixed bridge in Latitude 39°59'37", Longitude 75°01'47". This bridge has no clearances presently charted. The field determined vertical clearance of 7 ft. at MHW should be charted with the notation "REPORTED".

14. An uncharted OVERHEAD POWER CABLE with a field determined vertical clearance of 21 ft. at MHW was located in Latitude 39°59'37", Longitude 75°01'40.5". The appropriate U.S. Army Corps of Engineers district office should be contacted for confirmation of the existence of this overhead cable and its vertical clearance.

15. A VERTICAL CLEARANCE of 9 ft. at MHW was measured for a fixed bridge in Latitude 39°59'06.5", Longitude 75°00'55.5". This bridge has no clearances presently charted. The field determined vertical clearance of 9 ft. at MHW should be charted with the notation "REPORTED".

Except as noted above, those areas covered by the present survey which have not been superseded by more recent U.S. Corps of Engineers hydrographic survey data are adequate to supersede the charted hydrography in the common area.

b. Controlling Depths

The channel soundings on the present survey have been superseded by more recent U.S. Corps of Engineers surveys of September 1981 through May 1982, as shown in the controlling depth tabulations for the 24th Edition, May 8, 1982 of Chart 12314, and require no further consideration.

c. Aids to Navigation

The fixed and floating aids to navigation presently charted adequately mark the features intended.

8. COMPLIANCE WITH INSTRUCTIONS

Except as listed elsewhere in this report, this survey adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

This is an adequate basic survey and no additional field work is recommended.

Robert R. Hill
Cartographic Technician
Verification of Data

Guy F. Trefethen
Senior Cartographic Technician
Verification Check

Charles D. Meador
Charles D. Meador
Cartographer
Evaluation and Analysis

INSPECTION REPORT
H-9842

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts of the survey have been made. The survey complies with National Ocean Service requirements except as noted in the Evaluation Report. The survey records comply with NOS requirements except where noted in the Evaluation Report.

Inspected

R. D. Sanocki
Chief, Hydrographic Survey Processing Section
Hydrographic Surveys Branch

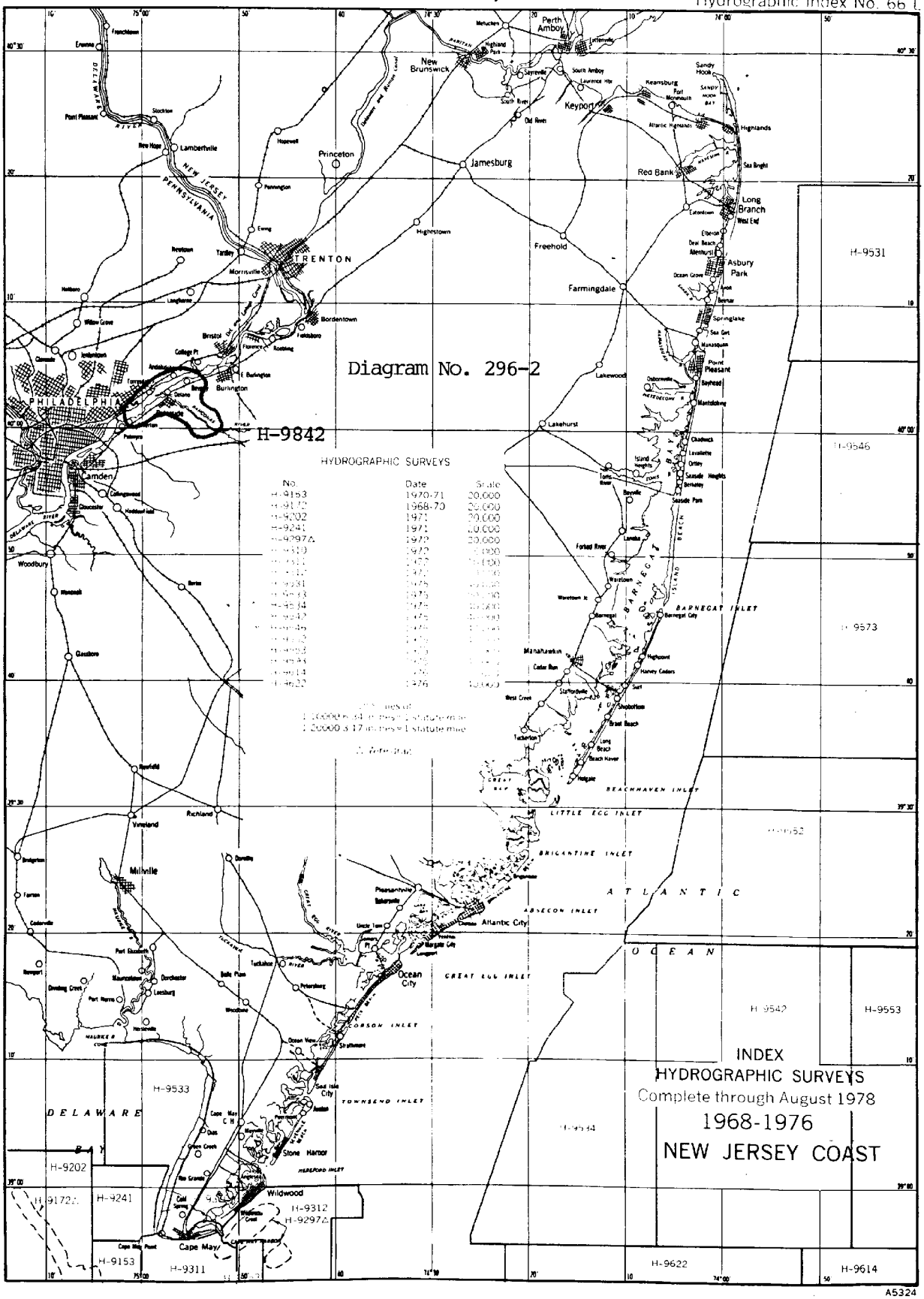
David B. MacFarland, LCDR, NOAA
Chief, Hydrographic Surveys Branch

Approved April 19, 1984

Wesley V. Hull, RADM, NOAA
Director, Atlantic Marine Center

DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Survey
Rockville, Maryland

Hydrographic Index No. 66 L



NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9842

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
12314	9-8-87	C. STANWARD	(Full) ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 30 Total Application of Hydro
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
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			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.