

# FE260

Diagram No. 1222-4

NOAA FORM 76-35A

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

## DESCRIPTIVE REPORT

Type of Survey ... Side Scan Sonar  
Field No. .... R/H-10-2-84  
Office No. .... FE-260

### LOCALITY

State ..... Virginia  
General Locality ..... Chesapeake Bay  
Locality ..... 6 Miles NE of New Point  
..... Comfort Shoal  
..... 1984  
..... CHIEF OF PARTY  
..... LCDR D.D. Winter

### LIBRARY & ARCHIVES

DATE ..... February 6, 1984

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

FE260

Ref  
L-605(84)  
L-646(84)  
L-737(84)  
Area 2  
Chs  
12224  
12221  
12220

TO SIGN OFF  
SEE "RECORD OF APPLICATION"

HYDROGRAPHIC TITLE SHEET

FE-260

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.

R/H 10-02-84

State Virginia

General locality Chesapeake Bay

Locality 6 MILES NE OF NEW POINT COMFORT SHOAL  
~~AWOIS Items #3181, #3182, #3183~~

Scale 1:10,000 Date of survey 16<sup>25</sup> April, 1894<sup>98</sup> (JD 107) -  
5 June, 1984 (JD 157)

Instructions dated 22 December, 1983 Project No. OPR-E609-RU/HE-84

Vessel NOAA Ships RUDE & HECK

Chief of party LCDR Donald D. Winter

Surveyed by LCDR Donald D. Winter, LT Neal G. Millett, LT Edward M. Clark, ENS Thomas G.

Soundings taken by echo sounder, ~~hand lead, pole pneumofathometer~~ PNEUMATIC DEPTH GAUGE Callahan

Graphic record scaled by D.D.W., N.G.M., E.M.C., T.G.C.

Graphic record checked by N.G.M., E.M.C., T.G.C., M.J.K.

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

Verification by C.D. MEADOR

Soundings in ~~fathoms~~ feet at ~~MLW~~ MLLW ~~corrected for predicted tides.~~

REMARKS: All times recorded in UTC.

NOTES IN RED WERE MADE DURING OFFICE PROCESSING.

AWOIS MSM 5/85

App'd to Std. 2-6-85 Pst

## TABLE OF CONTENTS

HYDROGRAPHIC TITLE SHEET .....	i
PROGRESS SKETCH .....	ii
TABLE OF CONTENTS .....	iii
A. PROJECT AUTHORITY .....	1
B. CHARACTERISTICS AND LIMITS OF SURVEY .....	1
C. SURVEY VESSELS .....	2
D. HYDROGRAPHIC SHEETS .....	2
E. EQUIPMENT AND TECHNIQUES .....	2
F. CONTROL STATIONS .....	4
G. CALIBRATION AND POSITION CONTROL .....	5
H. DATES OF SURVEY .....	5
I. REDUCTION AND PROCESSING OF DATA .....	5
J. JUNCTIONS AND SPLITS .....	6
K. COMPARISON WITH PRIOR SURVEY .....	6
L. COMPARISON WITH THE CHARTS .....	7
M. ADEQUACY OF SURVEY .....	8
N. INCOMPLETE ITEMS .....	8
O. CURRENTS AND WINDS .....	8
P. PERSONNEL .....	8
Q. GENERAL NOTES .....	8
R. APPROVAL SHEET .....	10

### APPENDICES

*A. ABSTRACT OF ELECTRONIC CORRECTORS .....	A- 1
*B. ABSTRACT OF DAILY STATISTICS .....	A-46
C. HORIZONTAL CONTROL .....	A-48
D. SIGNAL LIST .....	A-49
*E. PNEUMO DEPTH GAUGE REPORT .....	A-52
F. DIVING REPORT .....	A-54
*G. SHEET PARAMETERS .....	A-60
H. LOCAL NOTICE TO MARINERS REPORT .....	A-62
*I. SMOOTH TIDE REQUEST - FIELD TIDE NOTE .....	A-64
J. DANGERS TO NAVIGATION REPORT .....	A-68
*K. TRANSMITTAL LETTERS .....	A-69
*L. SIDE SCAN SONAR COVERAGE ABSTRACT - TARGET ABSTRACT - TARGET LIST .....	A-75
*M. SETTLEMENT AND SQUAT DATA .....	A-89
*N. GEOGRAPHIC NAMES LIST .....	A-92

\* FILED WITH THE ORIGINAL SURVEY RECORDS.

*Left as part of this Descriptive Report.*

DESCRIPTIVE REPORT TO ACCOMPANY  
HYDROGRAPHIC SURVEY ~~H~~ FE-260, R/H 10-02-84  
AWOIS ITEMS #3181, #3182, #3183  
1:20,000 SCALE, 1984  
NOAA SHIPS RUDE & HECK  
LCDR DONALD D. WINTER, COMDG.

A. Project Authority

This project was conducted in accordance with Hydrographic Project Instructions OPR-E609-RU/HE-84, dated 22 December, 1983. The AWOIS listing dated 15 December, 1983, updated 16 January, 1984 was used as the source of survey requirements and item histories. An additional revised AWOIS listing, dated 01 May, 1984, was received during the last week of the survey. This last AWOIS listing was not utilized for survey requirements due to its late arrival. There were no changes or additions to these original instructions. The purpose of this project was to verify or disprove certain charted <sup>DANGEROUS</sup> submerged wrecks and obstructions in the southern part of Chesapeake Bay. Detached positions, least depths, or wire-drag clearances were to be obtained for these <sup>DANGEROUS</sup> submerged wrecks and obstructions.

B. Characteristics and Limits of Area Surveyed

This report covers the areas bounded by the survey requirements in the AWOIS listing for items #3181, #3182, and #3183, plus additional searches for suspected contacts.

The area surveyed for coverage of AWOIS item #3181 was bounded by 0.5 nautical mile search radii about the two positions used in the AWOIS listing to describe item #3181, latitude 37°-18'-12.0"N, longitude 076°-07'-54.0"W and <sup>ITEM # 3182</sup> latitude 37°-18'-25.2"N, longitude 076°-07'-47.4"W. This area was covered by the 400% side scan sonar coverage required for item disproof. No indication of the item was found by this coverage. <sup>THESE ARE THE 5/1/84, NOT THE 1/16/84, AWOIS POSITIONS. SEE THE APPROPRIATE AWOIS LISTING.</sup>

The 250m radius search area required for coverage of AWOIS item #3182 was contained within the search area covered for AWOIS item #3181. AWOIS item #3182 was resolved with the completion of the 400% side scan coverage required for AWOIS item #3181. No indication of AWOIS item #3182 was found by this survey.

AWOIS item #3183 required coverage of a 250m search radius centered about latitude 37°-19'-19.8"N, longitude 076°-08'-13.2"W. The item was located by 100% side scan sonar coverage of this area. <sup>SEE SECTION 6.6 OF THIS EVALUATION REPORT.</sup>

An additional 250m search radius, centered about latitude 37°-19'-18.5"N, longitude 076°-07'-50.0"W was covered during this survey. This was the position of a suspected obstruction, Contact 2, observed during the investigation of AWOIS item #3183 on JD 117. This contact was observed outside and to the east of the required search area for AWOIS item #3183. Side scan sonar coverage of this area by 400% yielded no further indication of

this contact.

Another suspected obstruction was observed outside and to the northwest of the required search area for AWOIS item #3183. This contact, Contact 1, was confirmed by reconnaissance side scan sonar with no further coverage required.

The two wrecks found by this survey, AWOIS item #3183 and Contact 1, were thoroughly investigated by divers. Complete documentation of all survey operations is contained in Section E of this report.

#### C. Survey Vessels

The NOAA Ships RUDE, Vesno 9040, and HECK, Vesno 9140, were the only vessels assigned to this survey. NOAA Ships RUDE and HECK obtained the detached positions and performed the side scan sonar work during this survey.

#### D. Hydrographic Sheets (Field Sheets)

The hydrographic sheets used in this survey were made of mylar and were constructed with the Digital FDP 11/34 computer and Houston Instruments roll-bed plotter aboard the Ship RUDE. The project instructions required that all data be smooth plotted at a scale of 1:20,000 but a scale of 1:10,000 was used for all field plotting and final data analysis. PLOTTED AT 1:20,000 DURING VERIFICATION.

The field sheets were plotted at a scale of 1:10,000 and were used to hand plot the towing vessel's position while on line. Smooth field sheets were also plotted aboard the RUDE using the same equipment as described above. These smooth field sheets were used to machine plot the towing vessel's position during side scan operations and to plot the least depth detached positions of the wrecks found by this survey.

All smooth field sheets for this survey were labeled R/H 10-02-84 with notation identifying the side scan sonar coverage or detached positions contained on the sheet. A separate smooth field sheet was generated for all four 100% coverages of the search area for AWOIS item #3181. The 100% and 200% and the 300% and 400% coverages of the search area centered around Contact 2 are contained on separate smooth field sheets. The 100% coverage of the search area required for AWOIS item #3183 and the detached position on this wreck are contained on another smooth field sheet. The detached position on Contact 1 is contained on a position overlay.

The field records are being sent to the Atlantic Marine Center for final verification and smooth plotting.

#### E. Equipment and Techniques

##### (1) Survey Operations

All survey coverage was accomplished with the Klein side scan sonar systems. A Klein system was provided for each ship by the Atlantic Marine Center. This system consisted of a Model 521 recorder, S/N 088 issued to the Ship RUDE and S/N 249 on the Ship HECK, a 100 KHz towfish, a K-Wing depressor and a towcable.

Four hundred per cent (400%) side scan sonar coverage of the required search area for AWOIS item #3181, which <sup>ALSO</sup> contained the required search area for AWOIS item #3182, was accomplished with the side scan sonar operated at the 100m range scale with 100m track spacings. The R1 arcs were run along the even 100m and 50m arcs to accomplish the 100% and 200% coverages respectively. The 300% and 400% coverage of this area was completed using the same method while running along the R2 arcs. This complete 400% coverage of the search area failed to yield any indication of AWOIS items #3181 or #3182.

Coverage of the 250m search radius around the position of Contact 2 was accomplished with the side scan sonar operated at the 100m range scale with 50m track spacings. The 100% and 200% coverage was accomplished by running along the even 100m and 50m R1 arcs. The R2 arcs were run in the same manner with the 100m range scale settings and 50m track spacings to complete the 300% and 400% coverage of the search area. No indication of Contact 2 was observed throughout this complete 400% coverage.

The 250m search radius around AWOIS item #3183 was covered by 100% side scan sonar coverage with a range scale of 100m and a track spacing of 100m. This AWOIS item was found using this coverage.

Additional lines of reconnaissance side scan sonar were run in the vicinity of AWOIS item #3183, Contact 1, and Contact 2 at the 50m range scale on JD 118.

Del Norte rates obtained on fixes were recorded with an Eaton Model 7000+ serial printer during this survey. This printer worked fairly well considering the fact that it was not designed to be operated in a marine environment. The printer would often type out a line of meaningless characters or rates from the previous fix before the current fix was recorded. The printer records were annotated such that these meaningless characters and extraneous rates were lined out leaving the correct fix rates clearly displayed.

Two Raytheon model DSF 6000N echo sounders, S/N B051N onboard the Ship RUDE and S/N A116N installed on the Ship HECK, were operated and annotated during all side scan sonar operations. The echo sounder recordings were reviewed daily to ensure that no large objects located directly under the sonar towfish went undetected. This is the first survey operation conducted with the model DSF 6000N echo sounding system and it is apparent that the internal gain settings of the DSF 6000N is much higher than that of the Raytheon DE-719B, which was used previously aboard the Ships RUDE and HECK. The gain control settings for both the high and low frequencies were set on "MANUAL" during all operations. The echo sounder was operated at a depth of less than 50 feet at the 0-50 foot range scale throughout all operations. The resulting trace indicates many contacts in the water column or a rebounding of the high frequency from very small objects or fish. It is recommended that the gain controls of this echo sounding system be manually tuned and operated at a paper speed of 30mm/min, during operations in shallow water, for optimum results. However, even with the gain settings on manual and a slower paper speed, numerous spurious contacts were noted as a result of high internal gain within the

DSF 6000N fathometer.

Although it is not anticipated that these sounding records will be used for charting purposes, the settlement and squat data for the Ships RUDE and HECK, obtained in Norfolk Harbor on 25 January 1983, is included in this report. No velocity corrections or settlement and squat determinations were actually conducted within or during this project.

## (2) Diving Operations

Contact 1 was thoroughly investigated by divers during survey operations. The least depth over this wreck was taken on JD 123, Fix #553, and is ~~33.0~~<sup>33.0</sup> feet at latitude 37°-19'-47.16"N, longitude 076°-08'-31.70"W. This depth was determined by ~~pneumofathometer~~<sup>PNEUMATIC DEPTH GAUGE</sup> and corrected for instrument error, and predicted tides. This wreck was first investigated by divers during this survey on JD 122. Tape measurements, the least depth and the detached position on this least depth were all obtained on JD 123.

38.9 Complete diver investigation of AWDIS item #3183 was accomplished on JD 131. The least depth ~~was~~ over this wreck was ~~33.0~~<sup>33.0</sup> feet with a detached position over this least depth, Fix #307, at latitude 37°-19'-20.32"N, longitude 076°-08'-12.75"W. This least depth was determined by ~~pneumofathometer~~<sup>PNEUMATIC DEPTH GAUGE</sup> and corrected for instrument error, and predicted tides. SEE SECTION 6.6 OF THIS EVALUATION REPORT.

Complete documentation of all dive operations, data collected by divers, and the ~~pneumofathometer~~<sup>PNEUMATIC DEPTH GAUGE</sup> depths obtained over the wrecks are found in Appendix F. of this report. Reductions of the least depths found over the wrecks are contained in the Sounding Volumes with the respective detached positions.

## F. Control Stations

Two electronic control stations were used for this section of the survey. These stations were:

Station Name	Latitude Longitude	Elev.
YORK SPIT LIGHTHOUSE(1900)	37°-12'-34.452N 076°-15'-16.369W	11.28m
WOLF TRAP LIGHTHOUSE(1898)	37°-23'-24.618N 076°-11'-23.295W	15.85m

These stations were located by NGS and the adjusted positions for these stations were obtained from published NGS horizontal control data. All stations are of Third-Order, Class I control accuracy or better. The station positions are based upon the North American Datum of 1927.

## G. Calibration and Position Control

Vessel positioning for all work was accomplished with the Del Norte 520 series electronic positioning equipment operated at a frequency of 9400 MHz in the Range-Range mode. A listing of the DMU and master units used by the vessels during this survey is listed by Julian Ray in Appendix A. Remote unit 76, S/N 3004 was installed at WOLF TRAP LIGHTHOUSE from JD 116 to JD 122. Remote unit 78, S/N 2986 was installed at this station from JD 123 to JD 144. The remote installed at YORK SPIT LIGHTHOUSE throughout the entire survey was unit 72, S/N 2897.

Baseline calibrations were performed before and after all data collection during this survey, on JD's 107 and 157 respectively. The baseline calibrations were conducted in the immediate work area and entirely over water in accordance with AMC OORDER 79. The baseline used for the calibrations ran from the Little Creek Coast Guard, western most pier, to the Little Creek East Jetty Light "1". The baseline calibration distance was determined by the HP 3800A electronic distance measuring instrument, S/N 0987A00157. The distance of this baseline, as measured by the HP 3800A, was 2183.14m.

The opening and closing daily calibration checks for this survey were accomplished using the three point sextant fix calibration method in accordance with the Hydrographic Manual Section 4.4.3.3. The objects used for the daily calibration checks are listed with the calibration data in Appendix A. These objects are fully described in Appendix D.

The daily correctors for all calibrations were stable and within accuracy tolerances for a survey of this scale. Therefore, only baseline calibration data should be applied to the raw position data during final processing and smooth plotting. See Appendix A for all daily and baseline calibration data. <sup>THE ONLY CORRECTORS WERE USED FOR OFFICE PROCESSING</sup>

~~The Pneumatometer~~ <sup>PNEUMATIC DEPTH GAUGE</sup> was calibrated on 13 March, 1984, JD 73, at Buoy "T", of Thimble Shoal Channel, east of Point Comfort, position latitude 37-02-30N, and longitude 076-17-06W. All depths determined by this survey have been corrected for instrument error, as determined in Appendix G.

## H. Dates of Survey

This survey was begun on 16 April, 1984, JD 107 and completed on 05 June, 1984, JD 157.

## I. Reduction and Processing of Data

All side scan data was initially recorded in NOAA Form 77-44, Soundings Volume. All header data, position numbers, time, and position control data were recorded in the appropriate columns in the volumes. The remarks column was used to record all on-line information, vessel rms, length of tow cable, measured from the waterline to the towfish, vessel heading, and any other unusual or noteworthy remarks. The towfish layback was computed using only the stern to antenna distance, 21.3 meters. The K-wins depressor was used with a short tow cable and caused the towfish to maintain a nearly vertical tow cable angle.



Position data from the side scan sonar work was entered in the Digital PDP 11/34 computer with a modified version of the R/H Double Precision Wire-Dras program. Rates for just one vessel were entered in this program and a single vessel position plot was then generated with the Houston Instruments roll-bed plotter. All side scan sonar work for this survey was plotted in this manner. The 1983 versions of the RUDE and HECK wire dras programs were used to plot all data on this field sheet.

The sonargrams from the side scan sonar work were examined while on line and then again at the end of the day. All contacts seen on ~~the~~ the sonargrams of this survey were flagged during each examination. These flagged contacts were then logged in the Side Scan Sonar Target Abstract for the field sheet. The Target Abstract was then completed and the contacts were plotted on the smooth field sheet containing the vessel position plots. The towfish layback was computed by using only the stern to antenna distance (21.3m) due to the fact that a very short length of towcable was used during all side scan sonar operations. The short length of the towcable, 13 to 15 feet, plus the action of the K-Wings caused the towfish to ride straight down off the stern, with nearly a vertical towcable angle. An odyssey protractor was used to plot the layback and the range to target. All values of towcable length on the sonargram and in the sounding volumes refer only to the amount of cable out from the waterline to the towfish. The Side Scan Sonar Target List was then compiled from the Target Abstract and the contact plots. The Del Norte rates of the positions of Contacts 2 and 3 were determined using a grid and arc overlay. These rates were then used to determine the latitude and longitude of the contact with the HP 9815 computer and the Geodetic Package program. The positions of AWOIS item #3183 and Contact 1, entered in the Target List, are the detached positions obtained during survey operation on these wrecks.

Side Scan Sonar Coverage Abstracts were completed to determine actual area covered during side scan sonar operations. The values for minimum towfish height off the bottom were determined directly from the sonargrams. Maximum effective scanning ranges were determined from the values listed in the Side Scan Sonar Guidelines for the minimum towfish heights. The values for the maximum track spacing between adjacent lines were those obtained within the actual search areas. There were instances when the maximum track spacing that occurred outside the search area was larger than the maximum track spacing that occurred within the search area. In such cases, the maximum track spacing that occurred within the search area was the value used to complete the Coverage Abstracts.

#### J. Junctions and Splits

There were no junctions or splits contained within the limits of this survey area.

#### K. Comparison with Prior Surveys

The areas surveyed are contained within the limits of

1948-  
prior survey H-7750 (1950). There are no indications on H7750 (1950) of these wrecks or any other obstruction within the limits of the survey areas.

#### L. Comparison With the Chart

The largest scale chart which contains the survey area is NOS Chart 12224. The current edition of this chart at the time of survey operations was the 16th Ed., May 23/81 and was used for all chart comparisons.

AWOIS item #3181 required coverage of a 0.5 nautical mile search radius about latitude 37-18-12.0N, longitude 076-07-47.40W. This area was covered by 400% side scan sonar coverage. No indication of the dangerous submerged wreck with ~~a~~ masts charted at this same position was observed on the side scan sonar. POS. REVISED IN 5/1/84 AWOIS LISTING.

The required search area for AWOIS item #3182 was a 250m search radius about the charted dangerous wreck at latitude 37-18-22.8N, longitude 076-07-48.0W. This search area was completely contained in the search area required to be surveyed for AWOIS item #3181. No indication of this submerged dangerous wreck was observed by this side scan sonar coverage. POS. REVISED IN 5/1/84 AWOIS LISTING.

AWOIS item #3183 required coverage of a 250m search radius centered about the charted dangerous submerged "Obstr rep 1978" at latitude 37-19-19.8N, longitude 076-08-13.2W. One hundred percent (100%) coverage of this search area located this submerged wreck. Diver investigation established a least depth over this wreck of ~~37.4~~ 38.9 feet MLLW at latitude 37-19-20.30N, longitude 076-08-12.75W. LORAN C rates over this wreck for the 9960 chain were X 27253.9, Y 41534.0, Z 58585.0. Cycle/SNR alarms were observed on the W rates. SEE SECTION 6.6 OF THIS EVALUATION REPORT. AS 4

A wreck was found during this survey outside the search area for AWOIS item #3183 and was not contained in the AWOIS listing nor found on the chart. This wreck was investigated by divers and found to have a least depth of ~~37.5~~ 33.0 feet ATMLLW at latitude 037-19-47.2N, longitude 076-08-31.70W. LORAN C rates over this wreck for the 9960 chain were W 15972.0, X 27256.2, Y 41538.7, Z 58585.4.

All presently charted landmarks in the proximity of this survey were visually verified from offshore and are adequate as charted. No additional landmarks or aids to navigation were noted in the area as suitable for charting.

#### Charting Recommendations:

- (1) AWOIS item #3181 SOURCE LNM 19/74
  - a. Remove the charted dangerous submerged wreck with ~~a~~ masts at latitude 37-18-12.0N, longitude 076-07-54.0W. CONCUR *ok done*
- (2) AWOIS item #3182 SOURCE CL 1960/78
  - a. Remove the charted dangerous submerged wreck at latitude 37-18-22.8N, longitude 076-07-48.0W. CONCUR *ok done*
- (3) AWOIS item #3183 SOURCE CL 1960/78
  - a. Remove the charted submerged "Obstr rep 1978" at latitude 37-19-19.8N, longitude 076-08-13.2W. ~~CONCUR~~ CONCUR. ALSO SEE SECTION 6.6 OF THIS EVALUATION REPORT. *not charted*

b. Chart an <sup>obstruction</sup> wreck symbol, as per Section 0.15 of NOS Chart 1, Seventh Edition, January 1979, at latitude 37-19'-20.52"N, longitude 076-08'-12.75"W with a least depth of 40 feet, ~~corrected for predicted tides, at MLLW.~~ <sup>27</sup> ~~CONCUR~~ - However the item found was wreckage as described in Appendix F. of this report. Therefore the <sup>39</sup> obstruction (wreckage) is recommended for charting in section 6.6. of the Evaluation Report.

(4) Contact 1, AWOIS item #3183

a. Chart a wreck symbol, as per Section 0.15 of NOS Chart 1, Seventh Edition, January 1979, at latitude 37-19'-47.12"N, longitude 076-08'-31.70"W with a least depth of 33 feet, ~~corrected for predicted tides at MLLW.~~ <sup>33</sup> ~~CONCUR~~

M. Adequacy of Survey

The contacts found to be <sup>9</sup> wrecks <sup>1</sup> and wreckage were completely and thoroughly investigated by divers during this survey operation. The least depths and detached position of these <sup>items</sup> are accurate and considered adequate for charting. - Concur

N. Incomplete Items SEE SECTION 9 OF THIS EVALUATION REPORT.

There are no incomplete items contained in this survey.

O. Currents and Winds

Tidal currents were closely monitored during the course of this survey, since diving operations were planned to coincide with slack water whenever possible. Comparisons were made with the Tidal Current Tables 1984, Atlantic Coast of North America for Station 4746, 5.8 miles west of Wolf Trap Light.

In general, the times and strengths of maximum current and times of slack water agreed with the predicted times and strengths under normal conditions. However, this entire area is greatly influenced by <sup>9</sup> North, <sup>9</sup> Northwesterly and <sup>5</sup> Southeasterly winds, which considerably prolongs or reduces the tidal currents, depending on wind direction and duration.

P. Personnel

The officers participating in this survey were LCDR Donald D. Winter, LCDR Kenneth W. Perrin, LT Neal G. Millett, LT John Novaro, LT Edward M. Clark, and ENS Thomas G. Callahan.

Q. General Notes

The format of this report is a composite of the Descriptive Report formats contained in the Wire Drags and Hydrographic Manuals. This format is the optimum composite of the pertinent sections of the two reports and is more applicable to the surveys currently being conducted by the NOAA Ships RUDE and HECK.

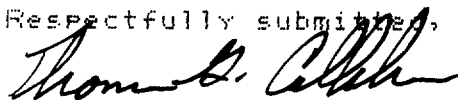
LORAN C rates for the 9960 chain at the wreck least depth positions were obtained with the Northstar 6000 LORAN C receiver, S/N 70460, onboard the Ship RUDE. LORAN C rates for the wrecks are listed in Section L.

Charting recommendations for this survey are contained in

section L. of this report.

For recommendations concerning the DSF 6000N sounding system, refer to section E.1.

Respectfully submitted,



Thomas G. Callahan, ENS., NOAA

R. APPROVAL SHEET

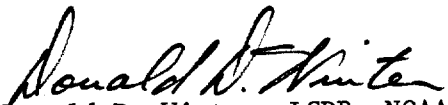
OPR-E609-RU/HE-84

FE-260

R/H 10-02-84

AWOIS ITEMS #3181, #3182, #3183

Field operations contributing to the accomplishment of this survey were conducted under my supervision with frequent personal checks of progress and adequacy. This report and field sheets have been closely reviewed and are considered complete and adequate for charting. SEE SECTIONS 6 AND 9 OF THIS EVALUATION REPORT.



Donald D. Winter, LCDR, NOAA

Commanding Officer

NOAA Ships RUDE and HECK

### C. HORIZONTAL CONTROL

No new stations were established for this survey. See Appendix D, Signal List for a complete listing of all stations used during this survey.

**D. SIGNAL LIST**

PROJECT:

~~OPR-EGOT-RWNB-84  
CHESAPEAKE BAY~~

SIGNALS/STATIONS

~~YORK SPIT LIGHTHOUSE  
(1900)~~

~~ID NBR 1  
LAT 371234.452  
LON 761516.369  
ELEV'N 11.28 M  
FILE 1~~

~~WOLF TRAP LIGHTHOUSE  
(1898)~~

~~ID NBR 2  
LAT 372324.618  
LON 761123.295  
ELEV'N 15.85 M  
FILE 2~~

~~THIMBLE SHOAL  
LIGHTHOUSE (1919)~~

~~ID NBR 3  
LAT 370051.712  
LON 761425.875  
ELEV'N 16.76 M  
FILE 3~~

~~CHERRYSTONE BAR  
LIGHT (1954)~~

~~ID NBR 4  
LAT 371522.825  
LON 760158.208  
FILE 4~~

~~CAPE CHARLES CITY RANGE  
FRONT LIGHT (1954)~~

~~ID NBR 5  
LAT 371445.887  
LON 760128.843  
FILE 5~~

~~CAPE CHARLES WATER  
TANK CHAR (1914)~~

~~ID NBR 6  
LAT 371604.409  
LON 760039.408  
FILE 6~~

~~SHERITON, WEBSTER  
CANNING CO., TANK (1939)~~

~~ID NBR 7  
LAT 371732.709  
LON 755734.786  
FILE 7~~

~~CAPE CHARLES 771 ST  
ANLERS NORTH TOWER DOME  
(1962)~~

~~ID NBR 8  
LAT 370803.977  
LON 755704.193  
FILE 8~~

~~CAPE CHARLES 771 ST  
ANLERS SOUTH TOWER DOME  
(1962)~~

~~ID NBR 9  
LAT 370802.245  
LON 755704.202  
FILE 9~~

~~CAPE CHARLES 771 ST  
ANLERS TOWER (1959)~~

~~ID NBR 10  
LAT 370757.897  
LON 755714.854  
FILE 10~~

~~FISHERMAN ISLAND  
NAVY TOWER (1959)~~

~~ID NBR 11  
LAT 370557.891  
LON 755845.131  
FILE 11~~

~~FISHERMAN ISLAND  
NAVY SHORAN TOWER (1959)~~

~~ID NBR 12  
LAT 370551.122  
LON 755845.459  
FILE 12~~

~~FISHERMAN ISLAND  
NAVY WATER TANK (1959)~~

~~ID NBR 13  
LAT 370604.124  
LON 755843.436  
FILE 13~~

~~CAPE CHARLES NEW  
LIGHTHOUSE (1887)~~

~~ID NBR 14  
LAT 370722.808  
LON 755424.577  
FILE 14~~



~~NEW PT COMFORT  
LIGHTHOUSE (1871)~~

~~ID NBR 15  
LAT 371883.167  
LON 761641.171  
-----  
FILE 15~~

~~DLD POINT COMFORT  
ROUND BRICK CHIMNEY (1919)~~

~~ID NBR 20  
LAT 370086.375  
LON 761844.521  
-----  
FILE 20~~

CHEARSIDE USE (1939)

ID NBR 25  
LAT 371119.428  
LON 755954.863  
-----  
FILE 25

~~OCEANVIEW MUNICIPAL  
WATER TANK (1950)~~

~~ID NBR 16  
LAT 355651.833  
LON 761533.886  
-----  
FILE 16~~

~~LITTLE CREEK NAB DESERT  
COVE TANK (1955)~~

~~ID NBR 21  
LAT 355514.382  
LON 758942.853  
-----  
FILE 21~~

OLD PLANTATION FLATS  
LIGHT (1984)

ID NBR 26  
LAT 371343.138  
LON 760250.256  
-----  
FILE 26

~~MOORE (1943)~~

~~ID NBR 17  
LAT 355558.489  
LON 761611.431  
-----  
FILE 17~~

~~HAMPTON RADIO STATION  
WVBC MAST (1958)~~

~~ID NBR 22  
LAT 370217.816  
LON 761829.133  
-----  
FILE 22~~

~~FORT MONROE TANK  
(1929)~~

~~ID NBR 18  
LAT 370824.444  
LON 761841.996  
-----  
FILE 18~~

~~TOW (1947)~~

~~ID NBR 23  
LAT 370712.122  
LON 761759.268  
-----  
FILE 23~~

~~SHAMBERLAIN VANDERBILT  
HOTEL WEST TOWER (1932)~~

~~ID NBR 19  
LAT 370003.284  
LON 761846.377  
-----  
FILE 19~~

FOX HILL MUNICIPAL  
WATER TANK (1939)

ID NBR 24  
LAT 370454.897  
LON 761715.253  
-----  
FILE A-51 24

**E. PNEUMO DEPTH GAUGE REPORT**

PNEUMOFATHOMETER CALIBRATION

LOCATION: Bouy "T", East of Point Comfort 37-02.5 N., 076-17.1 W.

PERSONNEL:

PNEUMO: LT. Clark LAEDLINE: ENS. Miller

DATE: JD 73 WX: Misting Rain WIND: NNE @ 10Kt SEAS: 1' Chop SWELLS: 1'

LEADLINE (ft.)	PNEUMO. (ft.)		CORRECTOR (ft.)		LEADLINE (ft.)	PNEUMO. (ft.)		CORRECTOR (ft.)	
	DOWN	UP	DOWN	UP		DOWN	UP	DOWN	UP
2.0	<u>2.0</u>	<u>1.0</u>	<u>0.0</u>	<u>+1.0</u>	52.0	<u>50.0</u>	<u>50.5</u>	<u>+2.0</u>	<u>+1.5</u>
4.0	<u>4.0</u>	<u>2.0</u>	<u>0.0</u>	<u>+2.0</u>	54.0	<u>52.0</u>	<u>51.5</u>	<u>+2.0</u>	<u>+2.5</u>
6.0	<u>6.0</u>	<u>4.5</u>	<u>0.0</u>	<u>+1.5</u>	56.0	<u>54.0</u>	<u>53.5</u>	<u>+2.0</u>	<u>+2.5</u>
8.0	<u>8.0</u>	<u>7.5</u>	<u>0.0</u>	<u>+0.5</u>	58.0	<u>55.5</u>	<u>55.5</u>	<u>+2.5</u>	<u>+2.5</u>
10.0	<u>10.0</u>	<u>9.0</u>	<u>0.0</u>	<u>+1.0</u>	60.0	<u>57.2</u>	<u>58.5</u>	<u>+2.8</u>	<u>+1.5</u>
12.0	<u>12.0</u>	<u>11.0</u>	<u>0.0</u>	<u>+1.0</u>	62.0	<u>59.0</u>	<u>60.0</u>	<u>+3.0</u>	<u>+2.0</u>
14.0	<u>14.0</u>	<u>14.0</u>	<u>0.0</u>	<u>0.0</u>	64.0	<u>61.0</u>	<u>61.5</u>	<u>+3.0</u>	<u>+2.5</u>
16.0	<u>16.0</u>	<u>16.0</u>	<u>0.0</u>	<u>0.0</u>	66.0	<u>62.0/20'</u>	<u>63.0</u>	<u>+4.0</u>	<u>+3.0</u>
18.0	<u>17.8</u>	<u>17.5</u>	<u>+0.2</u>	<u>+0.5</u>	68.0	<u>64.0</u>	<u>64.5</u>	<u>+4.0</u>	<u>+3.5</u>
20.0	<u>19.8</u>	<u>18.5</u>	<u>+0.2</u>	<u>+0.5</u>	70.0	<u>66.0</u>	<u>65.5</u>	<u>+4.0</u>	<u>+4.5</u>
22.0	<u>21.7</u>	<u>20.5</u>	<u>+0.3</u>	<u>+1.5</u>	72.0	<u>68.0</u>	<u>66.0</u>	<u>+4.0</u>	<u>+6.0</u>
24.0	<u>23.7</u>	<u>21.5</u>	<u>+0.3</u>	<u>+1.5</u>	74.0	<u>70.0</u>	<u>67.8</u>	<u>+4.0</u>	<u>+6.2</u>
26.0	<u>25.5</u>	<u>24.5</u>	<u>+0.5</u>	<u>+1.5</u>	76.0	<u>71.8</u>	<u>69.0</u>	<u>+4.2</u>	<u>+7.0</u>
28.0	<u>27.5</u>	<u>26.5</u>	<u>+0.5</u>	<u>+1.5</u>	78.0	<u>72.0</u>	<u>70.2</u>	<u>+6.0</u>	<u>+7.8</u>
30.0	<u>29.5</u>	<u>28.5</u>	<u>+0.5</u>	<u>+1.5</u>	80.0	<u>73.8</u>	<u>70.5</u>	<u>+6.2</u>	<u>+9.5</u>
32.0	<u>31.5</u>	<u>31.5</u>	<u>+0.5</u>	<u>+0.5</u>	82.0	<u>75.0</u>	<u>72.5</u>	<u>+7.0</u>	<u>+9.5</u>
34.0	<u>33.5</u>	<u>33.5</u>	<u>+0.5</u>	<u>+0.5</u>	84.0	<u>77.0</u>	<u>74.0</u>	<u>+7.0</u>	<u>+10.0</u>
36.0	<u>35.2</u>	<u>35.5</u>	<u>+0.8</u>	<u>+0.5</u>	86.0	<u>79.0</u>	<u>75.0</u>	<u>+7.0</u>	<u>+11.0</u>
38.0	<u>36.5</u>	<u>37.0</u>	<u>+1.5</u>	<u>+1.0</u>	88.0	<u>81.0</u>	<u>77.0</u>	<u>+7.0</u>	<u>+11.0</u>
40.0	<u>38.0</u>	<u>39.0</u>	<u>+2.0</u>	<u>+1.0</u>	90.0	<u>82.0</u>	<u>79.0</u>	<u>+8.0</u>	<u>+11.0</u>
42.0	<u>40.0</u>	<u>40.2</u>	<u>+2.0</u>	<u>+1.8</u>	92.0	<u>83.0</u>	<u>80.0</u>	<u>+9.0</u>	<u>+12.0</u>
44.0	<u>42.5</u>	<u>42.5</u>	<u>+1.5</u>	<u>+1.5</u>	94.0	<u>85.0 /45'</u>		<u>+9.0</u>	
46.0	<u>45.0</u>	<u>45.5</u>	<u>+1.5</u>	<u>+1.5</u>	96.0				
48.0	<u>46.0</u>	<u>47.5</u>	<u>+2.0</u>	<u>+1.5</u>	98.0				
50.0	<u>48.5</u>	<u>48.8</u>	<u>+1.5</u>	<u>+1.2</u>	100.0				

**F. DIVING REPORT**

DIVING OPERATIONS

Date: 1 MAY, 1984 (J.D.122) Unit: HECK, Heck-3

Divemaster: LT. Edward M. Clark Jr. Lead diver: LT. John Novaro

Purpose of Dive: Locate and survey Contact #1 N.E. of AWOIS Item #3183 using pneumofathometer 784996 and standard line pull signals: 1 (OK, stop, on the job); 2 (slack the line); 3 (take up the slack); 4 (haul away); 2-2 (purge the hose and take 3 least depth readings); 3-3 (purge the hose and take 3 max depth readings).

Equipment: Variable volume dry suits with standard scuba and accessory equipment in accordance with the NOAA Diving Regulations.

Planned Depth: Not to exceed 50' Planned Duration: Not to exceed 100min.

Divers	IN Pressure	Out Pressure	Pressure	In Time (UTC)	Out Time	Time	Depth	Comments
LT Novaro	3000	100	2900	1534	1559	28	34	
LCDR Perrin	2800	400	2400	1604	1607			
LT Novaro	2900	100	2800	1534	1559	28	34	
LCDR Perrin	2800	400	2400	1604	1607			
LT Novaro	2900	100	2800	1635	1705	34	37	
LCDR Perrin	2800	400	2400	1708	1712			
LT Novaro	3050	950	2100	1635	1705	34	37	
LCDR Perrin	3000	900	2100	1708	1712			
LT Novaro	3050	950	2100	1851	1902	31	37	
LCDR Perrin	3000	900	2100	1910	1930			
LT Novaro	3050	950	2100	1851	1902	31	37	
LCDR Perrin	3000	900	2100	1910	1930			

Post dive comments: The contact was found on the last dive. It is a steel hull of a barge and the divers were able to survey two sides attaching the float line near a corner of the hull. The short side either the bow or stern lies on a bearing of 065° mag.

LT Edward M. Clark Jr.  
Divemaster Signature

John Novaro  
Lead Diver Signature

ITEM INVESTIGATION

DATE: 2 MAY, 1984 (J.D.123)

SHIP/LAUNCH: HECK, Heck-3

LOCATION: Contact #1 NNW of the listed position of AWOIS Item # 3183

DIVE MASTER LT. Edward M. Clark Jr.

TIMES (UTC)

DIVERS: LCDR. Perrin

IN WATER

LT. Novaro

UNDER WATER

ON SURFACE

IN BOAT

MAXIMUM DEPTH Not to exceed 50'

DIVE DURATION Not to exceed 100 min.

PNEUMOFATHOMETER NO. #784996

ITEM 3193 Contact #1

ITEM

ITEM

POSITION

POSITION

POSITION

LEAST DEPTH

LEAST DEPTH

LEAST DEPTH

TIME(UTC) DEPTH + 4 hrs.

TIME(UTC) DEPTH

TIME(UTC) DEPTH

1. 1804/34.0

1. \_\_\_\_\_

1. \_\_\_\_\_

2. 1804/34.0

2. \_\_\_\_\_

2. \_\_\_\_\_

3. 1805/33.5 + 0.5' - 1.0' = 33.0' Least Depth

3. \_\_\_\_\_

3. \_\_\_\_\_

BOTTOM

BOTTOM

BOTTOM

TIME(UTC) DEPTH

TIME(UTC) DEPTH

TIME(UTC) DEPTH

1. 1806/37.0

1. \_\_\_\_\_

1. \_\_\_\_\_

2. 1806/37.0

2. \_\_\_\_\_

2. \_\_\_\_\_

3. 1807/37.0

3. \_\_\_\_\_

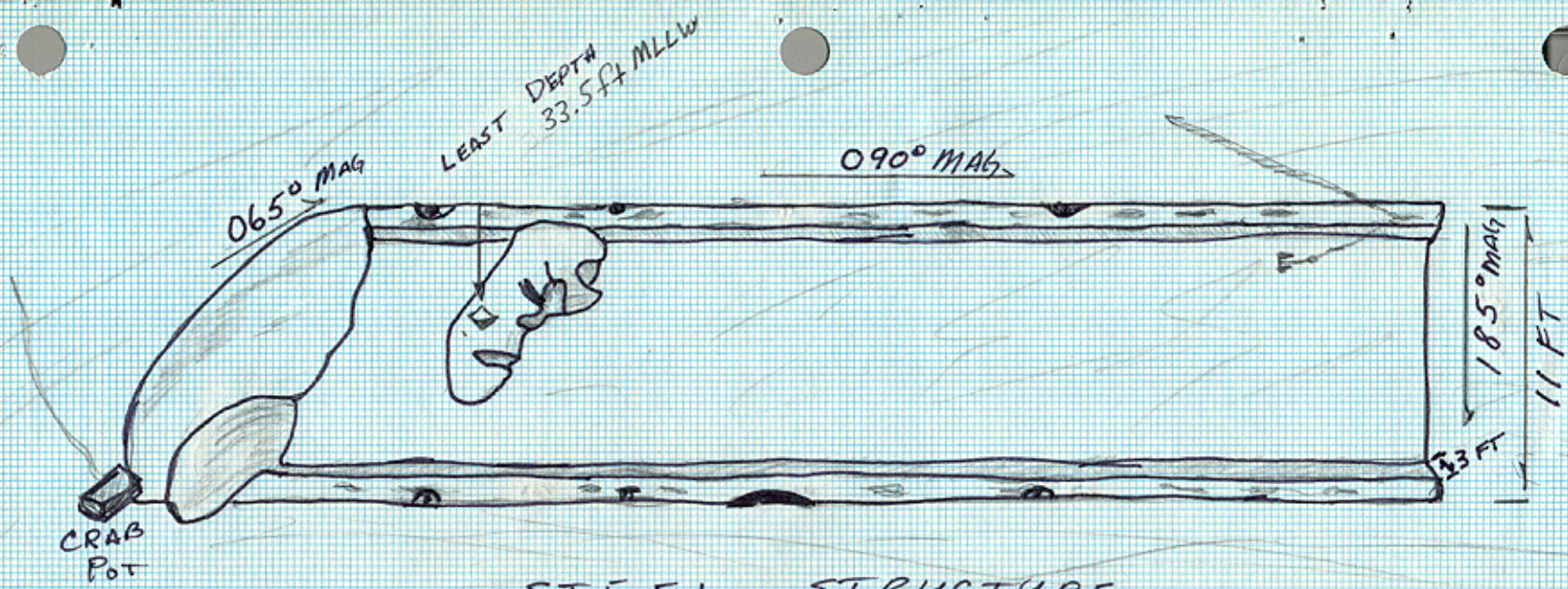
3. \_\_\_\_\_

DRAWING OF ITEM

DESCRIPTION OF ITEM

SEE ATACHED DRAWING

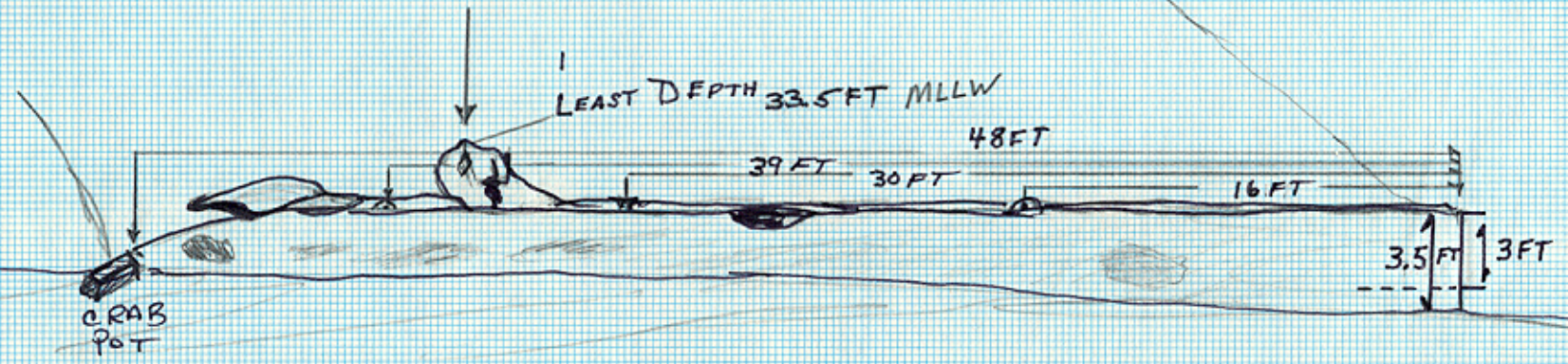
The contact is a steel barge like structure with a longitudinal orientation of 090° magnetic. The contact is 48 feet LOA with an 11 foot beam. The westerly end of the contact has sustained damage and the decking is forced upward and it is in this area that the least depth was established and recorded with the pneumofathometer. The contact is level with the bottom having no apparent list and no discernable scour.



STEEL STRUCTURE

LEAST DEPTH MEASURED FROM RAISED SHEET METAL DECKING.

A-57



ITEM INVESTIGATION

DATE: 10 May, 1984 (JD 131)

SHIP/LAUNCH: RUDE launch #25

LOCATION: AWOIS Item # 3183

DIVE MASTER LT. Edward M. Clark Jr.

TIMES (UTC)

DIVERS: LT. John Novaro

IN WATER \_\_\_\_\_

UNDER WATER \_\_\_\_\_

ON SURFACE \_\_\_\_\_

IN BOAT \_\_\_\_\_

MAXIMUM DEPTH Not to exceed 50'

DIVE DURATION Not to exceed 100 min.

PNEUMOFATHOMETER NO. #784996

ITEM 3183

ITEM \_\_\_\_\_

ITEM \_\_\_\_\_

POSITION \_\_\_\_\_

POSITION \_\_\_\_\_

POSITION \_\_\_\_\_

LEAST DEPTH \_\_\_\_\_

LEAST DEPTH \_\_\_\_\_

LEAST DEPTH \_\_\_\_\_

TIME(UTC) DEPTH (+4 hrs)

TIME(UTC) DEPTH

TIME(UTC) DEPTH

1. 2058 - 39.8  $+1.5' - 2.4' = 38.9'$  Least Depth

1. \_\_\_\_\_

1. \_\_\_\_\_

2. 2058 - 40.0  $\uparrow$   $\uparrow$

2. \_\_\_\_\_

2. \_\_\_\_\_

3. 2059 - 40.0 *inst. Tide*  
*corr. corr.*

3. \_\_\_\_\_

3. \_\_\_\_\_

BOTTOM

BOTTOM

BOTTOM

TIME(UTC) DEPTH

TIME(UTC) DEPTH

TIME(UTC) DEPTH

1. 2059 - 41.1

1. \_\_\_\_\_

1. \_\_\_\_\_

2. 2059 - 41.0

2. \_\_\_\_\_

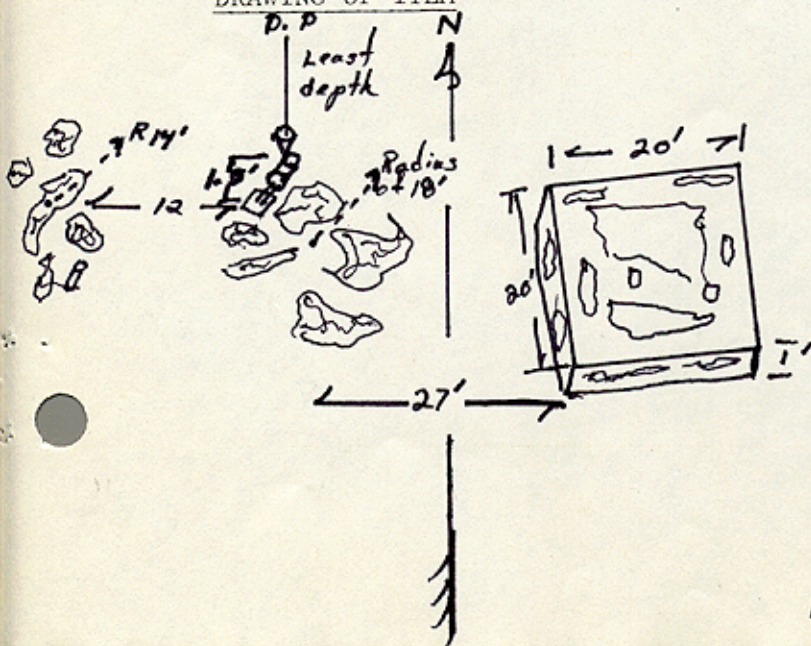
2. \_\_\_\_\_

3. 2059 - 41.0

3. \_\_\_\_\_

3. \_\_\_\_\_

DRAWING OF ITEM



DESCRIPTION OF ITEM

The item is in three sections and is composed of wood and steel. The middle section has some ground tackle that is recognizable but is primarily debris protruding from the sediment. The westerly portion is also a mass of steel and wood debris with low relief. The easterly portion is a section of deck which measures 20'X 20'. The detached position of least depth was recorded in the middle portion on a piece of ground tackle.



DIVING OPERATIONS

Date: 10 May, 1984 (JD 131) Unit: RUDE launch #25

Divemaster: LT Edward M. Clark Lead diver: LT Edward M. Clark

Purpose of Dive: Obtain the least depth on AWOIS Item #3183 using pneumofathometer

#784996 and standard line pull signals; 1 ( OK, stop, on the job ); 2 ( slack );

3 ( take up the slack ); 4 ( haul away ); 2-2 ( purge hose and take 3 least depth readings );

3-3 ( purge the hose and take 3 max depth readings )

Equipment: Variable volume dry suits with standard scuba and accessory equipment in

accordance with the NOAA Diving Regulations.

Planned Depth: Not to exceed 50' Planned Duration: Not to exceed 100 min.

Divers	IN Pressure	Out Pressure	Pressure	In Time (UTC)	Out Time	Time	Depth	Comments
LT. Clark LT. Novaro	3000 2950	1150 1450	1850 1500	1547 1547	1609 1609	22 22	50 50	
LT. Clark LT. Novaro	3100 3100	1100 1250	2000 1850	1951 1951	2018 2019	27 27	50 50	
LT. Clark LT. Novaro	1100 1250	350 450	750 800	2050 2050	2100 2100	10 10	50 50	

Post dive comments: The item was found to be in three different sections all in close  
proximity. All three portions of the wreckage are badly decomposed and are reduced to  
piles of wood and metal. The middle portion has a some decenable ground tackle and it was  
at <sup>this</sup> location that the least depth was taken. The easterly portion was found to be a wooden  
section of the hull approximately 20' X 20' and was located 27 feet from the ground  
tackle in the middle section. The westerly portion was 12 feet from the ground tackle and  
was debris and rubble of steel and wood.

*Edward M. Clark*  
 Divemaster Signature

*Edward M. Clark*  
 Lead Diver Signature

GEOGRAPHIC NAMES

FE-260

Name on Survey	Source of Information											
	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				
CHESAPEAKE BAY (title)												1
NEW POINT COMFORT SHOAL (title)												2
VIRGINIA (title)												3
												4
												5
												6
												7
												8
												9
												10
												11
												12
												13
												14
												15
												16
												17
												18
												19
												20
												21
												22
												23
												24
												25

Approved:

*Charles E. Harrington*  
Chief Geographer - N/C&S 2x5

JUL 30 1984

**HYDROGRAPHIC SURVEY STATISTICS**  
**REGISTRY NO.: FE-260**

Number of positions	2	<hr/>
Number of soundings	2	<hr/>
Number of control stations	10	<hr/>

	<u>TIME-HOURS</u>	<u>DATE COMPLETED</u>
Preprocessing Examination	1	<hr/> 8/15/84
Verification of Field Data	2	<hr/> 8/30/84
Quality Control Checks	1	<hr/>
Evaluation and Analysis	61	<hr/> 9/19/84
Final Inspection	3	<hr/> 9/19/84
<b>TOTAL TIME</b>	<hr/> 68	
Marine Center Approval		<hr/> 9/19/84

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

DATE: 7/6/84

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Marine Center: Atlantic

OPR: E609

Hydrographic Sheet: RU/HE 10/2/84, FE-260

Locality: Chesapeake Bay

Time Period: April 25 - May 23, 1984

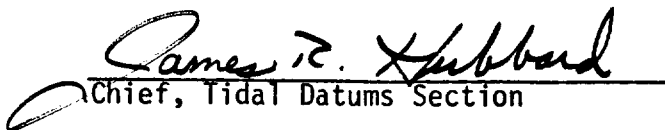
Tide Station Used: 863-8610 Hampton Roads, VA

Plane of Reference (Mean Lower Low Water): 4.01 ft.

Height of Mean High Water Above Plane of Reference: 2.6 ft.

Remarks: Recommended Zoning:


For Awois item #3183 Apply x0.90 Range Ratio.

  
Chief, Tidal Datums Section


Inspection Report  
FE-260

The completed survey has been inspected with regard to survey coverage, development of critical depths, cartographic symbolization, and verification or disapproval 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

  
\_\_\_\_\_  
Rudolph D. Sanocki  
Acting Chief, Hydrographic Surveys  
Branch

Approved September 19, 1984

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

ATLANTIC MARINE CENTER  
EVALUATION REPORT

REGISTRY NO.: FE-260

FIELD NO.: R/H-10-02-84

Virginia, Chesapeake Bay, 6 Miles NE of New Point Comfort Shoal

SURVEYED: 25 April to 23 May 1984

SCALE: 1:20,000

PROJECT: OPR-E609-RU/HE-84

SOUNDINGS: Pneumatic Depth Gauge

CONTROL: Del Norte  
(Range/Range)

Chief of Party.....D. D. Winter

Surveyed by.....N. G. Millett  
.....E. M. Clark  
.....T. G. Callahan

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

1. INTRODUCTION

a. No unusual problems were encountered during verification.

b. The field data for this field examination was collected at a scale of 1:10,000. It was processed during verification at a scale of 1:20,000 as required by section 7.3 of the Project Instructions.

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

2. CONTROL AND SHORELINE

a. The control is adequately described in sections F and G of the Descriptive Report.

b. There is no shoreline within the limits of this field examination.

3. HYDROGRAPHY

The only hydrography on this field examination is two Pneumatic Depth Gauge least depths on two dangerous sunken wrecks.

4. CONDITION OF SURVEY

The smooth sheet, hydrographic records and reports comply with the Hydrographic Manual except as follows:

a. No comparison was made with prior wire-drag field examination FE-222 WD (1978) as required by section 7.5 of the Project Instructions.

b. The discussion in section E(1) of the Descriptive Report about problems with the DSF6000N echo sounder was very informative. The field unit is encouraged to continue with such discussions when necessary.

c. The Descriptive Report for this survey was well written.

## 5. JUNCTIONS

This is an item investigation survey with no junctional requirements.

## 6. COMPARISON WITH PRIOR SURVEYS

### a. Hydrography

H-7750 1:40,000 1948-50

The discussion in section K of the Descriptive Report for the present field examination is adequate.

### b. Wire Drag

FE-222 WD 1:20,000 1978

This survey has not been processed. Prior wire drag strips common to the present survey were verified for comparison purposes.

1) A hang, at an effective depth of 34 ft., in Latitude 37°18'22.8", Longitude 76°07'47.0", during drag strip X-1 (18 April 1978), is the original source of the submerged dangerous wreck (AWOIS Item #3182) charted incorrectly in Latitude 37°18'22.8", Longitude 76°07'48.0", from information contained in Chart Letter (CL) 1960/78. This Chart Letter is the Monthly Activities Report covering 26 March to 25 April 1978 and sent by the NOAA Ships RUDE and HECK to the Director of the Atlantic Marine Center on 28 April 1978. (Telephone conversation with Mr. Roger Durosko, Area Team 2, Nautical Chart Section on August 29, 1984.)

This hang occurred just after position 16 and held to position 23 when the drag strip was ended. Upon retrieval of the wire, a mast, approximately 6 inches in diameter and 15 ft. long, was found entangled in it. This mast fell off the wire before a securing line could be attached.

Diver investigation of the hang was not done because, at the time, an NOS Directive did not allow any diving unless a positive pressure oxygen resuscitation unit was aboard a vessel.

A Klein side scan sonar unit was also used during the field work on this prior wire-drag field investigation. The search techniques used in 1978 are not presently known. A letter to the Associate Director,

Marine Surveys and Maps (C3), dated 15 May 1978 and marked as Attachment V in the Descriptive Report for this prior wire-drag field examination states that, as concerns this hang, "...extensive side scan sonar work has uncovered nothing of a suspicious nature that would indicate substantial remains of a wreck".

On the present field examination, the 400% side scan sonar coverage, which is adequate and properly done, found no indication of an object of any size within the search area. The hydrographer's charting recommendation in section L of the present Descriptive Report is reasonable and should be followed.

The present field examination is adequate to supersede the hang (AWOIS Item #3182) found on this prior wire-drag field examination.

What appears to be a conflict, with the 1978 work indicating something at the hang position and the 1984 work indicating nothing there, is actually the interpretation of the results of traditional and more recently accepted hydrographic surveying techniques. When a drag strip hung and brought up a section of mast, with no other available information, a reasonable doubt would require the charting of a submerged wreck at the hang position, even if the mast was the only object actually on the bottom. With 400% side scan sonar coverage over an area, the view of the entire bottom gives reasonable proof whether an object does or does not exist in its charted or reported position.

2) A hang, which occurred before any lift tests could be done, in approximate Latitude  $37^{\circ}19'19.6''$ , Longitude  $76^{\circ}08'09.7''$ , during drag strip W-1 (17 April 1978), is the original source of the dangerous submerged obstruction reported 1978 (AWOIS Item #3183) charted incorrectly in Latitude  $37^{\circ}19'19.8''$ , Longitude  $76^{\circ}08'13.2''$ , from information contained in CL 1960/78.

The hang position is approximate because Buoy #4, which was in close proximity to the hang, was towed under and sextant cuts were taken to Buoys #3 and #5 to locate the hang. The field noted in the Descriptive Report for this prior wire-drag field examination that these sextant cuts did not plot a firm position for the hang.

No effective depth of this hang could be determined since no lift tests were taken prior to the hang.

This item is charted incorrectly because the charting source, CL 1960/78, gave the position of this hang as Latitude  $37^{\circ}19.33'$  ( $37^{\circ}19'19.8''$ ), Longitude  $76^{\circ}08.22'$  ( $76^{\circ}08'13.2''$ ) (Telephone conversation with Mr. Roger Durosko on August 29, 1984). The actual position of this hang was determined during office processing of this strip. The position, Latitude  $37^{\circ}19'19.6''$ N, Longitude  $76^{\circ}08'09.7''$ W, is approximate as mentioned previously.

The somewhat scattered wreckage found by the present survey in Latitude  $37^{\circ}19'20.40''$ N, Longitude  $76^{\circ}08'12.75''$ W, with a least depth of 39 feet is the same obstruction hung by strip W-1 on FE-222 WD (1978). The difference between the present and prior positions is only 75



meters. The hang in 1978 was from the northeast and the present least depth and position of the wreckage was taken near the western end of the wreckage. Additionally the 1978 hang position is an approximation as previously mentioned.

It is recommended that this item (AWOIS Item #3183) be charted as an obstruction (wreckage) with a least depth of 39 feet and the obstr rep (1978) be removed from the affected charts. VCOM

7. COMPARISON WITH CHART 12224 (16th Edition, May 23, 1981)

a. Hydrography

Notice to Mariners 19/74 and CL 1960/78 are the sources of the charted investigation items. The charting recommendations discussed in section 6.b. of this report should be followed.

Attention is directed to the following:

The hydrographer makes additional charting recommendations in section L of the Descriptive Report.

Except as noted elsewhere in this Evaluation Report, the present field examination is adequate for charting. It was not the intent of this survey to supersede charted hydrography.

8. COMPLIANCE WITH INSTRUCTIONS

Except as noted in section 4 of this Evaluation Report, this field examination adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

Excellent work was done by the field unit. No additional work is recommended for AWOIS Items #3181, #3182, and #3183.

10. RECOMMENDATION

If there are unprocessed surveys in an area which is scheduled for future field work, no assignments for investigations of AWOIS items should be made until the survey data is verified by the appropriate processing office.

for R. D. Sanabhi  
Charles D. Meador  
Chief, Evaluation and Analysis Group  
Verification of Data and  
Evaluation and Analysis

H. LOCAL NOTICE TO MARINERS REPORT



**U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration**

NOAA SHIPS RUDE & HECK  
439 West York St.  
Norfolk, VA 23510

May 3, 1984

To: Commander, Fifth Coast Guard District  
Federal Building  
431 Crawford St.  
Portsmouth, VA 23705

From: *Donald D. Winter*  
LCDR Donald D. Winter  
Commanding Officer

Subj: Notice to Mariners

Survey operations by the NOAA Ships RUDE and HECK, east of Buoy N "C49", Chesapeake Bay, have located wreckage of a steel barge, 48' LOA, 11' Beam, at latitude  $37^{\circ}19'47.16''N$ , longitude  $76^{\circ}08'32.70''W$ . The least depth, determined by NOAA divers, over the wreck was 33.0 feet, reduced for predicted tides. This wreck is not presently charted.

Reference AWOIS Item 3183 (Contact #1).





**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NOAA SHIPS RUDE & HECK  
439 West York St.  
Norfolk, VA 23510

May 3, 1984

To: Commander, Fifth Coast Guard District  
Federal Building  
431 Crawford St.  
Portsmouth, VA 23705

From: *Donald D. Winter*  
LCDR Donald D. Winter  
Commanding Officer

Subj: Notice to Mariners

Survey operations by the NOAA Ships RUDE and HECK, east of Buoy N "C49", Chesapeake Bay, have located wreckage of a steel barge, 48' LOA, 11' Beam, at latitude 37°19'47.16"N, longitude 76°08'32.70"W. The least depth, determined by NOAA divers, over the wreck was 33.0 feet, reduced for predicted tides. This wreck is not presently charted.

Reference AWOIS Item 3183 (Contact #1).





**U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration**

NOAA Ships RUDE & HECK  
439 W. York Street  
Norfolk, VA 23510  
15 May, 1984

TO: Commander, Fifth Coast Guard District  
Aids to Navigation Branch  
Federal Bldg., 431 Crawford St.  
Portsmouth, VA 23705

FROM: *Donald W. Hunter*  
Commanding Officer  
NOAA Ships RUDE & HECK

SUBJ: Notice to Mariners

Hydrographic survey operations conducted by the NOAA Ships RUDE and HECK indicate that the presently charted dangerous "Obstr rep 1978" symbol at latitude  $37^{\circ}19'19.80''N$ , longitude  $076^{\circ}08'13.20''W$  should be changed to a wreck, over which depth is known, symbol at latitude  $37^{\circ}19'20.32''N$ , longitude  $076^{\circ}08'12.75''W$ . This wreck was investigated by NOAA divers and found to have a least depth of 40 feet, corrected for predicted tides.



**J. DANGERS TO NAVIGATION REPORT**

Negative Report

MA023-05-85

## LETTER TRANSMITTING DATA

DATA AS LISTED BELOW WERE FORWARDED TO YOU  
BY (Check): ORDINARY MAIL  AIR MAIL REGISTERED MAIL  EXPRESS GBL (Give number) \_\_\_\_\_

DATE FORWARDED

February 2, 1985

NUMBER OF PACKAGES

one tube; one box

TO:

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

**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.

FE-260, OPR-E609-RU/HE-84, Field No. R/H-10-2-84, Virginia, Chesapeake Bay.  
6 Miles N.E. of New Point Comfort Shoal

Package #1 of 2

Tube: / One original Descriptive Report (smooth sheet included in this D.R.)

- / Five Preliminary Field Sheets
- / Three Side Scan Sonar Contact Overlays
- / Seven Side Scan Sonar Coverage Plots

Package #2 of 2

Box: / One accordion file containing echograms and field data printouts

- / Three Sounding Volumes
- / One envelope with data removed from Descriptive Report
- / Seven envelopes with Side Scan Sonograms
- / One envelope with Smooth Tides Listing
- / One cahier containing:
  - final control printout
  - final position printout
  - final sounding printout
  - L-File (Z-Record) printout

FROM: (Signature)

*David MacFarland*  
D. B. MACFARLAND, JR., LCDR, CHIEF, HYDRO SURVEYS BR

RECEIVED THE ABOVE  
(Name, Division, Date)

*Dwayne S. Clark*  
*February 6, 1985*  
*N/CG243*

Return receipted copy to:

HYDROGRAPHIC SURVEYS BRANCH, N/MA0232  
ATLANTIC MARINE CENTER  
NOAA - NATIONAL OCEAN SERVICE  
339 WEST YORK STREET  
NORFOLK, VA 23510

ATTN: THERESA HIGH

76° 09'

76° 08'

76° 07'

37° 20'

33 *Wk*

39 *obstr (wreckage)*

37° 19'

FE-260(1984) AWOIS ITEMS NO. 3181, 3182 AND 3183  
SCALE 1:20,000  
POLYCONIC PROJECTION  
NORTH AMERICAN DATUM OF 1927  
MLLW DATUM

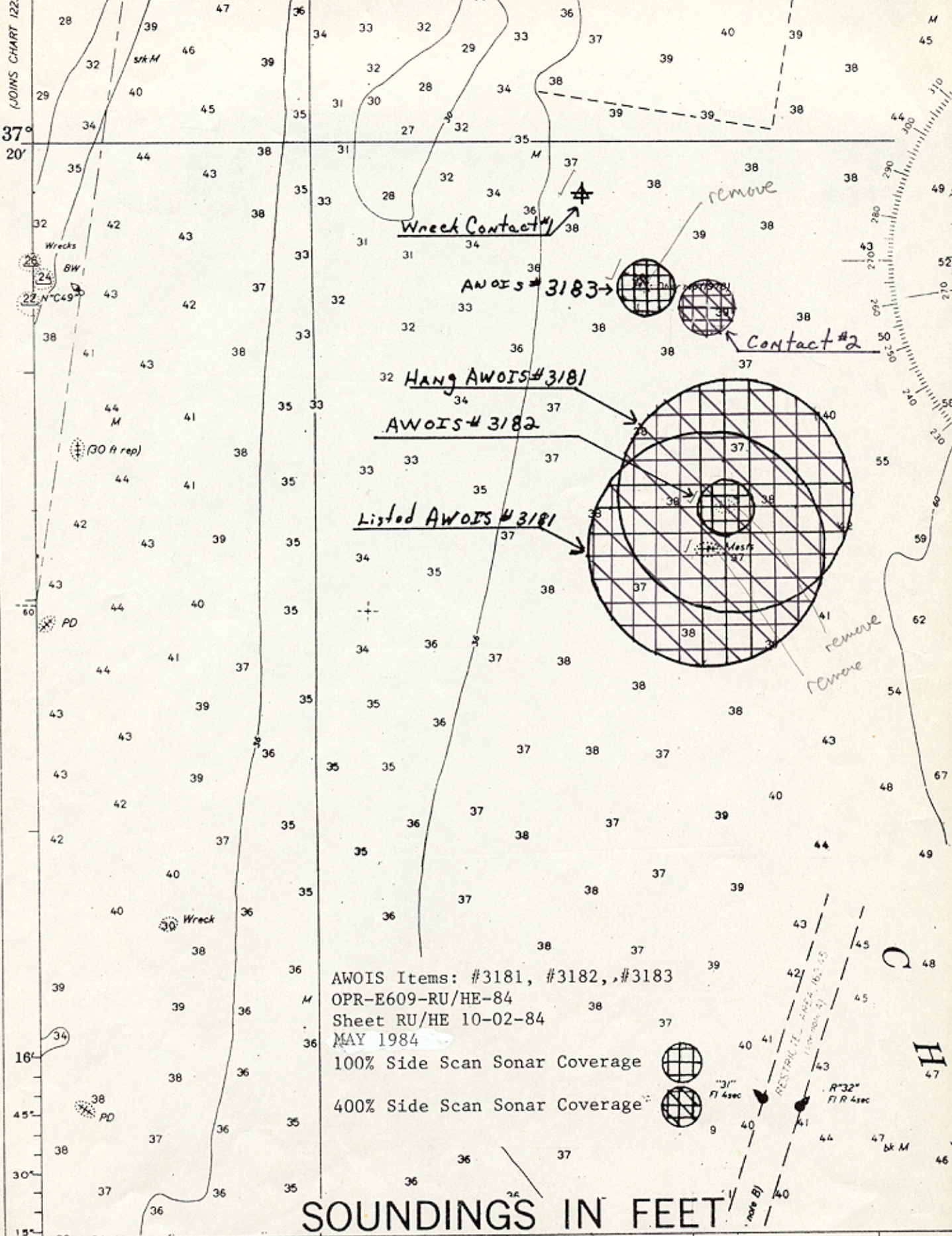
76° 09'

76° 08'

76° 07'



37° 20'



AWOIS Items: #3181, #3182, #3183  
 OPR-E609-RU/HE-84  
 Sheet RU/HE 10-02-84  
 MAY 1984  
 100% Side Scan Sonar Coverage  
 400% Side Scan Sonar Coverage



SOUNDINGS IN FEET

76° 10'

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

Hydrographic Index No. 69 K

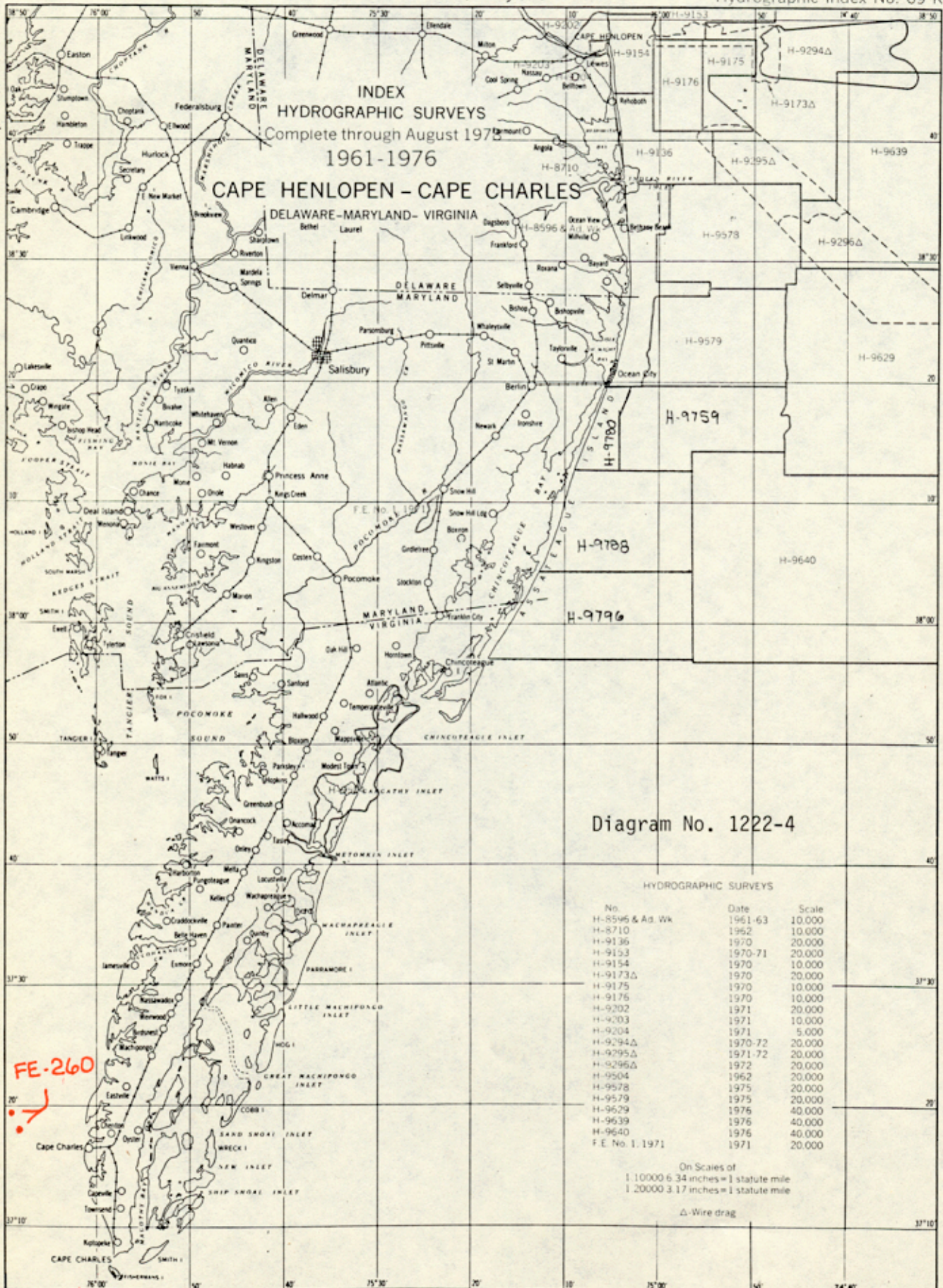


Diagram No. 1222-4

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. FE-260

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
12220	3-18-86	JEP Irvine	(Full) Part Before After Verification Review Inspection Signed Via Drawing No. #52
12224	1-3-87	Ed Marto	Full Part Before After Verification Review Inspection Signed Via Drawing No. 19 Rev: <del>44</del> to 39: WK Revised 9/19/85
12221	11-7-84	John Pierce	Full Part Before After Verification Review Inspection Signed Via Drawing No. 85
12224	11/29/89	Stuart Bell	Full Part Before <del>After</del> Verification Review Inspection Signed Via Drawing No. 20 Deleted 2 subm weeks
			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.
			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.
			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.
			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.
			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.