

9875

Diagram Chart Nos. 369-5 & 1215-3

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. WH-5-3-80

Office No. H-9875

LOCALITY

State New York

General Locality .. New York Harbor

Locality The Narrows to Bay

..... Ridge Channel

19 80

CHIEF OF PARTY
CDR F.P. Rossi

LIBRARY & ARCHIVES

DATE October 21, 1981

☆U.S. GOV. PRINTING OFFICE: 1980-668-537

9875

Area

12 100 10,000
13 100 13,000 ✓
12 300 15,000
13 100 40,000

HYDROGRAPHIC TITLE SHEET

H-9875

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.

WH-5-3-80

State NEW YORK

General locality NEW YORK HARBOR

Locality UPPER BAY The Narrows to Bay Ridge Channel

Scale 1:5000 - 10,000 Date of survey April 24-May 20, 1980

Instructions dated Nov. 30, 1979 Project No. OPR-B139-WH-80

Vessel NOAA Ship WHITING Launches 1014(2932) and 1015 (2931)
CDR Karl Kieninger April 24-April 30, 1980

Chief of party CDR Frank P. Rossi May 01-May 20, 1980

Surveyed by N. Prah, D. Mason, R. Mann, F. Diaz, J. Gardner, D. Bland, J.B. Grant

Soundings taken by echo sounder, hand lead, pole ROSS Model 5000

Graphic record scaled by WHITING personnel

Graphic record checked by NP, DM, RM, FD, JG, DB, JBG

Protracted by _____ Automated plot by Hydroplot

Soundings penciled by _____

Soundings in ~~fathoms~~ feet at MLW ~~MLW~~

REMARKS: All times are Coordinated Universal Time (UTC)

All notes in red ink ^{made during} are by Verification Branch Personnel.

Misc. data culled from the D.R. are filed with the survey records

STANDARDS OK'D 9-9-82
C. WY

DESCRIPTIVE REPORT
TO ACCOMPANY HYDROGRAPHIC SURVEY
WH-5-3-80 (H-9875)
OPR-B139-WH-80

A. PROJECT

Hydrographic Survey WH-5-3-80, H-9875, was performed in accordance with the project instructions for OPR-B139-WH-80, New York Harbor dated 30 November 1979. The following changes are also noted:

| <u>CHANGE NO.</u> | <u>DATE</u> |
|-------------------|-------------|
| 1 | 8 FEB 1980 |
| 2 | 6 FEB 1980 |
| 3 | 4 APR 1980 |

In conducting Evaluation Surveys of the New York Harbor suite of Charts in 1978 and 1979, the WHITING discovered a number of major discrepancies between observed depths and those that were charted. As a result, a basic survey of New York Harbor was undertaken in 1979 of a portion of the Lower Bay. The Survey continued in the Upper Harbor in 1980.

The WHITING arrived in New York on March 6, 1980 with project instructions for OPR-B139-WH-80, Hydrographic Survey New York Harbor, the area to be surveyed was defined as follows: bounded on the North by the Battery of Manhattan Island, on the South by the Verrazano Narrows Bridge, on the West by the Staten Island/New Jersey Shoreline and on the East by the Brooklyn Shoreline. This area is covered by Chart No. 12334, 1:^{10,000}~~20,000~~. Sixty days of sea time were scheduled for establishing a horizontal control network and completing four 1:5000 sheets. *See Verification Report*

A Command decision was made early in the Operation to survey the navigable corridors between the Verrazano Bridge and the Battery concentrating on adequate soundings to portray the bottom configuration, floating aids to navigation and bottom samples. Fixed aids to navigation, shoreline and coast pilot investigation were purposely excluded. The reasons for this decision were compelling and are as follows, 1) the sea days allotted to the project (60) were approximately one third of the required amount of time necessary to properly do a complete survey, 2) no contemporary photography exists of the shoreline, and 3) the Army Corps of Engineers is undertaking a massive reclamation project on the New Jersey Shoreline. The navigable corridor surveyed is defined as follows: the Brooklyn Shoreline at the pier head line on the east; a line running from Ellis Island to Liberty Island thence to the pier head of the Military Ocean Terminal to Staten Island and south along the pier head line on the west.

Together with H-9815 and H-9874 (or H-9875) this survey provides a basis for updating the shipping lanes of the contiguous area covered by Chart No. 12334. Completion of this area, in the classic sense, can be properly undertaken only at such time that contemporary photogrammetry and ample sea days are provided to a survey party equipped to undertake extensive field edit and shoal water hydrography. *CONCUR*

B. AREA SURVEYED

Survey H-9875 covers the area between Staten Island and Brooklyn, New York known as the Narrows. The northern limit of hydrography is 40°38'40"N and the southern limit is 40°36'38"N or .3 miles north of the Verrazano Narrows Bridge. Hydrography was ^{not} run between pier faces as per Change No. 2. The work was performed from Julian Days 115-141 (April 24, 1980 through May 20, 1980).

C. SOUNDING VESSEL

All hydrography was performed by NOAA Launch 1014 (EDP No. 2932). No major mechanical problems were encountered. *Vessel 1015 (2931) was used on day 140 to take Detached Positions.*

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

All soundings were acquired on a Ross Model 5000 Fineline Recorder, S/N 1049. Phase check calibrations were performed on the Ross in accordance with the Hydrographic Manual. This calibration was conducted regularly and noted on all fathograms.

Bar checks were taken daily, weather and sea conditions permitting. Quality of bar checks varied with wind, sea and current conditions. Data from bar checks showed to be inconsistent among themselves. All velocity corrections were taken from TDC cast averages, taken several times during the survey with a Martek Mark VII Model 167 (S/N 127). This was calibrated in March, 1980.

All bar check data is included in the direct comparison logs, which along with the TDC data, is included with this report.

Settlement and squat correctors were taken from trials performed by WHITING personnel on June 28, 1979 in New York. Graphs and tables for settlement and squat are in the Appendix and applied on the TC/TI tape.

All soundings on this sheet were taken on the 1-100 foot scale.

Vault

E. HYDROGRAPHIC SHEETS

The field sheets were prepared by WHITING personnel using a Houston Instruments DP-3 roll plotter, S/N 5557-6. For processing purposes, the area was divided into two plotter sheets, north and south. Plotter origins for the sheets are as follows:

North: 040°37'29"N
074°05'38"W

South: 040°36'15"N
074°05'38"W

F. CONTROL STATIONS

The following signals were used for electronic positioning sites, initial points for range-azimuth control, or for calibration.

| <u>SIGNAL NO.</u> | <u>DESCRIPTION</u> |
|-------------------|-------------------------------------|
| 152 | H-52-NY, 1980 |
| 230 | Statue of Liberty, 1887 |
| 245 | FT. Wadsworth Lt. W. O. E. C., 1980 |
| 250 | Robbins Reef Light USE, 1930 |

Station 152 was established by personnel from Operations Division, Atlantic Marine Center. All other positions were recovered from ^{NGS} NOS Horizontal Control data. All computations were submitted to the Operations Division, Atlantic Marine Center, Norfolk, Virginia.

G. HYDROGRAPHIC POSITION CONTROL

All hydrography was controlled with the range-azimuth method using Del Norte equipment and a Wild T-2 theodolite, S/N 35052. The launch was equipped with a master unit and distance measuring unit (DMU). The remote unit was set up on shore at Station 245 (FT. Wadsworth).

All hydrography was logged using Program FA-181 real-time range-azimuth hydrolog.

Calibrations were made twice daily in accordance with the Hydrographic Manual. All calibrations were made from Station ¹⁵²~~250~~ (H-52-NY) using Program RK561 and set up on 245 (FT. Wadsworth). Baseline calibrations were performed in accordance with manufacturer's specifications and the Hydrographic Manual. Del Norte master and DMU remained paired between baseline calibrations.

The following master/DMU pairs were used during the survey:

| <u>JD</u> | <u>MASTER S/N</u> | <u>DMU S/N</u> |
|-----------|-------------------|----------------|
| 115-132 | 169 | 192 |
| 136-141 | 250 | 180 |

H. SHORELINE See Verification Report, section 2 b.

A blow up of NOS Chart No. 12334 (52nd Edition) was used for transferring shoreline. No shoreline hydrography was run.

I. CROSSLINES

The percentage of crosslines run on this survey was 8.7. The nautical miles of crosslines run were 10. Crosslines were run normal to mainscheme lines in all areas. Agreement with mainscheme lines was generally within two feet (85% within one foot).

J. JUNCTIONS See Verification Report, section 5.

This survey junctions with H-9874 (1:5,000) to the north and H-~~9820~~⁹⁸⁵⁹ (1:10,000) to the south. The junctions are generally excellent, with approximately 90% of the soundings agreeing to within one foot. Both junction surveys were conducted by WHITING personnel this year and have not been verified.

K. COMPARISON WITH PRIOR SURVEYS See Verification Report, section 6.

This sheet was compared with Prior Surveys H-5607 (1934) and H-5736 (1934). Approximately 80% of the compared soundings on the prior surveys were 2-3 feet deeper than on this survey with the largest discrepancy being 4 feet.

L. COMPARISON WITH THE CHART

Chart No. 12334 (53rd Edition, 1:10,000) was enlarged and overlaid with the mainscheme. Throughout the sheet, depths appear to be 2-3 feet deeper than those on the chart with the largest discrepancy being 5 feet. An investigation of an obstruction reported at Lat. 40°37'08"N, Long. 74°03'15"W was conducted by running 22 meter spacing lines over the area. No evidence of the obstruction was found. The recommendation is made to perform a wire drag survey over the area. Concur. See Verification Report, section 7.2.

109920

Anchor & 200 ft. of chain. Ch't'd from LNM 11/73 Retain as charted

✓ 775

M. ADEQUACY OF SURVEY

This survey is adequate to meet the standards set forth in Section A of this report.

N. AIDS TO NAVIGATION

The following is a list of all floating aids to navigation included in this survey:

| <u>DESCRIPTION</u> | <u>G.P.</u> | <u>POS. NO.</u> |
|-------------------------------------------|------------------------------|-----------------|
| Flashing Green 2.5 sec, Black, "1" Bell ✓ | 40/38/02.927 74/02/01.898 | 8001 |
| Flashing Red 2.5 sec, Red, "22" Gong ✓ | 40/38/03.729 74/03/01/898 | 8003 |
| Qk Flashing Red, Red "20A", Bell ✓ | 40/37/21.178 74/02/50.036 | 1037 |

These positions are in excellent agreement with the chart.

O. STATISTICS

| <u>VESNO</u> | <u>NO. OF POSITIONS</u> | <u>TOTAL MILES</u> |
|--------------|-------------------------|--------------------|
| 2932 | 1504 | 114 |
| 2931 | 20 (Bottom Samples) | 0 |

Total square miles - 2.8.

P. MISCELLANEOUS

None.

Q. RECOMMENDATIONS

The recommendation is made that field edit of contemporary photogrammetry be performed. *concur (contemporary to 1980, not 1974-75 photography, in other words a new topo survey)*

R. AUTOMATED DATA PROCESSING

The following data processing programs were used in this survey:

| <u>PROGRAM NO.</u> | <u>NAME</u> | <u>VERSION DATE</u> |
|--------------------|---------------------------------------|---------------------|
| RK201 | Grid & H/R Lattice Plot | 04/18/76 |
| FA181 | Range-Azimuth Hydrolog | 02/23/78 |
| RK212 | Visual Station Table Load | 04/01/74 |
| RK216 | R/Az Position & Sounding Plot | 05/15/74 |
| RK300 | Utility Computations | 02/10/76 |
| RK330 | Data Reformat & Check | 05/04/76 |
| AM500 | Predicted Tide Generator | 11/10/72 |
| AM530 | Layer Corrections for Velocities | 05/10/76 |
| RK561 | Hyperbolic & R/R Geodetic Calibration | 02/19/75 |
| AM602 | Extended Line Oriented Editor | 03/10/72 |
| AM407 | Geodetic Inverse/Direct Computation | 10/23/75 |

S. REFERRAL TO REPORTS

None.

APPROVAL

Supervision of all field and office work on this hydrographic 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. This survey is complete and adequate as far as the stipulations of Section A.

Approved/Forwarded



Frank P. Rossi
CDR, NOAA
Commanding Officer, NOAA Ship WHITING

Respectfully submitted



Robert G. Mann, LT, NOAA

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

CORRECTIONS IN FEET, FATHOMS

VELOCITY TABLE IV

| | | |
|--------------------------------------------|------------------------------------------------------------------|-----------------|
| FORM CGS 137 (11-68) | U.S. DEPARTMENT OF COMMERCE ESSA COAST AND GEODETIC SURVEY | |
| VELOCITY CORRECTIONS | | |
| SHIP: NOAA SHIP WHITING Launch 1014 (2932) | | |
| CDR Frank P. Rossi, NOAA | | Comdg. |
| These corrections are to be used | | |
| between JD 131 | 1980 | and JD 140 1980 |
| in the locality: UPPER BAY | | |
| New York Harbor | | |
| for hydrographic surveys Nos. H-9875 | | |

T.D.C. CASTS

JD 134

JD 134

AVERAGE

(For deep water add a 0 to these figures)

DEPTH IN FATHOMS (FEET)

0
10
20
30
40
50
60
70
80
90

0 +.2 +.4 +.6 +.8 +1.0 +1.2 +1.4 +1.6 +1.8 +2.0

20 X 20 TO THE INCH 46 1240
7 X 10 INCHES
MADE IN U.S.A.
KEUFFEL & ESSER CO

SETTLEMENT AND SQUAT CURVE

VESNO 2932, LAUNCH 1014

700 RPM

1000 RPM

1300 RPM

1600 RPM

1900 RPM

2200 RPM

2500 RPM

2600 RPM

| RPM | CORRECTION |
|------|------------|
| 700 | 0 |
| 1000 | +.1 |
| 1500 | +.2 |
| 2000 | +.2 |
| 2500 | -.1 |
| 2600 | -.2 |

+ .2

+ .1

0

- .1

- .2

- .3

CORRECTION IN FEET

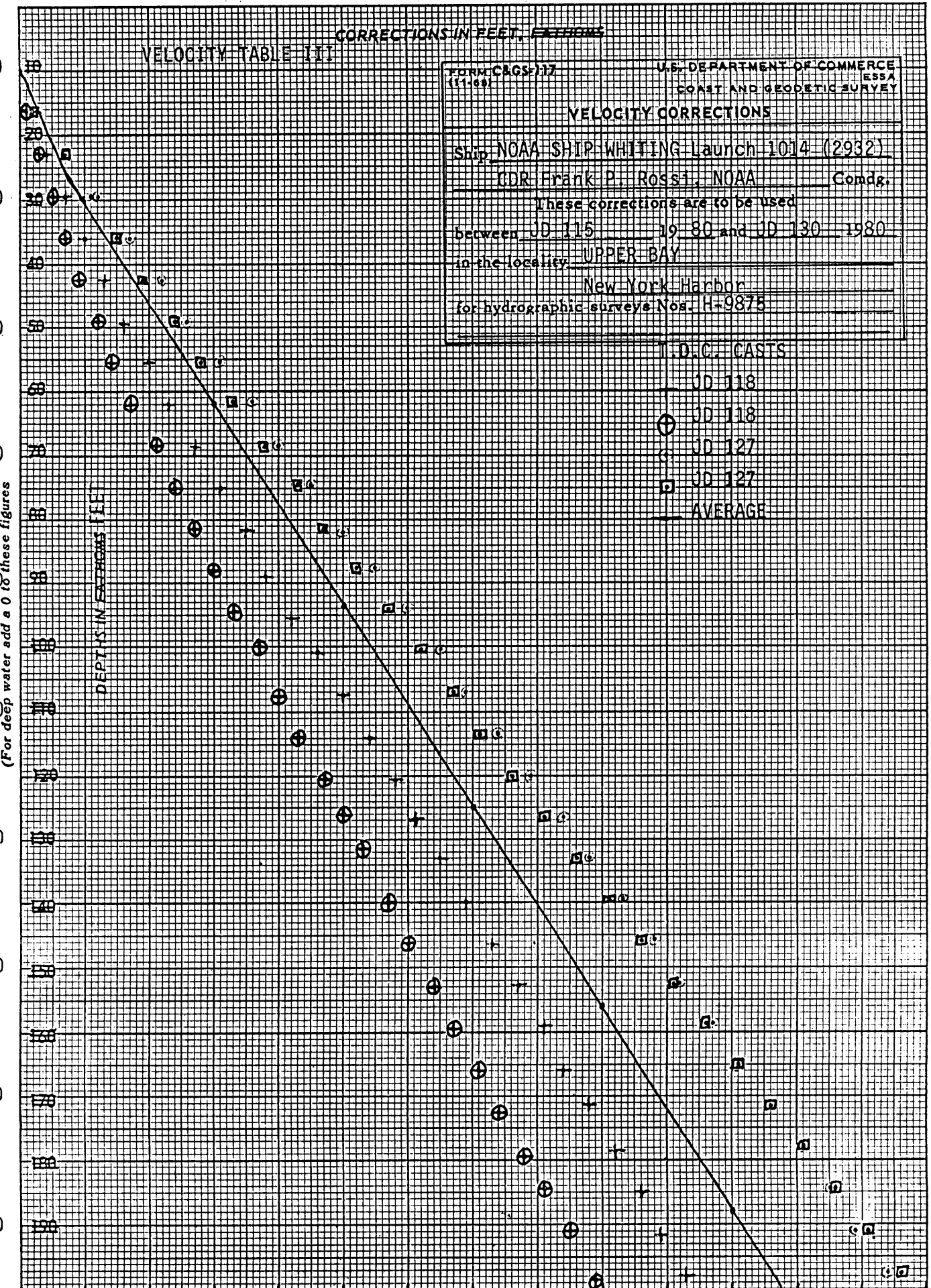
(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

VELOCITY TABLE III

CORRECTIONS IN FEET, ~~FATHOMS~~

| | | |
|--------------------------------------------------|------------------------------------------------------------------|-----------------|
| FORM CGS-117 (11-68) | U.S. DEPARTMENT OF COMMERCE ESSA COAST AND GEODETIC SURVEY | |
| VELOCITY CORRECTIONS | | |
| Ship <u>NOAA SHIP WHITING-Launch 1014 (2932)</u> | | |
| CDR Frank P. Rossi, NOAA | | Comdg. |
| These corrections are to be used | | |
| between JD 115 | 19 80 | and JD 130 1980 |
| in the locality <u>UPPER BAY</u> | | |
| <u>New York Harbor</u> | | |
| for hydrographic surveys Nos. <u>H-9875</u> | | |

- T.D.C. CASTS
- JD 118
 - JD 118
 - JD 127
 - JD 127
 - AVERAGE



(For deep water add a 0 to these figures)

DEPTH IS IN FATHOMS (11)

20 X 20 TO THE INCH 46 1240
7 X 10 INCHES
KEUFFEL & ESSER CO.

0 +.1 +.2 +.3 +.4 +.5 +.6 +.7 +.8 +.9 +1.0 +1.1 +1.2

LIST OF STATIONS

| | | | | | | | | | | |
|-----|---|----|----|-------|-----|----|-------|-----|------|--------|
| 152 | 6 | 40 | 38 | 22543 | 074 | 02 | 20811 | 250 | 0010 | 000000 |
| 230 | 6 | 40 | 41 | 20655 | 074 | 02 | 41863 | 139 | 0000 | 000000 |
| 245 | 6 | 40 | 36 | 20578 | 074 | 03 | 15654 | 250 | 0020 | 000000 |
| 250 | 6 | 40 | 39 | 26145 | 074 | 03 | 56777 | 139 | 0000 | 000000 |

LIST OF STATION NAMES

152 6 40 38 22543 074 02 20811 H-52-NY, 1980
230 6 40 41 20655 074 02 41863 STATUE OF LIBERTY, 1887
245 6 40 36 20578 074 03 15654 FT WADSWORTH LH. ECC., 1980
250 6 40 39 26145 074 03 56777 ROBBINS REEF LIGHT ~~HOUSE~~ HOUSE, 1930

FIELD TIDE NOTE

Field tide reduction of soundings was based on predicted tides from the Battery, New York with corrections as prescribed in the Project Instructions. WHITING personnel monitored the tide gage located at Lat. $040^{\circ}42.03'N$, Long. $074^{\circ}05.20'W$ (S/N 73902-76; No. 851-8570) and found it in proper working order.

A secondary gage (ADR) installed by WHITING personnel at Constable Hook, New Jersey was in operation during this period. This was located at Lat. $040^{\circ}39.30'N$, Long. $074^{\circ}05.20'W$ (S/N R-7304A3908M5; No. 853-0985).

U.S. DEPARTMENT OF COMMERCE
September 12, 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): 851-8750 The Battery, New York

Period: March 17 - May 21, 1980

HYDROGRAPHIC SHEET: H-9875

OPR: B139

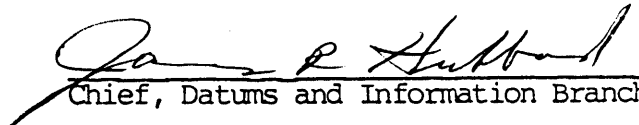
Locality: Upper Bay, New York Harbor

Plane of reference (mean ~~low~~ low water): 3.15 ft.

Height of Mean High Water above Plane of Reference is
4.7 ft. - zone(1); 4.5 ft. - zone(2)

REMARKS: Recommended zoning:

- (1) South of $40^{\circ}38.3'$ apply -25 minute time correction and range ratio $\times 1.04$
- (2) North of $40^{\circ}38.3'$ (to $40^{\circ}40.0'$) apply -15 minute time correction.


Chief, Datums and Information Branch

GEOGRAPHIC NAMES

H-9875

| Name on Survey | <div style="display: flex; justify-content: space-between;"> A ON CHART NO. 12334 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 GRAND McNALLY ATLAS H U.S. LIGHT LIST K </div> | | | | | | | | | | | |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|--|--|--|--|--|--|--|--|--|----|
| | Bay Ridge (Ppl) ✓ | x | | | | | | | | | | |
| Bay Ridge Channel | x | | | | | | | | | | | 2 |
| Brooklyn ✓ | x | | | | | | | | | | | 3 |
| Clifton ✓ | x | | | | | | | | | | | 4 |
| New York | x | | | | | | | | | | | 5 |
| Owls Head Park | x | | | | | | | | | | | 6 |
| Quarantine Station ✓ | x | | | | | | | | | | | 7 |
| Rosebank ✓ | x | | | | | | | | | | | 8 |
| Stapleton ✓ | x | | | | | | | | | | | 9 |
| Staten Island | x | | | | | | | | | | | 10 |
| St George ✓ | x | | | | | | | | | | | 11 |
| The Narrows ✓ | x | | | | | | | | | | | 12 |
| Tompkinsville ✓ | x | | | | | | | | | | | 13 |
| Fort Hamilton (Ppl) | | | | | | | | | | | | 14 |
| | | | | | | | | | | | | 15 |
| | | | | | | | | | | | | 16 |
| | | | | | | | | | | | | 17 |
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| | | | | | | | | | | | | 24 |
| | | | | | | | | | | | | 25 |

Approved:

Charles E. Hammit
Chief Geographer *CSX*

3 Feb 1982

APPROVAL SHEET
FOR
SURVEY H-9875

- A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position printout has/~~has not~~ been made. A new final sounding printout has/~~has not~~ been made.
- B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the HYDROGRAPHIC MANUAL. Exceptions are listed in the Verification Report.

Date: Aug 81


Chief, Verification Branch

HYDROGRAPHIC SURVEY STATISTICS

H-9875

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

| RECORD DESCRIPTION | | AMOUNT | RECORD DESCRIPTION | | AMOUNT | |
|--------------------|---------------|----------------------|------------------------------------|------------|---------------|----------------------------|
| SMOOTH SHEET | | 1 | BOAT SHEETS & PRELIMINARY OVERLAYS | | 6 | |
| DESCRIPTIVE REPORT | | 1 | SMOOTH OVERLAYS: POS & ARC, EXCESS | | 3 | |
| DESCRIP-TION | DEPTH RECORDS | HORIZ. CONT. RECORDS | PRINTOUTS | TAPE ROLLS | PUNCHED CARDS | ABSTRACTS/SOURCE DOCUMENTS |
| ENVELOPES | | | | | | |
| CAHIERS | 1 | | | | | |
| VOLUMES | | | | | | |
| BOXES | | | | | | |

T-SHEET PRINTS (List) TP-00744

SPECIAL REPORTS (List)

1-3 vol., 2 P/O, 1 Grw., 1 azimuth,

OFFICE PROCESSING ACTIVITIES

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

| PROCESSING ACTIVITY | AMOUNTS | | |
|---------------------------------------------------|------------------|--------------|------------|
| | PRE-VERIFICATION | VERIFICATION | TOTALS |
| POSITIONS ON SHEET | | | 1524 |
| POSITIONS CHECKED | | 1524 | 1524 |
| POSITIONS REVISED | | 50 | 50 |
| SOUNDINGS REVISED | | 150 | 150 |
| SOUNDINGS ERRONEOUSLY SPACED | | 250 | 250 |
| SIGNALS (CONTROL) ERRONEOUSLY PLOTTED | | 0 | 0 |
| | TIME - HOURS | | |
| CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION) | 3 | 0 | 3 |
| VERIFICATION OF CONTROL | | 16 | 16 |
| VERIFICATION OF POSITIONS | | 228 | 228 |
| VERIFICATION OF SOUNDINGS | | 30 | 30 |
| COMPILATION OF SMOOTH SHEET | | 60 | 60 |
| APPLICATION OF TOPOGRAPHY | | 32 | 32 |
| APPLICATION OF PHOTOBATHYMETRY | | 0 | 0 |
| JUNCTIONS | | 3 | 3 |
| COMPARISON WITH PRIOR SURVEYS & CHARTS | | 28 | 28 |
| VERIFIER'S REPORT | | 32 | 32 |
| OTHER | | 47 | 47 |
| | | | |
| TOTALS | 3 | 476 | 479 |

| | | |
|----------------------------------------------------------------------|--------------------------|------------------------|
| Pre-Verification by J. Wilson | Beginning Date 8/5/80 | Ending Date 8/5/80 |
| Verification by M. Holloway, C. Meekins, R. Hill, D. Mason | Beginning Date 8/6/80 | Ending Date 6/30/81 |
| Verification Check by G.F. Trefethen | Time (Hours) 4 | Date 5/13/81 |
| Marine Center Inspection by H.I.T. | Time (Hours) 12 | Date 7/30/81 |
| Quality Control Inspection by F.P. SAULSBURY | Time (Hours) 26 | Date 2-3-82 |
| Requirements Evaluation by D. Hill | Time (Hours) 3 | Date 8/5/82 |

Compiled thru 4/28/82

REGISTRY NO. H-9875

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

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

MAGNETIC TAPE CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

ATLANTIC MARINE CENTER
VERIFICATION REPORT

REGISTRY NO.: H-9875

FIELD NO.: WH 5-3-80

New York, New York Harbor, The Narrows to Bay Ridge Channel

SURVEYED: April 24, 1980 through May 20, 1980

SCALE: 1:10,000

PROJECT NO.: OPR-B139

SOUNDINGS: Ross Model 5000 Fineline
Echo Sounder

CONTROL: Del Norte/Theodolite
(Range/Azimuth)

Chief of Party Karl Wm. Kieninger

. Frank P. Rossi

Surveyed by N. Prah
. C. Mason
. R. Mann
. F. Diaz
. J. Gardner
. D. Bland
. J. Grant

Automated Plot by Xynetics 1201 Plotter (AMC)

1. Introduction

a. Section 1.8 of CHANGE NO. 2 to Project Instructions, dated February 6, 1980 modified the basic survey requirements for this project stating, "The inshore limit of the survey shall be a line connecting the offshore ends of piers in developed areas, bulkheads or limits of solid fill, or as close to the shoreline as safety and practicality permits in undeveloped areas."

b. The following unusual conditions were encountered:

1. The Project Instructions for this survey required a 1:5,000 scale survey of this area. The survey was conducted at 1:5,000 scale; however, during processing at the Atlantic Marine Center it was determined that the survey did not meet NOS survey standards at the scale of the survey. The line spacing between sounding lines frequently exceeded the maximum distance of fifty (50) meters for this area for a 1:5,000 scale survey. In instances where line spacing was substantially exceeded (50% or more), splits were not run to alleviate the problem. Approximately 21% of the positions on this

survey exceeded the position frequency requirements for fixes along sounding lines (see section 1.4 of the Hydrographic Manual). The conditions of the surveys in this project were discussed with the director of the Atlantic Marine Center, and it was decided to reduce the survey scale to 1:10,000 scale which resulted in the survey meeting the criteria for position fixing and line spacing.

2. The text of Descriptive Report was submitted with pages out of sequence. This has considerable effect on the continuity of the report. Removal of pages to correct this is not practical since this too would leave gaps in information; therefore, the Descriptive Report is submitted as it was received from the field. *Pg. 2 of D.R. removed & pgs renumbered during QCI*

3. Twenty-one (21) of sixty-nine (69) bottom samples were plotted on the smooth sheet. Plotting of any more bottom samples would have caused a considerable loss of sounding data at the plotted scale of the smooth sheet. The bottom characteristics plotted at the scale of the smooth sheet adequately represent the characteristics in the survey area. If additional characteristics are required, they may be obtained from the Oceanographic Log Sheet-M filed with the survey records.

2. Control and Shoreline

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

b. Shoreline for the smooth sheet was taken from Class III final reviewed photogrammetric manuscript TP-00744 of 1974-75. No field edit was required or performed on this photogrammetric manuscript.

3. Hydrography

a. Soundings at crossings are in good agreement. Depths vary from one (1) to two (2) feet.

b. The standard depth contours could be adequately delineated. In addition to the standard contours, the charted thirty-six (36) foot contour was delineated. *Portions of the 6, 12, 18, 30 & 36 ft curves are not shown due to no hydro coverage.*

c. Development of the bottom configuration and determination of least depths is adequate. *Since some charted items were not investigated, least depths on these items obviously were not acquired.*

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. Bar checks were not taken in accordance with section 1.5.2 of the Hydrographic Manual. Only seven (7) complete bar checks were taken during fourteen (14) days of hydrography.

b. A list of Geographic names in the survey area was not prepared as required by sections 5.3.5 (C) and 5.7 of the Hydrographic Manual and section 4.2.4 of the Project Instructions. *A list of geo. names was prepared by verif. & inserted in the D.R.*

c. Field tide note was not submitted using the proper format. The correct format is in Section 5.3.5 (B) of the Hydrographic Manual.

d. The hydrographer failed to use the proper edition of Chart #12334 for section L of his Descriptive Report. Edition 52, dated August 4, 1979 was specified by the Project Instructions; edition 53, dated July 5, 1980, was used and is dated more than a month after the completion of the survey. *1980 edition was adequate*

e. Section K of the Descriptive Report, "Comparison with Prior Surveys," by the hydrographer was not properly formatted. The hydrographer failed to use all the prior surveys that covered the entire survey area. Section 5.3.5 of the Hydrographic Manual describes the proper format.

f. Section N of the Descriptive Report, "Aids to Navigation," fails to comment on the adequacy of the aids to navigation in the survey area. This is required by section 5.3.4 (N) of the Hydrographic Manual. *Also no mention of ch'd landmarks being observed from seaward was made. No landmark elevations are available.*

g. Two vessels were used to obtain data on this survey. The Descriptive Report failed to mention the use of a second vessel for data acquisition.

h. The hydrographer did not locate the fixed aid, Bay Ridge Channel Light 2, at approximate latitude 40°38.4' N, longitude 74°02.4' W. *Check with U.S.C.G. for light information*

i. Along the western edge of the survey area the hydrographer ran lines of hydrography over ruin areas on the ends of piers with no notation of being in a ruin area. Fathograms show a jagged bottom profile again without any annotation. *Several subm ruins on the ends of these piers were brought fwd to the smooth sheet during QCL.*

j. Three (3) small holidays exist in the survey area. Two (2) are along the western limit of hydrography where lines were not run to the limits of the ends of piers (latitude 40°37'09" N, longitude 74°03'54" W and latitude 40°37'27" N, longitude 74°04'06" W). The third area is located at approximately latitude 40°38'25" N, longitude 74°02'13" W. *CONCUR*

k. Five (5) small junctional holidays exist at the following locations:

| <u>Latitude</u> | <u>Longitude</u> | |
|-----------------|------------------|------------------------------|
| 40°38'39" N ✓ | 74°02'09" W ✓ | <i>considered negligible</i> |
| 40°38'39" N ✓ | 74°02'30" W ✓ | |
| 40°38'41" N ✓ | 74°03'21" W ✓ | |
| 40°38'41" N ✓ | 74°04'09" W ✓ | |
| 40°38'42" N ✓ | 74°04'15" W ✓ | |

l. Baseline calibration information was not provided. The calibration data for Del Norte correctors was found to be very inconsistent based on the information provided. The use of HYDROLOG program RK 561 in AUTOPATTERN mode resulted in unacceptable differences in the two resulting readings of the set up (differences at times exceeding five (5) meters). These differences should have been explained. Because of this inconsistent data and conflict with the shoreline manuscript, a zero (0) correction to the electronic control was applied and improved survey results were seen.

m. The hydrographer did not address six (6) charted items that fell within the survey area. These items include wrecks, rocks, piles, and ruins. See section 7.2 of this report for additional comments.

5. Junctions

Satisfactory junctions were effected with the following contemporary surveys, exceptions are noted in section 4.k. of this report.

- H-9874 (1980) to the north *OK*
- H-9859 (1979-80) to the south *OK*

6. Comparison with Prior Surveys

- H-1667 (1885) 1:10,000 ✓
- H-1719 (1886) 1:5,000 ✓
- H-5607 (1934) 1:10,000 ✓
- H-5736 (1934) 1:10,000 ✓
- ~~F.E. 29 (1941) 1:2,000~~ *off limits of survey*

The prior surveys listed above taken together cover the entire area of the present survey.

The two older surveys H-1667 (1885) and H-1719 (1886) cover the entire survey area. H-1667 varies from one (1) to twenty-seven (27) feet deeper than the present survey. H-1719 (1886) is generally one (1) to seven (7) feet shoaler than the present survey east of a line from latitude 40°37'25" N, longitude 74°03'18" W to latitude 40°36'30" N, longitude 74°03'00" W. West of this line depths are generally one (1) to fourteen (14) feet deeper than the present survey. Extensive cultural build up on the west side of the river in the vicinity of latitude 40°37'15" N, longitude 74°04'00" W has occurred. *Extensive dredging & dumping since 1886 preclude a meaningful comparison.*

H-5607 (1934) and H-5736 (1934) are the most recent prior surveys in the survey area. Taken together these two surveys do not cover the entire survey area. Only about fourteen (14) soundings from H-5736 (1934) fall in the area of present survey. *CONCUR*

H-5607 (1934) covers the northern three-quarters of the present survey. The present survey is generally one (1) to nine (9) feet shoaler west of longitude 74°03'30" W and one (1) to twenty-seven (27) feet deeper east of the same longitude. These changes can be attributed to both natural and cultural changes in the survey area. *CONCUR*

(FE 1-1941)

Portions of FE-29, 1941 may fall within the limits of this survey; however, the quality of the copy of FE-29 was such that any correlation between the two surveys could not be made. *off limits of present survey*

The present survey is adequate except as noted above to supersede the prior surveys in the common area.

7. Comparison with Chart #12334 (52nd Edition, Aug 4/79)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys and unascertainable sources, and requires no further discussion. The following should be noted:

The charted obstruction at latitude $40^{\circ}37'08''$ N, $74^{\circ}03'15''$ W originates with LNM 11/73 and is an anchor and 200 feet of chain lost by a merchant vessel. The charted obstruction should remain charted until verified or disproved by wire drag. concur

some of which are charted from miscellaneous sources

The following ~~charted~~ items were neither verified nor disproved on this survey:

1. Piles and wreck located at latitude $40^{\circ}38'37''$ N, longitude $74^{\circ}02'07''$ W. *Piles fall within a foul area on the smooth sheet. cht piles as submerged.*

2. Piles and ruins located at latitude $40^{\circ}38'20''$ N, longitude $74^{\circ}02'18''$ W. *cht as submerged*

3. ^{Bare} Rock at latitude $40^{\circ}38'59''$ N, longitude $74^{\circ}03'51''$ W. *in the vicinity of 6* *Falls inside the L.W.L. on TP-00744 (1974-75) considered discredited by TP-00744*

4. Six (6) wrecks at latitude $40^{\circ}38'58''$ N, longitude $74^{\circ}03'48''$ W and two (2) wrecks at latitude $40^{\circ}38'53''$ N, longitude $74^{\circ}03'44''$ W. *These wrecks are not shown on later edition charts & are considered to no longer exist.*

5. ^{Two south-most} Piles and ruins at latitude $40^{\circ}36'42''$ N, longitude $74^{\circ}03'36''$ W. *Brought fwd from T-5465 (1935) as subm piles during Q.C.I.*

6. Ruins at latitude $40^{\circ}36'36''$ N, longitude $74^{\circ}03'30''$ W. *The charted ruins extend further offshore than the ruins shown on the smooth sheet. Retain charted delineation of ruins as submerged.*

The above charted items should remain charted unless subsequent data supersedes this report, *except as noted.*

b. Aids to Navigation

The aids to navigation within the survey area adequately mark the intended features. See section 4.h. of this report for additional comment.

8. Compliance with Instruction

The hydrographer did not comply with sections 4.2.2, 4.2.3, 4.2.4, 6.5, 6.10.1, 6.10.2, 6.12, and 9.6.1 of the Project Instructions and sections 4.1 and 4.2.1.2 of CHANGE NO. 2 to Project Instructions, and 6.2.2.1 of CHANGE NO. 3 to Project Instructions. *(also Sect. 1.4 of H.M.-fix interval)*

*(landmarks)
(fixed aids)
(Geo. names)
(line spacing)
(prior survey comparison)*

9. Additional Field Work

This is an adequate ~~basic~~ survey at the scale of the plotted smooth sheet. Additional work is recommended to correct the deficiencies noted in this report. *concur*

Douglas V. Mason
Douglas V. Mason
Cartographic Technician

Robert G. Roberson
Robert G. Roberson
Cartographer

Guy F. Trefethen
Guy F. Trefethen
Senior Cartographic Technician

INSPECTION REPORT
H-9875

The completed survey has been inspected by the Hydrographic Inspection Team with regard to survey coverage, delineation of depth contours, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The Verification Report has presented the facts accurately and properly, the procedures used were appropriate, and the recommendations are logical and justifiable.

The survey complies with National Ocean Survey requirements except as noted in the Verification Report. Except where noted in the Verification Report the survey records comply with NOS requirements. concur

Also, it is noted that the records were found to be in poor condition, particularly the Descriptive Report, documentation of velocity corrections, and the shipboard processing of field data. The results of this survey shows that sufficient emphasis was not placed upon the quality of survey data. The Hydrographic Inspection Team concurs with the verifier's findings, actions, and recommendations.

Due to time constraints, several charted near shore items were not investigated. The main shipping area is considered generally well covered.

Examined and Approved
Hydrographic Inspection Team

Karl Wm Kieninger

Karl Wm Kieninger, CDR, NOAA
Chief, Processing Division

Ronald W Jones

Ronald W. Jones, LCDR, NOAA
Field Procedures Officer
Operations Division

R.D. Sanocki

R.D. Sanocki
Chief, Verification Branch
Processing Division

Approved/Forwarded
August 10, 1981

Richard H. Houlder

Richard H. Houlder, RADM, NOAA
Director, Atlantic Marine Center



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

C352:FPS

February 3, 1982

TO: Glen R. Schaefer *GR*
Chief, Hydrographic Surveys Division

THRU: Chief, Quality Control Branch *hpm*

FROM: F. P. Saulsbury *F. P. Saulsbury*
Quality Evaluator

SUBJECT: Quality Control Report for H-9875 (1980), New York, New York Harbor,
The Narrows to Bay Ridge Channel

A quality control inspection of H-9875 was accomplished to monitor the survey for adequacy with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, smooth plotting, shoreline transfer, decisions made and actions taken by the verifier, and the cartographic presentation of data. Revisions and additions to the smooth sheet, plus helpful comments made to the verifier, are identified on a one-half scale copy of the survey to be furnished the verifier. In general, the survey was found to conform to the National Ocean Survey's standards and requirements except as stated in the Verifier's Report and the HIT Report.

cc:
C351





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

AUG 24 1982

C351:DJH

TO: CAM - Richard H. Houlder

FROM: for C3 - C. William Hayes

James H. Hayes

SUBJECT: H-9875 (1980), OPR-B139, New York, New York Harbor, The Narrows to Bay Ridge Channel, Report of Compliance with Project Instructions

The smooth sheet and Descriptive Report for the subject survey have been examined. This survey, except as noted in the Quality Control Report, dated February 3, 1982 (copy attached), and the Hydrographic Survey Inspection Team Report, dated August 10, 1981, is complete and adequate for the purposes intended and is in compliance with Project Instructions OPR-B139-WH-80, dated November 30, 1979.

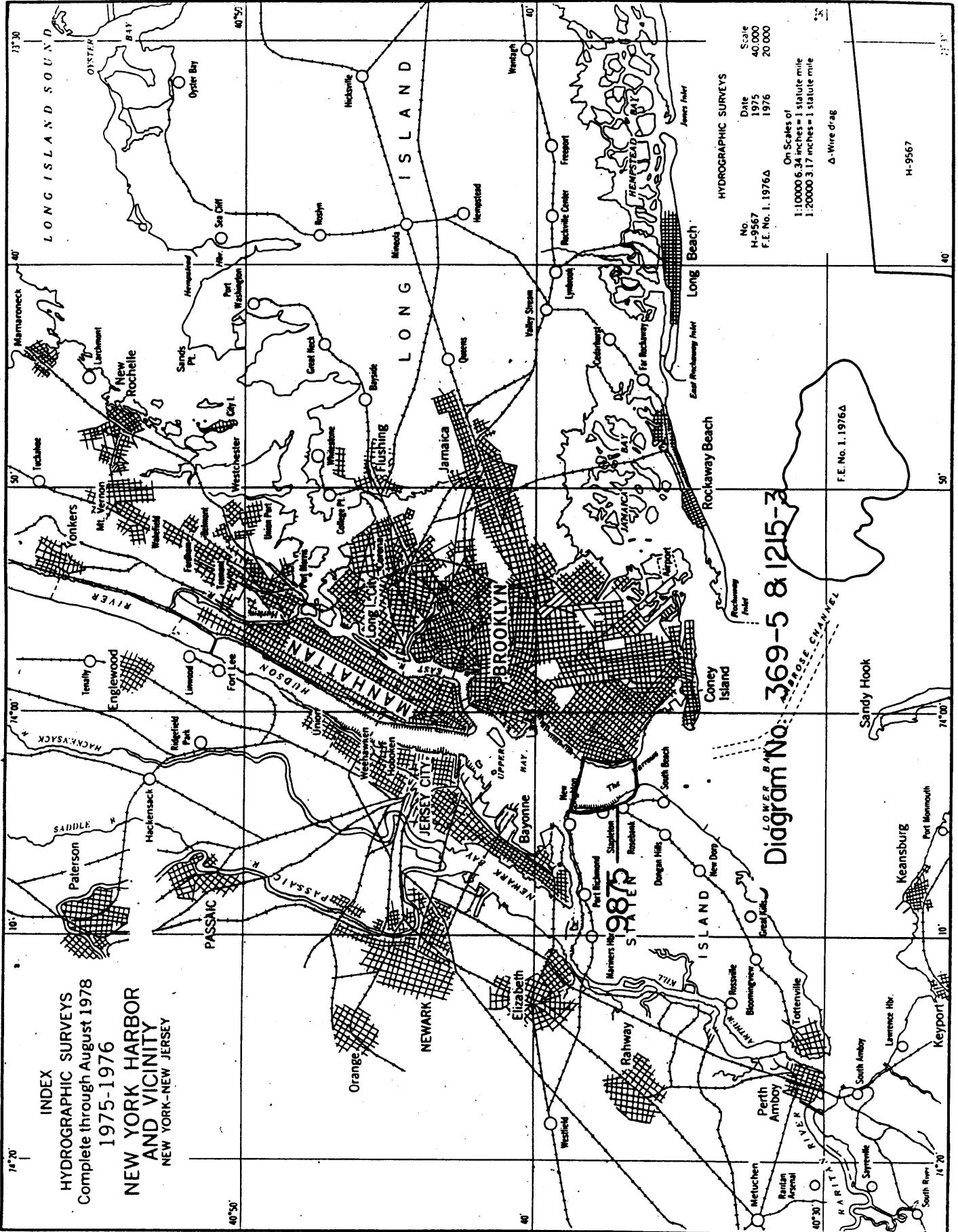
Attachment

cc:
C352 w/o att.



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

Hydrographic Index No. 651



INDEX
 HYDROGRAPHIC SURVEYS
 Complete through August 1978
 1975-1976
 NEW YORK HARBOR
 AND VICINITY
 NEW YORK-NEW JERSEY

HYDROGRAPHIC SURVEYS
 No. H-9567
 Date 1975
 F.E. No. 1. 1976A
 Scale 40,000
 20,000
 On Scales of
 1:10000 6.34 inches = 1 statute mile
 1:20000 3.17 inches = 1 statute mile
 Δ-Wire drag

Diagram No. 369-5 & 1215-3

H-9567

F.E. No. 1. 1976A

9875

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9875

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 |
|-------|----------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12349 | 9-14-82 | James T. Conry | Full Part Before After Verification Review Inspection Signed Via Drawing No. 22 Revised soundings & curves through direct application of survey comp. 1hr |
| 12334 | 9-16-82 | James T. Conry | Full Part Before After Verification Review Inspection Signed Via Drawing No. # 51 Revised soundings & curves through direct application of survey comp. 15 hrs ver. 2.0 |
| 12333 | 10-29-82 | James T. Conry | Full Part Before After Verification Review Inspection Signed Via Drawing No. 36 Revised soundings & curves through reduction of 12334 dgs. # 51 COMP 1 1/2 HR REVIEW 2.0 |
| 12327 | 11-10-82 | James T. Conry | Full Part Before After Verification Review Inspection Signed Via Drawing No. 93 Revised soundings & curves through reduction of 12334 dgs. # 51 & 12333 dgs. # 36 COMP 4 hrs |
| 12402 | 1/14/86 | Ed. Bodulac | Full Part Before After Verification Review Inspection Signed Via Drawing No. Thru 12334 REV 2.0 |
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