

FE324

SIDE SCAN

Diagram No. 1267-2

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey .. Side Scan Sonar

Field No. RU-20-1-89

Registry No. FE-324SS

LOCALITY

State Mississippi

General Locality Gulf of Mexico

Sublocality Approaches to Horn Island Pass

19 89

CHIEF OF PARTY

..... LCDR A.M. Snella

LIBRARY & ARCHIVES

DATE November 30, 1990

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

FE324
SIDE SCAN

CHTS.
11375
11374A
11373
11366
11360
11006 NC

HYDROGRAPHIC TITLE SHEET

FE-324-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.

RU-20-1-89 ✓

State Mississippi ✓

General locality Gulf Of Mexico ✓

Locality Approaches to Horn Island Pass ✓

Scale 1:20000

Date of survey March-August, 1989 ✓

Instructions dated Jan. 11, 1989

Project No. OPR-J433-RU-88/89 ✓

Vessel NOAA SHIP RUDE S-590 Hull No. 9040 ✓

Chief of party LCDR Andrew Snella ✓

Surveyed by LT Craig L. Bailey, ENS Ralph Rogers, ENS Philip A. Gruccio,
AST Mark Sramek ✓

Soundings taken by echo sounder, ~~Hand lead, pole~~ RAYTHEON DSF-6000N ✓

Graphic record scaled by CLB, RRR, PAG, MAS ✓

Graphic record checked by CLB, RRR, PAG, MAS ✓

Protracted by N/A

Automated plot by ^(Field) BRUNING-NICOLET ZETA
124 CS Plotter ✓

Verification by Atlantic Hydrographic Section Personnel ✓

^(Office) Xynerics 1201 Plotter (AMS)

Soundings in ~~XXXXX~~ XXXXX feet at ~~MLW~~ MLW MLLW

REMARKS: Notes in the Descriptive Report were made in Red during office processing.

Notes in black ink in the Descriptive Report
were entered during examination.

XW 2-22-91

AGG/S/SURF 5/10/91 GEM

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* = Data removed from the Descriptive Report & filed with the field records.

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NOAA Ship RUDE (S590) ✓
LCDR Andrew Snella
Commanding Officer

RU-20-1-89 ✓
Scale 1:20,000 ✓

A. PROJECT DESCRIPTION

A1. Project Authorization

This survey was conducted in accordance with Hydrographic Project Instructions OPR-J433-RU-88, Approaches to Pascagoula and Biloxi, Mississippi, dated 11 January, 1988, and as amended by: ✓

Change No.1 dated 04 MAR, 1988 ✓
Change No.2 dated 22 APR, 1988 ✓
Change No.3 dated 19 JUL, 1988 ✓
Change No.4 dated 13 FEB, 1989 ✓
Change No.5 dated 07 APR, 1989 ✓
Change No.6 dated 23 MAY, 1989 ✓
Change No.7 dated 26 JUN, 1989 ✓

The Project began in 1988 and involved both the RUDE and HECK. The project continued into 1989 with only the RUDE assigned. ✓

A2. Project Purpose

This project is to conduct investigations of wrecks and obstructions in and near the approaches to Pascagoula, Biloxi and Gulfport, Mississippi. The project responds to requests from the U.S. Coast Guard (Eighth District), Chevron Shipping Company, and to recommendations from a 1984 NOS Planning Staff report entitled "A Study of NOS Surveys in Major U.S. ports". ✓

B. PROJECT OVERVIEW

B1. General

Project Instructions for OPR-J433-RU-88 assigned to the NOAA Ship RUDE a total of 32 AWOIS items. This report includes the following 17 AWOIS items: 2807, 3599, 7129, 7130, 7131, 7213, 7214, 7217, 7218, 7219, 7232, 7233, 7234, 7235, 7236, 7237, 7317. ✓

Horizontal control recovery and installation of navigation units for this survey began on March 29, 1989. Side scan sonar operations began on April 20, 1989. Field operations for the portion of the project covered by this report concluded on 02 August, 1989. ✓

B2. Methodology

The general survey technique used for this project was to acquire 200% side scan sonar imagery of a specified search area by running two sets of search lines oriented orthogonally to each other. For ✓

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some items, 400% side scan coverage was required.

The survey requirements for each item are specified in the AWOIS listing. ✓

All side scan imagery was carefully analyzed both on-line and off-line in order to identify contacts requiring further investigation. Each contact was evaluated for significance based on water depth, height of contact as computed from its acoustic shadow, size, and nature of the bottom. Additional reconnaissance side scan was conducted on several contacts to assist in this evaluation process. ✓

All significant contacts were investigated by divers. A precise depth was measured over the highest point of the contact using a pneumo depth gauge. The divers would attach a marker buoy to the high point enabling the ship to maneuver directly over the wreck. A position was acquired as the ship drifted over the least depth via the HDAPS. ✓

Survey data acquisition and processing were accomplished utilizing the HDAPS system with software version No. 2.4 through 07 June, 1989, and 2.42 through the end of the project. ✓

C. AREA SURVEYED

This report covers survey operations performed on AWOIS items located in the approaches to Pascagoula and Biloxi, Mississippi. The items lie south of Horn and Petit Bois Islands between longitudes 88° 28' and 88° 40' West. The AWOIS items are listed in section B1. ✓

D. SURVEY VESSELS

The following vessels were used during this project:

VESSEL	ELECTRONIC DATA PROCESSING NUMBER	PRIMARY FUNCTION
NOAA Ship RUDE (S590) ✓	9040 ✓	Side Scan Operations
RUDE Launch (RU3) ✓	1290 ✓	Diving Operations ✓
RUDE Skiff (RU1) ✓	N/A	Mini-Ranger Service and Diving Operations

E. SURVEY SHEETS (Field Sheets)

All survey sheets are plotted on a Modified Transverse Mercator Projection using the North American Datum of 1983 (NAD 83) ✓. Technical specifications for each sheet are contained in APPENDIX V. The items plotted on each sheet are as specified below:

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PLOTTER SHEET	SCALE	AWOIS ITEMS
1 ✓	1:10000 ✓	7129, 7130, 7131, 7237 ✓
Four copies of this sheet are included:		
1 edited depth, swath, and track plot; 7130 ✓		
1 edited swath plot; 7129, 7131		
1 edited swath and track plot; 7237		
1 online swath plot; 7129, 7130, 7131, 7237.		
2 & 15 ✓	1:10000 ✓	2807 ✓
Seven copies of this sheet are included:		
2 online and 1 edited N/S swath plot		
1 online and 1 edited E/W swath plot ✓		
1 edited contact investigation swath plot		
1 depth plot.		
5 ✓	1:10000 ✓	3599 ✓
Two copies of this sheet are included:		
1 online swath plot ✓		
1 online contact investigation swath plot.		
6 ✓	1:10000 ✓	7213, 7214, 7219 ✓
Three copies of this sheet are included:		
1 online swath plot; 7213, 7214, 7219		
1 edited swath, track, and depth plot; 7219 ✓		
1 edited swath, track, and depth plot; 7214.		
7 ✓	1:20000 ✓	Buoy Positions ✓
This is an overlay at the scale of chart 11375 showing charted and actual buoy and range marker positions. ✓		
8 ✓	1:10000 ✓	7233, 7234, 7235, 7236 ✓
This is an online swath plot of the four items. ✓		
10 ✓	1:10000 ✓	7217, 7218, 7232 ✓
Three copies of this sheet are included:		
1 online swath plot; 7217, 7218, 7232		
1 edited swath plot; 7217, 7218, 7232 ✓		
1 edited depth plot; 7217, 7218, 7232.		
11 ✓	1:20000 ✓	7129, 7131 ✓
This sheet is an online swath plot of the two items, at the some scale as Chart 11375 so nearby shoals could be plotted. ✓		
12 ✓	1:1000 ✓	7237 ✓
This sheet is a plot of the 3 contacts from 7237. ✓		
13 ✓	1:2500 ✓	7237 ✓
Three copies of this sheet are included:		
1 online echosounding development depth plot		
1 edited echosounding development track plot ✓		
1 edited echosounding development depth plot.		

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14 ✓

1:10000 ✓

7317 ✓

Two copies of this sheet are included:

1 online swath plot

1 edited contact swath plot.

F. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDING**F1. Raytheon DSF 6000N Echosounder**

All hydrographic soundings were acquired using a Raytheon 6000N digital survey fathometer (DSF). Both low and high frequency sounding data were recorded, only the high frequency was used for plotting purposes. Refer to each day's raw data printouts for listing of equipment serial numbers. ✓

F2. EG&G Model 260 Side Scan Sonar

Side scan sonar (SSS) operations were conducted utilizing an EG&G Model 260 slant range corrected side scan sonar recorder and Model 272 dual frequency towfish. Refer to each day's raw data printouts for listing of equipment serial numbers. ✓

During normal survey operations, the 100 kHz frequency and 100 meter range scale were used. On occasion, we chose to tow the fish at smaller ranges, normally due to shallow depth in the area surveyed. The 500 kHz frequency was seldom used, except when desiring a more detailed trace of a contact. ✓

Side scan sonar operations were conducted in accordance with the Side Scan Sonar Manual dated September 1988. Daily confidence checks were performed by either towing the fish past a previously located contact, or by noting recognizable bottom characteristics at the edges of the sonar range scale in use. ✓

F3. Pneumo Depth Gauge

All diver determined least depths were measured with a pneumo depth gauge. The RUDE is equipped with two Precision Depth Gauges; one, a 0-70 FSW depth gauge, and another, a 0-140 FSW gauge. Both instruments were calibrated on 11 & 12 January, 1989, at Instruments East Labs in Norfolk. Copies of these calibrations are included in Appendix I. The RUDE's pneumo depth gauge system is operated according to specifications set forth in Hydrographic Guideline No. 55. Prior to each dive, a leadline systems check was performed to ensure the gauge was functioning properly. These systems checks are included in APPENDIX I. ✓

See the Evaluation Report, section 4.f.

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G. CORRECTIONS TO SOUNDINGS

G1. Velocity Correctors

Velocity correction data was collected periodically throughout the survey area. The first cast compared the MARTEK CTD and the DIGIBAR Sound Velocity Probe. The data collected was extremely close. The DIGIBAR was chosen for future use because of its simpler operation. All data was processed using the program VELOCITY. The computed velocity correctors were entered into the HDAPS sound velocity table and applied online to the echosounder depths.

The following casts were made:

DATE	LAT/LONG	TYPE	HDAPS VELOCITY TABLES
19 April	30° 03.1' / 88° 32.0'	MARTEK CTD	N/A
19 April	30° 03.1' / 88° 32.0'	DIGIBAR	1
11 May	30° 04.8' / 88° 31.4'	DIGIBAR	2
30 May	30° 06.4' / 88° 32.5'	DIGIBAR	3
22 June	30° 04.2' / 88° 32.2'	DIGIBAR	4
21 July	30° 10.5' / 88° 33.9'	MARTEK CTD	N/A

See APPENDIX I, for listings of cast data and output from the VELOCITY program. A copy of the instrument calibrations and HDAPS Velocity Tables are also included in APPENDIX I.

G2. Tide Correctors

The tidal datum for this project is mean lower low water. The operating tide station at Pensacola, Florida (874-7437) served as control for datum determination and as a reference station for predicted tides. One tide station was established at Point Cadet, Biloxi, Mississippi (874-3735).

All hydrographic and diver determined depths have been corrected for predicted tides. Correctors for time and height were taken from the project instructions.

Tidal correctors were applied on-line using the HDAPS predicted tides table. The tables used can be found in APPENDIX I.

On 22 May, 1989 the Point Cadet Tide Gauge was struck by a local research vessel. This caused the gauge and floatwell to rotate 180° and settle a fraction of a foot. The staff and the gauge itself was undamaged and data was still collected. On 26 May, 1989 the gauge was repositioned and the tide staff was releveled. This

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leveling shows the staff did not move. No least depths were taken between the dates 22-26 May, therefore smooth tides data is not required for this time period. A request for smooth tides was mailed 11 August, 1989. A copy is included in Appendix I. ✓

G3. Settlement and Squat Correctors

Settlement and squat corrector for RUDE were determined on 10 March, 89 on the Elizabeth River Norfolk, Virginia. An observer was on shore with a leveling instrument and changes in relative height were measured as the ship passed by at various speeds. Settlement and Squat correctors are applied to the sounding data through the HDAPS Offset Table. APPENDIX I contains settlement and squat data. ✓

G4. Heave Corrections

Heave data is collected by a Datawell B.V. heave, pitch and roll sensor and is applied to the soundings in near real time. Only heave corrections are applied to the plotted depths. ✓

G5. Vessel Draft Corrector

During a recent dry dock period an exact vertical measurement was taken from the DSF transducer to a fixed point on the bridge wing of the ship. After refloating the ship the height above the waterline was determined for this point. The ships static draft was calculated to be exactly 7.4 feet (2.26 meters) ✓

This draft value is applied to sounding data via the HDAPS Offset Table. This table is contained in APPENDIX I. ✓

H. HORIZONTAL CONTROL

H1. Survey Navigation

Vessel survey navigation was accomplished by the range-range method, utilizing the Motorola Mini-Ranger Falcon 484 system. Refer to daily data printouts for listings of equipment serial numbers. ✓

The Mini-Ranger system is interfaced to the HDAPS system in such a way that only the ranges and signal strengths are recorded; the position computation capability of the Falcon system is not utilized. Vessel position is computed by a least squares algorithm within the NAVITRONIC NAVISOFT 300 software. ✓

RUDE routinely conducted surveying operations using four Mini-Ranger LOP's, although occasionally one or more ranges were automatically rejected from the solution due to poor signal strength. At no time during this project did the residual consistently exceed 10 meters or 0.5 mm at the survey scale. The 95% confidence error circle radius very rarely exceeded 30 meters or 1.5 mm at the survey scale. ✓

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Two pre-project baseline calibration of the Mini-Ranger system were conducted at Fentress Naval Auxiliary Field and three more were made in the Pascagoula area during the project. During these calibrations, the range correctors were determined for each combination of transponder and shipboard R/T and RPU. A Minimum Acceptable Signal Strength (MASS) was also determined for each Mini-Ranger code. The dates and location of these calibrations follow:

DATE	LOCATION	CODES	C-O TABLE
02 MAR	Fentress NAF	4,6,9	1,2,3
12 MAR	Fentress NAF	3,1	1,2,3
09 MAY	Highway 90	6	3
08 JUL	Petit Bois Is.	1,3,5,7	4,6
18 JUL	Highway 90	6,8,9,B,D,F	6

Reference APPENDIX II, for the data records of the calibrations.

The range corrector and MASS for each Mini-Ranger code was entered in the HDAPS system using the Pre-Survey C-O Table Utility. This table provided the mechanism by which HDAPS automatically applies the proper range corrector and removes from the position computation those LOP's with signal strengths below MASS. A new C-O Table was generated each time changes were made to the navigation configuration. Each C-O table lists the Mini-Ranger, RT, and RPU serial numbers used. Five C-O tables were used in this project, effective between the following dates:

Table	Dates
1	18 APR - 03 MAY
2	04 MAY - 19 JUN
3	20 JUN - 06 JUL
4	10 JUL - 24 JUL
6	25 JUL - 02 AUG.

Reference APPENDIX II for the C-O Tables used during this survey.

Critical systems checks of the positioning equipment were conducted in accordance with the Project Instructions. These checks are contained in APPENDIX II. A closing baseline calibration was not required in the project instructions.

H2. Geodetic Control

The horizontal datum for this project is the North American Datum of 1983 (NAD 83). Geodetic support to establish hydrographic control on the barrier islands in the survey area was provided by N/MOA2222 in 1988. This field work was conducted in accordance with Project Instructions for Job HC-8801 dated 02 February, 1988.

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Listings of the control stations used during this project were under the NAD 83 preliminary unadjusted field positions provided to RUDE by N/MOA2222 in 1988. The control station list is provided in Appendix II, including station names, numbers, and positions. This replaces the ABSTRACT OF POSITIONS. Appendix II also contains recovery notes for these stations, recovered by RUDE personnel.

The processing abstracts, not the control station list, is replacing the abstract of positions in this survey.

I. AUTOMATED DATA PROCESSING

Raw data collected during this project were stored on magnetic tape, numbered by day of year, type of data, and number of tape that day. Edited data was recorded in the same sequence as the raw data and each raw data tape has a corresponding edited tape. A list of all data tapes follows:

<u>Items</u>	<u>Raw/Edited Tape No.</u>
2807	11010 / 17811 12310 / 15611 15210 / 15911 17810 / 17811
3599	11110 / 14211
7237, 7129, 7130, 7131	11410 / 12211
7213, 7214, 7219	11510 / 13711
7317	14310 / 16011 17210 / 17211 20710 / 21521
7217, 7218, 7232	19410 / 19411
7233, 7234, 7235, 7236	19420 / N/A

Due to a change in hardware configuration, between 02 August, and 04 August, 1989, the internal clock of the HDAPS computer was ahead of GMT by 1 hour and 6 minutes. All affected data are annotated with a label on the sonargram, fathogram, and data printout stating:

"The HDAPS computer clock was ahead of GMT time by 1 hour and 6 minutes for the period of 2 August to 4 August 1989. To correct time subtract 1 hour 6 minutes from the time logged by the HDAPS computer. Depths from this data will not be plotted, therefore no correction to time is necessary".

J. COMPARISON WITH CHARTS AND PRIOR SURVEYS — *See the Evaluation Report.*

Hydrographic soundings from this survey were compared with the largest scale chart for the area covered by each survey sheet.

Comparison with Chart 11373

Hydrographic soundings from the present survey were compared to the 31st Edition, dated 24 October, 1987. With the exception of AWOIS 2807, all soundings agree within 1 foot of Chart 11373. In the southern half of the search area of AWOIS 2807, the depths tended to be approximately 1 foot deeper than the charted depths.

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See the Evaluation Report.

Comparison with Chart 11375

Hydrographic soundings from the present survey were compared to the 26th Edition, dated September 17, 1988. All soundings agree within 1 foot of Chart 11375.

Comparison with Survey H-9118

Hydrographic soundings from the present survey were compared to prior survey H-9118, 1:20000 scale, surveyed in 1970. All soundings agree within 1 foot of the prior survey.

Comparison with Survey H-4171

Hydrographic soundings from the present survey were compared to prior survey H-4171, 1:80000 scale, surveyed in 1920. With the exception of AWOIS 7237, all soundings agree within 1 foot of the prior survey. The echosounding development of AWOIS 7237 indicated depths in the channel approximately 1 to 2 feet deeper than the prior survey, probably due to dredging.

Comparison with Survey H-4020

Hydrographic soundings from the present survey were compared to prior survey H-4020, 1:40000 scale, surveyed in 1917-18. With the exception of AWOIS 7237, all soundings agree within 1 foot of the prior survey. Present depths in the channel are approximately 1 to 2 feet deeper than the prior survey.

K. MISCELLANEOUS

The buoys marking the entrance to Horn Island Pass were positioned using detached positions from RUDE. They include "HI" sea buoy, "1", "2", "3", "4", "5", and "6". These positions were plotted at the scale of Chart 11375 and comparisons made. All charted positions agreed and no corrections need to be made.

L. AWOIS ITEM INVESTIGATION REPORTS

AWOIS Item reports follow:

AWOIS ITEM 2807 INVESTIGATION — Sheet 1 of 12**Area of Investigation**

AWOIS Item: 2807
 State: Mississippi
 County: Jackson
 Locality: 5.6 nm S of Horn Island Pass Channel
 Latitude: 30° 05' 36.00" N
 Longitude: 88° 32' 12.00" W
 Depth: Unknown (wreck)

AWOIS Item Description

AWOIS item 2807 is described in LNM-07/76 as a 51 foot fishing vessel VACA-DEL-MAR chartered as a dangerous submerged wreck, PA. Survey FE315SS/88--OPR-J433-RU/HE-88; did not locate this item and is considered incomplete. Items located within fish haven on Survey FE315SS/88 are not considered to be the vessel sought. Survey requirements call for 200% sidescan coverage to a 2750 meter radius for disproval, or diver investigation and least depth if found. The AWOIS listing also states that there is no requirement to search within the fish haven.

Survey Procedures

The following data summary reflects survey procedures used for investigating these items:

AWOIS Item: 2807
 Positioning: Falcon Mini-Ranger
 Sonar Search: 20, 21 & 26 April 1989 (DOY 110, 111, 116)
 3, 24, 25 & 31 May 1989 (DOY 123, 144, 145, 151)
 1, 2, 7, 22, 27 June 1989 (DOY 152, 153, 158, 173, 178)
 11, 12, 26 July 1989 (DOY 192, 193, 207)
 Diving: 12 July 1989 (DOY 193)
 Echo Sounding: N/A
 Sonification: 200% SSS coverage
 Contacts: Two significant Contacts H01, H02

There were no significant problems encountered with either the positioning or side scan sonar equipment.

Two significant contacts were identified on the 200% side scan sonar coverage. These contacts were investigated by divers and a least depth and position were determined for H02. H01 was found to be insignificant by diver investigation.

Contact H01 Investigation

(a) Contact H01 Dive Summary

Contact H01 was investigated by divers on 12 July 1989 (DOY 193). Divers descended down the marker buoy line to to the bottom at 55 feet. A circle search of 10 meter radius was conducted about the marker buoy anchor. A fishing net was found lying on the bottom. The net and surrounding area were visually searched for any obstruction; none was found.

(b) Contact H01 Description

Contact H01 is a fishing net lying rolled up on the bottom. Its length is approximately 50 feet. The height off the bottom varies from 3 inches at one end to 1.5 feet at the other. This contact is not a danger to navigation. - *Concur*

Contact H02 Investigation — *Sheet 2 of 12*

(a) Contact H02 Dive Summary

Contact H02 was investigated by divers on 12 July 1989 (DOY 193). Divers descended down the marker buoy line to to the bottom at 55 feet. A circle search of 10 meter radius was conducted about the marker buoy anchor. A winch was found lying upright on the bottom. There was a net snagged on part of the obstruction. A least depth was determined by divers using a pneumo depth gauge.

(b) Contact H02 Description

Contact H02 is a winch lying on the bottom. It is approximately 6 feet wide, 8 feet long, and 4 feet off the bottom. A fishing net is snagged on part of the obstruction and trails off to one side.

(c) Contact H02 Least Depth Determination

Least depth of Contact H02 was taken by divers.

Contact:	H02 - <i>Position# 3637</i>
Date:	12 July 1989 (DOY 193)
Time:	1930 Z
Average Pneumo Depth:	48.0 Ft.
Pneumo Gauge Corrector:	+0.2
PREDICTED Tidal Zone Cor:	-0.4
Actual Least Depth:	47.4 Ft.

(d) Contact H02 Positioning

Three detached positions were taken as the ship drifted over the target that was marked by the dive buoy.

Contact:	H02			
HDAPS Position Numbers:	3636-3638			
Average Easting:	110086.9 E			
Average Northing:	123446.0 N			
Computed Latitude:	30° 06' 49.182" N			
Computed Longitude:	88° 33' 43.210" W			
Loran-C Rates:	7980-W	7980-X	7980-Y	7980-Z
Average Loran:	12446.7	29624.4	47049.6	64069.0

(e) Contact H02 Recommendation

Contact H02 should be charted as a obstruction over which the depth is known, using symbol No. ⁴⁷27, Section "B", ~~(Dangers)~~ from Nautical Chart No.1 at the above location. — Concur

AWOIS Item 2807 Summary

with the least depth of 47 feet.

(47) obstrn

AWOIS item 2807, as reported, is considered disproved by 200% sidescan sonar investigation. This item should be removed from the AWOIS listing. One hazard to navigation was located and the charting of this item should be updated as specified in the recommendations for Contact H02.

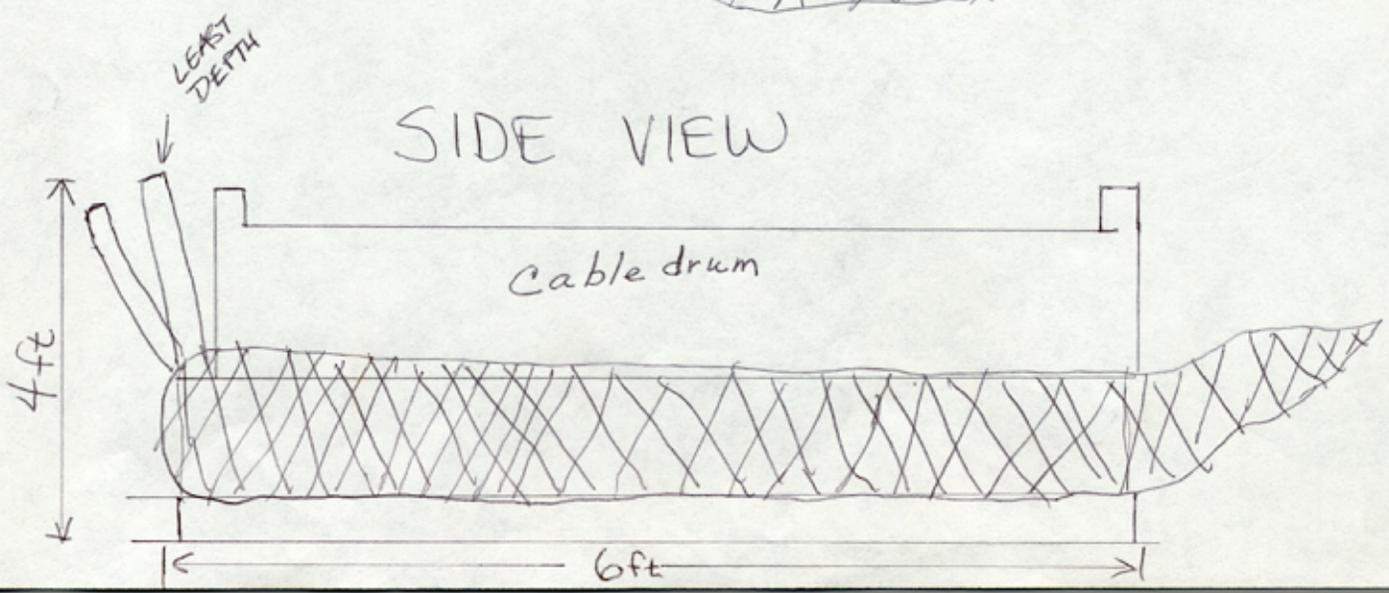
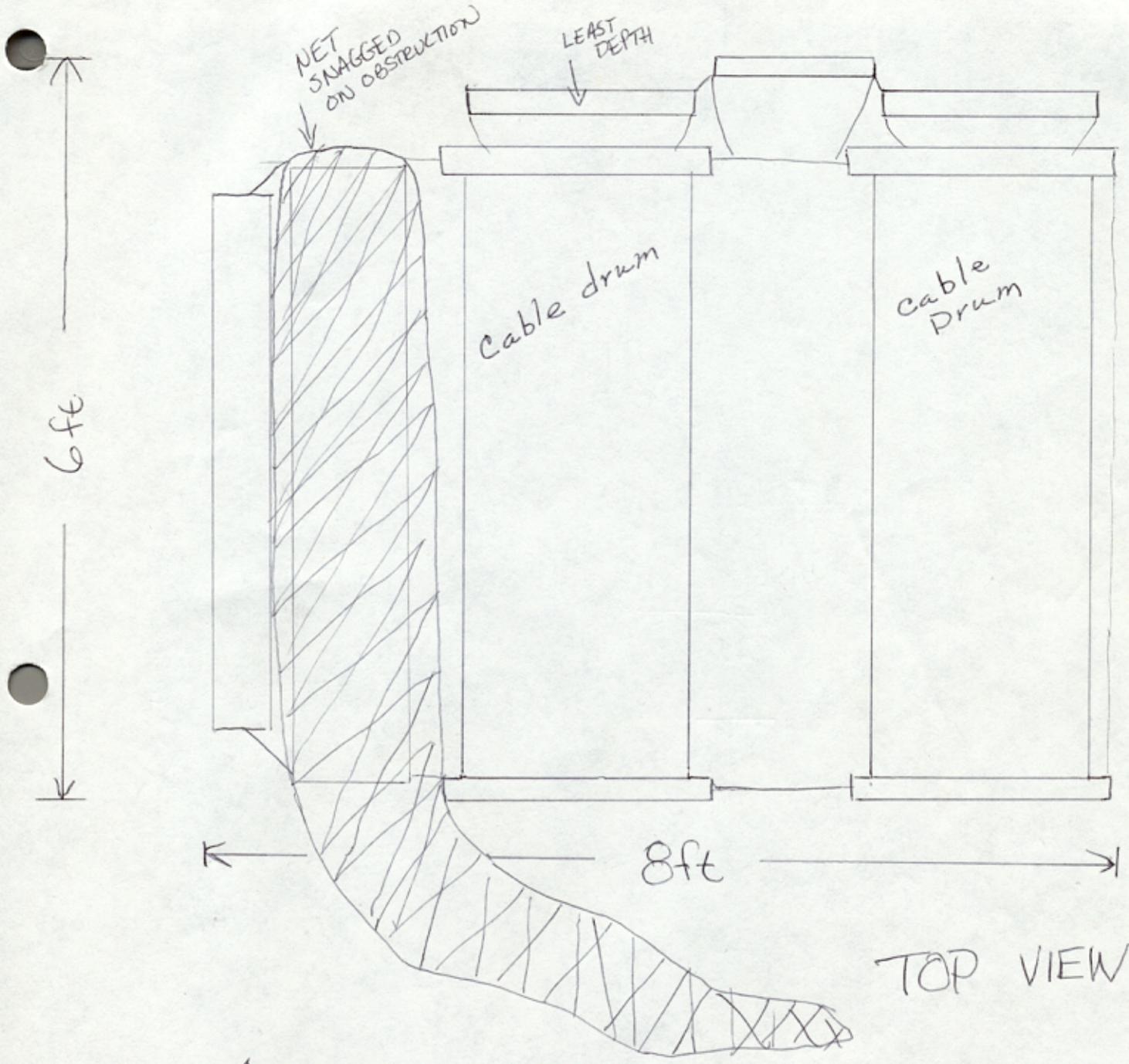
Contact H02 was reported to Coast Guard District No. 8 for inclusion in the Local Notice to Mariners. A copy of this letter is included in Appendix VI.

Additionally, AWOIS item #2807 should be deleted from all effected charts.

AWOIS item 2807 originated as a wreck and is not deleted from the listing, however it is to be expunged from the chart.

*GKM
5/91*

AWOIS 2807 CONTACT HOZ
Trawl Winch



AWOIS ITEM 3599 INVESTIGATION - Sheet 3 of 12**Area of Investigation**

AWOIS Item: 3599
State: Mississippi
County: Jackson
Locality: 3 nm S of Petit Bois Island
Latitude: 30° 09' 13.90" N
Longitude: 88° 28' 29.70" W
Depth: Cleared to 30 feet in 1974

AWOIS Item Description

AWOIS item 3599 is described in Survey FE309WD/74 as a 100 foot barge in 43-44 feet of water, cleared to 30 feet. Survey requirements call for 200% side-scan coverage to a 100 meter radius for disproval, or diver investigation and least depth if found.

Survey Procedures

AWOIS Item: 3599
Positioning: Falcon Mini-Ranger
Sonar Search: 21 April 1989 (DOY 111)
Diving: 08 May 1989 (DOY 128)
Echo Sounding: N/A
Sonification: 200% SSS coverage
Contacts: Six significant Contacts B01, B02, B03, B04, B05, B06

There were no significant problems encountered with either the positioning or side scan sonar equipment.

Six significant contacts were identified on the 200% side scan sonar coverage. One contact was investigated by divers and a least depth and position were determined. The others were investigated through further side-scan sonar development and disproved.

Contact B01 Investigation**(a) Contact B01 Dive Summary**

Contact B01 was investigated by divers on 08 May 1989 (DOY 128). Divers descended down the marker buoy line to the bottom at 44 feet. What appeared to be a steel hulled vessel approximately 100 feet long, 20 feet wide, and 8 feet off the bottom was found lying on the bottom. A least depth was obtained by pneumo depth gauge.

(b) Contact B01 Description

Contact B01 appears to be a steel hulled vessel with the super structure removed lying on the bottom. Its length is 100 feet. The surrounding depth is 44 feet. Divers found the highest point to be 8 feet off the bottom. ✓

(c) Contact B01 Least Depth Determination

Least depth of Contact B01 was taken by divers with a pneumo depth gauge.

Contact:	B01	Position # 722
Date:	08 May 1989 (DOY 128)	
Time:	2102 Z	
Average Pneumo Depth:	38.8 Ft.	
Pneumo Gauge Corrector:	+0.70	
PREDICTED Tidal Zone Cor:	-0.42	
Actual Least Depth:	37.16 Ft.	

(d) Contact B01 Positioning

Three detached positions were taken as the ship drifted over the target. ✓

Contact:	B01			
HDAPS Position Numbers:	721, 722, 725			
Average Easting:	118464.2 E			
Average Northing:	127898.4 N			
Computed Latitude:	30° 09' 13.422" N			
Computed Longitude:	88° 28' 30.003" W			
Loran-C Rates:	7980-W	7980-X	7980-Y	7980-Z
Average Loran:	12489.1	29680.2	47060.7	64067.9

(e) Contact B01 Recommendation

Contact B01 should be charted as a wreck over which the depth is known, using symbol No. 15, Section "B", ~~(Dangers)~~ from Nautical Chart No. 1 at the above location. This should show the symbol No. 15 for a sunken wreck dangerous to surface navigation with the least depth of 37 feet inside parenthesis. — Concur

the danger circle

37' WK

Contact B02, B03, B04, B05, B06 Investigation**(a) Contact B02, B03, B04, B05, B06 Side-Scan Sonar Summary**

Discussions with local divers led us to believe there was an additional wreck, described as a fishing vessel, in this area. 200% Side-scan Sonar coverage was made over these five contacts located on the side-scan trace to verify or disprove the traces found in the area. Additional development of these contacts shows they are either bottom texture changes or reflections from the water surface. After further discussion with local divers, we found that contact B01 was in fact the fishing vessel they had described with its house removed, and described as a barge in the AWOIS listing. Side-scan sonar development is summarized below.

<u>Contact</u>	<u>Position Numbers</u>
B02 (1045.30P)	1271-1273 , 1274-1276
B03 (1072.23S)	1267-1269 , 1284-1288
B04 (1114.35S)	1277-1279 , 1280-1283
B05 (1128.04P)	1252-1255 , 1256-1259
B06 (1206.16P)	1260-1262 , 1263-1266

Side-scan sonar ranges of 50m and 100M range were used and no significant contacts were identified in this area.

(b) Contact B02, B03, B04, B05, B06 Recommendation

Contacts B02, B03, B04, B05, B06 are considered disproved by 200% side-scan sonar coverage. *Concur*

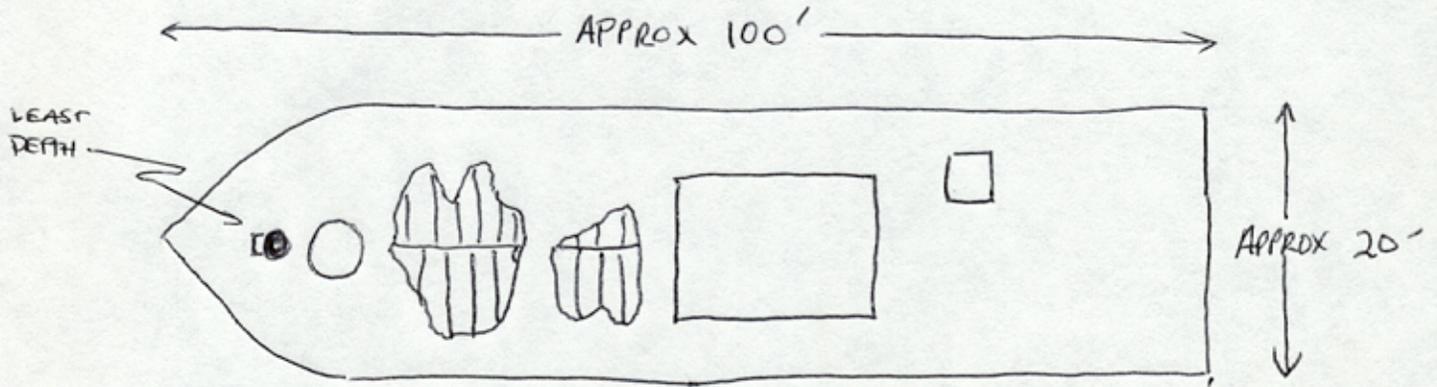
AWOIS Item 3599 Summary

AWOIS item 3599, as reported, is considered verified by diver investigation. The charting of this item should be updated as specified in the recommendations for Contact B01. Contacts B02, B03, B04, B05, B06 are not significant and have been disproved through 200% side-scan sonar coverage. *Concur*

AWOIS 3599

CONTACT B01

TOP VIEW



SIDE VIEW

LEAST DEPTH

APPROX 8'



AWOIS ITEM 7130 INVESTIGATION - Sheet 4 of 12**Area of Investigation**

AWOIS Item: 7130
 State: Mississippi
 County: Jackson
 Locality: 1.7 nm SE of West End of Petit Bois Island
 Latitude: 30° 11' 20.57" N
 Longitude: 88° 31' 18.10" W
 Depth: Reported as 28 feet

AWOIS Item Description

AWOIS item 7130 is described in FE315WD/88; as a submerged obstruction covered by 28 feet, located while searching for AWOIS item 2870. Survey requirements call for 200% sidescan coverage to a 50 meter radius for disproval, or diver investigation and least depth if found.

Survey Procedures

AWOIS Item: 7130
 Positioning: Falcon Mini-Ranger
 Sonar Search: 24 April 1989 (DOY 114)
 25 April 1989 (DOY 115)
 Diving: N/A
 Echo Sounding: N/A
 Sonification: 200% SSS coverage
 Contacts: None

There were no significant problems encountered with either the positioning or side scan sonar equipment.

One contact (contact no. 265.02P) having a shadow height of zero was identified on the first 100% side scan sonar coverage. This contact was investigated by additional side scan sonar lines. No contacts were seen on these subsequent lines. Contact no. 265.02P appears to have been a school of fish.

AWOIS Item 7130 Summary

AWOIS item 7130, as reported, is considered disproved by 200% side scan sonar investigation. This item should be removed from the AWOIS listing. - Concur (This item presently is not charted.)

AWOIS ITEMS 7129 & 7131 INVESTIGATION *Sheet 4 of 12*

Area of Investigation

AWOIS Item: 7129 & 7131
State: Mississippi
County: Jackson
Locality: 1.7 nm SW of West End of Petit Bois Island.

✓

Latitude: 30° 11' 34.08" N (7129)
Longitude: 88° 31' 15.53" W
Depth: 21 Feet

✓

Latitude: 30° 11' 34.17" N (7131)
Longitude: 88° 31' 17.63" W
Depth: 23 Feet

✓

AWOIS Item Description

The AWOIS listing is unclear as to when item 7129 was discovered. The listing states that the item was located on Survey FE315WD/88 while searching for AWOIS 2870. No statement is made as whether this item was discovered during the survey or during Marine Center examination. The item is described as a submerged obstruction covered 21 feet. Survey requirements call for 200% side scan coverage to a 50 meter radius or diver investigation and least depth if found.

✓
✓

The AWOIS listing is unclear as to when item 7131 was discovered. The listing states that the item was located on Survey FE315WD/88 while searching for AWOIS 2870. No statement is made as whether this item was discovered during the survey or during Marine Center examination. The item is described as a submerged obstruction covered 23 feet. Survey requirements call for 200% side scan coverage to a 50 meter radius or diver investigation and least depth if found.

✓
✓

Survey Procedures

AWOIS items 7129 and 7131 were investigated concurrently as their search areas overlap.

✓

AWOIS Item: 7129 & 7131
Positioning: Falcon Mini-Ranger
Sonar Search: 11 May 1989 (DOY 131)
27 July 1989 (DOY 208)
Diving: N/A
Echo Sounding: N/A
Sonification: 200% SSS coverage
Contacts: None

✓
✓

There were no significant problems encountered with either the positioning or side scan sonar equipment. ✓

No significant contacts were identified on the 200% side scan sonar coverage. ✓

AWOIS Item 7129 & 7131 Summary

AWOIS item 7129 and 7131 as reported are considered disproved through 200% side scan sonar investigation. These items should be removed from the AWOIS listing. *Concur* ✓

(These items presently are not charted.)

AWOIS ITEM 7213 INVESTIGATION

- Sheet 5 of 12

Area of Investigation

AWOIS Item: 7213
 State: Mississippi
 County: Harrison
 Locality: 5 miles SW of Petit Bois Island
 Latitude: 30° 08' 53.30" N
 Longitude: 88° 33' 48.70" W
 Depth: Cleared to 40 feet in 1974

AWOIS Item Description

AWOIS item 7213 is described in FE309WD/74 as a hunk of steel, 5 ft off the bottom with a least depth of 40 ft. Survey requirements call for 200% sidescan coverage to a 500 meter radius for disproval, or diver investigation and least depth if found.

Survey Procedures

AWOIS Item: 7213
 Positioning: Falcon Mini-Ranger
 Sonar Search: 25 April 1989 (DOY 115)
 Diving: 27 April 1989 (DOY 117)
 Echo Sounding: N/A
 Sonification: 100% SSS coverage
 Contacts: One significant Contact A01

There were no significant problems encountered with either the positioning or side scan sonar equipment.

One significant contact was identified on the 100% side scan sonar coverage. This contact was investigated by divers a least depth and position were determined.

Contact A01 Investigation**(a) Contact A01 Dive Summary**

Contact A01 was investigated by divers on 27 April 1989 (DOY 117). Divers descended down the marker buoy line to the bottom at 46 feet. A steel mast 54 feet in length was found lying on the bottom. Sheaves and blocks were found around the wreckage and a trawl net fouled along its length. A least depth was obtained by pneumo depth gauge.

(b) Contact A01 Description

Contact A01 is a steel mast lying on the bottom. Its length is 54 feet. The surrounding depth is 46 feet. Divers found the highest point to be 5 feet off the bottom.

(c) Contact A01 Least Depth Determination

Least depth of Contact A01 was taken by divers with a pneumo depth gauge.

Position # 597

Contact: A01
 Date: 27 April 1989 (DOY 117)
 Time: 1746 Z

Average Pneumo Depth: 42.1 Ft.
 Pneumo Gauge Corrector: +0.7⁰
~~PREDICTED~~ Tidal Zone Cor: -1.54

 Actual Least Depth: 41.37 Ft.

(d) Contact A01 Positioning

Three detached positions were taken as the ship drifted over the target that was marked by the dive buoy.

Contact: A01
 HDAPS Position Numbers: 592, 593, 597

Average Easting: 110082.5 E
 Average Northing: 127220.8 N

Computed Latitude: 30° 08' 51.771" N
 Computed Longitude: 88° 33' 43.245" W

Loran-C Rates:	7980-W	7980-X	7980-Y	7980-Z
	-----	-----	-----	-----
Average Loran:	12435.6	29626.0	47058.7	64066.7

(e) Contact A01 Recommendation

Contact A01 should be charted as a obstruction over which the depth is known, using symbol No. 27, Section "C", ~~(Dangers)~~ from Nautical Chart No. 1 at the above location. This should show a least depth of 4 feet inside a danger circle and labeled "Obstr". - Concur

(This obstr. is not presently charted.)

40. obstr

AWOIS Item 7213 Summary

AWOIS item 7213, as reported, is considered verified by diver investigation. The charting of this item should be updated as specified in the recommendations for Contact A01. *Concur*

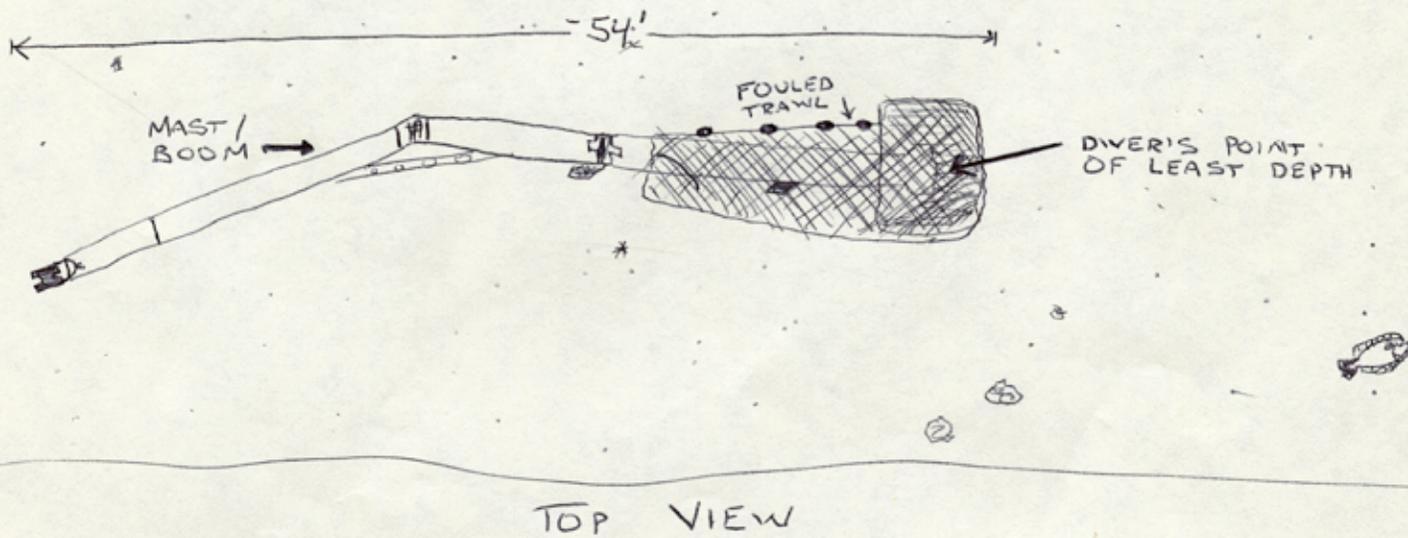
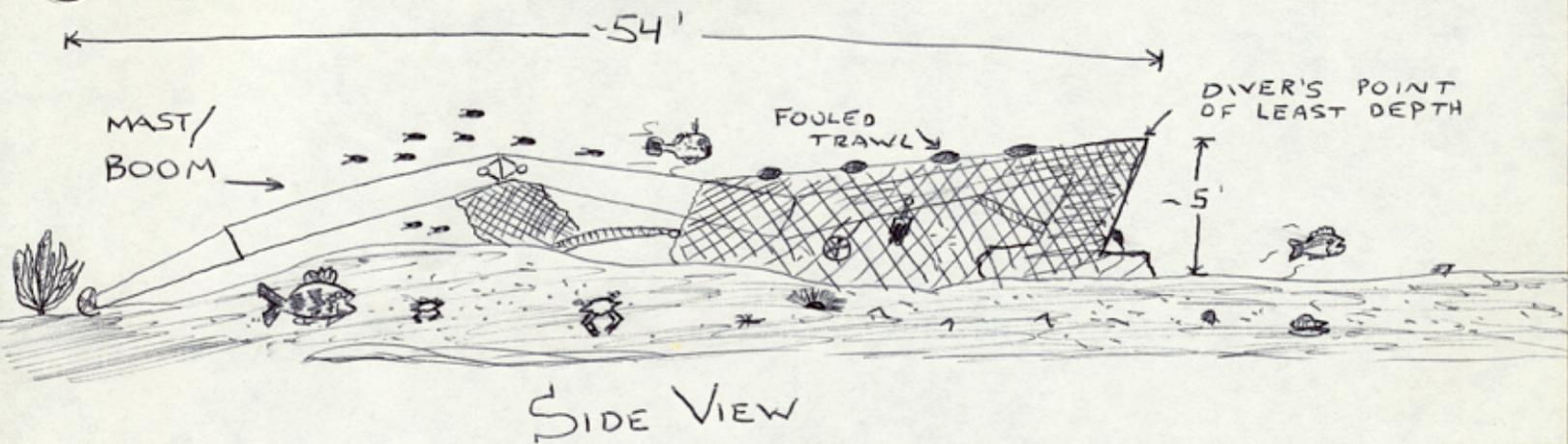
✓
✓

Contact A01 was reported to Coast Guard District No. 8 for inclusion in the Local Notice to Mariners. A copy of this letter is included in Appendix VI.

✓
✓

AWOIS 7213

CONTACT A01



AWOIS ITEM 7214 INVESTIGATION Sheet 6 of 12**Area of Investigation**

AWOIS Item: 7214 ✓
 State: Mississippi ✓
 County: Jackson ✓
 Locality: 4.7 nm SW of West End of Petit Bois Island ✓
 Latitude: 30° 09' 16.30" N ✓
 Longitude: 88° 34' 01.20" W ✓
 Depth: 44 ft. hang in 1974 ✓

AWOIS Item Description

AWOIS item 7214 is described from Project FE309WD/74 as being a hang at 44 feet found during wire drag operations. The item was neither cleared nor investigated. Survey requirements call for 400% sidescan coverage to a 100 meter radius for disproval or diver investigation and least depth if found. ✓

Survey Procedures

AWOIS Item: 7214 ✓
 Positioning: Falcon Mini-Ranger ✓
 Sonar Search: 25 April 1989 (DOY 115) ✓
 11 May 1989 (DOY 131) ✓
 Diving: None ✓
 Echo Sounding: N/A ✓
 Sonification: 400% SSS coverage ✓
 Contacts: None ✓

There were no significant problems encountered with either the positioning or side scan sonar equipment. ✓

No significant contacts were identified with 400% side scan sonar coverage. ✓

AWOIS Item 7214 Summary

AWOIS item 7214, as reported, is considered disproved through 400% sidescan investigation. This item appears to have been a "touch bottom" of the wire during the 1974 survey. The reported depth of 44 feet is in surrounding depths of 45-46 feet. This item should be removed from the AWOIS listing. - Concur ✓

(This item is not presently charted.) ✓

AWOIS ITEMS 7217 & 7218 INVESTIGATION - Sheet 7 of 12**Area of Investigation**

AWOIS Item:	7217 & 7218
State:	Mississippi
County:	Jackson
Locality:	9.0 nm SW of West tip of Petit Bois Island
Latitude:	30° 07' 19.80" N (7217)
Longitude:	88° 38' 47.00" W
Latitude:	30° 07' 21.20" N (7218)
Longitude:	88° 38' 25.00" W
Depth:	Unknown

AWOIS Item Description

AWOIS item 7217 was denoted during Marine Center examination of Survey D-79/88 as a side scan sonar contact. No size or shadow length is stated. Survey requirements call for 200% sidescan coverage to a 100 meter radius for disproval, or diver investigation and least depth if found.

AWOIS item 7218 was denoted during Marine Center examination of Survey D-77/88 as a side scan sonar contact. No size or shadow length is stated. Survey requirements call for 200% sidescan coverage to a 100 meter radius for disproval, or diver investigation and least depth if found.

Survey Procedures

AWOIS items 7217 & 7218 were investigated concurrently as each lies within 600 meters of the other.

The following data summary reflects survey procedures used for investigating these items:

AWOIS Item:	7217 & 7218
Positioning:	Falcon Mini-Ranger
Sonar Search:	13 July 1989 (DOY 194)
Diving:	N/A
Echo Sounding:	N/A
Sonification:	200% SSS coverage
Contacts:	None

There were no significant problems encountered with either the positioning or side scan sonar equipment.

No significant contacts were identified on the 200% side scan sonar coverage.

AWOIS Item 7217 & 7218 Summary

AWOIS items 7217 and 7218 as reported, are considered disproved by 200% side scan sonar investigation. These items should be removed from the AWOIS listing. - Concur ✓

(These items are not presently charted.)

AWOIS ITEM 7219 INVESTIGATION - Sheet 6 of 12**Area of Investigation**

AWOIS Item: 7219
 State: Mississippi
 County: Jackson
 Locality: 5.0 nm SE of Horn Island Pass Channel
 Latitude: 30° 08' 47.00" N
 Longitude: 88° 34' 46.60" W
 Depth: Unknown

AWOIS Item Description

AWOIS item 7219 was denoted during marine center examination of Survey D-79/88 as a sidescan sonar contact. No size or shadow length is stated. Evaluator recommends further investigation. Survey requirements call for sidescan coverage to a 100 meter radius for disproval, or diver investigation and least depth if found.

Survey Procedures

AWOIS Item: 7219
 Positioning: Falcon Mini-Ranger
 Sonar Search: 16 May 1989 (DOY 136)
 Diving: N/A
 Echo Sounding: N/A
 Sonification: 400% SSS coverage
 Contacts: No significant contacts

There were no problems encountered with either the positioning or side scan sonar equipment.

400% sonar coverage was attained by first running lines at 200% in a N/S direction. An additional 200% coverage was run at a 45° to the original 200% lines to achieve 400% total coverage.

AWOIS Item 7219 Summary

AWOIS 7219, as reported, is considered disproved by 400% sidescan sonar investigation. It is recommended that this item be removed from the AWOIS listing. - Concur

(This item is not presently charted.)

AWOIS ITEM 7232 INVESTIGATION

- Sheet 7 of 12

Area of Investigation

AWOIS Item: 7232 ✓
 State: Mississippi
 County: Jackson ✓
 Locality: 8.9 nm SW of Horn Island Pass Channel ✓
 Latitude: 30° 06' 53.57" N ✓
 Longitude: 88° 38' 15.00" W ✓
 Depth: Unknown

AWOIS Item Description

AWOIS item 7232 was denoted during Marine Center examination of Survey D-79/88 as a spike on the echogram. Survey requirements call for 200% side scan sonar coverage along a sounding line segment as specified in the AWOIS listing. ✓

Survey Procedures

The following data summary reflects survey procedures used for investigating these items: ✓

AWOIS Item: 7232 ✓
 Positioning: Falcon Mini-Ranger ✓
 Sonar Search: 13 July 1989 (DOY 194) ✓
 Diving: N/A ✓
 Echo Sounding: N/A ✓
 Sonification: 200% SSS coverage ✓
 Contacts: None ✓

There were no significant problems encountered with either the positioning or side scan sonar equipment. ✓

No significant contacts were sighted during the 200% side scan sonar coverage. ✓

AWOIS Item 7232 Summary

AWOIS item 7232, as reported, is considered disproved by 200% side scan sonar investigation. This item should be removed from the AWOIS listing. - Concur (This item is not presently charted.) ✓

AWOIS ITEM 7233 INVESTIGATION - Sheet 8 of 12

Area of Investigation

AWOIS Item: 7233
 State: Mississippi
 County: Jackson
 Locality: 4.5 nm W of Horn Island Pass Channel
 Latitude: 30° 11' 00.00" N
 Longitude: 88° 37' 37.95" W
 Depth: Unknown

AWOIS Item Description

AWOIS item 7233 was denoted during Marine Center examination of Survey D-79/88 as a spike on the echogram. Survey requirements call for 200% side scan coverage along a sounding line segment as specified in the AWOIS listing.

Survey Procedures

AWOIS Item: 7233
 Positioning: Falcon Mini-Ranger
 Sonar Search: 2 August 1989 (DOY 214)
 Diving: N/A
 Echo Sounding: N/A
 Sonification: 200% SSS coverage
 Contacts: None

There were no significant problems encountered with either the positioning or side scan sonar equipment.

No significant contacts were sighted during the 200% side scan sonar coverage.

AWOIS Item 7233 Summary

AWOIS item 7233, as reported, is considered disproved by 200% side scan sonar investigation. This item should be removed from the AWOIS listing. - Concur (This item is not presently charted.)

Note: The reported G.P. of this item plots near the western edge of this investigation. The field should have run one more line to the west.

AWOIS ITEM 7234 INVESTIGATION - Sheet 8 of 12**Area of Investigation**

AWOIS Item: 7234
 State: Mississippi
 County: Jackson
 Locality: 4.4 nm W of Horn Island Pass Channel
 Latitude: 30° 11' 06.00" N
 Longitude: 88° 36' 39.16" W
 Depth: Unknown

AWOIS Item Description

AWOIS item 7234 was denoted during Marine Center examination of Survey D-79/88 as a spike on the echogram. Survey requirements call for 200% side scan coverage along a sounding line segment as specified in the AWOIS listing.

Survey Procedures

AWOIS Item: 7234
 Positioning: Falcon Mini-Ranger
 Sonar Search: 2 August 1989 (DOY 214)
 Diving: N/A
 Echo Sounding: N/A
 Sonification: 200% SSS coverage
 Contacts: None

There were no significant problems encountered with either the positioning or side scan sonar equipment.

No significant contacts were sighted during the 200% side scan sonar coverage.

AWOIS Item 7234 Summary

AWOIS item 7234 as reported, is considered disproved by 200% side scan sonar investigation. This item should be removed from the AWOIS listing. - Concur (This item is not presently charted.)

AWOIS ITEM 7235 INVESTIGATION - Sheet 8 of 12**Area of Investigation**

AWOIS Item: 7235
 State: Mississippi
 County: Jackson
 Locality: 4.7 nm W of Horn Island Pass Channel
 Latitude: 30° 11' 10.00" N
 Longitude: 88° 37' 51.00" W
 Depth: Unknown

AWOIS Item Description

AWOIS item 7235 was denoted during Marine Center examination of Survey D-79/88 as a spike on the echogram. Survey requirements call for 200% side scan coverage along a sounding line segment as specified in the AWOIS listing.

Survey Procedures

AWOIS Item: 7235
 Positioning: Falcon Mini-Ranger
 Sonar Search: 2 August 1989 (DOY 214)
 Diving: N/A
 Echo Sounding: N/A
 Sonification: 200% SSS coverage
 Contacts: None

There were no significant problems encountered with either the positioning or side scan sonar equipment.

No significant contacts were sighted during the 200% side scan sonar coverage.

AWOIS Item 7235 Summary

AWOIS item 7235 as reported is considered disproved by 200% side scan sonar investigation. This item should be removed from the AWOIS listing. Concur (This item is not presently charted.)

AWOIS ITEM 7236 INVESTIGATION - Sheet 8 of 12

Area of Investigation

AWOIS Item: 7236
 State: Mississippi
 County: Jackson
 Locality: 3.8 nm W of Horn Island Pass Channel
 Latitude: 30° 11' 13.00" N
 Longitude: 88° 36' 53.43" W
 Depth: Unknown

AWOIS Item Description

AWOIS item 7236 was denoted during Marine Center examination of Survey D-79/88 as a spike on the echogram. Survey requirements call for 200% side scan coverage along a sounding line segment as specified in the AWOIS listing.

Survey Procedures

AWOIS Item: 7236
 Positioning: Falcon Mini-Ranger
 Sonar Search: 2 August 1989 (DOY 214)
 Diving: N/A
 Echo Sounding: N/A
 Sonification: 200% SSS coverage
 Contacts: None

There were no significant problems encountered with either the positioning or side scan sonar equipment.

No significant contacts were sighted during the 200% side scan sonar coverage.

AWOIS Item 7236 Summary

AWOIS item 7236 as reported is considered disproved by 200% side scan sonar investigation. This item should be removed from the AWOIS listing. *Concur (This item is not presently charted.)*

AWOIS ITEM 7237 INVESTIGATION — *Sheets 9 of 12 & 10 of 12***Area of Investigation**

AWOIS Item: 7237 ✓
 State: Mississippi ✓
 County: Jackson ✓
 Locality: 1.7 nm S of Petit Bois Island ✓
 Latitude: 30° 11' 40.00" N ✓
 Longitude: 88° 31' 29.00" W ✓
 Depth: Unknown ✓

AWOIS Item Description

AWOIS item 7237 is described as being a "spike" seen on the echogram trace during marine center examination of survey D-79/88. Survey requirements call for verification or disproval through 200% sidescan sonar coverage along the specified sounding line segment described in the AWOIS listing. ✓

Survey Procedures

AWOIS Item: 7237 ✓
 Positioning: Falcon Mini-Ranger ✓
 Sonar Search: 24 & 25 April 1989 (DOY 114, 115) ✓
 02 May 1989 (DOY 122) ✓
 Diving: N/A ✓
 Echo-sounding: 11 May 1989 (DOY 131) ✓
 Sonification: 200% SSS coverage ✓
 Contacts: Three significant Contacts C01, C02, C03 ✓

There were no significant problems encountered with either the positioning or side scan sonar equipment. ✓

All three significant contacts were identified on the echosounder during side scan sonar coverage. These contacts were further investigated by echo sounding development. ✓

Contact C01, C02, C03 Investigation**(a) Contact C01, C02, C03 Echo-soundings Summary**

Echo-sounding lines were run to provide 100% coverage over the contact areas to verify or disprove these contacts. Echo-sounding development is summarized below. ✓

<u>DOY</u>	<u>Contact</u>	<u>Position Numbers</u>
131	C01 (244.03F)	737-787, 790-880
131	C02 (273.21F)	954-965, 976-986 991-1023
131	C03 (599.03F)	881-950

Four meter line spacing was used over this area. No shoaling or objects protruding above the bottom were found. A sounding plot at 1:2,500 scale (sheet 9 of 12) was smooth plotted for disproval proof of these contacts.

(b) Contact C01, C02, C03 Recommendation

Contacts C01, C02, C03 are considered disproved by echo-sounding development and 200% side scan coverage. AWOIS 7237 should be removed from the AWOIS listing. *Concur* *Concur*

AWOIS Item 7237 Summary

AWOIS item 7237, as reported, is considered disproved by 200% side scan sonar and echo-sounding development. No further investigation is needed. *Concur* *Concur*

(Item #7237 is not presently charted.)

AWOIS ITEM 7317 INVESTIGATION - *Sheet 11 of 12***Area of Investigation**

AWOIS Item: 7317
 State: Mississippi
 County: Jackson
 Locality: 1.2 nm S of Horn Island Pass Channel
 Latitude: 30° 09' 24.00" N
 Longitude: 88° 32' 24.00" W
 Depth: Unknown (wreck)

AWOIS Item Description

AWOIS item 7317 is described in LNM37/88 as a 38 steel hull foot fishing vessel MISS SOPHIE chartered as a dangerous submerged wreck, PA. Survey requirements call for 200% sidescan coverage to a 3000 meter radius for disproval, or diver investigation and least depth if found.

Survey Procedures

AWOIS Item: 7317
 Positioning: Falcon Mini-Ranger
 Sonar Search: From 23 May (DOY 143)
 to 02 August 1989 (DOY 214)
 Diving: 19 July 1989 (DOY 200)
 26 July 1989 (DOY 207)
 Echo Sounding: N/A
 Sonification: 100% SSS coverage
 Contacts: Two significant contacts, I01 and I02

There were no significant problems encountered with either the positioning or side scan sonar equipment.

Two significant contacts were identified on the 100% side scan sonar coverage. These contacts were investigated by divers and least depths and positions were determined. *A third contact was identified during office processing.*

Contact I01 Investigation**(a) Contact I01 Dive Summary**

Contact I01 was investigated by divers on 19 July 1989 (DOY 200). Divers descended down the marker buoy line to the bottom at 45 feet. A circle search of 30 meter radius was conducted about the marker buoy anchor. A buoy similar to buoy "HI" presently located at the entrance to Horn Island Pass Channel was found lying on its side on the bottom. A least depth was determined by divers using a pneumo depth gauge.

(b) Contact I01 Description

Contact I01 is a buoy lying on the bottom. It is approximately 4 feet in diameter, 11 feet long, and raises 7 feet above the bottom. ✓

(c) Contact I01 Least Depth Determination

Least depth of Contact I01 was taken by divers.

Contact:	I01	Position # 3738
Date:	19 July 1989	(DOY 200)
Time:	2132Z	
Average Pneumo Depth:	36.0	Ft.
Pneumo Gauge Corrector:	+0.26	
PREDICTED Tidal Zone Cor:	-1.26	
Actual Least Depth:	35.4	Ft.

(d) Contact I01 Positioning

Three detached positions were taken as the ship drifted over the target that was marked by the dive buoy. ✓

Contact:	I01
HDAPS Position Numbers:	3738-3740
Average Easting:	111966.2 E
Average Northing:	130467.6 N
Computed Latitude:	30° 10' 37.150" N
Computed Longitude:	88° 32' 32.725" W
Loran-C Rates:	7980-W 7980-X 7980-Y 7980-Z
Average Loran:	12447.8 29645.0 47065.8 64065.5

(e) Contact I01 Recommendation

Contact I01 should be charted as a obstruction over which the depth is known, using symbol No.27, Section "O", (Dangers) from Nautical Chart No.1 at the above location. *- Do not concur - This shaken mv. buoy was salvaged on Sept. 15-16, 1989 by the U.S. Coast Guard. Since this obstruction no longer exists, it is not recommended to be charted*

Contact I02 Investigation**(a) Contact I02 Dive Summary**

Contact I02 was investigated by divers on 26 July 1989 (DOY 207). Divers descended down the marker buoy line to the bottom at 45 feet. A circle search of 30 meter radius was conducted about the marker buoy anchor. A steel hull F/V was found on the bottom. A least depth was determined by divers using a pneumo depth gauge. ✓

(b) Contact I02 Description

Contact I02 is a steel hull F/V lying on it's side on the bottom. It is approximately 38 feet long, 9 feet wide and raises 8 feet off the bottom. This wreck is partially buried in the sandy bottom.

(c) Contact I02 Least Depth Determination

Least depth of Contact I02 was taken by divers.

Contact:	I02	Position # 3943
Date:	26 July 1989 (DOY 207)	
Time:	2201 Z	
Average Pneumo Depth:	34.0 ^{33.9} Ft.	
Pneumo Gauge Corrector:	+0.26	
PREDICTED Tidal Zone Cor:	-*0.17	
Actual Least Depth:	34.35 Ft.	

(d) Contact I02 Positioning

Three detached positions were taken as the ship drifted over the target that was marked by the dive buoy.

Contact:	I02			
HDAPS Position Numbers:	3742-3744			
Average Easting:	112887.0 E			
Average Northing:	128846.6 N			
Computed Latitude:	30° 09' 44.474" N			
Computed Longitude:	88° 31' 58.378" W			
Loran-C Rates:	7980-W	7980-X	7980-Y	7980-Z
Average Loran:	12453.6	29647.2	47062.3	64066.4

(e) Contact I02 Recommendation

Contact I02 should be charted as a sunken wreck over which the depth is known, using symbol No. 15, Section "C", ~~(DANGER)~~ from Nautical Chart No. 1 at the above location.

with the least depth of 33 feet
 Concur — This is the item being sought. The presently charted wreck should be deleted from all affected charts and this wreck should be charted as indicated.

AWOIS Item 7317 Summary

AWOIS item 7317, as reported, is considered verified by diver investigation. The vessel located by divers matches the AWOIS description. The charting of this item should be updated as specified in the recommendations for Contact I02. On 28 July 1989 the the Coast Guard Aids to Navigation Group station Gulfport placed a lighted red buoy on contact I02 to mark its location. ✓

An additional item (Contact I01) was found during this search. The charting of this should be as specified in the recommendations for contact I01. ✓

Both of these items were reported to Coast Guard District No. 8 for inclusion in the Local Notice To Mariners. A copy of each letter is included in Appendix VI. ✓

A third contact was observed at ^v3024.28 P at
on Day 177
25 meters and then again at 4120.215, at
on Day 209
11 meters. This contact has a computed height
of 2½ to 3 feet. This contact lies in depths
of 45 feet, giving this obstruction a computed
least depths of 42 feet. This obstruction is
plotted in Latitude 30° 09' 38.1" N, Longitude
88° 30' 46.3" W (Sheet 12 of 12). It is recommended
that this obstruction be charted in accordance
with Cartographic Order 004/89, dated July 3, 1989. ✓

M. AUTHORS

The preceding descriptive report has been prepared and reviewed aboard the NOAA Ship RUDE. It is submitted to the Commanding Officer for final review, signature, and submission. ✓



Ralph Rogers, ENS, NOAA
NOAA Ship RUDE

N. LETTER OF APPROVAL

FIELD NO. RU-20-1-89

REGISTRY NO. FE-324-SS

OPR-J433-RU-88

Field operations contributing to the accomplishment of this survey were conducted under the Commanding Officer's 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. ✓



Andrew Snella, LCDR, NOAA
Commanding Officer
NOAA Ship RUDE

LIST OF HORIZONTAL CONTROL STATIONS

✓

LIST OF HORIZONTAL CONTROL STATIONS

STATION NUMBER	STATION NAME	GEOGRAPHIC POSITION
101	PETIT AZMK ,1985	30° 12' 12.63396" N 88° 28' 08.74297" W
118	AMY, 1988	30° 12' 05.34702" N 88° 25' 27.33849" W
120	HORN IS PASS ENT RNG REAR LT	30° 13' 05.33160" N 88° 30' 03.57878" W
122	PASCAGOULA CHAN RNG D REAR LT	30° 12' 42.66812" N 88° 30' 13.64261" W
124	BIKE, 1988	30° 13' 48.30481" N 88° 39' 58.22276" W

APPENDIX VI
CORRESPONDENCE



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

AWOIS 7317 CONTACT 102

NOAA Ship RUDE
439 West York St.
Norfolk, VA 23510

26 July, 1989

Commander, Eighth Coast Guard District
Aids to Navigation Branch
Hale Boggs Federal Building, Room 1141
500 Camp Street
New Orleans, LA 70130-3396

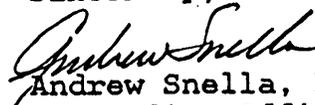
The NOAA Ship RUDE recently located an obstruction to navigation within the safety fairway near Horn Island Pass Channel. This obstruction is 0.9 nautical miles at a bearing of 152 degree from the entrance buoy "HI", at position $30^{\circ}09'44.474''$ North, $88^{\circ}31'58.378''$ West (NAD 83). The least depth over this obstruction of 34 feet is based on predicted tides. Depths in the surrounding area are 42 feet.

Two charts are affected. The position and least depth are stated below.

<u>CHART</u>	<u>POSITION</u>	<u>DATUM</u>	<u>LEAST DEPTH</u>
11373	$30^{\circ}09'43.746''$ N $88^{\circ}31'58.332''$ W	NAD 27	34 Feet
11360	$30^{\circ}09'44.474''$ N $88^{\circ}31'58.378''$ W	NAD 83	5 Fathom & 4 Feet

Please include this information in the next Local Notice to Mariners. Any questions or comments can be referred to my Executive Officer LT Craig Bailey. He can be contacted on cellular phone at (601) 938-2691. Future correspondence should be referred to project No. OPR-J433-89-RU, survey registry No. 324-SS-89. NOAA Atlantic Marine Center, Hydrographic Surveys Branch phone (804) 441-6746 will handle any correspondence on this matter after September 15, 1989.

Sincerely,


Andrew Snella, LCDR/NOAA
Commanding Officer
NOAA Ship RUDE



AWOIS 7317 CONTACT 101

NOAA Ship RUDE
439 West York St.
Norfolk, VA 23510

20 July, 1989

Commander, Eighth Coast Guard District
Aids to Navigation Branch
Hale Boggs Federal Building, Room 1141
500 Camp Street
New Orleans, LA 70130-3396

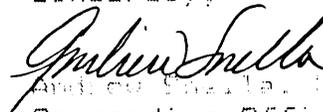
The NOAA Ship RUDE recently located an obstruction to navigation within Horn Island Pass Channel 35 meters southwest of the entrance buoy "HI" at position $30^{\circ}10'37.150''$ North, $88^{\circ}32'32.725''$ West (NAD 83). The least depth over this obstruction of 35 feet is based on predicted tides. The controlling depth of the channel in this vicinity is 40 feet.

Four charts are affected. The position and least depth are stated below.

CHART	POSITION	DATUM	LEAST DEPTH
11373	$30^{\circ}10'36.422''$ N $88^{\circ}32'32.679''$ W	NAD 27	35 Feet
11374	$30^{\circ}10'36.422''$ N $88^{\circ}32'32.679''$ W	NAD 27	35 Feet
11375	$30^{\circ}10'37.150''$ N $88^{\circ}32'32.725''$ W	NAD 83	35 Feet
11360	$30^{\circ}10'37.150''$ N $88^{\circ}32'32.725''$ W	NAD 83	5 Fathom & 5 Feet

This work was completed under project No. OPR-J493-89-RU. Please include this information in the next Local Notice to Mariners. Any questions or comments can be referred to my Executive Officer LT Craig Bailey. He can be contacted on cellular phone at (601) 938-2691. Future correspondence should be referred to NOAA Atlantic Marine Center. Hydrographic Surveys Branch phone (804) 441-6746.

Sincerely,


Andrew Smalls, LCDR/NOAA
Commanding Officer
NOAA Ship RUDE



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

AWOIS 2807 CONTACT H02

NOAA Ship RUDE
439 West York St.
Norfolk, VA 23510

14 July, 1989

Commander, Eighth Coast Guard District
Aids to Navigation Branch
Hale Boggs Federal Building, Room 1141
500 Camp Street
New Orleans, LA 70130-3396

The NOAA Ship RUDE recently located an obstruction to navigation within the Safety Fairway near the entrance to Horn Island Pass Channel, at position $30^{\circ}06'49.182''$ North, $88^{\circ}33'43.210''$ West (NAD 83). The least depth over this obstruction of 48 feet is based on predicted tides. The location is 6.7 nm, bearing 214° True from the West tip of Petit Bois Island. Three charts are affected. The position and least depth are stated below, note that the position for chart 11373 is on the North American Datum of 1927.

CHART	POSITION	DATUM	LEAST DEPTH
11373	$30^{\circ}06'48.454''$ N $88^{\circ}33'43.164''$ W	NAD 27	48 Feet
11375	$30^{\circ}06'49.182''$ N $88^{\circ}33'43.210''$ W	NAD 83	48 Feet
11360	$30^{\circ}06'49.182''$ N $88^{\circ}33'43.210''$ W	NAD 83	8 Fathom

This work was completed under project No. OPR-J433-89-RU. Please include this information in the next Local Notice to Mariners. Any questions or comments can be referred to my Executive Officer LT Craig Bailey. He can be contacted on cellular phone at (601) 938-2691. Future correspondence should be referred to NOAA Atlantic Marine Center, Hydrographic Surveys Branch phone (804) 441-6746.

Sincerely,

Andrew Snella
Andrew Snella, LCDR/NOAA
Commanding Officer
NOAA Ship RUDE





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

AWOIS 7213 CONTACT A01

NOAA Ship RUDE
439 West York St.
Norfolk, VA 23510

1 May, 1989

Commander, Eighth Coast Guard District
Aids to Navigation Branch
Hale Boggs Federal Building, Room 1141
500 Camp Street
New Orleans, LA 70130-3396

The NOAA Ship RUDE recently located an obstruction to navigation within the Safety Fairway near the entrance to Horn Island Pass Channel, at position $30^{\circ}08'51.771''$ North, $88^{\circ}33'43.245''$ West (NAD 83). The least depth over this obstruction of 41 feet is based on predicted tides. The location is 4.9 nm, bearing 216° True from the West tip of Petit Bois Island. Three charts are affected. The position and least depth are stated below, note that the position for chart 11373 is on the North American Datum of 1927.

CHART	POSITION	DATUM	LEAST DEPTH
11373	$30^{\circ}08'51.048''$ N $88^{\circ}33'43.205''$ W	NAD 27	41 Feet
11375	$30^{\circ}08'51.771''$ N $88^{\circ}33'43.245''$ W	NAD 83	41 Feet
11360	$30^{\circ}08'51.771''$ N $88^{\circ}33'43.245''$ W	NAD 83	7 Fathom

This work was completed under project No. OPR-J433-89-RU. Please include this information in the next Local Notice to Mariners. Any questions or comments can be referred to my Executive Officer LT Craig Bailey. He can be contacted on cellular phone at (601) 938-2691. Future correspondence should be referred to NOAA Atlantic Marine Center, Hydrographic Surveys Branch phone (804) 441-6746.

Sincerely,

Andrew Snella
Andrew Snella, LCDR/NOAA
Commanding Officer
NOAA Ship RUDE





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
 NATIONAL OCEAN SERVICE
 OFFICE OF CHARTING AND
 GEODETIC SERVICES
 ATLANTIC HYDROGRAPHIC SECTION
 439 West York Street
 Norfolk, Virginia 23510-1114

July 31, 1990

Commander, Eighth Coast Guard District
 Aids to Navigation Office
 Hale Boggs Federal Building
 500 Camp Street
 New Orleans, LA 70130-3396

Dear Sir,

The following items were discovered during office processing of a hydrographic survey and are considered dangers to navigation.

REPORT OF DANGER TO NAVIGATION

Hydrographic Survey Registry Number.....FE-324 (1989)
 State.....Mississippi
 General Locality.....Gulf of Mexico
 Sublocality.....Approaches to Horn Island Pass
 Project Number.....OPR-J433-RU-88/89
 Surveyed By.....NOAA Ship RUDE

In the vicinity of Horn Island Pass Channel Lighted Buoys "1" and "3" several uncharted dangers to navigation were indicated during 1989 surveying work in this area. These uncharted dangers appear to be buoy sinker weights that have been left on the bottom.

The obstructions associated with buoy "1" were seen on side scan sonar while in the "off-line" mode and not collecting positional information. The hydrographer did not position or investigate these obstructions. From the limited analysis that can be gained from the sonargrams, these obstructions appear to be within a 75-meter radius circle from these buoys and some have a computed height above the bottom of approximately 3½ feet.

The obstructions associated with buoy "3" were seen on side scan sonar while collecting hydrographic data and therefore have the positioning information necessary to position sonar contacts. From sonargram analysis there appears to be three obstructions separate from buoy "3" and its sinker. These obstructions plot in the following positions (±30 meters):

<u>LATITUDE</u>	<u>LONGITUDE</u>
30°11'50.2"N	88°31'24.8"W
30°11'49.5"N	88°31'24.4"W
30°11'48.5"N	88°31'27.2"W

The hydrographer did not investigate these obstructions. The sonargrams were not of sufficient quality to determine height above the bottom for these contacts.

*See LNM 34/90,
 8th CGD, for
 charted source
 of these items.
 GKM
 5/91*



It is recommended that all of these uncharted obstructions be investigated and either charted or salvaged. Horn Island Pass Channel Lighted Buoy "1" is charted in Latitude 30°11'22.7"N, Longitude 88°31'49.8"W and Horn Island Pass Channel Lighted Buoy "3" is charted in Latitude 30°11'47.8"N, Longitude 88°31'24.5"W.

Affected nautical charts:

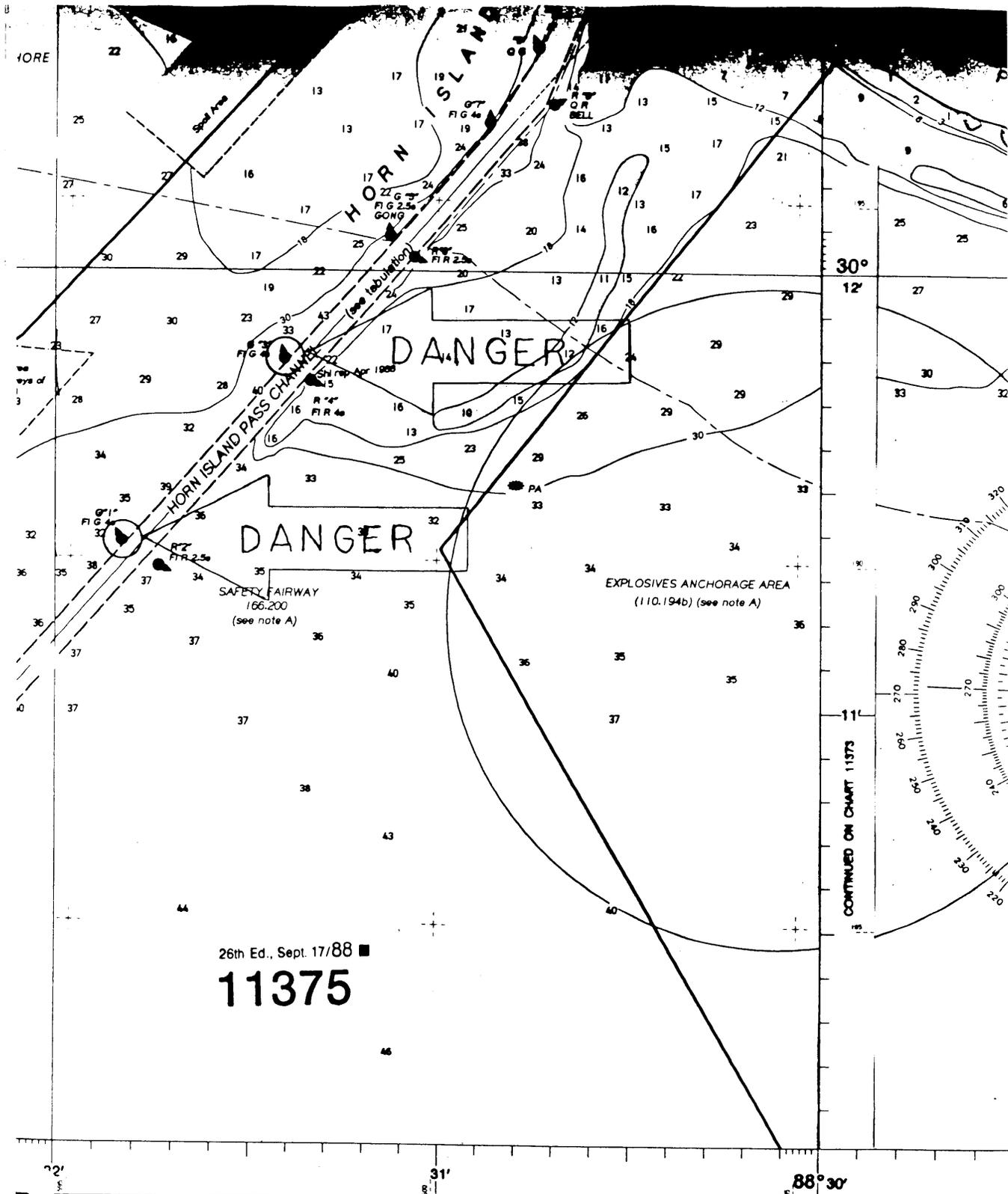
CHART NUMBER	EDITION NO.	DATE	HORIZ. DATUM
11373	32	5/6/89	NAD 83
11375	26	9/17/88	NAD 83
11374	24	6/18/90	NAD 83

Questions concerning this report should be directed to the Office of Charting and Geodetic Services, Atlantic Hydrographic Section at the Atlantic Marine Center by calling 804-441-6746 or FTS 827-6746.

Sincerely,

Pr R. D. Sanschi
Christopher B. Lawrence, CDR, NOAA
Chief, Atlantic Hydrographic Section

Attachments



SOUNDINGS IN FEET

FATHOMS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
FEET	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90
METERS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: November 16, 1990

MARINE CENTER: Atlantic

OPR: J433

HYDROGRAPHIC SHEET: FE-324 - REVISED

LOCALITY: Mississippi, Approaches to Horn Island Pass

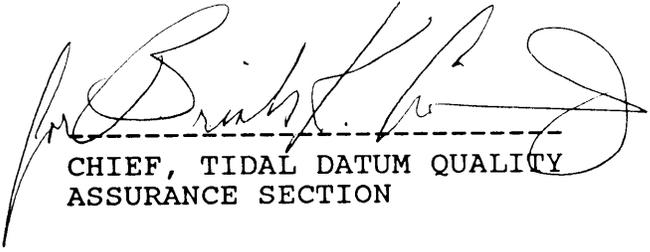
TIME PERIOD: April 20 - August 3, 1989

TIDE STATION USED: 873-5180 Dauphin Island, Alabama

PLANE OF REFERENCE (MEAN LOWER LOW WATER): = 2.68 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: = 1.2 ft.

REMARKS: RECOMMENDED ZONING - apply a x1.23 range ratio to all heights, and a -0 hr. and 30 min. time correction to Dauphin Island.



CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

GEOGRAPHIC NAMES

FE-324 SS

Name on Survey

ON CHART NO. 11373
 NO. 11375
 CON PREVIOUS SURVEY
 A ON CHART NO. 11373
 B NO. 11375
 C CON U.S. QUADRANGLE MAPS
 D FROM LOCAL INFORMATION
 E ON LOCAL MAPS
 F P.O. GUIDE OR MAP
 G RAND McNALLY ATLAS
 H U.S. LIGHT LIST
 K

HORN ISLAND PASS (title)

MEXICO, GULF OF (title)

MISSISSIPPI (title)

1
2
3
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13
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21
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23
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25

Approved:

Charles E. Hester
 Chief Geographer

JUL 27 1990

11/27/90

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: FE-324SS

NUMBER OF CONTROL STATIONS	5
NUMBER OF POSITIONS	4111
NUMBER OF SOUNDINGS	14706

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	56	09/26/89
VERIFICATION OF FIELD DATA	140	04/20/90
ELECTRONIC DATA PROCESSING	15	
QUALITY CONTROL CHECKS	114	
EVALUATION AND ANALYSIS	84	09/14/90
FINAL INSPECTION	6	09/26/90
TOTAL TIME	415	
ATLANTIC HYROGRAPHIC SECTION APPROVAL		11/26/90

REFERENCE NO.

N/CG244-70-90

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 Section, N/CG243
 Room 151, WSC-1
 Hydrographic Surveys Branch
 National Ocean Service
 Rockville, MD 20852

DATE FORWARDED

28 Nov. 1990

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-324SS (RU-20-1-89), OPR-J433
MISSISSIPPI, GULF OF MEXICO, APPROACHES TO HORN ISLAND PASS

Pkg. 1: (Box)

~~26~~ Envelopes containing Sonargrams, Echograms, and/or Data
 Printouts.

Pkg. 2: (Box)

- ~~21~~ Envelopes containing Sonargrams, Echograms, and/or Data
 Printouts.
- ~~1~~ Original Descriptive Report containing twelve (12) Smooth
 Sheets.
- ~~1~~ Envelope containing Sounding Correctors (Tides, Velocity,
 & TRA).
- ~~1~~ Envelope containing Smooth Accompanying Overlays.
- ~~1~~ Envelope containing data removed from the Descriptive
 Report.

FROM: (Signature)

Maurice B. Hickson, III
 Maurice B. Hickson, III

RECEIVED THE ABOVE
(Name, Division, Date)

D. S. Clark
11/30/90

Return receipted copy to:

Chief, Atlantic Hydrographic Section
 N/CG244
 Atlantic Marine Center
 439 W. York Street
 Norfolk, VA 23510-1114

OFFICE OF CHARTING AND GEODETIC SERVICES
ATLANTIC HYDROGRAPHIC SECTION
EVALUATION REPORT

SURVEY NO.: FE-324SS

FIELD NO.: RU-20-1-89

Mississippi, Gulf of Mexico, Approaches to Horn Island Pass

SURVEYED: March 29, 1989 through August 2, 1989.

SCALE: 1:20,000

PROJECT NO.: OPR-J433

SOUNDINGS: EG&G Model 260 Side Scan Sonar, Pneumatic Depth Gauge, and RAYTHEON DSF 6000N Echosounder

CONTROL: MOTOROLA Falcon 484 Mini-Ranger (Range/Range)

Chief of Party.....A. M. Snella

Surveyed by.....C. L. Bailey
.....R. R. Rogers
.....P. A. Gruccio
.....M. A. Sramek

Automated Plots by.....XYNETICS 1201 Plotter (AHS)

1. INTRODUCTION

a. This is primarily a side scan sonar survey. A Raytheon DSF-6000N echosounder was operated concurrently with the side scan sonar. Echo sounder developments were conducted to search for items found on the sonargrams. The echosounder data was used in positioning the item and in determining an items significance and approximate depth. For the assigned items not found, trackplots and swathplots or sounding plots, if disproval by echosounder development, are included for proof of coverage. The hydrography is considered reconnaissance hydrography and not suitable for charting.

b. Five smooth plots at 1:20,000 scale of the wrecks and obstructions found by this survey with accompanying position overlays, five trackplots at 1:20,000 scale, one trackplot at 1:40,000 scale, and one echosounder development plot with accompanying excess and position overlays at 1:2,500 scale were generated during processing. These plots are considered the final plots or smooth sheets for this survey. The accompanying position overlays and excess overlays are filed with the field records. The field swath plots were not suitable for inclusion in this report (see section 4.g. of this report). Swath plots could not be produced in the office because the present HDAPS system configuration is no longer compatible with the field data tapes for this survey.

c. Corrections and notes made by the evaluator to the Descriptive Report are denoted in red ink.

d. There is no final digital file for this survey.

2. CONTROL AND SHORELINE

a. Control is adequately discussed in Section H. of the Descriptive Report.

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83). 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 (NAD27).

To place the smooth plots on the NAD27 move the projection lines 0.725 seconds (22.3 meters or 0.558mm at the scale of 1:40,000, 1.115mm at the scale of 1:20,000, and 8.92mm at the scale of 1:2,500) north in latitude, and 0.057 seconds (1.5 meters or 0.038mm at the scale of 1:40,000, 0.075mm at the scale of 1:20,000, and 0.6mm at the a scale of 1:2,500) west in longitude.

b. Charted shoreline does not fall within the limits of the smooth plots of this survey except sheet 4 of 12. Charted shoreline was not drawn on sheet 4 of 12 since charted shoreline for orientation is not considered necessary for chart application of these survey data.

3. HYDROGRAPHY

The least depths collected on wrecks and obstructions found during this survey and the estimated depth applied during office processing to an undesignated side scan sonar contact are the only valid soundings for charting. All other soundings collected on this survey are of reconnaissance value only. The investigation of features and the determination of least depths are considered adequate except as noted in this report.

4. CONDITION OF SURVEY

The smooth sheets and accompanying overlays, survey records, and reports adequately conform to the requirements of the HYDROGRAPHIC MANUAL and the SIDE SCAN SONAR MANUAL. The only deficiencies noted in this report are those which impact charting recommendations or affect the accuracy, adequacy, or

interpretation of this survey. These deficiencies are noted as follows:

a. As noted in section 7.c. of this report, two fixed aids are charted in error. Although the correct positions were available to the hydrographer and one of the fixed aids was used for horizontal control; the hydrographer did not recognize the charting discrepancy.

b. In the vicinity of Horn Island Pass Channel Lighted Buoys "1" and "3" several uncharted dangers to navigation were indicated on the sonargrams of this survey. These uncharted obstructions were neither investigated nor reported by the hydrographer. A danger to navigation report was issued during office processing. A copy of this danger to navigation report is appended to the Descriptive Report.

c. A number of contacts were flagged on the sonargrams but were not included in the Side Scan Sonar Contact List. All contacts should be included in the Side Scan Sonar Contact List (see section 3.1. of the SIDE SCAN SONAR MANUAL). The Side Scan Sonar Contact Lists are not in sequential order. The lack of order and the unrecorded flagged contacts raise the suspicion that one or more pages of the Contact List could be missing. During processing all sonargrams were check-scanned and all contacts were re-evaluated.

d. The sonargrams for this survey are not of the quality desired, particularly for item disprovals. Heavy concentrations of fish, thermoclines, other water column conditions, towfish degradations, and recorder problems may have obscured significant contacts. Known wrecks and obstructions seen on the sonargrams at ranges greater than 50 meters lack definition and have no shadow. Significant targets could be misinterpreted as insignificant contacts.

e. For proof of coverage, either swath plots or coverage abstracts are required (see section 3.1.3. of the SIDE SCAN SONAR MANUAL). Sonar Coverage Plots (automated swath plots) were provided and Side Scan Sonar Coverage Abstracts were not provided. The swath plots do show side scan sonar effective width but the only factor considered to limit effective coverage in these automated plots is the towfish height above the bottom. Other factors such as heavy concentrations of fish, thermoclines, other water column conditions, towfish degradations, and recorder problems are not considered in the effective side scan sonar coverage in the computer swath plot. These factors individually or collectively may significantly limit the effective coverage of the side scan sonar. Side

Scan Sonar Coverage Abstracts are considered necessary for proof of coverage for item disproval.

f. Least depths taken on three of the items located by this survey were taken by pneumatic depth gauges that could not be correlated to the pneumatic depth gauge calibration sheets provided in the Descriptive Report. The actual corrections to apply to these least depths are unknown. No instrument error corrections were applied to these least depths.

g. The swath plots provided by the field were unsatisfactory and unusable for inclusion in the final survey records. The field swath plots were plotted at an offset from their actual geographic positions.

5. JUNCTIONS

There are no junctional requirements for this survey.

6. COMPARISON WITH PRIOR SURVEYS

D-79 (1988) 1:20,000
 FE-315SS (1988) 1:20,000
 H-10261 (1987) 1:20,000
 H-10208 (1985) 1:20,000
 FE-309WD (1974) 1:40,000
 H-9118 (1970) 1:20,000
 H-8646 (1961-62) 1:10,000
H-4171 (1920) 1:80,000

These prior surveys are common to the entire present survey. The most recent prior surveys (H-10261, H-10208, D-79, and FE-315SS) are not yet source for charted data. In general, the most recent prior hydrographic surveys agree with present reconnaissance soundings within one foot within the common areas. The older prior surveys show significant differences in and around Horn Island Pass Channel. Differences in the offshore areas where comparisons were made indicate a general shoaling of 1 to 2 feet. Detailed comparisons between present and prior hydrography were not made since all present hydrography, except the detached soundings on items located, is considered reconnaissance hydrography. These prior surveys are the source of 16 of the 17 assigned items for investigation. These investigations and the appropriate charting recommendations are adequately discussed in section L. of the Descriptive Report.

The present survey is adequate to supersede the above prior surveys for each of the specific items resolved or

disproved. The present survey is not considered adequate to supersede any other prior data.

7. COMPARISON WITH CHARTS 11373 (32nd Edition, May 6, 1989)
11375 (26th Edition, Sept. 17, 1988)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys and from sources not readily available. The items investigated by this survey are adequately discussed and appropriate charting recommendations are made in section L. of the Descriptive Report. The evaluator, with reservations, concurs with recommendations to delete claimed disproved items (#2807, #7129, #7130, #7131, #7214, #7217, #7218, #7219, #7232, #7233, #7234, #7235, #7236, and #7237) from the charts. See sections 4.d. and e. of this report.

It is not the intent of the present survey to supersede prior hydrography, but to supersede prior and charted information pertaining to the items investigated. The present survey is adequate to supersede the prior and charted data pertaining to the items investigated.

b. Controlling Depths

Within the common area, there are no conflicts between the present survey depths and the tabulation for Horn Island Pass Channel shown on the charts.

c. Aids to Navigation

The hydrographer located seven (7) floating aids to navigation in the survey area. These aids appear adequate to serve their intended purpose.

Four fixed aids to navigation are common to the area of this survey and are listed in Appendix II. of the Descriptive Report. These stations were located and recovered prior to this survey. It is apparent from information available during office processing that two of these fixed aids are charted in error. These two fixed aids are PASCAGOULA CHANNEL RANGE D FRONT LIGHT and PASCAGOULA CHANNEL RANGE D REAR LIGHT. It is recommended that the charts be corrected to show these fixed aids to navigation in their proper position.

8. COMPLIANCE WITH INSTRUCTIONS

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

9. ADDITIONAL FIELD WORK

This is an adequate side scan sonar survey. Additional field work is recommended to identify, position, and obtain a least depth on the obstruction identified during office processing. See section L., pages 36-39, AWOIS Item #7317, in the Descriptive Report.

Deborah A. Bland

Deborah A. Bland
Cartographic Technician
Verification of Field Data

Maurice B. Hickson III

Maurice B. Hickson, III
Cartographer
Evaluation and Analysis

for Robert R. Cram

Leroy G. Cram
Supervisory Cartographic Technician
Verification Check

APPROVAL SHEET
FE-324SS

Initial Approvals:

The data that make up this Side Scan Sonar survey have been inspected to gain insight into its overall completeness regarding survey coverage, presentation of survey results, and the verification or disproval of charted data. This survey, except as noted in the Evaluation Report, is considered complete and adequate to meet National Ocean Service standards. Processing is considered complete. The survey records comply with NOS requirements except as noted in the Evaluation Report.

Robert G. Roberson

Date: 13 November 1990

R. G. Roberson
Chief, Evaluation and Analysis Team
Atlantic Hydrographic Section

I have reviewed the smooth sheets, accompanying data, and reports. The verified and smooth plotted data meet or exceed NOS requirements and standards for products in support of nautical charting except as noted in the Evaluation Report.

Christopher B. Lawrence

Date: November 26, 1990

Christopher B. Lawrence, CDR, NOAA
Chief, Atlantic Hydrographic Section

Final Approval:

Approved: Wesley V. Hull Date: 2/15/91
Wesley V. Hull
Rear Admiral, NOAA
Director, Charting and
Geodetic Services



**UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration**

NATIONAL OCEAN SERVICE
~~OFFICE OF CHARTING AND GEODETIC SERVICES~~
ROCKVILLE, MARYLAND 20852
Coast and Geodetic Survey

MAY 21 1991

MEMORANDUM FOR: Captain Dean R. Seidel, NOAA
Chief, Hydrographic Surveys Branch
FROM: *George K. Myers, Jr.*
George K. Myers, Jr.
Chief, Standards Section
SUBJECT: Examination of Side Scan Sonar Survey FE-324
(1989), SS, Mississippi, Gulf of Mexico,
Approaches to Horn Island Pass

Chief of Party A. M. Snella
Field Unit NOAA Ship RUDE
Processed by Atlantic Marine Center
Examined by G. K. Myers

An examination of side scan sonar survey FE-324 (1989) SS was accomplished to monitor the survey for adequacy with respect to data acquisition, conformance with applicable project instructions, search requirements, navigational hazards, smooth plotting, decisions made and actions taken by the evaluator, and the cartographic presentation of data.

In general, the survey was found to conform to National Ocean Service standards and requirements except as stated in the Evaluation Report.

cc: N/CG244 - C. Lawrence



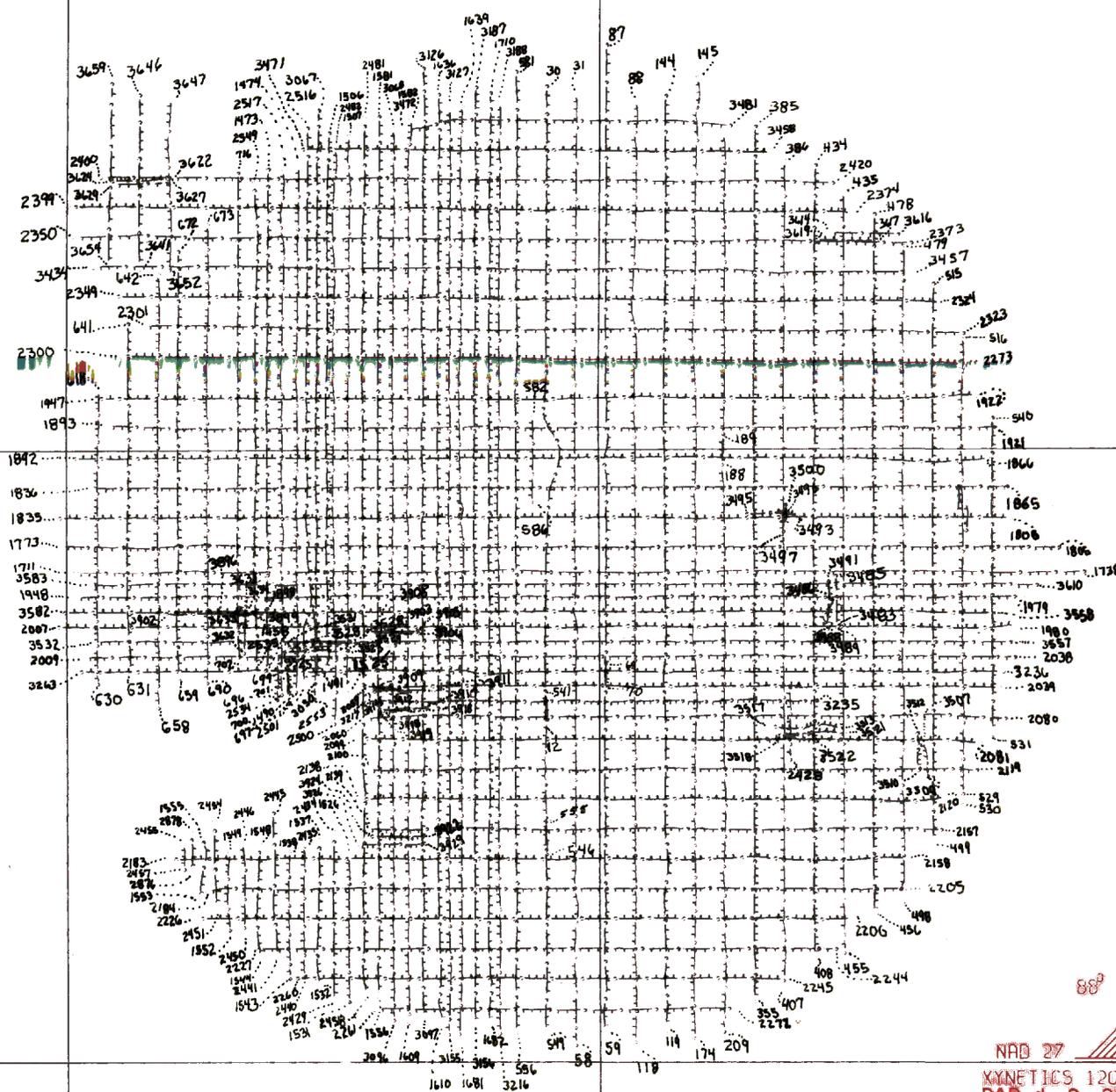
88° 34'

88° 32'

88° 30'

88° 28'

30° 08'



30° 06'

FE-324 SS
 MISSISSIPPI
 GULF OF MEXICO
 APPROACHES TO HORN ISLAND PASS
 APR 20 - JUL 26, 1989
 SCALE: 1:40,000
 HORIZONTAL DATUM: NAD 1983
 SHEET 1 OF 12
 AWOIS NUMBER 2807

88° 30' 00"

30° 04' 00"

30° 04'

NAD 27
 XANETICS 1201
 DAB 4-9-90

88° 34'

88° 33'

30° 08'

FE - 324 SS
MISSISSIPPI
GULF OF MEXICO
APPROACHES TO HORN ISLAND PASS
APR 20 - JUL 26, 1989
SCALE: 1:20,000
HORIZONTAL DATUM: NAD 1983
SOUNDING IN FEET AT MLLW
SHEET 2 OF 12

30° 07'

47 Obstr (6ft x 8ft winch)

88° 34' 00"

NAD 27

30° 05' 00"

XYNETICS 1201
✓ DAB 2-23-90

30° 06'

88° 29'

88° 28'

FE - 324 SS
MISSISSIPPI
GULF OF MEXICO
APPROACHES TO HORN ISLAND PASS
APR 21 - MAY 08, 1989
SCALE: 1:20,000
HORIZONTAL DATUM: NAD 1983
SOUNDING IN FEET AT MLLW
SHEET 3 OF 12
AWOIS NUMBER 3599

88° 28' 00"

NAD 27
XYNETICS 1201
DAB 2-23-90

30° 10' 00"

30° 10'

37Wk (100ft long by 20ft wide)

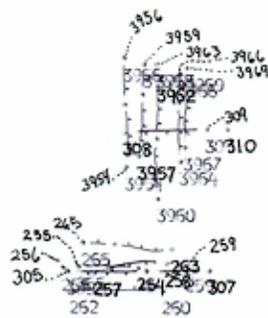
30° 09'

30° 08'

88° 32'

88° 31'

30° 12'



30° 11'

FE - 324SS
 MISSISSIPPI
 GULF OF MEXICO
 APPROACHES TO HORN ISLAND PASS
 APR 24 - JUL 27, 1989
 SCALE: 1:20,000
 HORIZONTAL DATUM: NAD 1983
 SHEET 4 OF 12
 AWOIS NUMBERS 7129, 7130, 7131

88° 32' 00"
 30° 10' 00"
 NAD 27
 XYNETICS 1201
 DAB 4-3-90

30° 10'

88° 34'

88° 33'

30° 10'

FE - 324 SS
MISSISSIPPI
GULF OF MEXICO
APPROACHES TO HORN ISLAND PASS
APR 25 - APR 27, 1989
SCALE: 1:20,000
HORIZONTAL DATUM: NAD 1983
SOUNDING IN FEET AT MLLW
SHEET 5 OF 12
AWOIS NUMBER 7213

88° 33' 00"

NRD 27

30° 09' 00"

30° 09'

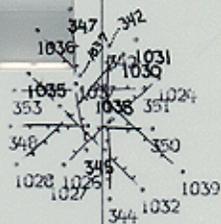
XYNETICS 1201
DAB 2-23-90

400bstr (steel mast)

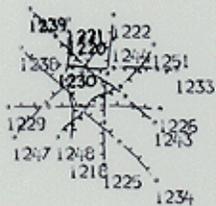
30° 08'

88° 35'

88° 34'



30° 09'



30° 08'

FE - 324 SS
 MISSISSIPPI
 GULF OF MEXICO
 APPROACHES TO HORN ISLAND PASS
 APR 25 - MAY 16, 1989
 SCALE: 1: 20,000
 HORIZONTAL DATUM: NAD 1983
 SHEET 6 OF 12
 AWOIS NUMBERS 7214, 7219

88° 35' 00"

30° 07' 00"

NAD 27
 XYNETICS 1201
 ✓ DAB 4-3-90

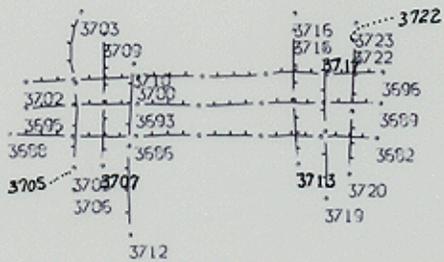
30° 07'

88° 39'

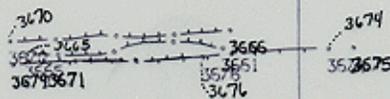
88° 38'

88° 37'

30° 08'



30° 07'



FE - 324 SS
 MISSISSIPPI
 GULF OF MEXICO
 APPROACHES TO HORN ISLAND PASS
 JUL 13, 1989
 SCALE: 1:20,000
 HORIZONTAL DATUM: NAD 1983
 SHEET 7 OF 12
 AWOIS NUMBERS 7217, 7218, 7232

88° 38' 00"

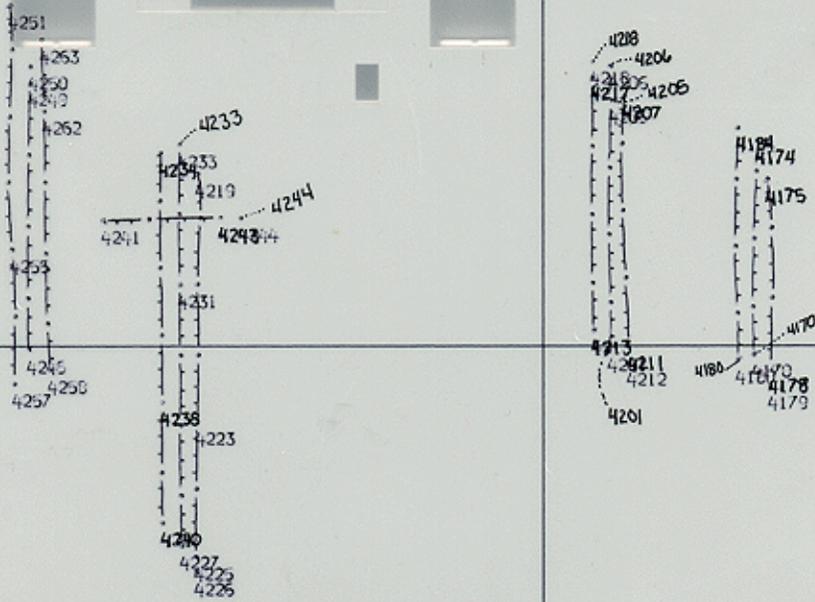
30° 05' 00"

30° 06'

NAD 27
 XYNETICS 1201
 DAB 4-4-90

88° 38'

88° 37'



30° 11'

30° 10'

FE - 324 SS
 MISSISSIPPI
 GULF OF MEXICO
 APPROACHES TO HORN ISLAND PASS
 AUG 2, 1989
 SCALE: 1:20,000
 HORIZONTAL DATUM: NAD1983
 SHEET 8 OF 12
 AWOIS NUMBERS 7233 - 7236

88° 38' 00"

30° 09' 00"

NAD 27

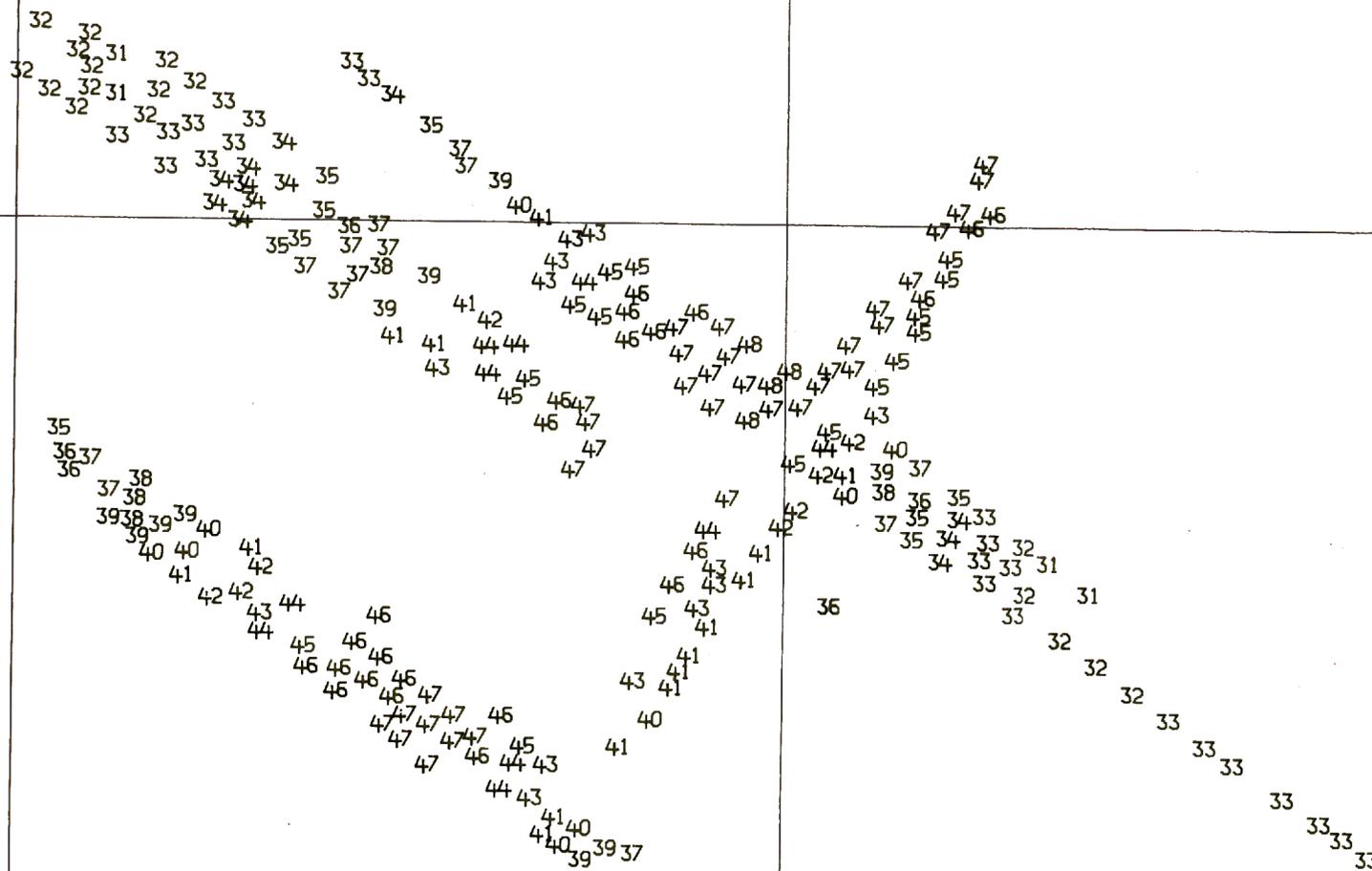
XYNETICS 1201
DAB 4-4-90

30° 09'

88° 31' 40"

88° 31' 30"

88° 31' 20"



30° 11' 40"

35

35

30° 11' 30"

FE - 324 SS
 MISSISSIPPI
 GULF OF MEXICO
 APPROACHES TO HORN ISLAND PASS
 APR 24 - MAY 11, 1989
 SCALE: 1:2500
 HORIZONTAL DATUM: NAD 1983
 SOUNDINGS IN FEET AT MLLW
 SHEET 9 OF 12
 AWOIS NUMBER 7237

88° 31' 40"

30° 11' 30"

NAD 27
 XYNETICS 1201
 DAB 4-5-90

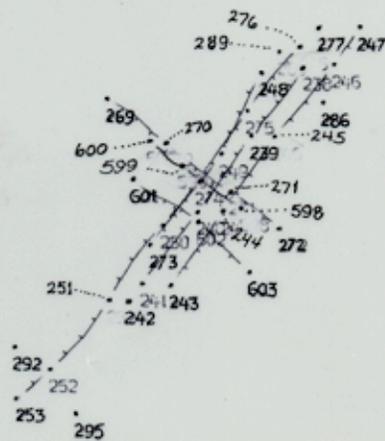
88° 33' 00"

88° 32' 00"

88° 31' 00"

280

283 30° 12' 00"



88° 31' 00"

NAD 27
XYNETICS 1201
LGC 8/17/90

FE-324 SS
 MISSISSIPPI
 GULF OF MEXICO
 APPROACHES TO HORN ISLAND PASS
 24 APR - 2 MAY, 1990
 SCALE : 1 : 20,000
 HORIZONTAL DATUM : NAD 1983
 SHEET 10 OF 12
 AWOIS ITEM NUMBER 7237

302

30° 10' 00"

88° 33'

88° 32'

FE-324 SS
 MISSISSIPPI
 GULF OF MEXICO
 APPROACHES TO HORN ISLAND PASS
 MAY 23- AUG 02, 1989
 SCALE: 1:20,000
 HORIZONTAL DATUM: NAD 1983
 SOUNDING IN FEET AT MLLW
 SHEET 11 OF 12
 AWOIS NUMBER 7317

30° 11'

30° 10'

33Wk (38ft long by 9 ft wide)

88° 33' 00"

30° 09' 00"

NAD 27
 XYNETICS 1201
 DAB 2-23-90

30° 09'

88° 32'

88° 31'

88° 30'

30° 10'

30° 10'

42 Obstr (A)

(A) The depth on this obstruction was estimated by scaling the height off the bottom from side scan sonar records. The position was determined by computing the offsets from the vessel's tracks.

30° 09'

30° 09'

88° 31' 00"
30° 09' 00"
NAD 27
XYNETICS 1201
✓MBH 8-21-90

FE - 324 SS
MISSISSIPPI
GULF OF MEXICO
APPROACHES TO HORN ISLAND PASS
MAY 23 - AUG 2, 1989
SCALE = 1:20,000
HORIZONTAL DATUM: NAD 1983
SOUNDING IN FEET AT MLLW
SHEET 12 OF 12

30° 08'

30° 08'

88° 32'

88° 31'

88° 30'

