

F00472

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey FIELD EXAMINATION

Field No.

Registry No.

F00472

LOCALITY

State NEW JERSEY

General Locality

SANDY HOOK

Locality SHREWSBURY AND NAVESINK RIVERS

2000

CHIEF OF PARTY
JOHN WILDER, CAPT

LIBRARY & ARCHIVES

DATE

FEB 14 2001

HYDROGRAPHIC TITLE SHEET

F00472

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.

State New Jersey

General locality Sandy Hook

Locality Shrewsbury and Navesink Rivers

Scale 1:10,000

Date of survey September 8 - September 20, 2000

Instructions dated 5-15-0

Project No. OPR-C410-NRT2

Vessel NOAA Launch 1210

Chief of party John D. Wilder, CAPT, NOAA

Surveyed by Navigation Response Team 2

Soundings taken by echo sounder, hand lead, pole Innerspace 448

Graphic record scaled by NRT2 Personnel

Graphic record checked by NRT2 Personnel

Protracted by Atlantic Hydrographic Branch Personnel

Automated plot by HP DesignJet 750C - Field

Verification by Atlantic Hydrographic Branch Personnel

Soundings in fathoms feet at MLW MLLW _____

REMARKS: Handwritten notes in the Descriptive Report were made during office processing.

AWOIS/SURE MCR 2/13/00

DAVID H. W. WEATHER BROADCASTS
Actual weather Service stations listed
provide continuous minute weather broadcast.
The range of reception is variable, but to
station is usually 75 to 100 miles from the
station.

WV, NY KWO-31 10P-5530F
NY, NJ KWB-38 10P-4030F

ONLY ON
500000: 1:30-2:00
with applicable and available
weather data. A 1:30-2:00
weather broadcast is available
on 500000: 1:30-2:00

NOTE: Use of these broadcasts is
subject to the provisions of the
International Convention on
the High Seas, 1958, and the
United Nations Convention on
the Law of the Sea, 1982, which
provide that the right of innocent
passage is not affected by the
establishment of a maritime
transportation security zone.

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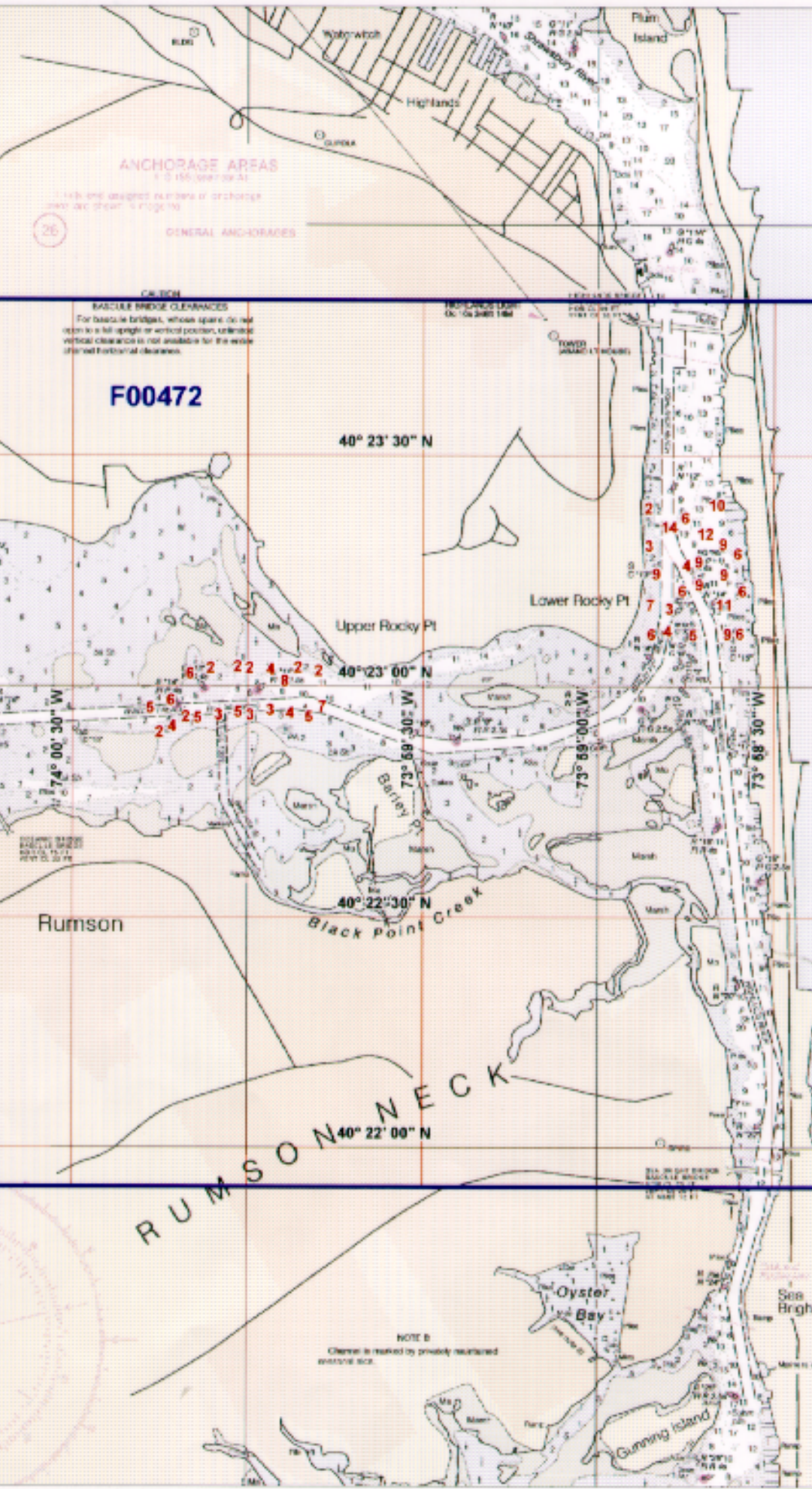
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ANCHORAGE AREAS
1-3 (See page 10-11)

26

GENERAL ANCHORAGES

CAUTION
BRIDGE CLEARANCES
For bascule bridges, whose spans do not
open to a full span or vertical position, elevated
vertical clearance is not available for the entire
spanned horizontal clearance.

F00472

40° 23' 30" N

40° 23' 00" N

40° 22' 30" N

40° 22' 00" N

Rumson

RUMSON NECK

NOTE B
Clearance is marked by privately maintained
vertical sign.

ATLANTIC OCEAN

FIELD EXAMINATION REPORT
to Accompany
Hydrographic Survey F00472
OPR-C410-NRB
1:10,000 - 2000
NAVIGATION SERVICES DIVISION
Navigation Response Team 2 – Launch 1210
Capt. John Wilder, Chief - NOAA

This examination was conducted according to Port Instructions OPR-C410-NRT2, New York and New Jersey dated May 15, 2000. The area includes Approaches to New York Harbor, Sandy Hook and New Jersey.

The purpose of Field Examination F00472 was to provide some contemporary soundings in several designated areas on the Navesink and Shrewsbury rivers in NJ. There was also one day for positioning of buoys in the same region.

A. AREA SURVEYED

The approximate survey area limits are:

North - $40^{\circ}23'30''N$
South - $40^{\circ}22'30''N$
East - $073^{\circ}58'30''W$
West - $074^{\circ}00'30''W$

This survey was conducted on: Sept 8, 2000 (DN:252) and September 20, 2000 (DN:264). This time frame includes DP's on buoys and hydrographic soundings.

* **B. DATA ACQUISITION AND PROCESSING** - See also Section D of Evaluation Report

B1. Equipment

An Innerspace model 448 depth sounder, S/Ns 188 was used to collect all echo soundings on this survey. A standard lead line calibrated in meters, S/N 1210, was used during this survey for comparison with the echo sounder. No problems were encountered with any of the sounding equipment.

Data Acquisition and Processing Report

OPR-C410 – F00472

A. Equipment

HYPACK version 7.1A was used for on-line data acquisition. HPS version 9.8 program, HP Tools version 10.3.1 were used for data processing, and MapInfo Professional Ver. 5.0, with Vertical Mapper Ver. 2.5, were used to support processing and plotting. The NOS program Velocity Ver. 5.0, Micro Station 95 and MS Word 97 Ver. 7.0 were also used during this survey.

NOAA launch 1210, a 27-foot SeaArk with a draft of 0.5 meters, was used to collect all survey data. There were no unusual vessel configurations or problems encountered with the vessel.

An Innerspace model 448 depth sounder, S/Ns 188 was used to collect all echo soundings on this survey. A standard lead line calibrated in meters, S/N 1210, was used during this survey for comparison with the echo sounder. No problems were encountered with any of the sounding equipment.

B. Quality Control

Survey data for single beam and side scan sonar Hydrography was transferred to a zip drive on the launch and entered into the post processing system in the Office trailer. Data is check scanned and edited through NOS-HPS software. The data upon completion of editing is then plotted or transferred via MapInfo or Micro Station.

The High accuracy DGPS positions for ENC (Electronic Navigational Chart) are transferred to Trimble Pathfinder Office software on the post processing system in the Office trailer. The data points are then plotted via MapInfo and processed into shape files for MCD. The data upon completion is posted on the FTP site for Navigation Response Branch.

*C. Corrections to Echo Soundings *- See also Section H. of Evaluation Report*

The instrument used for determining corrections for the speed of sound through the water column was a Seabird-Seacat Velocity Profiler, model 19-03, S/N 198671-1477. The manufacturer calibrated this unit on December 28, 1999. Data quality assurance tests were performed after each cast. Program VELOCITY was used for computing the correctors. Corrections were applied to the sounding plot using the HPS REAPPLY program.

The lead line for launch 1210 was calibrated using a steel tape on April 17, 2000 (DN: 108). No corrections were necessary. A static draft of 0.5 meters was applied to

A Starlink DGPS Beacon Receiver (S/N 795) and antenna (S/N 4132) were used as the remote station on launch 1210.

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NOAA launch 1210, a 27-foot SeaArk with a draft of 0.5 meters, was used to collect all survey data. There were no unusual vessel configurations or problems encountered with the vessel.

B2. Quality Control

The integrity of the survey data for F00472 has been insured by following the Field Procedures Manual and the NOS Hydrographic Surveys Specifications and Deliverables Manual, June 2000. Due to the nature of this survey as Chart Evaluation, percentages of crosslines were not calculated or specific to mainscheme hydrography.

The lead line for launch 1210 was calibrated using a steel tape on April 17, 2000. No corrections were necessary. A static draft of 0.5 meters was applied to the sounding plots by the HPS REAPPLY program. The draft was measured by subtracting the difference from a punch mark on the side of launch 1210, 0.6 meter above the transducer, to the water surface.

Settlement and squat measurements for launch 1210 were taken on April 17, 2000 (DN: 108). These measurements were conducted in New York Harbor, NY using the level method. Settlement and squat correctors were applied to the sounding plots using the HPS REAPPLY program.

Differential GPS (DGPS) was used for all hydrographic data acquired on this survey. DGPS performance checks were conducted in accordance with FPM 3.4.4 by comparing the DGPS position of the vessel to a high accuracy (1st order) calibration point.

B3. Corrections to Echo Soundings

There are no deviations to be discussed in this section. Refer to Section "C" Correction to Echo Soundings of the Data Acquisition and Processing Report.

***C. VERTICAL AND HORIZONTAL CONTROL** - See also Evaluation Report Section H

The instrument used for determining corrections for the speed of sound through the water column was a Seabird-Seacat Velocity Profiler. The manufacturer calibrated this unit on December 28, 1999. Data quality assurance tests were performed after each cast. Program

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Settlement and squat measurements for launch 1210 were taken on April 17, 2000 (DN: 108). These measurements were conducted in New York Harbor, NY using the level method. Settlement and squat correctors were applied to the sounding plots using the HPS REAPPLY program.

* Field tide reduction of soundings is based on unverified actual heights from the Internet from stations Sandy Hook, NJ (853-1680). The values were downloaded from: http://www.opsd.nos.noaa.gov/data_retrieve.shtml?input_code=101011111pw1. Values and correctors were applied at the perspective locations of Hydrography from the Port Instructions.

* Approved tides and zoning have been applied during office processing

VELOCITY was used for computing the correctors. Corrections were applied to the sounding plot using the HPS REAPPLY program.

Field tide reduction of soundings is based on unverified actual heights from the Internet from station Sandy Hook, NJ (853-1680). The values were downloaded from:
http://www.opsd.nos.noaa.gov/data_retrieve.shtml?input_code=101011111pw1.
Values and correctors were applied at the perspective locations of hydrography.

All elevations and soundings on survey F00472 are based on MLLW unless otherwise specified.

The horizontal control datum for this project is the North American Datum (NAD) of 1983 in UTM. The control reference station used for this survey was the USCG DGPS Sandy Hook, NJ (Station ID #804), located at 40°28'17.34"N, 074°00'41.74"W.

* **D. RESULTS AND RECOMMENDATIONS** - See also Section O of the Evaluation Report
D1. Chart Comparison

The following is a list of Charts compared during F00472:

Chart Number	Edition	Edition Date
12325	1 st	Aug. 12, 2000

There were no Danger to Navigation reports submitted for this survey.

D2. Additional Results

* There were no Prior Survey comparisons conducted by the hydrographer for F00472.
See also Section M of the Evaluation Report

III. Sound Velocity Profile Data

The instrument used for determining corrections for the speed of sound through the water column was a Seabird-Seacat Velocity Profiler, model 19-03, S/N 192472-284.

Correctors for the velocity of sound through water were determined from the casts listed below:

<u>Cast No.</u>	<u>Table No.</u>	<u>Deepest * Depth(m)</u>	<u>Applicable DN(s)</u>	<u>Cast Position</u>		<u>Day Taken</u>
1	1	18.9	110-118	40°42'18"N	074°01'18"W	110
2	2	17.5	122-130	40°42'12"N	074°00'00"W	122
3	3	8.5	136-140	40°26'42"N	074°00'24"W	136
4	4	8.7	145-146	40°26'00"N	074°00'35"W	145
5	5	11.1	152	40°42'00"N	074°01'00"W	152
6	6	13.5	153-154	40°20'00"N	074°01'30"W	153
7	7	7.6	159	40°27'36"N	074°01'36"W	159
8	8	20.6	165-168	40°41'42"N	074°00'36"W	165
9	9	17.8	178-179	40°37'10"N	074°03'48"W	178
10	10	18.8	229-230	40°37'18"N	074°03'30"W	229
11	11	15.6	236-237	40°42'00"N	074°00'00"W	236
12	12	15.0	241-243	40°32'30"N	074°15'00"W	241
13	13	16.9	258	40°32'12"N	074°15'00"W	258
14	14	19.3	262-266	40°31'12"N	074°14'54"W	262
* 15	15	7.9	264	40°23'36"N	074°58'42"W	264

F00472 only

The manufacturer calibrated this unit on December 28, 1999. Data quality assurance tests were performed after each cast. Program VELOCITY was used for computing the correctors. Corrections were applied to the sounding plot using the HPS REAPPLY program.

Velocity Profiler Calibration reports are included in this section.

Printouts of individual sound velocity profiles are not required.

GEOGRAPHIC NAMES

FE00472

Name on Survey	A ON CHART NO. 12523, 12524		B ON PREVIOUS SURVEY		C ON U.S. QUADRANGLE MAPS		D FROM LOCAL INFORMATION		E ON LOCAL MAPS		F P.O. GUIDE OR MAP		G GRAND MCNALLY ATLAS		H U.S. LIGHT LIST		K	
BARLEY POINT	X		X															1
BARLEY POINT REACH	X		X															2
BLACK POINT CREEK	X		X															3
HIGHLANDS REACH	X		X															4
LOWER ROCKY POINT	X		X															5
NAVESINK RIVER (title)	X		X															6
NEW JERSEY (title)	X		X															7
NORTH ATLANTIC OCEAN	X		X															8
RUMSON (pp1)	X		X															9
SANDY HOOK (title)	X		X															10
SHREWSBURY RIVER (title)	X		X															11
UPPER ROCKY POINT	X		X															12
																		13
																		14
																		15
																		16
																		17
																		18
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																		24
																		25

Chris Clay

FEB 1 2001

N/CS33-10-2001

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 GROUP, N/CS3X1
NOAA/NATIONAL OCEAN SERVICE
STATION 6815, SSMC3
1315 EAST-WEST HIGHWAY
SILVER SPRING, MARYLAND 20910-3282

DATE FORWARDED

FEB 9, 2001

NUMBER OF PACKAGES

ONE TUBE

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.

F00472

NEW JERSEY, SANDY HOOK, SHREWSBURY AND NAVESINK RIVERS

ONE TUBE CONTAINING THE FOLLOWING:

- 1 ORIGINAL DESCRIPTIVE REPORT FOR F00472 AND ACCOMPANYING PAGE-SIZED PLOT
- 1 RECORD OF APPLICATION TO CHART (NOAA FORM 76-96) FOR SURVEY F00472
- H-DRAWING FOR NOS CHART 12325
- COMPOSITE DRAWING FOR NOS CHART 12325

FROM: (Signature)

DEBORAH A. BLAND



RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

ATLANTIC HYDROGRAPHIC BRANCH
N/CS33
439 WEST YORK STREET
NORFOLK, VA 23510-1114

02/09/2001

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: F00472

NUMBER OF CONTROL STATIONS		2
NUMBER OF POSITIONS		368
NUMBER OF SOUNDINGS		368
	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	18.0	11/17/2000
VERIFICATION OF FIELD DATA	73.0	01/26/2001
QUALITY CONTROL CHECKS	2.0	
EVALUATION AND ANALYSIS	2.0	
FINAL INSPECTION	3.0	02/09/2001
COMPILATION	17.0	02/01/2001
TOTAL TIME	115.0	
ATLANTIC HYDROGRAPHIC BRANCH APPROVAL		02/09/2001

**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR FE472 (2000)**

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

The following software was used to process data at the Atlantic Hydrographic Branch:

Hydrographic Processing System (HPS)
NADCON, version 2.10
SITE WORKS 02.01.02.00
MicroStation 95, version 5.05
I/RAS B, version 5.01

The smooth sheet was plotted using an Hewlett-Packard DesignJet 2500CP plotter.

H. CONTROL STATIONS

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). Office processing of this survey is based on these values. The smooth sheet has been annotated with ticks showing the computed mean shift between the NAD 83 and the North American Datum of 1927 (NAD 27).

To place this survey on the NAD 27 datum move the projection lines 0.394 seconds (12.149 meters or 1.21 mm at the scale of the survey) north in latitude, and 1.503 seconds (35.461 meters or 3.55 mm at the scale of the survey) east in longitude.

All geographic positions listed in this report are on NAD 83 datum unless otherwise specified.

J. SHORELINE

Brown shoreline originates with National Ocean Survey (NOS) chart 12325, (1st Edition, Aug 12/2000) and is for orientation purposes only.

M. COMPARISON WITH PRIOR SURVEYS

Hydrographic

H10016 (1982) 1:10,000

The prior survey listed above covers the present survey area in its entirety. The following should be noted:

H10016 (1982) is in general agreement with the present survey, with prior soundings shoaler by 1 to 3 feet (0³ to 1 meter). The differences between the present and prior surveys can be attributed to natural changes in the bottom configuration, cultural change, and/or improved hydrographic surveying methods. Attention is directed to the following:

A charted rock awash, in Latitude 40°23'06.9"N, Longitude 73°58'43.6"W, originates with the prior survey. This feature was neither investigated nor addressed by the hydrographer. This feature has been brought forward from the prior survey to supplement the present survey. No change in charting status is recommended.

The present survey is considered adequate to supersede the prior surveys within the common area, except as noted in this report.

O. COMPARISON WITH CHART 12324 (28th Edition, Mar 1/97)
12325 (1st Edition, Aug 12/00)

1. Hydrography

The charted hydrography originates with the previously addressed prior surveys, miscellaneous sources and from sources not readily available. The previously addressed prior survey requires no further consideration.

2. Controlling Depths

Agreement between the channel controlling depths and present survey soundings is adequate except as noted:

a. Present survey depths of 3 to 4 feet between Latitude 40°22'57.01"N, Longitude 73°59'55.97"W and Latitude 40°22'56.38"N, Longitude 74°00'04.81"W conflict with the controlling depth of 4.3 feet for Barley Point Reach channel.

b. Present survey depths of 3 feet to 4 feet between Latitude 40°23'06.91"N, Longitude 73°58'48.64"W and Latitude 40°23'10.20"N, Longitude 73°58'47.68"W conflict with the

controlling depth of 4.3 feet for Barley Point Reach channel.

c. A present survey depth of 4 feet in Latitude 40°23'15.84"N, Longitude 73°58'44.69"W conflicts with the controlling depth of 6.2 feet for Highlands Reach channel.

The present survey is adequate to supersede the charted hydrography in the common area, except as noted in this report.

P. ADEQUACY OF SURVEY

This is an adequate field examination survey. No additional work is recommended.

Q. AIDS TO NAVIGATION

The hydrographer located 28 floating aids to navigation on the present survey. These aids appear adequate to serve their intended purpose. The following should be noted:

1. Shrewsbury River Channel Buoy 13, Light List number 35805, is positioned incorrectly on both charts in Latitude 40°23'16"N, Longitude 73°58'49.6"W. The present survey positioned the buoy at Latitude 40°23'16.46"N, Longitude 73°58'39.25"W. This information was forwarded to Marine Chart Division, Mr. Len Arkenau, Silver Spring, Maryland, where a Notice to Mariners was issued for this item.

2. Shrewsbury River Channel Buoy 12, Light List number 35800, is charted in Latitude 40°23'25.5"N, Longitude 73°58'47.8"W. The Light List indicates that the buoy is located in Latitude 40°23'24"N, Longitude 73°58'48"W. The present survey found the buoy off station in Latitude 40°23'07.05"N, Longitude 73°58'49.64"W. A conversation with the Coast Guard Aids to Navigation Branch in New York determined that the Coast Guard is aware that the buoy is off station and that a Notice To Mariners had already been issued. According to Mr. Tooth, of the Coast Guard Aids to Navigation Branch, a disgruntled fisherman is moving that buoy off station every two weeks or so.

3. Navesink River Buoy 1, Light List number 35975, is charted in Latitude 40°23'09.6"N, Longitude 73°58'47.0"W. The present survey found the buoy off station, southeast of its charted position, in Latitude 40°23'06.68"N, Longitude

73°58'46.09"W.

4. Shrewsbury River Channel Lighted Buoy 19, Light List number 35835, is charted in Latitude 40°22'34.8"N, Longitude 73°58'47.0"W. The present survey found the buoy off station, southwest of its charted position, in Latitude 40°22'24.90"N, Longitude 73°58'33.20"W.

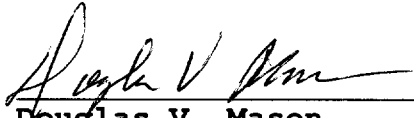
All buoys in the Navesink and Shrewsbury Rivers will be removed for the winter on December 4, 2000.

S. MISCELLANEOUS

Chart compilation was done by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland. The following NOS Chart was used for compilation of the present survey:

12325 (1st Edition, Aug 12/00) 1:15,000

F00472

A handwritten signature in cursive script, appearing to read "Douglas V. Mason", written over a horizontal line.

Douglas V. Mason


Cartographic Technician

Verification of Field Data

APPROVAL SHEET
F00472

Initial Approvals:


The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproof 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 digital data for this survey. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.



Deborah A. Bland
Cartographer,
Atlantic Hydrographic Branch

Date: 9 FEB 2001

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.



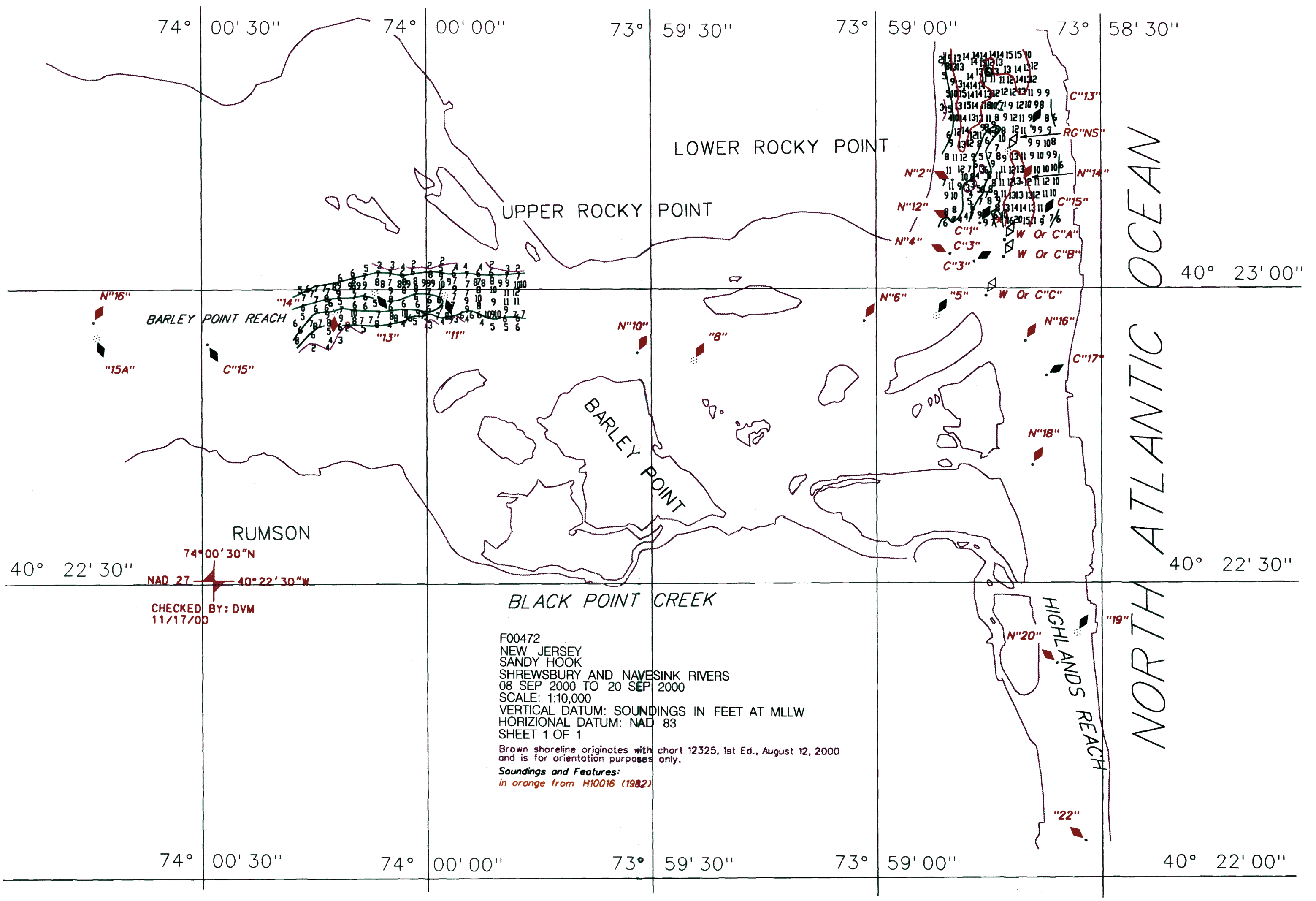
Andrew L. Beaver
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Branch

Date: 9 FEB 2001

Final Approval:

Approved:  _____, LCDR, USN Date: 14 Feb 2001

for Samuel P. De Bow, Jr.
Captain, NOAA
Chief, Hydrographic Surveys Division



74° 00' 30"

74° 00' 00"

73° 59' 30"

73° 59' 00"

73° 58' 30"

LOWER ROCKY POINT

UPPER ROCKY POINT

ATLANTIC OCEAN

NORTH ATLANTIC OCEAN

NORTH ATLANTIC OCEAN

40° 23' 00"

40° 22' 30"

40° 22' 00"

RUMSON

BARLEY POINT

BLACK POINT CREEK

HIGHLANDS REACH

74° 00' 30" N
NAD 27
40° 22' 30" W

CHECKED BY: DVM
11/17/00

F00472
NEW JERSEY SANDY HOOK SHREWSBURY AND NAVESINK RIVERS
08 SEP 2000 TO 20 SEP 2000
SCALE: 1:10,000
VERTICAL DATUM: SOUNDINGS IN FEET AT MLLW
HORIZONTAL DATUM: NAD 83
SHEET 1 OF 1
Brown shoreline originates with chart 12325, 1st Ed., August 12, 2000 and is for orientation purposes only.
Soundings and Features:
in orange from H10016 (1982)

74° 00' 30"

74° 00' 00"

73° 59' 30"

73° 59' 00"

73° 58' 30"

