FE329

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-20-2-89

Registery No. ... FE-329SS

LOCALITY

State ... Mississippi

General Locality ... Gulf of Mexico

Sublocality ... SE of Dog Keys Pass

1989

CHIEF OF PARTY
LCDR A. M. Snella

LIBRARY & ARCHIVES

DATE ... March 22, 1990

FE329 SIDE SCAN

GP & GDB
CHT
11373 } CARTOG
11374A } SIGN OFF ON
17360 } FORM IN BACK

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

NOAA FORM 77-28 (72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.
FE-329-SS

FIELD NO.
RU-20-2-89

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State Mississippi

General locality Gulf Of Mexico

Locality ~~3nm South of Horn Island~~ SE OF DOG KEYS PASS

Scale 1:20000

Date of survey 2 MAY THROUGH 14 August, 1989

Instructions dated 11 January, 1988

Project No. OPR-J433-RU-88

Vessel NOAA SHIP RUDE S-590 Hull No. 9040

Chief of party LCDR Andrew M. Snella

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

Soundings taken by echo sounder, ~~hand lead~~, ~~pole~~ RAYTHEON DSF-6000N, Pneumatic Depth Gauge

Graphic record scaled by CLB, PAG, RRR, MAS

Graphic record checked by CLB, PAG, RRR, MAS

Protracted by

Automated plot by XYNETICS 1201 PLOTTER (AHB) ~~BRUNING-NICOLET ZETA 124 CS Plotter~~

Verification by ATLANTIC HYDROGRAPHIC SECTION PERSONNEL

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

REMARKS: NOTES IN THE DESCRIPTIVE REPORT WERE MADE IN RED DURING OFFICE PROCESSING

NW03/SURF ✓ 3/29/90 SST

RWW 10/23/92

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

☆ U.S. G.P.O. 1972-769-565/519 REG.#6

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APPENDIX

DATA REMOVED FROM DESCRIPTIVE REPORT AND FILED WITH FIELD DATA.

AWOIS ITEMS:	7064	7208	7209	7210	7211	7212

NOAA Ship RUDE (S590) **RU-20-2-89**
LCDR Andrew Snella **Scale 1:20,000**
Commanding Officer

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 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 6 AWOIS items: 7064, 7208, 7209, 7210, 7211, 7212.

Horizontal control recovery and installation of electronic positioning units for this survey began on March 29, 1989. Side scan sonar operations began on May 02, 1989. Field operations for the portion of the project covered by this report concluded on August 14, 1989.

AWOIS ITEMS:	7064	7208	7209	7210	7211	7212

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.

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 via HDAPS as the ship drifted over the least depth.

Survey data acquisition and processing were accomplished utilizing the HDAPS system with software version No. 2.4 through 07 June, 1989, and version No.2.42 from 08 June through the end of this survey.

C. AREA SURVEYED

This report covers survey operations performed on AWOIS items located in the approaches to Pascagoula, Biloxi, and Gulfport Mississippi. The items lie south of Horn Island between longitudes 88° 40' and 88° 52' 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.

AWOIS ITEMS:	7064	7208	7209	7210	7211	7212

E. SURVEY SHEETS (FIELD)

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:

PLOTTER SHEET	SCALE	AWOIS ITEMS
19	1:10000	7212
	Two copies of this sheet are included: 1 online swath plot 1 edited swath and depth plot.	
21	1:10000	7209, 7210, 7211
	One copy of this sheet is included: 1 online swath plot.	
22	1:10000	7208
	One copy of this sheet is included: 1 online 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.

* DATA REMOVED FROM DESCRIPTIVE REPORT AND FILED WITH FIELD DATA.

F3. Pneumo Depth Gauge

All diver determined least depths were measured with a pneumo depth gauge. RUDE is equipped with two Precision Depth Gauges; a 0-70 FSW depth gauge, and 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.* 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 system checks are included in APPENDIX I.*

G. CORRECTIONS TO SOUNDINGS

G1. Velocity Correctors

Velocity correction data were collected periodically throughout the survey area. The first cast compared the MARTEK CTD and the DIGIBAR Sound Velocity Probe. The data collected were 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 on-line to the echosounder depths.

On 21 July a sound velocity cast was made using the MARTEK CTD. The data collected verified the data in velocity table 4 and data collection continued using this table.

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
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).

*DATA REMOVED FROM DESCRIPTIVE REPORT AND FILED WITH FIELD DATA.

AWOIS ITEMS: 7064 7208 7209 7210 7211 7212

All hydrographic and diver determined depths have been corrected with 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 were undamaged and data was still collected. On 26 May, 1989 the gauge was repositioned and the tide staff was releveled. This 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.

On 3 and 5 August, the paper in the tide gauge was torn. One least depth was taken on AWOIS No. 7064 during this time period. The least depth was remeasured on 9 August after the tide gauge was returned to working order.

A request for smooth tides was mailed 21 August, 1989. A copy is included in Appendix I.*

G3. Settlement and Squat Correctors

Settlement and squat correctors for RUDE were determined on 10 March 1989 on the Elizabeth River in 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 are collected by a Datawell B.V. heave, pitch and roll sensor and applied to 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.*

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AWOIS ITEMS:	7064	7208	7209	7210	7211	7212

H. HORIZONTAL CONTROL SEE ALSO SECTION 2.9. OF THE EVALUATION REPORT.

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 HDAPS software.

RUDE routinely conducted survey 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.

Two pre-project baseline calibrations 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
08 JUL	Petit Bois Is.	1,3,5,7	4,6,7,8,9
18 JUL	Highway 90	6,8,9,B,D,F	6,7,8,9.

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. Three C-O tables were used in this project, effective between the following dates:

* DATA REMOVED FROM DESCRIPTIVE REPORT AND FILED WITH FIELD DATA.

AWOIS ITEMS: 7064 7208 7209 7210 7211 7212

Table	Dates
1′	18′APR - Ø3′MAY
6′	25′JUL - Ø2′AUG
7′	Ø4′AUG - 15′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 SEE ALSO SECTION 2.C OF THE EVALUATION REPORT.

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 Ø2′February, 1988.′

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 by RUDE personnel.

I. AUTOMATED DATA PROCESSING

Raw data collected during this project were stored on magnetic tape, numbered by day of year, number of tape that day, and type of data (Ø = RAW , 1 = EDITED). 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:

Items	Tape No. Raw / Edited
7064′	N/A / N/A
7208;7212′	21620′/ 23511′
7209;7210,7211′	21610′/ N/A.

Due to a change in hardware configuration, between Ø2 August, and Ø4′ 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".

* DATA REMOVED FROM DESCRIPTIVE REPORT AND FILED WITH FIELD DATA.

AWOIS ITEMS: 7064 7208 7209 7210 7211 7212

J. COMPARISON WITH CHARTS AND PRIOR SURVEYS SEE ALSO SECTIONS 6. AND 7. OF THE EVALUATION REPORT.

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

Comparison with Chart 11373

Hydrographic soundings from the present survey were compared to the 32nd Edition, dated 06 May, 1989. The soundings in AWOIS 7212 were 2 to 4 feet shoaler than the charted depth. This is consistent with soundings from reconnaissance survey D-77 conducted by RUDE in 1988.

Comparison with Survey H-4171

Hydrographic soundings from the present survey were compared to prior survey H-4171, 1:80000 scale, surveyed in 1920. The soundings from AWOIS 7212 were 2 feet shoaler than the prior survey.

K. MISCELLANEOUS

L. AWOIS ITEM INVESTIGATION REPORTS

AWOIS Item reports follow:

AWOIS ITEM 7064 INVESTIGATION

Area of Investigation

AWOIS Item:	7064
State:	Mississippi
County:	Jackson
Locality:	3.3 nm S of Horn Island
Latitude:	30° 10' 36.60"N
Longitude:	88° 41' 06.60"W
Depth:	37 feet

AWOIS Item Description

AWOIS item 7064 is described ~~as~~ in a message from the NOAA Ship CHAPMAN to the Eighth Coast Guard District in July 1988 as a sunken wreck, dangerous to surface navigation located in the above position, 3.3 nm south of Horn Island. Dimensions of the vessel are given as: 38 feet LOA, 15 feet beam, constructed of fiberglass and steel. The message also states that divers obtained a least depth of 37 feet in surrounding depths of 45 feet. Survey requirements call for 200% sidescan coverage to a 250 meter radius for disproval, or diver investigation and least depth if found.

Survey Procedures

AWOIS Item:	7064
Positioning:	Falcon Mini-Ranger
Sonar Search:	N/A
Diving:	3 & 9 August 1989 (DOY 215,221)
Echo Sounding:	N/A
Sonification:	N/A
Contacts:	One significant Contact K01

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

One significant contact was identified on the second pass of the side scan sonar coverage. This contact was investigated by divers a least depth and position were determined. SEE ALSO 7.9. OF THE EVALUATION REPORT.

Contact K01 Investigation

(a) Contact K01 Dive Summary

Contact K01 was investigated by divers on 3 August 1989 (DOY 215). Divers descended down the marker buoy line to to the bottom at 45 feet. The marker line was laying across a 38 foot steel hulled vessel, 15 feet wide, sitting upright on the bottom. Divers proceeded to search the entire Wreck, and conducted a 20 meter

radius circle search about the highest point. Due to a loss of tide data for that day, divers returned on 9 August, 1989 to obtain a least depth by pneumo depth gauge.

(b) Contact KØ1 Description

Contact KØ1 is a steel hulled vessel sitting upright on a flat bottom. Its length as determined by divers measurement is 38 feet. A thorough search of this wreck by divers found the least depth to be on the foredeck where the house had been. There are no masts or spars rising above this point.

(c) Contact KØ1 Least Depth Determination

Least depth of Contact KØ1 was taken by divers with a pneumo depth gauge.

Contact:	KØ1
Date:	9 August 1989 (DOY 221)
Time:	2130 Z
Average Pneumo Depth:	36.4 Ft.
Pneumo Gauge Corrector:	+Ø.2
~~PREDICTED~~ Tidal ~~Zone~~ Cor:	-Ø.4
Actual Least Depth:	36.2 Ft.
PLOTTED DEPTH:	36.Ø FT.

(d) Contact KØ1 Positioning

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

Contact:			KØ1	
HDAPS Position Numbers:			4271-4273	
Average Easting:			98254.6 E	
Average Northing:			130549.7 N	
Computed Latitude:		30° 10' 40.024" N		
Computed Longitude:		88° 41' Ø5.241" W		
Loran-C Rates:	7980-W	7980-X	7980-Y	7980-Z
Average Loran:	12360.Ø	29558.8	47Ø64.8	64Ø62.8

(e) Contact KØ1 Recommendation SEE SECTION 7.9. OF THE EVALUATION REPORT.

~~Contact KØ1 should be charted as a wreck over which the depth is known, using symbol No.15, Section "O", (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 36 feet inside parentheses.~~

AWOIS Item 7064 Summary

AWOIS item 7064, as reported, is considered verified by diver investigation. The charting of this item should be updated as specified in the recommendations for Contact K01. SEE SECTION 7.9. OF THE EVALUATION REPORT. SEE SHEET #1 OF 6.

AWOIS ITEM 7208 INVESTIGATION

Area of Investigation

AWOIS Item:	7208
State:	Mississippi
County:	Jackson
Locality:	6.6 nm S of Horn Island
Latitude:	30° 07' 36.50" N
Longitude:	88° 45' 09.50" W
Depth:	Unknown

AWOIS Item Description

AWOIS item 7208 was denoted during marine center examination of Survey D-77-88 as a sidescan sonar contact in the above position. 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 Item:	7208
Positioning:	Falcon Mini-Ranger
Sonar Search:	04 AUG 1989 (DOY 216)
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. CONCUR

AWOIS Item 7208 Summary

AWOIS item 7208 as reported, is considered disproved by 200% side scan sonar investigation. This item should be removed from the AWOIS listing. CONCUR SEE SHEET #2 OF 6.

AWOIS ITEM 7209 INVESTIGATION

Area of Investigation

AWOIS Item:	7209
State:	Mississippi
County:	Jackson
Locality:	6.7 nm SW of Dog Keys Pass
Latitude:	30° 06' 55.00" N
Longitude:	88° 49' 30.00" W
Depth:	Unknown

AWOIS Item Description

AWOIS item 7209 was denoted during marine center examination of Survey D-77/88 as spikes on the fathometer trace. Survey requirements call for 200% sidescan coverage along the segment line specified in the AWOIS listing for disproval, or diver investigation and least depth if found.

Survey Procedures

AWOIS Item:	7209
Positioning:	Falcon Mini-Ranger
Sonar Search:	4 August 1989 (DOY 216)
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 with 200% side scan sonar coverage. CONCUR

AWOIS Item 7209 Summary

AWOIS item 7209 as reported, is considered disproved by 200% side scan sonar investigation. This item should be removed from the AWOIS listing. CONCUR SEE SHEET # 3 OF 6.

AWOIS ITEM 7210 INVESTIGATION

Area of Investigation

AWOIS Item:	7210
State:	Mississippi
County:	Jackson
Locality:	6.7 nm S of Dog Keys Pass
Latitude:	30° 07' 27.50" N
Longitude:	88° 48' 51.00" W
Depth:	Unknown

AWOIS Item Description

AWOIS item 7210 was denoted during marine center examination of Survey D-77/88 as a spike on fathometer trace. Survey requirements call for 200% sidescan coverage along the segment line as specified in the AWOIS listing for disproval, or diver investigation and least depth if found.

Survey Procedures

AWOIS Item:	7210
Positioning:	Falcon Mini-Ranger
Sonar Search:	4 August 1989 (DOY 216)
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. CONCUR

AWOIS Item 7210 Summary

AWOIS item 7210 as reported, is considered disproved by 200% side scan sonar investigation. This item should be removed from the AWOIS listing. CONCUR SEE SHEET #4 OF 6.

AWOIS ITEM 7211 INVESTIGATION

Area of Investigation

AWOIS Item:	7211
State:	Mississippi
County:	Jackson
Locality:	6.4 nm S of Horn Island
Latitude:	30° 07' 57.6" N
Longitude:	88° 48' 34.2" W
Depth:	Unknown

AWOIS Item Description

AWOIS item 7211 was denoted during marine center examination of Survey D-77/88 as a spike on the fathometer trace. Survey requirements call for 200% sidescan coverage along the segment line as specified in the AWOIS listing for disproval, or diver investigation and least depth if found. The original end points of the sounding line segment stated in the AWOIS listing were incorrect. A phone conversation with LT Paul Moen of N/CG 241 indicated that the end points of the sounding line segment were as follows: from 30° 07' 57.6" N, 88° 48' 34.2" W to 30° 07' 56.3 N, 88° 49' 01.6" W .

Survey Procedures

AWOIS Item:	7211
Positioning:	Falcon Mini-Ranger
Sonar Search:	04,08 August 1989 (DOY 216,220)
Diving:	N/A
Echo Sounding:	N/A
Sonification:	200% SSS coverage
Contacts:	No significant contacts discovered

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

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

AWOIS Item 7211 Summary

AWOIS item 7211 as reported, is considered disproved by 200% side scan sonar investigation. This item should be removed from the AWOIS listing. CONCUR SEE SHEET #5 OF 6.

AWOIS ITEM 7212 INVESTIGATION

Area of Investigation

AWOIS Item:	7212
State:	Mississippi
County:	Jackson
Locality:	6.6 nm S of Horn Island
Latitude:	30° 07' 41.60" N
Longitude:	88° 43' 23.90" W
Depth:	Cleared to 43 feet in 1974

AWOIS Item Description

AWOIS item 7212 is described in FE309WD/74 as a wire drag hang at 48 foot, cleared to 43 feet. Additional field work is reccommended to identify, accurately position, and obtain the least depth. Survey requirements call for 200% sidescan coverage to a 250 meter radius for disproval, or diver investigation and least depth if found.

Survey Procedures

AWOIS Item:	7212
Positioning:	Falcon Mini-Ranger
Sonar Search:	04,08,10 August 1989 (DOY 216,220,222)
Diving:	N/A
Echo Sounding:	N/A
Sonification:	200% SSS coverage
Contacts:	None

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

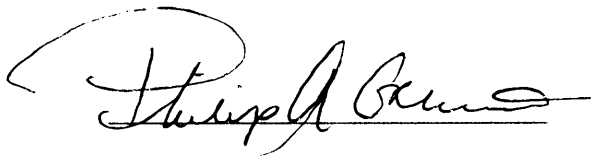
No significant contacts were sighted during the 200% side scan sonar coverage. CONCUR

AWOIS Item 7212 Summary

AWOIS item 7212 as reported, is considered disproved by 200% side scan sonar investigation. This item should be removed from the AWOIS listing. CONCUR SEE SHEET #6 OF 6.

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.



Philip A. Gruccio, ENS, NOAA
NOAA Ship RUDE

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
107	NPS 46-46-CFRL, 1986	30° 14' 40.71778" N 88° 46' 31.85500" W
118	AMY, 1988	30° 12' 05.34702" N 88° 25' 27.33849" W
120	HORN IS PASS ENT RNG REAR LT, 1988	30° 13' 05.33160" N 88° 30' 03.57878" W
122	PASCAGOULA CHAN RNG D REAR LT, 1988	30° 12' 42.66812" N 88° 30' 13.64261" W
124	BIKE, 1988	30° 13' 48.30481" N 88° 39' 58.22276" W
125	NANCY, 1988	30° 14' 08.12446" N 88° 41' 16.77903" W
126	MAUREEN, 1988	30° 14' 36.03197" N 88° 43' 11.73659" W

JCLB

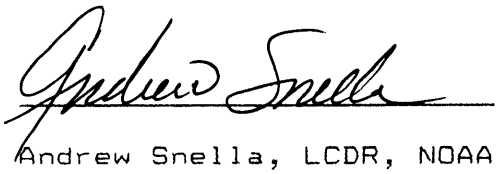
N. LETTER OF APPROVAL

FIELD NO. RU-20-2-89

REGISTRY NO. FE-329-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

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: Nov 1, 1989

MARINE CENTER: Atlantic

OPR: J433

HYDROGRAPHIC SHEET: FE-329

LOCALITY: Mississippi, 3 miles south of Horn Island

TIME PERIOD: May 2 - August 10, 1989

TIDE STATION USED: 873-5180 Dauphin Island, Alabama

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 2.68 feet

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.2 feet

REMARKS: RECOMMENDED ZONING
Apply a x1.23 range ratio to all heights and a
-0 hr 50 min time correction to low waters only

James R. Hubbard
CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

FE-329 SS

Name on Survey	A ON CHART NO.	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
GULF OF MEXICO (TITLE)	X									1
MISSISSIPPI (TITLE)	X									2
DOG KEYS PASS (TITLE)	X									3
										4
										5
										6
										7
										8
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										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

02/01/90

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: FE-329SS

NUMBER OF CONTROL STATIONS	8
NUMBER OF POSITIONS	202
NUMBER OF SOUNDINGS	637

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	32	09/28/89
VERIFICATION OF FIELD DATA	63	12/05/89
QUALITY CONTROL CHECKS	24	
EVALUATION AND ANALYSIS	28	01/19/90
FINAL INSPECTION	6	01/05/90
TOTAL TIME	121	

MARINE CENTER APPROVAL 02/01/90

OFFICE OF CHARTING AND GEODETIC SERVICES
ATLANTIC HYDROGRAPHIC SECTION
EVALUATION REPORT

SURVEY NO.: FE-329SS FIELD NO.: RU-20-2-89

Mississippi, Gulf of Mexico, SE of Dog Keys Pass

SURVEYED: 2 May through 14 August 1989

SCALE: 1:20,000 PROJECT NO.: OPR-J433-RU-88

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

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

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

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

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

1. INTRODUCTION

a. This survey was conducted under the authority of Change No. 5, dated 7 April 1989 to Project Instructions OPR-J433-RU/HE, dated 11 January 1988. During evaluation and analysis of reconnaissance survey D-77 (1988) several spikes on the fathograms and contacts on the sonargrams were identified as needing additional work. The items which were identified are the basis for Change No. 5; additional Automated Wreck and Information System (AWOIS) items were assigned for investigation by the field unit.

b. This is a side scan sonar survey. A RAYTHEON DSF-6000N fathometer was operated concurrently with the side scan sonar; however, the sounding data acquired while investigating all AWOIS items are of reconnaissance value only. No wire drag was accomplished during this survey.

c. This survey is comprised of six (6) AWOIS items. The data collected for the six (6) items were plotted on four (4) 1:10,000 scale and two (2) 1:20,000 scale page size plots and inserted into the Descriptive Report.

In the case where the existence of an item was disproved by side scan sonar search, AWOIS items #7208, #7209, #7210, #7211 and #7212, five (5) page size track plots were generated during office processing and are inserted into the report.

e. No unusual problems were encountered during office processing.

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

2. CONTROL AND SHORELINE

a. Control is adequately discussed in section H. of the Descriptive 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 (NAD27).

To place the 1:10,000 scale plots, sheets 2, 4, 5, and 6 on the NAD27 datum, move the projection lines 0.725 seconds (22.3 meters or 2.23 mm at the scale of the survey) north in latitude, and 0.073 seconds (1.9 meters or .19 mm at the scale of the survey) east in longitude.

To place the 1:20,000 scale plots, sheets 1 and 3 on the NAD27 datum, move the projection lines 0.725 seconds (22.3 meters or 1.12 mm at the scale of the survey) north in latitude, and 0.073 seconds (1.9 meters or .095 mm at the scale of the survey) east in longitude.

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 depth shown on sheet 1 of 6 included in this report.

b. The determination of the least depth of AWOIS item #7064 found and shown on sheet 1 of 6 is considered adequate.

4. CONDITION OF SURVEY

The smooth sheets and accompanying overlays, hydrographic records and reports are adequate and conform to the requirements of the HYDROGRAPHIC MANUAL and the Side Scan Sonar Manual. The following should be noted:

a. Section F. of the Descriptive Report did not provide the required information for sounding equipment used during survey operations. Section 5.3.4.(D) of the HYDROGRAPHIC MANUAL and section 4.(D) of the FIELD PROCEDURES MANUAL for

HYDROGRAPHIC SURVEYING outline the necessary information to be provided in the Descriptive Report.

b. Section H. of the Descriptive Report did not provide the required information for electronic control equipment used during survey operations. Section 5.3.4.(G) of the HYDROGRAPHIC MANUAL and page 6-18 of the FIELD PROCEDURES MANUAL for HYDROGRAPHIC SURVEYING outline the necessary information to be provided in the Descriptive Report.

5. JUNCTIONS

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

6. COMPARISON WITH PRIOR SURVEYS

a. Hydrographic

D-77 (1988) 1:20,000

Prior survey D-77 (1988) covers the search areas of AWOIS items #7208, #7209, #7210, and #7211. Each AWOIS item was investigated using side scan sonar. No indication of the items were seen during survey operations or subsequent office processing. Charting recommendations are found in section L., pages 9 through 16 of the Descriptive Report for the above items. No further comparisons are required.

b. Wire Drag

FE-309WD (1974) 1:20,000

Prior wire drag survey FE-309WD (1974) covers the search area of AWOIS item #7212. Additional work was recommended on AWOIS item #7212 during office processing of FE-309WD (1974). An investigation was conducted using side scan sonar; no significant contacts were found. A thorough examination of the side scan sonar records was made during office processing, and the evaluator concurs with the hydrographer's recommendation for removal from the chart.

7. COMPARISON WITH CHART 11373 (32nd Edition, May 6/89)

a. Hydrography

The charted hydrography originates with prior surveys and miscellaneous sources not readily ascertainable. The hydrographer makes an adequate chart comparison in section J., page 8, of the Descriptive Report. The following should be noted:

AWOIS item #7064, a charted dangerous sunken wreck with a notation covered by 37 ft, in Latitude 30°10'36.60"N,

Longitude 88°41'06.60"W originates with a message to the 8th Coast Guard District from the NOAA Ship CHAPMAN. During the NOAA Ship CHAPMAN's investigation of the wreck a diver least depth of 37 feet was determined. The dangerous sunken wreck was located by the present survey in Latitude 30°10'40.02"N, Longitude 88°41'05.24"W with a pneumatic depth gauge least depth of 36 feet. The charted wreck is approximately 111 meters southwest of the present survey location. It is recommended that the charted dangerous sunken wreck with a notation covered by 37 ft be deleted form the chart and a wreck with a known depth of 36 feet (36Wk) and a danger curve be charted in present survey location. See sheet 1 of 6.

The present survey is adequate to supplement the charted information in the common area.

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 adequately complies with the Project Instructions. This is a good side scan sonar survey for the AWOIS items resolved by the survey.

Franklin L. Saunders
Cartographic Technician
Verification of Field Data

Norris A. Wike
Cartographer
Evaluation and Analysis

Robert R. Hill
Senior Cartographic Technician
Verification Check

INSPECTION REPORT
FE-329SS

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.

Inspection

Robert G. Roberson
Chief, Evaluation and Analysis Group

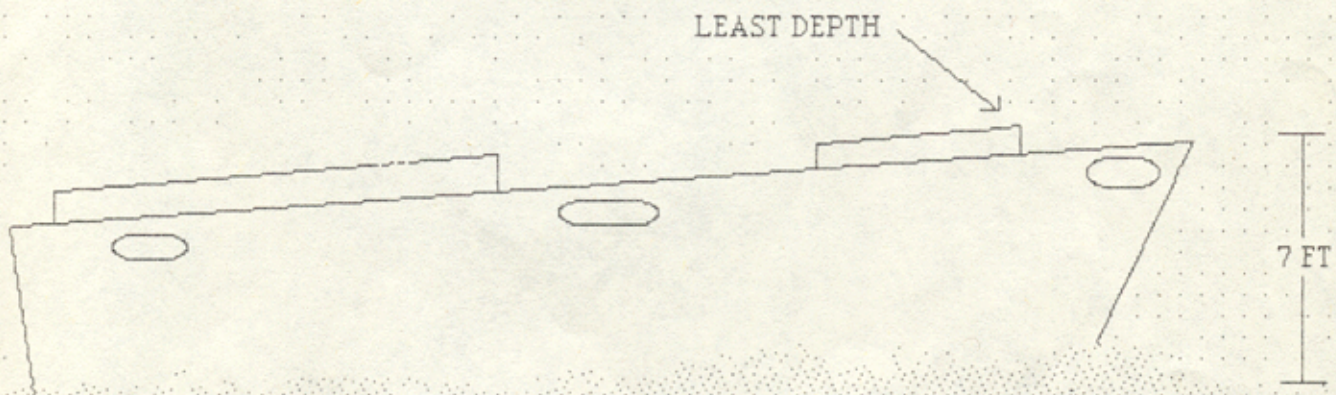
Christopher B. Lawrence CDR, NOAA
Chief, Atlantic Hydrographic Section

Approved: 1 February 1990

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

Wesley V. Hull, RADM, NOAA
Director, Office of Charting and Geodetic Services

AWOIS 7064
CONTACT KO1



STEEL HULLED 38 FT VESSEL

88° 42′ 88° 41′ 88° 40′

30° 12′

30° 11′

36 Wk (38 ft steel hull)

88° 42′ 00″

NAD 27 30° 10′ 00″

XYNETICS 1201

✓FLS 11/17/1989

30° 10′

FE-329SS

AWOIS ITEM # 7064

SCALE: 1:20,000

SOUNDING IN FEET AT MLLW

HORIZONTAL DATUM: NAD 1983

SHEET 1 OF 6

88° 42′ 88° 41′ 88° 40′

30° 12′

30° 11′

4273

86° 42′ 00″

30° 10′ 00″

NAD 27

XYNETICS 1201

✓FLS 11/17/1989

30° 10′

FE- 329SS
POSITION OVERLAY TO ACCOMPANY
SHEET 1 OF 6

88°45'30"

88°45'00

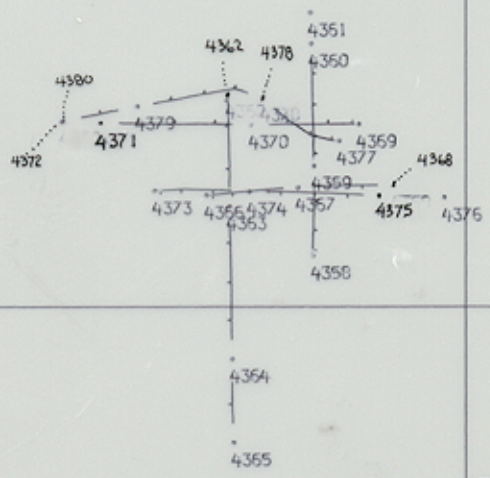
88° 45' 00"

NAD 27 30° 08' 00"

XYNETICS 1201

✓F.L.S 11/16/1989

30° 08' 00"



30° 07' 30"

FE-329 SS
MISSISSIPPI
GULF OF MEXICO
SE OF DOG KEYS PASS
AUG 4, 1989
SCALE: 1:10000
HORIZONTAL DATUM: NAD 1983
SHEET 2 OF 6
AWOIS NUMBER 7208

88°51'00"

88°50'00"

88°49'00"

88°50'00"

NAD 27

30°08'00"

30°08'00"

XYNETICS 1201
✓F.L.S 11/22/1989

30°07'00"

FE-329 SS
MISSISSIPPI
GULF OF MEXICO
SE OF DOG KEYS PASS
AUG 4, 1989
SCALE: 1:20,000
HORIZONTAL DATUM : NAD 1983
SHEET 3 OF 6
AWOIS NUMBER 7209

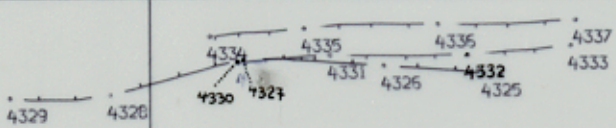
30°06'00"

88° 49' 00"

88° 48' 30"

30° 08' 00

30° 07' 30"



FE-329 SS
MISSISSIPPI
GULF OF MEXICO
SE OF DOG KEYS PASS
AUG 4, 1989
SCALE: 1:10,000
HORIZONTAL DATUM: NAD 1983
SHEET 4 OF 6
AWOIS NUMBER 7210

88° 49' 00"

NAD 27 30° 07' 00"

XYNETICS 1201

✓F.L.S 11/16/1989

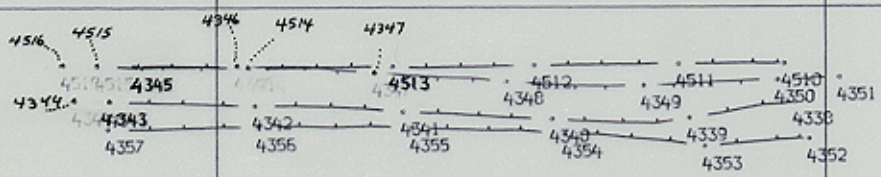
30° 07'00"

88° 49' 00"

88° 48' 30"

30° 08' 30"

30° 08' 00"



FE-329 SS
MISSISSIPPI
GULF OF MEXICO
SE OF DOG KEYS PASS
AUG 4-8, 1989
SCALE: 1:10,000
HORIZONTAL DATUM: NAD 1983
SHEET 5 OF 6
AWOIS NUMBER 7211

88° 48' 30"

NAD 27

30° 07' 30"

XYNETICS 1201
F.L.S 11/17/1989

30° 07' 30"

88°44'00"

88°43'30"

88°43'00"

30°08'30"

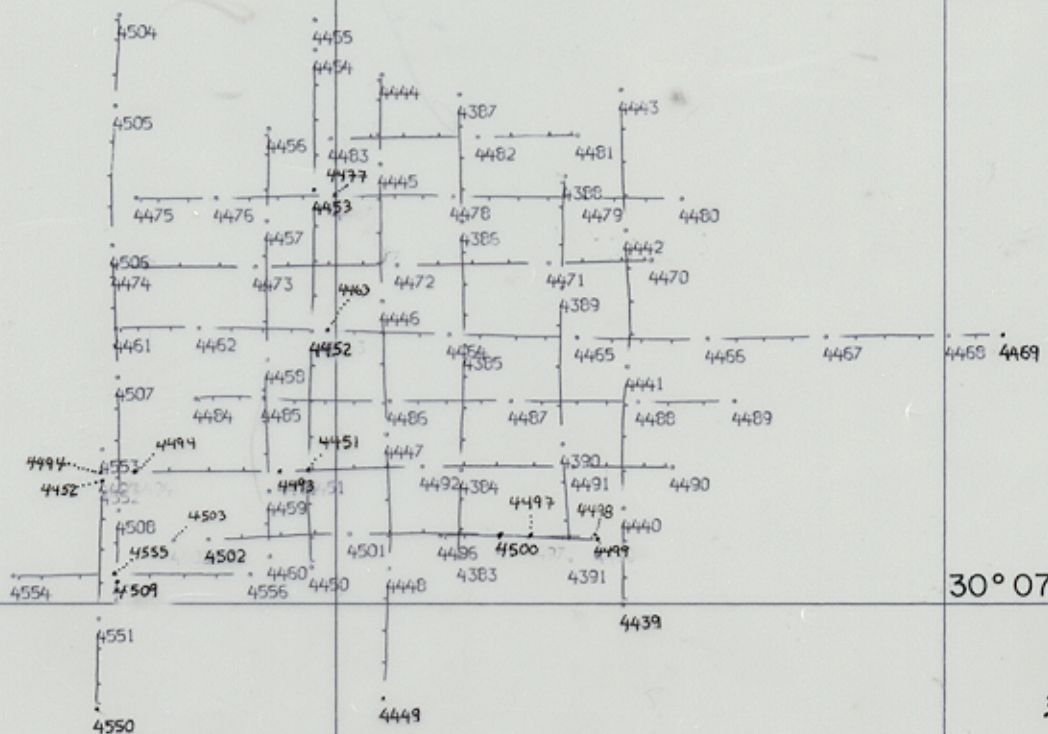
88° 43' 00"

NAD 27 30° 08' 00"

XYNETICS 1201

✓F.L.S 11/16/1989

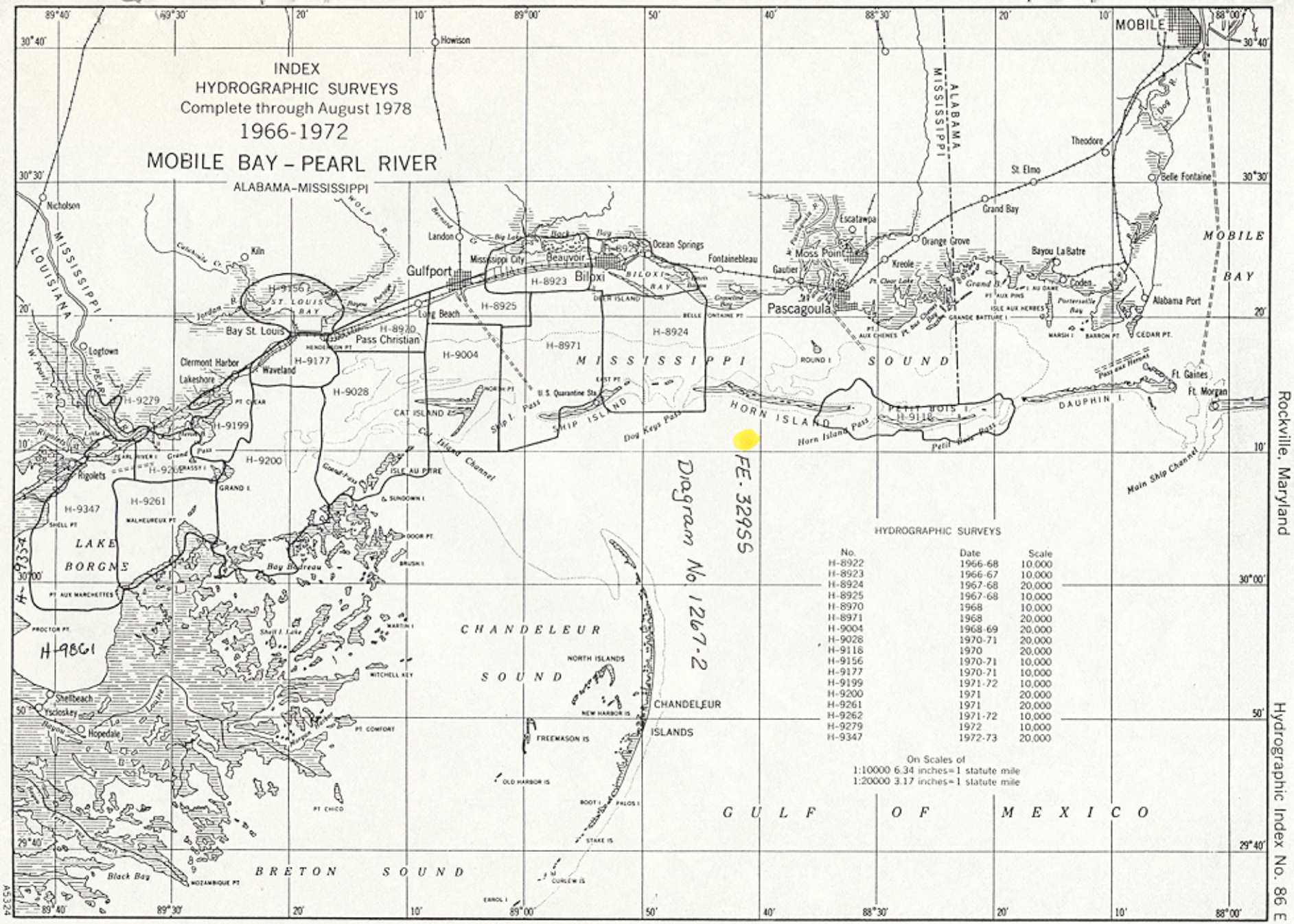
30°08'00"



30°07'00" 3

SJV
3/29/90

FE-329 SS
MISSISSIPPI
GULF OF MEXICO
SE OF DOG KEYS PASS
AUG 4-10, 1989
SCALE: 1:10,000
HORIZONTAL DATUM: NAD 1983
SHEET 6 OF 6
AWOIS NUMBER 7212



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

Hydrographic Index No. 86 E

NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. FE-329SS

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
11373	4-25-90	T. Bedell	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via
			Drawing No. 55
11374	4-25-90	T. Bedell	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via
			Drawing No. 23
11360	4-25-90	T. Bedell wf	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via
			Drawing No. 45
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.