

H11082

NOAA FORM 76-35A

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

## DESCRIPTIVE REPORT

Type of Survey Hydrographic/Side Scan Sonar

Field No. \_\_\_\_\_

Registry No H11082

### LOCALITY

State Alabama

General Locality Mobile Bay

Locality Mobile Bay Entrance Reef

2001

CHIEF OF PARTY

Cdr. John W. Humphrey, OIC

LIBRARY & ARCHIVES

DATE

September 19, 2002

**HYDROGRAPHIC TITLE SHEET**

**H11082**

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: .....Alabama

General Locality: .....Mobile Bay

Sub-Locality: .....Mobile Bay Entrance Reef

Scale: .....1:10,000

Date of Survey: .....SEPT 17 - SEPT 21, 2002

Instructions Dated: ..... AUG 30, 2001

Project Number: .....OPR -S-J907-NRB

Vessel: ..... NAVIGATION RESPONSE TEAM 2 NOAA LAUNCH 1210

Chief of Party: ..... CDR. John W. Humphrey

Surveyed by: .....David B. Elliott, Mark J. McMann, Robert W. Ramsey

Soundings by: ..... Innerspace model 448 depth sounder

Graphic record scaled by: ..... Field Personnel

Graphic record checked by: ... Field Personnel

Protracted by: ..... N/A

Automated Plot: ..... HP-750C (*field*)

*Hewlett Packard Design Jet 2500CP (office)*

Verification by: ..... Atlantic Hydrographic Branch *Personnel*

Soundings in: ..... **Meters** *Feet* at MLLW

Remarks: *Bold, red, italicized Notes in Descriptive Report were made during office processing.*

*1) All Times are UTC.*

*2) This is a Basic Hydrographic Survey.*

*3) Projection is UTM Zone 16.*

**FIELD EXAMINATION REPORT**  
**to Accompany**  
**Hydrographic Survey H11082**  
**OPR-S-J907-NRB**  
**1:10,000 - 2001**  
**NAVIGATION SERVICES DIVISION**  
**Navigation Response Team 2 – Launch 1210**  
**Capt. John Wilder, Chief - NOAA**

This examination was conducted according to Port Instructions OPR-S-J907-NRB, Mobile Bay Entrance Artificial Reef, Alabama dated August 30, 2001

The purpose of this project is to investigate a charted artificial fishing reef south/southwest of the entrance to the Mobile Bay Main Shipping Channel.

**A. AREA SURVEYED**

There was no sheet letter designated for this project.

The approximate survey area limits are:

30°08'47.80 05'00.0"N  
088°12'22 13'00.0"W  
30°06'08.7 10'00.0"N  
088°03'23 02'00.0"W

This survey was conducted from: Sept.17, 2001 (DN:260) to Sept.21, 2001 (DN:264). This time frame includes hydrographic soundings and side scan sonar. *Concur*

**B. DATA ACQUISITION AND PROCESSING *See also Evaluation Report***

**B1. Equipment**

An Innerspace model 448 depth sounder, S/Ns 188 was used to collect all echo soundings on this survey. A standard lead line calibrated in meters, S/N 1210, was used during this survey for comparison with the echo sounder. No problems were encountered with any of the sounding equipment.

An Edge Tech model 260-TH image correcting side scan sonar recorder (S/N 020417) with a model 272-TD towfish (S/N 020892), was used throughout this survey. The side scan sonar equipment was used to investigate AWOIS items. *Concur*

A Starlink DGPS Beacon Receiver (S/N 795) and antenna (S/N 4132) was used as the primary navigation station on launch 1210.

A Trimble Pathfinder ProXRS (S/N 0224010201) and antenna (S/N 0220170250) were used for

all ENC high accuracy positioning and establishment of calibration points.

The instrument used for determining corrections for the speed of sound through the water column was a Seabird-Seacat Velocity Profiler, model 19-03, S/N 198671-1477.

NOAA launch 1210, a 27-foot SeaArk with a draft of 0.5 meters, was used to collect all survey data. There were no unusual vessel configurations or problems encountered with the vessel.

*Concur*

## **B2. Quality Control**

The integrity of the survey data for H11082 has been insured by following the Field Procedures Manual and the NOS Hydrographic Surveys Specifications and Deliverables Manual, June 2000. Due to the nature of this survey as Chart Evaluation, percentages of crosslines were not calculated or specific to mainscheme hydrography. *Concur*

The lead line for launch 1210 was calibrated using a steel tape on Sept. 11, 2001 (DN: 254). No corrections were necessary. A static draft of 0.5 meters was applied to the sounding plots by the HPS REAPPLY program. The draft was measured by subtracting the difference from a punch mark on the side of launch 1210, 0.6 meter above the transducer, to the water surface.

Settlement and squat measurements for launch 1210 were taken on Sept. 11, 2001 (DN: 254). These measurements were conducted in Dauphin Island, AL using the level method. Settlement and squat correctors were applied to the sounding plots using the HPS REAPPLY program.

*Concur*

Differential GPS (DGPS) was used for all hydrographic data acquired on this survey. DGPS performance checks were conducted in accordance with FPM 3.4.4 by comparing the DGPS position of the vessel to a high accuracy (1<sup>st</sup> order) calibration point. *Concur*

A coverage of 200% was obtained in the required survey areas and AWOIS items where water depth and/or hazards permitted. Side scan sonar coverage was conducted ~~to the 12-foot depth curve~~ *(the survey is in depths of 54 to 67 feet)* and single beam reduced line spacing was performed in other areas where warranted. The towfish was deployed off the starboard quarter of the vessel, which proved very stable. Distorted images caused by strong tidal currents were seen periodically. All contacts and shadows were manually scaled and entered into a *an* HPS contact table to determine the height off the bottom. The significant contacts were then compared by position, as well as common depth and relationship to channels to determine if further investigations were needed. All areas surveyed were track line/swath line plotted to insure complete coverage, these regions can be reviewed on the CD. *Concur*

The system frequency used was 100 kHz. The recorder was set on one of either 100-meter range scale. There were no water depths greater than 35 meters. The confidence checks were performed daily at 100kHz. *Concur*

### B3. Corrections to Echo Soundings

There are no deviations to be discussed in this section. Refer to Section "C" Correction to Echo Soundings of the Data Acquisition and Processing Report.

### C. VERTICAL AND HORIZONTAL CONTROL *See also Evaluation Report*

The instrument used for determining corrections for the speed of sound through the water column was a Seabird-Seacat Velocity Profiler. The manufacturer calibrated this unit on December 28, 2000. Data quality assurance tests were performed after each cast. Program VELOCITY was used for computing the correctors. Corrections were applied to the sounding plot using the HPS REAPPLY program. *Concur*

Field tide reduction of soundings is based on unverified actual heights from the Internet from the Gage at Dauphin Island, AL (873-5180).

Values and correctors were applied at the perspective locations of Hydrography from the Port Instructions. *Smooth tides were applied during office processing.*

All elevations and soundings on survey H11082 are based on MLLW unless otherwise specified. *Concur*

The horizontal control datum for this project is the North American Datum (NAD) of 1983 in UTM. The control reference station used for this survey was the USCG DGPS Mobile, AL (Station ID #813), located at 30°13.65077'N, 088°01.44588'W. *Concur*

### D. RESULTS AND RECOMMENDATIONS *See also Evaluation Report*

#### D1. Chart Comparison

The following is a list of Charts compared during H11082:

Chart Number	Edition	Edition Date
11376	47th	Jan. 24, 1998
11377	3rd	Aug, 5, 2000
<del>11378</del>	<del>30th</del>	<del>Dec.13, 1997</del> <i>Not in the survey area</i>

In general survey soundings compared favorably with the charted soundings within one to three feet. The shoalest depth of ~~52.2~~ (54) feet was at position no. 3404 at 30°07'17.6"N, 088°04'48.6"W. *Concur*

The maintained channel survey depths do not apply to this examination. *Concur*

There ~~was one~~ *were two* AWOIS items investigated during this survey. AWOIS #3625 a 57 foot sounding *wire drag least depth on a dangerous shoal* at 30°06'26.4"N, 088°02'22.6"W. The result of the investigation was negative. The 57 foot sounding does not exist and should be

removed from the chart. *Concur - See also section D.1. of the Evaluation Report*

There were no Danger to Navigation reports submitted for this survey. *Concur*

## **D2. Additional Results**

There were several weak contacts located on the first 100% of the side scan survey for H11082. The contacts were loaded and investigated during the 200%. The contacts were not repeatable and required no further investigation. A closing confidence check on the nearby sea buoy confirmed no problems with the side scan sonar. There were incredible amounts of sea life noted by the hydrographers during the investigation. These features were most likely responsible for the false contacts. *Concur*

There were no Prior Survey comparisons conducted by the hydrographer for H11082. *Concur*

All Navigation Aids serve their intended purpose. *Concur*

## **E. APPROVAL SHEET**

Attached next page.

**APPROVAL SHEET**  
**OPR-S-J907-NRB**  
**Field Examination – H11082**  
**Dauphin Island, AL**  
**NRT-2 Launch 1210**  
**2001**

This Field Examination survey is complete and adequate for its intended purpose, which included a sidescan sonar survey of the Artificial Reef south/southeast of Mobile Bay, AL. The survey includes a Field Examination Report (ie. Descriptive Report), digital data and all accompanying records.

The following reports are included with this submission:

Field Examination Report (DR)	September 2001
Data Acquisition and Processing Report	September 2001
Vertical and Horizontal Control Report	September 2001
Tides and Water Level Package	September 2001

Approved by: David B. Elliott – Team Leader  
NOAA-Navigation Response Team 2

**TIDE NOTE FOR HYDROGRAPHIC SURVEY**

**DATE:** April 23, 2002

**HYDROGRAPHIC BRANCH:** Atlantic

**HYDROGRAPHIC PROJECT:** S-J907-NRT2-2001

**HYDROGRAPHIC SHEET:** H11082

**LOCALITY:** Mobile Bay Entrance Artificial Reef, AL

**TIME PERIOD:** September 17 - 21, 2001

**TIDE STATION USED:** 873-5180 Dauphin Island, AL

Lat. 30° 15.7'N Lon. 88° 04.7'W

**PLANE OF REFERENCE (MEAN LOWER LOW WATER):** 0.000 meters

**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 0.369 meters

**REMARKS: RECOMMENDED ZONING**

**Use zone(s) identified as:** CGM1.

Refer to attachments for zoning information.

**Note 1:** Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time.

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**CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION**



## Verified 6 minute Water Level Data (W1)

Station -- Unique seven character identifier for the station  
 Date Time -- Date and time the data were collected by the DCP  
 WL -- Water level height  
 Sigma -- Standard deviation of 1 second samples used to  
 compute the water level height  
 I -- A flag that indicates that the water level value  
 has been inferred.  
 F -- A flag that when set to 1 indicates that the fla  
 tolerance limit was exceeded  
 R -- A flag that when set to 1 indicates that the rat  
 of change tolerance limit was exceeded  
 T -- A flag that when set to 1 indicates that the  
 temperature difference tolerance limit was excee  
 ded

Data are in Meters above MLLW

Times are on UTC (GMT)

8735180 DAUPHIN ISLAND, MOBILE BAY , AL from 20010901 to 20010930

Station Date Time WL Sigma I F R T

8735180	2001/09/12	18:00	0.390	0	0	0	0
8735180	2001/09/12	18:06	0.392	0	0	0	0
8735180	2001/09/12	18:12	0.379	0	0	0	0
8735180	2001/09/12	18:18	0.371	0	0	0	0
8735180	2001/09/12	18:24	0.366	0	0	0	0
8735180	2001/09/12	18:30	0.366	0	0	0	0
8735180	2001/09/12	18:36	0.363	0	0	0	0
8735180	2001/09/12	18:42	0.355	0	0	0	0
8735180	2001/09/12	18:48	0.352	0	0	0	0
8735180	2001/09/12	18:54	0.350	0	0	0	0
8735180	2001/09/12	19:00	0.356	0	0	0	0
8735180	2001/09/12	19:06	0.344	0	0	0	0
8735180	2001/09/12	19:12	0.323	0	0	0	0
8735180	2001/09/12	19:18	0.325	0	0	0	0

REFERENCE NO.  
N/CS33-27-02

**LETTER TRANSMITTING DATA**

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

- ORDINARY MAIL
- REGISTERED MAIL
- GBL (Give number) \_\_\_\_\_
- AIR MAIL
- EXPRESS

**TO:**

CHIEF, DATA CONTROL GROUP, N/CS3x1  
 NOAA / NATIONAL OCEAN SERVICE  
 STATION 6815, SSMC3  
 1315 EAST-WEST HIGHWAY  
 SILVER SPRING, MARYLAND 20910-3282

DATE FORWARDED  
08/23/2002

NUMBER OF PACKAGES  
1

**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.

H11082

ALABAMA, MOBILE BAY, MOBILE BAY ENTRANCE REEF

**ONE TUBE CONTAINING THE FOLLOWING:**

- 1 SMOOTH SHEET FOR SURVEY H11082
- 1 ORIGINAL DESCRIPTIVE REPORT FOR SURVEY H11082
- 2 H-DRAWINGS ON MYLAR FOR SURVEY H11082 - 1 EACH FOR NOS CHARTS 11376 AND 11377
- 1 RECORD OF APPLICATION TO CHART FORM (NOAA FORM #75-96) FOR SURVEY H11082

**FROM:** (Signature)

*Robert A. Blum*

**RECEIVED THE ABOVE**  
(Name, Division, Date)

**Return receipted copy to:**

NOAA \ NATIONAL OCEAN SERVICE  
 ATLANTIC HYDROGRAPHIC BRANCH N/CS33  
 439 WEST YORK STREET  
 NORFOLK, VA. 23510-1114

**ATLANTIC HYDROGRAPHIC BRANCH  
EVALUATION REPORT FOR H11082 (2001)**

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

**B. AUTOMATED DATA ACQUISITION AND PROCESSING**

The following software was used to process data at the Atlantic Hydrographic Branch:

Hydrographic Processing System  
NADCON, version 2.10  
MicroStation 95, version 5.05  
I/RAS B, version 5.01

The smooth sheet was plotted using a Hewlett-Packard DesignJet 2500CP plotter.

**C. CONTROL STATIONS**

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 NAD 83 and the North American Datum of 1927 (NAD 27).

To place this survey on the NAD 27, move the projection lines 0.739 seconds (22.769 meters or 2.28 mm at the scale of the survey) north in latitude, and 0.004 seconds (0.110 meters or 0.11 mm at the scale of the survey) west in longitude.

**D1. COMPARISON WITH CHART 11376 (48<sup>th</sup> Edition, Dec 01/01)  
11377 (03<sup>rd</sup> Edition, Aug 05/00)**

**Hydrography**

The charted hydrography originates with the prior surveys and requires no further consideration. The hydrographer makes adequate chart comparison in section D1. of the Descriptive Report. The following should be noted:

1. Automated Wreck and Obstruction Information System (AWOIS) Item #3625 a charted dangerous 57 foot wire drag clearance depth shoal, in Latitude 30°06'27.74"N Longitude 88°02'23.98"W, originates with survey H9374 a wire drag survey done in 1973 (H9374/73WD). This item was further investigated but not disproved with surveys H10226/86-88 and H10394/91.

This feature was disproved by the present survey and it is recommended that this feature be deleted from the chart and the area updated with present survey soundings.

2. Automated Wreck and Obstruction Information System (AWOIS) Item #3627 a charted discontinued Fish Haven, in Latitude 30°07'18.73"N Longitude 88°07'59.99"W, originates with Wire Drag survey H9374 of 1973 (H9374/73WD). This item was further investigated but not disproved with hydrographic surveys H10226/86-88 and H10394/91. There were no indications of any obstructions found during the present survey and the least depth over the limits of this item was 56 feet. This feature was disproved by the present survey and it is recommended that the notation Depths from Survey of 2001 be added to the label and that present survey depths be added inside the limits of the fish haven.

## **D2. COMPARISON WITH PRIOR SURVEYS**

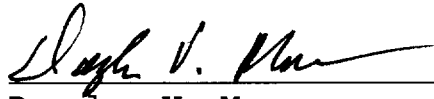
A comparison with prior surveys was not done during office processing in accordance with section 4. of the memorandum titled, "Changes to Hydrographic Survey Processing," dated May 24, 1995.

The present survey is adequate to supersede the charted hydrography within the common area.

## **MISCELLANEOUS**

Chart compilation was done by Atlantic Hydrographic Branch personnel, in Norfolk, Virginia. Compilation data will be forwarded to the Marine Chart Division, Silver Spring, Maryland. The following National Ocean Survey charts were compiled using the present survey:

11376 (48<sup>th</sup> Edition, Dec 01/01) 1:80,000  
11377 (04<sup>th</sup> Edition, Apr 06/02) 1:40,000

A handwritten signature in black ink, appearing to read "Douglas V. Mason", written over a horizontal line.


**Douglas V. Mason**

Cartographic Technician  
Verification of Field Data  
Evaluation and Analysis

APPROVAL SHEET  
H11082

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.



Deborah A. Bland  
Cartographer,  
Atlantic Hydrographic Branch

Date: 8-09-02

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.



Emily B. Christman  
Commander, NOAA  
Chief, Atlantic Hydrographic Branch

Date: 8/22/02

\*\*\*\*\*

Final Approval:

Approved: 

Samuel P. De Bow, Jr.  
Captain, NOAA  
Chief, Hydrographic Surveys Division

Date: September 19, 2002

MARINE CHART BRANCH  
**RECORD OF APPLICATION TO CHARTS**

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 111082

**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
11376	8/23/02	Dobson G. Blundell	Full Part Before After Marine Center Approval Signed Via Drawing No.
11377	8/23/02	Dobson G. Blundell	Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
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