

9788

Diag. Cht. No. 1220-2

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. .... WH-20-3-78 .....  
Office No..... H-9788 .....

LOCALITY

State ..... Maryland .....  
General Locality ..... Atlantic Coast .....  
Locality ..... Off. Central Portion of Assateague.....  
Island

19 78

CHIEF OF PARTY  
Karl Wm. Kieninger.....

LIBRARY & ARCHIVES

DATE ..... July 19, 1979 .....

8876

Areas 1 + 2  
check  
12200  
12211  
13003

HYDROGRAPHIC TITLE SHEET

H-9788

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-20-3-78

State Maryland

General locality Atlantic Coast  
Off Central Portion Of

Locality Assateague Island

Scale 1:20,000 Date of survey 15 Aug.-22 Oct. 1978

Instructions dated 8 December 1977 Project No. OPR-D103 (516)-MI, WH-78

Vessel NOAA Ship Whiting Launches 1015 (2931) and 1014 (2932)

Chief of party CDR Karl Wm. Kieninger

Surveyed by Dennis M. Kuhl, Nicholas E. Perugini, Douglas C. Schultz, Frederico Diaz

Soundings taken by echo sounder, hand lead, pole

Graphic record scaled by Whiting Personnel

Graphic record checked by KWK, DRT, DMK, JSB

Protracted by \_\_\_\_\_ Automated plot by XYNETICS 1201  
Hydroplot

Soundings <sup>verified</sup> penciled by \_\_\_\_\_  
D. V. Mason  
May 21, 1979

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

REMARKS: All times are Coordinated Universal Time

Applied to slide.  
10-4-79 WJT

RWW 10/6/79

DESCRIPTIVE REPORT

TO ACCOMPANY SURVEY

H-9788

WH-20-3-78

A. PROJECT

Hydrographic survey WH-20-3-78, H-9788, was performed in accordance with project instructions for OPR-D103(516)-MI,WH-78, Atlantic Seaboard Area Project (ASAP), Delmarvanc Phase, dated 8 December 1977. The following changes have amended the original project instructions:

<u>CHANGE NO.</u>	<u>DATE</u>
1	16 Dec. 1977
2	21 Dec. 1977
3	7 Feb. 1978
4	6 Mar. 1978
5	9 Mar. 1978
6	16 Mar. 1978
7	10 Apr. 1978
8	27 Apr. 1978
9	22 May 1978
10	30 May 1978
11	28 Sep. 1978

B. AREA SURVEYED

Survey H-9788 was performed from julian days 227 to 295, 1978. The area surveyed extends from the shoreline east to  $74^{\circ}57.9'$  W. The limits of hydrography to the north and south are  $38^{\circ}12.0'$  N and  $38^{\circ}04.4'$  N respectively.

There are no significant shoals in the area surveyed less than 25 feet. The bottom is soft (sand or mud) and gently contoured. Traffic in the area surveyed is generally limited to pleasure craft and fishing vessels.

### C. SOUNDING VESSELS

All range-range and range-azimuth hydrography was performed by NOAA launches 1015 (EDP 2931) and 1014 (EDP 2932). Each launch was equipped with the Ross model 5000 echo sounders. The survey launches encountered no major mechanical problems.

### D. SOUNDING EQUIPMENT

Echo sounders used on WH-20-3-78 were Ross model 5000. Serial numbers for 1015 and 1014 are 1052 and 1087 respectively. Phase check calibrations were performed on the Ross Model 5000 in accordance with the Hydrographic Manual. This calibration was conducted regularly and is noted on all fathograms.

Bar checks were taken at least once a day, weather and sea conditions permitting. Quality of bar checks varied with wind, sea, and current conditions.

Velocity corrections were based on bar check averages. Data from bar checks was compiled in direct comparison logs, and velocity corrections were computed in accordance with the hydrographic manual. Due to the varying quality of analog traces only the following days were used for computing bar check averages:

<u>2931</u>	<u>2932</u>
227	227
228	228
229	229
231	231
232	232
235	235
264	250
	265

Settlement and squat corrections are taken from trials performed by Whiting personnel in February, 1978. Graphs and corresponding tables for settlement and squat are in the appendix and applied on the TC/TT tape.

All soundings on this sheet were taken on the 0-100 foot scale.

### E. HYDROGRAPHIC SHEETS

The field sheets were prepared by Whiting personnel using a Houston Instruments DP-3 Roll Plotter, S/N 4680-1. For processing purposes, the area was divided into two plotter sheets. Plotter origins for the sheets are as follows:

NORTH:	38/08/00 N	75/15/00 W
SOUTH:	38/03/30 N	75/15/00 W

A total of four plotter sheets are submitted with this survey. Two sheets cover the entire field sheet. One pair of plotter sheets contain all main scheme hydrography. The second pair of sheets is a set of overlays which contain all crosslines and bottom samples.

#### F. CONTROL STATIONS

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

<u>SIGNAL NO.</u>	<u>NAME</u>
302	H-12-MD-78
304	BMG-141,1977
306	H-9-MD-78
308	H-8.5,1978
310	H-8-MD-78
312	NORTH BEACH 2,1962-75
314	ROBIN,1978
316	PHOEB,1978
318	H-10-MD-78
320	BMK-141,1977
401	Assateague Lighthouse (A09-67)
408	A-01,1978
410	J.C.,1978
414	BMA-141,1977
415	H-13-MD-78
416	HALL,1978

*- These stations per  
were marked per  
Jim Shea 2-6-79  
B.J.S.*

Stations 302,304,306,310,318,320,408,414, and 415 were established by third order traverse in 1977-78 by the Operations Division, Atlantic Marine Center. The positions for 312 and 401 were obtained from published horizontal control data. Stations 308,314,316,410, and 416 were spurs established by Whiting personnel from third order control and located using third order traverse methods. Distances were measured with an HP Model 3800A, S/N 0987A00157 or by steel tape. All angles were measured by a Wild T2 Theodolite, S/N 35803. The spurs are not recoverable.

#### G. HYDROGRAPHIC POSITION CONTROL

Two types of position control were used in this survey, range-range, and range-azimuth. The Del Norte positioning system provided range control for all work.

The range-range hydrography was performed by launches 1015 and 1014, equipped with Del Norte Master units and distance measuring units. The Hydroplot system was used in all range-range work. Remote Del Norte stations were selected so that hydrography was run where intersections of rates was greater than 30 degrees and less than 150 degrees.

Both launches performed range-azimuth work. Ranges and depths were recorded in real time using RK-111. Azimuths were measured with a Wild T2 Theodolite, S/N 35803.

Daily calibration of the system was accomplished by using three-point sextant fixes (with check angle). Pattern correctors were computed by comparing visual and electronic fixes. Inverse distances between fixes and check fixes were compared and daily pattern correctors were computed by means of a weighted average. In addition to daily visual calibrations, a baseline calibration was performed every two weeks.

Del Norte master units and distance measuring units were kept paired between baseline calibrations. The following Master-DMU pairs were used during the project:

<u>Julian Days</u>	<u>Vessel</u>	<u>DMU S/N</u>	<u>Master S/N</u>
227-235	1014	517	273A
	1015	515	281
250-255	1014	517	273A
	1015	515	281
264-265	1014	517	273A
	1015	515	281
281	1015	517	273A
294-295	1014	123	159

Remote stations with interrogation codes of 82, 84, 86, and 88 were used on this survey.

Several problems were encountered when using the Del Norte positioning system. A few days were partially lost due to an erratic signal. This problem may have been due to atmospheric conditions or working beyond the maximum range. This problem was remedied by raising the height of the shore stations by 10 to 20 feet and operating under more suitable weather conditions.

#### H. SHORELINE

No shoreline manuscripts were available for this survey. Shoreline for this sheet was taken from a 1:20,000 blowup of NOS Chart No. 12211, 25 Ed. Jan. 8/78, 1:80,000, obtained from C351. The shoreline is unverified by photogrammetric methods, but is in good agreement with hydrographic shorelines run during the survey.

There is evidence of slight erosion, extending from 38°12.0' N to 38°08.0' N, as indicated by shoreline soundings.

#### I. CROSSLINES

The percentage of crosslines run on this survey was 13%. Agreement with main scheme lines was excellent in most cases, 0-2 feet. Crosslines were run in a north-south direction, perpendicular to the east-west main scheme. Several radials were run by both launches to check range-azimuth work.

#### J. JUNCTIONS

This survey junctions with H-9780 and H-9759 on the north, H-9640 on the east, and H-9796 on the south. Agreement with all four contemporary surveys is excellent, 0-2 feet. Surveys H-9780 and H-9796 were

completed this year by the Whiting and are still unverified. H-9759 completed by NOAA launch 1255 is also unverified.

K. COMPARISON WITH PRIOR SURVEYS

Survey H-5357, Great Gull Bank to Pope Island, June-October, 1933, 1:20,000. Comparisons were made in the area bounded by:

NORTH: 38°12'00"	EAST: 75°04'30"
SOUTH: 38°04'15"	WEST: Assateague Island

In general, agreement with the mainscheme of the two surveys is good, within 4 feet. There are notable discrepancies in all areas of shoaling. The bottom features have the same basic configuration as on the prior survey but in most cases shoals appear to have migrated in a southeast direction over distances of one to two tenths of a mile.

Survey H-5347, Ocean City and Southward, June-July, 1933, 1:20,000. Comparisons were made in the area bounded by:

NORTH: 38°12'00"	EAST: Thirty foot contour
SOUTH: 38°04'15"	WEST: Assateague Island

Overall agreement with this prior survey is good. The six, twelve and eighteen foot contours are in the same approximate location as on the prior survey and follow the same general pattern as the shoreline.

Survey H-5353, Offshore Maryland and Virginia Coasts, September-October 1933, 1:40,000. Comparisons were made in the area bounded by:

NORTH: 38°12'00"	EAST: 75°00'00"
SOUTH: 38°04'15"	WEST: 75°05'00"

Agreement with this prior survey is good. The shoal at 38°04.0' N 75°02.0' W appears to have the same configuration and shoal depths as shown on the prior survey and extends onto survey H-9796. This shoal appears as a dashed item in the pre-survey review.

PSI 28

Charted Item; Wreck, Originates with Chart Letter 1118 of 1953.

Charted Position: 38°10.2' N VESNO 2932  
75°02.3' W JD 264

Pos. No's. 1672-1731

Note: Position Approximate

This item was developed in two locations, the approximate position where it is charted and at 38° 11.1'N, 74° 59.9' W, which was a position obtained from local fisherman. Both locations were developed by splitting the mainscheme and running a series of north-south lines at 50 meter spacing. There was no evidence of a wreck on the fathometer in either location and no depths were found shoaler than the mainscheme hydrography. These developments are not plotted on the field sheets but all data is included with the survey records. It is recommended that this wreck be retained as charted.

PSI 30

Charted Item: Wreck, Originates with NM 50 of 1967  
 Charted Position: 38°05.2' N VESNO: 2931 2932  
 75°03.5' W JD: 265 294  
 Pos: 5861-5903 1997-2029

Note: Position Approximate

This item was developed on separate occasions by each launch. In both instances there was no evidence of a wreck on the fathogram and no depths shoaler than the main scheme hydrography were found. These developments are not plotted on the field sheets, but all data is included with the survey records. It is recommended that this wreck be retained as charted.

L. COMPARISON WITH THE CHART

Survey H-9788 was overlaid and compared with a 1:20,000 blowup of NOS Chart No. 12211, 25 Ed. Jan. 8/78, obtained from C351. Overall agreement with the chart is good. There are several areas with 5-10 foot discrepancies. The shoal areas within one and a half miles from shore do not all agree with soundings on the chart. In almost every case where a charted shoal depth was not found during hydrography, the hydrography shows a sounding of the same shoal depth located three tenths of a mile in the direction south, southwest from the charted shoal sounding. These shoal soundings found during the hydrography are not charted nor do these soundings agree with charted soundings in the area where they were found.

A two mile square area on the far northeast corner of the sheet has several charted depths in the 50-53 foot range but soundings from the survey are at least five feet deeper. The contours in the area do not agree well with the chart.

The remaining contours on the sheet approximate those on the chart but extend from one to two tenths of a mile to the southeast. All charted contours should be re-evaluated with respect to the soundings from this survey.

The most significant discrepancy with the chart is a thirty foot sounding at 38°06.3' N, 75°09.2' W for which all soundings within 150 meters were 10 feet deeper. There are some soundings within 300 meters which agree within 3 feet. A 1:5,000 plot of a development in this area is attached. It is recommended that the 30 foot sounding be removed from the chart and a representative sounding from the survey be charted. *Present least depth 31 ft.*

M. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede prior surveys.

N. AIDS TO NAVIGATION

A white orange buoy currently charted at location 38°11.7' N, 75°06.9' W is the only charted floating aid within the survey limits. This buoy was not found during the survey. In checking with the United States Coast Guard, 5th District, Aids to Navigation Branch, there is no record for the private aid. It is recommended that this buoy be deleted from the chart.



O. STATISTICS

<u>VESNO</u>	<u>Number of Positions</u>	<u>Total Miles</u>
2931	2010	406.5
2932	<u>2079</u>	<u>535.5</u>
	TOTAL:	942.0

Total square miles: 76.5  
Tide gages established: None

P. MISCELLANEOUS

None

Q. RECOMMENDATIONS

None

R. AUTOMATED DATA PROCESSING

<u>PROGRAM NO.</u>	<u>DESCRIPTION</u>	<u>VERSION DATE</u>
RK 111	Range-Range Real Time Hydroplot	1-30-76
RK 201	Grid and H/R Lattice Plot	4-18-76
RK 211	Range/Range Off-Line Plot	1-15-76
RK 212	Visual Station Table Load	4-01-74
RK 216	Range-Azimuth Position and Sounding Plot	5-16-74
RK 300	Utility Computations	2-10-76
RK 330	Data Reformat and Check	3-12-76
AM 500	Predicted Tide Generator	11-10-72
RK 561	Hyperbolic and Range-Range Geodetic Calibration	2-19-75
AM 602	Extended Line Oriented Editor	3-10-72
RK 407	Geodetic Inverse/Direct Computation	10-23-75

S. REFERENCES TO REPORTS

None

U.S. DEPARTMENT OF COMMERCE  
January 30, 1979 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): 857-0280 Ocean City, Md.

Period: August 15 - October 22, 1978

HYDROGRAPHIC SHEET: H-9788

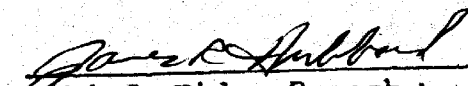
OPR: D103

Locality: Off Assateague Island, Maryland

Plane of reference (mean ~~lower~~-low water): 4.04 ft.

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

Remarks: Zone direct.

  
Chief, Tides Branch

## FIELD TIDE NOTE

The soundings on the field sheet were reduced by predicted tides based on preliminary zoning furnished with the project instructions. Values of -1hr 40min on Hampton Rds., VA, were applied to times of high and low water. A ratio of 1.50 was applied to heights of tide.

A tide gage at the fishing pier, Ocean City, Maryland, was one of two control gages used in the survey area. The gage is a Fischer-Porter ADR 1550, SN-6803A3012M14. Location of the gage is: 38/19.37N, 75/05.0 W.

A second tide gage at Chincoteague National Wildlife Refuge, on Assateague Island, Virginia was the other control gage used in this survey area. The gage is a gas-purged Metercraft SN-7602-705-108. Location of the gage is 37°55.4' N, 75°19.0' W. Both tide gages were inspected by Whiting personnel.

4. CORRECTIONS TO ECHO SOUNDING ABSTRACT

## BAR CHECK DATA AVERAGES

VESNO 2931 - 2932

<u>DEPTH</u>	<u>CORRECTION</u>
5.0	0.0
9.9	0.1
14.7	0.3
19.5	0.5
24.4	0.6
29.2	0.8
34.0	1.0
38.9	1.1
43.7	1.3
48.5	1.5
53.3	1.7

Corrections on PAGES 20A thru 20D  
ARE to be used. (WAH)

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

208  
CORRECTIONS IN FEET, FATHOMS

NOAA FORM 75-21 (10-72) U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEAN SURVEY

**VELOCITY CORRECTIONS**

Ship WHITING Launches 1014 1015

CDR Karl Wm. Kieninger, NOAA Comdg

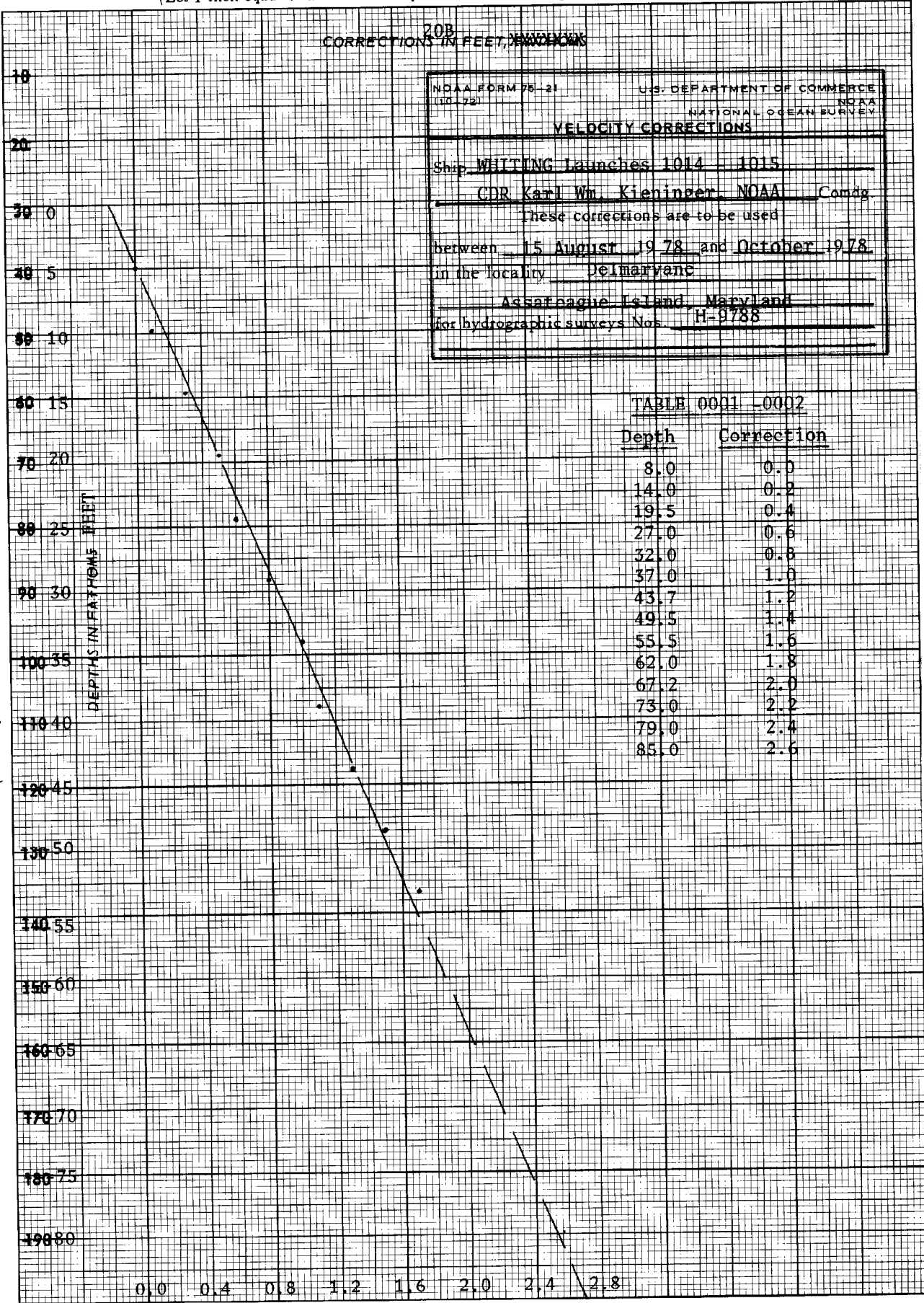
These corrections are to be used  
between 15 August 1978 and October 1978  
in the locality Delmarvenc  
Assateague Island, Maryland  
for hydrographic surveys Nos. H-9788

TABLE 0001 - 0002

Depth	Correction
8.0	0.0
14.0	0.2
19.5	0.4
27.0	0.6
32.0	0.8
37.0	1.0
43.7	1.2
49.5	1.4
55.5	1.6
62.0	1.8
67.2	2.0
73.0	2.2
79.0	2.4
85.0	2.6

(For deep water add a 0 to these figures)

DEPTH IN FATHOMS FEET



4 1240

20 X 20 TO THE INCH • 7" x 10" INCHES  
KEUFFEL & ESSER CO. MA

K&E

VELOCITY TAPE

VESSEL 2931

H-9788

000080 0 0000 0201 000 293100 009788  
000140 0 0002  
000195 0 0004  
000270 0 0006  
000320 0 0008  
000370 0 0010  
000437 0 0012  
000495 0 0014  
000555 0 0016  
000620 0 0018  
000670 0 0020  
000730 0 0022  
000790 0 0024  
000850 0 0026  
999999 0 9999

20D

VELOCITY TAPE

VESSEL 2932

H-9788

000080	0	0000	0002	000	293200	009788
000140	0	0000				
000195	0	0000				
000270	0	0000				
000322	0	0000				
000370	0	0010				
000437	0	0010				
000495	0	0014				
000555	0	0010				
000620	0	0010				
000670	0	0010				
000700	0	0000				
000790	0	0000				
000850	0	0000				
999999	0	0000				



## BAR CHECK DATA AVERAGES

VESNO 2931

<u>DEPTH</u>	<u>CORRECTION</u>
5.0	0.0
9.9	0.1
14.7	0.3
19.6	0.4
24.4	0.6
29.3	0.7
34.2	0.8
39.0	1.0
43.9	1.1
48.4	1.6

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

22  
CORRECTIONS IN FEET, FATHOMS

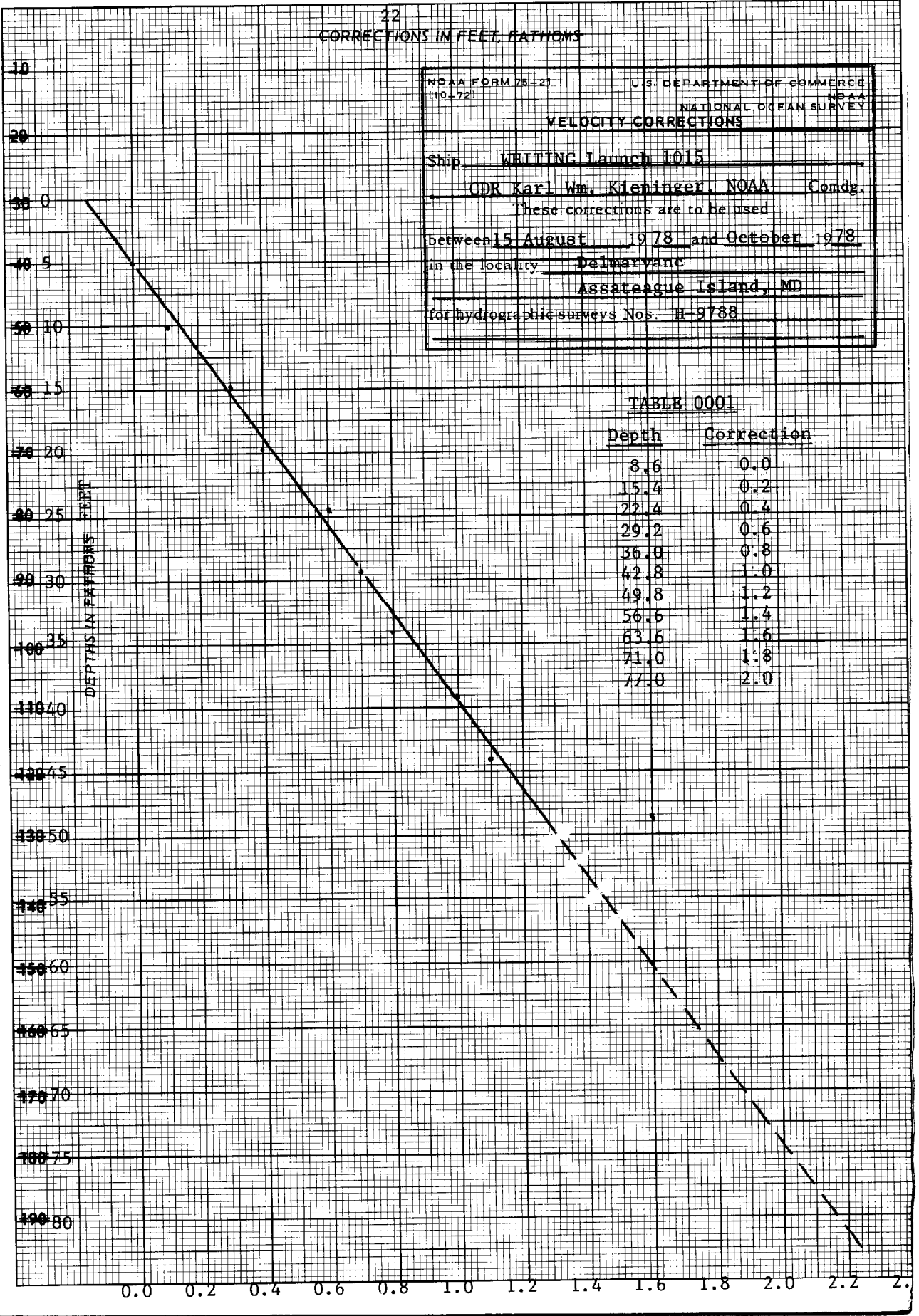
NOAA FORM 75-21 (10-72) U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEAN SURVEY  
NOAA  
**VELOCITY CORRECTIONS**

Ship WRITING Launch 1015  
 CDR Karl Wm. Kieninger, NOAA Comdg.  
 These corrections are to be used  
 between 15 August 1978 and October 1978  
 in the locality Delmarvanc  
Assateague Island, MD  
 for hydrographic surveys Nos. H-9788

TABLE 0001

Depth	Correction
8.6	0.0
15.4	0.2
22.4	0.4
29.2	0.6
36.0	0.8
42.8	1.0
49.8	1.2
56.6	1.4
63.6	1.6
71.0	1.8
77.0	2.0

(For deep water add a 0 to these figures)



4 240

K&S  
20 X 20 TO THE INCH • 7 1/2 X 10 INCHES  
KEUFFEL & ESSER CO. MAI

VELOCITY TAPE

VESSEL 2931

H-9788

000086 0 0000 0001 000 293100 009788  
000154 0 0002  
000224 0 0004  
000292 0 0006  
000360 0 0008  
000428 0 0010  
000498 0 0012  
000566 0 0014  
000636 0 0016  
000710 0 0018  
000770 0 0020  
999999 0 0000

## BAR CHECK DATA ABSTRACTS

VESNO 2932

<u>DEPTH</u>	<u>CORRECTION</u>
5.1	-0.1
9.9	0.1
14.7	0.3
19.5	0.5
24.3	0.7
29.1	0.9
33.9	1.1
38.8	1.2
43.5	1.5
48.5	1.5
53.3	1.7

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

25  
CORRECTIONS IN FEET, FATHOMS

NOAA FORM 75-21 (10-72) U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEAN SURVEY

**VELOCITY CORRECTIONS**

Ship WHITING Launch 1014

CDR Karl Wm. Kieninger, NOAA Comdg

These corrections are to be used  
between 15 August 1978 and October 1978  
in the locality Delmarvanc  
Assateague Island, MD  
for hydrographic surveys Nos. H-9788

(For deep water add a 0 to these figures)

DEPTHS IN FATHOMS FEET

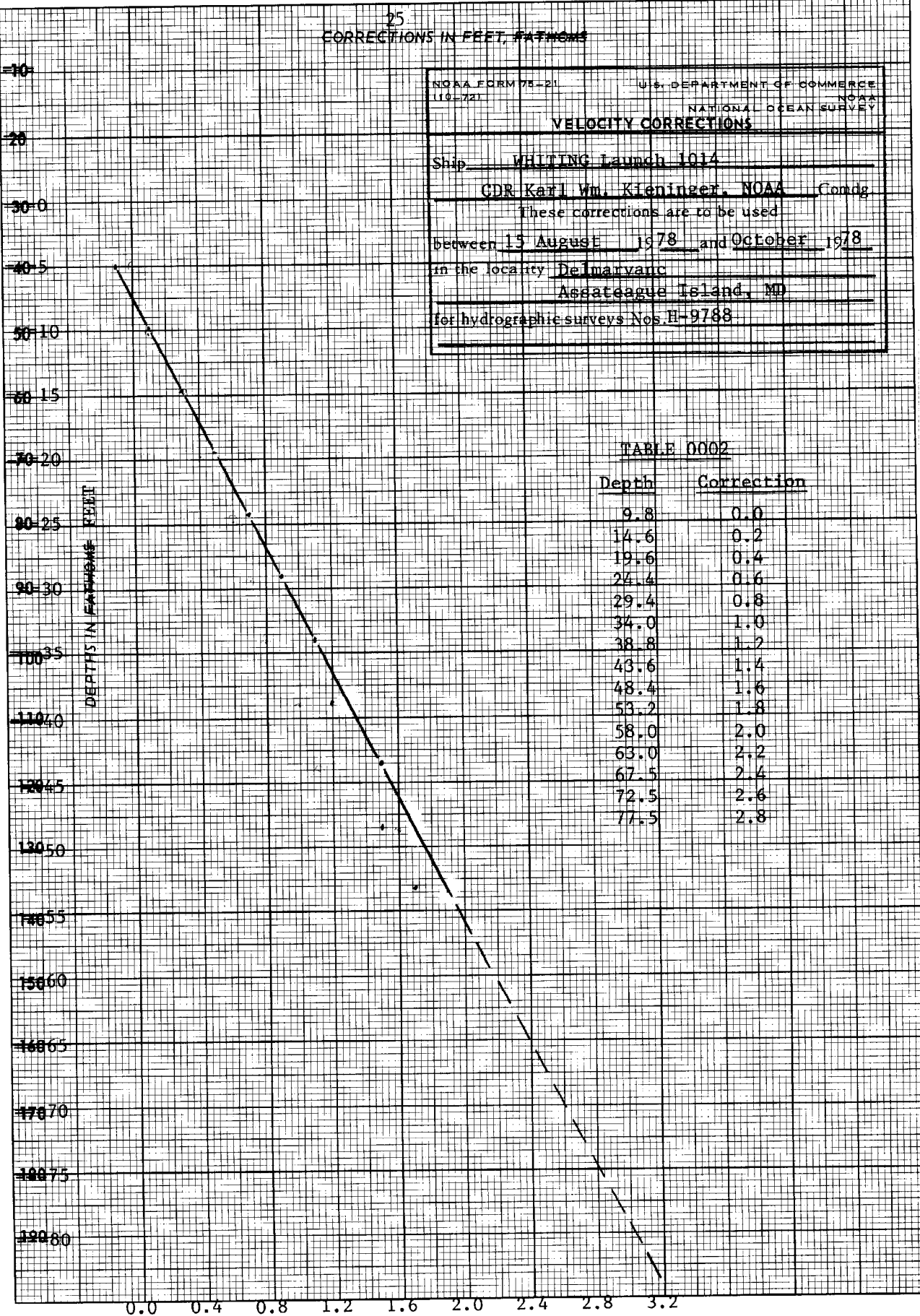


TABLE 0002

Depth	Correction
9.8	0.0
14.6	0.2
19.6	0.4
24.4	0.6
29.4	0.8
34.0	1.0
38.8	1.2
43.6	1.4
48.4	1.6
53.2	1.8
58.0	2.0
63.0	2.2
67.5	2.4
72.5	2.6
77.5	2.8

4 240

20 X 20 TO THE INCH • 7" x 10" INCHES  
KEUFFEL & ESSER CO. MA

## VELOCITY TAPE

VESNO 2932

H-9788

000098 0 0000 0002 000 293200 009788  
000146 0 0002  
000196 0 0004  
000244 0 0006  
000294 0 0008  
000340 0 0010  
000388 0 0012  
000436 0 0014  
000484 0 0016  
000532 0 0018  
000580 0 0020  
000630 0 0022  
000675 0 0024  
000725 0 0026  
000775 0 0028  
999999 0 0000

## SETTLEMENT AND SQUAT TRIALS

Settlement and squat trials were run on launches 1014 and 1015 at Governor's Island, New York in February and April 1978. Trials were run using a level and rod. The level rod was held over the transducer location. Results are the average of one run towards the observer and one run away from the observer at the speeds listed below.

<u>Speed in RPM</u>	<u>Correction 1014</u>	<u>Correction 1015</u>
700	+0.006	+0.080
1000	+0.070	+0.156
1500	+0.158	+0.250
2000	+0.172	+0.127
2500	-0.081	-0.263
2600	-0.176	-0.486

Corrections for settlement and squat are made on the TC/TI Tape. Periods of reduced speed during actual hydrography are noted in the sounding volumes and on the printouts.

See the attached graph of the correctors versus RPM for each vessel.

SETTLEMENT AND SQUAT CURVE

VESNO 2931, LAUNCH 1015

700 RPM

1000 RPM

1300 RPM

1600 RPM

2000 RPM

2300 RPM

2500 RPM

2600 RPM

RPM	CORRECTION
700	+ .1
1000	+ .2
1500	+ .2
2000	+ .1
2500	- .3
2600	- .5

+ .25

+ .15

+ .05

- .05

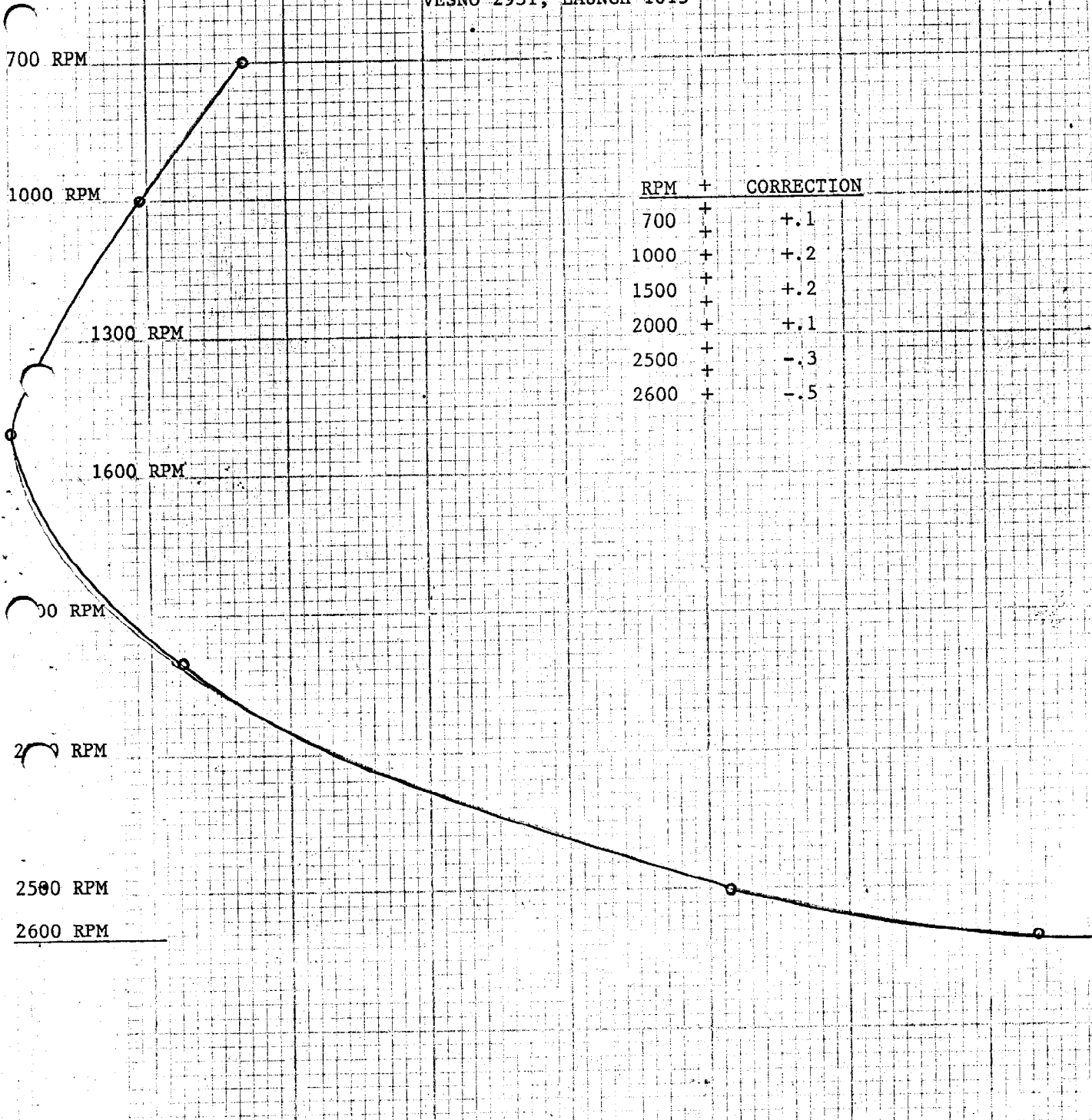
- .15

- .25

- .35

- .45

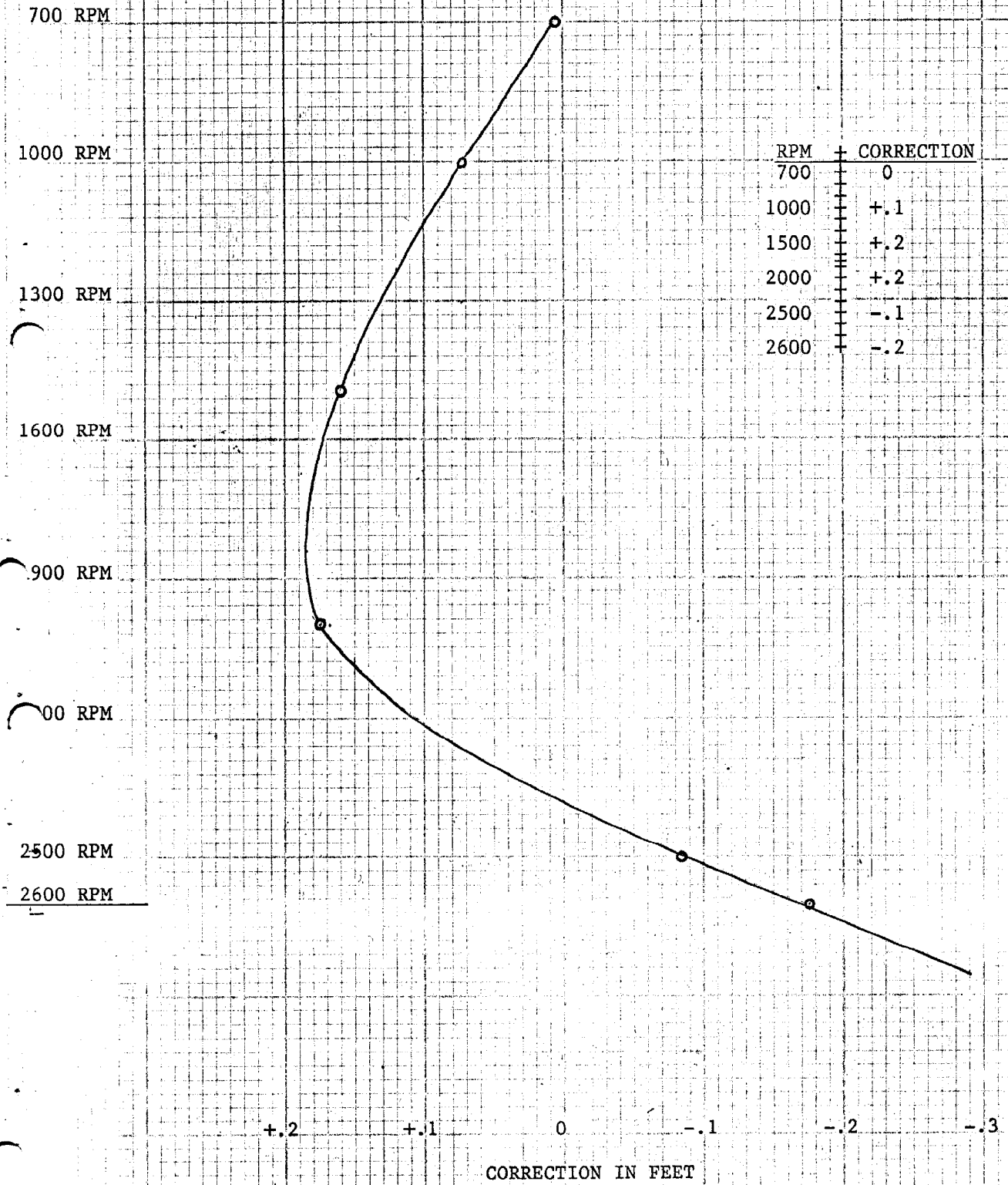
CORRECTION IN FEET





SETTLEMENT AND SQUAT CURVE

VESNO 2932, LAUNCH 1014



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

CORRECTION IN FEET

WH-20-3-78

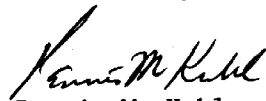
## SIGNAL TAPE

302	6	38	04	28817	075	12	32135	250	0000	000000	H-12-MD-78
304	6	38	07	30707	075	10	57130	139	0000	000000	BMG-141,1977
306	6	38	08	07298	075	10	43724	250	0000	000000	H-9-MD-78
308	6	38	08	31991	075	10	28515	243	0000	000000	H-8.5,1978
310	6	38	09	01924	075	10	25089	139	0000	000000	H-8-MD-78
312	6	38	11	56869	075	09	23217	250	0000	000000	North Beach 2, 1962-75
314	6	38	06	45900	075	11	10118	243	0000	000000	Robin,1978
316	6	38	10	16742	075	09	52087	243	0000	000000	Phoeb,1978
318	6	38	06	47273	075	11	17176	139	0000	000000	H-10-MD-78
320	6	38	10	19064	075	09	56579	139	0000	000000	BMK-141,1977
401	6	37	54	39797	075	21	22991	250	0000	000000	Assateague Lighthouse,1909-67
408	6	38	01	37067	075	14	44685	139	0000	000000	A-01,1978
410	6	38	01	51874	075	14	24270	139	0000	000000	J.C.,1978
414	6	38	02	16244	075	14	16614	139	0000	000000	BMA-141,1977
415	6	38	03	05754	075	13	36809	139	0000	000000	H-13-MD-78
416	6	38	05	04095	075	12	07649	250	0000	000000	Hall,1978

All landmarks are correct as charted. There are no additional landmarks recommended for charting.

## APPROVAL SHEET


Submitted by:



Dennis M. Kuhl  
Lieutenant, NOAA

Supervision of 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.

Approved/Forwarded:



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

GEOGRAPHIC NAMES

H-9788

Name on Survey	Source of Name										1
	A	B	C	D	E	F	G	H	K		
ASSATEAGUE ISLAND											1
											2
											3
											4
											5
											6
											7
											8
											9
											10
											11
											12
											13
											14
											15
											16
											17
										Approved:	18
										<i>Chas. E. Harrington</i>	19
										Chief Geographer - C325	20
											21
										14 Aug. 1979	22
											23
											24
											25

NOAA FORM 77-27 (5-77)		U. S. DEPARTMENT OF COMMERCE NOAA			HYDROGRAPHIC SURVEY NUMBER H-9788	
HYDROGRAPHIC SURVEY STATISTICS						
RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.						
RECORD DESCRIPTION		AMOUNT		RECORD DESCRIPTION		AMOUNT
SMOOTH SHEET		1		BOAT SHEETS & PRELIMINARY OVERLAYS		460
DESCRIPTIVE REPORT		1		LATTICE OVERLAY Received 8-8-79 SMOOTH OVERLAYS: POS. ARC, EXCESS		83
DESCRIP-TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES						1-misc. data
CAHIERS	2-with printouts					
VOLUMES	4					
BOXES			1-Smooth			
T-SHEET PRINTS (List)						
SPECIAL REPORTS (List) 1- Cht. mark-up						
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						4089
POSITIONS CHECKED					300	
POSITIONS REVISED					8	
SOUNDINGS REVISED					206	
SOUNDINGS ERRONEOUSLY SPACED					0	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED					0	
				TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)						
VERIFICATION OF CONTROL					1	
VERIFICATION OF POSITIONS					52	
VERIFICATION OF SOUNDINGS				4	162	
COMPILATION OF SMOOTH SHEET					48	
APPLICATION OF TOPOGRAPHY					0	
APPLICATION OF PHOTOBATHYMETRY					0	
JUNCTIONS					10	
COMPARISON WITH PRIOR SURVEYS & CHARTS					37	
VERIFIER'S REPORT					12	
OTHER					12	
TOTALS				4	334	338
Pre-Verification by P. Niland				11/24/78		11/21/78
Verification by P. Niland, R. Keene, D. Mason				Beginning Date 01/15/79		Ending Date 05/23/79
Verification Check by B. Stephenson				Time (Hours) 7		Date 05/24/79
Marine Center Inspection by Hydrographic Inspection Team (AMC)				Time (Hours) 7		Date 06/26/79
Quality Control Inspection by A. W. Wellman				Time (Hours) 33		Date 8-13-79
Requirements Evaluation by [Signature]				Time (Hours) 4		Date 8/30/79

1 DR Engle 8 hrs 8-21-79

REGISTRY NO. H-9788

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. H-9788

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  
VERIFIER'S REPORT

REGISTRY NO. H-9788

FIELD NO. WH-20-3-78

Maryland, Atlantic Coast, Alongshore Assateague Island

SURVEYED: August 15 through October 22, 1978

SCALE: 1:20,000

PROJECT NO.: OPR-D103

SOUNDINGS: Ross Model 5000  
Fineline Recorder

CONTROL: (Range-Range)  
(Range-Azimuth)  
Del-Norte

Chief of Party ..... K.W.Kieninger  
Surveyed by ..... D.M.Kuhl  
..... N.E.Perugini  
..... D.C.Schultz  
..... F.R.Diaz  
Automated Plot by ..... XYNETICS 1201 Plotter (AMC)  
Verified and Inked by ..... D. V. Mason  
May 21, 1979

1. Introduction

- a. No unusual problems were encountered during the verification of this survey.
- b. The changes shown in red ink in the Descriptive Report were made by the verifier.

2. Control and Shoreline

- a. The source of control is adequately described under Sections F. and G. of the Descriptive Report. Attention is directed to the following:

It was discovered during verification that no corrections for signal heights <sup>were</sup> ~~was~~ applied to the signal tape. The ship was contacted and the problem was not resolved. The height correction does not effect the accuracy of this survey but could <sup>effect</sup> ~~effect~~ future surveys <sup>were</sup> ~~was~~ this signal list is used.

- b. No shoreline manuscripts were available at the time of the survey or during verification. Shoreline detail was transferred, in brown, from a blowup of chart No. 12211, and is shown for orientation purposes only. (See Q.C. Report-item 1)

3. Hydrography

- a. Depths at crossings are in good agreement.
- b. The standard depth curves <sup>are</sup> ~~were~~ adequately delineated. (See Q.C. Report-item 2)



c. The development of the bottom configuration and the investigation of least depths <sup>are</sup> considered adequate except as noted in Section 4.

#### 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. Developments of shoal areas were not in accordance with Section 1.4.3 and Section 4.5.9.2 of the Hydrographic Manual, and Section 3.12 of the Project Instructions.

b. The submerged dangerous wreck, PA, 24 feet reported, charted in latitude  $38^{\circ}09.1'$ , longitude  $74^{\circ}57.2'$ , originates with Local Notice to Mariners No. 18 of 1961. The wreck is the bow section of the AFRICIAN QUEEN. This wreck was not investigated on this survey or the adjoining survey H-9640, 1976. Note: see spike\* at Pos. No. 1156 J.D. 234. \*Considered to be an irrelevant spurious fathogram trace.

c. Spacing of sounding lines should have been reduced when the two types of control methods merged.

#### 5. Junctions

An adequate junction was effected with the following surveys:

H-9759	(1978)	1:20,000	to the north	} Junctional surveys were not available during Q.C. inspection
H-9780	(1978)	1:20,000	to the north	
H-9796	(1978)	1:20,000	to the south	

A junction on the east with Mt. Mitchell survey H-9640 (1976) was not completed. Due to the unavailability of this survey for adjustments, the 60-foot depth curve is not in complete harmony and should be considered further by Quality Control. (See Q.C. Report - item 3)

#### 6. Comparison with Prior Surveys

a.	H-5347	(1933)	1:20,000
	H-5348	(1933)	1:40,000
	H-5353	(1933)-34	1:40,000
	H-5355	(1933)	1:40,000
	H-5357	(1933)	1:20,000

The prior surveys cover the area of the present survey. A comparison between the present and prior surveys reveals a variable pattern of depth differences with present survey depths generally 1 to 10 feet deeper than prior depths. The greatest depth differences occur in the vicinity of latitude  $38^{\circ}10'00''N$ , longitude  $74^{\circ}59'00''W$ . These depth differences are attributed to natural changes in the bottom and the less detailed and less accurate methods employed on the prior surveys, ~~with the addition of several soundings from H-5355 (1933) and H-5357 (1933) the~~ See Q.C. Report - item 4)

→ Soundings deleted during Q.C. inspection

The

present survey is considered adequate to supersede the prior surveys in the common area. (See Section K. of the Descriptive Report for additional information on comparison.)

7. Comparison With Chart #12211 (2<sup>5</sup>th Edition, ~~February 24, 1979~~ <sup>January 7, 1978</sup>)  
(See Q.C. Report - item 5a)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys and requires no further consideration. (See Section L. of the Descriptive Report for additional information on Chart Comparison.) (See Q.C. Report - item 5-b)

Attention is directed to the following:

1) Two submerged dangerous wrecks, the 53 foot fishing vessel COURAGEOUS, PS1 Item #28, shown on chart #12211, in latitude  $38^{\circ}10.2'N$ , longitude  $75^{\circ}02.27'W$  and the fishing vessel HIWAL, PS1 Item #30, at latitude  $38^{\circ}05.22'N$ , longitude  $75^{\circ}03.45'W$ , originate with chart letter #1118 of 1953 and N.M. #50 of 1967. The existence of these wrecks were neither verified nor disproved by the present survey and should be retained as charted.

2) The dashed-circled shoal area shown on chart #12211, in latitude  $38^{\circ}04.5'N$ , longitude  $75^{\circ}01.5'W$ . The existence of this shoal area is verified and should remain ~~as~~ charted.

b. Aids to Navigation

The private floating aid charted at latitude  $38^{\circ}11.7'N$ , longitude  $75^{\circ}06.9'W$  has been proven to be non-existent and should be deleted from the chart. (See Section N. of the Descriptive Report for additional information.)

8. Compliance With Instructions

This survey adequately complies with Project Instructions, except as noted in Section 4 of this report.

9. Additional Field Work

This is considered an adequate basic survey, and no additional work is recommended at this time with the following exceptions,

During future field work in the area, the items discussed in item 4.b and 7a() should be investigated and verified or disproved.

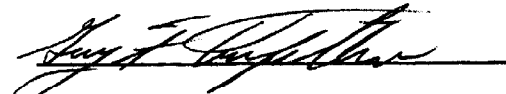
APPROVAL SHEET  
FOR  
SURVEY H-9788

- 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:

6/27/79

Signed:



Title:

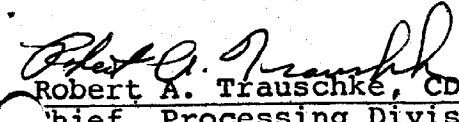
Chief, Verification Branch

Inspection Report

H-9788


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.

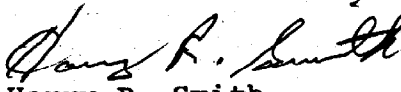
Examined and Approved:  
Hydrographic Inspection Team  
Date:

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

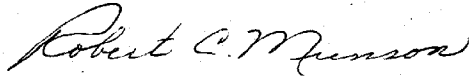
ABSENT  
Carl W. Fisher, CDR, NOAA  
Chief, Operations Division

Absent  
R. D. Sanocki  
Technical Assistant  
Processing Division

  
Maureen R. Kenny, LT, NOAA  
Chief, Electronic Data  
Processing Branch

  
Harry R. Smith  
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

OA/C352:KWW

August 13, 1979

TO: *R. H. Carstens*  
R. H. Carstens  
Acting Chief, Hydrographic Surveys Division

THRU: Chief, Quality Control Branch

FROM: K. W. Wellman *K. W. Wellman*  
Quality Evaluator

SUBJECT: Quality Control Report for H-9788 (1978), Maryland, Atlantic Coast, Off Central Portion of Assateague Island

A quality control inspection of H-9788 was accomplished to monitor the survey for obvious deficiencies with respect to data acquisition, delineation of the bottom, determination of least depths and navigation hazards, junction, shoreline transfer, decisions and actions by the verifier, and cartographic presentation of data.

In general, the present survey was found to conform to National Ocean Survey standards and requirements except as discussed in the Verifier's Report, the HIT Report, and as follows:

1. Section 2-b of the Verifier's Report is supplemented by the following:

Minor shoreline changes were made in areas where present survey depths are in conflict with the charted shoreline. Such minor alterations are consistent with the changeable nature of the shoreline in the area.

2. Section 3-b of the Verifier's Report is supplemented by the following:

Supplemental and dashed depth curves were added to emphasize isolated shoal features.

3. Section 5 of the Verifier's Report is supplemented by the following:

It is further noted that scattered depth differences of 1 to 3 feet exist in the junctional area between the present survey and adjoining survey H-9640 (1976). Such differences are attributed to the combined effects of sea conditions and slight random shifting of bottom sediments during the intervening 2 years. The noted minor depth differences are not



inconsistent with the designation of the junction as adequate and, further, do not necessitate a butt junction in the overlapping area. Accordingly, necessary reconciliation of overlapping depth curves has been accomplished and an adequate junction between the present survey and H-9640 has been effected.

4. Section 6-a of the Verifier's Report is supplemented by the following:

The shoreline has eroded and accreted in a random fashion, generally within a range of  $\pm 70$  meters. The noted shoreline changes are attributed to natural causes.

5. Reference section 7-a of the Verifier's Report:

a. The proper edition of the chart was not used during verification. It is required that the chart(s) used during verification be ". . . the same edition available to the hydrographer at the time of the survey . . . ." (See section 6.3.10 of the Hydrographic Manual--Fourth Edition and the memorandum dated March 21, 1977, from the Office of Marine Surveys and Maps entitled "Verifier's Report Format.") The referenced section of the Verifier's Report was appropriately annotated during quality control inspection.

b. The referenced section of the Verifier's Report does not include any indication that the charted hydrography is superseded by the present survey. (See section 6.6(12-a) of the Hydrographic Manual--Fourth Edition.)

Section 7-a of the Verifier's Report is supplemented by the following:

Except as indicated above, the present survey is adequate to supersede the charted hydrography within the common area.

6. The boat sheets and arc overlay were not forwarded with the survey records. (See sections 7.3.2 and 8.3 of the Hydrographic Manual--Fourth Edition.) It was therefore necessary to request the Electronic Arc Overlay during the quality control inspection. The boat sheets were not available during the quality control inspection; however, they were subsequently received at Headquarters.

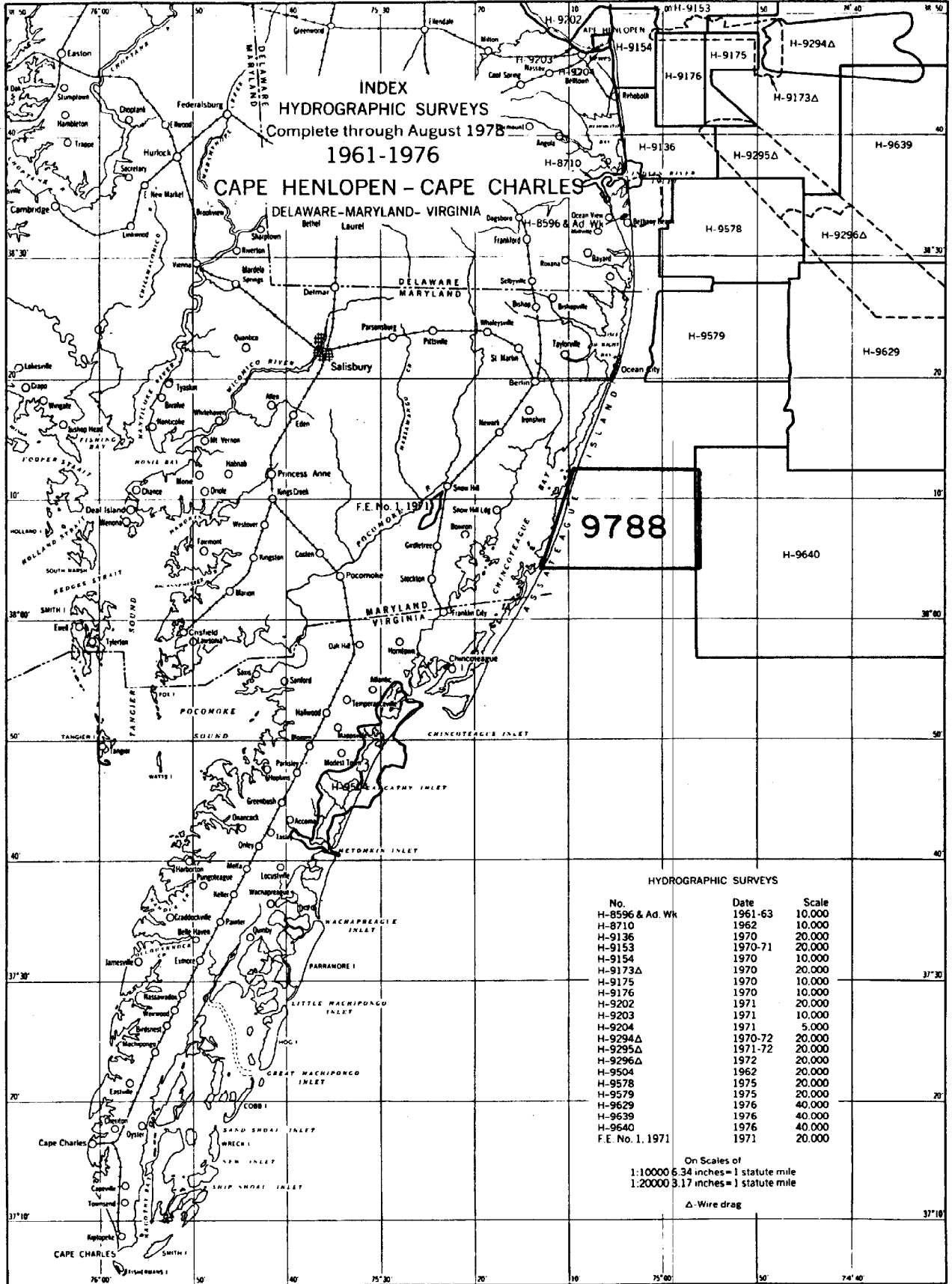
cc:  
OA/C35  
OA/C351

oops!

DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration

National Ocean Survey  
Rockville, Maryland

Hydrographic Index No. 69 K



HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-8596 & Ad. Wk	1961-63	10,000
H-8710	1962	10,000
H-9136	1970	20,000
H-9153	1970-71	20,000
H-9154	1970	10,000
H-9173Δ	1970	20,000
H-9175	1970	10,000
H-9176	1970	10,000
H-9202	1971	20,000
H-9203	1971	10,000
H-9204	1971	5,000
H-9294Δ	1970-72	20,000
H-9295Δ	1971-72	20,000
H-9296Δ	1972	20,000
H-9504	1962	20,000
H-9578	1975	20,000
H-9579	1975	20,000
H-9629	1976	40,000
H-9639	1976	40,000
H-9640	1976	40,000
F.E. No. 1, 1971	1971	20,000

On Scales of  
1:10000 6.34 inches = 1 statute mile  
1:20000 3.17 inches = 1 statute mile

Δ - Wire drag

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 9788

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
12211 (x-dwg)	3-27-80	Martha McInnis	<del>Full Part Before After Verification Review</del> Inspection Signed Via Drawing No. <u>40X</u>
12200	4-24-80	Martha McInnis	<del>Full Part Before After Verification Review</del> Inspection Signed Via Drawing No. <u>46</u> Rev. Jo'C 4-30-80
13003	6-4-86	Barbara Lovitz	<del>Full Part Before After Verification Review</del> Inspection Signed Via Drawing No. <u>#60 NO CORR.</u>
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
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