10044

Diagram No. 1221-2

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. MI-20-2-82

Office No. H-10044

LOCALITY

State Virginia

General Locality Atlantic Ocean

Locality Blackfish Bank to Porpoise Bank

1982

CHIEF OF PARTY
CAPT. J. A. Yeager

LIBRARY & ARCHIVES

DATE Janurary 3, 1985

☆U.S. GOV. PRINTING OFFICE: 1980—766-230

10044

Area 2
Chts
12210
12211
12200

Area 1
Chts
13003

TO SIGN C...
SEE "RECORD OF APPLICATION"

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO. H-10044 ✓

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. MI 20-2-82 ✓

State Virginia ✓

General locality Atlantic Ocean ✓

Locality Blackfish Bank to Porpoise Banks ✓

Scale 1:20,000 Date of survey 12 Aug 1982-06 Nov 1982

Instructions dated 05 May 1982 Project No. OPR-D103-MI-82

Vessel NOAA Ship MT MITCHELL (VESNO 2220) ✓

Chief of party J. Austin Yeager, Captain, NOAA ✓

Surveyed by Ship's Officers (See "Remarks")

Soundings taken by echo sounder, hand lead, pole Echo sounder, Lead line

Graphic record scaled by ER, GY KP, BC, DC, CM, DH, JM, PT, RW, EM, UG, RC, BM, MS, CS

Graphic record checked by ER, RW, EM, UG, RC, BM, MS, CS

Protracted by N/A Automated plot by AMC Digital Plotter (XYNETICS 1201 Plotter)

Verification by J. Scott Bradford (AMC Verification Group)

Soundings in fathoms feet at MLW MLLW feet at MLLW ✓

REMARKS: CAPT J. Austin Yeager

LCDR Lewis A. Lapine — ENS Bobby L. Coakley

LT Peter M. Thomas (British Royal Navy) — ENS Ben Donald E. Crews

LTJG ~~Fred~~ Fredrick W. Rossmann — ENS Craig N. McLean

LTJG Garner R. Yates — ENS Robert Darryl Hennegar

LTJG ~~Ken~~ Kenneth P. Peters — ENS John A. Miller

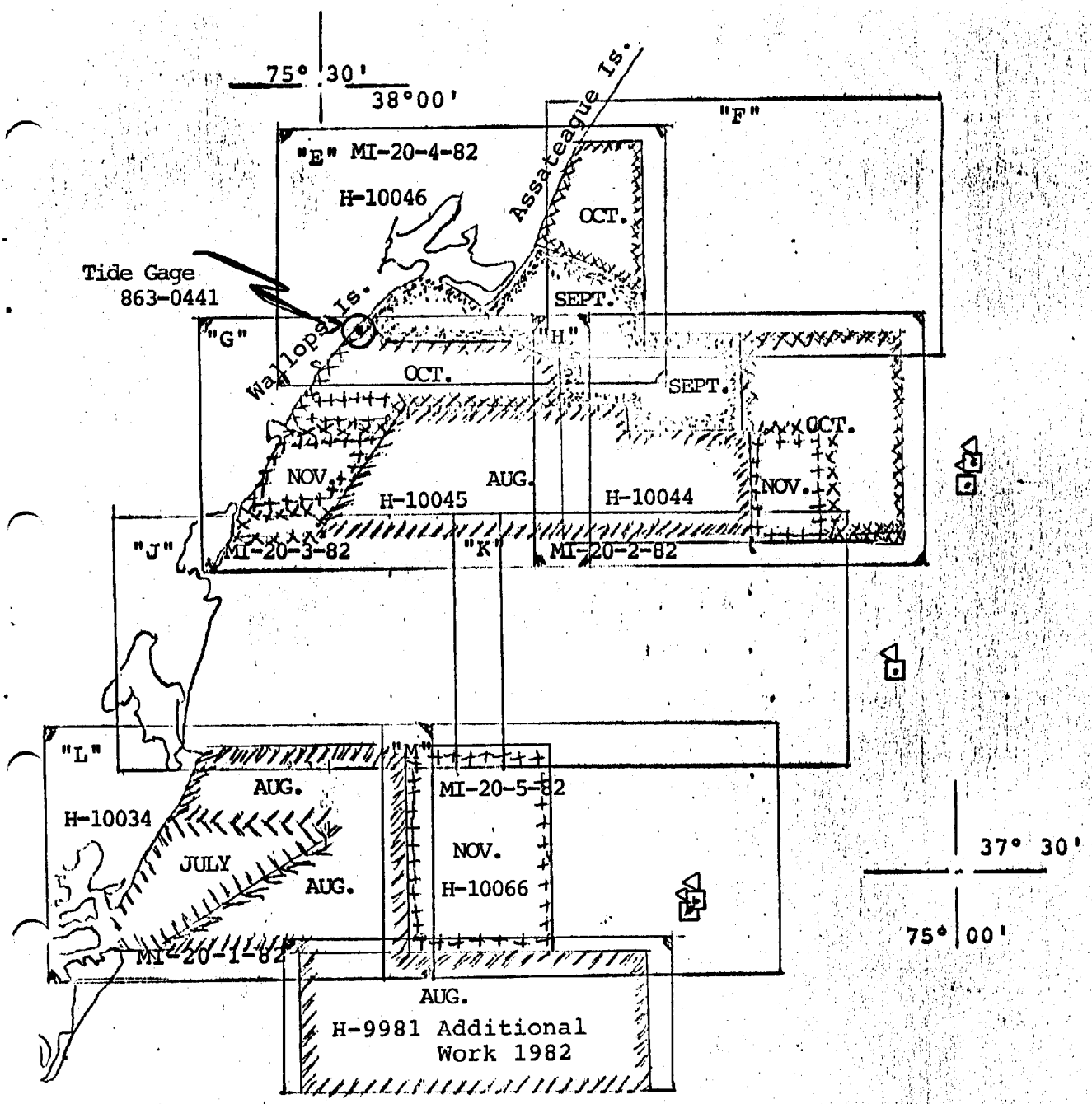
Notes in the Descriptive Report were made in red during office processing STANDARDS CK'D 1-4-85

AWOIS checked 5/30/85 SJV

SURF checked 5/30/85 SJV C.Loy

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537.

☆ U.S. GPO: 1976-0-768-081/1207



JULY	AUG.	SEPT.	OCT.	NOV.	
—	1856.3	525.0	467.8	725.2	LNM HYDRO (SHIP)
—	195.4	22.8	47.5	55.0	SNM HYDRO (SHIP)
269.6	587.6	265.1	563.8	222.7	LNM HYDRO (LAUNCH)
21	20	18	34.4	20.0	SNM HYDRO (LAUNCH)
54	47	36	53	21	BOTTOM SAMPLES
2	1	1	1	—	NANSEN CAST
—	784.7	271.9	324.8	396.6	MISC., NM (SHIP)
199.6	348.4	220.6	263.0	227.6	MISC., NM (LAUNCH)

OPR-D103-MI-82, ASAP
PROGRESS SKETCH
HYDROGRAPHIC OPERATIONS
NOAA SHIP MT. MITCHELL S-222
J. Austin Yeager, Capt., NOAA

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* Removed from the original Descriptive Report and filed with the field data.

DESCRIPTIVE REPORT
to accompany
Survey H-10044
(Field No. MI20-2-82)
NOAA Ship MT MITCHELL S-222
CAPT J. Austin Yeager, NOAA
Chief of Party

A. PROJECT

This survey was conducted in accordance with Project Instructions OPR-D103-MI-82, Atlantic Seaboard Area Project (ASAP), DELMARVANC Phase dated 5 May 1982. These instructions were amended by changes 1, 2, and 3 dated 21 June 1982, 7 August 1982, and 10 December 1982.

B. AREA SURVEYED

The area surveyed is offshore of Assateague and Wallops Islands, Virginia, that is between Porpoise Banks and Blackfish Bank. The bottom slopes gently from 34 feet on the northwestern end of the survey to over 100 feet on the eastern edge of the survey. The survey area is roughly defined by connecting the following points:

Lattitude	Longitude
~~37°41.6'N~~ 37°42' 32"N	~~75°19.6'W~~ 75° 02' 23"W
~~37°49.5'N~~ 37° 42' 35"N	~~75°19.6'W~~ 75° 18' 05"W
~~37°49.5'N~~ 37°49' 27"N	~~75°14.7'W~~ 75° 18' 14"W
~~37°51.3'N~~ 37°49' 26"N	~~75°14.7'W~~ 75° 14' 41"W
~~37°51.3'N~~ 37° 50' 24"N	~~75°01.5'W~~ 75° 14' 36"W
~~37°41.6'N~~ 37° 50' 19"N	~~75°01.5'W~~ 75° 02' 18"W

The northwest corner of the survey area, the Blackfish Bank Area, was not included as part of the ship survey due to the shallow depths in this area. This area was included with MI-20-4-82, H-10046.

The survey commenced on Julian Date 224, 12 August 1982, and was completed on Julian Date 310, 6 November 1982. Survey data was collected on the following dates:

Julian Dates	Calendar Dates
224-225	12-13 Aug 82
238-241, 242	26-29 Aug 82, 31 AUG 82
246	3 Sep 82
265-272	22-29 Sep 82
281-287	8-14 Oct 82
303-307	30 Oct - 3 Nov 82
310	6 Nov 82

C. SOUNDING VESSELS

The NOAA Ship MT MITCHELL, S-222, (VESNO 2220) was the only sounding vessel used for this survey. No unusual problems were encountered.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS ✓

The following sounding equipment was utilized during the survey:

(a)	~~Fathometer~~ Echosounder	
	Ross Model 5000 Fineline Depth Recorder	#1050
	Ross Model 4000 Transceiver	#1050
	Ross Digitizer	#1050
(b)	Side Scan Sonar	
KLEIN	Hydroscan Model 521T	#249
KLEIN	Hydroscan Towfish	#417M

All survey records were scanned by survey department personnel and checked by the Officer-in-Charge. Peaks or deeps considered significant that occurred between soundings were inserted on the electronic corrector tape. Digitizing errors were corrected to agree with the graphic record via the electronic corrector tape.

Manual depths were entered on Julian Dates 265, 270 and 271. These depths were entered along the line that approximated the average depth. The paper speed on the Ross ~~Fathometer~~ echosounder during these times was reduced from 3 to 2 to compress the analog depth record, thereby making it easier to approximate the average depth.

Phase calibration checks were made at frequent intervals. Necessary adjustments were made and noted in the sounding volume and on the ~~fathogram~~ echogram. Any departure of the trace from the calibration due to phase difference was corrected during the scanning process.

Velocity correctors were obtained from 3 Nansen Casts. The dates and locations of the casts were:

Cast	JD	Date	Location LATITUDE	LONGITUDE
3	237	8/25/82	37°46.1'N	74°58.7'W
4	264	9/21/82	37°44.9'N	74°59.2'W
5	303	10/30/82	37°37.8'N	75°02.7'W

A vertical cast was taken on 22 July 1982, JD 203. A transducer Draft of 13.9 feet was established by making a direct comparison between leadline soundings and echo soundings.

Normally, all soundings were taken with the skeg mounted transducer. The skeg transducer, mounted on the centerline of the ship, is 32 meters aft of the navigation antenna. Sound Room 2's transducer was used for sounding during the period of Julian Date 303 through Julian Date 309. The change of transducers was made to reduce the error caused by the failure of the gyrocompass input to the hydroplot. Antenna distance for Sound Room 2's transducer is six meters. Antenna distance (ANDIST) was applied to the online and offline programs via the parameter tape.

Predicted tides were based on daily predictions for Hampton Roads, Virginia (863-8610). Predicted tides were applied during sounding operations using RK-112. On those occasions when tides were not applied online, predicted tides were applied during the offline processing. Smooth tides were requested from the Chief, Tides and Water Levels Branch (OA/C23) dated 19 November 1982 for the period of hydrography.

E. HYDROGRAPHIC SHEETS

This survey was plotted on Mylar Field Sheets prepared on the NOAA Ship MT MITCHELL's ~~Hydroplot~~ HYDROPLOT/HYDROLOG System.

Number of Sheets	Type	Skew
5	Mainscheme	0,21,54
4	Crosslines & Development	0,21,54
2	Bottom Samples	0,21,54

Five field sheets, 3 mainscheme and 2 crosslines and developments are part of the side scan sonar data. These sheets are marked "To Be Forwarded with Side Scan Sonar Data". These sheets are additional plots of the survey and they, along with the sonargrams, will be forwarded by OA/CAM3 to OA/C353 separately from other data from this survey.

Soundings on the field sheets are corrected for draft, predicted tides, digitizing errors and sound velocity. Field sheets are not corrected for smooth tides, settlement and squat or instrument error; these corrections will be applied on the final smooth sheet prepared by the Atlantic Marine Center (OA/CAM3) Processing Division, Norfolk, VA.

All field records and the following tapes have been forwarded to the Atlantic Marine Center, Processing Division:

Hyperbolic Master Tape
Range-range Master Tape
Electronic Corrector Tape
Velocity Corrector Tape
Parameter Tapes
Signal Tape
TC/TI Tape

F. ELECTRONIC CONTROL STATIONS

The following Electronic Control Stations were used for this survey:

Station No.	Station Name	Year Est.	Latitude (N)	Longitude(W)
100	GRAVITY 1965,1980	~~1965~~ (1980)	36°40'31.453"	75°54'56.471"
200	BIRD 1909, RM5	1982	37°44'17.414"	75°35'11.904"
300	JONES 1981	1981	37°53'16.699"	75°20'31.186"

All stations are monumented and were established using Third-Order, Class I Survey Methods. Stations were recovered either by NOAA Ship MT MITCHELL personnel or personnel from Operations Division, Atlantic Marine Center.

A complete list of stations used for the project and their geographic positions are included in Appendix F of this report.

G. HYDROGRAPHIC POSITION CONTROL

Sounding line position control for this survey was obtained using a medium range system, HYDROTRAC, manufactured by Odum Offshore Surveys, Inc. The system was utilized both in the hyperbolic and range-range modes. The range-range mode was utilized on the eastern portion of the survey because this area was outside of the 10 meter "drms" error curve in the hyperbolic mode. The range-range operations were conducted on Julian Dates 281 through Julian Date 286. All other portions of the survey were run in the hyperbolic mode. The equipment used for this survey was:

Location	Equipment Name	Model	Serial No.
Ship	Hydrotrac Receiver	703	327
(VESNO 2220)	Hydrotrac Power Amplifier	74-87	538
	Master		122
	Sawtooth Recorder		8501
Slave 1	Receiver/Slave Drive Unit		226 Julian Days 224-310
(Station 100)	Linear Power Amplifier	74-87	536
	Coupler		130
	Power Supply		754
Slave 2	Receiver/Slave Drive Unit		215*Julian Days 224-282
	Receiver/Slave Drive Unit	257	214 Julian Days 282-310
(Station 300)	Linear Power Amplifier		539
	Coupler		133*
	Power Supply		752
Master	Master		131*Julian Day 224-310
	Master		122 Julian Day 310
(Station 200)	Coupler		131
	Linear		540
	Power Supply		102

The "*" notes a change in equipment. A broken wire on the inside of the insulator caused the coupler to be changed on 3 October, JD 276. The wire was broken while reinstalling the antenna, which had been moved to do some survey work at Station JONES, 1981. The Slave Drive Unit at Station 300 went off frequency on 9 October, JD 282, and was changed. The lack of heat in the trailer on 6 November, JD 310, may have caused the master to drift off frequency.

Lane counts and partial lane corrections were normally determined using three point sextant fixes and RK 561. The calibrations were taken 3 to 5 miles offshore of Wallops Island, Virginia. Calibrations were not taken within the survey limits due to the lack of visual control. LORAN-C was used to calibrate the Hydrotrac System, for the taking of bottom samples only, on 13 Oct 82, JD 286. Weather conditions (fog) made it impossible to take a visual calibration on that day after the system was switched from range-range to hyperbolic. A circle calibration at Buoy R "10", Parramore Bank Lighted Whistle, Latitude 37° 32.0' N Longitude 75° 25.9' W showed P_1 to be one lane high. The method by which the position was determined using LORAN-C follows:

A LORAN-C Position was taken from the NORTHSTAR 6000, serial number 70408. This position was plotted on Chart 12210, 1:80,000 scale. A three arm protractor was re-entered on that position and used to determine the angles between the charted visual stations onshore. These angles were then entered into RK561 to determine correctors. This calibration was used only for bottom samples and the position accuracy is felt to be sufficient for that purpose.

A sawtooth recorder was used to monitor the whole lane count. The whole lane count on the sawtooth recorder was annotated by hand and checked against the digital readout on the Hydrotrac receiver.

A complete list of all electronic correctors is continued in Appendix C.

H. SHORELINE

There is no shoreline in the survey area.

I. CROSSLINES

A total of 86.4 nm of crosslines ~~were~~ was surveyed and represents 8% of the total main scheme. Crosslines were run ~~between~~ at angles of 45° and 90° to the east-west mainscheme. A total of 282 soundings were compared. The results of the comparison are:

Exact Agreement	32%
+/- 1 foot	75%
+/- 2 feet	90%
+/- 3 feet	94%
+/- 4 feet & greater	100%

The majority of the crossline soundings show good agreement, 94% agree by +/- 3 feet. The other 7% with differences of 4 feet or more appear to be random throughout the field sheet and may have been created when manual depths were being entered.

J. JUNCTIONS - See section 5 of the Evaluation Report.

This survey junctions with the following surveys:

Area of Junction	Field #	Reg #	Scale	Date	Vessel
Northwest Corner	MI-20-4-82	H-10046	1:20,000	1982	2225
Western End	MI-20-3-82	H-10045	1:20,000	1982	2220
Western End	MI-20-3-82	H-10045	1:20,000	1982	2225

Excellent agreement was displayed between this survey and H-10046, Launch 1008 (VESNO 2225) surveyed the junction area. The agreement between the ship and launch data is good with 100% of the differences being 2 feet or less, with the launch work being deeper. Application of smooth tides and revised velocity correctors alleviated the differences.

Most of the junction between this survey and H-10045 was conducted using the same sounding vessel (VESNO 2220). All soundings agree by +/- 1 foot. The agreement between the ship and launch data is good with 100% of the differences being two feet or less~~, with the launch work being deeper~~.

K. COMPARISON WITH PRIOR SURVEYS - See also section 6 of the Evaluation Report.

Comparisons were made with the following surveys:

Survey	Scale	Year
H-5702	1:40,000	1934
H-5715	1:40,000	1934
H-5673	1:40,000	1939

Comparison with H-5715 reveals good agreement percentages and magnitude of agreements between the current survey and prior survey. No noticeable change in the bottom ~~contour~~ curves was evident during the comparison, with most soundings in agreement by +/- 3 feet.

Comparison with H-5702 shows good agreement between the surveys. No noticeable change in the bottom ~~contour~~ curves was evident during the comparison, with most soundings in agreement by +/- 3 feet.

Comparison with H-5673 shows good agreement between the surveys. No noticeable change in the bottom ~~contour~~ curves was evident during the comparison, with most soundings in agreement by +/- 3 feet.

The following Presurvey Review Items were searched for during the survey:

PSR #37: 37°50'00.0 N, 75°11'00.00"W, reported in local Notice to Mariners 17/72. The vessel is described as a 61-foot long fishing vessel with white hull. The vessel is reported to have sunk in 63 feet of water.

This PSR item was an information item. 200 meter line spacings with 150 meter range, i.e. 100% side Scan Sonar Coverage, was conducted in the area of the wreck. No evidence of the wreck was observed. It is recommended that this wreck be charted as PD (Position Doubtful). See section 7.a.1 of the Evaluation Report

PSR #38: 37°48'00" N, 75°14'48"W, reported in Notice to Mariners 48/69. Listed only as a wreck. This PSR Item was an information item. A 400% Side Scan Sonar search at 100 meter line spacing and 150 meter range in area 1 mile square around the charted position revealed no sign of wreck. It is recommended that this item be deleted from the chart based on the 400% Side Scan Sonar Coverage. See section 7.a.2 of the Evaluation Report

PSR #39: 37°45'48.00" N, 75° 13'54.00" W, a 25-foot sounding reported in approximately 50 feet of water. Information is from a 1959 Coast Guard Broadcast and suggests a possible sunken wreck. A 400% side scan search at 100 meter line spacing and 150 meter side scan range was run for 1 square mile. The center of the square is the charted location of the sounding. No evidence was found of the possible wreck or the shoal depth recorded. Least depth in the area is 52 feet. Recommend that the charted 25-foot depth be removed. See section 7.a.3 of the Evaluation Report.

PSR #51: 37°48'54.00" N, 75°03'42.00" W, Local Notice to Mariners 50/78 reported a fishing vessel sunk at this approximate position. A 400% side scan survey search at 100 meter line spacing and 150 meters side scan range for a radius of 1 mile about the charted position showed no indication of a sunken wreck. It is recommended that this item be deleted from the chart based on the side scan search. See section 7.a.4 of the Evaluation Report.

PSR #142: 37°45'47.2" N, 75°11'50.8" W, USPS Report of a broken up steel vessel with least depth of 45'. Wreck is a popular local dive and known as USS Bone. On JD 2225 the ship, using side scan sonar, searched for the wreck. The wreck was found. The wreck is in 60 feet of water at position 37°45'45.2" N, 75°11'49.3" W. This position was plotted on the boat sheet using RK201. Divers, LTJG Rossmann, Ast Collins and AB Jennings investigated the wreck on JD 242, 30 August 1982. The divers found a metal hull vessel resting on the bottom. The vessel has a growth of coral making it impossible to determine a name for the ship. The vessel has a north-south orientation. The bow of the vessel is the highest point, found by the divers, from the bottom with a least depth of 45 feet. The water depth in the area around the wreck is in the 60 foot range. A scour along the eastern side of the wreck has a depth of 70 feet. Visibility at the dive site was roughly 10 to 15 feet. During the dive, the launch drifted over the wreck with the fathometer running. This echogram is included with the survey data for information only. It is recommended that the wreck be plotted on the chart at 37°45'45.2" N, 75°11'49.3" W with a least depth of 45 feet. Position determined from "xy" taken on line when passing over wreck. This geographic position ~~co~~ compared favorably with g.p. scaled at position 9617 when the survey line ran over the wreck, that is the towfish ran over the wreck. Plotted in Latitude 37°45'46.73" N, Longitude 75°11' 50.86"W with a least depth of 44 feet

L. COMPARISON WITH THE CHART See section 7 of the Evaluation Report.

This survey was compared with the 26th Edition of Chart 12210 (Chincoteague Inlet to Great Machipongo Inlet) dated 31 October 1981. Chart 12210 is a 1:80,000 scale chart. A comparison of 311 soundings from a 1:20,000 scale enlargement of chart 12210 yielded the following results:

26% of soundings in exact agreement
74% of soundings in agreement by +/- 3 feet
19% of soundings disagree by +/- 5 feet with the soundings from this survey being deeper.

A slight shift was noted in the ~~contours~~ curves on the eastern end of the survey. This shift may be the result of the differences in positioning control between the current and prior survey. Also, some distortion exists in the enlargement used for comparison.

All the charted features in this survey area were Presurvey Review Items. These PSR Items were addressed in section K of this report. One additional item, a charted 37-foot sounding at Latitude 37°48.1' N, Longitude 75°05.7' W, is probably an error in the typesetting for the chart. It should be 87 instead of the charted 37 as indicated on the chart locating PSR Items. It is recommended that the present survey soundings supersede the charted 37-foot depth. Concur. 87 foot sounding originates with H-5673 (1934). Present survey depths are 82 to 96 feet in this area.

M. ADEQUACY OF THE SURVEY ✓

This survey is considered complete and adequate to supersede prior surveys for charting.

N. AIDS TO NAVIGATION - See section 4.e of the Evaluation Report

Blackfish Bank Lighted Whistle, Buoy "8", at Latitude 37°50.6' N, Longitude 75°12.1' W was positioned during the survey, although it was not in the surveyed area. It is a Red Structural Buoy with a radar reflector. The buoy has a flashing white light with an interval of 2.5 seconds. The buoy serves as a warning for the 25-foot shoal at Blackfish Bank. A scaled position taken from detached positions 1318 and 1319 placed the buoy at Latitude 37°50.6' N, Longitude 75°12.2' W. The description of the buoy in CG-158, 1982 Light List Volume I Atlantic Coast, is accurate.

There were no other Aids to Navigation in the survey area.

O. STATISTICS

Linear nautical miles of mainscheme hydrography	1118.6 Nm
Linear nautical miles of crosslines	86.4 Nm
Linear nautical miles of development	220.4 Nm
Total miscellaneous miles	951.5 Nm
Total miles run	2376.9 Nm
Square miles of hydrography	108
Total number of positions	4127
Nansen casts	3
Bottom samples	58

P. MISCELLANEOUS

A side scan sonar unit was used during portions of this survey. Although the unit does not yield depths, it appears to be a useful tool for the hydrographer. PSR #142 was found with the aid of the side scan sonar. A pass made directly over the wreck gave little indication of a wreck on the fathogram, while the side scan gave a graphic description of the wreck. It should be noted that side scan operations reduce the ship's speed to six knots or less. Side scan operations are also weather dependent, wave action causes surface refraction on the sonargram. This surface refraction deteriorates the useful range of the system. Side scan operations yield 100% bottom coverage, in some areas this coverage may be advantageous to the hydrographer and the mariner. The sonargram also shows changes in bottom texture by changes in the contrast displayed on the sonargram. This information will be useful in determining bottom types, sand, mud, gravel, etc., once a better understanding of the sonargram is achieved, and along with the fathogram will provide a better interpretation of the ocean bottom being surveyed.

A special report was written on the side scan operations (see section S).

No information on currents was obtained for this survey area.

Q. RECOMMENDATION

It is recommended that this survey supersede all prior surveys.

It is recommended that standard procedures for operating the side scan sonar be formulated along with some procedures to determine an approximate postion of side scan contacts.

R. AUTOMATED DATA PROCESSING

The following HYDROPLOT Programs were used to acquire and process the data:

		Date
RK 112	Hyperbolic, R/R Hydroplot	03/19/81
RK 201	Grid, Signal, and Lattice Plot	04/18/75
RK 210	Hyperbolic Non-real Time Plot	02/02/81
RK 211	Range-Range Non-real Time Plot	02/02/81
RK 300	Utility Computations	10/21/80
RK 330	Data Reformat and Check	05/04/75
RK 561	H/R Geodetic Calibration	02/19/76
RK 530	Velocity Corrections computations	05/10/76
RK 602	Extended Line Oriented Editor	05/20/75
PM 360	Electronic Corrector Abstract	02/02/76
AM 500	Predicted Tide Generator	11/10/72

S. REFERENCE TO REPORTS

Side Scan Sonar Report

Horizontal Control Report

Respectfully submitted,

Frederick W. Rossmann

LTJG NOAA

APPENDIX K

APPROVAL SHEET

Approval Sheet

Date Jan 6, 1983

Survey H-10044

Field No. MI-20-2-82

The field work for this survey was conducted under my daily review and supervision. I have reviewed this report with the final field sheet and approve them and the accompanying records. Together they represent a complete survey adequate to supercede all prior surveys for charting purposes, with exceptions noted in the body of this report.

J. Austin Yeager

Captain J. Austin Yeager, NOAA
Commanding,
NOAA SHIP MT MITCHEL

APPENDIX F

LIST OF STATIONS

MASTER SIGNAL TAPE PRINTOUT

OPR D103-MI-82 DELMARVANCE

10/29/82 42 SIGNALS

001	100	4	36	40	31454	075	54	56471	250	0000	171859	
002	110	4	36	54	16158	075	42	47123	139	0000	000000	*
003	120	4	37	23	39409	075	42	31434	139	0000	000000	*
004	125	4	37	23	39453	075	42	31515	139	0000	000000	*
005	130	0	37	27	12013	075	40	30714	139	0013	000000	*
006	131	6	37	27	11947	075	40	30639	139	0015	000000	*
007	132	2	37	27	12019	075	40	30565	250	0013	000000	*
008	135	4	37	27	39565	075	40	15726	139	0000	000000	*
009	140	4	37	29	31700	075	39	48219	139	0000	000000	*
010	142	0	37	32	11100	075	37	24750	139	0000	000000	*
011	145	6	37	34	33483	075	36	01191	139	0000	000000	*
012	146	4	37	34	23559	075	37	03467	139	0000	000000	*
013	150	0	37	35	21197	075	36	57542	139	0000	000000	*
014	155	4	37	36	21103	075	38	45122	139	0000	000000	*
015	160	4	37	37	12105	075	38	52930	139	0000	000000	*
016	165	3	37	38	05988	075	35	53860	139	0000	000000	*
017	167	4	37	40	21070	075	35	40852	139	0000	000000	*
018	170	1	37	41	41887	075	35	11562	139	0000	000000	*
019	175	4	37	41	49767	075	36	50225	139	0000	000000	*
020	180	5	37	44	16918	075	35	09494	139	0000	000000	*
021	200	2	37	44	17414	075	35	11904	250	0000	171859	
022	210	4	37	46	25644	075	33	44864	139	0000	000000	
023	240	5	37	49	00905	075	30	11209	139	0000	000000	
024	250	7	37	49	48629	075	31	22808	139	0000	000000	
025	270	3	37	50	32204	075	28	48887	139	0000	000000	
026	273	4	37	51	08099	075	28	16909	139	0000	000000	
027	280	4	37	52	34534	075	26	38652	250	0000	000000	
028	288	7	37	51	46270	075	22	03968	250	0004	000000	*
029	290	0	37	51	48970	075	22	06649	139	0000	000000	
030	291	7	37	51	48913	075	22	06592	250	0006	000000	*
031	299	5	37	53	15578	075	20	31626	139	0007	000000	*
032	300	0	37	53	16699	075	20	31186	250	0000	171859	
033	310	4	37	54	39797	075	21	22991	139	0000	000000	
034	319	6	37	55	09071	075	19	21586	139	0000	000000	*
035	320	4	37	55	09696	075	19	22183	139	0000	000000	*
036	321	2	37	55	10324	075	19	22052	250	0006	000000	*
037	324	3	37	55	50303	075	18	57172	250	0000	000000	*
038	327	3	37	56	40422	075	18	33276	250	0000	000000	*
039	330	3	37	57	27186	075	17	56400	250	0000	000000	*
040	340	3	37	58	20864	075	17	15574	250	0000	000000	*
041	350	3	37	59	10652	075	16	35025	250	0000	000000	*
042	370	3	38	00	55525	075	15	17408	139	0000	000000	*

* Not used on this survey

APPENDIX "F"

OPR-D103-MI-82
SIGNAL NAMES

SIGNAL	NAME	QUAD#	STA#
100=	GRAVITY,1980 ✓	PUBLISHED BY NGS	
110=	CHESAPEAKE LIGHT TOWER,1966	360754	1047
120=	HOG ISLAND CG LOT,1959	370753	1119
125=	HOWARD,1962 (MARK ON CATWALK)	370753	1038
130=	LITTLE,1959	370753	1048
131=	LITTLE MACHIPONGO INLET CG LOT,1959	370753	1121
132=	LITTLE ECC.,1982	FIELD POSITION	
135=	HOG,1933	370753	1037
140=	REVEL,1959	370753	1061
142=	TARR,1962	370754	1134
145=	TULL,1962	370754	1146
146=	PARRAMORE BEACH CG TOWER,1962	370754	1186
150=	BRAD,1962	370754	1147
155=	HAMMOCK VFC,1933	370754	1072
160=	BURTON VFC,1933	370754	1026
165=	TOMPKINS,1962	370754	1143
167=	METOMPKIN INLET CG LOT #152,1959	370754	1177
170=	TERN,1962	370754	1139
175=	JOYNES-2,1934	370754	1082
180=	BIRD,1909	350754	1020
200=	BIRD, ~~1209~~,RM 5, 1982 (field position)	FIELD POSITION	
210=	SUTTON,1949	370754	1132
240=	FLAT,1962	370754	1061
250=	BARNES,1909	370754	1008
270=	WALLOPS ISLAND ~~NEW NASA~~ NASA NEW TANK,1975	370751	1082
273=	WALLOPS ISLAND NASA METMAST W80,1968	PUBLISHED BY NGS	
280=	EASY WALLOPS BEACH CG LOT #3,1949 *	370751	1019
288=	H 8 VA 1978	FIELD POSITION	
290=	ASSATEAGUE BEACH CG LOT #150,1959 **	370751	1071
291=	ASSATEAGUE BEACH CG LOT ECC,1982	FIELD POSITION	
299=	ASSATEAGUE NPS DOME,1982	FIELD POSITION	
300=	JONES,1981	PUBLISHED BY NGS	
310=	ASSATEAGUE LIGHTHOUSE,1909	370751	1073
319=	STEEL,1962,RM 2	FIELD POSITION	
320=	STEEL,1962	370751	1056
321=	STEEL,1962,RM 1	FIELD POSITION	
324=	H 7 VA 1978	FIELD POSITION	
327=	H 6 VA 1978	FIELD POSITION	
330=	H 5 VA 1978	FIELD POSITION	
340=	H 4 VA 1978	FIELD POSITION	
350=	H 3 VA 1978	FIELD POSITION	
370=	H 2 VA 1978	FIELD POSITION	

* EASY WALLOPS BEACH COAST GUARD 3 NEW TOWER, 1949

** ASSATEAGUE BEACH COAST GUARD LOOKOUT TOWER NO. 15ϕ, 1959

APPENDIX I

LANDMARKS FOR CHARTS

(There were no landmarks in this survey area)

LANDMARKS FOR CHARTS

No landmarks within the survey area.

APPENDIX J

DIVE REPORT

DIVE REPORT

Dive Date: 30 August 1982

I. AREA OF INVESTIGATION

A. Location: Atlantic Coast of Virginia, Porpoise Banks to Blackfish Bank

B. Position: 37°45'45.2" N 75°11'49.3" W

C. Survey Sheet: H10045 - MI-20-2-82

II. PURPOSE

Diving Investigation of PSR #142, Sunken Wreck.

III. SURVEY PROCEDURE

The wreck was found using LORAN-C rates and side scan sonar unit.

The area was marked by the ship and a launch deployed. Using the launch fathometer, the diver located the wreck and dropped a weighted descent line.

IV. DIVERS: Rossmann, Collins, Jennings, with Watson as Surface Dive Master.
BOTTOM TIME: 18 minutes
DEPTH: 65'
CURRENTS AND CONDITIONS: Calm
VISIBILITY: 10-15 feet, 5 feet on bottom

V. A metal hull vessel was found. Least depth was determined by using a dive float and nylon line. The float was attached to the line and inflated. A knot was tied in the line at the least depth and measured with a steel tape upon returning to the ship. The wreck has a growth of coral, making it impossible to determine the name of the vessel. The least depth found was 45 feet. The vessel has a north-south orientation with a 70 foot deep scour on the eastern side. The length of the vessel was not determined by the divers. A length may be scaled from the sonagrams.

VI. RECOMMENDATIONS

Charted with least depth of ~~45~~ 44 feet. Corrected for actual tides at 1,536 GMT.

DATE: 7/8/83

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): 863-0441 Wallops Island, Virginia

Period: August 12 - November 6, 1982

HYDROGRAPHIC SHEET: H - 10044

OPR: D103

Locality: Offshore Wallops Island, Virginia

Plane of reference (mean lower low water): 3.01 ft.

Height of Mean High Water above Plane of Reference is 4.0 ft.

REMARKS: Recommended Zoning
Apply X0.94 Range Ratio

James R Hubbard
Chief, Tidal Datums Section, Tides & Water Levels Branch

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10044

Name on Survey	A ON CHART NO. 12210	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
ATLANTIC OCEAN (title)										1
BLACKFISH BANKS(title)										2
PORPOISE BANKS (title)										3
										4
										5
										6
										7
										8
										9
										10
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										23
										24
										25

Approved:

Chief Geographer

AUG 17 1984

NOAA FORM 76-155 SUPERSEDES C&GS 197

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NO.: H-10044

Number of positions		4096
Number of soundings		26390
Number of control stations		8
	TIME-HOURS	DATE COMPLETED
Preprocessing Examination	15	22 FEB 1983
Verification of Field Data	302	13 JULY 1984
Quality Control Checks	74	
Evaluation and Analysis	140	18 OCT 1984
Final Inspection	30	2 OCT 1984
TOTAL TIME	561	
Marine Center Approval		18 OCT 1984

Transmittal letter of survey and survey records will be included in the Descriptive Report to identify the records accompanying the survey.

ATLANTIC MARINE CENTER
EVALUATION REPORT

SURVEY NO.: H-10044 FIELD NO.: MI-20-2-82

Virginia, Atlantic Ocean, Blackfish Bank to Porpoise Banks

SURVEYED: 12 August through 6 November 1982

SCALE: 1:20,000 PROJECT NO.: OPR-D103-MI-82

SOUNDINGS: Ross Digital Echo Sounder, Leadline CONTROL: Odom Offshore HYDRO-TRAC (Hyperbolic and Range/Range)

Chief of Party.....J. A. Yeager

Surveyed by.....L. A. Lapine
.....P. M. Thomas (B.R.N.)
.....F. W. Rossman
.....G. R. Yates
.....K. P. Peters
.....B. L. Coakley
.....D. I. Crews
.....C. N. McLean
.....R. D. Henegar
.....J. A. Miller

Automated Plot by.....Xynetics 1201 Plotter (AMC)

1. INTRODUCTION

a. No unusual problems were encountered during office processing.

b. Notes in red were made in the Descriptive Report during office processing.

2. CONTROL AND SHORELINE

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

b. There is no shoreline within the area surveyed.

3. HYDROGRAPHY

a. Soundings at crossings agree within the criteria stated in sections 4.6.1 and 6.3.4.3 of the Hydrographic Manual and section 6.6 of the Project Instructions.

b. The standard depth curves could be drawn in their entirety. The supplemental thirty-six (36) foot and charted ninety (90) foot curves were drawn on the smooth sheet. Additional dashed and brown curves were drawn to better show the bottom relief.

c. Development of the bottom configuration and determination of least depths was well done.

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 survey was not submitted to AMC in the prescribed time interval of six (6) weeks after termination of field operations found in section 6.13 of the Project Instructions. The survey was received six (6) weeks late.

b. Cartographic codes were not assigned to any of the control stations on the list of stations provided by the hydrographer. Appropriate cartographic codes were assigned during office processing.

c. The hydrographer did not adequately annotate the survey records at the start and end of side scan sonar investigations of Presurvey Review Items.

d. No original velocity graphs for velocity correctors were submitted with the survey data. New velocity graphs were drawn and correctors were revised during office processing because of the odd scale used by the hydrographer and difficulty in interpreting xerographic copies of the original graphs.

e. The hydrographer failed to locate "Blackfish Bank Lighted Buoy 8," charted in Latitude 37°50'36.80"N, Longitude 75°12'07.60"W in accordance with sections 1.6.5 and 4.5.13.2 of the Hydrographic Manual.

The hydrographer used an azimuth and an estimated distance at one position and an azimuth with no distance on another position. The buoy was not shown on the smooth sheet because the methods used are inadequate for proper positioning, and the buoy falls slightly outside of the area surveyed.

f. An antenna distance (ANDIST) of six (6) meters and zero (0) meters was erroneously applied to data acquired on year day 310. The digital records were corrected during office processing; however, the survey smooth sheet was plotted with the error. The error applies to a relatively small number of soundings, 384 soundings out of 26390 soundings.

The positions involved are numbers 4066 through 4127. Four soundings (positions 4126+5, +6, +7 and 4127) are in error by 1.5mm at the scale of the survey with the remainder being in error by 1.3mm. These errors were not considered sufficient to justify replotting the

survey smooth sheet, and they did not cause a misrepresentation of the bottom configuration. The positions of the depths have not been changed on the smooth sheet.

g. The hydrographer failed to make a comparison with prior survey FE-80WD (1949).

h. A negative report on dangers to navigation was not included in the Descriptive Report as required by section 6.12 of the Project Instructions. A danger to navigation was discovered during the course of this survey; however, it was not identified until office processing was almost complete. A notice to mariners was generated and forwarded to the appropriate offices.

i. The hydrographer did not adequately locate Presurvey Review Item #142 (AWOIS 2424). On the day (242) a diver investigation was completed. The position shown on the smooth sheet was determined from a combination of side scan sonar and hydrographic position data. No detached positions were obtained on the wreck during either hydrographic or dive operations.

j. Some deeper depths found in shoal areas were not shown on the smooth sheet. At the scale of the survey it is not practical to show all deeps and shoals on the smooth sheet; generalization was necessary.

k. The side scan sonar report submitted by LT E. Scott Varney mentioned lettered contacts found on the sonargrams. No records listing these contacts were forwarded with the hydrographic survey records. No graphic plot of these contacts was found in the survey records.

l. Loran-C data was not collected during survey operations as required by section 8.4 of the Project Instructions.

5. JUNCTIONS

H-10045 (1982) to the west
H-10046 (1982) to the northwest

Excellent junctions were made between the present survey and surveys H-10045 (1982) and H-10046 (1982).

There are no contemporary surveys to the north, east and south of the present survey. The charted depths and the present survey depths are in harmony to the north, east and south.

6. COMPARISON WITH PRIOR SURVEYS

a. Hydrographic Surveys

H-5673 (1939) 1:40,000
H-5702 (1934) 1:40,000
H-5715 (1934) 1:40,000

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

Soundings on these prior surveys are generally within plus or minus one (1) to five (5) feet. The location of the deeps and highs are in general agreement with an indication of a slight migration to the southeast in some areas. Scattered soundings are from twenty (20) feet shoaler to thirty (30) feet deeper than present survey soundings.

The differences between the present and prior surveys can be attributed to natural changes, errors in taking leadline soundings and reading the old style combination striker and oscillator fathometer, inaccuracies in positioning by use of sextants and the Radio Acoustic Ranging System.

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

b. Wire Drag Survey

FE-80WD (1949)

There were no hangs in the search area for Item 8, a fishing vessel reported in Latitude 37°44'24"N, Longitude 75°18'12"W investigated by FE-80 WD. There were several areas where the wire grounded; however, the wreck was removed from the chart. No indications of Item 8 were found during the course of this survey.

There are no conflicts between the present survey depths and the wire drag effective depths for Item 8.

7. COMPARISON WITH CHART 12210 (26th Edition, October 31, 1981)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys and needs no further discussion.

Five (5) Presurvey Review Items (numbers 37, 38, 39, 51, and 142) were investigated by the hydrographer and are discussed in section K of the Descriptive Report; additional discussions follow:

1) Presurvey Review Item #37, a dangerous sunken wreck, charted in Latitude 37°50'N, Longitude 75°11'W, is a sixty-one (61) foot long, white hulled fishing vessel and originates with LNM 17/72. There was insufficient side scan sonar coverage to the south of the item; it is recommended that this item be retained as charted and additional wire drag/side scan sonar work be done to verify or disprove the wreck's existence.

2) Presurvey Review Item #38 (AWOIS 2432), a dangerous sunken wreck, PA, charted in Latitude 37°48.0'N, Longitude 75°14.8'W, originates with Notice to Mariners 48/69, was searched for by the hydrographer with negative results. No contacts were found on the side

scan sonar record. See section 7.a.6) of this report for recommendations concerning this item.

3) Presurvey Review Item #39 (AWOIS 2430), a 25-ft REP, in Latitude 37°45.8'N, Longitude 75°13.9'W, originates with a NM broadcast 891-59. The item was identified as a "possible wreck" in the broadcast. The hydrographer searched for the item with negative results; however, 400% side scan sonar coverage was not achieved. It is recommended that the 25-ft REP, be removed from the chart because there is no indication of a bottom feature of this nature. It is also recommended that a dangerous sunken wreck, ED be charted in this location based on the information provided by the hydrographer.

4) Presurvey Review Item #51, charted a dangerous sunken wreck, PA, in Latitude 37°48.9'N, Longitude 75°03.7'W, originates with LNM 50/78. The hydrographer searched for the item but did not achieve the required 400% bottom coverage for side scan sonar disproval required in section 7.12.2 of the Project Instructions. It is recommended that the wreck be retained as charted.

5) An uncharted obstruction was found from three (3) different aspects with the side scan sonar. The position of the obstruction was determined using position data of the ship, tow cable length, and distances measured from the side scan sonar towfish to the obstruction. The height of the obstruction was determined using formulas derived by side scan sonar users. The depth of the object was determined by taking a mean depth of surrounding hydrography, fifty-nine (59) feet and subtracting the height of the obstruction. The obstruction is in Latitude 37°46'06.10"N, Longitude 75°14'20.21"W with an approximate depth of forty-seven (47) feet. It is recommended that an obstruction 47 ft REP be charted in the above location.

6) An uncharted obstruction (possibly wreckage) was discovered on year day 271. The obstruction was found using side scan sonar and was seen two (2) times on the sonargrams. The obstruction was seen once during a sounding line and once between sounding lines. The obstruction is in approximate Latitude 37°50'03"N, Longitude 75°12'33"W. Because the obstruction was seen from a single controlled aspect, it is recommended that an dangerous sunken wreck, PA be charted in the above location. The obstruction seen on the sonargram appeared to be approximately 75 feet by 18 feet in extent. This item was found approximately 5km northeast of the Presurvey Review Item #38, and 2.1km west of Presurvey Review Item #37. It is also recommended that additional side scan sonar/wire drag and/or diver investigation be performed in order to ascertain the extent of the wreck and a least depth.

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

b. Aids to Navigation

There are no fixed or floating aids to navigation within the area of the present survey.

8. COMPLIANCE WITH INSTRUCTIONS

This survey adequately complies with the Project Instructions except as noted in section 4 of this Evaluation Report.

9. ADDITIONAL FIELD WORK

This is a good basic survey. Recommendations for additional field work on Presurvey Review Items are found in section K and Q of the Descriptive Report and section 7.a of this report.

for Leroy G. Gross

J. Scott Bradford
Cartographic Technician
Verification of Data

Richard H. Whitfield

Richard H. Whitfield
Cartographic Technician
Evaluation and Analysis

Harry R. Smith

Harry R. Smith
Senior Cartographic Technician
Verification Check

Inspection Report
H-10044

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts of the survey have been made. The survey complies with National Ocean Service requirements except as noted in the Evaluation Report. The survey records comply with NOS requirements except where noted in the Evaluation Report.

Inspected

Robert G. Roberson
Acting Chief, Evaluation and Analysis Group
Hydrographic Surveys Branch

R. D. Sanocki
Chief, Hydrographic Surveys Processing Section
Hydrographic Surveys Branch

Approved October 18, 1984

Wesley V. Hull, RADM, NOAA
Director, Atlantic Marine Center

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
ATLANTIC MARINE CENTER
439 West York Street
Norfolk, Virginia 23510

OCT 19 1984 N/MOA2321:RGR

Rear Admiral James C. Irwin, USCG
District Commander
Fifth Coast Guard District
431 Crawford Street
Portsmouth, Virginia 23705

Dear Admiral Irwin:

During office processing of hydrographic survey H-10044, Virginia, Atlantic Coast, Blackfish Bank to Porpoise Banks, an uncharted obstruction was noted and was considered a danger to navigation. Questions concerning the survey may be directed to Mr. Robert G. Roberson, Acting Chief, Evaluation and Analysis Group, telephone (804) 441-6268.

The following text is recommended for inclusion in the Local Notice to Mariners:

"An uncharted obstruction with a reported depth of forty-seven (47) feet at Mean Lower Low Water is located in Latitude 37°46'06"N, Longitude 75°14'20"W."

Charts affected are 12200 and 12210.

Sincerely,

Wesley V. Hull
Rear Admiral, NOAA
Director, Atlantic Marine Center

cc:
N/CG222

NOAA FORM 61-29 (12-71)

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

LETTER TRANSMITTING DATA

REFERENCE NO.
MT-112-84

DATA AS LISTED BELOW WERE FORWARDED TO YOU BY *(Check)*:

☐ ORDINARY MAIL ☐ AIR MAIL
☒ REGISTERED MAIL ☐ EXPRESS
☐ GBL *(Give number)* _____

TO:

CHIEF, DATA CONTROL SECTION
HYDROGRAPHIC SURVEYS BRANCH, N/CG243
NATIONAL OCEAN SERVICE, NOAA
ROCKVILLE, MD 20852

DATE FORWARDED
12/11/84

NUMBER OF PACKAGES
one tube, two boxes

NOTE: A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

H-10044 OPR-D103 Virginia, Atlantic Ocean

tube: ✓one smooth sheet
✓one smooth position overlay
✓two smooth excess overlays
✓one Descriptive Reports
✓two final field sheets
✓three final field sheet overalys
✓five preliminary field sheets

first box: ✓one accordian file with echograms and field data printouts
✓three sounding volumes

second box: ✓two boxes of sawtooth position charts
✓one envelope of velocity correction records
✓one envelope of data removed from Descriptive Report
✓one envelope of miscellaneous data
✓one cahier with: final control printout
final position printout
final sounding printout
L-File (Z-Record) printout

FROM: *(Signature)* for Norris A. Wike
D. B. MACFARLAND, JR., LCDR, CHIEF, HYDRO SURVEYS BR

RECEIVED THE ABOVE
(Name, Division, Date)
Dwayne S. Clark
January 3, 1984
N/CG243

Return receipted copy to:

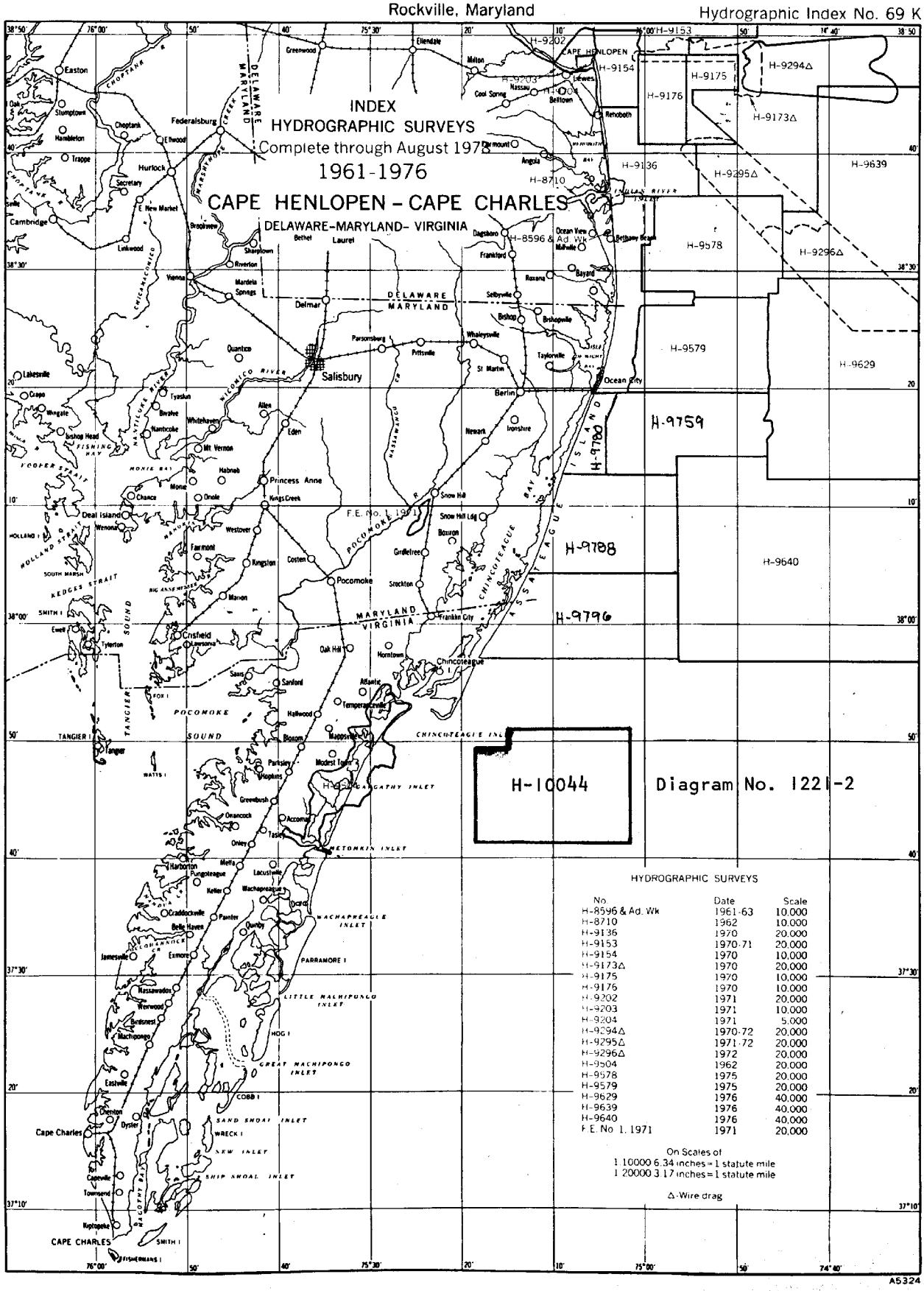
HYDROGRAPHIC SURVEYS BRANCH, N/MOA222
ATLANTIC MARINE CENTER
NOAA — NATIONAL OCEAN SERVICE
439 WEST YORK STREET
NORFOLK, VA 23510

ATTN: THERESA HIGH

NOAA FORM 61-29 SUPERSEDES FORM C&GS 413 WHICH MAY BE USED. ☆U.S. GOVERNMENT PRINTING OFFICE: 1980—765-012/1121

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

Hydrographic Index No. 69 K



A5324

FORM C&GS-8352
(3-25-63)

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10044

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	2-10-86	R. Fecht	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 45 FULL APPLICATION
12210	2-10-86	R. Fecht	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 51 FULL APPLICATION
12200	8-14-86	R. Fecht	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 50 FULL APPLICATION
13003	5-12-86	B. Coretz	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. #60 Fully appl'd thru reduction
			of chart 12200 #50
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.

FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975.

USCOMM-DC 8556-P63