

9722

Diag. Cht. No. 1218-2

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT (HYDROGRAPHIC)

Type of Survey HYDROGRAPHIC
Field No. HSB-5-7-77
Office No..... H-9722

LOCALITY

State NEW JERSEY
General Locality .. DELAWARE BAY
Locality CROW SHOAL

1977

CHIEF OF PARTY
William R. Daniels

LIBRARY & ARCHIVES

DATE August 25, 1978

9722
1218

Area 2

Cht

- 12304

- 12214

- 123168

HYDROGRAPHIC TITLE SHEET

H-9722

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

FIELD NO.

HSB-5-7-77

State New Jersey

General locality Delaware Bay

Locality Crow Shoal

Scale 1:5,000

Date of survey 9/22 - 10/7/77

Instructions dated 4/26/77

Project No. OPR-492-HFP-77

Vessel NOS Launch 1260

Chief of party William R. Daniels, LCDR, NOAA

Surveyed by LTJG S. Iwamoto

Soundings taken by echo sounder, hand lead, pole All No information is available for any sndgs. other than those taken with DC-723

Graphic record scaled by SRI, LCG, RS, TBF, DE

Graphic record checked by LCG, SRI, RS

Protracted by LCG

Automated plot by AMC CALCOMP 618

Verification by AMC - Verification Branch

Soundings in ~~300000~~ feet at MLW ~~XXXXX~~

REMARKS: Data was logged with a DCU, and plotted manually. Editing, reformatting, and smooth plotting will be done at AMC, Norfolk, Va.

Applied to stds 12/18/78
[Signature]

RWW 10/6/92

DESCRIPTIVE REPORT
to accompany
HYDROGRAPHIC SURVEY H-9722 (HSB-05-7-77)

Scale: 1:5,000
Hydrographic Surveys Branch

Lt. S.R. Iwamoto, OIC, HFP-3
Lt. Cdr. W. R. Daniels, Chief

A. PROJECT

This survey was conducted in accordance with project instructions dated 26 April 1977. The project number is OPR-492-HFP-77.

B. AREA SURVEYED

The survey area is approximately two miles off shore Cape May Point, bounded by the following coordinates: $38^{\circ}56.2'N$, $74^{\circ}58.2'W$; $38^{\circ}57.0'N$, $74^{\circ}59.8'W$; $38^{\circ}55.6'N$, $75^{\circ}01.2'W$; $38^{\circ}54.9'N$, $75^{\circ}00.2'W$. Survey operations began 22 September 1977, ended 7 October 1977.

C. SOUNDING VESSEL

NOAA Launch 1260 was used to obtain all soundings.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

The following equipment was used to obtain soundings:

723D Fathometer	S/N 2928
ECU	S/N 37013
DCU	S/N 128
Digitizer	S/N 37012

The ECU circuitry was modified at EED, AMC, Norfolk, Va., in order to obtain a narrow initial trace, for shallow water soundings. The modification was used only for the first day Position 1-48. The normal mode was used for all other soundings in order to improve reception of digitized soundings.

A settlement and squat test was run on 14 March 1977. The corrections were less than 0.2ft, so no settlement and squat corrections need be applied to soundings taken underway.

Velocity corrections were determined from bar checks, and are applied on Velocity Table 01.

A static transducer draft of 1.0ft was applied to soundings on the field sheet, and are on the corrector tapes.

The analog initial was maintained at zero on-line.

E. HYDROGRAPHIC SHEETS ✓

Field sheets were prepared at AMC, Norfolk, Va. No shoreline was shown on the field sheets.

On-line data was logged automatically with DCU S/N 128 and corrector tapes were manually logged. Soundings and positions were plotted by hand. Data will be forwarded to AMC for reformatting and final processing, (DCU tapes reformatted at HSB office).

F. CONTROL STATIONS ✓

There were two stations used as Del Norte sites. Cape May Canal West Entrance South Jetty Light, 1975 was located by third order ground survey methods by Photo Party 62 - Job PH-7002 and was used as signal 002. Control Station 001 was an eccentric from Cape May Lighthouse, 1859 - 1932, established by launch personnel using a steel tape, sextant and Program RK407. A printout of RK407 is included in this report.

G. HYDROGRAPHIC POSITION CONTROL ✓

The launch was positioned by Range/Range methods using Del Norte. Control information was logged automatically with a Digital Control Unit (DCU).

Del Norte was calibrated twice daily at fixed points located by ground survey methods. The Del Norte equipment worked very well and corrections were maintained at zero with no detectable drift between morning and evening calibration (less than 2 meters).

H. SHORELINE ✓

No shoreline was shown on the field sheet.

I. CROSSLINES ✓

Crosslines were run at 8% of the regular system of lines. Agreement at crossings was very good with a maximum of one foot differences. *encour*

J. JUNCTIONS

No prior or contemporary surveys were available at the time of this survey. *See Section 5 of Verifiers Report*

K. COMPARISON WITH PRIOR SURVEYS

No prior surveys were available at the time of this survey. No pre-survey review items were in the survey limits. *See Section 6 of Verifiers Report*

L. COMPARISON WITH THE CHART ✓

This survey was compared with Chart 12316, 11th Edition; Jan. 1977; 1:40,000. The 12 and 18 foot contours agree well. The 24 ft. contour north of buoys 5 and 6 has shifted approximately 500 meters SW. The 6 foot contour delineated in the disposal area at approximately lat. 38°55.5', long. 74°59.8' has shifted NW approximately 500 meters. A least depth of 4 feet was found on Position 571 at lat. 38°55.65'; long. 75°00.00'. ~~Seventeen foot contour~~ *Concur* * No charted 24' contour on any charts used.

The 3 foot shoal at approximately lat. 38°55.35', long. 74°59.90' has deepened to depths varying from ~~7-15~~ ⁴⁻⁹ feet.

Where Crow Shoal crosses the navigable area between buoys 3, 4, 5, and 6, least depths which were 10 and 11 feet, are now 9 feet. *concur*

M. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede prior surveys of the area. *concur*

N. AIDS TO NAVIGATION ✓

The floating aids were found to be on station at the time of survey and are adequate to serve the purpose for which they were established. *concur*

O. STATISTICS

Positions	1436
Miles of sounding line	132.5
Square miles of Hydro	2.8
Bottom samples	26
X Lines	8.4
Development & Splits	40.0

P. MISCELLANEOUS

None

Q. RECOMMENDATIONS

None

R. AUTOMATED DATA PROCESSING

Data was logged on-line with a DCU.

S. REFERENCE TO REPORTS

Control Report - Job PH-7002 submitted by Photo Party 62 (1975).

Respectfully submitted

Robert Lewis
LT. STANLEY IWAMOTO
OIC, HFP-3

TIDE NOTE

Field reductions of soundings were based on predicted tides from Breakwater Harbor, Delaware, corrected to Cape May Point, New Jersey and were interpolated by computer at AMC, Norfolk, Va. Interpolation was made to 0.2', all times were GMT.

An ADR tide gage was operated during the survey at Cape May Point, $38^{\circ}56.73'N$, $74^{\circ}59.32'W$. The gage was installed by Coast Surveys Ltd.

Abstract of Bar Check Corrections

Lch 1260

Fath. 7230 #2928

Corr. = True depth - (observed depth + 1 ft. draft)

J.D.	5	10	15	20	25	30		
265	0.2	0.2	0.3	0.5				
	0.2	0.3	0.3	0.6				
270	0.5	0.8	0.4	1.0	1.0			
	0.2	0.8	0.9	1.0	1.0			
273	0.2	0.3	0.3	0.8	0.9	1.0		
	0.2	0.3	0.3	0.7	0.7	1.0		
279	0.2	0.5	0.3	0.4	0.3	0.6		
	0.2	0.4	0.2	0.5	0.3	0.6		
280	0.2	0.2	0.2	0.5	0.7	0.9		
	0.2	0.2	0.5	0.6	0.6	0.8		
Mean	0.2	0.4	0.4	0.7	0.7	0.8		

Tab. RL
 ✓ JN

0 .2 .4 .6 .8 1.0

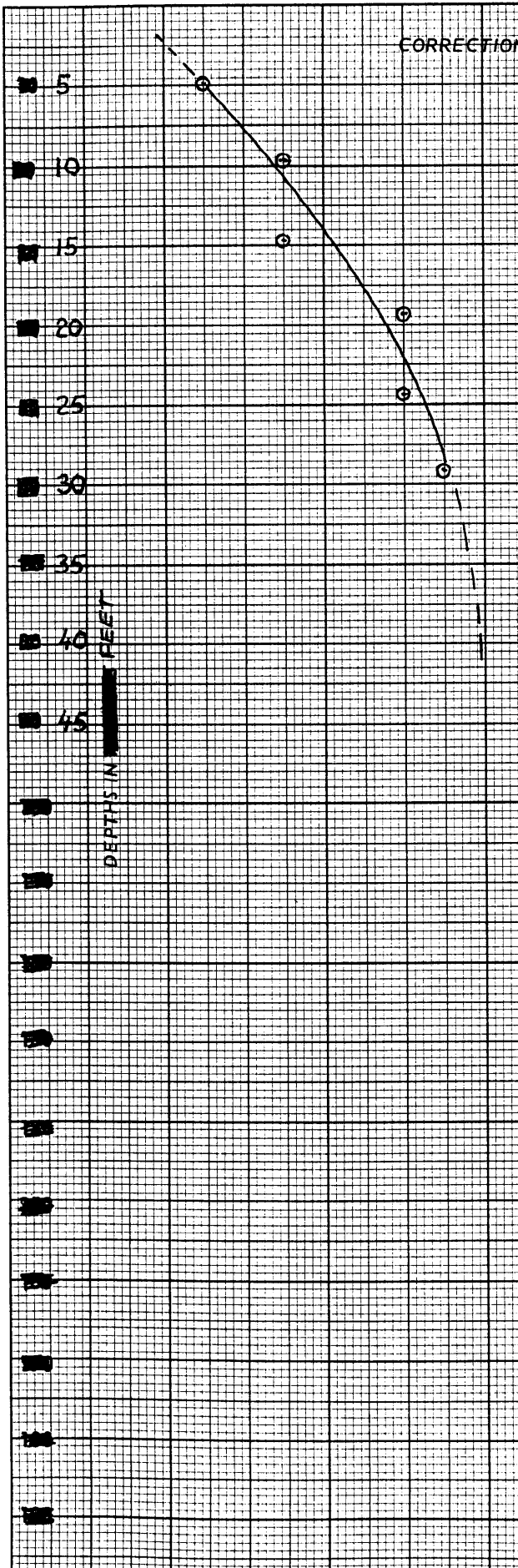
Fath. 723D # 2928

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.1 fathom for shoal.)

CORRECTIONS IN FEET

Table # 1

NOAA FORM 75-21 (10-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEAN SURVEY
VELOCITY CORRECTIONS	
Ship <u>HSB - HEP3 - Lch 1260</u>	
<u>S. R. Iwamoto</u> Comdg	
These corrections are to be used	
between <u>22 Sept 1977</u> and <u>7 Oct. 1977</u>	
in the locality <u>Cape May, N.J.</u>	
<u>Crow Shoal</u>	
for hydrographic surveys Nos. <u>H-9727</u>	



Velocity Table 01

Depth	Corr.
0 - 2.3	0.0
7.6	0.2
14.0	0.4
22.0	0.6
30.0	0.8

drawn by Tab. RL
✓ JN

(For deep water add a 0 to these figures)

20 X 20 TO THE INCH • 7 1/2 X 9 INCHES
KEUFFEL & ESSER CO. MA, U.S.A.

VELOCITY TABLE 01

H-9722(HSB-05-7-77)

000023 0 0000 0001 000 126000 009722

000076 0 0002

000140 0 0004

000220 0 0006

999999 0 0008

ELECTRONIC CORRECTOR ABSTRACT

Del Norte remained stable with zero correctors for all positions.

Remote #251-Code-76-Station 002 was calibrated J.D. 265 from stations 002-001 (3686 meters). The remaining days this unit was calibrated from station 002 to calibration dolphin "A" (761 meters). Remote #262-Code-74-Station 001 was calibrated daily from station 001-002.

INVERSE DISTANCES FOR CALIBRATION

Calibration dolphin "A" 38°58'03.653" 74°57'31.667"	to	Cape May West Entrance South Jetty Light 1975	761 meters
South Jetty Light 1975	to	Cape May Lighthouse ecc. 1977	3686 meters

EQUIPMENT UTILIZATION

Master	S/N 912
DMU	S/N 429
Remote	S/N 262 Code 74 Sta. 001
Remote	S/N 251 Code 76 Sta. 002

SIGNAL LIST

H-9722(HSB-05-7-77)

001	7	38	55	58461	074	57	38774	254	0054	000000	CAPE MAY LIGHTHOUSE, 1859, 1932 (ECC. 1977)
002	7	38	57	56615	074	58	01958	250	0003	000000	CAPE MAY CANAL WEST ENTRANCE SOUTH JETTY LIGHT, 1975

APPROVAL SHEET

SURVEY H-9722 (HSB-05-7-77)

The hydrographic records transmitted with this report are complete and adequate.

No direct supervision was given by me during field work.

This survey is complete and adequate with no additional field work recommended.



William R. Daniels
Lt. Cdr., NOAA
Chief, Hydrographic Surveys Branch

March 6, 1978

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): 853-6021 Cape May Point, N. J.

Period: Sept. 22 - October 7, 1977

HYDROGRAPHIC SHEET: H-9722

OPR: 492

Locality: Delaware Bay

Plane of reference (mean ~~lower~~ low water): 2.78 ft.

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

Remarks: Zone direct.

Don Spillman
Chief, Tides Branch

85

GEOGRAPHIC NAMES

H-9722

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
	ON CHART NO.	ON PREVIOUS SURVEY NO.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	GRAND MCNALLY ATLAS	U.S. LIGHT LIST			
BAY SHORE CHANNEL											1
CAPE MAY CHANNEL											2
CROW SHOAL											3
DELAWARE BAY											4
											5
											6
											7
											8
											9
											10
											11
											12
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											23
											24
											25

APPROVED

Chas. E. Harrington

CHIEF GEOGRAPHER - C3x8

13 OCT 1978

APPROVAL SHEET
FOR
SURVEY H-9722

- 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 Verifier's Report.

Date:

Aug 9, 1978

Signed:

Ray J. Copleton

Title: ~~Act~~ Chief, Verification Branch

ATLANTIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO. H-9722

FIELD NO. HSB-5-7-77

New Jersey, Delaware Bay, Crow Shoal

SURVEYED: September 22 through October 7, 1977

SCALE: 1:5,000

PROJECT NO.: OPR-492

SOUNDINGS: Raytheon DE-723D

CONTROL: Del-Norte
(Range-Range)

Chief of Party W. R. Daniels
Surveyed by S. R. Iwamoto
Automated Plot by CALCOMP-618 Plotter (AMC)
Verified and Inked by L. G. Cram
August 4, 1978

1. Introduction

a. An unusual problem was encountered when drawing depth curves. The curves were drawn using excess level 1 soundings as much as possible. There were times, however, when the density of the soundings at excess levels 0 and 1 precluded the use of excess level 1 soundings.

b. The projection parameters were revised during verification. Changes in red were made during verification by the verifier.

2. Control and Shoreline

a. The source of control is adequately described in Section F of the Descriptive Report.

b. No shoreline was available as per project instructions, Section 3.0.

c. Cape May Lighthouse, 1859 is located a distance 2.43 meters on a bearing of 08° 32' 30" from control station #1, as shown on the smooth sheet.

3. Hydrography

a. The agreement at crossings on this survey is adequate.

b. The standard depth curves could be drawn in their entirety. However, the excess level 1 soundings could only be used in some areas; see Section 1 of this report.

c. This survey was considered inadequate to delineate the bottom configuration and least depths in some areas. One of these areas is the channel between C"5", N"6", and C"3", N"4". Section 5.0 of the project instructions requested that this area be given particular attention.

4. Condition of Survey

The smooth sheet and accompanying overlays, hydrographic records, and reports comply with the requirements of the Hydrographic Manual, with the following exceptions:

- a. No comparison was made with prior surveys on the boat sheet.
- b. No apparent attempt was made to junction with any surveys in this area.
- c. There are an insufficient number of bar checks.
- d. The inadequate development of the bottom configuration in the marked channel area.

5. Junctions

Butt junctions will have to be effected with the following surveys:

H-9153 (1970) to the southwest
H-9241 (1971) to the west and north
H-9311 (1972) to the east and south

These surveys, taken together, cover the present survey and any attempt to draw curves into the common areas results in differences ranging from 2 to 17 feet. It is believed that the reason for this is due to the survey being in a highly changeable sand bottom influenced by the currents and tides at the entrance to Delaware Bay. The area most affected by this is in the southeast corner of survey H-9722 (1977), where the differences in the junctional area are from 3 to 15 feet.

Since these surveys are not available at AMC to make the butt junctions, the verifier has drawn the limit lines on mylar junctional strips showing the areas to be superseded by H-9722.

6. Comparison With Prior Surveys

H-9153 (1970) 1:20,000
H-9241 (1971) 1:20,000
H-9311 (1972) 1:10,000

These surveys are the most recent in this area that would provide complete coverage and a meaningful comparison. The list of prior surveys included in Section 4.9 of the project instructions are dated from 1880 through 1910. Any comparison with these surveys would be useful for historical information only. These earlier surveys should be considered superseded by the above surveys for comparison purposes.

The basic bottom configuration appears to be from 1 to 4 feet shoaler in all but one area within the limits of the present survey. The area from latitude 38° 55' 45", longitude 75° 00' 15" to the southeastern limits of the present survey appears to be deeper on the present survey by from 1 to 14 feet. This area is interpreted to be of relatively unstable sand wave features that are better delineated by the line spacing on the 1:5,000 scale survey (H-9722) as compared to the 1:10,000 scale survey (H-9311) used for comparison in this area. The differences as discussed above can be attributed to natural causes and to the increased density of soundings on the present survey.

The present survey is considered adequate to supersede the prior surveys within the common areas.

7. Comparison With Chart 12316 (14th Edition, January 1977)

a. Hydrography

In comparing with this chart, the source of only a very few soundings could be identified. There is a note on the chart that states, "depths from surveys 1927 and 1971". Only two soundings were identified from 1970, 1971, and 1972 surveys that cover this area. It appears in comparing the chart with these surveys that the chart (14th Edition) was never completely revised from the 1970 to 1972 surveys. The Descriptive Report adequately discusses the changes that have taken place, under Section L.

This survey is considered adequate to supersede the charted information in the common area.

b. Aids to Navigation

The aids to navigation are adequately described in the Descriptive Report.

8. Compliance With Instructions

This survey did not comply with project instructions in delineating the channel area as per Section 5.0. In addition, this survey did not comply with the project instructions under Section 4.8, Junctions and 4.9, Prior Surveys. No adequate junctions were attempted with any surveys nor was this compared with any prior surveys by field party.

Development of channel area considered adequate.


9. Additional Field Work

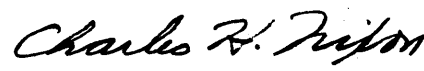
This is an adequate basic survey; no additional field work is recommended.


Inspection Report
H-9722


Any verification errors regarding procedures and presentation of survey data detected during inspection by the Hydrographic Inspection Team have been corrected before submission for administrative approval. HIT comments regarding quality of field work, compliance with instructions, and adequacy of the survey have been incorporated within the Verifier's Report.


Examined and Approved:
Hydrographic Inspection Team
Date:


Robert A. Trauschke, CDR, NOAA
Chief, Processing Division

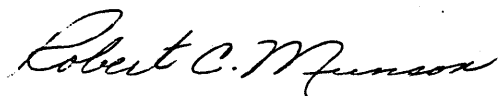

Charles H. Nixon, CAPT, NOAA
Chief, Operations Division


R. D. Sanocki
Technical Assistant
Processing Division


C. Douglas Mason, LT, NOAA
Chief, Electronic Data
Processing Branch


Guy F. Trefethen
Team Leader
Verification Branch

Approved/Forwarded


Robert C. Munson
RADM, NOAA
Director, Atlantic Marine Center



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

C352/GKM

October 11, 1978

TO: *A. J. Patrick*
A. J. Patrick
Chief, Marine Surveys Division

FROM: *G. K. Myers*
G. K. Myers
Chief, Quality Control Branch

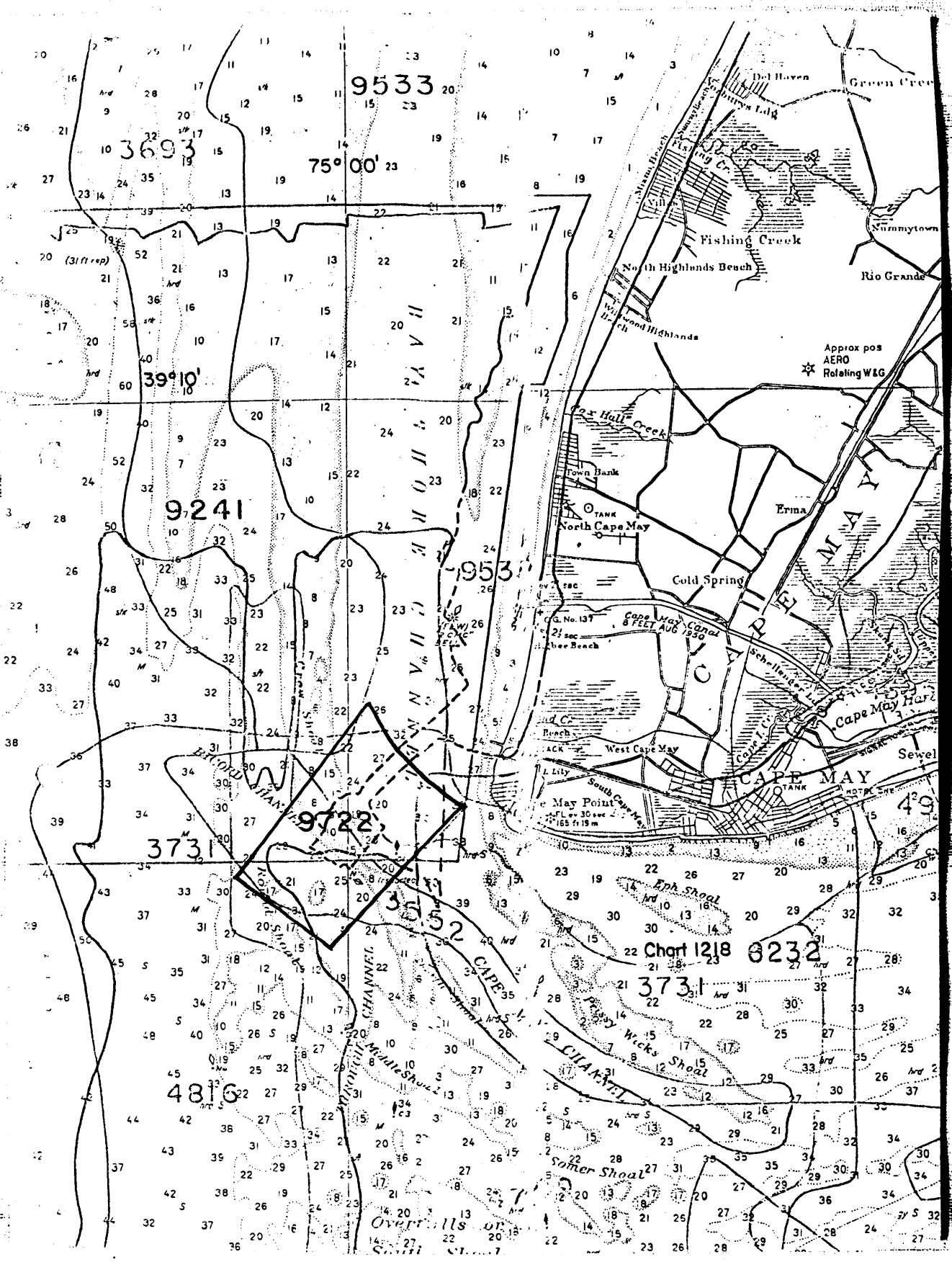
SUBJECT: Quality Control Report for H-9722 (1977), New Jersey, Delaware Bay, Crow Shoal

A quality control inspection of H-9722 was accomplished to monitor the survey for obvious deficiencies with respect to data acquisition, delineation of the bottom, determination of least depths, navigation hazards, junctions, sounding line crossings, smooth plotting, decisions and actions taken by the verifier, and cartographic presentation of data. In general, it was found to conform to the National Ocean Survey standards and requirements except as stated in the report by the verifier and Hydrographic Inspection Team and as follows:

1. Butt junctions were made in accordance with comments stated in the Verifier's Report during quality evaluation. In addition, a butt junction was effected with H-9533 (1975) on the northeast.
2. Red buoy "6" was erroneously shown 5 mm northeast of its true position on the smooth sheet. The recorded position number of this aid is 274; however, the buoy symbol was located at position 1032 during verification.

cc:
C35
C351





9533

3693

75° 00'

39° 10'

9241

953

9722

3731

4816

Chart 1218

0232

3731

Overfalls or
South Shoal

RECORD OF APPLICATION TO CHARTS

H-9722

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. _____

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
12316	7-30-79	Marguerite Moore	Full Part Before After Verification Review Inspection Signed Via Drawing No. 18B
12214	8-3-79	Marguerite Moore	Full Part Before After Verification Review Inspection Signed Via Drawing No. 45 thru Chart 12304
12304	8-1-79	Marguerite Moore	Full Part Before After Verification Review Inspection Signed Via Drawing No. 50 thru Chart 12316
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
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