

10394

Diagram No. 1115-3 & 1266-3

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey ... Hydrographic
Field No. HE-10-3-91
Office No..... H-10394

LOCALITY

State Alabama
General Locality Gulf of Mexico
Sublocality Southern Approach to
Mobile Bay

19 91

CHIEF OF PARTY
LCDR J.W. Blackwell

LIBRARY & ARCHIVES

DATE April 30, 1993

10394

EC/G
PRODUCTS

11377 11378
11376v
11360
11006
411
CP5

HYDROGRAPHIC TITLE SHEET

H-10394

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

FIELD NO.

HE-10-3-91

State ALABAMA

General locality GULF OF MEXICO

Locality SOUTHERN APPROACH TO MOBILE BAY

Scale 1:10,000

Date of survey 15 AUG 91 - 10 OCT 91

Instructions dated 11 JUN 91

Project No. OPR-J461-HE

Vessel NOAA Ship HECK (EDP 9140)

Chief of party John W. Blackwell, LCDR, NOAA

Surveyed by LCDR ^{J.W.} Blackwell, LT ^{D.W.} Moeller, LTJG ^{K.N.} Harbison, ENS ^{T.F.} Martin, ST ^{W.R.} Morris

Soundings taken by echo sounder, ~~hand lead, pots~~

Graphic record scaled by LT Moeller, LTJG Harbison, ENS Martin, ST Morris

Graphic record checked by LTJG Harbison

Protracted by N/A

Automated plot by HDAPS (FIELD)

SYNETICS 1201 PLOTTER (AHS)

Verification by Atlantic Hydrographic Section, N/CG244

PERSONNEL

Soundings in ~~fathoms~~ METERS at MKW MLLW

REMARKS: Change 1 dated 12 July 91

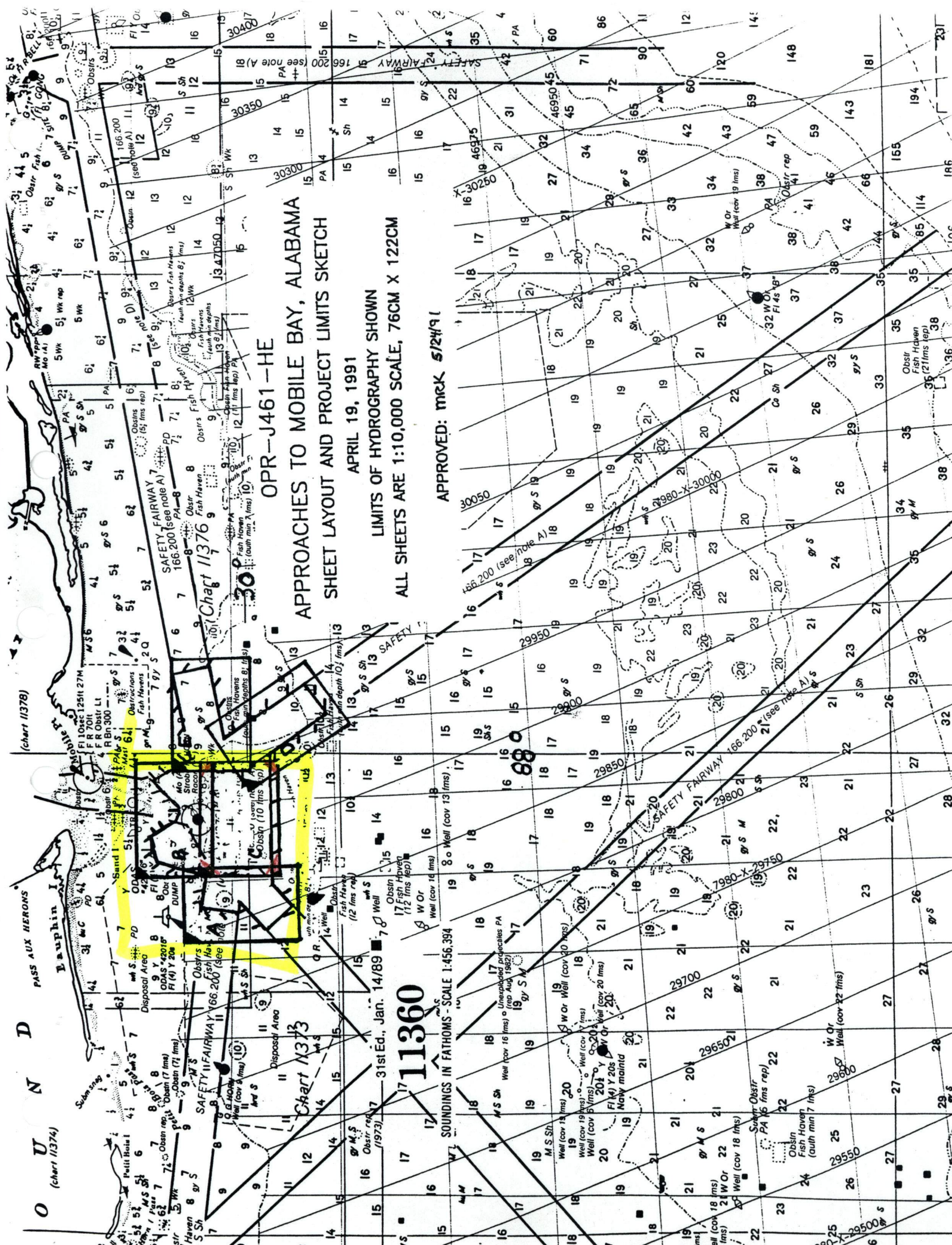
All times UTC

200% Side Scan coverage in depths less than 20 meters, 100% Side Scan coverage in depths greater than 20 meters.

Data submitted to Atlantic Hydrographic Section, N/CG244

Notes in red were made during office processing

AWOIS/SURF ✓ 6/9/93 SJT



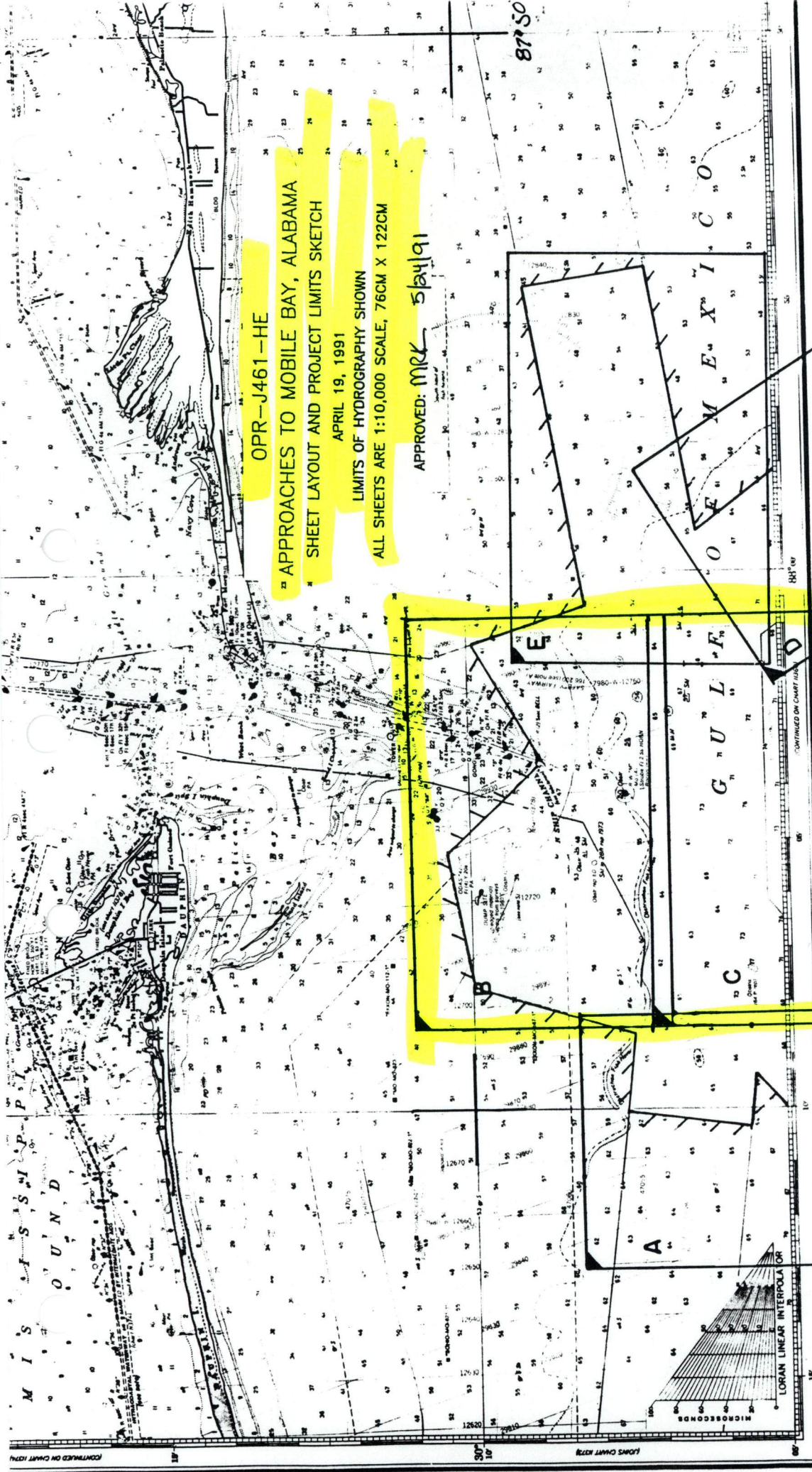
OPR-J461-HE
 APPROACHES TO MOBILE BAY, ALABAMA
 SHEET LAYOUT AND PROJECT LIMITS SKETCH

APRIL 19, 1991
 LIMITS OF HYDROGRAPHY SHOWN
 ALL SHEETS ARE 1:10,000 SCALE, 76CM X 122CM

APPROVED: mck 5/24/91

11360
 SOUNDINGS IN FATHOMS - SCALE 1:456,394

31st Ed., Jan. 14/89



OPR-J461-HE

APPROACHES TO MOBILE BAY, ALABAMA
SHEET LAYOUT AND PROJECT LIMITS SKETCH

APRIL 19, 1991

LIMITS OF HYDROGRAPHY SHOWN
ALL SHEETS ARE 1:10,000 SCALE, 76CM X 122CM

APPROVED: MRK 5/24/91

Published by authority of the
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL CENTER FOR HYDROGRAPHY

1:10,000 SCALE

11376
LORAN-C OVERPRINTED

H-10394

4th Ed. Oct. 22, 88

11376

LORAN-C OVERPRINTED

DESCRIPTIVE REPORT APPENDICES

- * I. DANGER TO NAVIGATION REPORTS
- * II. NON-FLOATING AIDS AND LANDMARKS FOR CHARTS
- III. LIST OF HORIZONTAL CONTROL STATIONS
- * IV. GEOGRAPHIC NAMES (*FIELD*)
- * V. TIDES AND WATER LEVELS
- * VI. SUPPLEMENTAL CORRESPONDENCE
- VII. APPROVAL SHEET

SEPARATES TO BE INCLUDED WITH SURVEY DATA

- * I. HYDROGRAPHIC SHEETS AND PARAMETERS
- * II. BOTTOM SAMPLES
- * III. HORIZONTAL POSITION CONTROL AND CORRECTIONS TO POSITION DATA
- * IV. SOUNDING EQUIPMENT CALIBRATIONS AND CORRECTIONS
- * V. SIDE SCAN SONAR DATA
- IV. ITEM INVESTIGATION DATA

* *filed WITH ORIGINAL SURVEY DATA*

DESCRIPTIVE REPORT TO ACCOMPANY
SURVEY H-10394
FIELD NUMBER HE-10-3-91
ALABAMA
GULF OF MEXICO
SOUTHERN APPROACH TO MOBILE BAY
Scale 1:10,000
NOAA SHIP HECK S-591
LCDR John W. Blackwell, NOAA, CMDG

A. PROJECT

This survey was conducted in accordance with Hydrographic Project Instructions OPR-J461-HE, Approaches to Mobile Bay, Alabama, dated June 11, 1991, and Change 1 dated 23 July 91.

The purpose of this project is to accomplish complete 200-percent side scan sonar coverage of the safety fairway and the fairway anchorages at the approaches to Mobile Bay, Alabama, and to investigate a number of wrecks and obstructions in or near the safety fairway. This project responds to requests by the Mobile Bar Pilots Association concerning the presence of submerged obstructions in the area. Change 1 allows for 100-percent side scan coverage in depths in excess of 20 meters.

B. AREA SURVEYED

The survey area, designated Sheet C in the Project Instructions, lies in the Gulf of Mexico, south of the entrance to Mobile Bay. The survey area is a rectangle shape formed by connecting, in order, the following points:

- | | |
|--|--|
| 1. LAT 30° 07' ^{6 40} 12 " N | LON 088° 07' ^{8 30} 12 " W |
| 2. LAT 30° 07' ^{6 40} 12 " N | LON 088° 00' ⁵⁹ 12 " W |
| 3. LAT 30° 03' ³⁹ 12 " N | LON 088° 00' ⁵⁹ 12 " W |
| 4. LAT 30° 03' ⁴⁰ 12 " N | LON 088° 07' ^{8 30} 12 " W |

Survey operations began on August 15, 1991 (DOY 227), and were completed on October 10, 1991 (DOY 283).

The size of the survey area exceeded the width constraints of HECK's plotter requiring the area to be split into a north sheet(03) and a south sheet(02). The boat sheet was set up as a 1:15,000 sheet(01) to allow HECK to use one boat sheet through the entire survey. All data was gathered and processed using 1:10,000 specifications and submitted on 1:10,000 smooth plots.

C. SURVEY VESSELS

All hydrographic and side scan data were collected by the NOAA Ship HECK (EDP 9140). All offset and layback information is contained in the offset table located in section IV of the separates. No unusual vessel configurations were used.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

Survey data acquisition and processing were accomplished utilizing the HDAPS system hardware and the latest version of the NAVITRONIC NAVISOFT 300 software provided to the ship by N/CG24. A listing of actual programs and versions is appended in Section VI.

E. SONAR EQUIPMENT

HECK is equipped with an EG&G model 260 slant range corrected Side Scan Sonar (SSS) recorder and model 272 dual frequency towfish. Serial numbers and dates of usage are as follows:

Towfish	S/N 10823	DOY 227 - 261
Towfish	S/N 11591	DOY 283
Recorder	S/N 012104	DOY 227 - 283

The beam width and down angle are not adjustable on this unit. All SSS data was collected using the 50, 75, and 100 meter range scale and 100 Khz frequency. Line spacing of 170 meters was used on the 100 meter scale to maintain the required 2mm of adjacent line overlap. The sidescan towfish was deployed off the stern when in use, all offset and layback information is provided in the offset table located in section IV of the separates.

Confidence checks were obtained, and annotated on the sonargrams, by towing the side scan unit either past known items or linear bottom features. A minimum of two confidence checks were obtained on a daily basis as required.

Required proof of sonar coverage is demonstrated through the included sonar coverage plots. The hydrographer chose this method in lieu of the sonar coverage abstract. The choice of method is left to the hydrographer per Side Scan Sonar Manual section 3.1.3.

The sonar contact list (Side Scan Sonar Manual 3.1.1.1.) is provided through the HECK's modified contact abstract table and the automated HDAPS contact printout that is produced during the computation and logging of contacts. Both are located in the separates.

Three contact tables were used during this survey. In order to prevent confusion all items were identified using their position number. Some contacts have more than one target number from successive hits during 200% coverage, developments, and detached positions. In this case the targets plotted on top of each other, however, the recommended charting positions were derived from their DP's.

Annotations required by section 2.6 of the Side Scan Sonar manual ie; ship's speed, ship's head, weather/sea state (heave) are not placed on the sonargrams. This information is all located in the digital records and can be examined using the "List Data" sub-routine located in post-survey of HDAPS. This information is also displayed in the "Depth/Position Edit" sub-routine of post-survey.

F. SOUNDING EQUIPMENT

The following Raytheon DSF-6000N echosounder was used during this survey:

S/N A110N DOY 227 - 283

Both low and high frequency depths were digitized, but only high frequency depths were plotted.

A leadline was used to measure all diver least depths. Good diving visibility (>80 ft) allowed scope to be eliminated. Comparison sheet is appended.

Annotations for sea state for weather appear at least once a day. Heave information is recorded digitally from the Hippy and the heave corrector is applied on line. Ship's head and speed are recorded digitally.

G. CORRECTIONS TO ECHOSOUNDINGS

The following table shows dates and locations of velocity casts conducted using the ODOM Digibar sound velocimeter (S/N 168):

VELOCITY TABLE	DATE	LOCATION	
1	13/08/91 (DOY 225)	30°05'36"N	088°02'00"W
2	09/09/91 (DOY 253)	30°05'12"N	088°06'49"W
3	02/10/91 (DOY 275)	30°04'54"N	088°06'42"W

The velocity cast data were reduced and velocity corrections calculated using program VELOCITY Version 1.11. The computed velocity correctors were then applied on line to echosounder depths (both high and low frequency) by entering the correction data into the HDAPS sound velocity table.

On DOY 108 a dual leadline comparison was conducted and resulted in a mean difference of 0.040 meter or a corrector of 0.0 meter.

The static draft of 2.10 meters was applied on line to all echosoundings via the HDAPS offset table.

Settlement and squat correctors for the HECK were determined on March 13, 1991 (DOY 72), in the vicinity of Craney Island fuel pier in Norfolk, Virginia using the level rod method.

Settlement and squat values were applied on line to hydrographic soundings via the HDAPS offset table located in section IV of the separates.

The digibar was checked on March 5, 1991 by ODOM and found to be functioning correctly. Field checks using the prescribed fresh water method were accomplished prior to each cast and recorded on the velocity cast form.

Heave is measured by a Datawell B.V. (S/N 19110-C) heave, roll, and pitch sensor (HIPPY) located midships near the transducer. The sensor gathers on line data which is applied to the soundings in near real time. All data have been corrected by applying HIPPY correctors.

The tidal datum for this survey was mean lower low water (MLLW). The tide station at Dauphin Island, Alabama (873-5180) was the reference station for this survey. The station was maintained under contract by Chapin and Assoc, and observed by Mike Dardeau. Contact with the observer was made, the station was inspected, and opening levels were run by HECK's crew. No tide stations were established by HECK in support of this survey.

All hydrographic depths have been corrected for predicted tides using the zone correctors specified in the project instructions. Tidal correctors were applied on line via the HDAPS predicted tide table. *APPROVED TIDES AND ZONING WERE APPLIED DURING OFFICE PROCESSING*

H. CONTROL STATIONS *SEE ALSO SECTION 2.2. OF THE EVALUATION REPORT*

The horizontal datum for this project is the North American Datum of 1983 (NAD 83). Four existing stations were recovered by HECK personnel. Those stations were:

Number	Station
--------	---------

101	- DAUPHIN ISLAND WEST BASE
-----	----------------------------

102	- PIRATE
-----	----------

103	- MOBILE POINT LIGHT
-----	----------------------

103	- STORMY
----------------	----------

104

Positions for PIRATE, STORMY, and MOBILE POINT LIGHT were obtained from N/CG23322 Coastal Surveys Unit.

A list of the horizontal control stations appears in appendix III, LIST OF HORIZONTAL CONTROL STATIONS submitted with this survey.

I. HYDROGRAPHIC POSITION CONTROL *SEE ALSO SECTION 2.2. OF THE EVALUATION REPORT.*

Position control was multiple LOP, utilizing Motorola Mini-Ranger shore stations. Control station positions were entered into the HDAPS Control Station Tables. (See APPENDIX III, LIST OF

HORIZONTAL CONTROL STATIONS). During the course of the survey mini-ranger codes were changed several times due to heavy mini-ranger activity in the area. To facilitate the tracking of mini-ranger remotes the serial numbers of the remotes, RPU's, and R/T's have been added to C-O tables.

Equipment serial numbers appear as part of the header information on each days data print out. The Falcon remote units are identified by their position and code numbers.

System checks were conducted in accordance with the Field Procedures Manual and appear as HDAPS screen dumps on the data printouts.

All survey offsets were applied on-line using the HDAPS Offset Table number 1.

At no time during this project did the maximum residual consistently exceed 0.5 mm at the survey scale (5 meters) nor did the 95% confidence ECR consistently exceeded 1.5 mm at the survey scale (15 meters). Data not meeting these requirements were examined and high residuals either accepted or smoothed and high ECR's either smoothed or rejected.

J. SHORELINE *SEE ALSO SECTION 2.6. OF THE EVALUATION REPORT.*

Not applicable as per project instructions.

K. CROSSLINES *SEE ALSO SECTION 3.2. OF THE EVALUATION REPORT.*

19.5 miles of crosslines were run on this survey and they represent 7.0% of all hydrography. Comparison to mainscheme soundings showed good agreement with random differences of ± 0.2 meters.

L. JUNCTIONS *SEE SECTION 5. OF THE EVALUATION REPORT.*

Not applicable as per project instructions.

M. COMPARISON WITH PRIOR SURVEYS *SEE ALSO SECTION 6. OF THE EVALUATION REPORT*

Comparisons were made to following prior surveys:

<u>SURVEY</u>	<u>DATE</u>	<u>SCALE</u>
H-9374WD	197 8 4	1:40,000
H-10206	1985	1: 4 0,000
H-10226	198 6 7	1:20,000

Comparisons showed excellent agreement with the majority of survey soundings 0 to 1 foot shoaler than the prior surveys.

AWOIS 3625

This item is listed as a ~~sounding and wire drag~~ ^{grounding 58ft (17.7M)} ~~hang at depth of 57.0ft~~ ^(17.4M) originating from survey H-9374/73WD--OPR-479-RU/HE-73. The HECK was required to complete 200% side scan coverage of this item in order to disprove it. In addition if anything was found within the AWOIS circle divers were required to investigate in order to verify or disprove this item. 200% side scan coverage was accomplished during the running of normal mainscheme hydrography. No contacts were found anywhere within the boundaries of the AWOIS circle. The center of the AWOIS circle is located at the following position:

LAT 30°06'27.74"N LON 088°02'23.98"W

Recommendation: AWOIS 3625, charted as "Obstruction Wire Cleared to 57ft", is to be considered disproved and should be removed from the chart. *Do Not Concur. SEE SECTION 6.b.i) OF THE EVALUATION REPORT.*

AWOIS 7333

This item is listed as an obstruction with a least depth of 61.0ft originating from survey H10226/86-88--OPR-J217-HFP-83. This item was further described as bridge rubble. HECK was required to complete 200% side scan coverage of this item in order to disprove it. In addition if anything was found within the AWOIS circle divers were required to investigate in order to verify or disprove this item. 100% side scan coverage was accomplished during the running of normal mainscheme hydrography. Several targets were found to exist in the vicinity of this item. Target 803.30 lies within the radius of the AWOIS. Target 803.30 was investigated by HECK divers on DOY 260 and was found to be bridge rubble. The divers obtained a lead line least depth of 18.8⁷ meters (61.7ft), and a height off the bottom of 2 meters (6.56ft).

POSITION INFORMATION;

POSITION # 1478

LAT 30°04' ~~10.99~~ ^{16.88} "N LON 088°06'26.1⁷ "W

E:16085.4 N:7729.3

LORAN | W:12713.5 X:29882.0 Y:47041.2 Z:64078.1

Recommendation: AWOIS 7333, charted as "Obstruction 61ft" ^(18.7M), is to remain as charted using the surveyed position. *CONCUR. SEE ALSO SECTION 6.a.3)a) OF THE EVALUATION REPORT.*

11360

AWOIS 7334

*SEE ALSO SECTION
6.2.3)b) OF THE
EVALUATION REPORT*

This item is listed as an obstruction (bridge rubble) with a least depth of 21 meters (69ft) originating from survey H10226/86-88--OPR-J217-HFP-83. HECK was required to complete 200% side scan coverage of this item in order to disprove it. Six targets were found to lay within the boundaries of the AWOIS: 386.78, 387.03, 387.10, 387.20, 387.30, 387.38. HECK divers investigated these items on DOY 283 and determined lead line least depths for each position and depth information is provided for each item below. ✓

TGT 386.78; POSITION # 1683
LEAST DEPTH: 20.⁶ METERS (67.⁶ FT)
HEIGHT OFF BOTTOM: .61 METERS (2FT)
LAT 30°05'30.62"N LON 088°07'29.00"W ✓
E: 14403.7 N: 10181.8
LORAN ; W:12703.3 X:29877.0 Y:47047.0 Z:64076.9

TGT 387.03; DETERMINED TO BE INSIGNIFICANT IN RELATION TO THE OTHER TARGETS AND WAS NOT FURTHER INVESTIGATED
NOTE: THIS CONTACT IS CLOSEST TO THE POSITION OF AWOIS #7334 AS DETERMINED BY SIDE SCAN SONAR.

TGT 387.10; DETERMINED TO BE INSIGNIFICANT IN RELATION TO THE OTHER TARGETS AND WAS NOT FURTHER INVESTIGATED.

TGT 387.20; DETERMINED TO BE INSIGNIFICANT IN RELATION TO THE OTHER TARGETS AND WAS NOT FURTHER INVESTIGATED.

TGT 387.30; POSITION # 1684
LEAST DEPTH: 21.1 METERS (69.2FT)
HEIGHT OFF BOTTOM: 1.3 METERS (4.4FT)
LAT 30°05'29.72"N LON 088°07'22.39"W
E: 14580.8 N: 10153.9
LORAN ; W:12704.5 X:29878.0 Y:47046.9 Z:64076.9

TGT 387.38; POSITION # 1686
LEAST DEPTH: 20.⁵ METERS (67.³ FT)
HEIGHT OFF BOTTOM: 1.2 METERS (4FT)
LAT 30°05'31.3⁶"N LON 088°07'21.39"W
E: 14607.5 N: 10202.8
LORAN ; W:12704.6 X:29787.3 Y:47047.0 Z:64076.9

Recommendation: AWOIS 7334, charted as "Obstruction 69ft", is to be considered verified. The chart scale prohibits the charting of all these items, therefore, the charted information should be revised to "Obstruction 67.0ft" using the position information associated with target 387.38.

AWOIS 7335

*SEE ALSO SECTION
6.2.3 b) OF THE
EVALUATION REPORT*

This item is listed as an obstruction (bridge rubble) with a least depth of 19.5 meters (64ft) originating from survey H10226/86/88--OPR-J217-HFP-83. HECK was required to complete 200% side scan coverage of this item in order to disprove it. Three targets were found to lay within the boundaries of the AWOIS: 374.29, 374.56, 374.62. HECK divers investigated these items on DOY 283 and determined lead line least depths for each position and depth information is provided for each item below. ✓

TGT 374.29; POSITION # 1680
LEAST DEPTH: 18.5 METERS (60.7FT) — *LEAST DEPTH FOUND FOR AWOIS ITEMS #7334 AND #7335*
HEIGHT OFF BOTTOM: 2.28 METERS (7.5FT)
LAT 30°05'33.68"N LON 088°07'19.54"W
E: 14657.2 N: 10276.0
LORAN ; W:12704.9 X:----- Y:47047.1 Z:64076.8

TGT 374.56; POSITION # 1681
LEAST DEPTH: 21.5 METERS (69.8FT)
HEIGHT OFF BOTTOM: 0.36 METERS (1.2FT)
LAT 30°05'34.87"N LON 088°07'23.46"W
E: 14552.2 N: 10312.6
LORAN ; W:12704.3 X:31201.3 Y:47047.2 Z:64076.8

TGT 374.62; DETERMINED TO BE INSIGNIFICANT IN RELATION TO THE OTHER TARGETS AND WAS NOT FURTHER INVESTIGATED.

Recommendation: AWOIS 7335, charted as "Obstruction 64ft", is to be considered verified. The chart scale prohibits the charting of all these items, therefore, the charted information should be revised to "Obstruction 60.7ft" using the position information associated with target 374.29. *Concur* ✓

AWOIS 7376

This item is listed as an "obstruction 65ft" added during office processing originating from survey H10206/85--OPR-J217-MI-85. HECK was required to complete 400% side scan coverage of this item in order to disprove it. In addition if anything was found within the AWOIS circle divers were required to investigate in order to verify or disprove this

★
11376 ✓
11360 ✓

item. 100% side scan coverage was accomplished during the running of normal mainscheme hydrography. The last 300% of coverage was run on DOY 256. No contacts were found anywhere within the boundaries of the AWOIS circle. The center of the AWOIS circle is located at the following position:

LAT 30°05'32.01"N LON 088°04'36.44"W - AWOIS #7376

Recommendation: AWOIS 7376, charted as *dangerous submerged* "Obstruction 65ft", *(20M)* is to be considered disproved and should be removed from the chart.

CONCOR 11376 ✓
(18.7M) 11360 ✓

AWOIS 7378

This item is listed as an "obstruction 61ft" *^* added during office processing originating from survey H10206/85--OPR-J217-MI-85. HECK was required to complete 200% side scan coverage of this item in order to disprove it. In addition if anything was found within the AWOIS circle divers were required to investigate in order to verify or disprove this item. 100% side scan coverage was accomplished during the running of normal mainscheme hydrography. The last 100% of coverage was run on DOY 261. No contacts were found anywhere within the boundaries of the AWOIS circle. The center of the AWOIS circle is located at the following position:

LAT 30°05'29.11"N LON 088°02'14.12"W - AWOIS #7378

Recommendation: AWOIS 7378, charted as *A DANGEROUS SOB.M.* "Obstruction 61ft", is to be considered disproved and should be removed from the chart.

CONCOR 11376 ✓
11360 ✓

N. COMPARISON WITH THE CHART *SEE ALSO SECTION 7.2. OF THE EVALUATION REPORT.*

Comparison of surveyed soundings were made to the following NOS charts:

<u>CHART</u>	<u>EDITION</u>	<u>DATE</u>	<u>SCALE</u>
11376	41st	<i>16</i> Mar/91	1:80,000
11360	32nd	<i>30</i> Mar/91.	1:456,394

The soundings agreed well with the charted soundings on 11376 consistently 0 to 3 feet shoaler than the survey. Chart 11360 contained only one 11 fathom sounding in the survey area and agreement was exact.

HECK has noted, through discussions with the pilots and local fishermen, that the present chart layout for the approaches to Mobile bay is not adequate. A 1:80,000 scale chart extending from about mid-bay to the southern extreme of this survey area would be of great use to shipping interests and fishermen. *CONCUR*

No danger to navigation reports were submitted as a result of this survey.

Fifty eight (58) contacts were identified during this survey. Eight (8) targets were identified as warranting additional investigation based on either their height off the bottom ($\geq .5$ meters in < 20 meters of water or ≥ 1.5 meters in > 20 meters of water), their appearance, or their relation to an assigned AWOIS item. All such contacts were investigated with additional side scan coverage and/or divers. The following is a list of targets with associated investigation results and recommendations:

TARGET

NARRATIVE

374.29	See section "M" AWOIS 7335.
374.56	See section "M" AWOIS 7335.
386.78	See section "M" AWOIS 7334.
387.03	See section "M" AWOIS 7334.
387.30	See section "M" AWOIS 7334.
387.38	See section "M" AWOIS 7334.
786.64	Target 786.64 is identified on contact table 1 with a computed height off the bottom of 1.7 meters (5.6ft) in 20.5 meters (67.2ft) of water. This target was further investigated because of its location in relation to AWOIS 7333. Ship's divers investigated this item on DOY 260 and found bridge rubble. A least depth of 19. ³ meters (63.6ft) was found using lead line with a height off the bottom of 1.3 meters(4.3ft). The target is located at the following position: ✓

POSITION # 1479
LAT 30°04'17.43⁴"N LON 088°06'30.98⁹"W
E: 15956.4 N: 7927.54
LORAN W:12712.8 X:29881.7 Y:47041.7 Z:64078.1

Recommendation: This item's relationship to AWOIS 7333, and the scale of the chart (1:456,394) make this item ^{LESS} insignificant. This item should not be added to the chart. *Concur. Shown on the present survey as 19.3 M (63ft) Obstr (bridge rubble)*

971.10

Target 971.10 is identified on contact table 2 with a computed height off the bottom of 1.5 meters (4.9ft) in 22.5 meters (73.8ft) of water. This target was determined to be insignificant due to the surrounding depth of water. Further investigation was conducted for information purposes. The ship made additional side scan passes on DOY 283. A recon line was run using the 75 meter scale between positions 1692 and 1693 with four targets found. All targets are considered the same as 971.10 with no significant least depths found.

POSITION # 971.10
LAT 30°03'44.28"N LON 088°05'08.24"W
E: 18172.3 N: 6906.04

Recommendation: This item is not significant and should not be added to the chart. *Do not concur. See section 7.a. of the Evaluation Report*

O. ADEQUACY OF SURVEY

This survey has met or exceeded 1:10000 specifications, and is adequate to supersede all prior surveys for the purposes of charting the depths and hazards to navigation within the survey area.

P. AIDS TO NAVIGATION *SEE also section 7.c. of the Evaluation Report*

No aids to navigation were found in the area of this survey.

Q. STATISTICS

ITEM	for... NOAA Ship HECK	AMOUNT
1. Total No. of Positions		1697 Fixes
2. Lineal NM of Soundings		289.5 NMi
3. Square NM Hydrography		28.9 NMi ²
4. Days of Production		8 Days
5. Bottom Samples		12
6. Tide Stations Established		None
7. Current Stations Established		None
8. Velocity Casts Performed		3 Casts
9. Magnetic Stations Established		None
10. Detached Positions		19

R. MISCELLANEOUS

No anomalies in either tide or current were noted.

No magnetic anomalies were noted.

Twelve bottom samples were taken, Log Sheet M appended, and submitted to the Smithsonian Institution. A copy will be included in section II of the separates. No actual samples were sent as per project instruction. The area has been extensively sampled in the past. Minimal samples were taken because samples taken by HECK match those from prior surveys.

User evaluation and chart agent visits were conducted on October 31 and November 1. Required reports will be submitted.


S. RECOMMENDATIONS

Recommendations concerning specific AWOIS items and depths are located in sections M and N of this report.

T. REFERRAL TO REPORTS

Electronic correction report included with H-10393

Respectfully Submitted,


Kevin N. Harbison, LT(jg), NOAA
Field Operations Officer
NOAA Ship HECK

DN: 260
 DATE: Sept 17 1991

DIVING OPERATIONS
 OPR-J461-HE-91
 APPROACHES TO MOBILE BAY UNIT: NOAA SHIP HECK S591

LOCATION: GULF OF MEXICO

POS: # 1478
 OF DIVE TARGET 803.30

DIVE MASTER: LT. MOELLER
 TENDERS: SS LEWIS

DIVERS : LT MOELLER
LTjg. HARBISON
ENS. MARTIN

DIVE PLAN: CIRCLE SEARCH AND ITEM INVESTIGATION. MAX DEPTH: 70 FT
 TARGET RADIUS: 25m MAX TIME : 26 MIN
 DEPTH: (1) 18.9m PNEUMO LEAD LINE AVERAGE LEAST DEPTH: 18.9 FT
 LEAST DEPTH TIME : 19:50

EQUIPMENT USED: OPEN CIRCUIT SCUBA.

PNEUMOFATHOMETER:

CONDITIONS:

WIND : DIR ESE KTS 0-5

SEAS : DIR ESE FT 0-1

CURRENT : KTS

SURFACE 0.3 KTS
BOTTOM 0.0 KTS

S/N 8607004N (SHALLOW) GAGE

S/N 8704986 (DEEP) GAGE

VISIBILITY: 60 FT +

AIR TEMP: 86°F

WATER TEMP: 85°F

ALL TIMES GMT

DIVERS NAME	SI	GROUP	RNT	TNK PRESURE IN / OUT	PRES. CHANGE	DIVE TIMES DOWN/UP	BOTTOM TIME	DEPTH	GROUP
MOELLER				<u>1</u>					
1						D <u>1943</u>	<u>26</u>	<u>70</u>	<u>F</u>
HARBISON				<u>2700 / 500</u>					
1						U <u>2009</u>	<u>26</u>	<u>70</u>	<u>F</u>
MARTIN				<u>2850 / 600</u>					

2				IN <u>1</u>		D			
HARBISON									
2				OUT <u>1</u>		U			
MARTIN									

DIVERS POST DIVE COMMENTS: HIGHT off Bottom 2.0m BRIDGE

AND DIAGRAM: RUBBLE, CONCRETE WITH PROTRUDING REBAR.

Position # 1478

L 30° 04' ^{11.00} 10.99" N λ 088° 06' 26.16" W

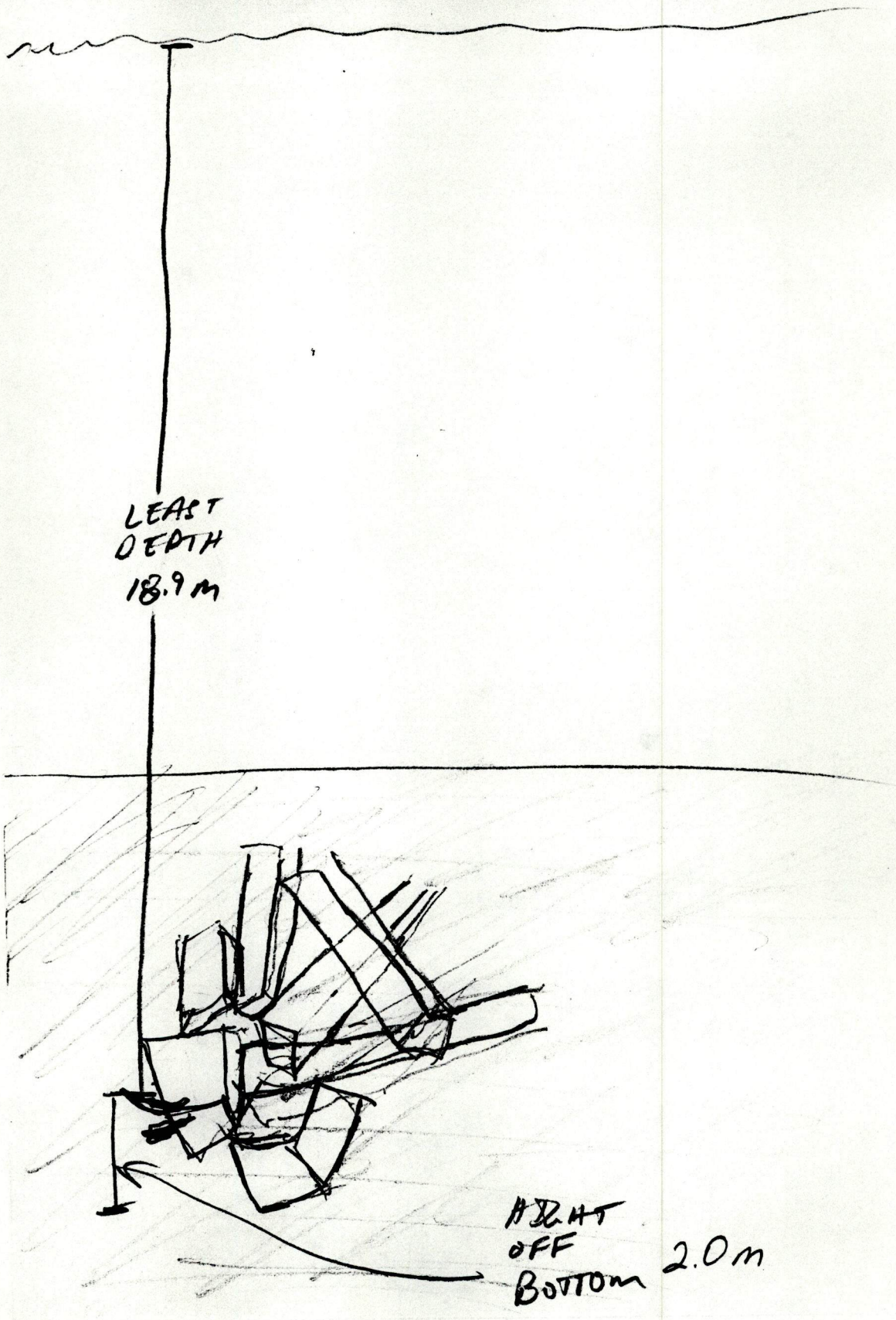
E: 16085.4 N: 7729.3

Concor

AW01 S
7333
122

DIVE MASTER SIGNATURE _____

TGT 803.30



DN: 260
 DATE: Sept. 1991

DIVING OPERATIONS
 OPR-J461-HE-91
 APPROACHES TO MOBILE BAY UNIT: NOAA SHIP HECK S591

LOCATION: GULF OF MEXICO

POS: # 1479
 OF DIVE TARGET 786.64

DIVE MASTER: LT. MOELLER
 TENDERS: SS LEWIS

DIVERS: LT. MOELLER
LTJG. HARBISON
ENS. MARTIN

DIVE PLAN: CIRCLE SEARCH AND ITEM INVESTIGATION. MAX DEPTH: 70 FT
 TARGET RADIUS: 15m MAX TIME: 20 MIN
 DEPTH: (1) 19.8³ PNEUMO/LEAD LINE AVERAGE LEAST DEPTH: 19.5 FT
 LEAST DEPTH TIME: 20:47

EQUIPMENT USED: OPEN CIRCUIT SCUBA.

PNEUMOFATHOMETER:

CONDITIONS:

S/N 8607004N (SHALLOW) GAGE
 S/N 8704986 (DEEP) GAGE
 VISIBILITY: 60 FT
 AIR TEMP: 86°F
 WATER TEMP: 85°F

WIND: DIR ESE KTS 0-5

SEAS: DIR ESE FT 0-1

CURRENT: KTS

SURFACE 0.5 KTS

BOTTOM 0.3 KTS

ALL TIMES GMT

DIVERS NAME	SI	GROUP	RNT	TNK PRESURE IN / OUT	PRES. CHANGE	DIVE TIMES DOWN/UP	BOTTOM TIME	DEPTH	GROUP
MOELLER				<u>1</u>					
1						D <u>2042</u>			
HARBISON				<u>2700 / 500</u>	<u>2200</u>		<u>21</u>	<u>70</u>	
1						U <u>2103</u>			
MARTIN				<u>3000 / 800</u>	<u>2200</u>		<u>21</u>	<u>70</u>	

2	MOELLER			IN <u>1</u>		D			
2	HARBISON			OUT <u>1</u>		U			
	MARTIN								

DIVERS POST DIVE COMMENTS: HEIGHT OFF BOTTOM 1.3M BRIDGE RUBBLE,
 AND DIAGRAM: CONCRETE WITH PROTRUDING REBAR.

Position # 1479

L 30° 04' 17.43" N λ 088° 06' 30.98" W

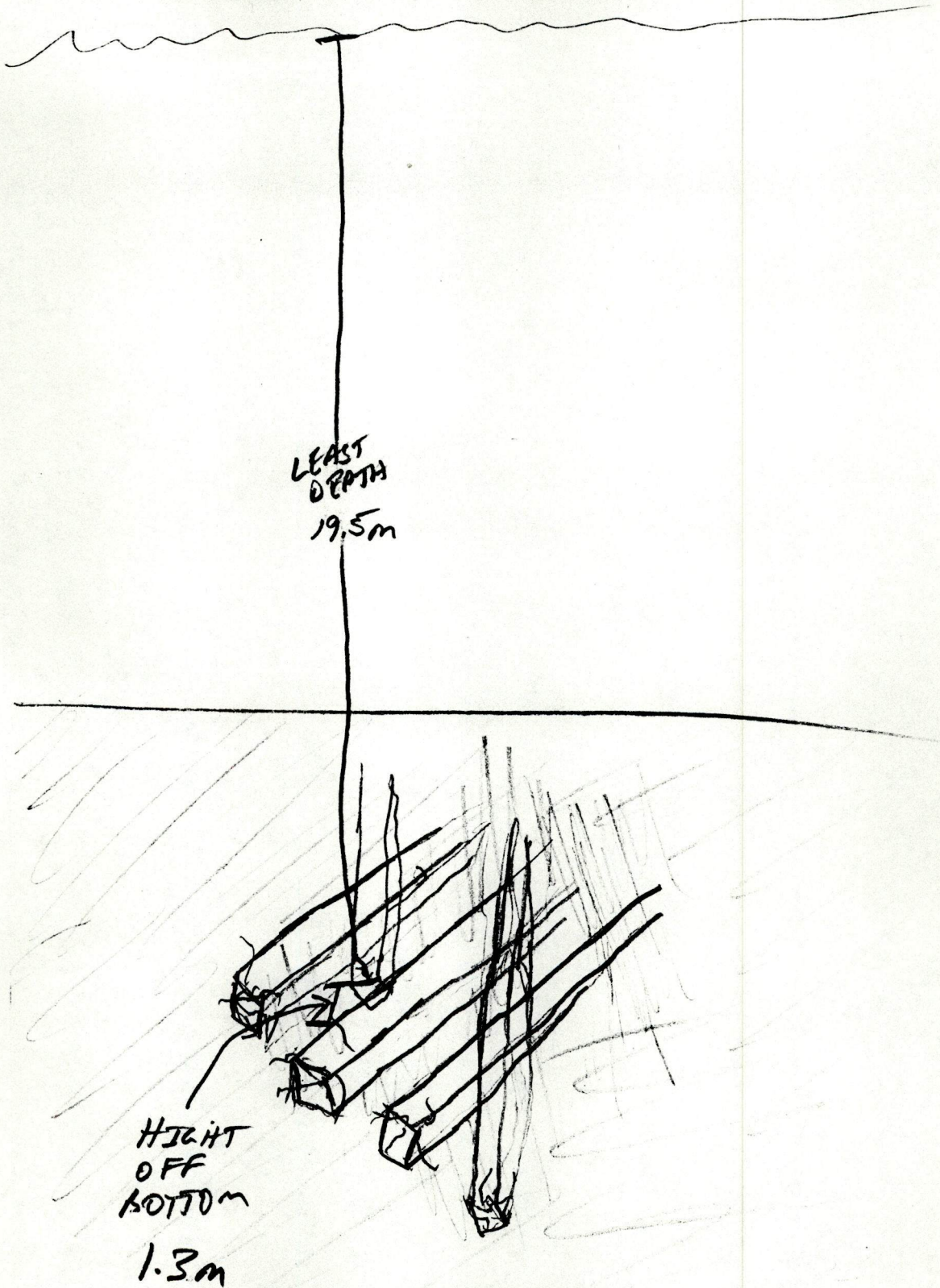
E: 15956.4 N: 7927.54

LORAN - W: 12712.8 X: 29881.7 Y: 47041 Z: 64078.1

DIVE MASTER SIGNATURE _____

CONCRETE
AW015
#7333

TGT 786.64



LEAST
DEPTH
19.5m

HEIGHT
OFF
BOTTOM
1.3m

DIVING OPERATIONS
OPR-J461-HE-91

DN: 283
DATE: OCT 10, 1991

APPROACHES TO MOBILE BAY UNIT: NOAA SHIP HECK S591

LOCATION: GULF OF MEXICO

POS: # 1680
OF DIVE TARGET
TARGET # 374.29
DIVERS : ~~LT MOELLER~~ CO.
LTJg. HARBISON

DIVE MASTER: LT. MOELLER
TENDERS: SS LEWIS

DIVE PLAN: CIRCLE SEARCH AND ITEM INVESTIGATION. MAX DEPTH: 70.5 FT
TARGET RADIUS: 40 meter MAX TIME: 13 MIN

DEPTH: (1) 61.0 PNEUMO/LEAD LINE
18.5M

AVERAGE LEAST DEPTH: 61.0 FT
LEAST DEPTH TIME: 15:20

EQUIPMENT USED: OPEN CIRCUIT SCUBA.

PNEUMOFATHOMETER:

CONDITIONS:

S/N 8607004N (SHALLOW) GAGE
S/N 8704986 (DEEP) GAGE

WIND : DIR NE KTS 10
SEAS : DIR NE FT 1-2 ft
CURRENT : KTS NE 0.5 kt.

VISIBILITY: _____
AIR TEMP: 21.4°
WATER TEMP: 19.4°

ALL TIMES UTC

DIVERS NAME	SI	GROUP	RNT	TNK PRESURE IN / OUT	PRES. CHANGE	DIVE TIMES DOWN/UP	BOTTOM TIME	DEPTH	GROUP
# <u>CO.</u> MOELLER				<u>2900 / 1600</u>	<u>1300</u>	<u>D 1504</u>	<u>13</u>	<u>70</u>	<u>D</u>
<u>1</u> HARBISON				<u>2500 / 700</u>	<u>1800</u>	<u>U 1517</u>	<u>13</u>	<u>70</u>	<u>D</u>
<u>1</u> MARTIN				<u>_____ / _____</u>					

<u>2</u> MOELLER				IN _____ / _____		D _____			
<u>2</u> HARBISON				OUT _____ / _____		U _____			
<u>_____</u> MARTIN									

DIVERS POST DIVE COMMENTS: 1. DIVE ON TET 374.29. FOUND WHAT APPEARS TO BE PART OF A BRIDGE SUPPORT. MEASURED A LEAST DEPTH OF 61 FEET AND A HEIGHT OFF THE BOTTOM OF 7.5 FEET.

POSITION # 1680

L 30° 05' 33.68" N 2 088° 07' 19.54" W

E: 14657.2 N: 10276.0

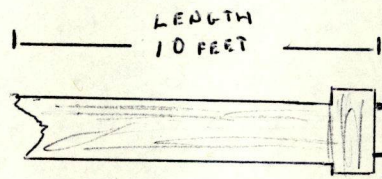
CONCOR

AW 015
1334

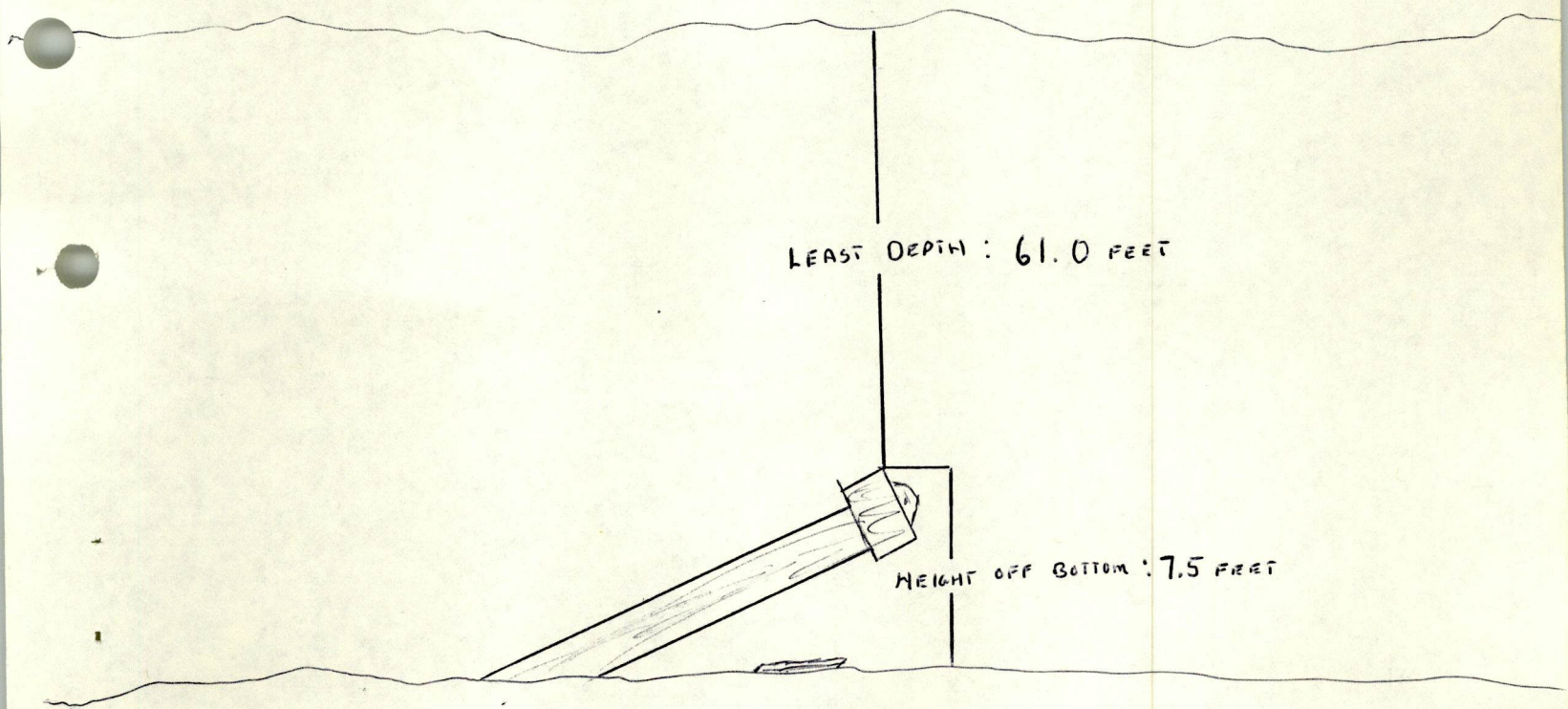
DIVE MASTER SIGNATURE _____

TOP

T&T 374.29



SIDE



DN: 283

DATE: OCT 10, 1991

DIVING OPERATIONS

OPR-J461-HE-91

APPROACHES TO MOBILE BAY UNIT: NOAA SHIP HECK S591

LOCATION: GULF OF MEXICO

DIVE MASTER: LT. MOELLER

TENDERS: SS LEWIS

POS: # 1681

OF DIVE TARGET

TARGET # 374.56

DIVERS: ~~LT~~ MOELLER CO.

LTJG. HARBISON

DIVE PLAN: CIRCLE SEARCH AND ITEM INVESTIGATION. MAX DEPTH: 70.5 FT

TARGET RADIUS: 40 meter MAX TIME: 24 MIN

AVERAGE LEAST DEPTH: 70 FT

LEAST DEPTH TIME: 16:00

DEPTH: (1) 70.0 PNEUMO/LEAD LINE

21.2M

EQUIPMENT USED: OPEN CIRCUIT SCUBA.

PNEUMOFATHOMETER:

S/N 8607004N (SHALLOW) GAGE

S/N 8704986 (DEEP) GAGE

VISIBILITY: _____

AIR TEMP: 21.4 C

WATER TEMP: 19.4 C

CONDITIONS:

WIND: DIR NE KTS 10

SEAS: DIR NE FT 1-2 ft.

CURRENT: KTS NE 0.5 kt.

ALL TIMES UTC

DIVERS	SI	GROUP	RNT	TNK PRESURE	PRES.	DIVE TIMES	BOTTOM	DEPTH	GROUP
NAME				IN / OUT	CHANGE	DOWN/UP	TIME		
# <u>C.O.</u>									
MOELLER				<u>2800 / 1300</u>					
1					<u>1500</u>	D <u>1540</u>	<u>24</u>	<u>70.5</u>	D
HARBISON				<u>2600 / 500</u>					
1					<u>2100</u>	U <u>1604</u>	<u>24</u>	<u>70.5</u>	D
MARTIN				<u>_____ / _____</u>					

MOELLER				IN _____ / _____		D _____			
2									
HARBISON				OUT _____ / _____		U _____			
2									
MARTIN									

DIVERS POST DIVE COMMENTS: 1. DIVER ON TGT 374.56. FOUND BRIDGE RUBBLE. MEASURED AND DIAGRAM:

LEAST DEPTH OF 70 FEET AND A HEIGHT OFF THE BOTTOM OF 1.2 FEET.

POSITION # 1681

L 30° 05' 34.87" N λ 088° 07' 23.46" W

E: 14552.2 N: 10312.6

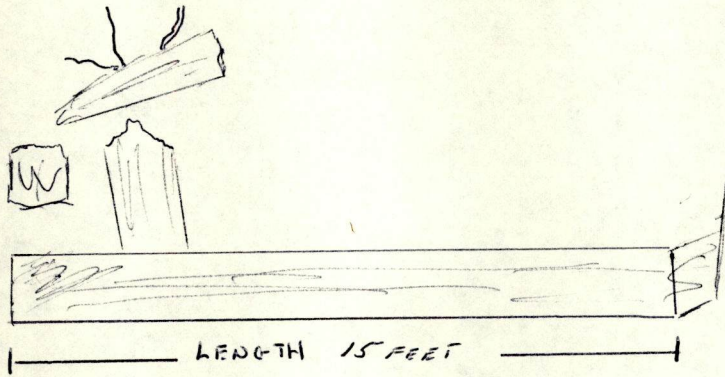
CONVERT

AWOIS # 7334

DIVE MASTER SIGNATURE _____

TOP

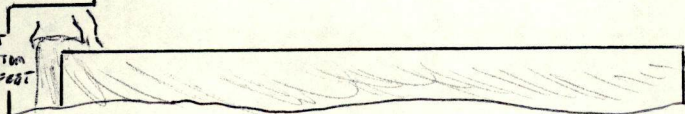
TOT 374.56



SIDE

LEAST DEPTH
70 FEET

HEIGHT
OFF BOTTOM
1.2 FEET



DIVING OPERATIONS

OPR-J461-HE-91

DN: 283
DATE: Oct 10, 1991

APPROACHES TO MOBILE BAY UNIT: NOAA SHIP HECK S591

LOCATION: GULF OF MEXICO

POS: # 1683

OF DIVE TARGET

TARGET # 386.78

DIVE MASTER: LT. MOELLER

DIVERS : LT MOELLER

TENDERS: SS LEWIS

LT J. HARBISON

ENS. MARTIN

DIVE PLAN: CIRCLE SEARCH AND ITEM INVESTIGATION. MAX DEPTH: 70 FT

TARGET RADIUS: 40 meter MAX TIME : 11 MIN

AVERAGE LEAST DEPTH: 68 FT

LEAST DEPTH TIME : 17:00

DEPTH: (1) 68.0 PNEUMO/LEAD LINE

EQUIPMENT USED: OPEN CIRCUIT SCUBA.

PNEUMOFATHOMETER:

S/N 8607004N (SHALLOW) GAGE

S/N 8704986 (DEEP) GAGE

VISIBILITY:

AIR TEMP: 21.4 °C

WATER TEMP: 19.4 °C

CONDITIONS:

WIND : DIR NE KTS 10

SEAS : DIR NE FT 1-2 ft.

CURRENT : KTS NE 0.5

ALL TIMES UTC

DIVERS NAME	SI	GROUP	RNT	TNK PRESURE IN / OUT	PRES. CHANGE	DIVE TIMES DOWN/UP	BOTTOM TIME	DEPTH	GROUP
MOELLER				2900 / 1650	1250	D 1655	11	70	D
HARBISON				/		U 1706	11	70	D
MARTIN				3000 / 1750	1250				

MOELLER		D		IN 3000 / 1300		D 1727	16	70	H
HARBISON				OUT 3000 / 800	2200	U 1743	16	70	H
MARTIN		D							

DIVERS POST DIVE COMMENTS: 1st DIVE TARGET 386.78 WAS BRIDGE AND DIAGRAM:

RUBBLE, LEAST DEPTH OF 68'

AW 015
#7334

2nd DIVE NF DIVE BUOY DRIFTED OFF OF TARGET

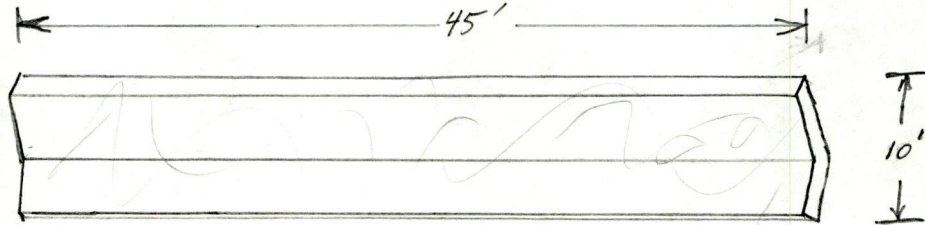
CONCUR

SEARCH RADIUS 40m Position # 1683

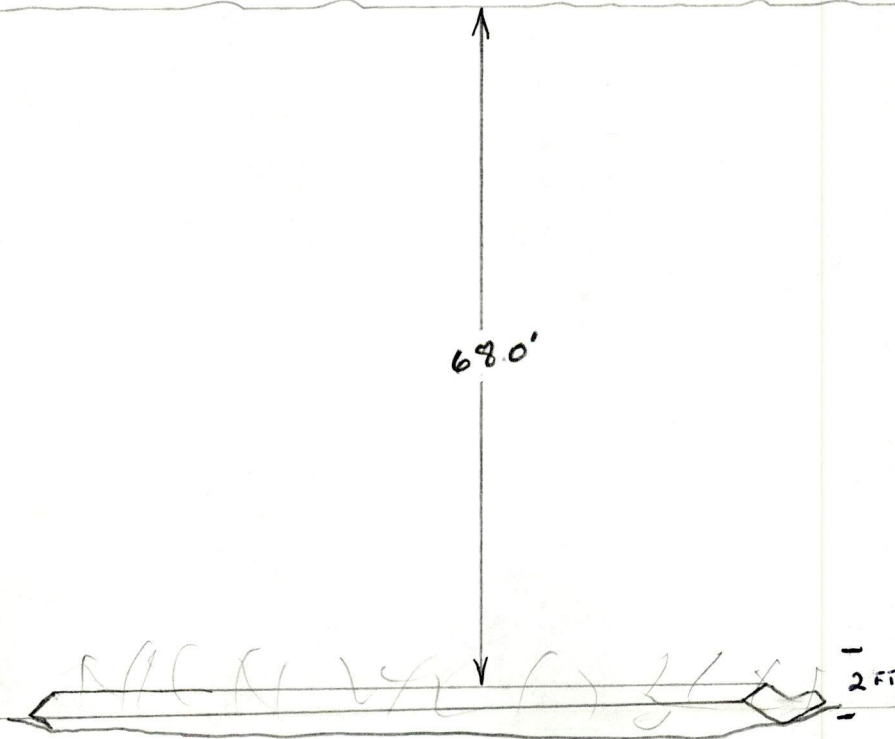
L 30° 05' 30.62" N 2 088° 07' 29.00" W

DIVE MASTER SIGNATURE _____ E: 14403.7 N: 10181.8

TOP



SIDE



DIVING OPERATIONS
OPR-J461-HE-91

DN: 283
DATE: Oct 10, 1991

APPROACHES TO MOBILE BAY UNIT: NOAA SHIP HECK S591

LOCATION: GULF OF MEXICO

POS: # 1684
OF DIVE TARGET
TARGET # 387.30

DIVE MASTER: LT. MOELLER
TENDERS: SS LEWIS

DIVERS: ~~LT. MOELLER~~ C.O.
LTJg. HARBISON

DIVE PLAN: CIRCLE SEARCH AND ITEM INVESTIGATION. MAX DEPTH: 75 FT
TARGET RADIUS: 40 meter MAX TIME: _____ MIN

DEPTH: (1) 70 PNEUMO/LEAD LINE

AVERAGE LEAST DEPTH: 70 FT
LEAST DEPTH TIME: 19:30

EQUIPMENT USED: OPEN CIRCUIT SCUBA.

PNEUMOFATHOMETER:

CONDITIONS:

S/N 8607004N (SHALLOW) GAGE
S/N 8704986 (DEEP) GAGE

WIND: DIR NE KTS 10

VISIBILITY: _____

SEAS: DIR NE FT 1-2

AIR TEMP: 21.4 °C

CURRENT: KTS NE 0.5

WATER TEMP: 19.4 °C

ALL TIMES UTC

DIVERS	SI	GROUP	RNT	TNK PRESURE	PRES.	DIVE TIMES	BOTTOM	DEPTH	GROUP
NAME				IN / OUT	CHANGE	DOWN/UP	TIME		
# <u>C.O.</u>									
MOELLER				<u>2950 / 1450</u>	<u>1500</u>	D <u>1909</u>	<u>20</u>		
<u>G.K.</u> HARBISON				<u>2700 / 800</u>	<u>1900</u>	U <u>1929</u>	<u>20</u>		
MARTIN				<u>_____ / _____</u>					

MOELLER				IN _____ / _____		D _____			
HARBISON				OUT _____ / _____		U _____			
MARTIN									

DIVERS POST DIVE COMMENTS: 1. Dive on TGT 387.30. FOUND BRIDGE RUBBLE MEASURED AND DIAGRAM:

A LEAST DEPTH OF 70 FEET AND A HEIGHT OFF THE BOTTOM OF 4.4 FEET.

POSITION # 1684

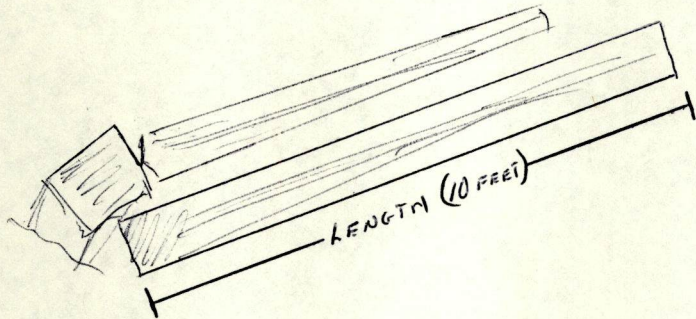
L 30° 05' 29.72" N λ 088° 07' 22.39" W

E: 14580.8 N: 10153.9

*AW 015 #
7334*

Comment

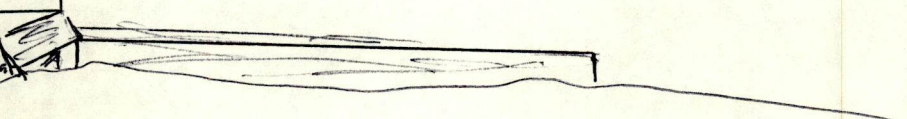
DIVE MASTER SIGNATURE _____



SIDE

LEAST DEPTH 70 FEET

HEIGHT OF
BOTTOM



DIVING OPERATIONS

OPR-J461-HE-91

DN: 283
 DATE: Oct 10, 1991

APPROACHES TO MOBILE BAY UNIT: NOAA SHIP HECK S591

POS: # _____
 OF DIVE TARGET

LOCATION: GULF OF MEXICO

TARGET # 387.38

DIVE MASTER: LT. MOELLER _____

DIVERS : LT MOELLER _____

TENDERS: SS LEWIS _____

LTJG. HARBISON _____

ENS. MARTIN _____

DIVE PLAN: CIRCLE SEARCH AND ITEM INVESTIGATION. MAX DEPTH: _____ FT

TARGET RADIUS: 40 meter MAX TIME : _____ MIN

AVERAGE LEAST DEPTH: 68' FT

LEAST DEPTH TIME : 20:20

DEPTH: (1) 68' PNEUMO/LEAD LINE

20.5M

EQUIPMENT USED: OPEN CIRCUIT SCUBA.

PNEUMOFATHOMETER:

S/N 8607004N (SHALLOW) GAGE

S/N 8704986 (DEEP) GAGE

VISIBILITY: _____

AIR TEMP: 21.4

WATER TEMP: 19.4

CONDITIONS:

WIND : DIR NW KTS 3

SEAS : DIR NW FT 1-2

CURRENT : KTS 0.5

ALL TIMES UTC

DIVERS	SI	GROUP	RNT	TNK PRESURE	PRES.	DIVE TIMES	BOTTOM	DEPTH	GROUP
NAME				IN / OUT	CHANGE	DOWN/UP	TIME		
MOELLER				<u>2900 / 1100</u>		<u>D 2005</u>	<u>11</u>		
HARBISON				<u>1</u>		<u>U 2016</u>	<u>11</u>		
MARTIN				<u>3000 / 1400</u>					

MOELLER				IN _____ / _____		D _____			
HARBISON				OUT _____ / _____		U _____			
MARTIN									

DIVERS POST DIVE COMMENTS: TARGET WAS DIRTCE RUBBLE WITH A LEAST
 AND DIAGRAM:

DEPTH OF 68'

POSITION # 1686

L 30° 05' 31.30" N 2 088° 07' 21.39" W

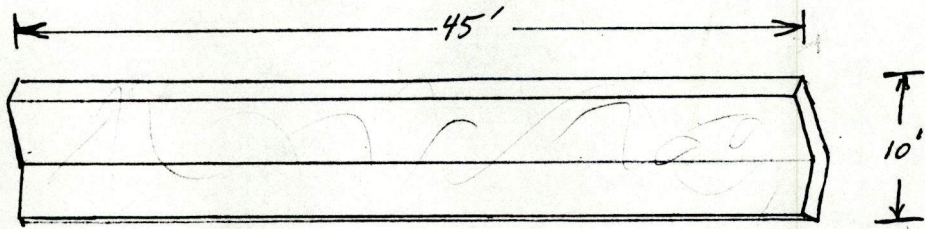
E: 14607.5 N: 10202.8

AWOL'S
#7334

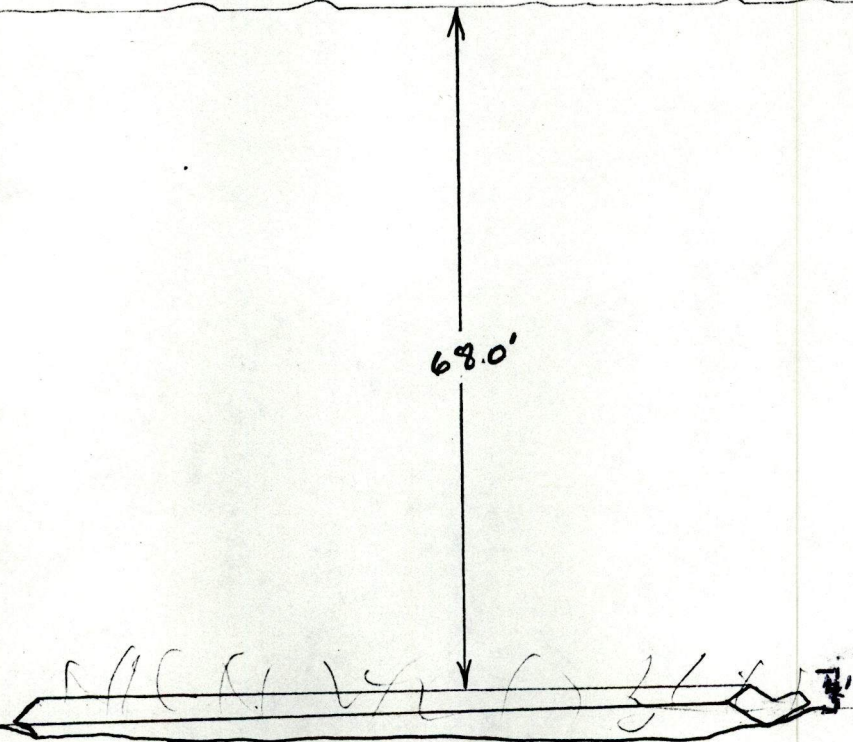
CONVERT

DIVE MASTER SIGNATURE _____

TOP

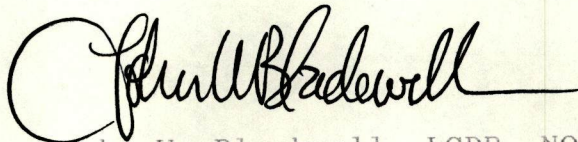


SIDE



VII. LETTER OF APPROVAL

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

A handwritten signature in black ink, appearing to read "John W. Blackwell". The signature is written in a cursive style with a large, prominent initial "J".

John W. Blackwell, LCDR, NOAA
Commanding Officer
NOAA Ship HECK



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Ocean and Earth Sciences
Rockville, Maryland 20852

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: December 16, 1991

MARINE CENTER: Atlantic

OPR: J461

HYDROGRAPHIC SHEET: H-10394

LOCALITY: Southern approach to Mobile Bay, Gulf of Mexico, AL

TIME PERIOD: August 15 - October 10, 1991

TIDE STATIONS USED: 873 5180 Dauphin Island, AL ⁸
Lat. 30° 15.0'N Lon. 80° 04.5'W

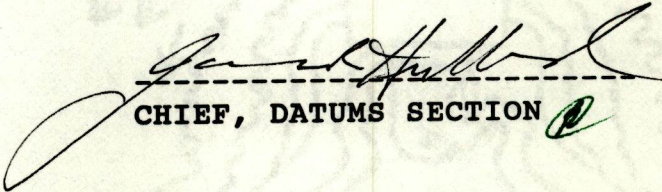
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 2.68 feet

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.2 feet

REMARKS: RECOMMENDED ZONING

Apply a -01 hr 40 min correction to all times, and a X1.23 range ratio to all heights.

NOTE: Hourly heights are tabulated on Central Standard Time.


CHIEF, DATUMS SECTION



GEOGRAPHIC NAMES

Name on Survey	ON CHART NO. 11360 ON PREVIOUS SURVEY NO. ON U.S. QUADRANGLE MAPS FROM LOCAL INFORMATION ON LOCAL MAPS P.O. GUIDE OR MAP GRAND McNALLY ATLAS U.S. LIGHT LIST										
	A	B	C	D	E	F	G	H	K		
ALABAMA (title)	X										1
MEXICO, GULF OF (title)	X										2
MOBILE BAY (title)	X										3
											4
											5
											6
											7
											8
											9
											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25

Approved:

Charles E. Harrington
Chief Geographer - N/C625

NOV 13 1992

N/CG244-48-93

LETTER TRANSMITTING DATA

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

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

FEDERAL EXPRESS

DATE FORWARDED

14 April 1993

NUMBER OF PACKAGES

1 box, 1 tube

TO:

Chief, Data Control Section, N/CG243
 NOAA/National Ocean Service
 Room 151, WSC-2, 6015 Executive Blvd.,
 Rockville, Maryland 20852

NOTE: A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

H-10394

Alabama, Gulf of Mexico, Southern Approach to Mobile Bay

1 Tube containing:

- ~~1~~ Final Smooth Sheet
- ~~1~~ Final Smooth Position Overlay
- ~~2~~ Excess Overlays
- ~~11~~ Smooth Field Plots (4 (four) swath, 2 (two) track, 1 (one) contact, and 4 (four) sounding plots)

1 Box containing:

- ~~1~~ Original Descriptive Report for H-10394
- ~~1~~ Envelope containing Miscellaneous Data removed from the original Descriptive Report
- ~~1~~ Envelope containing Supplemental data removed from printouts
- ~~1~~ Envelope containing sounding correctors (velocity, tide and TRA data)
- ~~1~~ Cahier with final sounding, position, and control listing
- ~~18~~ Envelopes containing, fathograms and daily printouts and side scan sonograms for VESNO 9140 for JDs: 227, 253 (4), 254 (5), 255 (4), 256, 260, 261, and 283

FROM: (Signature)

Deborah A. Bland

Deborah A. Bland

RECEIVED THE ABOVE
(Name, Division, Date)

D. S. Clark
4/29/93

Return receipted copy to:

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

04/14/93

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: H-10394

NUMBER OF CONTROL STATIONS

4

NUMBER OF POSITIONS

1665

NUMBER OF SOUNDINGS

12171

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	63	07/01/92
VERIFICATION OF FIELD DATA	95	06/18/92
ELECTRONIC DATA PROCESSING	52	
QUALITY CONTROL CHECKS	99	
EVALUATION AND ANALYSIS	79	11/10/92
FINAL INSPECTION	17	04/03/93
TOTAL TIME	405	
ATLANTIC HYDROGRAPHIC SECTION APPROVAL		04/14/93

**COAST AND GEODETIC SURVEY
ATLANTIC HYDROGRAPHIC SECTION
EVALUATION REPORT**

SURVEY NO.: H-10394

FIELD NO.: HE-10-3-91

Alabama, Gulf of Mexico, Southern Approach to Mobile Bay

SURVEYED: 15 August through 10 October 1991

SCALE: 1:10,000

PROJECT NO.: OPR-J461-HE-91

SOUNDINGS: RAYTHEON DSF-6000N Fathometer and Leadline

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

Chief of Party.....J. W. Blackwell

Surveyed by.....D. W. Moeller
.....K. N. Harbison
.....J. E. Martin
.....W. R. Morris

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

1. INTRODUCTION

a. This is a combined basic hydrographic/side scan sonar survey. The side scan sonar was operated simultaneously with the fathometer during survey operations.

b. No unusual problems were encountered during office processing.

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

2. CONTROL AND SHORELINE

a. Control is adequately discussed in sections H., I., and T. of the Descriptive Report.

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). Office processing of this survey is based on these values. The smooth sheet has been annotated with ticks showing the computed mean shift between the survey datum and the North American Datum of 1927 (NAD 27).

To place this survey on the NAD 27 datum move the projection lines 0.742 seconds (22.844 meters or 2.28 mm at the scale of the survey) north in latitude, and 0.008 seconds (0.216 meters or 0.022 mm at the scale of the survey) east in

longitude.

All geographic positions listed in this report are on NAD 83 unless otherwise specified. Geographic positions for items brought forward from prior sources to the present survey have been converted to NAD 83.

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

3. HYDROGRAPHY

a. Soundings at crossings are in excellent agreement and comply with the criteria found in sections 4.6.1 and 6.3.4.3. of the HYDROGRAPHIC MANUAL.

b. The standard depth curves were drawn in their entirety. A brown curve and dashed curves were also drawn to delineate bottom relief.

c. The development of the bottom configuration and determination of least depths is considered adequate with the following exception:

The following uncharted obstructions found by the present survey are not considered adequately developed or investigated:

	<u>Item (m/ft)</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
11360	Obstr 18 ¹ /59	30°06'22.32"	88°06'58.89"
11377, 11376, 11360	Obstr 17 ⁹ /58	30°06'05.92"	88°06'13.13"
11377, 11376	Obstr 18 ⁹ /62	30°06'05.81"	88°05'38.17"

sndy 59 this location
Echo sounder depth

Additional work to adequately develop these obstructions is recommended at an opportune time.

N/CG241 recommends charting these 3 items as shown on smooth sheet. See also memo from N/CG2442 to N/CG241 dated 8/3/92.

4. CONDITION OF SURVEY

The smooth sheet and accompanying overlays, hydrographic records and reports conform to the requirements of the HYDROGRAPHIC MANUAL, SIDE SCAN SONAR MANUAL, and the FIELD PROCEDURES MANUAL.

5. JUNCTIONS

H-10403 (1991) to the west
 H-10393 (1991) to the north
H-10418 (1992) to the east

Adequate junctions were effected between the present survey and the surveys listed above. Present survey depths are in harmony with the charted hydrography to the south.

6. COMPARISON WITH PRIOR SURVEYS

a. Hydrographic

H-10179 (1985-87) 1:20,000
 H-10206 (1985) 1:40,000
H-10226 (1986-88) 1:20,000

The three (3) prior surveys listed above cover the present survey area in its entirety.

1) Prior survey H-10179 (1985-87) covers the northeast corner of the present survey, north of Latitude 30°05'00"N and east of Longitude 88°01'30"W. Present survey soundings are in good agreement with prior survey soundings in depths less than 20 meters (65 ft). Present survey soundings deeper than 20 meters (65 ft) are generally 0³ meter (1 ft) deeper than the prior survey.

2) Prior survey H-10206 (1985) covers the southern half of the present survey. Prior hydrography is in good agreement with present hydrography with prior soundings generally 0³ to 0⁶ meters (1 to 2 ft) deeper than the present survey. The following should be noted:

a) AWOIS Items #7376 and #7378 originate with the prior survey. Discussions and charting recommendations for these items are in section M. of the Descriptive Report.

b) An uncharted 68-ft (20⁸ m) sounding in Latitude 30°03'55.86"N, Longitude 88°02'59.24"W, originating with the prior survey is not considered disproved by the present survey. Present depths are 21⁶ meters (71 ft). The 68-ft (20⁸ m) sounding has been brought forward from the prior survey to supplement the present survey. It is recommended that the 68-ft (20⁸ m) sounding be charted should the scale of the chart allow. ✓

c) A dangerous submerged obstruction with a depth of 9 fathoms, charted in Latitude 30°04'03.24"N, Longitude 88°02'36.80"W, originates with prior survey as an obstruction with a depth of 55 feet (16⁹ m). The side scan sonograms acquired in the vicinity of the obstruction are considered of poor quality and are not considered adequate to disprove the

AWOIS #
7379
11360

obstruction. The obstruction has been brought forward from the prior survey to supplement the present survey. No change in charting status is recommended. Additional work to verify or disprove the obstruction is also recommended. ✓

3) Prior survey H-10226 (1986-88) covers the northern half of the present survey. Prior hydrography is in good agreement with present hydrography with prior soundings generally 0³ to 0⁶ meters (1 to 2 ft) deeper than the present survey. The following should be noted:

a) AWOIS item #7333 is a charted dangerous submerged obstruction (10 fms rep), in Latitude 30°04'11.72"N, Longitude 88°06'23.34"W, originating with the prior survey as an obstruction (concrete debris) with a depth of 61 feet (18⁷ m). The item was investigated by the field unit. Three separate contacts can be seen on the side scan sonargram in the vicinity of the AWOIS item. A dive was conducted on one of contacts and a least depth of 18⁷ meters (61 ft) was obtained on a pile of bridge rubble in Latitude 30°04'11.00"N, Longitude 88°06'26.17"W. The two other contacts were not investigated. One of these contacts is in proximity to the AWOIS item. The obstruction found by the prior survey has been brought forward from the prior survey to supplement the present survey. The position of the third contact is in Latitude 30°04'14.05"N, Longitude 88°06'26.51"W. Based on the contacts seen on the side scan sonargrams, a limit line delineating the area was drawn on the present survey. The AWOIS item is shown only on chart 11360. No change in charting status is recommended. ✓ 11360 ✓

b) AWOIS items #7334 and #7335 are a submerged obstruction (concrete debris) with a depth of 69 feet (21² m) in Latitude 30°05'28.98"N, Longitude 88°07'24.99"W and a submerged obstruction (concrete debris) with a depth of 64 feet (19⁴ m) in Latitude 30°05'33.77"N, Longitude 88°07'23.71"W respectively. The items originate with the prior survey and are charted as dangerous submerged obstructions with a depth of 64 feet (10⁵ fms). The area was investigated and numerous piles of bridge rubble were seen on the side scan sonargrams. Divers obtained depths on various piles of rubble within the two areas. A least depth of 18⁵ meters (60 ft) was obtained by divers in Latitude 30°05'33.69"N, Longitude 88°07'19.54"W. Based on the positions of the contacts seen on the side scan sonargrams, limits of the area were determined and are shown on the present survey. Because of the close proximity of the two AWOIS items, it is recommended that the chart be revised to dangerous submerged obstructions with a depth of 18⁵ meters ✓ 11376 ✓ 11360 ✓

(60 ft/10 fms) as shown on the present survey.

Except as noted above, the present survey is adequate to supersede the prior surveys in the common areas.

b. Wire Drag

H-9374WD (1973) 1:40,000

FE-276WD (1974) 1:40,000

1) Prior survey H-9374WD (1973) covers the northern half of the present survey. Comparison with the prior survey shows one (1) grounding that falls within the present survey area. This grounding is AWOIS item #3625. The following should be noted:

AWOIS item #3625 is a charted Shl with a wire drag clearance depth of 57 feet (9^5 fms/ 17^3 m), in Latitude $30^{\circ}06'27.74''N$, Longitude $88^{\circ}02'23.98''W$, originating with the prior survey as a 58 foot (17^7 m) grounding. A side scan sonar contact with an undetermined height is seen on two adjacent lines in the proximity of the AWOIS item. The AWOIS item is not considered disproved by the present survey. The grounding has been brought forward to the present survey to supplement the present survey. No change in charting is recommended. Additional work is recommended to verify or disprove this item at an opportune time.

There are no conflicts between the present survey and the effective clearance depths shown on the prior survey.

2) Two uncharted mud hangs, 66 feet (20^1 m) in Latitude $30^{\circ}04'47''N$, Longitude $88^{\circ}02'38''W$ (NAD 27) and 69 feet (21 m) in Latitude $30^{\circ}04'00''N$, Longitude $88^{\circ}04'55''W$ (NAD 27) originate with prior survey FE-276WD (1974). These mud hangs were not cleared by the prior survey. The mud hangs were recommend for charting in the Evaluation Reports of the prior survey and subsequent prior survey H-10206 (1985). Present survey depths are 21^3 to 22 meters (70 to 72 ft). The present survey depths coupled with the absence of side scan sonar contacts or visual changes in bottom texture in the vicinity of these items reinforce the conclusion that these mud hangs no longer exist. It is recommended that the two mud hangs be disregarded.

7. COMPARISON WITH CHART 11376 (41st Ed., 16 March 1991)
11360 (32nd Ed., 30 March 1991)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys and from sources not readily available and requires no further consideration. The following should be noted:

Two uncharted obstructions considered insignificant by the hydrographer were examined during office processing and are considered significant. The positions and heights of the contacts were scaled from the side scan sonograms.

<u>Depth (m/ft)</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
19 ⁷ (A)/64(A)	30°03'46.00"	88°07'24.25" <i>yes chart #11360 ✓</i>
21 ³ (A)/70(A)	30°03'44.26"	88°05'08.11" <i>no chart</i>

It is recommended that these obstructions be charted in accordance with Cartographic Order 004/89, dated 3 July 1989 provided the chart scale will permit.

The present survey is adequate to supersede the charted hydrography within the common areas except as noted elsewhere in this report.

b. Dangers to Navigation

There were no dangers to navigation submitted by the field unit. No dangers to navigation were discovered during office processing.

c. Aids to Navigation

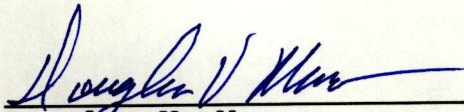
There are no fixed or floating aids to navigation within the limits of this survey.

8. COMPLIANCE WITH INSTRUCTIONS

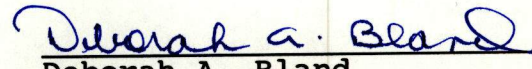
This survey adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

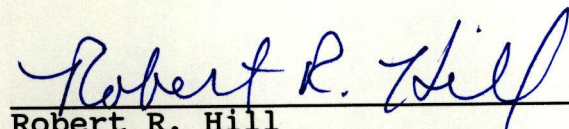
This is an adequate hydrographic side scan sonar survey. No additional field work is recommended except as stated in sections 3.c., 6.a., and 6.b., of this report.



Douglas V. Mason
Cartographic Technician
Verification of Field Data



Deborah A. Bland
Senior Cartographic
Technician
Evaluation and Analysis



Robert R. Hill
Senior Cartographic Technician
Verification Check

APPROVAL SHEET
H-10394

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 disapproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts of the survey have been made. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Richard H. Whitfield Date: 14 April 1993
Richard H. Whitfield
Cartographer, Evaluation and Analysis Team
Atlantic Hydrographic Section

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.

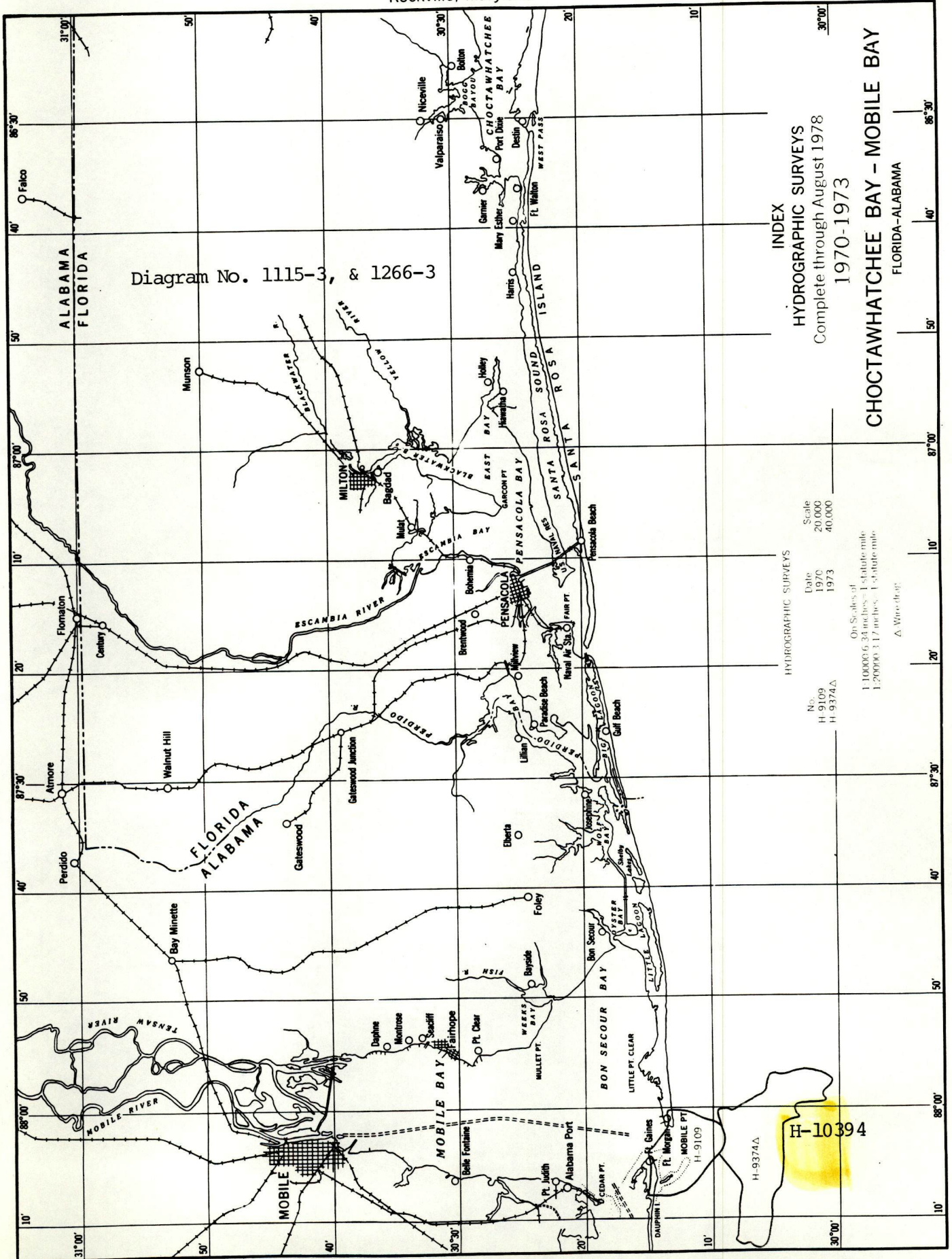
Christopher B. Lawrence Date: 14 April 1993
Christopher B. Lawrence, CDR, NOAA
Chief, Atlantic Hydrographic Section

Final Approval:

Approved: J. Austin Yeager Date: 3-13-95
J. Austin Yeager
Rear Admiral, NOAA
Director, Coast and Geodetic Survey

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

Hydrographic Index No. 85 F



MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10394

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 ^v	7/26/93	Alan Barber	Full Part Before After Marine Center Approval Signed Via Drawing No. 55 APP'd critical corr's.
11360	7/26/93	Alan Barber	Full Part Before After Marine Center Approval Signed Via Drawing No. 47 APP'd critical corr's.
411	7/26/93	Alan Barber	Full Part Before After Marine Center Approval Signed Via Drawing No. 65 APP'd critical corr's.
11006	7/26/93	Alan Barber	Full Part Before After Marine Center Approval Signed Via Drawing No. 38 APP'd critical corr's.
11377 ^v	7/26/93	Alan Barber	Full Part Before After Marine Center Approval Signed Via Drawing No. 2 APP'd critical corr's.
11360	5/20/94	Dean Clark	Full Part Before After Marine Center Approval Signed Via Drawing No. 48
11006	9/15/95	Jessie Shadid	Full Part Before After Marine Center Approval Signed Via Drawing No. 39
			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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