**DESCRIPTIVE REPORT (HYDROGRAPHIC)**

<table>
<thead>
<tr>
<th>Type of Survey</th>
<th>Hydrographic</th>
</tr>
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<tbody>
<tr>
<td>Field No.</td>
<td>WH-20-3-72</td>
</tr>
<tr>
<td>Office No.</td>
<td>H-9313</td>
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</tbody>
</table>

**LOCALITY**

<table>
<thead>
<tr>
<th>State</th>
<th>Delaware</th>
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<tbody>
<tr>
<td>General Locality</td>
<td>Delaware Bay</td>
</tr>
<tr>
<td>Locality</td>
<td>Mispillion River &amp; Entrance</td>
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</table>

**1972**

**CHIEF OF PARTY**

C. H. Nixon

**LIBRARY & ARCHIVES**

DATE August 29, 1980
DESCRIPTIVE REPORT
To Accompany Hydrographic Survey H-9313
Field No. WH 20-3-72
DELWARE BAY
1972
Scale 1:20,000
NOAA Ship WHITING

Charles H. Nixon, CDR, NOAA, Commanding
HYDROGRAPHIC TITLE SHEET

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

State: Delaware
General locality: Delaware Bay
Locality: South of Mispillion River Entrance

Scale: 1:20,000 & 1:10,000
Date of survey: 6/21/72 - 10/9/72


Vessel Launches WH-1 and WH-2, Whaler No. 2

Chief of party: CDR Charles H. Nixson

Surveyed by: CDR Nixson, LCDR Burke, LT LeRoy, LTJG Hoge, LTJG Servais, ENS Kaiser, ENS Decker, CST Hill

Soundings taken by echo sounder.

Graphic record scaled by: Ship's Personnel

Soundings penciled by: WHITING Shipboard System

Soundings in feet at MLW

REMARKS: The area of boatsheet WH 20-3-72 requires two WHITING computer
plotter sheets to cover; WH 20-3N-72 and WH 20-3S-72. Hydrography
was accomplished only on WH 20-3S-72 during the 1972 field season.
This title sheet is for the south half of WH 20-3-72. Time
meridian of this survey was 0°, GMT.

Approved to U.S. Eds. 7-22-80
A. PROJECT

This survey was accomplished in accordance with PROJECT INSTRUCTIONS--OPR-492-WH-72--DELAWARE BAY, dated February 28, 1972 and CHANGE NO. 1, Supplement to Instructions, dated March 24, 1972.

B. AREA SURVEYED

The area surveyed is bounded on the west by the Delaware shoreline from Fowler Beach north to the Mispillion River Jetty. The northern boundary of the sheet extends along a line east of the Mispillion River Jetty to approximately two miles offshore. The eastern edge of the sheet is the junction with prior survey WH 20-2-71, H-9202, 1971, which extends southward to the shoreline just south of Fowler Beach.

C. SOUNDING VESSELS

The sounding vessels used were NOAA Ship WHITING's launches WH-1 and WH-2. In addition, shoreline was run by the ship's Boston Whaler No. 2.

D. SOUNDING EQUIPMENT

The sounding instruments used were Raytheon DE-723D survey fathometers. Launch 1, used survey fathometer number 37018 and launch 2 used survey fathometer number 37019. The ship's Boston Whaler No. 2 used a sounding pole for the shoreline work.

Bar checks and lead line comparisons were taken in the area of the survey as often as sea conditions permitted. The launch fathometer operators continually checked for proper initial settings, stylus arm length, and A-P scale checks. Nansen and TDC casts were taken frequently in the area of the survey in water as deep as that encompassed by the survey as an additional source of sounding corrections.

Tide correctors, based upon predicted tides for the Mispillion River entrance, were applied to all soundings on WH 20-38-72. A tide gage was maintained at the Mispillion River entrance for obtaining smooth tide data.

E. SMOOTH SHEET

The smooth sheet will be plotted on the computer plotter system at the Atlantic Marine Center, Norfolk, Virginia.

Boatsheet WH 20-3-72 was subdivided into two plotter sheets, WH 20-3N-72 and WH 20-3S-72. It was the latter of the two,
WH 20-3S-72 which was completed and is the subject of this report. WH 20-3N-72 will be completed at a later date. On 2/13/75, this was considered a completed survey.

F. CONTROL

Both WHITING launches WH-1 and WH-2 ran visual hydrography on sheet WH 20-3S-72. In addition Boston Whaler No. 2 ran the visual controlled shoreline in the area.

The control, a line of traverse stations, was established by Photo Party 62 and ship's personnel. Tripods were built on all the relevant monumented traverse stations, while banners were constructed on the secondary points of the traverse.

G. SHORELINE

The shoreline on the boatsheet was transferred from shoreline Manuscript TP-00058, dated October 1969. The low water line was verified by sounding lines run by Boston Whaler No. 2, while the high water line was verified by Photo Party 62. See Verifiers Report.

H. CROSSTIES

Crosslines composed 5.2% of the total length of main sounding lines. The agreement between the crossties and the main system of lines was excellent. See Verifiers Report.

I. JUNCTIONS

Agreement in depths at the eastern junction with survey WH 20-2-71, H-9202, 1971 was excellent. Soundings agreed or were within one foot of each other. See Verifiers Report.

J. COMPARISON WITH PRIOR SURVEYS

Comparison with the prior survey of 1883, Registry No. 1582 was made. The basic line spacing on the old survey was very wide, however, the agreement between the surveys was very good. The maximum difference between soundings was two feet.

Pre-Survey Review Items: The 3 ft. circled sounding located just off the Misquion Jetty at Lat. 38°56'05.0"N, Long. 75°16'30.0"W was verified by launch WH-1 on 195 day. This depth is still the controlling depth for the approach to the jetty. The hydrographer recommends this sounding be retained on the chart. See Verifiers Report.
The 5 ft. circled sounding at Lat. 38°55'12.0"N, Long. 75°16'35"W was investigated by WH-1 on 188 day. The shoalest
soundings found within this area were 6 ft. depths located just south of the circled 5 ft. sounding. See Variations Report.

K. COMPARISON WITH THE CHART

The boatsheet was compared with the 18th Edition of Chart No. 1218, dated September 25, 1971 at a scale of 1:80,000.

Agreement was excellent throughout the entire area encompassed by the boatsheet. A two-foot discrepancy was maximum error of the agreement. See Variations Report.

L. ADEQUACY OF THE SURVEY

The survey is complete and adequate to supersede all prior surveys for charting purposes. See Variations Report.

M. AIDS TO NAVIGATION

The following non-floating aids to navigation are located within the area of the survey:

<table>
<thead>
<tr>
<th>NAME</th>
<th>CHARACTERISTIC</th>
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<tr>
<td>Mispillion South Jetty Light</td>
<td>Fl R 4 sec. 26 ft. 10m &quot;1&quot;</td>
</tr>
<tr>
<td>Mispillion Lighthouse</td>
<td>Fl 4 sec. 67 ft. 9m</td>
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These aids were considered adequate to serve the purpose for which they were established. See Variations Report.

N. STATISTICS

<table>
<thead>
<tr>
<th>Sounding Vessel</th>
<th>Miles of Sounding Line</th>
<th>No. of Bottom Samples</th>
<th>No. of Positions</th>
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<td>WH-2</td>
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<tr>
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<tr>
<td>TOTAL</td>
<td>140.1 N.M.</td>
<td>2</td>
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Area Surveyed = 5½ Square Nautical Miles

Percent of Crosslines = 5.2%

O. MISCELLANEOUS

None.
P. RECOMMENDATIONS

None.

Q. REFERENCES TO REPORTS

1. Corrections to Echo Soundings Report 1972, Project OPR-492-WH-72

356 38 46 5355 075 07 0011
476 38 50 1849 075 13 3347
496 38 52 2426 075 15 3234 Lynch, 1971
500 38 52 3749 075 15 5044
504 38 52 5189 075 16 0908
505 38 53 0047 075 16 2115
506 38 53 1175 075 16 3234
508 38 53 2248 075 16 3981 Tough, 1971
509 38 53 4186 075 17 0078
512 38 53 3572 075 16 5646
516 38 53 5161 075 17 1360
517 38 53 5363 075 17 1579
520 38 54 1422 075 17 4020
524 38 54 2768 075 17 5508
528 38 54 4592 075 18 1532
532 38 55 1049 075 18 3435
536 38 55 2066 075 18 4256 Shaw, 1971
540 38 55 2872 075 18 5124
544 38 55 3725 075 18 5702
548 38 55 4741 075 19 0394
552 38 55 5922 075 19 0662
556 38 56 0522 075 19 2542 Trout, 1971
560 38 56 0615 075 19 0477 RaviDist, 1968
570 38 56 5042 075 18 5569 MISPILLION FLASHING LIGHT, 1953
572 38 56 1124 075 17 5468 MISPILLION RIVER JETTY LIGHT, 1933
580 39 00 0074 075 19 4396
10 JULY 73

JUL 10 1973

VELOCITY TABLE NO. 8, WH-1, H9313, WH-20-B-72

| 000049 | 0 0000 0002 000 293100 00003 3 |
| 000107 | 0 0002 |
| 000166 | 0 0004 |
| 000225 | 0 0006 |
| 000285 | 0 0008 |
| 000349 | 0 0010 |
| 000418 | 0 0012 |
| 000500 | 0 0014 |
| 000620 | 0 0016 |
| 000700 | 0 0018 |
| 999999 | 0 0018 |

JUL 10 1973

VELOCITY TABLE NO. 12, WH-2, H9313, WH-20-B-72

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| 000166 | 0 0004 |
| 000225 | 0 0006 |
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| 000349 | 0 0010 |
| 000418 | 0 0012 |
| 000500 | 0 0014 |
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VELOcity Table No. 8, WH-1, H9313, WH-20-3-73

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VELOcity Table No. 12, WH-2, H9313, WH-20-3-72

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</table>
Processing Division: Atlantic Marine Center
Hourly heights are approved for Form 362
Tide Station Used (NOAA form 77-12): Milford (2) Mispillion Lighthouse (1)
Period: June 3-July 14; Sept 30, Oct 9, 1972
HYDROGRAPHIC SHEET: N-9313
OPR: 492
Locality: Mispillion River, Delaware Bay

Plane of reference (mean low water): Milford 2.4 ft. Mispillion Light 2.0 ft.
Height of Mean High Water above Plane of Reference is Milford 3.0 ft. Mispillion Light 3.9 ft.

Remarks:
Hourly heights have been revised in-red and verified as follows:

<table>
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<tr>
<th>Julian Day</th>
<th>Zoning</th>
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<tbody>
<tr>
<td>155</td>
<td>Mispillion River</td>
<td>There is a time difference of 2.4 hrs. between the earlier tide at the entrance and the station at Milford.</td>
</tr>
<tr>
<td>156</td>
<td></td>
<td>In addition the range at the entrance is 3.9 ft. while the range at Milford is 3.0 ft.</td>
</tr>
<tr>
<td>283</td>
<td></td>
<td>Due to lack of information between these two sites, it must be assumed that a linear change in time and range can be applied to correct hourly heights for reduction of soundings.</td>
</tr>
</tbody>
</table>

[Signature]
Chief, Tides Branch
ADDITION TO DESCRIPTIVE REPORT
WH-20-38-72
MISPILLION RIVER
1972
SCALE 1:10,000
NOAA SHIP WHITING

Charles H. Nixon, CDR, NOAA, Commanding
This survey was accomplished in accordance with project instructions for OPR-492 dated 21 May 1971 and amended 1 July and 5 August 1972. The survey was done on September 30, 1972 by Whiting Launch # 1. It consists of 42 positions and 94 miles of sounding lines. It is considered a reconnaissance survey.

The area surveyed was that portion of the Mispillion River from the Mispillion South Jetty Light in Delaware Bay, to the Highway 14 Basculc Bridge which crosses the river. The river is located approximately 15 miles NW of Lewes, Delaware and trends east-west. The survey is bounded by longitude 75° 25' 30" on the west, latitudes 38° 54' 30" and 38° 57' 58" on the south and north, and by contemporary survey WH-20-3S-72 # H-9313 on the east. Sounding equipment consisted of a Raytheon DE-723-D Fathometer, serial number 37018.

Control for this survey consisted of picking readily identifiable points, usually drainage ditches, off TP Sheets 00057 & 00058, and using these points for "sea-boatsheet" hydro. These fixes were marked on the fathogram and soundings were recorded every 15 seconds.

To the hydrographers knowledge the Mispillion River has never been surveyed. A limited number of small boats use the river and the survey should be adequate for their purpose. The tide range on this river is considerable and greatly affects the water depth.

Actual tides were requested in December 1972 (see attached letter copy) so that reduced soundings could be plotted by ship's personnel. At this time, May 1, 1973 the tide data has not arrived and the forwarded manuscripts have fixes plotted only.

Submitted:

Theodore C. Kaiser
LTJG NOAA

For Charles H. Nixon
CDR. NOAA
TIDE NOTE

Daily predicted tides for Breakwater Harbor, Delaware with appropriate correctors applied for the Mispillion River Entrance were used to obtain predicted tides for the boatsheet.

A tide station was installed by ship's personnel on June 24, 1972 at Lat. 38° 56' 51" N, Long 75° 18' 56" W. Hourly heights for the hours of hydrography were scaled and logged. The time meridian was 0° (GMT). The hourly heights were sent to Rockville for verification and a copy of the logged unverified hourly heights is included in this report. Hydrography was done on two days before the gage was installed. The Tides Division has been requested to furnish inferred hourly heights for these days - 155 and 156.

A copy of the letter to the Chief, Tides Division is enclosed in this report. The letter requests the two days of inferred tides, the value of MLW on the staff, verification of the hourly heights, and time and height differences to be applied for smooth plotting.
GEOGRAPHIC NAME LIST

Cedar Beach
Fowler Beach
Mispillion River
Slaughter Beach
Cedar Neck
Supervision of field and office work on this hydrographic survey was continuous on a day to day basis to insure completeness of the survey and that the work done was in accordance with the instructions.

Approved/Forwarded

Charles H. Nixon
CDR, NOAA
Commanding Officer, NOAA Ship WHITING
<table>
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<tr>
<th>Name on Survey</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
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Approved:

Chief Geographer - C3x3

6 Feb. 1981
## Hydrographic Survey Statistics

**Records Accompanying Survey:** To be completed when survey is registered.

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<th>Record Description</th>
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<th>Depth Records</th>
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<th>Punched Cards</th>
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### Special Reports (List)
- Junction Strip
- 1 Chart Markup

### Office Processing Activities
The following statistics will be submitted with the cartographer's report on the survey.

<table>
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<tr>
<th>Processing Activity</th>
<th>Amounts</th>
<th>Totals</th>
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<tr>
<td><strong>Positions on Sheet</strong></td>
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<td>626</td>
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<tr>
<td>Positions Checked</td>
<td>400</td>
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<tr>
<td>Positions Revised</td>
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<td>Soundings Revised</td>
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<tr>
<td>Soundings erroneously spaced</td>
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<tr>
<td>Signals (Control) erroneously plotted</td>
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</table>

### Critique of Field Data Package (Pre-Verification)
- Verification of Control: 0
- Verification of Positions: 130
- Verification of Soundings: 48
- Compilation of Smooth Sheet: 13
- Application of Topography: 10
- Application of Photobathymetry: 4
- Junctions: 4
- Comparison with Prior Surveys & Charts: 4
- Verifier's Report: 10
- Other: 7

### Totals
- 226

**Pre-Verification by**
- B. J. Stephenson
  - Beginning Date: 01/10/73
  - Ending Date: 01/19/73

**Verification by**
- B. J. Stephenson, D. Mason
  - Beginning Date: 09/15/73
  - Ending Date: 08/01/80

**Verification Check by**
- R. Roberson
  - Time (Hours): 4
  - Time (Date): 07/30/80

**Hydrographic Inspection Team (AMC)**
- Time (Hours): 10
  - Time (Date): 08/01/80

**Stevenson Center Inspection by**
- J. M. Hill
  - Time (Hours): 2
  - Date: 04/18/81

**Quality Control Inspection by**
- J. M. Hill
  - Time (Hours): 2
  - Date: 05/28/81
REGISTRY NO. H4313 (1972)

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

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

**CARDS CORRECTED**

DATE_________ TIME REQUIRED_________ INITIALS_________

**REMARKS:**

REGISTRY NO. ______

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-9313

Delaware, Delaware Bay, Mispillion River and Entrance

SURVEYED: June 2, 1972 through October 9, 1972

SOUNDINGS: Raytheon 723 D

Chief of Party
Surveyed by

Automated Plot by
Verified and Inked by

Dated

FIELD NO. WH-20-3-72

CONTROL: Three Point Sextant
Fix and See Boat Sheet

C. Nixon
K. Burke
R. LeRoy
R. Hoge
J. Servais
T. Kaiser
G. Decker
W. Hill

Xynetics 1201 Plotter (AMC)
D.V. Mason

August 1, 1980
1. **INTRODUCTION.**

Numerous problems were encountered during the verification of this survey. These problems are discussed in detail throughout this report.

2. **CONTROL AND SHORELINE**

   a. The source of control is adequately described under section F of the Descriptive Report.

   b. The shoreline for this survey is taken from two class III shoreline manuscripts, T.P. -00057 and T.P. -00058, flown in October 1969. No field edit has been applied. Field edit on these two surveys was cancelled.

   The shoreline from T.P. -00059 (1969-71) is from a Class I shoreline Manuscript. T.P. -00057 and T.P. -00058 were photographically reduced from a 1:10,000 scale sheet to 1:20,000 scale sheets, the same as the scale of the survey. T.P.-00059 was reduced using a Kargl Reflecting Projector during verification. The shoreline for this survey is considered to be "for orientation purposes only," as shown on this survey.

3. **HYDROGRAPHY**

   a. Depths at crossings are in good agreement. Refer to Section 4.e for additional information.

   b. The standard 6-foot curves were adequately delineated. The three foot supplemental curve was added to better delineate the bottom configuration.
c. The development of the bottom configuration and investigation of least depths is considered adequate with the following exceptions:

1. A shoal area of approximately 400 by 600 meters in the vicinity of lat. 38°55.1' long. 75°16.6' was not adequately developed to delineate the extent of the shoal or least depths. *concur*

2. The shoal area of approximately 300 by 400 meters in the vicinity of lat. 38°56.05' long. 75°17.75' at the entrance to Mispillion River was not developed adequately to assure that the least depths were obtained. *2 ft. least depths acquired on the present survey. Additional development is needed to ascertain that least depths were acquired.*

3. There were several areas south of lat. 38°55' alongshore and out to 6-foot depths where additional lines should have been run to fully develop the bottom configuration. *A few splits would have been beneficial.*

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 sounding volumes were incomplete in regards to stamps and the stamps were not properly annotated. There are no sounding volumes for five days of hydrography. *All sgs acquired on the boat sheet are accounted for on the smooth sheet.*

b. Fathograms were not properly annotated. Some fathograms were found without position numbers. These position numbers were added during verification.
c. Random data was found to be overlooked and not processed by the field. This data was logged, checked, spooled, and incorporated into the survey during verification.

d. The launches ran with an initial setting of 2.0 feet to compensate for their draft correction. The 2.0 foot draft correction was also added to the TRA tape which made the survey 2 feet too deep. This discrepancy was corrected by subtracting the 2.0 foot draft from the TRA tape. 

\textit{concur}

e. One crossline had to be rejected during verification due to the lack of data sent in by the field. This crossline was also plotted incorrectly on the field boat sheet.

f. This survey was turned in eight months after its completion. There are no velocity corrector abstracts in the Descriptive Report. The velocity table used for this survey was made up and dated July 10, 1973. One year after the survey was completed,

\textit{See QC Report, item 3, par. 2}

g. No bottom samples were taken in the survey area.

Bottom samples were brought forward to the present survey from N-1582 (1883) during Q.C.I.

h. The foul areas found on the T-sheets were not investigated, nor were they discussed in the Descriptive Report.

5. \textbf{JUNCTIONS}

a. An adequate junction was made with H-9202 (1971) to the east. Several 7-foot soundings were brought through to the present survey to better delineate
the 6-foot shoal at latitude 38°55.0' longitude 75°16.0'. Changes on H-9202 will have to be made by the Quality Control Branch, C352, since this survey has been verified and mailed to Rockville, to bring the surveys into agreement.

6. COMPARISION WITH PRIOR SURVEYS

H-1582 (1883) 1:20,000

The above prior survey covers the area of the present survey. A comparison between the present and prior survey reveals that the present survey is from 0 to 1 ft and 2 to 3 ft shallower on bar or jetty entrance (jetty created bar). These differences are attributed to natural changes in the bottom configuration and less detailed and accurate methods employed on the prior survey. The present survey is adequate to supersede the above prior survey within the common area.

7. COMPARISON WITH CHART #1218 (18th Edition, September 25, 1971)

A. Hydrography

The charted hydrography generally originates with the previously discussed prior survey which requires no further consideration except as indicated below.

Attention is directed to the following:

1) PRESURVEY REVIEW ITEM #4 A 3-foot depth, shown on chart #1218 in lat. 38°56.0', long. 75°17.8'. This sounding was located at the eastern edge of a 2 to 3 foot shoal. It is recommended that the seaward 2-foot sounding be charted
at lat. 38°55' long. 75°17.5'. The controlling depth for the Mispillion River
Entrance is 6 foot and should be charted as such. Markers are needed for a
6' entrance depth

2) A 5-foot shoal sounding charted from an unknown source at
latitude 38°55.02', long. 75°16.5'. A 6-foot shoal area was located at this area.
Due to insufficient development the 5-foot charted sounding should remain as
charted. Do not concur. This shoal with a least depth of 4½ ft. charted
from an unknown source, is discredited by present survey depths.
Chart the shoal as shown on the present survey.
3) A 6-foot sounding charted at lat. 38°54.8', long. 75°16.3'. Due to
insufficient development this sounding should remain as charted. Do not concur.
Area has deepened to 6-10 ft. depths. Charted 6½ ft. is discredited by
deeper present survey depths. Chart the area as shown on the present
survey of H-9202 (1971)

The controlling depth of the Mispillion River at Mean Low Water after
was reported to be 2½ ft. in Sept. 1972.
crossing the bar is 7 feet. This note should be revised on the chart.

c. Aids to Navigation

The aids to navigation located on the present survey are in substantial
agreement with their charted positions and adequately serve the purposes
intended. ✓

8. COMPLIANCE WITH INSTRUCTIONS

This survey does not comply with the Project Instructions. See Section 4
and 9 of this report.

9. ADDITIONAL FIELD WORK
This is considered a very poor survey. Considering the comments under "Condition of Survey" where considerable office manipulation of field data was necessary to obtain a coherent plot of the survey results, this area should be resurveyed as part of the continuation of the scheduled survey work in the Delaware and/or Delaware Bay. Do not concur.

The inset portion of the survey is considered an adequate basic survey.

The Mispillion River (1:5000) portion of the survey is considered reconnaissance.
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 records do not comply with National Ocean Survey requirements and this is noted in the Verification Report. The Hydrographic Inspection Team concurs with the verifier's findings, actions, and recommendations.

Maureen R. Kenny
Maureen R. Kenny, Lt, NOAA
Acting Chief, Processing Division

H.R. Smith
Team Leader
Verification Branch

Examined and Approved:
Hydrographic Inspection Team
Date: August 1, 1980

R.D. Sanocki
R.D. Sanocki
Technical Assistant
Processing Division

Approved/Forwarded

Richard H. Houlder
RADM, NOAA
Director, Atlantic Marine Center
APPROVAL SHEET
FOR
SURVEY H-7313

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/not been made. A new final sounding printout 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 Verifier's Report.

Date: 8/14/80
Signed: [Signature]
Title: Chief, Verification Branch
November 5, 1980

TO: Glen R. Schaefer  
Chief, Hydrographic Surveys Division

THRU: Chief, Quality Control Branch

FROM: F. P. Saulsbury  
Quality Evaluator

SUBJECT: Quality Control Report for H-9313 (1972), Delaware, Delaware Bay, Mispillion River and Entrance

A quality control inspection of H-9313 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, shoreline transfer, smooth plotting, decisions and actions taken by the verifier, and the cartographic presentation of data. In general, it was found to conform to the National Ocean Survey's standards and requirements except as stated in the Verifier's Report and as follows:

1. The following items should be investigated at an opportune time and pertinent information furnished so that these items may be accurately charted.

   a. The jetties at the entrance to Mispillion River are shown on the smooth sheet as delineated on TP-00058 (1969); that is, partially covered at MHW. These features are indicated by solid black lines on the boat sheet which cartographically represents the jetties to bare at MHW. Since the color of the jetties on the boat sheet is black, rather than red, the delineation of the jetties as shown on TP-00058 (1969) and the smooth sheet is considered more reliable.

   b. The delineation of shoreline in the vicinity of latitude 38°55.01'N, longitude 75°24.30'W is questionable. Here, the boat sheet delineation of limits for a dredged area suggests a considerable change of the MHW line; however, the original shoreline is not expunged.

   c. The two dashed black lines in the vicinity of latitude 38°54.30'N, longitude 75°17.65'W that resemble the delineation of ruins were added to
the smooth sheet from the boat sheet during quality control inspection. No information as to what these dashed black lines identify is found in the survey records.

d. The boat sheet delineation of the dock and marine railway in the vicinity of latitude 38°55.10'N, longitude 75°25.0'W is considered improbable. The boat sheet delineation shows the marine railway enclosed within a dock. This was revised during quality control inspection and the area was shown on the smooth sheet as it appears on an air photo of 1969.

2. While 16 groins are charted in the vicinity of latitude 38°54.80'N, longitude 75°18.30'W the present survey shows only 13. Chart the groins as shown on the present survey.

3. Mispillion River was surveyed with a single line of soundings. There is no survey confirmation that the deepest channel soundings were acquired. Therefore a valid controlling depth note for the chart is considered misleading. It is suggested that the charted controlling depth note read:
"After crossing the bar the controlling depth at Mean Low Water was reported to be 2 1/2 feet to Milford in September 1972."

Fathometer soundings in Mispillion River are plotted on the smooth sheet from references "See Boat Sheet" in the sounding volumes. No velocity correctors were applied or are available. However, velocity correctors applied to the remaining hydrography on the survey are positive and suggest that if correctors were available, they would add a plus 0.2 foot to controlling depths in the river.

For the aforementioned reasons the survey in Mispillion River is considered to be of a reconnaissance nature.

Controlling depths in the river should be ascertained at an opportune time. Also, Cedar Creek should be surveyed from its entrance southward to the Route 36 Bridge.

4. Verification experienced considerable difficulty when plotting the hydrography in the inset portion of the survey. An examination of this area during quality control inspection revealed that the smooth sheet plot is in good general agreement with the boat sheet plot and that depths at crossings are reasonable. Also, charted features are in reasonable agreement with counterpart features shown on the present survey. With the addition of bottom characteristics brought forward from H-1582 (1883), the inset portion of the present survey is considered adequate to supersede prior survey data and charted information within the common area. The inset portion of the survey is considered an adequate basic survey.
5. A comparison of junctional soundings on H-9202 (1971) revealed plus and/or minus 1- to 2-foot differences throughout the overlap area with H-9313. Due to these differences, a partial butt junction was made with H-9202 (1971). The present survey partially supersedes H-9202. The differences are attributed to bottom change.

6. The sign on the bascule bridge at Milford reads:

"Special Regulations - U.S. Coast Guard 1-1-71, 2 hours notice required to open bridge. Contact Delaware Division of Highways - Georgetown, Del. Monday thru Friday 8 AM to 4 PM - Call 856-2571. Nights, weekends and holidays call 645-6537."

This information appears in the sounding records.

cc:
OA/C351
TO:        OA/CAM - Richard H. Houlder
FROM:   OA/C9 - Roger F. Lanier
SUBJECT:  H-9313 (1972), OPR-492, Delaware, Delaware Bay, Mispillion River
          and Entrance, 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 November 5, 1980 (copy attached), and the Verifier’s Report, is
complete and adequate for the purposes intended and is in compliance with

Attachment

cc:
OA/C352 w/o att.
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.

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<th>CHART</th>
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<th>CARTOGRAPHER</th>
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<td>3/21/61</td>
<td>Russell Kennedy</td>
<td>Full Part Before After Verification Review Inspection Signed Via Drawing No. 52</td>
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