

FE296

SIDE SCAN

Diagram No. 77-4

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey ... Field Examination.....
Field No. HE-20-1-87.....
Registry No. FE-296SS.....

LOCALITY

State Maryland.....
General Locality .. Chesapeake Bay.....
Sublocality Vicinity of Sandy Point and
..... Tolly Point Shoal.....

1987

CHIEF OF PARTY
LCDR C.B. Lawrence.....

LIBRARY & ARCHIVES

DATE June 14, 1988.....

☆U.S. GOV. PRINTING OFFICE: 1985-566-054

FE296
SIDE SCAN

"GP"

clb

12082

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on form in back

HYDROGRAPHIC TITLE SHEET

FE 296-SS

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.

~~HE-10-2-87, HE-10-3-87~~
HE-20-1-87

State Maryland

General locality ~~Annapolis~~ CHESAPEAKE BAY

Locality ~~Tolly Point to Sandy Point~~ VICINITY OF SANDY POINT AND TOLLY POINT SHOAL

Scale 1:20,000 (Field work - 1:10,000) Date of survey May 7(128), June 22(173), 1987

Instructions dated December 19, 1986 Project No. OPR-E609-RU/HE-87

Vessel HECK (S-591) EDPN - 9140

Chief of party Christopher B. Lawrence, LCDR, NOAA

Surveyed by LT J.C. Talbott, LT. A.^E Francis, ENS A.^L Beaver, ST W. Morris

Soundings taken by echo sounder, hand lead, pole DSF 6000N Echo Sounder

Graphic record scaled by Auto

Graphic record checked by Francis, Beaver, Morris

Protracted by _____ Automated plot by SYNETIC 1201 PLOTTER
~~H.D.A.S. (AMC)~~

Verification by Hydrographic Surveys Branch - AMC

Soundings in ~~fathoms~~ feet at ~~MLW~~ MLLW FEET (MLLW)

REMARKS: This survey begins a new era in data collection for the National Ocean Service. This is the first N.O.S. survey to use the H.D.A.S. (Hydrographic Data Acquisition System). Along with the development and testing of any new system, anomalies will occur. Anomalies associated with the inception of this new system are detailed in the following report.

This report is also unique in that it is the first using a new format to describe item investigation surveys. NOTES IN THE DESCRIPTIVE REPORT WERE MADE IN RED DURING OFFICE PROCESSING.
AWOIS/SURF 4/12/89 LG
APPROVED 5/24/88
N. W. K. Cartographer

MA-9-96

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DESCRIPTIVE REPORT TO ACCOMPANY
SURVEY FE-296SS
Scale 1:20,000
NOAA Ship HECK (S-591)
LCDR Christopher B. Lawrence, CMDG

PROJECT OVERVIEW

A. Project Authorization

This survey was conducted in accordance with Hydrographic Project Instructions OPR-E609-RU/HE-87, Chesapeake Bay, Maryland and Virginia, dated December 19, 1986, as amended by Change No. 1 dated January 29, 1987, change No. 2 dated July 24, 1987 and Change No. 3 dated August 24, 1987.

B. Project Purpose

The purpose of this project is to verify or disprove the existence of charted submerged wrecks and obstructions that pose a danger to navigation in the vicinity of the planned Baltimore Harbor and Channel 50-foot dredging project.

C. Project Area

The project area extends from just north of the Chesapeake Bay Bridge southward to Smith Point at the Maryland/Virginia border. A total of 30 AWOIS Items have been assigned; 21 were assigned by the original project instructions; 3 additional items were assigned on August 9, 1987 at the request of the RUDE and HECK, and 6 additional items were assigned on September 23, 1987 also at the request of the RUDE and HECK. The following AWOIS items were investigated for this report:

AWOIS NUMBER	POSITION	SURVEY REQUIREMENTS	DATES SURVEYED
4455	039 ⁰ 00' 37" N 076 ⁰ 22' 20" W	1000 METERS 400% COVERAGE	May 20-June 22 (DOY 140-173)
4456	038 ⁰ 55' 59" N 076 ⁰ 23' 37" W	500 METERS 400% COVERAGE	May 7,8; June 29 (DOY 127,128,180)

D. Survey Vessels

The following vessels were used for data collection:

Vessel	Electronic Data Processing Number	Primary Function
NOAA Ship HECK (S-591)	9140	Side Scan Sonar
HECK Launch (HE-3)	NONE	Diving operations
HECK Boston Whaler (HE-1)	NONE	Mini-ranger service

E. Methodology

The survey was carried out using an EG&G Model 260 slant corrected Side Scan Sonar recorder and a Model 272, 100/500 khz Side Scan towfish. Side Scan sonification was supplemented by echo-soundings obtained utilizing the ship's Raytheon DSF 6000N echo-sounder. Least depths on contacts found by diver investigation were taken with a pneumofathometer.

Primary control for survey operations was provided by a Motorola Mini-ranger Falcon 484 system. Multiple lines of position (LOP's), as many as four for each individual data set number (DSN), were recorded on line. Upon recognition of possible targets, diver investigations were performed to identify each contact deemed significant.

F. Overview of AWOIS Items 4455 and 4456

Project Status - This descriptive report is the first submitted by the NOAA Ship HECK for data acquired using the new Hydrographic Data Acquisition System (HDAS). Although at the time of submission of this report, the HECK had completed 12 AWOIS investigations, HDAS processing capabilities were incomplete until mid-July; consequently, data processing and reports have lagged substantially behind data acquisition. Descriptive reports for remaining AWOIS investigations are in progress and will follow receipt of this initial report within several weeks. AWOIS items will be grouped in subsequent descriptive reports such that items in relatively close proximity to each other and on which the same positioning control configuration was used will be submitted together in a single report.

This descriptive report also marks the first HECK submission using the new Item Investigation format. Any comments and suggestions for improvement would be most welcome.

Acquisition and Processing Software - Numerous enhancements and modifications to both data acquisition and processing software were in progress at the time of this survey, and the combination of software bugs, limited system capability and unfamiliarity of the system by shipboard personnel resulted in several unusual situations which are explained below:

During the survey of AWOIS items 4455 and 4456 the on-line swath coverage graphic initially displayed fix numbers with a character height of 4 mm. A subsequent software change reduced the character size to 1.5 mm. In addition to the overly large fix number size, initial field sheets were run with 200% coverage and holidays displayed on a single sheet. These factors, coupled with general inexperience with this new survey system resulted in very cluttered field sheets. Although the verifier should be able to verify adequacy of coverage from the field sheets, the smooth swath coverage plots are much more legible.

In reviewing the survey data for submission, it became apparent that some method of correlating contacts located on different survey lines would greatly facilitate processing. Meetings held at the Naval Station Annapolis and attended by HECK, RUDE, AMC Verification and Rockville HDAS personnel have addressed the need for a "Contact Abstract File". Work is continuing in this area and future reports should facilitate the correlation of contacts by inclusion of a contact abstract.

For this survey, no straightforward method of plotting detached positions on contacts was available. This problem was overcome by entering the position in the Control Station Table and plotting the position as if it were a control station. Within the individual AWOIS item investigation reports, each contact is identified by both its contact number and its associated Control Station Table Number (CSTN) as it appears on the smooth plot.

At the time of this survey, swath width was not recorded by HDAS; although, it was used for generating the real time coverage plot. For smooth plotting purposes, the swath width, as logged on the coverage abstracts was manually entered prior to plotting. Subsequent software versions give the hydrographer the option of using the recorded swath width or, entering an adjusted swath width.

Several different logging forms were generated to assist in tracking data flow. "HDAS Position, Tape, and DSN Abstract" tracks daily acquisition and "Side Scan Sonar Post Processing Tracking" tracks data post processing. The latter identifies raw tape number and data as either raw, unedited data or, data edited prior to post processing. A raw data tape listing of each tape is provided.

To facilitate ease of inspection of individual swath and track plots, multiple sheets were plotted in the following pattern:

AWOIS 4455

TRACK PLOTS - 2 200% PLOTS

SWATH PLOTS - 4 100% PLOTS

ADDITIONAL LINES AND HOLIDAY PLOTS - 1 SHEET

CONTACT PLOTS - 1 ROUGH, 1 SMOOTH

AWOIS 4456

CONTACT PLOT ONLY (The contact was found on the first side scan sonar recon line and no additional side scan work was necessary.)

For ease of data identification, each sheet on AWOIS 4455 was plotted in a different color and all holidays were plotted orange. Holiday and development swath plots are plotted on the two 200% trackplot sheets. Unedited data is plotted in black and edited data is plotted in red on the two track plots.

SOUNDING EQUIPMENT

A. EG&G Model 260 Side Scan Sonar

The HECK is equipped with an EG&G model 260 Slant Corrected Side Scan Sonar recording unit (S/N 0011443) and a Model 272, 100/500 khz towfish (0011591). The towfish was led through a fairlead block over the stern of the HECK and towed astern. Fish height was controlled by a combination of vessel speed and cable length. During normal operations the 100 khz frequency was used.

Daily "rub tests" were performed and confidence checks were performed when possible during daily operations. The results of these checks are annotated and included as part of each day's graphic record (see Appendix IA for an abstract of SSS tests)* In general, the EG&G produced a high quality picture; however, problems with thermoclines degraded the picture quality somewhat. In shoal waters the problem was accentuated to the point that at times the record was almost unusable. During these times, the ship moved to other areas to work until the thermocline broke down. DATA REMOVED FROM DESCRIPTIVE REPORT AND FILED WITH FIELD DATA.

B. Raytheon DSF 6000N Echo Sounder

Echo soundings were taken with a Raytheon DSF 6000N Dual Beam Echo-Sounder (S/N A116N). The unit was calibrated daily with an

Electronic Depth Simulator Instrument (EDSI) provided by AMC/EEB. Data collected with the DSF 6000N was used for reconnaissance purposes only. Since no capability to apply corrections to echo soundings existed at the time of this survey no sounding plots were generated. In general the DSF provided a good quality representation of the bottom (see Appendix IB for dates of use and abstracts of daily tests). *DATA REMOVED FROM DESCRIPTIVE REPORT AND FILED WITH FIELD DATA.*

C. Pneumofathometer Gauge

Least depths on obstructions were determined using a pneumofathometer gauge as described in Hydrographic Survey Guideline No. 55. For this survey a 0-70 FSW gauge (S/N 8607004N) and a 0-140 FSW gauge (S/N 8606822N) were used. Strong currents and wind occasionally made calibrations difficult to perform. On days when no calibration was possible, the subsequent calibration was checked to insure that the prior depth readings recorded were acceptable. No unusual problems were encountered with this system. Calibrations were performed by attaching the hose to a leadline and lowering the hose to a known depth and recording the reading (see Appendix IC for Pneumofathometer Calibration data and dates of use). *DATA REMOVED FROM DESCRIPTIVE REPORT AND FILED WITH FIELD DATA.*

D. Leadline

Leadline No. H-1-87 was used for calibration of the pneumofathometers (see Appendix IC for leadline calibration record). *DATA REMOVED AND FILED WITH FIELD DATA.*

CORRECTIONS TO ECHO SOUNDINGS

A. Velocity Corrections

Velocity correction data for the DSF6000N echo sounder was obtained by Martek cast (Martel Ser. Nos. HECK-205, RUDE-232). NOAA Ships RUDE and HECK each took velocity casts throughout work in this area. The data was reduced and velocity corrections calculated using PC 530 on the ship's IBM computer. Martek units receive a pre- and post-deployment calibration at AMC (see Appendix ID for Martek calibration and velocity correction data). *DATA REMOVED FROM DESCRIPTIVE REPORT AND FILED WITH FIELD DATA.*

B. Heave, Roll and Pitch Correctors

Heave, roll and pitch were recorded by a Datawell B. V. (Ser. No. 19110-C) heave, roll and pitch sensor (HIPPY) located on the centerline, midships. This sensor gathers on-line heave data which is applied to soundings in near real time.

No heave, roll, pitch sensor calibration requirements or procedures have been defined. Because sounding data acquired for this project is for reconnaissance use only, this deficiency does

not compromise the quality ^{OF} ~~to~~ the survey. However, it is recommended that procedures for calibration of this unit be defined and tested prior to conduction of survey operations requiring reduction of sounding data.

C. Settlement and Squat Correctors

Settlement and squat corrections for the NOAA Ship HECK were determined on June 12, 1986 in Key West, Florida. The static draft of the HECK for the Raytheon DSF6000N transducer was determined to be 6.8 feet. At the time of this report, HDAS software was not capable of applying this corrector. Since all side scan sonar survey work was carried out at vessel speeds of less than 200 r.p.m., the settlement and squat corrector was effectively 0.0 feet for all data acquired. Anticipated software modifications will provide the capability to apply both draft and settlement and squat correctors to sounding data during acquisition. See Appendix IF for Settlement and Squat test results. DATA REMOVED FROM DESCRIPTIVE REPORT AND FILED WITH FIELD DATA.

D. Tide Correctors

The tidal datum for this survey is mean lower low water (MLLW). The operating tide gages at Annapolis, MD. (857-7330) and Solomons Island, MD. (857-5512) provided direct control for hydrographic operations and served as control for datum determination for all subordinate stations during work on this project. For AWOIS items 4455 and 4456, no subordinate gages were required.

The operating stations at Baltimore, Maryland and Hampton Roads, Virginia were the reference stations for predicted tides.

Predicted tides were generated by HDAS from high and low water times and correctors input from the 1987 NOS Tide Tables. A request for smooth tides was made to N/NOA12 on July 27, 1987 (see Appendix IG for tides information). DATA REMOVED FROM DESCRIPTIVE REPORT AND FILED WITH FIELD DATA.
HORIZONTAL POSITION CONTROL

A. Datum

The horizontal datum for this project is the North American Datum of 1983 (NAD 83)* A listings of control station positions for the NAD 83 datum was provided to the HECK by N/CG241 prior to the project, as well as a table of shifts in meters and seconds between the NAD 83 and NAD 27 datums.*SEE ALSO SECTION 2.C. OF THE EVALUATION REPORT.

Two stations were established by HECK personnel; an eccentric position on Thomas Point Shoal Light and an eccentric position on Sandy Point Shoal Light. Both positions were established to 3rd Order accuracy standards. See Appendix IIA for a list of control stations used.

ELECTRONIC POSITIONING SYSTEMS

Positioning for AWOIS items 4455 and 4456 was provided by a Motorola Mini-ranger Falcon 484 microwave positioning system. HDAS provides the capability to acquire and process up to four (4) lines of position (LOP) for improved positioning accuracy. During work on this survey, three lines of position were routinely used during on-line operations. A minimum acceptable signal strength (MASS) of 15 was used in the positioning algorithm. Any LOP with signal strength below this value was not used in computation of the vessel's position.

Three point sextant critical systems checks were performed at the beginning and ending of each week or when possible. Aside from occasional null zones within the working area, problems with mini-ranger positioning systems were minimal.

At the southern limit of the AWOIS 4455 search area, the Chesapeake Bay Bridge occasionally blocked one of the LOP's for short periods of time. During these times, two ranges were recorded. Any resulting position shifts resulting from the loss of the third LOP were corrected during post processing by using the HDAS hard smooth capability. All edits are clearly marked by color coding in red on track plots. See Appendix IIB & IIC for baseline calibration data and daily systems check data. ~~DATA REMOVED FROM DESCRIPTIVE REPORT AND FILED WITH FIELD DATA.~~

SURVEY SHEETS (FIELD SHEETS)

All survey sheets were made aboard the NOAA Ship HECK using the HDAS and Brunning 824A CS Plotter (S/N 15237). Due to current software constraints, all plotted sheets are of fixed dimensions 45.0 cm by 62.0 cm. Survey sheets were plotted using the NAD 1983.

All field sheets, smooth track and swath plots were plotted at a scale of 1:10,000 for improved legibility. A final contact plot at a scale of 1:20,000 is also submitted. See Appendix VI for plotter sheet parameters. ~~DATA REMOVED FROM DESCRIPTIVE REPORT AND FILED WITH FIELD DATA.~~

AWOIS ITEM INVESTIGATION REPORTS

Following are the individual AWOIS item investigation reports for AWOIS items 4455 and 4456:

Respectfully submitted,

Arthur E. Francis, Lt., NOAA

Arthur E. Francis, LT, NOAA
Operations Officer
NOAA Ship HECK

AWOIS INVESTIGATION REPORT
AWOIS Item No: 4455

LARGEST SCALE CHART: 12282, 25th Ed., June 2/84

VESSEL: NOAA Ship HECK (S 591)

PERSONNEL: DIC - LT. Joseph C. Talbott, CMDG, LT. A. Francis,
ENS A. Beaver, ST W. Morris

DATES OF INVESTIGATION: May 20 - June 22, 1987 (DOY 140-173)

AWOIS HISTORY: LNM38/73--18.5 FT. BOAT REP. SUNK OFF SANDY PT.,
MD IN APPROX. POS. LAT.39-00-37N. LONG. 76-22-20W IN 60 FT.

SURVEY REQUIREMENTS: FULL--VERIFY OR DISPROVE THROUGH 400 % SIDE
SCAN SONAR SEARCH, 1000 METER MIN. RADIUS. ID REQUIRED IF FOUND.
ASSIGNED: OPR-E609-R/H-87

METHOD OF INVESTIGATION: Side Scan Sonar and diving operations
were the primary methods of investigation. The DSF 6000N echo
sounder was used to obtain the under keel profile and to aid in
positioning the diver's search buoy. The search area was
constrained on the extreme western side by shoal water.

RESULTS OF INVESTIGATION: Seven significant contacts were
identified during SSS operations. Six contacts were determined
by intensive SSS development to be significant items requiring
further investigation and one was deemed insignificant.

Detailed information and recommendations on each contact found
while searching for AWOIS Item 4455 follows in the individual
Contact\Target Investigations Reports:

AWOIS 4455 CONTACT SUMMARY

Of the six items investigated by diving operations, contact number S913.1 (CSTN 554) was felt to be AWOIS number 4455. It is recommended that the current charted item be changed to that of a sunken wreck not dangerous to surface navigation at the position determined.

Contact S286.2 (CSTN - 551) was determined to be several clay spoils piles dumped outside the charted dump site in the vicinity. ~~No charting recommendation was necessary as the piles are small and insignificant.~~ SEE SECTION 6. Q. OF THE EVALUATION REPORT.

Contact S427.1 (CSTN - 552) was the remains of a highly deteriorated barge and it is recommended that it be charted as a wreck over which ^A the depth ^{OF 49 FEET} is known ^{AND A DANGER CURVE} at the determined position. SEE ALSO SECTION 6. Q. OF THE EVALUATION REPORT.

Contact S648 (CSTN - 553) is an uncharted 17 meter power boat and it is recommended that the wreck be charted as a wreck over which ^A the depth ^{OF 36 FEET} is known ^{WITH A DANGER CURVE} at the determined position. SEE ALSO SECTION 6. Q. OF THE EVALUATION REPORT.

Contact P342.2 (CSTN - 555) is the remains of a highly deteriorated sailboat. The wreck is well outside the shipping lanes and it is recommended that ~~it be charted as a wreck not dangerous to navigation at the determined position.~~ ^{A WRECK OVER WHICH A DEPTH OF 47 FEET IS KNOWN AND A DANGER CURVE BE CHARTED IN PRESENT SURVEY LOCATION.}

Contact S257.2 (CSTN - 556) The remains of a long wooded beam, 18 feet long by 3 feet high by 10 inches thick. The contact did not extend more than 3 feet off the bottom and it is recommended that it not be charted. DO NOT CONCUR. SEE SECTION 6. Q. OF THE EVALUATION REPORT.

CONTACT INVESTIGATION REPORT
ON AWOIS 4455
ON CONTACT : S286.2
(CSTN - 551)

DATE/DOY OF DIVE: JUNE 2, 1987/(153)

I. POSITION OF CONTACT: LAT 039 00 29.548N
LONG 076 22 02.296W

GENERAL STATEMENT OF POSITION QUALITY: Four lines of position were used to position the contact. A standard deviation of less than two meters was recorded and the fix is considered of good quality. The position data is recorded in the sounding volume.

II. LEAST DEPTH DATA:

METHOD OF DETERMINATION: NA

1) TIME (UTC): 1930	RAW LEAST DEPTH READING (FT): NA
2) TIME (UTC):	RAW LEAST DEPTH READING (FT): NA
3) TIME (UTC):	RAW LEAST DEPTH READING (FT): NA

AVERAGE LEAST DEPTH (FT) : NA

AVERAGE PNEUMO DEPTH (FT):
TIDE CORRECTOR (FT) :
TRA CORRECTOR (FT) :

ACTUAL LEAST DEPTH (FT) : NA

III. SEARCH PROCEDURES

A. DETERMINATION OF DIVE SITE :

The contact was originally positioned by SSS

B. SEARCH PROCEDURE :

A dive buoy was deployed and a circle search was performed until the contact was located.

IV . ITEM DESCRIPTION :

Several large mounds of what appears to be a clay like material was discovered during the circle search. The typical bottom was a sandy silty material and the mounds were quite prominent standing approximately 4 - 5 ft above the bottom. A discontinued dump site lies just east of the dive site and it is suspected that dump spoils were dropped at this local instead of in the dump site. The difference in the

material types would help to explain the difference in reflectivity of the contact to the surrounding bottom type.

V. RECOMMENDATIONS:

Based on the depth of the surrounding water and, the make-up of the contact, this contact is not considered a hazard to navigation and no further investigation is necessary. CONCUR
ITEM HAS BEEN PLOTTED ON SMOOTH SHEET FOR REFERENCE ONLY
AND SHOULD NOT BE CONSIDERED FOR CHARTING.

SEE ALSO SECTION 6.a. OF THE EVALUATION REPORT.

CONTACT INVESTIGATION REPORT ON
AWOIS 4455
CONTACT : S427.1
(CSTN - 552)

✓ AWOIS, item # 7260
see DOY 155

DATE\DOY OF DIVE: JUNE 3, 1987/(154)

I. POSITION OF CONTACT: LAT 039 00 56.546N
LONG 076 22 31.458W

GENERAL STATEMENT OF POSITION QUALITY: Four lines of position were used to position the contact. The above position is from DOY 155 which is the dive which resolves this contact. A standard deviation of less than 1 meter was recorded and the fix is of good quality.

II. LEAST DEPTH DATA:

METHOD OF DETERMINATION : NA

1) TIME (UTC): LEAST DEPTH READING (FT): NA
2) TIME (UTC): LEAST DEPTH READING (FT): NA
3) TIME (UTC): LEAST DEPTH READING (FT): NA

AVERAGE LEAST DEPTH (FT) : NA

AVERAGE PNEUMO DEPTH (FT): NA
TIDE CORRECTOR (FT) : NA
TRA CORRECTOR (FT) : NA

U. ACTUAL LEAST DEPTH (FT) : NA

III. SEARCH PROCEDURES:

A. DETERMINATION OF DIVE SITE :

The contact was originally positioned by Side Scan Sonar.

B. SEARCH PROCEDURE

A dive buoy was deployed and a circle search was performed until the contact was located.

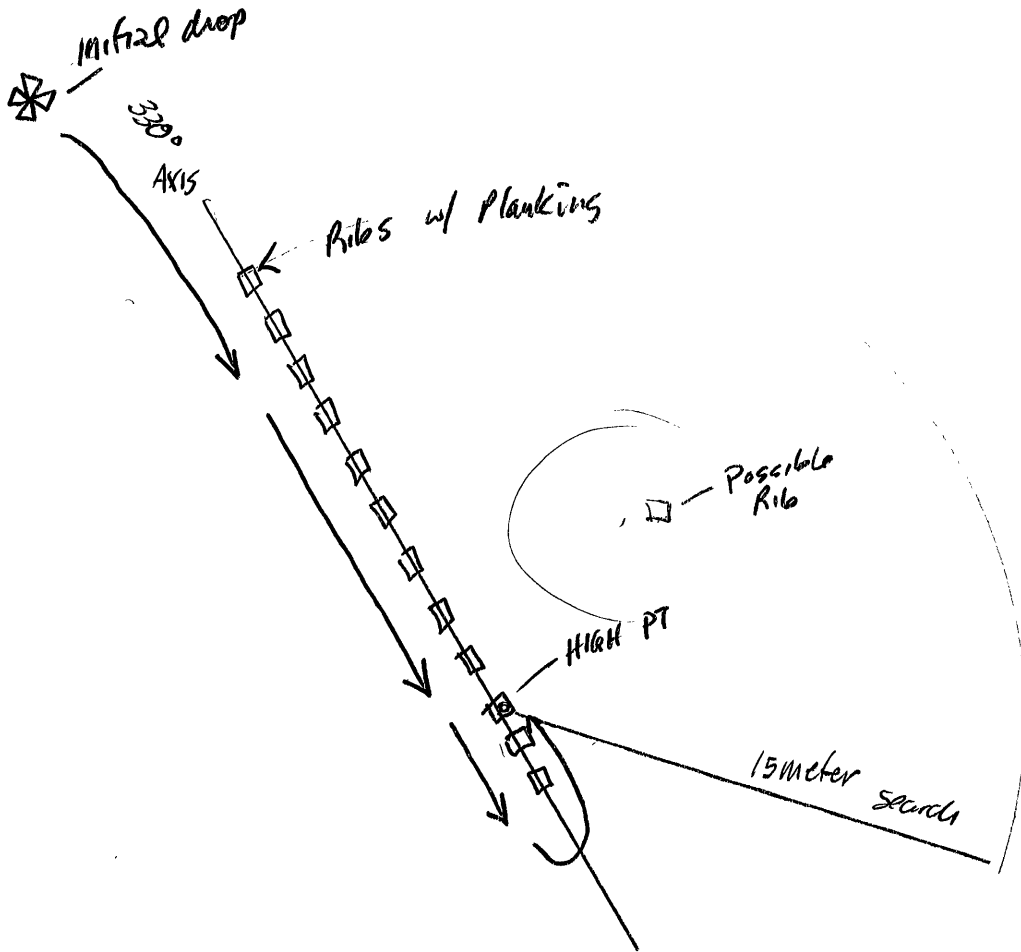
IV. ITEM SUMMARY

A. RESULTS: The ribs of the hull of a large decayed wreck. The ribs had a definite angle to them and were composed of wood with some wooden planking left between some of the ribs. Only the west side of the wreck was investigated and further investigations should indicate if that was truly the west side of the wreck. The wreck was lying with it's centerline pointing in a heading of 330 degrees true. A pile of debris was found at the southern end of the rib line, composition unknown. A circle search was conducted around the high point to locate further high points, but was discontinued due to high currents before any results could be obtained.

V. RECOMMENDATIONS: Due to the large size of the wreck, limited visibility and strong currents experienced during operations, it is recommended that further dive operations be conducted at the site to determine least depth, size, and positioning of the wreck. A follow up dive was performed on DOY 155 and the position and least depth of the wreck were determined. See DOY 155 dive report for resolution of this contact.

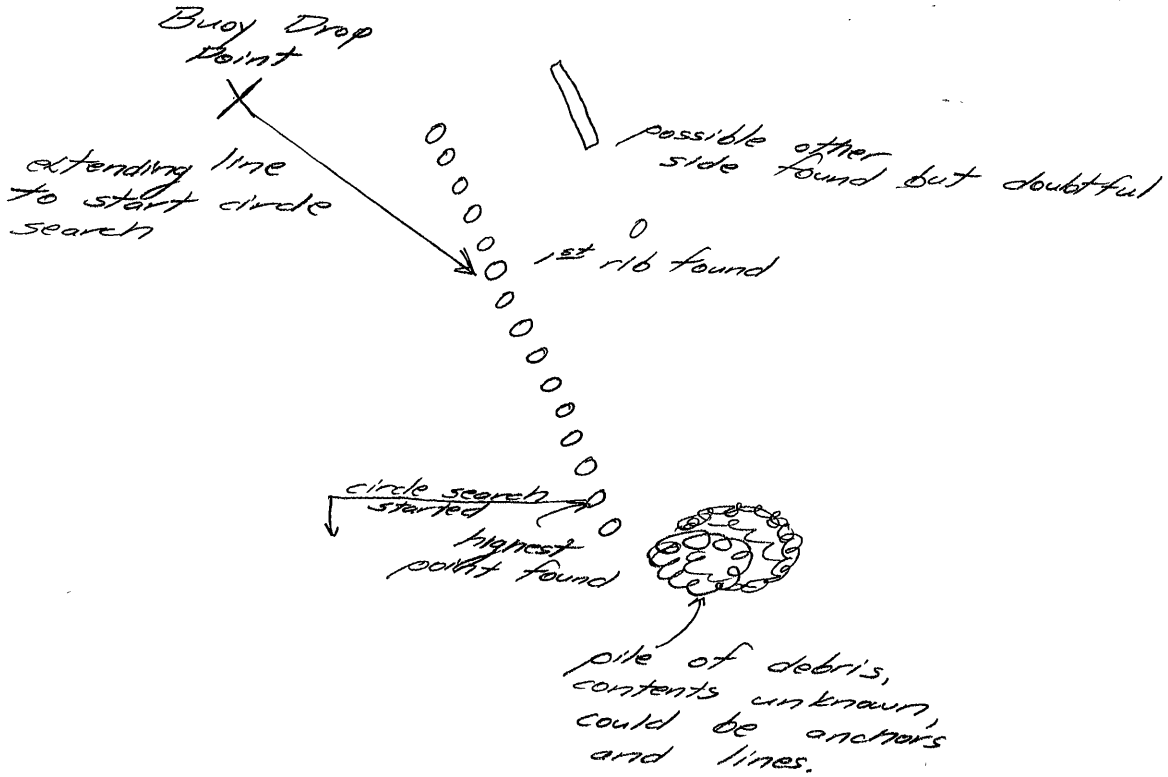


Awois # 4455
Contract S 427.1
DOY 154





Awois 4455
CONTACT - 427.1
004 154



CONTACT INVESTIGATION REPORT
ON AWOIS 4455
CONTACT : S427.1
(CSTN - 552)

*AWOIS Item
7260
New Item
✓*

DATE\DOY OF DIVE: JUNE 4, 1987/(155)

I. POSITION OF CONTACT: LAT 039 00 56.546N
LON 076 22 31.458W

GENERAL STATEMENT OF POSITION QUALITY: Four lines of position were used to position the contact. A standard deviation of less than 1 meter was recorded and the fix is considered of good quality.

II. LEAST DEPTH DATA:

METHOD OF DETERMINATION : PNEUMOFATHOMETER

1) TIME (UTC):1724 LEAST DEPTH READING (FT): 51.4
2) TIME (UTC):1724 LEAST DEPTH READING (FT): 51.4
3) TIME (UTC):1725 LEAST DEPTH READING (FT): 51.4

AVERAGE LEAST DEPTH (FT) : 51.4

AVERAGE PNEUMO DEPTH (FT): 51.4
TIDE CORRECTOR (FT) : ~~00.9~~ -2.0
TRA CORRECTOR (FT) : NA

ACTUAL LEAST DEPTH (FT) : ~~50.5~~ 49.4
PLOTTED DEPTH (FT) 49.0

III. SEARCH PROCEDURES:

- A. DETERMINATION OF DIVE SITE :
The contact was originally positioned by Side Scan Sonar.
- B. SEARCH PROCEDURE :
A dive buoy was deployed and a circle search was performed until the contact was located.

IV. ITEM DESCRIPTION:

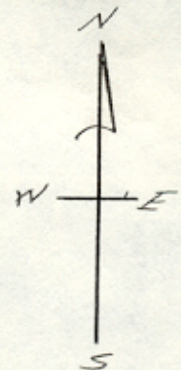
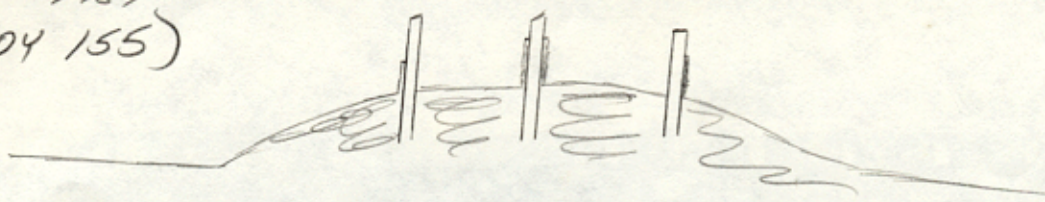
- A. RESULTS: The remains of an uncharted old oyster barge was found. The remains were determined to be 30 meters long by 10 meters wide lying in a line with the bow at 150 degrees and the stern at 330 degrees magnetic. The barge appeared to be lying on it's keel and was covered with shells as well as having them to either side.

The wreck extended 8-10 feet off the bottom with the highest point measured at a depth of 51.5 feet. There was some planking remaining between some of the ribs but most of it was gone, indicating that the wreck had been there for a long time. A pile of chains, line, and other debris as well as a large round wooden structure was found at the bow of the wreck.

- V. RECOMMENDATIONS: Due to the large size of the wreck and the position of it in relation to the shipping channel, it is recommended that this wreck be charted as a wreck over which ^A the depth ^{OF 40 FEET} is known ^{AND A DANGER CURVE} on the next edition of the chart at the determined position, ~~and least depth.~~
SEE ALSO SECTION 6.9. OF THE EVALUATION REPORT.

4 JUNE 1987
(004 155)

END VIEW

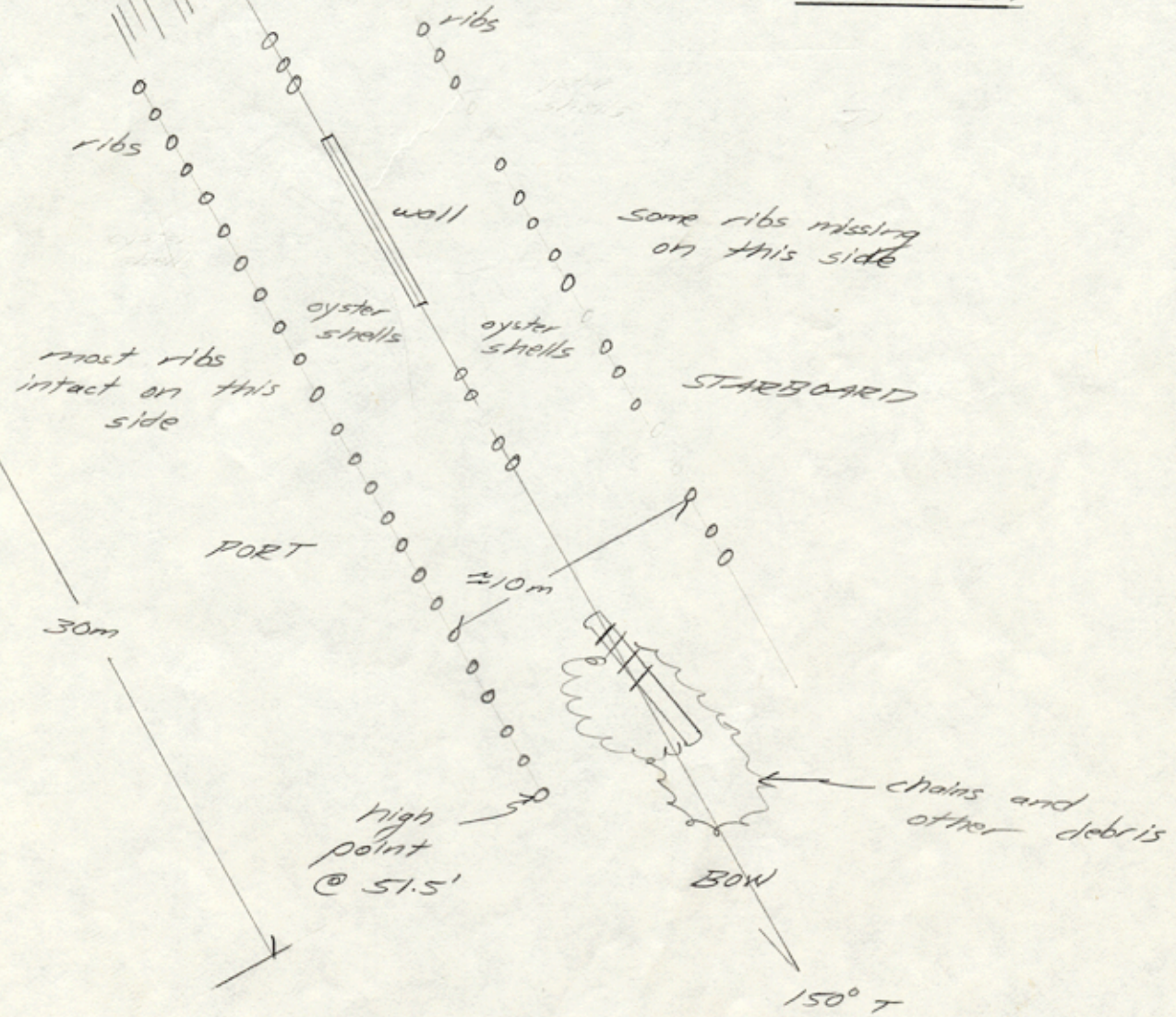


STERN

330° T



TOP VIEW



notes: the oyster barge appeared to be lying on it's keel and surrounded with shells, there was about 8-10 ft. of depth difference between the high point and the bottom, some of the planking remained between the ribs in places, all planking and ribs were wooden, if anything it was tilted a little to the east side (starboard), the wreck was highly deteriorated as if it had been there a long time, wreck uncharted

CONTACT INVESTIGATION REPORT
ON AWOIS 4455
CONTACT : S648
(CSTN - 553)

*W/K removed
CL 112 (89)*

DATE/DOY OF DIVE: JUNE 9, 1987/(160)

I. POSITION OF CONTACT : LAT 038 59 53.681N
LON 076 22 56.181W

GENERAL STATEMENT OF POSITION QUALITY: Four lines of position were used to position the contact. A standard deviation of 1.2 meters was recorded and the fix is considered of good quality.

II. LEAST DEPTH DATA

METHOD OF DETERMINATION : PNEUMOFATHOMETER

1) TIME (UTC): 1647	LEAST DEPTH READING (FT)	: 37.0
2) TIME (UTC): 1647	LEAST DEPTH READING (FT)	: 37.0
3) TIME (UTC): 1648	<u>LEAST DEPTH READING (FT)</u>	: 37.0

AVERAGE LEAST DEPTH (FT) : 37.0

AVERAGE PNEUMO DEPTH (FT): 37.0
TIDE CORRECTOR (FT) : -00.6
TRA CORRECTOR (FT) : N/A

ACTUAL LEAST DEPTH (FT) : 36.4
PLOTTED DEPTH (FT) : 36.0

III. SEARCH PROCEDURES

A. DETERMINATION OF DIVE SITE :

The contact was originally positioned by echosounder.

B. SEARCH PROCEDURE :

A dive buoy was deployed and a circle search was performed until the contact was located.

IV. ITEM DESCRIPTION

A. RESULTS:

The wreck of a large power boat was found measuring approximately 17 meters long (total length) by 5 meters wide. The keel of the vessel was lying in a north south direction in a large scour made by the current. The vessel was very much intact and was lying on it's keel with a slight list to starboard. A least depth of 37 feet was recorded and an exact position was obtained from the ship.

The highest point of the vessel was approximately 12-15 feet off the scour floor. The bow, which was facing to the south, was found to have a very large hole in it which was determined to be the cause of the sinking. Two large barrels were found on the forward part of the vessel and were thought to be part of an earlier salvage attempt. The appearance of the vessel indicated that it had not been down for much more than 2-5 years and several objects had appeared to be taken by earlier divers.

V. RECOMMENDATION:

Based on the location and depth of this wreck, it is recommended that it be charted as a wreck over which ^A the depth ^{OF 30 FEET} is known ^{WITH A DANGER} at the position ^{AND} ~~and least depth~~ determined by this investigation. ^{CURVE}
SEE ALSO SECTION 6.9. OF THE EVALUATION REPORT.

AWOIS 4455
DOY 160

PROJECT E600-HE-87
NESSEL HULL (9140)

CONTACT

CORRECTED LD, - 36.4'
(E) TIME - 1647
DOY 160

JUNE, 9, 1987

DIVERS/ FRANCIS + BEAVER

\$
L

MEASURED DEPTH - 37.0

PRED TIDE CORR - -.6

ACTUAL LD, - 36.4

LEAST DEPTH (L.D.)

37.0 FT (BY PNEUMOFATHOMETER)

SURROUNDING
DEPTH

Canopy supports
(lowered by divers)

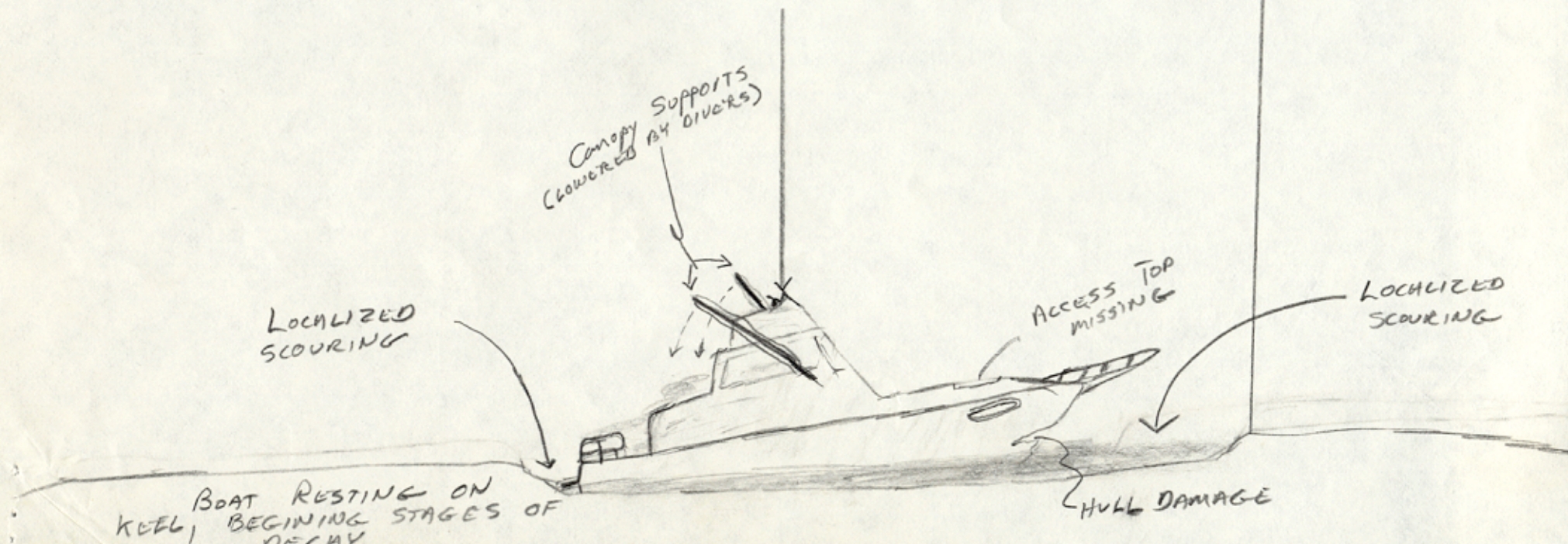
LOCALIZED
SCOURING

ACCESS TOP
MISSING

LOCALIZED
SCOURING

BOAT RESTING ON
KEEL, BEGINNING STAGES OF
DECAY

HULL DAMAGE



CONTACT INVESTIGATION REPORT
ON AWOIS 4455
CONTACT : 9913.1
(CSTN - 554)

AWOIS 4455

DATE/DOY OF DIVE: JUNE 16, 1987/(167)

I. POSITION OF CONTACT : LAT 039 00 55.146 N
LON 076 22 12.425 W

GENERAL STATEMENT OF POSITION QUALITY: Four lines of position were used to locate the contact. A standard deviation of less than 1 meter was recorded and the fix is considered of good quality.

II. LEAST DEPTH DATA

METHOD OF LEAST DEPTH : PNEUMOFATHOMETER

1) TIME (UTC): 1710	LEAST DEPTH READING (FT)	: 56.6
2) TIME (UTC): 1710	LEAST DEPTH READING (FT)	: 56.4
3) TIME (UTC): 1710	<u>LEAST DEPTH READING (FT)</u>	: 56.5
	AVERAGE LEAST DEPTH (FT)	: 56.5

AVERAGE PNEUMO DEPTH (FT):	56.5
TIDE CORRECTOR (FT)	: -00.98
<u>TRA CORRECTOR (FT)</u>	: N/A

ACTUAL LEAST DEPTH (FT)	: 55.67
<i>PLOTTED DEPTH (FT)</i>	<i>55.0</i>

III. SEARCH PROCEDURES

A. DETERMINATION OF DIVE SITE :

The contact was originally positioned by Side Scan Sonar and Echosounder.

B. SEARCH PROCEDURE :

A dive buoy was deployed and a search was not necessary as the buoy fell on top of the contact.

IV. ITEM DESCRIPTION:

A. RESULTS: The divers search buoy landed directly within the hull of the remains of the boat found. A search by the divers found the remains to be a small boat, approx 15 ft. long by 4 to 5 ft wide. All that remained was the outer hull of the boat which was filled with sediment, old pieces of line and, some densely encrusted metal pipes. A least depth was taken on the shoalest point and a detached

position was taken. A portion of the hull (made of wood) was brought to the surface by the divers. The boat appeared to have been on fire prior to sinking. In addition, light blue paint remained on the outside of the hull. No name was found.

V.

RECOMMENDATIONS: Based on the size, position and, general age of this boat as evident by the amount of deterioration, it is the opinion of the hydrographer that this contact is AWOIS item 4455. In its current location and depth of water this boat constitutes no hazard to navigation and; therefore, it is recommended that the charted symbol for this wreck (AWOIS 4455) be ^{DELETED.} ~~changed to that for a sunken wreck not dangerous to surface navigation at the position determined by this investigation. IT IS ALSO RECOMMENDED THAT A WRECK OVER WHICH A DEPTH OF 55 FEET IS KNOWN AND A DANGER CURVE BE CHARTED IN PRESENT SURVEY LOCATION.~~

AWOS # 4455
DOY 167
JUNE 16, 1987

PROJECT E609-HE-87
VESSEL HECK (9140)

CONTACT S9101

CORRECTED L.D. — 55.6 FT

(Z) TIME — 1710

DOY 167

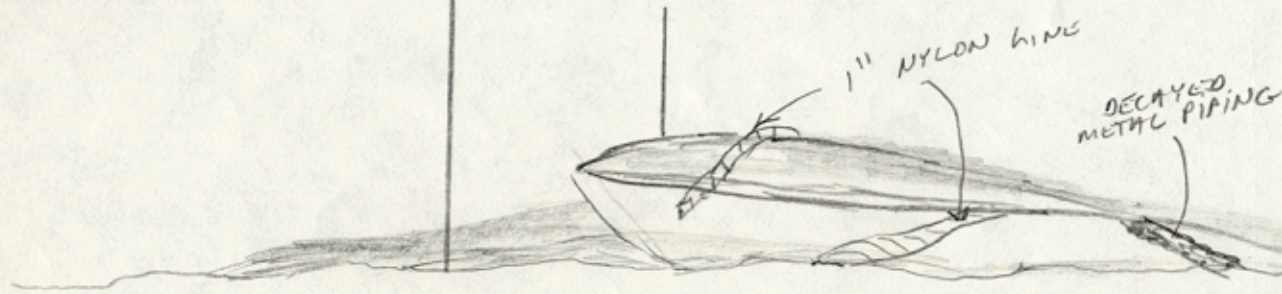
DIVERS / FRANCIS + BLAUER

\$

MEASURED DEPTH - 56.5'
PRED TIDE CORR - 0.9'
ACTUAL DEPTH - 55.6'

SURROUNDING
DEPTH
AS MEASURED BY
DIVERS SUBMERSIBLE
DEPTH GAUGE
≈ 62 FT

LEAST DEPTH (L.D.)
56.5 FT (BY PNEUMOFATHOMETER)



VESSEL APPEARS TO
BE BURNED PRIOR TO SINKING
STILL HAD LIGHT BLUE PAINT
ON WOOD HULL
HULL FILLED WITH
SEDIMENT

BOAT RESTING ON KEEL, ROLLED SLIGHTLY TO PORT
ADVANCED STAGES OF DECAY, STERN BURIED IN BOTTOM

CONTACT INVESTIGATION REPORT
ON AWOIS 4455
CONTACT : P342.2
(CSTN - 555)

New Item

DATE/DOY OF DIVE: JUNE 17, 1987/(168)

I. POSITION OF CONTACT : LAT 039 01 03.709 N
LON 076 21 22.392 W

GENERAL STATEMENT OF POSITION QUALITY: Four lines of position were used to locate the contact. A standard deviation of less than 1 meter was recorded and the fix is of good quality. The position data is recorded in the sounding volume on DOY 168.

II. LEAST DEPTH DATA:

METHOD OF LEAST DEPTH : PNEUMOFATHOMETER

1) TIME (UTC): 1100	LEAST DEPTH READING (FT)	: 48.4
2) TIME (UTC): 1100	LEAST DEPTH READING (FT)	: 48.4
3) TIME (UTC): 1100	<u>LEAST DEPTH READING (FT)</u>	: 48.4
	AVERAGE LEAST DEPTH (FT)	: 48.4

AVERAGE PNEUMO DEPTH (FT):	48.4
TIDE CORRECTOR (FT)	: - 1.1 0.8
<u>TRA CORRECTOR (FT)</u>	: N/A

ACTUAL LEAST DEPTH (FT)	: 47.6
PLOTTED DEPTH (FT)	47.0

III. SEARCH PROCEDURES

A. DETERMINATION OF DIVE SITE :

The contact was originally positioned by Side Scan Sonar and Echosounder.

B. SEARCH PROCEDURE :

A dive buoy was deployed and a circle search was conducted for a 10 meter radius before the contact was found.

IV. ITEM SUMMARY

A. RESULTS:

A search by the divers found the remains to be a small boat, approximately 24 ft. long by 8 ft. wide. All that remained was the port side, stem, and stern of the outer hull. There was a large piece of the bow railing lying inside the hull and a cleat on the stern corner, port side. A least depth was taken on the

highest point, which was the bow, and a detached position was obtained by the ship. The wreck was lying on its keel with no noticeable list. A search was conducted for the starboard side, but nothing was found. What remained of the hull was badly deteriorated and appeared to be made of wood and steel. After a complete inspection of the remains, it was decided that what we had probably found were the remains of an old sailboat that had sunk many years ago and not AWOIS #4455. It was also concluded that it was not a hazard to navigation.

- V. RECOMMENDATIONS: The contact had a least depth that was determined to be of no hazard to navigation and was located a good distance outside the channel. This wreck should be charted as a ~~sunken wreck not dangerous to surface navigation at the position determined by this investigation.~~ WRECK OVER WHICH A DEPTH OF 47 FEET IS KNOWN AND A DANGER CURVE IN PRESENT SURVEY LOCATION.

SKETCH OF ITEM D-342.2

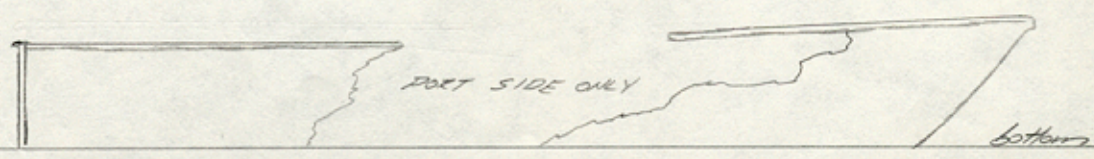
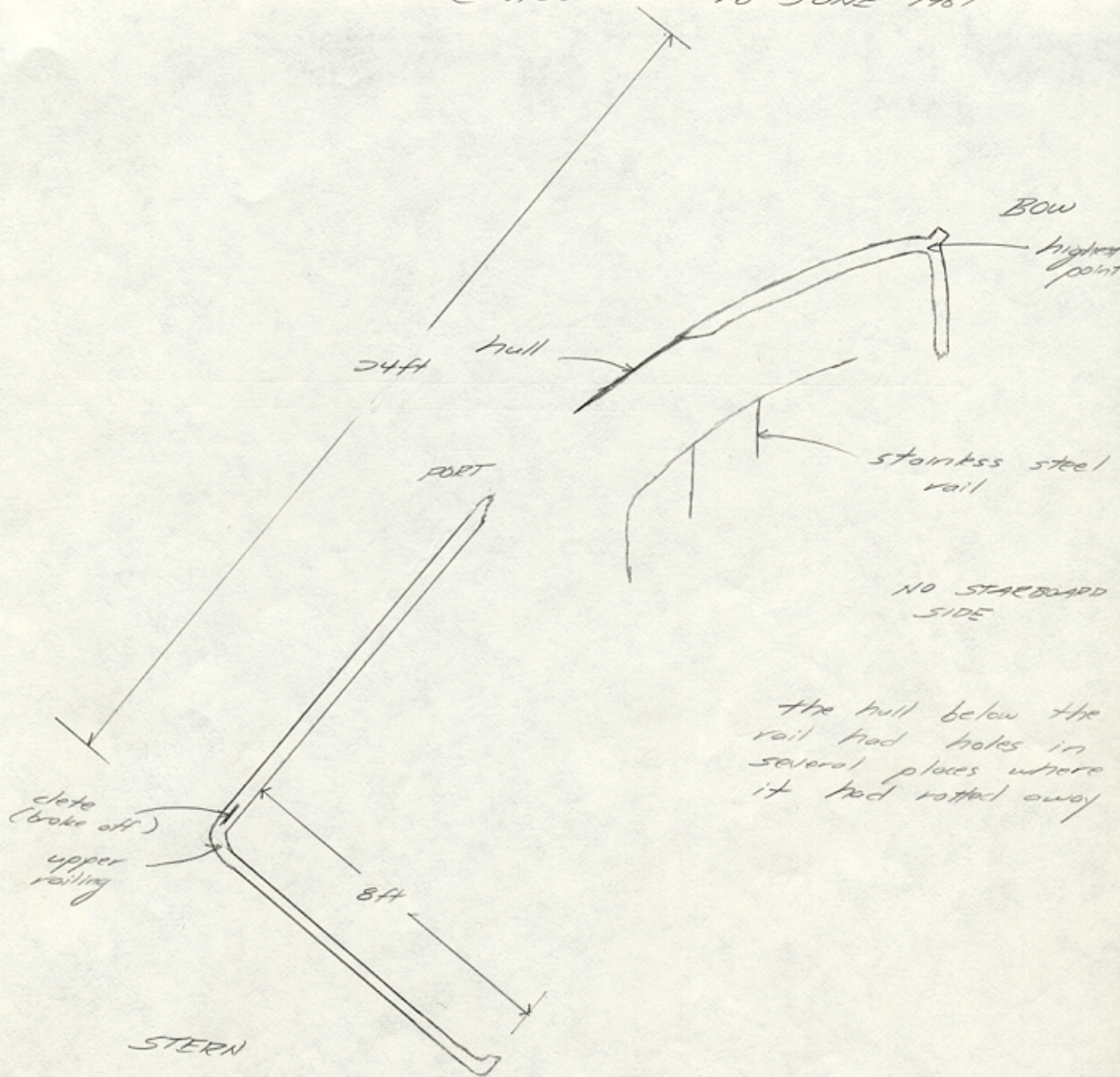
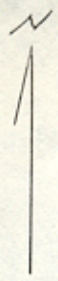
AWOIS: #4455

PROJECT: E609-HE-87

DOY: 168-169

VESSEL: NOAA SHIP HECK (9140)

LEAST DEPTH 47.3 ft @ 1100 EST 18 JUNE 1987



CONTACT INVESTIGATION REPORT
ON AWOIS 4455
CONTACT : 5257.2
(CSTN - 556)

New Item

DATE/DOY OF DIVE: JUNE 18, 1987/(169)

I. POSITION OF CONTACT: LAT 039 00 30.793 N
LON 076 22 05.602 W

GENERAL STATEMENT OF POSITION QUALITY: Four lines of position were used to locate the contact. A standard deviation of less than 1 meter was recorded and the position is of good quality.

II. LEAST DEPTH DATA:

METHOD OF LEAST DEPTH : N/A

1) TIME (UTC): N/A LEAST DEPTH READING (FT) : N/A
2) TIME (UTC): N/A LEAST DEPTH READING (FT) : N/A
3) TIME (UTC): N/A LEAST DEPTH READING (FT) : N/A

AVERAGE LEAST DEPTH (FT) : N/A

AVERAGE PNEUMO DEPTH (FT): N/A
TIDE CORRECTOR (FT) : N/A
TRA CORRECTOR (FT) : N/A

ACTUAL LEAST DEPTH (FT) : N/A

III. SEARCH PROCEDURES

A. DETERMINATION OF DIVE SITE :

The contact was originally positioned by side scan sonar and echo sounder.

B. SEARCH PROCEDURE :

A dive buoy was deployed and a circle search was conducted for a 20 meter radius before the contact was found.

IV. ITEM DESCRIPTION:

A. RESULTS:

A 20 meter circle search by the divers found what appeared to be a long, low wooden structure. The structure is approximately 18 feet long, 3 feet high, and 10 inches thick.

It is tilted at a 10 degree angle from the vertical and has a large amount of sediment accumulated on one side. There is a large open chock located towards one end which indicates that the structure had once been part of a vessel. No least depth was taken, but a detached position was obtained with the ship. A search was conducted in the area and no further remains were found. It was concluded that this was not AWOIS #4455.

(SEE SKETCH)

- V. RECOMMENDATIONS: ~~Since the contact does not extend more than three feet off the bottom and is not located in the channel, it is recommended that this item not be charted. SEE SECTION 6.9. OF THE EVALUATION REPORT FOR A RECOMMENDATION ON THIS ITEM.~~

SKETCH OF 5257.2

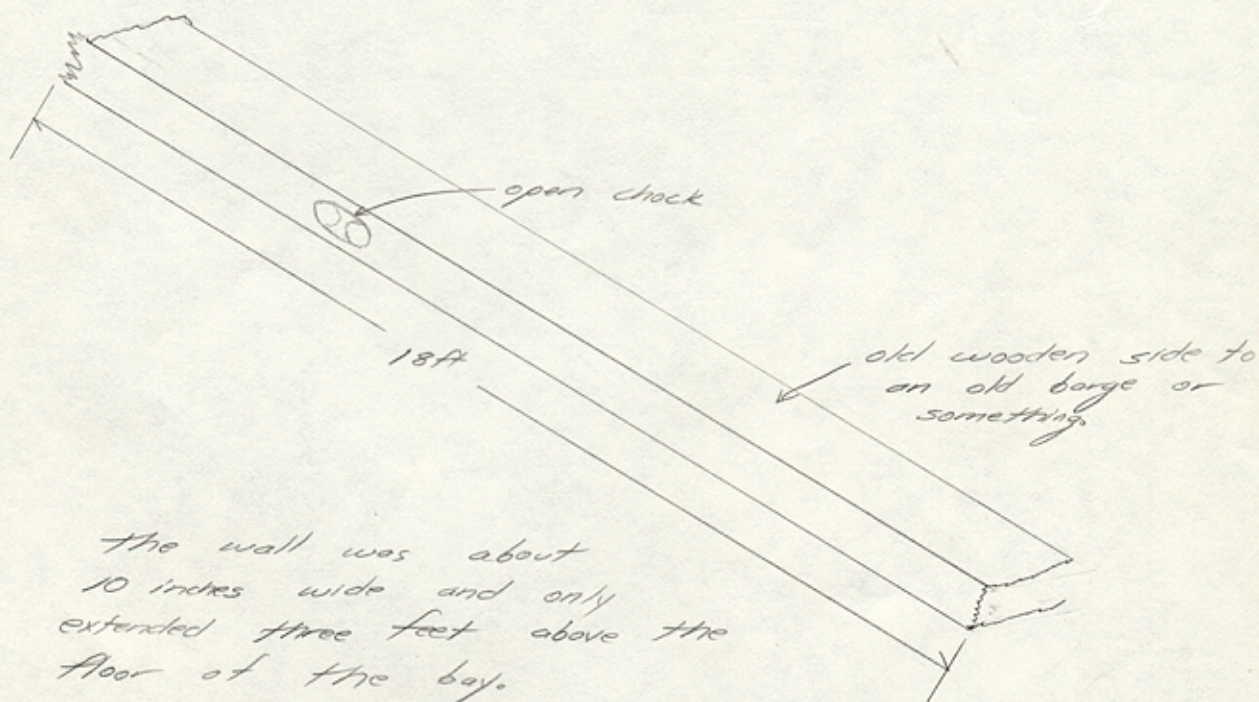
AWOIS: #4455

PROJECT: EG09-HE-87

DOY: 169

VESSEL: NOS HECK (9140)

NO LEAST DEPTH TAKEN



The wall was about
10 inches wide and only
extended three feet above the
floor of the bay.

AWOIS ITEM INVESTIGATION REPORT
AWOIS Item No: 4456

LARGEST SCALE CHART: 12282, 25th Ed. June 2/84

VESSEL: NOAA Ship HECK (S 591)

PERSONNEL: OIC - LT. Joseph C. Talbott, CMDG, LT. A. Francis,
ST W.. Morris

DATES OF INVESTIGATION: May 7-8, June 29, 1987 (DOY 127,128,180)

AWOIS HISTORY: H8523WD/60-SPECIAL PROJECT 10,000-816 (FIELD NO. WA-HI-10-60,WD); WRECK HUNG AT 60 FT., CLEARED BY 50 FT IN LAT 38-55-58.8N, LONG. 76-23-38.4W. THE WRECK CHARTED IN LAT. 38-54.82N, LONG. 76-23.85W, COVERED 45 FT. WAS CLEARED BY 61 FT. NOT HUNG. THIS WRECK IS DESCRIBED (CL36/40) AS A PILE DRIVER, STEEL HULL, 60 FT. X 25 FT. WRECK HUNG IS CONSIDERED TO BE THIS PILE DRIVER, PREVIOUSLY CHARTED WRECK COVERED 45 FT., DELETED AND WRECK CLEARED TO 50 FT. CHARTED.

SURVEY REQUIREMENTS: FULL--VERIFY OR DISPROVE THROUGH 200% SIDE SCAN SONAR INVESTIGATION, 500 METER MIN. RADIUS. ID REQUIRED. ASSIGNED: OPR-E609-R/H-87.

METHOD OF INVESTIGATION: Side Scan Sonar and diving operations were the primary tools of investigation. The DSF 6000N echo sounder was used to obtain the under keel profile and to aid in deploying the diver's search buoy.

RESULTS OF INVESTIGATION: On DOY 127, an initial SSS reconnaissance investigation identified a contact 37 meters from the reported position. An attempted dive was made but strong currents caused the dive to be aborted. On DOY 128 two dives were made to locate and position the least depth on the contact. At the time this item was surveyed, HDAS had no capability to compute a detached position fix. Consequently, the positioning data was sent to AMC for computation and the fix was found to be weak. On DOY 180 the ship again located the AWOIS item and reobserved the detached position fix. The latter is of good quality and is used for the AWOIS position.

Following is the Contact/Target Investigation Report on AWOIS 4456 including least depth data, position information and recommendations.

A copy of the raw data from DOY 180 used to compute the position of AWOIS 4456 follows the item investigation report.

CONTACT INVESTIGATION REPORT ON
AWOIS 4456
CONTACT NO: AWOIS 4456
(CSTN - 561)

DATE/DOY OF DIVE: May 8, 1987/(128)

I. POSITION OF CONTACT: LAT: 038⁰ 55' 57.722" N
 LONG: 076⁰ 23' 37.732" W

GENERAL STATEMENT OF POSITION QUALITY: The detached position was retaken on June 29, 1987(180). Four lines of position were used to locate the AWOIS item. The standard deviation was less than two meters and the fix of DOY 180 is considered a good quality fix.

II. LEAST DEPTH DATA:

METHOD OF DETERMINATION : PNEUMOFATHOMETER

1) TIME (UTC): 1815	RAW LEAST DEPTH READING	(FT) : 51.2
2) TIME (UTC): 1815	RAW LEAST DEPTH READING	(FT) : 51.2
3) TIME (UTC): 1815	RAW LEAST DEPTH READING	(FT) : 51.2

AVERAGE LEAST DEPTH READING (FT) : 51.2

AVERAGE LEAST DEPTH (FT)	: 51.2
TIDE CORRECTOR (FT)	- : 0.8
TRA CORRECTOR (FT)	: 0.0

ACTUAL LEAST DEPTH (FT)	: 52.0 50.4
PLOTTED DEPTH (FT)	: 50.4

III. SEARCH PROCEDURES:

A. DETERMINATION OF DIVE SITE :

The wreck was originally position by Side Scan Sonar.

B: SEARCH PROCEDURE : A divers search buoy was deployed by the ship on the item.

IV. ITEM DESCRIPTION : The contact investigated was indeed AWOIS 4456 by description. The divers swam the entire wreck until the least depth was identified. The least depth was taken on what appeared to be the pile driving derrick. The wreck was heavily covered with marine growth and was lying over slightly on it's starboard side.

V. RECOMMENDATIONS: ~~It is recommended that the currently charted symbol be changed to a wreck over which the depth is known at the position and least depth determined during this investigation.~~

SEE SECTION 6.D. OF THE EVALUATION REPORT FOR RECOMMENDATION ON THIS ITEM.

POSITION NUMBER 4456

EASTING = 25853.55
NORTHING = 140603.34

STATION	RANGE	RESIDUAL
	2795.3	1.3
	6549.0	.6
	5226.6	1.2
101	10994.6	-0.4

*DETERMINED FROM
RAW RATES (Corrected for BEC)
recorded in Sounding Volume
ON DOY 180*

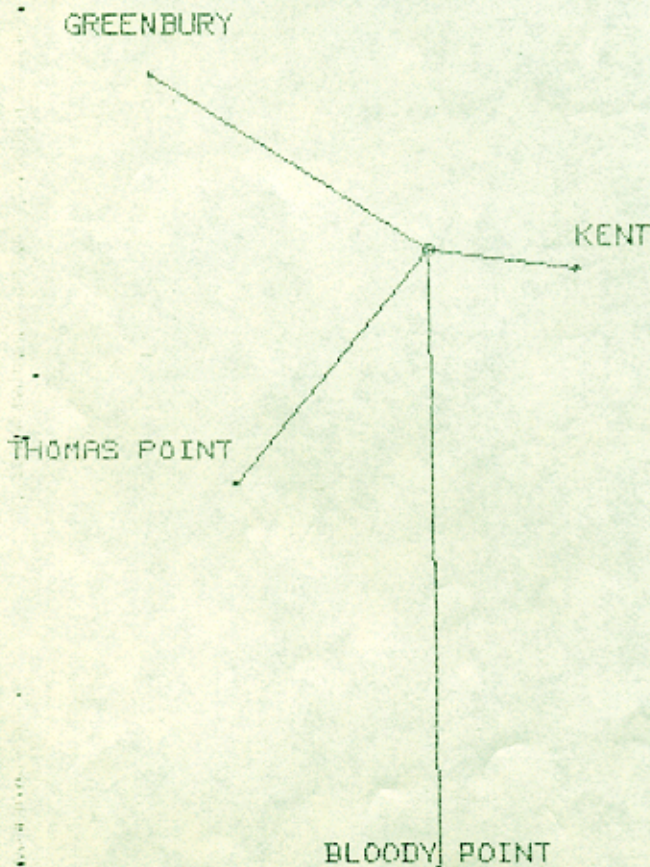
-----FIX QUALITY FIGURES-----

ANGLE OF INTERSECTION BETWEEN 100 AND 103 = 137.63
 ANGLE OF INTERSECTION BETWEEN 100 AND 102 = 139.91
 ANGLE OF INTERSECTION BETWEEN 100 AND 101 = 94.57
 ANGLE OF INTERSECTION BETWEEN 103 AND 102 = 82.65
 ANGLE OF INTERSECTION BETWEEN 103 AND 101 = 127.87
 ANGLE OF INTERSECTION BETWEEN 102 AND 101 = 45.22

ERROR ELLIPSE: SIGMA X = 5.4 M SIGMA Y = 5 M. ROTATION = -19.75 DEG.
 RADIUS OF 90% CONFIDENCE CIRCLE = 4.6 METERS
 ITERATIONS = 2

*LAT: 038° 55' 57.722" N
LONG: 076° 23' 37.732" W*

POSITION COMPUTATION - FIX 4456



POSITION DATA

E - 25853.6
N - 140603.3

RESIDUALS (M)

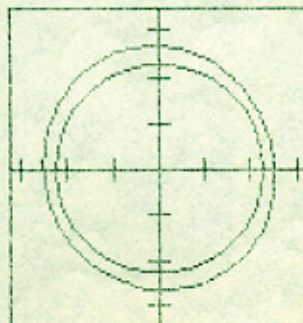
R(100) - 1.3
 R(103) - .6
 R(102) - 1.2
 R(101) - -0.4

ERROR ELLIPSE

SIGMA X = 5.4
 SIGMA Y = 5 M
 THETA = -19.8

95% CONFIDENCE

CIRCLE (M)
 RADIUS = 4.6



APPENDIX IIA

STATION INFORMATION

The following are the horizontal control and, visual control stations used during work on this survey.

HDAS SIG	STATION NAME	LATTITUDE LONGITUDE	EASTING NORTHING	* USE *
100	KENT IS SP TR N F RNG 1981	038°56'06.437 076°21'42.160	28638.3 140860.5	PC
101	BLOODY PT BAR LH ECC, 1987	038°50'01.246 076°23'30.122	25989.7 129610.0	V
102	THOMAS PT SHOAL LH ECC, 1987	038°53'56.315 076°26'09.189	22187.8 136876.1	PC/V
103	GREENBURY PT SHOAL LH 1898	038°58'05.191 076°27'15.243	20634.4 144558.6	PC
104	SANDY PT LH ECC, 1987	038°58'54.983 076°23'03.817	26693.5 149835.0	PC/V
105	ANNAPOLIS NAVAL ACADEMY CHAPEL	038°58'53.615 076°29'10.993	17855.8 146066.0	V
106	CHESAPEAKE BAY BRIDGE W TOWER	038°59'37.848 076°23'05.679	26654.3 147388.0	V

* USE * - PC - Position Control
 V - Visual control for systems checks
 PC/V - Both



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

NOAA Ship HECK
439 West York Street
Norfolk, VA. 23510

June 10, 1987

Commander
Fifth Coast Guard District
431 Crawford St.
Portsmouth, VA. 23705

Dear Sir,

While conducting hydrographic survey operations approximately 1 mile north of the William P. Lang Memorial Bridges, in the vicinity of Annapolis, MD., The NOAA Ship HECK located two uncharted wrecks which pose a potential hazard to navigation for deep draft vessels transiting the area.

Wreck number one (enclosure) is the remains of an old oyster barge. The barge measures approximately 100 feet by 40 feet and is in an advanced stage of decomposition. The least depth was measured from a structural member on the Southwest corner of the barge which rises approximately 12 feet above the bottom.

Wreck number two is a sport fishing boat which measures approximately 50 feet by 15 feet. This vessel is in good condition which indicates that the period of immersion has been fairly short, on the order of a couple of years. The least depth was measured from the flying bridge of the vessel which is approximately 13 feet above the bottom. Divers searched for the vessels name and registry number but were not able to locate either.

The HECK is currently conducting daily operations out of the U.S. Naval Station Annapolis, Annapolis, MD. If further information regarding these wrecks is required, please contact the ship through the Atlantic Marine Center in Norfolk, VA at (804) 441-6440.

Respectfully,


Joseph C. Talbot, LT., NOAA
Commanding Officer

Attachments

cc:
N/NOA - Moses
N/CE24 - Matsushige



POSITION DATA

WRECK	POSITION	LEAST DEPTH (MLLW)
1	039° 00' 56.342" N 076° 22' 31.428" W	50.5 FEET
2	038° 59' 53.681" N 076° 22' 56.181" W	36.4 FEET

Horizontal Datum: NAD 1983

Letter of Approval

Field No. FE-296SS

OPR-E60987-RU/HE-87

Field operations contributing to the accomplishment of this survey were conducted under my direct supervision with frequent personal checks of progress and data quality. This report, the field sheets and the data records have been closely reviewed and are considered complete and adequate for charting.

Christopher B. Lawrence

Christopher B. Lawrence, LCDR, NOAA
Commanding Officer
NOAA Ship HECK S-591

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

DATE: October 15, 1987

Marine Center: Atlantic

OPR: E609

Hydrographic Sheet: FE-296SS

Locality: Chesapeake Bay

Time Period: May 8 - June 22, 1987

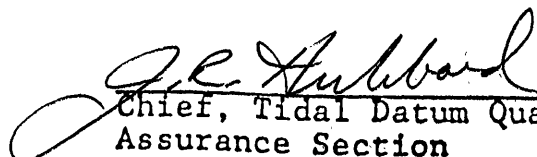
Tide Station Used: 857-5512 Annapolis, MD

Plane of Reference (Mean Lower Low Water): 4.30 ft.

Height of Mean High Water Above Plane of Reference: 1.2 ft.

Remarks: Recommended Zoning:

1. For AWOIS Items #4455 and #4456 Zone Direct.


Chief, Tidal Datum Quality
Assurance Section

GEOGRAPHIC NAMES

FE-296

Name on Survey	Source of Information											
	A	B	C	D	E	F	G	H	K			
CHESAPEAKE BAY (title)												1
MARYLAND (title)												2
SANDY POINT (title)												3
TOLLY POINT SHOAL (title)												4
												5
												6
												7
												8
												9
												10
												11
												12
												13
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												20
												21
												22
												23
												24
												25

Approved:

Charles E. Harrington
Chief Geographer - N/C62x5

FEB 17 1988

MOA23-56-88

LETTER TRANSMITTING DATA

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

- ORDINARY MAIL AIR MAIL
- REGISTERED MAIL EXPRESS
- GBL (Give number) _____

TO:

Chief, Data Control Branch, N/CG243
 Room 151, WSC-1
 National Ocean Service - NOAA
 Rockville, MD 20852

DATE FORWARDED

6 JUNE 1988

NUMBER OF PACKAGES

Two (2)

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-296SS (HE-20-1-87)
OPR-E609-RU/HE-87 Maryland, Chesapeake Bay,
Vicinity of Sandy Point and Tolly Point Shoal

PKG. 1 (BOX)

- ~~1~~ ORIGINAL DESCRIPTIVE REPORT
- ~~2~~ SMOOTH SHEETS in DESCRIPTIVE REPORT
- ~~1~~ ENVELOPE containing POSITION OVERLAYS
- ~~1~~ ENVELOPE containing SUPPLEMENTAL DATA
- ~~1~~ NOTEBOOK BINDER containing FIELD DATA
- ~~17~~ ENVELOPES containing DISK PRINTOUTS, FATHOGRAMS, and SIDE SCAN SONAR RECORDS for following VESNO S-591--JD's: 128, 140-141, 146-148, 154-155, 160-163, 167-170, 173
- ~~1~~ ENVELOPE containing FATHOGRAM ONLY FOR JD 153
- ~~1~~ ENVELOPE containing SOUNDING VOLUME DATA
- ~~1~~ ENVELOPE containing DATA TAPE PRINTOUTS

PKG. 2 (TUBE)

- ~~9~~ SMOOTH FIELD SHEETS

FROM: (Signature)

NORRIS A. WIKE

Norris A. Wike

RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

Chief, Hydrographic Surveys Branch,
 N/MOA23
 Atlantic Marine Center
 439 W. York Street
 Norfolk, VA 23510-1114

Dwayne S. Clark
June 14, 1988

05/24/88

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: FE-296

NUMBER OF CONTROL STATIONS	4
NUMBER OF POSITIONS	7
NUMBER OF SOUNDINGS	5

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	34	02/08/88
VERIFICATION OF FIELD DATA	30	02/19/88
QUALITY CONTROL CHECKS	0	
EVALUATION AND ANALYSIS	32	05/24/88
FINAL INSPECTION	25	05/17/88
TOTAL TIME	121	
MARINE CENTER APPROVAL		05/24/88

ATLANTIC MARINE CENTER
EVALUATION REPORT

SURVEY NO.: FE-296SS

FIELD NO.: HE-20-1-87

Maryland, Chesapeake Bay, Vicinity of Sandy Point and Tolly Point Shoal

SURVEYED: 7 May through 22 June 1987

SCALE: 1:20,000

PROJECT NO.: OPR-E609-RU/HE-87

SOUNDINGS: RAYTHEON DSF-6000N Fathometer, EG&G Model 260 Side Scan Sonar, Pneumofathometer Gauge

CONTROL: MOTOROLA Mini-Ranger Falcon 484

Chief of Party.....C. B. Lawrence

Surveyed by.....A. E. Francis
.....J. C. Talbott
.....A. L. Beaver
.....W. R. Morris

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

1. INTRODUCTION

a. The personnel of the NOAA Ship HECK are to be commended for the effort and initiative used in performing work on this survey. New survey equipment was used during this survey. Problems were handled in a professional manner. Their efforts have provided the program with valuable charting information, and, as a result, the effected charts will provide the mariner with the most complete information available.

b. This is a side scan sonar survey. A Raytheon DSF-6000N fathometer was operated concurrently with the side scan sonar; however, the soundings are of reconnaissance value only. Only reconnaissance hydrography was required. No wire drag was accomplished during this survey.

c. Two (2) page size smooth plots were generated during office processing and are attached to this report. The two (2) plots show only the items found by this survey. The final field sheets adequately display the lines run and the area covered by this survey.

d. No unusual problems were encountered during office processing.

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

2. CONTROL AND SHORELINE

a. Control is adequately discussed on pages 6 and 7 of the hydrographer's report.

b. There is no shoreline within the limits of this survey.

c. Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). Office processing of this survey is based on these values. The smooth sheet has been annotated with ticks showing the computed mean shift between the survey datum and the North American Datum of 1927 (NAD 27). To place this survey on the NAD 27 datum move the projection lines 0.405 seconds (12.5 meters or 0.0625 mm at the scale of the survey) north in latitude, and 1.150 seconds (27.7 meters or 1.385 mm at the scale of the survey) east in longitude.

d. All geographic positions that originate with the AWOIS listing or prior surveys have been converted to the NAD 83 datum prior to any geodetic computations.

3. HYDROGRAPHY

a. The hydrography collected on this survey during side scan sonar operations is of reconnaissance value only and was not verified. This does not pertain to the depths shown on the smooth plots included in this report.

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 and the PROVISIONAL SIDE SCAN SONAR MANUAL.

5. JUNCTIONS

There are no contemporary junctional surveys. There are no junctional requirements in the Project Instructions.

6. COMPARISON WITH PRIOR SURVEYS

a. Hydrographic

H-2345 (1896-97) 1:20,000
H-2402 (1898) 1:20,000
H-8522 (1960) 1:10,000

Prior surveys H-2345 (1896-97), H-2402 (1898), and H-8522 (1960) combine to cover the search areas of AWOIS items # 4455 and # 4456. Four wrecks, a wooden structure, and a large clay spoil pile which were found during the investigation of AWOIS item # 4455. One of the four wrecks was considered

the AWOIS item and the other three wrecks are uncharted wrecks. The six are described as follows:

AWOIS item # 4455, a charted dangerous sunken wreck, PA, in Latitude 39°00'37"N, Longitude 76°22'20"W (NAD 27 position), was located in Latitude 39°00'55.146"N, Longitude 76°22'12.425"W with a pneumofathometer least depth of 55 feet at MLLW. This item originates with Local Notice to Mariners 38 of 1973 (LNM 38/73). The location of the wreck found by the field unit is approximately 609 meters NNE of the the AWOIS position. The wreck is described as small wooden hull boat approximately 5 meters long and 1.5 meters wide. Surrounding prior survey depths from H-2345 (1896-97) are 58-ft. It is recommended that the charted dangerous sunken wreck, PA be revised to a dangerous sunken wreck with a known depth of 55 feet (55 Wk) in the location shown on the present survey.

The remains of a wooden barge were found in Latitude 39°00'56.546"N, Longitude 76°22'31.458"W. The barge is approximately 30 meters long and 10 meters wide. It was apparently used to haul oysters or oyster shells. A pneumofathometer least depth of 49 feet at MLLW was obtained on the wreck. Surrounding prior survey depths from H-2345 (1896-97) are 58 feet. It is recommended that the wreck be charted as a dangerous sunken wreck with a known depth of 49 feet (49 Wk) in the location shown on the present survey.

ADDED LNM
25/87

A power boat approximately 17 meters long and 5 meters wide was located in Latitude 38°59'53.681"N, Longitude 76°22'56.181"W. A pneumofathometer least depth of 36 feet at MLLW was obtained on the wreck. Surrounding prior survey depths from H-2402 (1898) are 56 feet. It is recommended that the wreck be charted as a dangerous sunken wreck with a known depth of 36 feet (36 Wk) in the location shown on the present survey.

Wk not moved
L112(89)
Not entered
AWOIS
LQ

A small boat approximately 8 meters long and 2 meters wide was located in Latitude 39°01'03.709"N, Longitude 76°21'22.392"W. A pneumofathometer least depth of 47 feet at MLLW was obtained on the wreck. Surrounding prior survey depths from H-2345 (1896-97) are 61 to 68 feet. It is recommended that the wreck be charted as a dangerous sunken wreck with a known depth of 47 feet (47 Wk) in the location shown on the present survey.

In addition to the four wrecks found during the search for AWOIS item #4455, a large clay spoil pile and a large wooden structure were located in Latitude 39°00'29.55"N, Longitude 76°22'02.30"W and Latitude 39°00'30.79"N, Longitude 76°22'05.60"W. These two items protrude approximately 4 to 5 feet and 3 feet from the bottom, respectively. These two objects are in an area common to two prior surveys, H-2345 (1896-97) and H-2402 (1898). The prior survey depths shown on H-2345 (1896-97) range from 58 to 62 feet. The prior survey

depths shown on H-2402 (1898) also range from 58 to 62 feet. The diver report states that the spoil pile was "prominent" and protruded approximately 4 to 5 feet off the bottom. The dive report states that a "long, low wooden structure" was located. The item is described as approximately 6 meters long, 1 meter high, and less than 1 meter (10 inches) thick. The wooden structure is said to protrude from the bottom approximately 3 feet. The timber is approximately 88 meters WNW of the spoil pile. Charted depths in the general vicinity of the objects range from 60 to 63 feet. It is recommended that the spoil pile not be charted because of its composition and that the timber be charted as an obstruction with the legend 55-ft reported in the location shown on the present survey.

b. Wire Drag

H-8523WD (1960) 1:10,000

Prior survey H-8523WD (1960) covers the search area of AWOIS item #4456. The charted item was located by the prior and present surveys. AWOIS item #4456, a charted wreck with a depth of 50 feet cleared by wire drag in Latitude 38°55'58.80"N, Longitude 76°23'38.40"W, originates with the prior survey. Prior survey H-8523WD (1960) located the wreck in Latitude 38°55'58.80"N, Longitude 76°23'38.40"W with a wire drag clearance depth of fifty (50) feet. The present survey located the wreck in Latitude 38°55'57.72"N, Longitude 76°23'37.73"W with a pneumatic depth gauge least depth of 50.0 feet. Prior survey depths shown on H-8522 (1960) range from 68 to 80 feet. The present survey location is 48 meters southeast of the prior survey location. It is recommended the charted wreck with a depth of 50 feet cleared by wire drag be deleted and a dangerous sunken wreck with a known depth of 50 feet (50 Wk) be charted in the present survey location.

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

c. Contemporary

D-71 (1987) 1:5,000

D-71 (1987) covers the search area of AWOIS item # 4456. AWOIS item #4456, a charted wreck with a depth of 50 feet cleared by wire drag in Latitude 38°55'58.80"N, Longitude 76°23'38.40"W, originating with prior survey H-8523WD (1960). AWOIS item # 4456 was searched for during survey operations on D-71 (1987) with negative results. The present survey located the wreck in Latitude 38°55'57.72"N, Longitude 76°23'37.73"W with a pneumatic depth gauge least depth of 50 feet at MLLW. An obstruction was found on D-71 (1987) in Latitude 38°55'58.77"N, Longitude 76°23'39.11"W with an echo sounder least depth of 64 feet. D-71 (1987) surrounding depths are 67 to 78 feet. It cannot be assured that the least depth on the

obstruction was obtained. The obstruction found on D-71 (1987) is approximately 46 meters northwest of the wreck found by the present survey. See recommendation for AWOIS item # 4456 in section 6.b. of this report. A charting recommendation for the obstruction can be found in the Evaluation Report for D-71 (1987).

7. COMPARISON WITH CHART 12282 (25th Ed., 2 June 84)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys. The previously discussed prior surveys require no further consideration.

b. Dangers to Navigation

The hydrographer identified several dangers to navigation and submitted information for inclusion in a Local Notice to Mariners to the Commander, Fifth Coast Guard District, Portsmouth, Virginia.

c. Aids to Navigation

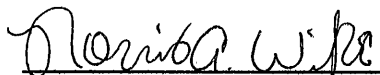
There are no fixed or floating aids to navigation within the limits of this survey.

8. COMPLIANCE WITH INSTRUCTIONS

This survey complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

This is a good side scan sonar survey. No additional work is recommended.



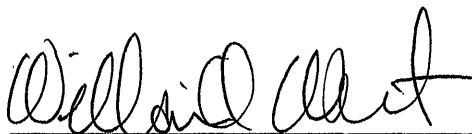
Norris A. Wike
Cartographer
Evaluation and Analysis

INSPECTION REPORT
FE-296SS

The completed survey has been inspected with regard to survey coverage, presentation of survey results, and the verification or disproval of the assigned items for investigation. The survey was found to be in compliance with National Ocean Service requirements except as noted in the Evaluation Report by the evaluator. The survey records comply with NOS requirements except where noted in the Evaluation Report.



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



William A. Wert, LCDR, NOAA
Chief, Hydrographic Surveys Branch

Approved: 24 May 1988



Ray E. Moses, RADM, NOAA
Director, Atlantic Marine Center

76° 23'

76° 22'

76° 21'

39° 01'

76° 23' 00"

39° 01' 00"

NAD 27
2-17-1988 NAW
✓ BY RHW

49 Wk

55 Wk

✓
47 Wk

39° 01'

39° 00'

36 Wk ✓

○ *obstr (rep depth 55 ft)*
○ *obstr (rep depth 54 ft)*

39° 00'

FE-296SS
MARYLAND
CHESAPEAKE BAY
VICINITY OF SANDY POINT AND
TOLLY POINT SHOAL
7 MAY THROUGH 22 JUNE 1987
SCALE 1:20,000
SOUNDINGS IN FEET AT MLLW
SHEET 1 OF 2
AWOIS ITEM # 4455
HORIZONTAL DATUM NAD 83

76° 23'

76° 22'

76° 21'

76° 24'

76° 23'

38° 57'

38° 57'

38° 56'

38° 56'

50 **

6

FE-296 SS
 MARYLAND
 CHESAPEAKE BAY
 VICINITY OF SANDY POINT AND
 TOLLY POINT SHOAL
 7 MAY THROUGH 22 JUNE 1987
 SCALE 1:20,000
 SOUNDINGS IN FEET AT MLLW
 SHEET 2 OF 2

AWOIS ITEM # 4456
 HORIZONTAL DATUM NAD83

76° 24'00"

39° 00'00"

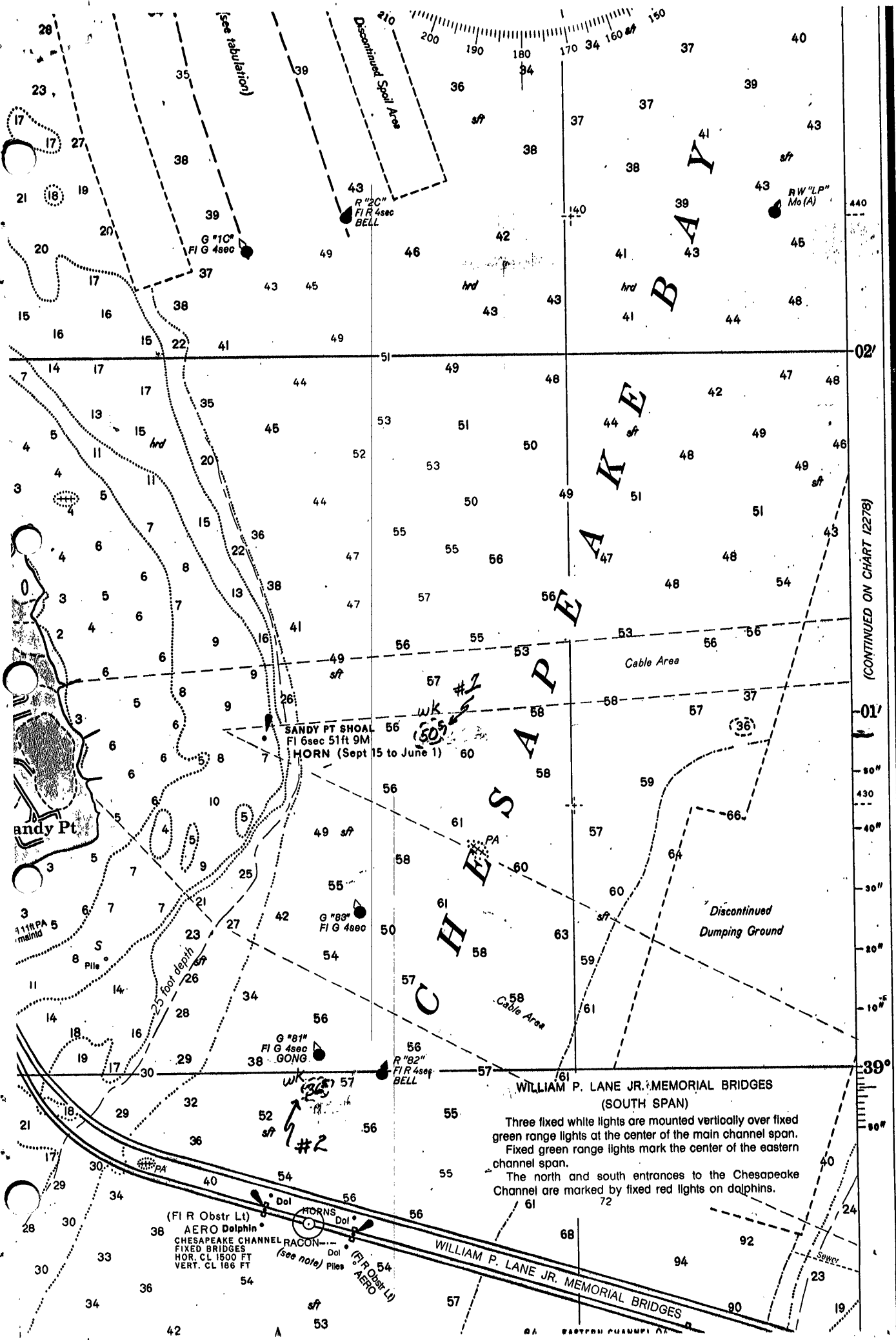
NAD 27
 2-17-1988 NAW
 ✓ BY RHW

38° 55'

38° 55'

76° 24'

76° 23'



(CONTINUED ON CHART 12278)

From Chart 12282 (Severn and Magothy Rivers Soundings in Feet - 1:25,000 Scale 25th Edition, June 2/84)

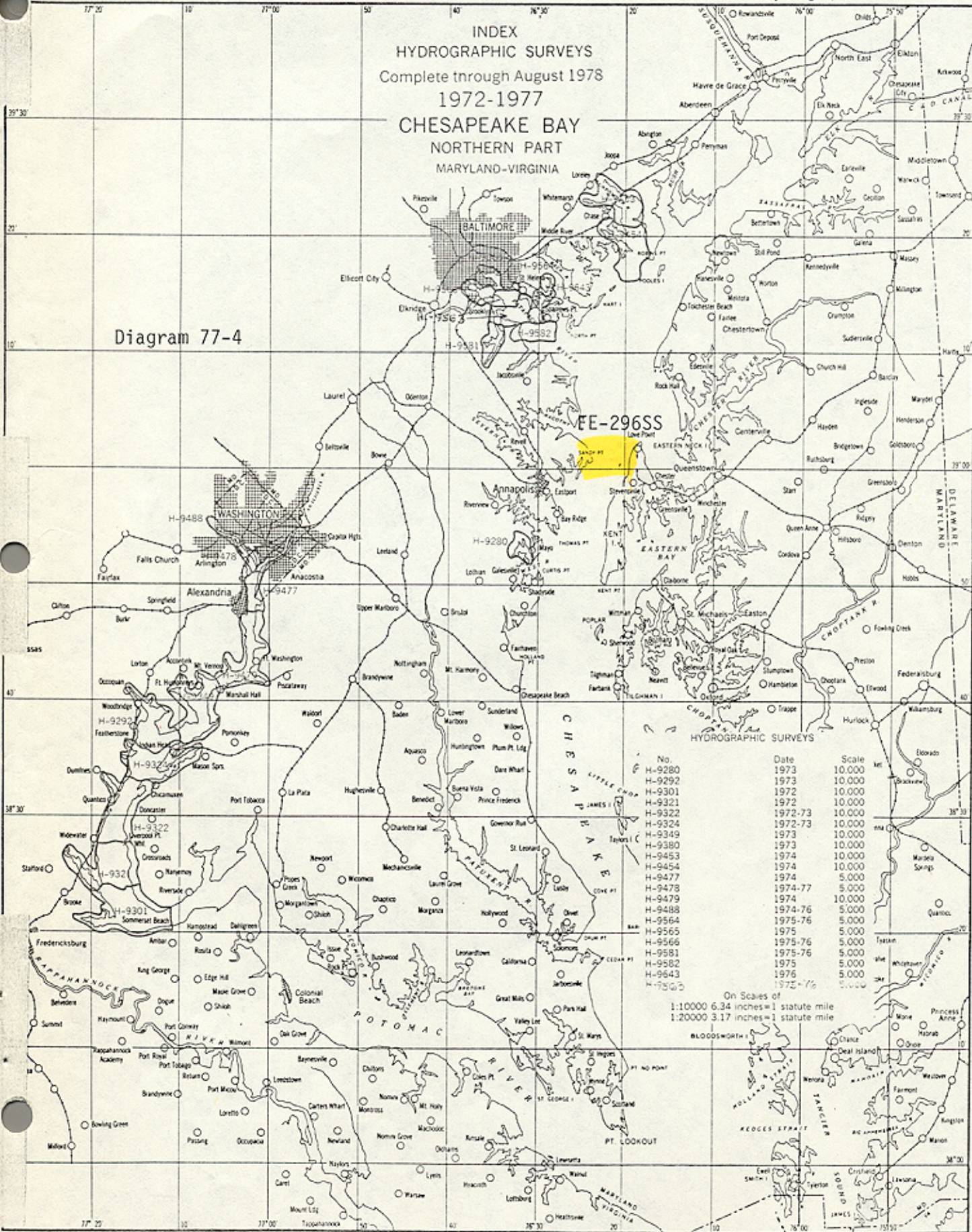
DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Survey
Rockville, Maryland

Hydrographic Index No. 68 J

INDEX
HYDROGRAPHIC SURVEYS
Complete through August 1978
1972-1977
CHESAPEAKE BAY
NORTHERN PART
MARYLAND-VIRGINIA

Diagram 77-4

EE-296SS



No.	Date	Scale
H-9280	1973	10,000
H-9292	1973	10,000
H-9301	1972	10,000
H-9321	1972	10,000
H-9322	1972-73	10,000
H-9324	1972-73	10,000
H-9349	1973	10,000
H-9380	1973	10,000
H-9453	1974	10,000
H-9454	1974	10,000
H-9477	1974	5,000
H-9478	1974-77	5,000
H-9479	1974	10,000
H-9488	1974-76	5,000
H-9564	1975-76	5,000
H-9565	1975	5,000
H-9566	1975-76	5,000
H-9581	1975-76	5,000
H-9582	1975	5,000
H-9643	1976	5,000
H-7560	1975-76	5,000

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

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. FE-296SS

INSTRUCTIONS

**EXAMINED FOR NNM
GDBU**

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.

10-10-89 PC
10-24-89 JPH

CHART	DATE	CARTOGRAPHER	REMARKS
12282	5/8/89	Elizabeth Hanna	Full Part Before After Marine Center Approval Signed Via Drawing No. 40
12270	9-16-87	R. Elliott	Full Part Before After Marine Center Approval Signed Via Drawing No. 50
12273	10-18-89	R. Elliott	Full Part Before After Marine Center Approval Signed Via Drawing No. Applied 5 critical cores.
12263	7-26-89	R. Elliott	Full Part Before After Marine Center Approval Signed Via Drawing No. 69
12260	7-26-89	R. Elliott	Full Part Before After Marine Center Approval Signed Via Drawing No. 45 Applied 5 critical cores.
12273	8-28-90	Ed Martin	Full Part Before After Marine Center Approval Signed Via Drawing No. 68 Applied 4 critical cores.
12263	2-19-91	E. Martin	Full Part Before After Marine Center Approval Signed Via Drawing No. 69
12260	3-11-91	L. Arkenau	Full Part Before After Marine Center Approval Signed Via Drawing No. 46
12270	7-24-91	L. Arkenau	Full Part Before After Marine Center Approval Signed Via Drawing No. 51
			Full Part Before After Marine Center Approval Signed Via Drawing No.