

FE 239

Diagram No. 369-5

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Field Examination
Field No. WH-15-1-79
Office No. FE-239

LOCALITY

State New York--New Jersey
General Locality New York Harbor
Locality Raritan Bay & Southern
..... Part of Arthur Kill
..... 1979
CHIEF OF PARTY
..... CDR. K.M. Kieninger

LIBRARY & ARCHIVES

DATE December 10, 1985

Area 1
CHTS

12331 }
12337 }
12332 }
12401 }
12402 }

for application see
Record of Application

12/10/85

HYDROGRAPHIC TITLE SHEET

FE-239
N/A

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.

CHART ~~12331~~ WH 15-1-79

State NEW YORK - NEW JERSEY

General locality NEW YORK HARBOR

Locality RARITAN BAY AND SOUTHERN PART OF ARTHUR KILL
1:2500, 1:5000, 1:7500, 1:10000, and

Scale 1:15,000 Date of survey 21 June to 18 Sept. 1979

Instructions dated DEC. 19, 1978 Project No. ^{OPR}
~~DRP~~ - B408 - WH - 79

Vessel NOAA Ship WHITING, Launches WH 1014 and Monark WH 1288

Chief of party Commander Karl Wm. Kieninger

Surveyed by D.M. Kuhl, N.E. Perugini, J.C. Gardner, and J.B. Grant

Soundings taken by echo sounder, hand lead, ~~XXX~~ Ross Model 5000 and Raytheon 719B

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Protracted by Program RK 201 Hydroplot System Automated plot by ^{N/A}
~~Complot DP-5~~ XYNETICS 1201 Plotter (AMC)

Verification by: GST J.B. Grant R.G. Roberson
Soundings penciled by

Soundings in ~~XXXXXX~~ feet at MLW ~~XXXXX~~ Based on Predicted tides

REMARKS: All times throughout are Coordinated Universal Time.

Notes in the Descriptive Report in red were made during verification

STANDARDS CC'D 12-15-85

C.104

AWOIS/SURF M&M 1/9/99

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* FILED WITH THE ORIGINAL FIELD RECORDS.

DESCRIPTIVE REPORT

To Accompany

FE-239

~~CHART EVALUATION SURVEY~~

~~Of Chart 12331~~

Scale: 1:15000

Surveyed June - September 1979

By NOAA Ship WHITING

CDR Karl Wm. Kieninger, Commanding

A. PROJECT

This survey was carried out in accordance with Project Instructions for OPR-B408-WH-79, Chart Evaluation Survey, New York Harbor, dated 19 December 1978, as amended by the following changes:

Change No.1 - 19 January 1979
Change No.2 - 01 March 1979
Change No.3 - 12 March 1979
Change No.4 - 02 April 1979
Change No.5 - 26 April 1979

B. AREA SURVEYED

The area surveyed is that covered by NOS Chart 12331 21st Ed., June 1977, "Raritan Bay and Southern Part of Arthur Kill." All work on this survey was conducted from 20 June to 18 Sept., 1979. Preliminary reconnaissance was accomplished in early April 1979 during the evaluation of Chart 12333. This chart can be geographically divided into 4 areas: 1) Arthur Kill, 2) Great Beds, 3) Raritan Bay, and 4) Great Kills Harbor.

1) Arthur Kill

The southern part of Arthur Kill shown on this chart consists of five narrow reaches maintained by the Army Corps of Engineers. The western shore of Arthur Kill is industrial with deep water to the shoreline. The eastern shore is residential or marsh ~~bordered~~ ^{bordered} by broad shoals and many wreckage areas.

2) Great Beds

This area is the junction of Arthur Kill, the Raritan River, and Raritan Bay. It is characterized by six maintained channels, a 36 foot anchorage, and a borrow area for a land-fill. This area is used by many deep drafted vessels and barges heading for the several petroleum terminals in Arthur Kill. There is also a large number of pleasure boats that use this area and the shoals along the channels for anchorages.

3) Raritan Bay

Raritan Bay stretches eastward from the southern tip of Staten Island and opens up into the Lower Bay of the New York Harbor. The bay has depths of up to 25 feet and cutting across it is a main channel consisting of three maintained reaches which lead toward the Sandy Hook Channel.

4) Great Kills Harbor

This is a shallow man-made harbor on the south-eastern edge of Staten Island, and is used as an anchorage for small boats. It is entered through a buoyed channel leading from the Lower Bay of the New York Harbor. There are several small craft facilities inside the harbor.

C. SOUNDING VESSELS

Sounding vessels for this survey were WHITING launch 1014 and Monark 1288. EDP numbers for these vessels are 2932 and 2933 respectively. The launch was equipped with the standard hydrographic equipment. WH 1288 was used to survey shallow areas. The Monark was powered by a Johnson 85 hp engine, and is equipped with a Raytheon shallow water fathometer and standard Del Norte gear. No major mechanical problems were encountered with the launch or the Monark.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Launch 1014 was equipped with a Ross Model 5000 ^{echosounder} ~~fathometer~~, SN 1052. Phase calibrations were conducted regularly in accordance with the Ross operating manual. Analog and digital output compared satisfactorily, and no instrument errors were observed.

WH 1288 was equipped with a Raytheon Model DE-719B fathometer. Calibrations of the instrument were done in accordance with the Raytheon operating manual. No major problems were encountered with the fathometers used in this survey. DE-719B s/n = 465.

Bar checks were attempted regularly and usually taken around slack water. Data from the following days was found adequate for the calculation of velocity correctors based on direct comparison.

TABLE I BAR CHECKS (JD 172 - 194) TABLE II BAR CHECKS (JD 197 - 242)

<u>Julian Day</u>	<u>Julian Day</u>	<u>Julian Day</u>	<u>Julian Day</u>
172 (1)	187 (2)	197 (1)	212 (1)
176 (1)	190 (2)	198 (2)	218 (1)
177 (2)	192 (1)	200 (1)	219 (2)
180 (2)	194 (1)	206 (2)	240 (1)
184 (2)		208 (1)	242 (2)
		209 (1)	

Bar check averages and the direct comparison logs are submitted with the field records.

TDC casts were taken with a Martek TDC unit, Model 167, SN 127. This unit was purchased for the WHITING in February 1979, through the Electronic Engineering Division, Atlantic Marine Center.

TABLE III TDC CASTS (JD 172 - 194)

<u>Julian Day</u>	<u>Location</u>
187	40°33'35" N 74°13'00" W
187	40°32'40" N 74°15'10" W

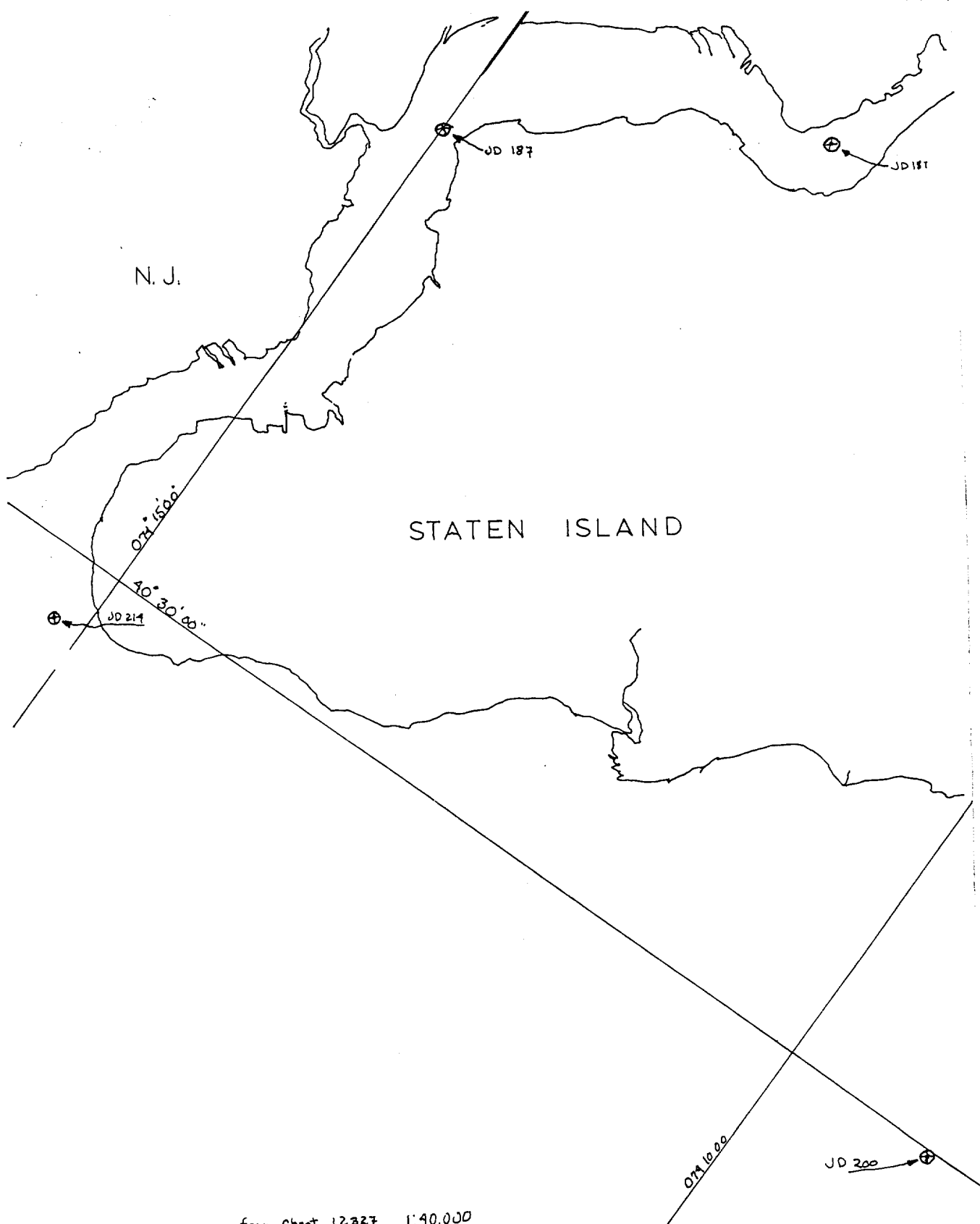
TABLE IV TDC CASTS (JD 197 - 242)

<u>Julian Day</u>	<u>Location</u>
200	40°30'00" N 74°09'00" W
214	40°29'40" N 74°15'10" W

During the survey period the TDC unit was sent to MESA calibration for tests. It was found to be inaccurate at very cold temperatures and at certain conductivities, soon afterwards the unit ceased to function. Both the TDC data and the bar check averages were plotted and they show similar slopes, but the TDC slope is shifted from 0.2 to 0.4 feet from the bar check slope. All velocity corrections were taken from the bar check averages. The TDC casts did reveal that the water did increase in temperature over the survey period. On Julian Day 187 the surface temperature was 21.8°C and on Julian Day 214 the surface temperature had risen to 27.6°C. At a given time the water temperature appeared to be constant with change in location. Salinity measurements were found to change with location and the stage of the tide. Analysis of the data shows that the velocity corrections are strongly dependent on temperature which as stated above changed over the survey period. The corrections were not location dependent.

The data was examined and found that it could be grouped within specific time frames. The bar checks shown in Table I (JD 172 - 194) were used for one set of velocity corrections. Table II (JD 197 - 242) shows the data that was used for the calculation of the other set of correctors. The bar checks from Julian Days 240 and 242 were taken after the second group of velocity correctors was calculated. When the data from these two days was averaged into the second table of velocity correctors there was an insignificant change to the correctors. So instead of calculating a third velocity table based on three bar checks, these two days were just grouped in table II.

Velocity, tide and TRA corrections were applied to all soundings on the field sheets. On 6 August, JD 218 it was determined that the TRA



from Chart 12327 1:40,000

correction for launch 1014 was 1.5 feet instead of 1.7 feet. All data was corrected and 0.2 feet was added to all correctors on the direct comparison logs for all bar checks taken before this date. The launch was run at a variety of speeds from 700 to 2600 RPM's. Settlement and squat trials were run on launch 1014 on 28 June 1979. The graph and corresponding table for settlement and squat are included in the appendix. The Monark was always run at idle speed and has no settlement and squat correction. The correctors for the launch range from -0.2 feet to +0.2 feet. This corrector has ~~not~~ been applied to the soundings.

All depths ^{are} noted in this report ~~is~~ reduced to Mean Low Water.

E. SURVEY SHEETS

Submitted with this survey are two mylar overlays which contain the reconnaissance hydrography, buoy positions, item investigations, and control stations. The north and south sheets are 1:15,000 projections which have the following limits:

	<u>NORTH SHEET</u>	<u>SOUTH SHEET</u>
NORTH	40°35'00" N	40°30'37" N
SOUTH	40°30'28" N	40°26'05" N
EAST	74°07'18" W	74°07'18" W
WEST	74°17'00" W	74°17'00" W

The Master Chart graphically shows additions, deletions, and verifications for Chart 12331. **THE MASTER CHART IS FILED WITH RECON. HYDRO. D-9C(1979).**

The development of items 4, 8, F and L are blown up to 1:5000 and are submitted with the individual item write-ups.

Item 17 was blown up to 1:2500 and is submitted with its item write up.

F. CONTROL STATIONS

Positions for the following stations were obtained from the NOS Horizontal Control Data: 102,104,105,109,111,112,125,126,131,132,133,134,135,136,138,139,147,148,149,601,700.

The following Corps of Engineers stations were used as Del Norte sites on this survey and were confirmed to third order accuracy: 901,903.

The position for the following signals were obtained from the Fixed/Floating Aids List compiled by Marine Charts (NOS) giving geographic positions of all charted features: 155,156,157,158,159,160,180,187.

The following stations were established by the WHITING: Station 600 was established by a traverse from a known first order station, to third order standards. Station 800 was established inside the Great Kills Harbor by three-point sextant fixes, off third order objects, and was used for reconnaissance hydrography only. This is a nonre coverable station.

All control is based on the North American Datum of 1927.

A signal list including signal numbers, latitudes, longitudes, names, types and sources is included with the report. A geodetic control report will be submitted through Operations Division, Atlantic Marine Center. Copies of the appropriate geodetic abstracts and computations are included for verification of the positions.

G. HYDROGRAPHIC POSITION CONTROL

The methods used to control positioning ^{for} the launch in this survey are: range-range and range-azimuth. Positioning control used on the Monark was: range-azimuth and "see field sheet." The Del Norte Positioning System was used to measure all the ranges on this survey. The azimuths were measured with a Wild T2, ^{theodolite} SN 35803. Baseline calibrations were performed in accordance with the Hydro Manual over a baseline of 1986 meters. All calibration records are included with the field records.

Range-azimuth work was done in Arthur Kill and the Great Kills Harbor. The areas of Great Beds and the Raritan Bay were surveyed using range-range control. The "see field sheet" method was used along the many creeks on this chart where better control was not available.

Daily correctors were computed and applied by three-point sextant fixes and by positioning the launch on a known baseline. In general the Del Norte Positioning System performed satisfactorily throughout the period of the survey.

The following is a list of model and component serial numbers for the Del Norte equipment used during each baseline calibration period.

JD 172 - 180 Vesno 2932 Master SN 250, DMU SN 162
Remotes: Code 78 SN 1316

JD 184 - 201 Vesno 2932 Master SN 1060, DMU SN 192
Remotes: Code 74 SN 218, 78 SN 1316

JD 204 - 220 Vesno 2932 Master SN 1060, DMU SN 192
Remotes: Code 74 SN 218 76 SN 1137, 78 SN 1316

JD 240 - 242 Vesno 2933 Master SN 1060, DMU SN 192
Remotes: Code 74 SN 218

H. WATERFRONT TOPOGRAPHY VERIFICATION

The waterfront topography was verified by visual inspection, electronic detached positions, and reconnaissance hydrography. Information was also obtained from the Army Corp of Engineers concerning dredging and building permits. In general the waterfront topography on this chart is accurately charted. There were several minor discrepancies that are noted on the Master Chart and in the item write-ups. One major discrepancy was discovered in Arthur Kill in the Fresh Kills reach. On the eastern shore just south of Great Fresh Kill creek the shoreline has been cut back and is no longer charted accurately. It is recommended that chart updating photography be flown in this area to adequately evaluate this new shoreline. PRESENTLY CHARTED ADEQUATELY.

I. HARBOR RECONNAISSANCE

J. DISCREPANCY INVESTIGATION

K. CHANNEL AND SHORELINE INVESTIGATION

L. RECONNAISSANCE HYDRO

~~SECTION 8~~ DISCREPANCY ITEM REPORTS

Sections I, J, K, L, and 8 were grouped together and references to these sections will be made in the individual area, reach, and item write-ups.

ITEM INDEX

<u>AREAS:</u>	<u>ASSIGNED</u>	<u>C.O.E. ITEMS</u>	<u>NEW ITEMS</u>
<u>ARTHUR KILL</u>			
<u>REACHES:</u>			
FRESH KILLS	37,38	9173,10042	A,B,C
PORT READING	34,35	8881,10245	D,L
PORT SOCONY	32	10095,10674	E,I
OUTERBRIDGE	19,20,24,26,27,29	9037,9615	F,G,H,J,K
WARD POINT BEND	18	10637,11016	
<u>GREAT BEDS</u>	16		
<u>RARITAN BAY</u>	2,4,8,17	10190	M
<u>GREAT KILLS HARBOR</u>			

Items crossed out on this page can be found in survey D-9(979)

RARITAN BAY

Raritan Bay stretches from the Great Beds area, to the west, to the Lower Bay of the New York Harbor, to the east. To the north lies Staten Island and on the southern shore is New Jersey. The channel cutting across the bay has three maintained reaches: Red Bank Reach, Sequine Point Bend Reach, and the Raritan Bay West Reach.

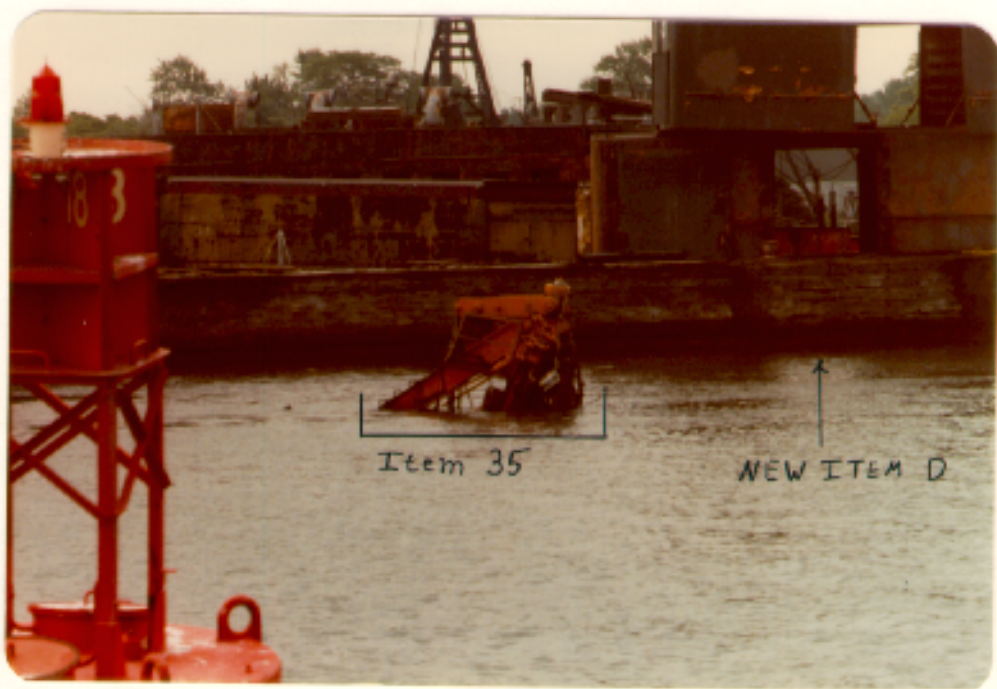
Reconnaissance lines spaced 800 meters apart were run over the entire area of the Raritan Bay, shown on the chart. In general the survey ^{SEE D-9(1979).} soundings both inside and outside of the channels agree with the chart.

*One peculiar discrepancy was noted off Point Comfort on the New Jersey shore. Depths from 4 to 26 feet are shown uncharted. (See new Item "M"). *SEE ATTACHMENT 6 OF 8

The shoreline in this area is accurately charted except for those items as noted on the Master Chart. **PRESENTLY CHARTED ADEQUATELY.**

Items investigated in this area are: 2,4,8,17,10190, and M.

Reconnaissance hydrography 2-3 feet deeper; no new basic survey is recommended.





PHOTOS OF DESTROYED LIGHT "10", HAS
BEEN REBUILT; IS PRESENTLY CHARTED ADEQUATELY.

CHART NUMBER: 12331

ITEM: L

DESCRIPTION: Development on Story Flats

SOURCE: New Item

INVESTIGATION

DATE	METHOD	REFERENCE
26 June, JD 177	R/Az	SV #1, pg 35
28 August JD 240	R/Az	SV #3, pg 6
30 August JD 242	R/Az	SV #3, pg 35
<u>GEODETIC POSITION</u>	LATITUDE	LONGITUDE
CHARTED	40°33'10" N	74°14'30" W (General Location)
OBSERVED		

POSITION DETERMINED BY: Del Norte and T2 SEE ATTACHMENT 8 DF 8

METHOD OF INVESTIGATION: Reconnaissance lines run over Story Flats, on the Port Reading reach of Arthur Kill, (pos. #'s 1193-1202) showed several discrepancies. This area was developed running arcs spaced 45 meters apart and radials spaced to cross important features. A bulkhead line, the shoreline and a range marked channel line were also run across Story Flats. The 12 foot reported 1967 channel charted in Story Flats is no longer there. The channel now used is marked by range markers (pos. #'s 2840-2843)*. It was reported that Story Flats was used as a borrow area for land fill approximately 10-15 yrs. ago. The development shows that the area southwest of day beacon 14 is much deeper than charted. Depths as deep as 28 feet (first and second out from pos. #2642) were discovered in an area charted as 3 feet. Also the area north of a line between day beacons 10 and 14 shows depths from 19 feet to 30 feet. This area has charted depths as shoal as 6 feet. Pos. # 2798 was taken on the remains of ^{light} day beacon 10 which

CHARTING RECOMMENDATION: (see below for Charting Recommendation) was destroyed by a run-away barge (see section M. LANDMARKS AND NONFLOATING VERIFICATION). NOTE: see sheet three of three, 1:5000, ITEM "L".

CHARTING RECOMMENDATION: It is recommended that this survey supersede ^{in the common area} the charted soundings. - concur - see Item 8 of 8 in the Descriptive Report. - presently charted as "Depths to 30 ft reported 1979"

* Not marker position, range line

ENS J. GARDNER OIC

FWO

CDR KIENINGER C.O.

COMPILATION USE ONLY

CHART EVALUATION SURVEY

NOAA SHIP WHITING

OPR-B408-WH-79

CHART NUMBER: 12331

ITEM: F

DESCRIPTION: ROCK

SOURCE: New Item (NM # 39/77)

INVESTIGATION

DATE	METHOD	REFERENCE
3 July JD 184	R/Az	SV #1, pg 53
6 July JD 187	R/Az	SV #1, pg 59
11 August JD 223	R/Az	SV #3, pg 4

<u>GEODETTIC POSITION</u>	LATITUDE	LONGITUDE
---------------------------	----------	-----------

~~CHARTED~~

OBSERVED 40°32'13.984" N 74°15'09.896" W (Least Depth)

POSITION DETERMINED BY: Del Norte and T2

METHOD OF INVESTIGATION: SEE ATTACHMENT 2 OF 8

The rock was developed running arcs spaced 25 meters apart and cross lines run parallel to the shoreline (pos. #'s 1352 - 1387). The rock is marked by two bouys (NM # 11/79) set by divers of the Chevron Corporation, numbered 1 and 2. Buoy # 2 (pos. # 1348) was set to show the outermost edge of the rock and buoy # 1 (pos. # 1392) was set over the least depth of the rock. The bouys have been temporarily removed until Chevron can develop a system to check the buoy positions daily. The fatho least depth over the rock was 20.6 feet (one out from pos. 1382). A lead line least depth of 21.3 feet obtained over the rock (pos. # 2520). A 1:5000 blow-up of the development is included with this write-up.

CHARTING RECOMMENDATION:

The rock is a great danger to surface navigation. The 30 foot contour of the rock should be outlined on the chart to show the extent and labled with a least depth of 20 feet. - [REDACTED]

[REDACTED] - presently charted

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FWO

CDR. KIENINGER C.O.

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GREAT BEDS SEE ATTACHMENT 1 OF 8

In the area of Great Beds there are six maintained channels: Ward Point Bend (West) Reach, Ward Point Bend (East) Reach, Ward Point Secondary Channel, Raritan River Cut-off Channel, Great Beds Reach, and South Amboy Reach. Two other main features of this area are a 36 foot anchorage and a borrow area, (where reported deeper depths than charted may exist). North of the Great Beds lies Arthur Kill and to the west is the Raritan River. Great Beds opens up to the east into the Raritan Bay.

This area was developed running north-south lines spaced 150 meters apart and cross lines spaced 800 meters apart. Discrepancies in the right inside quarter of the Raritan River Cut-off Channel were noted (one out from pos. # 1949) where a 16 foot sounding* was discovered in an area of the channel charted at 20 feet. Also in the left outside quarter of this channel a 16 foot was noted (fourth out from pos. # 1958) in a charted 20 foot area (see Danger to Navigation Report dated 1 August 1979). Outside the channels discrepancies were discovered in the 36 foot anchorage. The west and south-western edge of the anchorage has shoaled to at least 30 feet in one location (Pos. # 1942)** The borrow area where it was reported that deeper depths than charted may exist appears to be still accurately charted, no major discrepancies were found in this area.

The shoreline in this area is accurately charted except for those items as noted on the Master Chart.***

The only item investigated in this area was 16.

* 11 foot on the left outside quarter

** More recent information has been charted.

*** Shoreline is still the same except for changes in charted landmarks, charted the same as in 1977.

CHART EVALUATION SURVEY

NOAA SHIP WHITING

OPR-B408-WH-79

CHART NUMBER: 12331

ITEM: 16

DESCRIPTION: Submerged Pile

SOURCE: Not Available

INVESTIGATION

DATE	METHOD	REFERENCE
August 7, 1979 JD 219	R/R	SV 2, Pg. 65
<u>GEODETIC POSITION</u>	LATITUDE	LONGITUDE
CHARTED	40°30'00"N	74°13'53.5"W
OBSERVED	Not Found	

POSITION DETERMINED BY: Del Norte SEE ATTACHMENT 1 OF 8

METHOD OF INVESTIGATION: In the investigation of this item, two areas of visible piles were found. Their positions were taken, (pos. no. 2423 - 2424). A line run between the areas of piles shows several spikes. The charted position of item 16 falls on this line, but no spike was found at the charted location. This is possibly the ruins of a fish trap or very old pier.

CHARTING RECOMMENDATION: Chart ruins between the above positions with both visible and submerged pilings. ~~(See Master Chart.)~~ - chart the two (2) detached positions with submerged ruins between them - not presently charted.

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FWO

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CHART NUMBER: 12331
 ITEM: 4 DESCRIPTION: Sunken Wreck
 SOURCE: LNM 40/74 (26 foot cabin cruiser)

INVESTIGATION

DATE	METHOD	REFERENCE
7 August, '79, JD 219	R/R	SV #2, pg. 65

<u>GEODETTIC POSITION</u>	LATITUDE	LONGITUDE
CHARTED	40°29'20.9" N	74°08'22" W
OBSERVED	NOT FOUND	

POSITION DETERMINED BY: Del Norte SEE ATTACHMENT 3 OF 8

METHOD OF INVESTIGATION: North-south lines spaced 20 meters apart and east-west lines spaced 50 meters apart were run over the item in the charted position. Nothing was found in this area.

CHARTING RECOMMENDATION: Retain the sunken wreck symbol on the chart. Further development and wire drag will be conducted on the object as part of the Chart Evaluation Investigation of Chart 12327. - *concur-use sub-✓*
sequent data for disposition - still charted as in 1977.

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 FWO

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COMPILATION USE ONLY

NOA 8 WHITING

CHART EVAL SUNKEN

OPR-B408-WH-79

CHART NUMBER: 12331

ITEM: 8

DESCRIPTION: Visible Wreck

SOURCE: LNM 36/75

INVESTIGATION

DATE	METHOD	REFERENCE
6 August, '79, JD 218	R/R	SV #2, pg. 63

<u>GEODETIC POSITION</u>	LATITUDE	LONGITUDE
CHARTED	40°27'17.8" N	74°13'00" W
OBSERVED	NOT FOUND	

POSITION DETERMINED BY: Del Norte SEE ATTACHMENT 7 OF 8

METHOD OF INVESTIGATION: North-south lines spaced 10 meters apart were run over the charted position of the visible wreck. Nothing was found. North-south lines spaced 50 meters apart were also run to the east and west of the item. Nothing was found. There is no visible wreck in this area.

CHARTING RECOMMENDATION: Remove the visible wreck symbol from the chart. Chart a sunken wreck symbol with "ED." - PA - still charted as visible wrecks "PA" ✓

ENS. J. GARDNER OIC

_____ FWO

CDR. KIENINGER C.O.

COMPILATION USE ONLY

CHART EVALUATION SURVEY

NOAA SHIP WHITING

OPR-B408-WH-79

CHART NUMBER: 12331

ITEM: 17

DESCRIPTION: Obstruction

SOURCE: Not Available

INVESTIGATION

DATE	METHOD	REFERENCE
August 6, 1979 JD 218	R/R	SV 2, Pg. 61

<u>GEODETTIC POSITION</u>	LATITUDE	LONGITUDE
CHARTED	40°30'27.1"N	74°12'33.3"W
OBSERVED	40°30'27.480"N	74°12'36.957"W

POSITION DETERMINED BY: Del Norte SEE ATTACHMENT 5 OF 8

METHOD OF INVESTIGATION: This item was developed with lines spaced 10 meters apart running east-west, and lines spaced 20 meters apart running north-south, (pos. no. 2366 - 2396.) The obstruction lies on a steeply sloped bottom in 24.0 feet of water, and has a fathometer least depth of 12.8 feet, (pos. no. 2366). All depths are corrected to Mean Low Water. The obstruction lies on the Sequine Point Bend range line. The above charted position is not the position the obstruction appears on the chart. The observed position coincides with the position of the item on the chart.

CHARTING RECOMMENDATION: It is recommended that this item remain as it is presently charted. - *least depth of 12 ft should be charted also - still charted as in 1977.*

ENS. J. GARDNER OIC

FWO

CDR. KIENINGER C.O.

COMPILATION USE ONLY

M. LANDMARK AND NONFLOATING AIDS VERIFICATION SEE D-9(1979)

All landmarks were inspected for their charted accuracy. A seaward inspection of each landmark was made to determine its value as an aid to navigation. Verifying the landmarks' positions was accomplished by occupying known control stations and intersecting charted landmarks by theodolite. Copies of Form 76-40 (Report on Non-floating Aids or Landmarks for Charts) are submitted with the Descriptive Report. All recommendations for landmarks are shown on the Master Chart.

Stations 120 and 121 were verified but the charted description of "SPIRES" is not accurate. These landmarks should be charted as "DOMES."

Station 132 (~~day beacon~~^{light} 10, Port Socony Reach, Arthur Kill) was destroyed by a runaway barge on 12 August 1979 (LNM 33/79). The ~~day beacon~~^{light} ruins are now a pile of rubble 40 feet in diameter and exposed 5.5 feet at Mean Low Water. The rocks are awash at high water. The beacon has been replaced, temporarily, with a lighted buoy (pos. # 2798). The Coast Guard has reported that it now plans on replacing the ~~day beacon~~^{light} as soon as possible. It recommended for now to remove the light from the chart but leave the rip-rap structure on the chart, exposed 5.5 feet. - *Now charted with new characteristics.*

Stations: 151, 153, 154, 171, 172, 173, 174, 176, and 177 are privately maintained aids. These lights and markers are shifted to accommodate the individuals concerned. They are charted correctly but are not aids to navigation and should be used with caution.-

The range marking the entrance channel to the Great Kills Harbor, stations 180 and 187, has been discontinued (LNM 6/79). The stations are still there and are still of value as landmarks, but should not be used as range markers. - *Only what was the front range light is presently charted.*

N. AIDS TO NAVIGATION

The positions of all aids to navigation on Chart 12331 were determined and found to be in their charted positions.

O. COAST PILOT

A Coast Pilot inspection was made of Chart 12331. In general, the Coast Pilot adequately describes the survey area. A NOAA Form 77-6 is submitted with the Descriptive Report.

P. TIDES/WATER LEVEL OBSERVATIONS

No tide gauges were installed specifically for this survey. A tides project (S-B805-WH-79) was running concurrently with this survey, with gauges set in the Great Kills Harbor and on Smoking Point in the Port Reading Reach. The Smoking Poing gauge ran concurrently with the development in Story Flats (Item L).

Q. USER EVALUATION

R. PUBLIC RELATION EFFORTS

A special effort was made to keep the WHITING in the public view and to present it as a clean efficient survey ship. The WHITING impressed on the public a degree of professionalism in conducting operations that were of immediate benefit to the mariner. The physical presence of the ship and its uniformed officers presented strong evidence of the commitment of NOS to a charting program in the New York Harbor.

Open houses were held for the U.S. Coast Guard Auxiliary at Governors Island on March 31 and April 1, 1979. These open houses coincided with the Regional Conference of the Northern Region of the Third District, U.S.C.G.Aux., and informed many high level officers of the mission of the Chart Update Program.

A comprehensive chart update workshop and open house was held on Governors Island for four hundred members of the Coast Guard Auxiliary and U.S. Power Squadron. Officers and crew members of the WHITING demonstrated practical methods of item investigations for the Auxiliary and Power Squadrons.

March 13-15, 1979; the ship participated in the Third Port of New York International Navigation and Communications Conference. The conference and exhibits were co-sponsored by the Maritime Association of the Port of New York and the Council of American Master Mariners. Sessions were conducted on the latest developments that affect the safe operations of vessels, as well as the safety of lives and cargo.

Units of the ship also participated in the New York City Harbor Festival, New York City lifeboat races, and the Fourteenth Anniversary Ceremony of the United States Coast Guard Auxiliary.

A series of meetings to evaluate user inputs were held in New York with the Ship Operation Charting Committee of the Maritime Association of the Port of New York. These meetings were attended by representatives of oil, barge, and tug companies, city departments, terminal operators, pilots, and others interested in port development.

The following background material was developed from these and other meetings:

The New York-New Jersey Metropolitan Region is the richest and largest in the Western Hemisphere because of its port having more natural and man made endowments than any of its rivals. Over 18,000,000 people live, work and play in the metropolitan port area. The Port District includes about 450 square miles of water bordered by 650 miles of water frontage. Over 13,000 passenger and cargo ships, in both foreign and domestic trade, move through the Port of New York in a year.

In the last 25 years drastic changes in the transport of passengers and cargo across the ocean has taken place. Transocean passenger traffic has shifted to airlines from ocean lines. Passenger ships now emphasize leisurely cruises and not speedy crossings. This shift caused the traditional practice of building piers to accommodate both passenger and cargo operations to be abandoned. A new large modern passenger ship terminal has been constructed close to the entertainment center of Manhattan.

In 1950 most cargo was carried by breakbulk ships, i.e. the general cargo was placed in slings and lifted by cranes to the pier. Now a majority of the general cargo is handled in containerships. This means that it is impractical to conduct operations near the congested heart of the city. The cost of providing space in the inner city for container lifting equipment and the storage needed for the containers makes it economical to shift the operations to a less densely populated area close to rail and highway networks. This has caused shipping to shift from the Hudson and East Rivers.

All of the petroleum products for use in the Metropolitan Region are shipped into the port. The handling of these cargos with the recent advent of super tankers is causing other dislocations. Very large tankers now enter the port after trans-shipping part of their cargos. Under consideration is the construction of an offshore tanker terminal to serve the area. This will require trans-shipping either by pipeline or in smaller tank crafts.

A massive clean up program of the port is underway to correct the abuse of dumping sewage, chemicals and other substances into the harbor. The Corps of Engineers has begun a federally funded project to clear away rotting hulks and piers. A count shows that there are at least 2,200 rotting hulks and 300 dilapidated shore structures in the harbor. As the clean up has progressed, there has been renewed interest in the use of the port for recreation. For example consideration has been given to the establishment of marinas in lower Manhattan.

S. STATISTICS

Total Number of Items Investigated - 41

Total Number of Positions Per Launch

Vesno. 2932 - 1236

Vesno. 2933 - 572

Total 1808

Total Miles of Soundings Per Launch

Vesno. 2932 - 101.3

Vesno. 2933 - 76.7

Total 178.0

Landmarks Deleted - 21 - 15 are still charted

Landmarks Verified - 56

} SEE D-9(1979)

T. MISCELLANEOUS

U. RECOMMENDATIONS

Specific charting recommendations are included with the individual item write-ups.

<u>V. AUTOMATED DATA PROCESSING</u>		<u>VERSION</u>
RK 111	RANGE/RANGE REAL TIME PLOT	01/30/76
RK 201	GRID, SIGNAL AND LATTICE PLOT	04/18/75
RK 211	RANGE/RANGE SOUNDING PLOT, NON-REAL TIME	01/15/76
RK 212	VISUAL STATION TABLE LOAD AND PLOT	04/01/74
RK 216	RANGE-AZIMUTH SOUNDING PLOT	08/16/74
RK 300	UTLILITY COMPUTATIONS	02/05/75
RK 330	DATA REFORMAT AND CHECK	05/04/76
AM 400	LAMBERT P.C. CONVERSION	04/01/73
AM 401	MERCATOR P.C. CONVERSION	04/01/73
AM 407	GEODETTIC INVERSE/DIRECT COMPUTATIONS	10/23/75
RK 409	GEODETTIC UTILITY PACKAGE	09/15/73
AM 500	PREDICTED TIDE GENERATOR	11/10/72
RK 530	VELOCITY CORRECTION COMPUTATIONS	05/10/76
RK 561	GEODETTIC CALBRATIONS	02/19/75
AM 602	ELINOR (EXTENDED LINE ORIENTED EDITOR)	05/20/75

- W. REFERENCES TO REPORTS



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY

DATE: August 1, 1979
TO: Director, National Ocean Survey
Attn: C322
THRU: Director, Atlantic Marine Center
FROM: *Karl Wm. Kieninger*
Karl Wm. Kieninger, CDR, NOAA
Commanding Officer, NOAA Ship WHITING
SUBJECT: Dangers to Navigation Report, New York Harbor

The NOAA Ship WHITING has noted the following changes to Chart 12331, "Raritan Bay and Southern Part of Arthur Kill" and Chart 12327, "New York Harbor."

- 1) Little Fresh Kills, showing charted depths of 25 feet, has shoaled to 3 feet at position:

LAT: $40^{\circ} 34' 45.5''$ N
LON: $74^{\circ} 12' 24.0''$ W

and to 1 foot exposed at: LAT: $40^{\circ} 34' 45.7''$ N
LON: $74^{\circ} 12' 04.1''$ W

No depths deeper than 3 feet have been found in this area.

- 2) Story Flats, in the Arthur Kill, LAT: $40^{\circ} 33' 01''$, LON: $74^{\circ} 14' 58''$, is not as charted. Charted depths from 2 to 10 feet between Day-beacons "10" and "14" now show depths up to 30 feet.

- 3) Shoaling has been discovered in the right inside quarter and left outside quarter of the Raritan River Cutoff. In the right inside quarter, where Corps of Engineer control depths show 20 feet, a 16 foot depth has been discovered at:

LAT: $40^{\circ} 29' 37.5''$ N
LON: $74^{\circ} 16' 05.6''$ W

In the left outside quarter, where Corps of Engineer control depths show 20 feet, a 14 foot sounding was discovered at:

LAT: $40^{\circ} 29' 27.0''$ N
LON: $74^{\circ} 16' 09.0''$ W

In general, shoaling along the left outside quarter exists.



4) Great Beds Basin, in the Raritan Bay, charted as "36 FT 1976", shows depths as shoal as 31 feet in the area of:

LAT: 40° 29' 36" N
LON: 74° 15' 30" W

All items have been reported to the Coast Guard. Items "3" and "4" have been reported to the Army Corps of Engineers. A field sheet showing these discrepancies will be sent to the National Ocean Survey Headquarters at the earliest opportunity.

1. FIELD TIDE NOTE

<u>Tide Station</u>	<u>Location</u>	<u>Type</u>	<u>Station Number</u>
Sandy Hook, N.J.	40°28'00" N 074°00'36"	ADR	853-1681

This is a primary gauge and was tended regularly by the WHITING and daily by the observer. The gauge was found to be in good operational condition during the entire period of the survey.

Tide correctors to all soundings were applied on the basis of data from Table 1 in the Project Instructions. Correctors for items were applied as specified. Soundings line tide correctors were applied on the basis of their proximity to specific items.

High/low data was obtained from the 1979 Tide Tables. Tide correctors were interpolated by use of Program AM 500, Predicted Tide Generator. The following is time correction and range ratio data supplied in the Project Instructions and applied to soundings in this survey.

Table 1 (Applied to Reference Station at Sandy Hook) follows:

TIME CORRECTORS

<u>ITEM</u>	<u>HIGH WATER/LOW WATER</u>		<u>RANGE RATIO</u>
2,8,16,17	-5 min.	0 min.	x1.06
4	-5 min.	0 min.	x1.04
18,19,20,24,26	0 min.	11 min.	x1.11
27,29,32	7 min.	18 min.	x1.11
34,35	14 min.	24 min.	x1.11
37,38	20 min.	30 min.	x1.11

4. LIST OF STATIONS

LIST OF SIGNALS

<u>STA #</u>	<u>GEODETTIC LATITUDE</u>	<u>GEODETTIC LONGITUDE</u>	<u>NAME</u>	<u>YEAR</u>	<u>TYPE</u>	<u>SOURCE</u>	
						<u>QUAD #</u>	<u>STA #</u>
102	40/27/06.351	74/08/18.121	Keansburg Standpipe	1926	3rd Order	400742	1041
104	40/26/30.994	74/11/27.106	Lockport Aero Marine Tank	1930	3rd Order	400742	1058
105	40/26/04.169	74/11/54.282	Keyport Standpipe	1926	3rd Order	400742	1044
109	40/26/34.085	74/13/04.314	Cliffwood Water Storage Tank	1926	3rd Order	400742	1024
111	40/27/54.395	74/15/24.803	Cheesequake Creek Beacon	1930	3rd Order	400742	4012
112	40/27/55.917	74/15/27.458	Cheesequake Creek Light	1930	3rd Order	400742	4015
125	40/34/00.137	74/13/56.303	Port Reading Reading Co. S Tank	1931	3rd Order	400741	2253
126	40/34/00.535	74/13/56.293	Port Reading Reading Co. N Tank	1931	3rd Order	400741	2252
131	40/33/13.979	74/14/29.495	Arthur Kill Beacon 7	1931	3rd Order	400741	2005
132	40/32/45.752	74/15/04.605	Beacon 6	1931	1st Order	400741	3003
133	40/31/05.807	74/14/22.878	Tottenville Copper Co. Chimney	1930	3rd Order	400741	2513
134	40/29/43.788	74/15/07.425	Beacon 5A	1932	3rd Order	400742	4167
135	40/29/11.587	74/15/12.406	Great Beds Lighthouse	1908	1st Order	400742	4026
136	40/29/07.675	74/15/37.121	Raritan Bay Beacon 1	1926	3rd Order	400742	4086
138	40/29/07.399	74/14/28.568	Raritan Bay Beacon 5	1926	3rd Order	400742	1137
139	40/29/46.898	74/13/28.963	Raritan Bay Beacon 4	1930	3rd Order	400742	1136

STA #	GEODETTIC LATITUDE	GEODETTIC LONGITUDE	NAME	YEAR	TYPE	SOURCE	
						QUAD #	STA #
147	40/30/12.160	74/09/45.736	Outer Beacon 1	1930	2nd Order	400741	2446
148	40/28/35.296	74/13/32.672	Boundary Beacon	1903	3rd Order	400742	1135
149	40/26/23.859	74/10/05.993	Union Beach Water Tank	1930	3rd Order	400742	1126
155	40/33/06.208	74/15/13.609	Outerbridge Reach Forward Range Light	1947	Fixed/Floating Aids List by Marine Charts (NOS)		
156	40/33/13.977	74/15/15.132	Outerbridge Reach Rear Range Light	1947	Fixed/Floating Aids List by Marine Charts (NOS)		
157	40/33/21.900	74/14/54.700	Stack	1964	Fixed/Floating Aids List by Marine Charts (NOS)		
158	40/32/46.000	74/12/10.100	North Radio Tower WPOW	1963	Fixed/Floating Aids List by Marine Charts (NOS)		
159	40/32/44.900	74/12/12.200	Central Radio Tower WPOW	1963	Fixed/Floating Aids List by Marine Charts (NOS)		
160	40/32/43.600	74/12/13.800	South Radio Tower WPOW	1963	Fixed/Floating Aids List by Marine Charts (NOS)		
180	40/32/06.200	74/08/33.560	Great Kill Harbor Front Range Light (discontinued)	1958	Fixed/Floating Aids List by Marine Charts (NOS)		
187	40/32/13.410	74/08/38.020	Great Kill Harbor Rear Range Light (discontinued)	1958	Fixed/Floating Aids List by Marine Charts (NOS)		
600	40/33/24.710	74/14/38.349	H - 3 - NJ - 79	1979	3rd Order	NOAA Ship Whiting	
601	40/31/28.918	74/14/49.734	Tottenville Out Bridge E Brghd	1930	3rd Order	400741	2514
700	40/28/14.489	74/01/08.761	Sandy Hook Ecc.	1979	3rd Order	NOAA Ship Whiting	
800	40/32/15.101	74/08/28.069	Cass - 79	1979	Non- Recoverable	NOAA Ship Whiting	
901	40/33/47.705	74/12/56.472	Met # 1	1970	3rd Order	C.O.E. Station	
903	40/31/30.493	74/14/50.316	N.E. Cell	1970	3rd Order	C.O.E. Station	

5. ABSTRACT OF POSITIONS

ABSTRACT OF POSITIONS

CHART 12331

Vessel: 2932

<u>DAY</u>	<u>POSITION</u>	<u>CONTROL</u>	<u>S1</u>	<u>S2</u>	<u>DESCRIPTION</u>	<u>LOCATION</u>
172	1000-1018	02	901	158	Reconn line	Fresh Kills Reach
	1019-1020				Rejected	
	1021-1037				Reconn line	Fresh Kills Reach
	1038-1040				Rejected	
	1041-1044				Reconn line	Fresh Kills Reach
	1045-1046				Rejected	
	1047-1050				Reconn line	Fresh Kills Reach
	1051-1052				Rejected	
	1053-1056				Reconn line	Fresh Kills Reach
	1057				Rejected	
	1058-1061				Development Item 35	Port Reading Reach
	1062				Rejected	
	1063-1066				Development Item 35	Port Reading Reach
	1067				Rejected	
	1068-1079				DP's New Item D	Port Reading Reach
	1080-1084				DP's Bouys	Fresh Kills Reach
176	1085-1095	02	901	158	Reconn (shoreline)	Fresh Kills Reach
	1096				Rejected	
	1097-1100				Reconn (shoreline)	Fresh Kills Reach
	1101-1102				DP's Rocks New Item C	Fresh Kills Reach
	1103-1112				Reconn lines	Port Reading Reach
177	1113-1162	02	131	158	Reconn lines	Port Reading Reach
	1163-1168				DP's Bouys	Port Reading Reach
	1169-1170				DP's New Item E	Smiths Creek
	1171-1202	02	132	158	Reconn Lines	Port Reading Reach
180	1203-1205	02	901	158	DP's Item 38 and New Item B	Fresh Kills Reach
	1206-1222				Reconn (shoreline)	Fresh Kills Reach
	1223-1226				Reconn line	Port Reading Reach
	1227-1257	02	132	158	Reconn lines	Port Reading Reach

<u>DAY</u>	<u>POSITION</u>	<u>CONTROL</u>	<u>S1</u>	<u>S2</u>	<u>DESCRIPTION</u>	<u>LOCATION</u>
184	1281-1345	02	132	158	Reconn Lines	Port Reading Reach
	1346-1351				DP's Bouys	Port Socony Reach
	1352-1369				Development Rock New Item F	Outerbridge Reach
	1370-1371				Rejected	
	1372-1379				Development Rock New Item F	Outerbridge Reach
	1380-1381				Rejected	
	1382-1387				Development Rock New Item F	Outerbridge Reach
187	1388-1390	02	132	158	DP's New Item G	Outerbridge Reach
	1391				DP Rock Bouy "11"	
	1392				DP Least Depth over Rock Item F	Outerbridge Reach
	1393-1395				Reconn line	Outerbridge Reach
	1396-1398	02	903	132	DP's New Item H	Outerbridge Reach
	1399				DP New Item J	Outerbridge Reach
	1400-1403				Reconn line	Outerbridge Reach
190	1404-1407	02	903	132	DP's New Item G	Outerbridge Reach
	1408-1412				Reconn line	Outerbridge Reach
	1413-1414				DP's New Item H	Outerbridge Reach
	1415-1459				Reconn lines	Outerbridge Reach
192	1460-1463	02	131	158	Reconn line	Port Reading Reach
	1464-1465				DP's Item 32	Port Socony Reach
	1466	02	903	132	DP Item 29	Outerbridge Reach
	1467-1479				DP's New Item K	Outerbridge Reach
	1480-1482				Reconn line	Outerbridge Reach
	1483				DP Item 27	Outerbridge Reach
194	1484-1567	01	700	111	Reconn lines	Raritan Bay
197	1568-1617	01	700	111	Reconn lines	Raritan Bay
	1618-1622				Rejected	
198	1623-1631	01	700	111	Reconn lines	Raritan Bay
	1632-1633				Rejected	
	1634-1636				Reconn line	Raritan Bay
	1637-1717				Development of Great Beds Area	Raritan Bay
200	1718-1783	01	700	111	Reconn lines	Raritan Bay
	1784-1795				Development of Great Beds Area	Raritan Bay

<u>DAY</u>	<u>POSITION</u>	<u>CONTROL</u>	<u>S1</u>	<u>S2</u>	<u>DESCRIPTION</u>	<u>LOCATION</u>
201	1796-1804 1805-1811 1812	01	700	111	Reconn lines DP's Bouys Rejected	Great Kills Harbor Great Kills Harbor
204	1813-1853	01	700	111	DP's Bouys	Raritan Bay
206	1927-1928 1929-1931 1932-1965 1966-1980 1981 1982	01 01	134 700	111 111	Development of Great Beds Area Rejected Development of Great Beds Area Reconn lines Rejected DP Bouy	Raritan Bay Raritan Bay
207	1983-1984 1985-1988 1989-2086	01	139	147	Reconn line Rejected Reconn lines	Raritan Bay Raritan Bay
212	2149-2162 2163-2171 2172-2210 2211-2212 2213-2215 2216 2217-2228 2229-2236	01	139	147	Reconn line Rejected Development of New Item M DP's pier ruins Reconn line DP Bouy Reconn line DP's Bouys	Raritan Bay Raritan Bay Raritan Bay Raritan Bay Raritan Bay Raritan Bay Raritan Bay Raritan Bay
218	2363-2365 2366 2367-2396 2397 2398	01	139	147	Rejected DP Item 17 Development of Item 17 DP exposed pile Rejected	Raritan Bay Raritan Bay Raritan Bay Raritan Bay Raritan Bay
219	2399-2420 2421 2422 2423-2424 2425-2427 2428-2475	01	139	147	Development of Item 8 DP Item 2 DP Piling DP's Item 16 DP's Bouys Development of Item 4	Raritan Bay Raritan Bay Raritan Bay Raritan Bay Raritan Bay Raritan Bay

<u>DAY</u>	<u>POSITION</u>	<u>CONTROL</u>	<u>S1</u>	<u>S2</u>	<u>DESCRIPTION</u>	<u>LOCATION</u>
220	2476-2517	02	800	147	Reconn lines	Great Kills Harbor
223	2518-2520	02	132	158	Lead Line Depths Over Item F	Outerbridge Reach
261	2912-2919	01	700	147	DP's Bouys	Great Kills Harbor
	2920-2924	02	800	145	DP's Bouys	Great Kills Harbor

Vessel: 2933

<u>DAY</u>	<u>POSITION</u>	<u>CONTROL</u>	<u>S1</u>	<u>S2</u>	<u>DESCRIPTION</u>	<u>LOCATION</u>
183	1258-1280	04			Reconn lines	Fresh Kills Creek
205	1854-1871	04			Reconn lines	Fresh Kills Creek
	1872				Rejected	
	1873-1888				Reconn line	Richmond Creek
	1889				Rejected	
	1890-1898				Reconn line	Smith Creek
	1899-1909				Reconn line	Woodbridge Creek
	1910-1913				Reconn line	Outerbridge Reach
	1914-1926				Reconn lines	Cheesequake Creek
211	2087-2090	04			Reconn line	Fresh Kills Reach
	2091-2115				Reconn line	Cheesequake Creek
	2116-2125				Reconn line	Matawan Creek
	2126-2130				Reconn line	Waackaack Creek
	2131-2138				Reconn line	Thorns Creek
	2139-2148				Recon line	Lemon Creek
214	2337-2342	02	903	132	DP's Item 27	Outerbridge Reach
	2343-2345	02	136	135	DP's Item 18	Ward Point Bend (West) Reach
	2346-2348				DP's New Item K	Ward Point Bend (West) Reach
	2349				Rejected	
240	2350-2362		600	601	Reconn lines	Ward Point Bend (West) Reach
	2521-2540	02	600	601	Development of New Item L	Story Flats
	2541				Rejected	
242	2542-2775		600	601	Development of New Item L	Story Flats
	2776-2911	02	600	601	Development of New Item L	Story Flats

6. REPORT ON LANDMARKS AND NONFLOATING AIDS TO NAVIGATION SEE D-9(1979).

7. Coast Pilot Reports

COAST PILOT REPORT

PLEASE MAIL TO:

Director
National Ocean Survey
National Oceanic and Atmospheric Administration
ATTENTION: C324
Rockville, Maryland 20852

This record of your experience and observations when coasting, entering port, and/or following inside channels will be used to correct, amplify, or confirm the description now given in the Coast Pilot.

Please use additional sheets if more space is needed.

Additional report forms will be provided upon receipt of each report.

GEOGRAPHIC LOCATION

NEW YORK HARBOR, ARTHUR KILL

LATITUDE 40° 33'	LONGITUDE 74° 14'	CHART NUMBER 12331	COAST PILOT NUMBER 2
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VESSEL NOAA Ship WHITING	MASTER/COMMANDING OFFICER CDR. K. Wm. KIENINGER
-----------------------------	--

DATE OF OBSERVATION 20 Sept. 1979	OBSERVER ENS. JAMES C. GARDNER
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LANDMARKS: Mention those visible from seaward and useful for navigation (day and/or night); include natural ranges and indicate the pair of marks forming a range. Photographs of landmarks difficult to describe are solicited; each view should be labeled with the distance off and the direction towards which the camera was pointed.

TYPE	CHARTED		LATITUDE (Approximate)	LONGITUDE	DESCRIPTIVE INFORMATION HELPFUL IN IDENTIFICATION
	YES	NO			

II. RADAR: List best radar targets and, if known, give maximum useful radar range at which the object can be positively identified and used. Mention under remarks places you have observed radar returns to be misleading.

NAME OR TYPE OF FEATURE (Include approximate latitude and longitude if necessary to identify on chart)	MAXIMUM USEFUL RANGE

III. ROUTES: Where entrance and inside routes are not marked by aids to navigation, show recommended directions for Coast Pilot (latitude and longitude of entrance point, and distances and true courses made good); include natural steering ranges if available.

IV. DANGERS: Mention those of concern to the navigator where special caution should be indicated in the Coast Pilot.

Little Fresh Kills is no longer an entrance to Fresh Kills. It has shoaled on the eastern end to being 1 foot exposed at Mean Low Water. (pg. 250, lines 3-6/R)

V. CURRENTS: Indicate places you have experienced conditions of current where special caution should be mentioned in the Coast Pilot.

VI. ANCHORAGES: Mention best anchorage in the area and other secure anchorages having good holding ground.

LOCATION (Include anchorage bearings and natural ranges if available)

TYPE OF BOTTOM OBSERVED:

	EXCEL	GOOD	FAIR	POOR	COMMENT	RECOMMENDED FOR VESSELS:	
						LENGTH	DRAFT
HOLDING QUALITY						_____ TO _____ FT.	_____ TO _____ F
PROTECTION OFFERED							
ACCESSABILITY							

VII. REMARKS:

The range has been removed in Smith Creek (pg. 249, line 45/R).

The north and south shore of the Fresh Kills is now a New York City garbage land-fill. The mouth of Great Fresh Kills is enclosed by a boom which opens only for garbage barges. The mouths of Little Fresh Kills, Richmond Creek, and Main Creek are enclosed permanently with booms to prevent the escape of garbage out of the area. These areas are closed to all traffic. There are plans to convert this area into a large recreational park in the future. (pg. 249, lines 60-64/R and pg. 250, lines 1-26/L)

The bridge in the Fresh Kills area is now completed. (pg. 250, lines 12-14/L)

VIII. OTHER COAST PILOT CHANGES

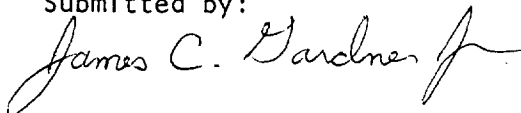
U.S. COAST PILOT			
NUMBER	EDITION	PAGE	LINE(S)

NOTE: Any chart(s) submitted with your report to show conditions will be replaced free of charge.

READ: STRIKE OUT: INSERT AFTER: (Circle one)

APPROVAL SHEET

Submitted by:



James C. Gardner Jr.
ENS NOAA

Supervision of field and office work on this Chart Evaluation Survey was continuous on a day to day basis to ensure completeness of the survey and that all work was done in accordance with the Project Instructions. The survey is complete and adequate. Wire drag will be conducted on Item 4 "Sunken Wreck" as part of Chart Evaluation of Chart 12327.

Approved/Forwarded:



Karl Wm. Kieninger
CDR, NOAA
Commanding Officer, NOAA Ship WHITING

DATE: February 25, 1982

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY
CHART EVALUATION
TIDE NOTE FOR ~~HYDROGRAPHIC SHEET~~

Processing Division: Atlantic Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): 851-9436 Great Kills Harbor, NY
851-9789 Rossville, NY
853-1681 Sandy Hook, NJ

Period: June 1, 1979 - September 30, 1979

CHART EVALUATION: FE-239
~~XXXXXXXXXXXX~~

OPR: B408

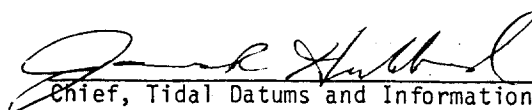
Locality: Chart #12331

Plane of reference (mean ~~XXXX~~ low water): 851-9436 = 24.41 ft.
851-9789 = 1.21 ft.
853-1681 = 2.26 ft.

Height of Mean High Water above Plane of Reference is 851-9436 = 4.79 ft.
851-9789 = 5.08 ft.
853-1681 = 4.61 ft.

REMARKS: Recommended Zoning:

1. In Great Kills Harbor zone direct on 851-9436.
2. In Arthur Kills, south to the entrance at 40°30' zone direct on 851-9789. For times of hydrography when 851-9789 was inoperative zone on 853-1681 and apply +20 minute time correction and x1.11 range ratio.
3. In Raritan Bay from 74°17' east to 74°11', zone on 853-1681 and apply +10 minute time correction and x1.08 range ratio.
4. In Raritan Bay East of 74°11', zone on 853-1681 and apply x1.04 range ratio.


Chief, Tidal Datums and Information Branch

GEOGRAPHIC NAMES

FE-239

Name on Survey	ON CHART NO. 12331 ON PREVIOUS SURVEY CON U.S. QUADRANGLE MAPS FROM LOCAL INFORMATION ON LOCAL MAPS P.O. GUIDE OR MAP RAND McNALLY ATLAS U.S. LIGHT LIST										
	A	B	C	D	E	F	G	H	K		
ARTHUR KILL	X										1
FERRY POINT	X										2
GREAT BEDS	X										3
NEW JERSEY (title block)	X										4
NEW YORK (title block)	X										5
PERTH AMBOY	X										6
PORT SOCONY	X										7
RARITAN BAY	X										8
RARITAN RIVER	X										9
SOUTH AMBOY	X										10
WARD POINT	X										11
STATEN ISLAND											12
PRINCES BAY											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25

Approved:

Charles E. Harrington
Chief Geographer - N/C62x5

20 July 1983

HYDROGRAPHIC SURVEY STATISTICS

FE-239

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

RECORD DESCRIPTION		AMOUNT		RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		8		SMOOTH OVERLAYS: POS., ARC, EXCESS		24	
DESCRIPTIVE REPORT		1		FIELD SHEETS AND OTHER OVERLAYS		4	
DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/SOURCE DOCUMENTS		
ACCORDIAN FILES	1						
ENVELOPES					2		
VOLUMES					3		
CAHIERS							
BOXES				2			

SHORELINE DATA

SHORELINE MAPS(List):

PHOTOBATHYMETRIC MAPS(List):

NOTES TO THE HYDROGRAPHER(List):

SPECIAL REPORTS(List):

NAUTICAL CHARTS(List):

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	EVALUATION	TOTALS
POSITIONS ON SHEET			2199
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			
	TIME - HOURS		
	VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION	9		9
VERIFICATION OF CONTROL	8		8
VERIFICATION OF POSITIONS	54		54
VERIFICATION OF SOUNDINGS	118		118
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION		4	4
COMPILATION OF SMOOTH SHEET	116		116
COMPARISON WITH PRIOR SURVEYS AND CHARTS		22	22
EVALUATION OF SIDESCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		20	20
OTHER			
DIGITIZING	8		8
TOTALS	304	46	350
Pre-processing Examination by J.S. Bradford	Beginning Date 19 FEB 80	Ending Date 20 FEB 80	
Verification of Field Data by R.G. Roberson, C. Meekins, I. Perkinson	Time(Hours) 304	Ending Date 15 FEB 83	
Verification Check by R.D. Sanocki	Time(Hours) 16	Ending Date 9 AUG 83	
Evaluation and Analysis by R.G. Roberson	Time(Hours) 46	Ending Date 8 JUNE 84	
Inspection by C.D. Meador	Time(Hours) 23	Ending Date 8 JUNE 84	

ATLANTIC MARINE CENTER
EVALUATION REPORT

REGISTRY NO.: FE-239

FIELD NO.: WH 15-1-79

New York, New York Harbor, Raritan Bay and Southern Part of Arthur Kill

SURVEYED: June 21 through September 28, 1979

SCALE: 1:15,000

PROJECT NO.: OPR-B408-WH-79

SOUNDING: Ross Digital Echo
Sounder, Raytheon
DE-719B Fathometer

CONTROL: Del Norte (Range/Range),
Del Norte/Theodolite
(Range/Azimuth)

Chief of Party.....K. W. Kieninger

Surveyed by.....D. M. Kuhl
.....N. E. Perugini
.....J. C. Gardner, Jr.
.....J. B. Grant

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

1. INTRODUCTION

a. The initial Chart Evaluation Survey for chart 12331, when plotted at the survey scale (1:15,000), had eight (8) areas of development that were very cluttered or would not adequately portray the area developed because of the line spacing at the scale of the survey. These eight (8) areas were separated from the survey data, assigned the registry number FE-239, and plotted at various scales that would better portray the feature(s) developed. These plots were done using parameters that would permit their inclusion in the Descriptive Report.

The remaining reconnaissance hydrographic data is plotted on a separate sheet at the survey scale. This sheet was assigned the registry number D-9 and is processed as a separate survey.

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

2. CONTROL AND SHORELINE

a. Control is adequately discussed in sections F and G of the Descriptive Report.

b. Waterfront Planimetry (Shoreline), shown in brown, originates with the Chart 12331 (21st Edition, June 11, 1977) and is for orientation purposes only. Modifications (additions, deletions and revisions) to shoreline is shown as provided on the hydrographer's Master Chart.

3. HYDROGRAPHY

a. Soundings at crossings were in good agreement and fall within the prescribed limits. Large differences that do occur are in areas of steep slope along the Corps of Engineers maintained channels.

b. Depth curves could be drawn in their entirety with consideration given to the depths in the areas that were developed.

c. Development of the bottom configuration and determination of least depths, where necessary, are considered adequate.

4. CONDITION OF SURVEY

The smooth sheet and accompanying overlays, hydrographic records and reports are adequate and conform to the requirements of the Hydrographic Manual with the following exceptions:

a. The hydrographer did not include a TC/TI listing for this survey in the separates. A "Sounding Correction Abstract" was submitted; however, the TC/TI tape listing which shows the input of the abstract into the system was not appended.

b. In his statement concerning corrections to echo soundings, the hydrographer stated that all corrections were based on bar checks. Two velocity correction tables were compiled using the available data. The bar checks taken on days prior to Julian day 240 were made with launch 1014 (VESNO 2932) and the bar checks taken after 240 day were taken with MONARK 1288 (VESNO 2933). When all bar check data was combined, the hydrographer failed to recognize that the launches used two (2) different echo sounders and the two (2) sounding systems were manufactured by different companies. A third table was computed and entered in the survey data for VESNO 2933 during verification.

c. Corrections to Echo Soundings applied to work done by MONARK 1288 (VESNO 2933) prior to Julian days 240 and 242 were derived from data collected by launch 1014 (VESNO 2932) which used different sounding equipment. Several "polechecks" were performed by MONARK 1288; however, these do not cover the entire range of depths taken, nor are there enough "polechecks" to provided adequate data for sounding correctors.

d. Sections I, J, K, L, and separate H were grouped together and placed in the Descriptive Report. Sections I, J, K, and L are supposed to be discussed in the body of the Descriptive Report, and separate H (8) is to be in the back of the Descriptive Report. In this case, however, the five (5) sections were combined and inserted in the Descriptive Report following Section L. This method is quite good because one does not have to flip back and forth through the report when reading about particular items.

e. Separate I, "Abstract of Documentation", was not submitted in the format in the Hydrographic Manual, section 4.12.5.4.(1) but was incorporated into the section mentioned in section 4.d. of this report. Once again there is a strong argument for the method used in this case. Each of these areas surveyed has its own peculiarities and should be judged on a case by case basis.

f. Some of the hydrographer's discussion of the items found during the survey reference items to Mean Low Water. In most cases there were no elevations found in the volumes, on the fathograms, or in the printouts. The end result is no elevations that can be used with the smooth tide correctors for the correct elevations at the appropriate plane of reference.

5. JUNCTIONS

There are no contemporary junctional surveys, and there are no junctional requirements in the Project Instructions.

6. COMPARISON WITH PRIOR SURVEYS

H-1712 (1:20,000) 1886
H-1713 (1:5,000) 1886
H-1714 (1:5,000) 1886
H-1715 (1:5,000) 1886
H-5617 (1:10,000) 1934
H-5636 (1:10,000) 1934
H-5637 (1:10,000) 1934
H-5647 (1:10,000) 1934

1 of 8

H-5636 (1:10,000) 1934
H-5647 (1:10,000) 1934

Comparison between the prior and present surveys in the dredged channels was not done. No soundings were shown in the dredged areas of the prior surveys. Outside of the maintained channels, six (6) or less feet of water, comparison between the present and prior surveys was fair to good with depths varying from + one (1) to five (5) feet. Dredged channels have been widened and anchorages dredged, resulting in little similarity between the present and prior surveys.

2 of 8

H-1713 (1:5,000) 1886
H-1714 (1:5,000) 1886

No meaningful comparison could be made between the prior surveys and the present survey. Generally the river has deepened; this is most probably a direct result of extensive cultural development in the area over the years.

3 of 8

H-5636 (1:10,000) 1934

Comparison between the prior and present surveys shows excellent agreement with differences of plus or minus one (1) to two (2) feet.

4 of 8

H-1714 (1:5,000) 1886

Comparison between the prior and present surveys shows the present survey to be three (3) to fourteen (14) feet deeper. Considerable cultural development has occurred along the river since the prior survey was completed.

5 of 8

H-5636 (1:10,000) 1934

Comparison between the prior and present surveys shows good agreement, but only a few, seven (7) soundings, from the prior survey fall in the common area.

6 of 8

H-5617 (1:10,000) 1934

Comparisons between the present survey and the prior survey shows differences from zero (0) to twenty-one (21) feet with the present survey having deeper depths. The area surveyed was most probably a borrow area for fill in the immediate area.

7 of 8

H-5636 (1:10,000) 1934

Comparison between the prior and present surveys shows excellent agreement. Depths vary no more than plus or minus one (1) foot in the common area.

8 of 8

H-1714 (1:5,000) 1886

Comparison between the prior and present survey showed extensive cultural development in the common area. This development has been so extensive that no meaningful comparison could be made.

The eight (8) specific areas of hydrography discussed above are adequate to supersede the prior surveys in the common area.

7. COMPARISON WITH CHART 12331 (21st Edition, June 11/77)

The charted hydrography originates with the above mentioned prior surveys and miscellaneous sources. They require no further discussion.

Because of the time which has elapsed between the field collection and office processing of the data contained in the present field examination, comparison was also made with the most recent edition of the above chart to insure that items already on the chart were not once more recommended for charting. The other edition used was: 24th Edition AUG 6/83.

Specific recommendations concerning individual items selected for inspection, items that were found by the hydrographer, and Corps of Engineers permits items can be found in the Descriptive Report following Section L (pages 8 through 84). Additional charting recommendations concerning fixed aids and landmarks are found in section 6, page 118, of the Descriptive Report.

The eight (8) areas of development discussed in section 6 of this report are adequate to supersede the charted hydrography in the common areas unless subsequent data indicates otherwise.

8. COMPLIANCE WITH PROJECT INSTRUCTIONS

This survey adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK


This is an excellent chart evaluation survey. No additional field work is recommended at the present time.

for Charles O. Meador
Robert G. Roberson
Cartographer
Verification of Data
Evaluation and Analysis

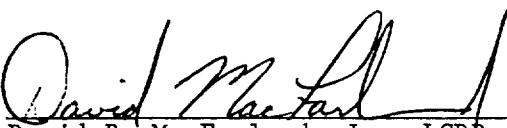
INSPECTION REPORT
FE-239

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

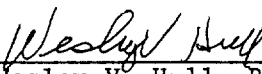


Charles D. Meador
Chief, Evaluation and Analysis Group



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

Approved June 8, 1984



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

PERTH
AMBOY

STATEN
ISLAND

FE-239

1 of 8

JUNE - SEPTEMBER 1979

SCALE: 1:15,000/NORTH AMERICAN DATUM OF 1927
SOUNDINGS IN FEET AT MLW/POLYCONIC PROJECTION

Brown shoreline originates with
Chart 12331 (21st Edition, 6/11/77)

and is for orientation purposes
only.

FERRY PT

RARITAN
RIVER

WARD PT

BEACON 5A, 1932
(Princes Bay Light 5B)

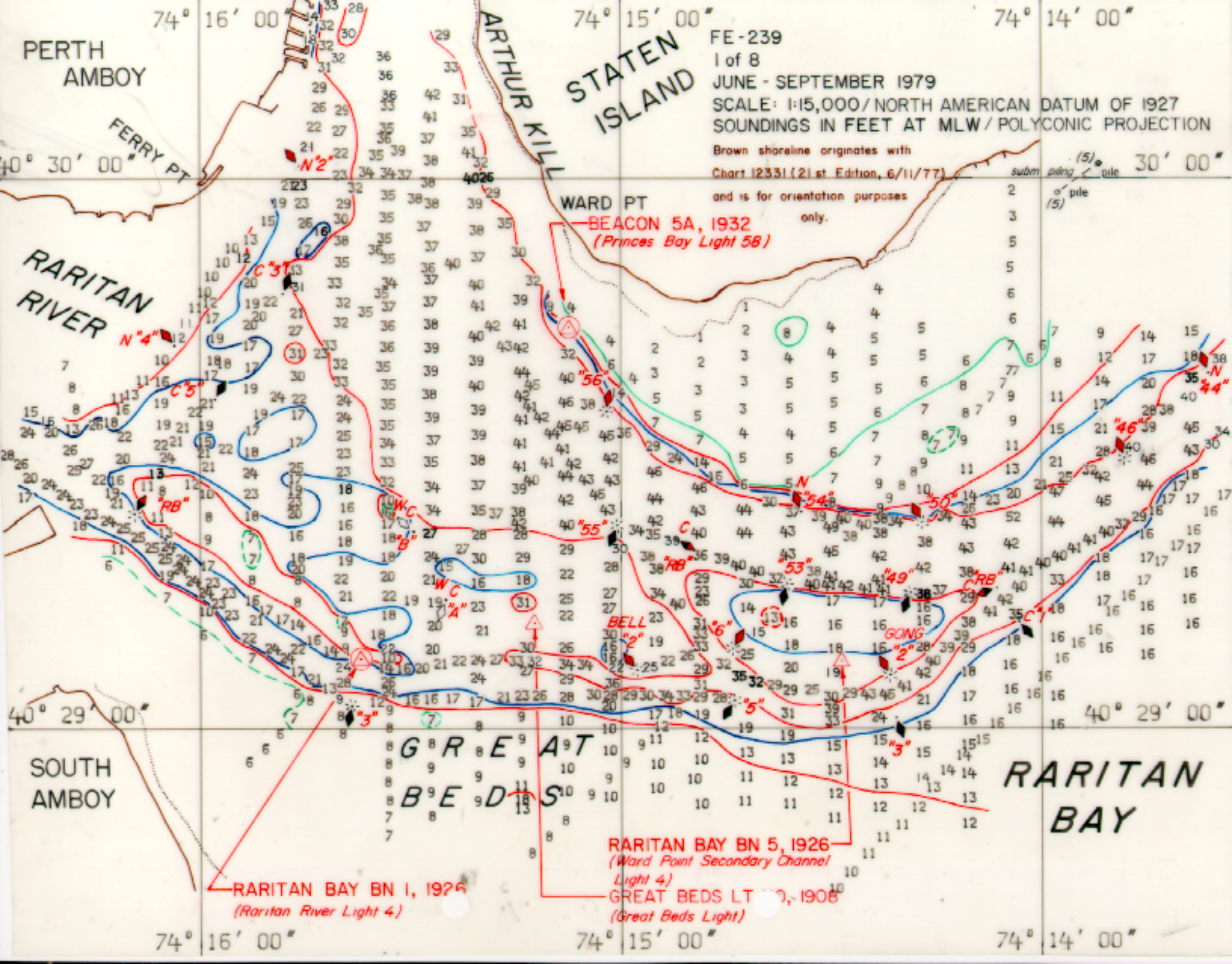
SOUTH
AMBOY

G R E A T
B E D S

RARITAN
BAY

RARITAN BAY BN 1, 1926
(Raritan River Light 4)

RARITAN BAY BN 5, 1926
(Ward Point Secondary
Light 4)
GREAT BEDS LT 7, 1908
(Great Beds Light)



74° 15' 15"

74° 15' 00"

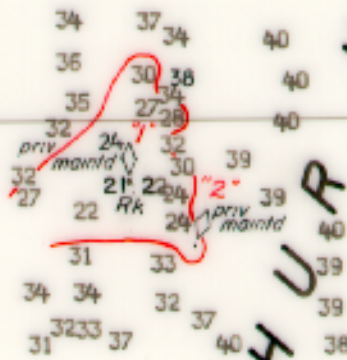
40° 32' 30"

40° 32' 30"

FE-239
 2 of 8
 JUNE - SEPTEMBER 1979
 SCALE: 1:5,000
 SOUNDINGS IN FEET AT MLW
 NORTH AMERICAN DATUM OF 1927
 POLYCONIC PROJECTION

40° 32' 15"

40° 32' 15"



ARTHUR KILL

40° 32' 00"

40° 32' 00"

74° 15' 15"

74° 15' 00"

40° 33' 45"

74° 13' 15"

74° 13' 00"

40° 33' 45"

FE-239
4 of 8
JUNE - SEPTEMBER 1979
SCALE: 1:5,000
SOUNDINGS IN FEET AT MLW
NORTH AMERICAN DATUM OF 1927
POLYCONIC PROJECTION

40° 33' 30"

40° 33' 30"

ARTHUR KILL

41 41
40
41 39 38 35
37 37 33
32

40° 33' 15"

40° 33' 15"

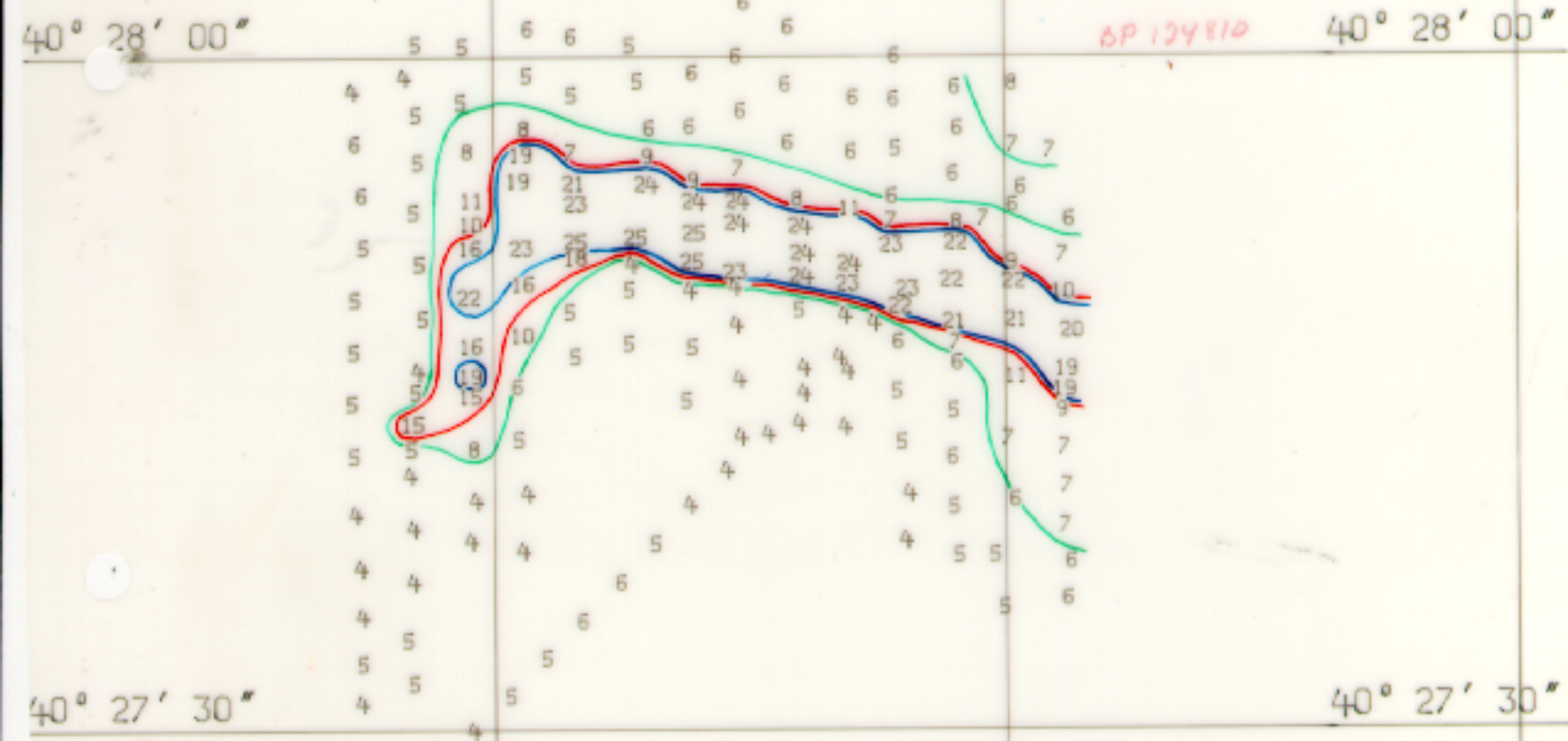
74° 13' 15"

74° 13' 00"

40° 28' 30" 74° 08' 00" 74° 07' 30" 40° 28' 30"

FE - 239
6 of 8
JUNE - SEPTEMBER 1979
SCALE: 1:10,000
SOUNDINGS IN FEET AT MLW
NORTH AMERICAN DATUM OF 1927
POLYCONIC PROJECTION

RARITAN BAY



40° 27' 30" 74° 08' 00" 74° 07' 30" 40° 27' 30"

74° 13' 15"

74° 13' 00"

74° 12' 45"

FE-239
 7 of 8
 JUNE - SEPTEMBER 1979
 SCALE: 1:5,000
 SOUNDINGS IN FEET AT MLW
 NORTH AMERICAN DATUM OF 1927
 POLYCONIC PROJECTION

40° 27' 30"

40° 27' 30"

RARITAN BAY

40° 27' 15"

40° 27' 15"

40° 27' 00"

40° 27' 00"

74° 13' 15"

74° 13' 00"

74° 12' 45"



74° 14' 30"
FE-239
8 of 8
JUNE - SEPTEMBER 1979
SCALE: 1:7,500 NORTH AMERICAN DATUM OF 1927
SOUNDINGS IN FEET AT MLW/POLYCONIC PROJECTION
Brown shoreline originates with Chart 12331 (21st Edition, 6/1/76)
and is for orientation purposes only.

ARTHUR KILL "13"

PORT SOCONY STATEN ISLAND

40° 33' 00"

40° 32' 30"

75° 15' 00" 40° 33' 30"

40° 32' 30" 74° 14' 30"

74° 14' 00"

40° 33' 30"

40° 33' 00"

74° 14' 00"

74° 15' 00"

• pile
• pile

