

H-10393

Diagram No. 1266-3

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. HE-10-1-91 ..
Registry No. H-10393 ..

LOCALITY

State Alabama ..
General Locality .. Gulf of Mexico ..
Sublocality Entrance to Main ..
..... Ship Channel ..

19 91

CHIEF OF PARTY

..... LCDR J.W. Blackwell ..

LIBRARY & ARCHIVES

DATE April 14, 1993 ..

H-10393

ECIG
PRODUCTS

11377 ✓

11378 'B' ✓

11376 ✓

11360

11006

411

CP5

HYDROGRAPHIC TITLE SHEET

H-10393

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

FIELD NO.

HE-10-2-91

State ALABAMA

General locality GULF OF MEXICO

Locality ENTRANCE TO MAIN SHIP CHANNEL

Scale 1:10,000

Date of survey Aug. 13 - Sep. ¹⁰9, 1991

Instructions dated June 11, 1991

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 ^{J.E.} Martin, ST ^{W.R.} Morris

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

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

Graphic record checked by LT Moeller

Protracted by N/A

Automated plot by HDAPS (FIELD) *XYNETICS 1201 Plotter (AHS)*

Verification by Atlantic Hydrographic Section, N/CG244

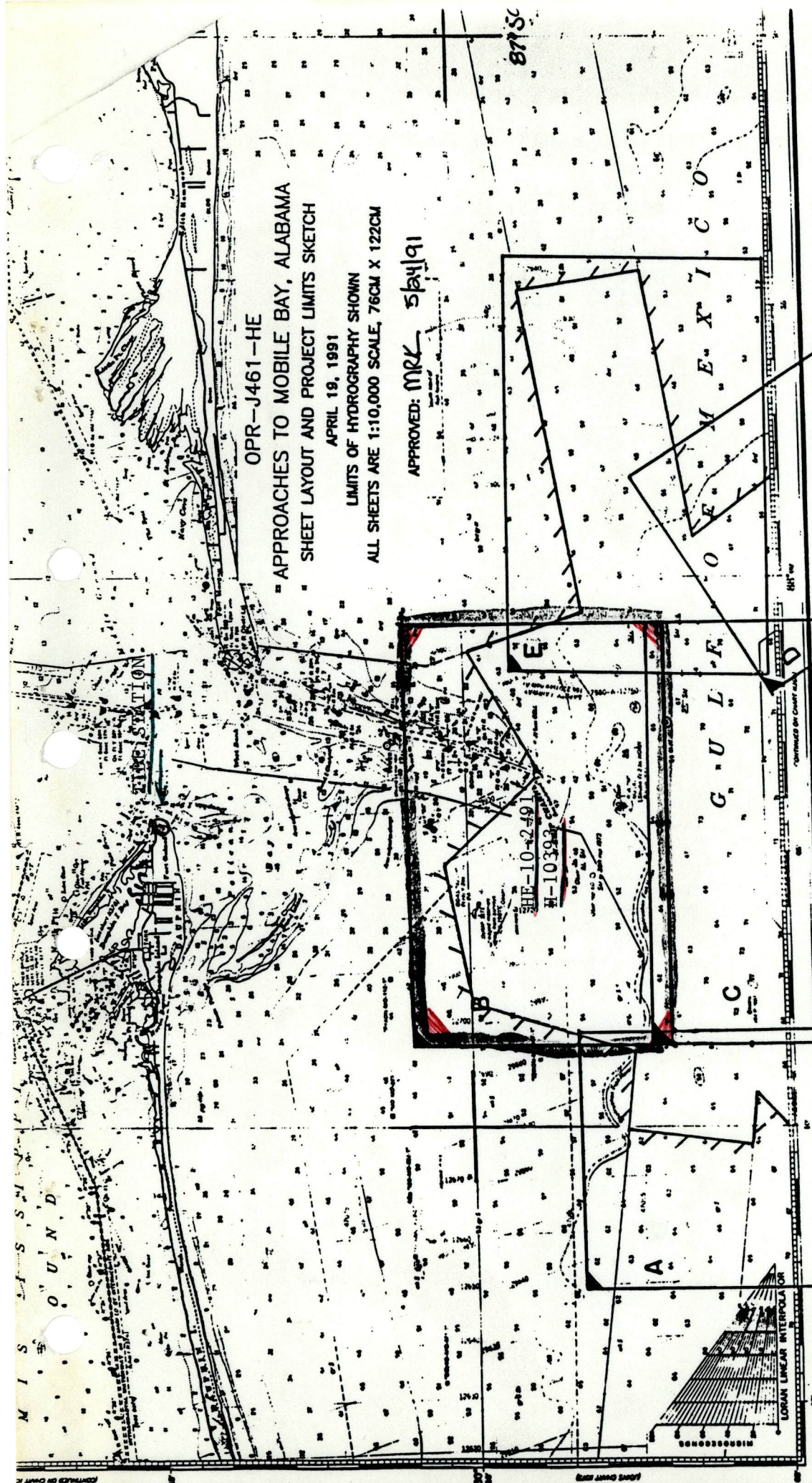
Soundings in ~~fathoms~~ METERS ~~feet~~ at ~~MLW~~ MLLW

REMARKS: Change 1 dated July 12, 1991

All times UTC

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

AWOIS/SURF ✓ 6/8/93 SJV ✓



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 5/4/91

87°S

SHE-10-2491
 M-10393

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 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

S IN FEET

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11376

LORAN-C OVERP/NTEJ

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 records.*

DESCRIPTIVE REPORT TO ACCOMPANY
SURVEY H-10393
FIELD NUMBER HE-10-2-91
ALABAMA
GULF OF MEXICO
ENTRANCE TO MAIN SHIP CHANNEL
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 12 July 91.

The purpose of this project is to provide updated information in response to requests by the Mobile Bar Pilots Association to investigate submerged obstructions in the area.

B. AREA SURVEYED

The survey area, designated Sheet B in the Project Instructions, lies in the Gulf of Mexico south of the entrance to Mobile Bay. The actual survey area is an irregular polygon formed by connecting, in order, the following points:

1. LAT 30°06'36"N	LON 088°08'27"W
2. LAT 30°08'30"N	LON 088°08'27"W
3. LAT 30°10'01"N	LON 088°07'43"W
4. LAT 30°10'31"N	LON 088°05'12"W
5. LAT 30°08'48"N	LON 088°03'30"W
6. LAT 30°09'48"N	LON 088°01'19"W
7. LAT 30°09'19"N	LON 088°01'08"W
8. LAT 30°06'36"N	LON 088°01'08"W

Survey operations began on August 13, 1991 (DOY 225), and were completed on September ⁸/₁₀, 1991 (DOY 25²/₂).

The size of the survey area exceeded the width constraint of the HECK's plotter and required that the area be split into a north (sheet 03) and south (sheet 02) sheet. The contours and vessel traffic required that the survey be run using north - south lines. In order to prevent HECK from needing to constantly switch sheets a single 1:15,000 scale boat sheet (sheet 01) was used for on-line surveying. All data was gathered and processed using 1:10,000 scale specifications and submitted on 1:10,000 scale smooth plots.

C. SURVEY VESSELS

All hydrographic data were collected by the NOAA Ship HECK (EDP 9140). 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 225 - 252
Recorder	S/N 012104	DOY 225 - 252

The beam width and down angle are not adjustable on this unit. All mainscheme SSS data was collected using the 100 meter range scale and 100 KHz frequency, 75 and 50 meter range scale 100 KHz was used for contact investigation. Mainscheme line spacing of 170 meters was used to assure the required 2mm of adjacent line overlap. 200% coverage was attain over the entire survey area. *Do NOT CONCUR. See section 4.c. of the Evaluation Report.* 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 HDAPS contact table printouts. 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 number due to 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.

F. SOUNDING EQUIPMENT

The following Raytheon DSF-6000N echosounders were used during this survey:

S/N A110N	DOY 225 - 232, 238 - 252
S/N A107	DOY 232 - 234

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

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	08/13/91 (DOY 225)	30°05'36"N 088°02'00"W

The velocity cast data were reduced and velocity corrections calculated using program VELOCITY. 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. A second velocity cast was performed on DOY 253. There was minimal change in velocity correctors between these two casts, therefore, the 27 day period between cast 1 and the last days data created no problem.

The Digibar used 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.

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.

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 was the reference station for this survey. The station was maintained under contract by Chapin and Assoc. and observed by Mike Dardue. Contact with the observer was made and the station inspected and opening levels run by HECK's crew members. No tide stations were established by the 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. a. 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:

<u>Number</u>	<u>Station</u>
101	- DAUPHIN ISLAND WEST BASE, <i>1989</i>
102	- PIRATE, <i>1986</i>
103	- MOBILE POINT LIGHT, <i>1987</i>
104	- STORMY, <i>1986</i>

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

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

I. HYDROGRAPHIC POSITION CONTROL *See also section 2. a. 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~~). The appropriate Mini-Ranger codes were attached to the station number on this table. Each time the survey navigation configuration was altered, the control station and C-O tables were modified to reflect the correct Mini-Ranger code placement and DOY 220 Baseline Corrector values.

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 (ie. Antenna-to-Towpoint) were applied on-line using the HDAPS Offset Table number 1 (copy in Section III & IV).

This survey was required to meet 1:10,000 scale accuracy requirements, at no time did the maximum residual consistently exceed 5 meters nor did the 95% confidence ECR consistently exceed 15 meters. Data not meeting these requirements were examined and high residuals either accepted or smoothed and high ECR's smoothed or rejected.

J. SHORELINE *See also section 2. b. of the Evaluation Report*

Not applicable as per project instructions.

K. CROSSLINES *See also section 3. a. of the Evaluation Report*

33.0 miles of crosslines were run on this survey and they represent 7.1% of all hydrography. Comparison to mainscheme soundings showed good agreement with random differences of ± 0.2 meters. One small area of poor agreement is from fix 1864 to 1868 where an irregular bottom caused differences of one meter.

L. JUNCTIONS *See also section 5. of the Evaluation Report.*

Not applicable.

M. COMPARISON WITH PRIOR SURVEYS *See also sections 6. a. and 6. b. of the Evaluation Report.*

Comparisons were made to prior survey H-10226, 1986-88, 1:20,000; surveyed by HFP-1, LTJG David W. Moeller, Officer-in-Charge.

Except for the two following areas comparisons showed excellent agreement with the majority of survey soundings agreeing within two feet of the prior survey. The first area is in the dump site where present depths of 18 feet lie in what once was depths of 42 feet (Notice to Mariners submitted). This pile of dredge spoil has caused the shoaling of the area surrounding it and may eventually cause some shoaling of the adjacent fairway area as it spreads. The second area of differences is in the vicinity of the channel where dredging activity has deepened the channel to 48 feet versus the prior surveys 44 feet.

Seven AWOIS items originate with this survey; 7330, 7338, 7339, 7340, 7341, 7342, and 7343. Only Awois items 7330, 7338, 7340, and 7341 are presently charted. All of these items are echosounder depths labeled as obstructions by AMC verification. 200 % side scan coverage of the area around these items showed no indication of these obstructions. It is recommended that all seven items be considered disproved and the four charted items be deleted from the chart. *Concur*

N. COMPARISON WITH THE CHART *See also section 7.a, of the Evaluation Report.*

Comparison of surveyed soundings were made to NOS chart 11376, 41st edition, Mar. 16/91. The soundings, with the exception of the dump site area, agreed well with the charted soundings consistently 0 to 2 feet shoaler than the survey.

One danger to navigation report was submitted as a result of this survey. Copies were forwarded to DMAHTC and N/CG221.

Seventy five (75) contacts were identified during this survey. Fifteen (15) targets were identified as warranting additional investigation based on either their height off the bottom or their appearance. All such contacts were investigated with additional side scan coverage and/or divers. The following is the list of targets with associated investigation results and recommendations:

POSITION

NARRATIVE

- | | |
|---------|---|
| 8.52 | Additional SSS development Pos. 2588-95, Nothing found. |
| 61.21 | Additional SSS development Pos. 2596-2600, Nothing found. <i>Do NOT Concur. A 14.7 Obstr (A) AND 14.3 Obstr (A) Found by present survey. Ad. Wk. was done. See section 7.a, 1) of the Evaluation Report.</i> |
| 210.07 | Additional SSS development Pos. 2571-6, Nothing found. |
| 228.51 | Additional SSS development Pos. 2605-8, Nothing found. |
| 469.45 | Additional SSS development Pos. 2611-6, Insignificant contact. |
| | Recommendation: This item is non-dangerous and should not be charted. <i>Concur. Located near gas well "EXXON-MO-868-1"</i> |
| 471.75 | Additional SSS development Pos. 2550-3, Nothing found. |
| 512.53 | Additional SSS development Pos. 2609-10, Nothing found. |
| 554.66 | Additional SSS development Pos. 2546-9, Nothing found. |
| 556.13 | Additional SSS development Pos. 2542-5, Nothing found. <i>Poor side scan sonar records. 10.8 Obstr on sheet. See also section 7.a, 2) of the Evaluation Report.</i> |
| 958.22 | Additional SSS development Pos. 2580-3, Nothing found. |
| 1041.51 | Additional SSS development Pos. 2584-7, 2615-7, Dive investigation. Divers found several 12" diameter metal pipes lying flat on the bottom. This item is most likely a load of drilling pipe lost by one of the many supply boats that transit the area. No least depth obtained. |

Recommendation: This item does not present a hazard to navigation and should not be charted. *Do NOT Concur. Chart A 17³ Obstr (pipe) as shown on the present survey. See also section 7.a, 2) of the Evaluation Report.*

POSITION

NARRATIVE

- 1321.58 Additional SSS development Pos. 2554-9, Nothing found.
- 1390.25 Additional SSS development Pos. 2601-4, Nothing found. *Do Not Concur. 12.7 Obstr (A) found by present survey. Ad. wk. conducted. See section 7.2.1 of the Evaluation Report.*
- 1940.60 Additional SSS development Pos. 2689-92, Nothing found.
- 2104.52 Additional SSS development Pos. 2685-88, Nothing found.

Several AWOIS items lie within the boundaries of this survey. All items appear only on NOS chart 11376, 41st edition, Mar. 16/91. The results of their investigation ~~is~~^{are} as follows:

3642 - Anchor fluke extending 2 feet off of the bottom cleared by 34 feet. 400% side scan coverage was accomplished with no indication of its existence found. The original survey, H-9374/73WD considered this item to be non-hazardous and according to the present criteria it would be considered insignificant. The item is considered disproved. Deleted Obstruction charted at 30°08'16.93"N 088°05'10.19"W. *Concur* 11377 ✓

3644 - 28 foot shoal reported LNM10/73, wire dragged to 35FT (0.5 mile radius) 1973, wire dragged to 41 FT 1974, echosounder development (50 m line spacing, 1000 meter radius) 1986-88, presently charted as an obstruction cleared to 41 feet. 200% side scan coverage, reduced from S4 to S2 by N/CG241, was attained over the entire search area, no indications of either a shoal or obstruction that would have caused the originally reported sounding were found. The item is considered disproved. Delete Obstruction charted at 30°08'00.73"N 088°05'23.99"W. *Concur* ✓

3647 - Obstruction cleared 50FT, 400% SSS coverage was accomplished with no indication of the obstruction. This item is considered disproved. Delete Obstruction charted at 30°07'36.73"N 088°04'06.99"W. *Concur* 11377 ✓

3648 - 58 ft shoal/grounding on wire drag H-9374, 55ft cleared. Survey depths for this items search area range from 59 to 61 feet, therefore, the original 58 foot wire grounding is highly probable. No obstruction was found within this items search area. The item is considered disproved. Delete Sounding charted at 30°07'25.74"N 088°03'10.99"W. *Concur* 11377 ✓

3627 - Obstruction, Fish Haven. This item lies along the 60ft contour westward from 088°03'30"W to 088°12'00"W. No AWOIS listing of this item was provided by N/CG241, however, it is believed to have been originally reported as a string of car bodies. No indication of the items associated with this fish haven were found. Discussions with local residents and further research by N/CG241 indicates the planned deployment of this fish haven was never accomplished ✓

and that it was charted in error. The item is considered disproved within the boundaries of this survey and should be deleted from this portion of the chart. *Concur. See also section 7. a. 4) 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. a. c) of the Evaluation Report.*

Five floating aids to navigation are located in the area of this survey. They are buoys R W "M", G "1", R "2", G "3", and R "4" of the Main Ship Channel. The surveyed positions (positions determined by side scan and logged on contact table 4) of these aids matched their charted location. They accurately mark the ship channel and no modifications are recommended.

Three unlighted mooring were located within the survey area. Two of these buoys were associated with drilling activity on the sheet and were removed prior to the end of operations and should not be charted. The mooring buoy located at Pos. 1596.20, 30°09'51.4"N 088°06'45.8"W was not associated with a drill platform and it is recommended for charting. *Concur*

A W Or Privately Maintained buoy is presently charted at 30°06'18"N 088°08'00"W. No indication of this buoy was observed. It is recommended it be deleted from the chart. *Concur.*

Q. STATISTICS

ITEM	for... NOAA Ship HECK	AMOUNT
1. Total No. of Positions		2692 Fixes
2. Lineal NM of Soundings		498.8 NMi
3. Square NM Hydrography		17.9 NMi ²
4. Days of Production		11 Days
5. Bottom Samples		14
6. Tide Stations Established		None
7. Current Stations Established		None
8. Velocity Casts Performed		1 Casts
9. Magnetic Stations Established		None
10. Detached Positions		1

R. MISCELLANEOUS

No anomalies in either tide or current were noted. The survey area had been fully bottom sampled on the prior survey, therefore, only fourteen bottom samples were taken and a Log Sheet M (copy appended) submitted to the Smithsonian Institution. The bottom sample characteristics found agreed well with those of the prior survey.

The confusion concerning the geographic names Sand Island and Pelican Island referred to in section 4.3. of the project instructions is due to the changeable nature of the area. According to Mr. Clinton Collier, longtime resident of Dauphin Island, two islands once existed south of Dauphin Island. Sand Island was the eastern most and had Sand Island Lighthouse and a Coast Guard station built on it. Old photographs of the Coast Guard station at the base of the light are displayed in the Sea Galley, a local Restaurant. Pelican Island lay to the west-northwest of Sand Island in approximately the same position as the single island that is presently charted. Over time both islands migrated to the northwest. Pelican Island eventually merged with Dauphin Island. Sand Island's movement forced the Coast Guard to abandon its station and lighthouse. The ruins of the lighthouse and its rock foundation remain. Sand Island continued to migrate to the northwest and now occupies the former location of Pelican Island. A review of the various prior surveys of the entrance to Mobile Bay will verify this information. It is referred to locally as Sand Island and it is recommended that the charted geographic name "Sand Island" be retained.

S. RECOMMENDATIONS

The amount of dredge material that has been recently dumped due to the deepening of the channel could cause shoaling to occur within the fairways adjacent to the dump site. The Corps of Engineers should be contacted and informed that a periodic monitoring of the fairways for shoaling is warranted.

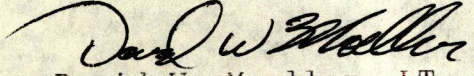
The complete insonification of the survey area via echosounder and side scan sonar (200% coverage) is such that the data from this survey should supersede all charted depths and features presently charted within the survey area.

Recommendations concerning specific items, depths, geographic names, and aids are located in sections M, N, P and R of this report.

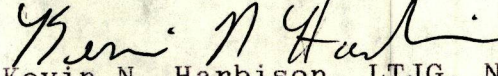
T. REFERRAL TO REPORTS

Electronic Corrector Report, OPR-J461-HE, Included with this survey.

Respectfully Submitted,


David W. Moeller, LT, NOAA
Executive Officer
NOAA Ship HECK

Approved and Forwarded,


Kevin N. Harbison, LTJG, NOAA
Field Operations Officer
NOAA Ship HECK

DESCRIPTIVE REPORT TO ACCOMPANY
SURVEY H-10393
ADDITIONAL WORK
FIELD NUMBER HE-10-3-91
ALABAMA
GULF OF MEXICO
ENTRANCE TO MAIN SHIP CHANNEL
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 February 18, 1992, and Change 1 dated April 2, 1992.

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 requires additional work on unresolved items found during the preprocessing examination of H-10393.

B. AREA SURVEYED

The survey area consisted of four item investigations in the H-10393 survey area. The items were at the following positions:

9000	LAT 30°08'04.76"N	LON 088°03'53.06"W
9001	LAT 30°08'06.67"N	LON 088°03'50.61"W
9002	LAT 30°08'25.29"N	LON 088°04'50.33"W
9003	LAT 30°09'53.80"N	LON 088°07'31.28"W

Survey operations began on May 1, 1992 (DOY 122), and were completed on May 11, 1992 (DOY 132).

The HECK collected data for these items on page size boat sheets. Three boat sheets were used. Items 9000 and 9001 are on sheet 05. Item 9002 is on sheet 06. Item 9003 is on sheet 07. All data was gathered and processed using 1:10,000 specifications and submitted on 1:10,000 scale page 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 can be found in appendix VI.*

The velocity cast data were reduced and velocity corrections calculated using program VELOCITY Version 1.11.

No unusual automated acquisition or processing methods were used.

E. SONAR EQUIPMENT

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

Towfish	S/N 011901	DOY 122 - 132
Recorder	S/N 012106	DOY 122 - 132

The beam width and down angle are not adjustable on this unit. All SSS data was collected using the 50 and 75 meter range scales and 100 Khz frequency. The sidescan towfish was deployed off the stern. 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.

In general the quality of sonargrams on these investigations was good. There were some instances where sea return or low reflectivity bottom degraded the sonar trace. These degraded traces were reviewed and either deemed to be adequate or rejected.

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

** Filed with the original survey records.*

One contact table was 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 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 A107N DOY 122 - 132

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

All data was collected using the automatic gain setting on the DSF-6000. There were no unusual problems with the echosounder.

Weather logs for all periods of hydrography are included in Appendix VI. *Filed with the original survey records.*

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

One velocity cast was conducted using the ODOM Digibar sound velocimeter (S/N 168):

<u>DATE</u>	<u>DOY</u>	<u>POSITION</u>
April 14, 1992	120	30°00'30"N 087°57'18"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.

The digibar was checked on November 1, 1991 by ODOM and found to be performing within specifications. Field checks using the

prescribed fresh water method were accomplished prior to each cast and recorded on the velocity cast form.

On DOY 115 a dual leadline comparison was conducted and resulted in a mean difference of 0.060 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. *Filed with the original survey records.*

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.

In situations where the HIPPY locked up, selected soundings were scanned and depths edited to remove the heave error.

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. a. 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:

<u>Number</u>	<u>Station</u>
103	- MOBILE POINT LIGHT, <i>1987</i>
104	- STORMY, <i>1986</i>
105	- ELANA, <i>1986</i>
106	- DAUPHIN ISLAND USAF E DOME

Positions for MOBILE POINT LIGHT, STORMY, ELANA and DAUPHIN ISLAND USAF E DOME 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. a. of the Evaluation Report.*

Position control was multiple LOP, utilizing Motorola Mini-Ranger Falcon 484 shore stations. Control station positions were entered into the HDAPS Control Station Tables. (See appendix III, LIST OF HORIZONTAL CONTROL STATIONS).

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

Baseline calibration information can be found in the Electronic Control Report submitted with H-10418. One C-0 table was used for these investigations survey.

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 rejected.

J. SHORELINE

Not applicable as per project instructions. *Correct*

K. CROSSLINES

Not applicable as per project instructions. *Correct*

L. JUNCTIONS

Not applicable as per project instructions. *Correct*

M. COMPARISON WITH PRIOR SURVEYS

The following items were identified as requiring additional work during the preprocessing review of H-10393.

9000⁰ This target was identified during survey H-1038⁹3 as contact number 61.07. It was determined to be significant during the preprocessing review of the survey. On DOY 122 and 126 an echosounder development found a least depth of 15.1⁰ meters in surrounding depths of 16.0² meters.

N: 14943.8
LAT 30°08'05.314"

E: 20170.5
LON 088°03'53.630"

Pos # 30000

Recommendation: This item is insignificant and should not be charted. *Do not Concur. Chart A 15' Obstr as shown on the present survey* 11377 ✓ 49 ft

9001⁰¹ This target was identified during survey H-1038⁹3 as contact number 61.21. It was determined to be significant during the preprocessing review of the survey. On DOY 122 and 126 an echosounder development found a least depth of 15.5⁶ meters in surrounding depths of 16.3¹ meters.

N: 14990.3
LAT 30°08'06.820"

E: 20247.9
LON 088°03'50.738"

Pos. # 30001

Recommendation: This item is insignificant and should not be charted. *Do not Concur. Chart as 15' Obstr as shown on the present survey should the scale of the chart allow.* NA

9002⁰² This target was identified during survey H-1038⁹3 as contact number 1390.25. It was determined to be significant during the preprocessing review of the survey. On DOY 132 an echosounder development found a least depth of 13.3⁶ meters in surrounding depths of 14.2³ meters.

N: 15562.9
LAT 30°08'25.417"

E: 18654.74
LON 088°03'50.266"

Pos. # 30002

Recommendation: This item is insignificant and should not be charted. The least depth position is approximately 100 meters from a lighted gas well. *Do not Concur. Chart as a 13' Obstr as shown on the present survey.* 11377 ✓ 44 ft

9003⁰³ This target was identified and determined to be significant during the preprocessing review of survey H-10393. On DOY 132 an echosounder development found a least depth of 12.3⁴ meters in surrounding depths of 12.9¹ meters.

13.0

40 ft

^{14354.1}
 N: ~~15562.9~~ E: ~~18654.7~~
^{18295.6}
 LAT ~~30°08'25.417"~~ LON ~~088°03'50.266"~~ 40 FT
^{30°09'54.120"} ^{88°03'31.010"}

Recommendation: This item is insignificant and should not be charted. The least depth position is in the vicinity of a dredge spoil disposal area where depths shoal to approximately 6.0 meters. *CONCUR. Shoaler depths of 9-10 meters are in the immediate vicinity to the EAST.* ✓

N. COMPARISON WITH THE CHART *See also section 2 of the Evaluation Report*

See descriptive report for project H-10393.

O. ADEQUACY OF SURVEY

This survey meets or exceeds 1:10,000 specifications, and is adequate to supersede all prior surveys for the purpose of charting the depths and hazards to navigation within the survey area.

This additional work (to reinvestigate targets identified during the preprocessing review of H-10393) required three additional days of ship time and resulted in no change to HECK's original determination of insignificance for all targets. Two of these contacts are insignificant due to proximity to much more hazardous features. This additional data supports the adequacy of the original survey. *Do NOT CONCUR*

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

See descriptive report for H-10393.

Q. STATISTICS

ITEM	AMOUNT
1. Total Number of Positions	124 Fixes
2. Lineal NM of Soundings	N/A
3. Square NM Hydrography	N/A
4. Days of Production	3 Days
5. Bottom Samples	None
6. Tide Stations Established	None
7. Current Stations Established	None
8. Velocity Casts Performed	1 Casts
9. Magnetic Stations Established	None
10. Detached Positions	None

R. MISCELLANEOUS

No anomalies in tide, current or magnetics were noted.

S. RECOMMENDATIONS

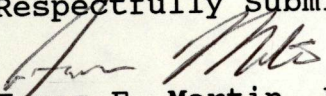
Recommendations concerning specific additional work items and depths are located in section M of this report. No additional investigations or field work are recommended.

T. REFERRAL TO REPORTS

Electronic control report included with H-10418.

This report should be evaluated together with the Descriptive Report for sheet H-10393.

Respectfully Submitted,


James E. Martin, ENS, NOAA
Field Operations Officer
NOAA Ship HECK

CONTROL STATIONS as of 26 Sep 1991

No	Type	Latitude	Longitude	H	Cart	Freq	Vel Code	MM/DD/YY	Station Name
101	F	030:14:22.002	088:14:51.512	11	250	0.0	0.0	1 08/01/91	DAUPHIN ISLAND WEST BASE
102	F	030:15:00.599	088:08:22.626	7	250	0.0	0.0	2 08/01/91	PIRATE 1987
103	F	030:13:41.558	088:01:26.458	20	250	0.0	0.0	6 08/01/91	MOBILE POINT LIGHT 1987
104	F	030:13:49.424	087:57:49.846	11	250	0.0	0.0	5 08/26/91	STORMY 1986

DOY 241

DIVING OPERATIONS

OPR-11452-111-01

DATE: 29 AUG 1991

OPR-5461-HE

UNIT: NOAA SHIP HECK S591

AWOIS ITEM # N/A

CONTACT # 1041.51

LOCATION: GULF OF MEXICO

DIVE MASTER: LT. MOELLER

DIVERS : LCDR BLACKWELL
ENS MARTIN

TENDERS:

DIVE PLAN: Hem invest. / LD

MAX DEPTH: 60 FT

MAX TIME: 27 MIN

AVERAGE LEAST DEPTH: 58.0' FT

LEAST DEPTH TIME: 18:31

DEPTH: (1) 58.0' PNEUMO LEAD LINE

EQUIPMENT USED: OPEN CIRCUIT SCUBA.

PNEUMOFATHOMETER:

S/N 8607004N (SHALLOW) GAGE

S/N 8704986 (DEEP) GAGE

DIVE VISIBILITY: 430'

AIR TEMP: 88

WATER TEMP: 83

CONDITIONS:

WIND : DIR SE KTS 10

SEAS : DIR SE FT 1-2

CURRENT : KTS N 0.2 KTS

ALL TIMES GMT

DIVERS NAME	SI	GROUP	RNT	TNK PRESURE IN / OUT	PRES. CHANGE	DIVE TIMES DOWN/UP	BOTTOM TIME	DEPTH	GROUP
1 JO				2900 / 800		D 1807	27		
1 JO				3000 / 500		U 1834	27		
				/					
2				/		D			
2				/		U			
				/					

POST DIVE COMMENTS

LAYER OF SUSPENDED SEDIMENT ~~RISES~~ ROSE

~ 1 METER ABOVE BOTTOM THRU-OUT AREA. 40 M CIRCLE

SEARCH REVEALED SEVERAL METAL PIPES ~ 1/2" DIA,

10-20 FT LONG, ^{WIND FLAT ON BOTTOM} ~~COLLECTED~~ THRU-OUT AREA. NO

HANDS NOTED RISING MORE THAN 1 FT OFF BOTTOM.

DIVE MASTER SIGNATURE



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of NOAA Corps Operations
NOAA Ship HECK S-591
439 W. York Street
Norfolk, VA 23510-1114

September 4, 1991

Commander, Eighth Coast Guard District
Aids to Navigation Branch
Hale Boggs Federal Building, Room 1209
501 Magazine Street
New Orleans, LA 70130-3396

Dear Sir,

During operations by the NOAA Ship HECK on survey project OPR-J461-HE, He-10-2-91, H-10393, Approaches to Mobile Bay significant shoaling was discovered in the Dump Site located west of the channel. The specific information is as follows:

Sounding @ MLLW	Position (NAD 83)
18 foot (5.5M)	30°09'30.0"N ³⁶ 088°06'21.0"W ¹³
19 foot (5.9M)	30°09'37.0"N ²⁷ 088°06'43.0"W ¹⁷
20 foot (6.3M)	30°09'48.0"N ⁷⁰ 088°07'07.0"W ¹⁹

Chartlet on 42 Ecd.

These sounding have been corrected for ^{SMOOTH} predicted tides.

A chartlet is attached for your information. These sounding affect NOS chart 11376. For additional information please contact me at (904) 572-5052.

Sincerely,

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

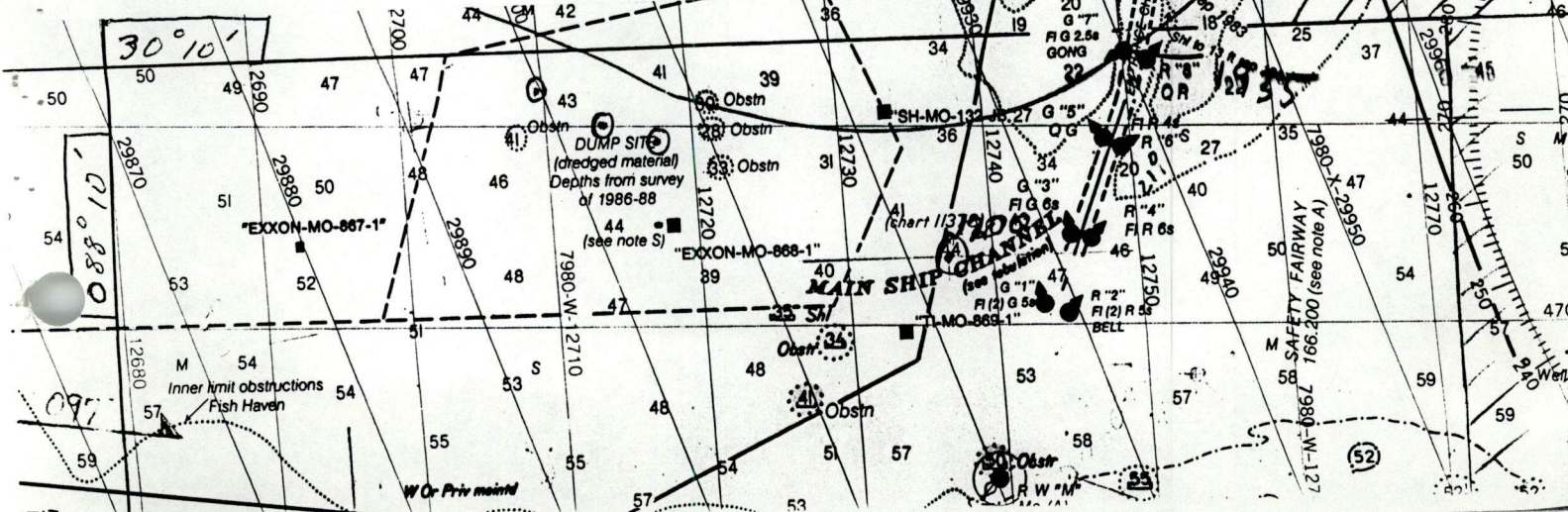




NOS CHART 11376


18 FOOT SOUNDING
 19 FOOT SOUNDING
 20 FOOT SOUNDING

Charted



VII. LETTER OF APPROVAL

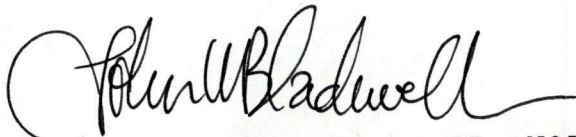
Field operations contributing to the accomplishment of this survey were conducted under my direct supervision with frequent personal checks of progress and data quality. This report, field sheets, and data records have been closely reviewed and are complete and adequate for charting.



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

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 cursive script, appearing to read "John W. Blackwell". The signature is written in dark ink and is positioned above the typed name.

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



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

NATIONAL OCEAN SERVICE
Rockville, Maryland 20852

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: October 25, 1991

MARINE CENTER: Atlantic

OPR: J461

HYDROGRAPHIC SHEET: H-10393

LOCALITY: Entrance to Main Ship Channel, Gulf of Mexico, AL

TIME PERIOD: August 13 - September 10, 1991

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

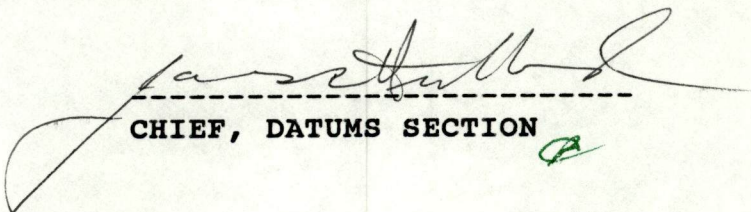
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 2.68 feet

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	Source of Name										
	A	B	C	D	E	F	G	H	K		
	ON CHART NO.	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			
ALABAMA (title)	X										1
GULF OF MEXICO	X										2
MAIN SHIP CHANNEL	X										3
											4
											5
											6
											7
											8
											9
											10
											11
											12
											13
											14
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											17
											18
											19
											20
											21
											22
											23
											24
											25

Approved:

Charles E. Harrington
Chief Geographer - N/CG275

AUG - 5 1992

03/31/93

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: H-10393

NUMBER OF CONTROL STATIONS

4

NUMBER OF POSITIONS

2690

NUMBER OF SOUNDINGS

18824

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	108	11/26/91
VERIFICATION OF FIELD DATA	181	04/20/92
ELECTRONIC DATA PROCESSING	78	
QUALITY CONTROL CHECKS	104	
EVALUATION AND ANALYSIS	77	08/21/92
FINAL INSPECTION	33	03/30/93
TOTAL TIME	581	
ATLANTIC HYDROGRAPHIC SECTION APPROVAL		03/31/92

N/CG244-4493

LETTER TRANSMITTING DATA

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

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

TO:

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

DATE FORWARDED

12 April 1993

NUMBER OF PACKAGES

1 tube, 2 boxes

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-10393 and Additional Work

Alabama, Gulf of Mexico, Entrance to Main Ship Channel

1 Tube containing:

- 1 Original Descriptive Report for H-10393 and 10393 Ad. Wk.
- 1 Original Smooth Sheet for H-10393
- 1 Original Position Overlay
- 3 Original Excess sounding Overlays
- 8 Smooth Field Sheets for H-10393
- 3 Smooth Field Sheets for H-10393 Ad. Wk.

1 Box containing:

- 1 Folder containing Tides
- 1 Folder containing Original Descriptive Report Separates
- 1 Envelope containing Appendices removed from the original Descriptive Report
- 11 Envelopes with fathograms and field printouts for 1991 JDs 225, 226, 227, 232, 233, 234, 239, 240, 241, 246, and 252
- 19 Envelopes with sonargrams for 1991 JDs 252, 226 (3), 227 (2), 232, 233 (3), 234 (2), 239, 240 (3), 241, 246, and 252

1 Box containing:

- 1 Cahier with final sounding printout and Line File Listing
- 1 Cahier with final position printout and control file listing
- 1 Envelope with sonargrams for day 132
- 1 Envelope with position overlays for H-10393 Ad. Wk.
- 1 Accordion file with fathograms & field printouts for 1992 JDs 122, 126 and 132

FROM: (Signature)

Richard H. Whitfield

RECEIVED THE ABOVE
(Name, Division, Date)

D. S. Clark
4/14/93

Return receipted copy to:

Atlantic Hydrographic Section, N/CG243
439 W. York Street
Norfolk, VA 23510-1114

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

SURVEY NO.: H-10393 and
Additional Work

FIELD NO.: HE-10-2-91

Alabama, Gulf of Mexico, Entrance to Main Ship Channel

SURVEYED: 13 August to 10 September 1991 and 1 May to 11 May 1992

SCALE: 1:10,000

PROJECT NO.: OPR-J461-HE

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

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. Side scan sonar was operated simultaneously with the fathometer during survey operations.

b. This survey was conducted during two field seasons, 1991 and 1992. The 1992 season was additional work to further develop side scan sonar items found during office processing on the present survey. The two Descriptive Reports have been combined under a single cover. See also section 7.a.1) of this report.

c. No unusual problems were encountered during office processing.

d. 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 the smooth sheet on the NAD 27 move the projection lines 0.739 seconds (22.76 meters or 2.28 mm at the scale of the survey) north in latitude, and 0.007 seconds (0.19 meters or 0.02 mm at the scale of the survey) east in longitude.

b. There is no shoreline within the area surveyed.

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 are drawn in their entirety. Additionally, some brown 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.

4. CONDITION OF SURVEY

The smooth sheet and accompanying overlays, hydrographic records and reports are adequate and conform to the requirements of the HYDROGRAPHIC MANUAL with the following exceptions:

a. There are four (4) U. S. Coast Guard floating aids to navigation, three privately maintained mooring buoys, two lighted gas wells, and a lighted oil platform in the survey area. The field unit did not acquire positional data, other than a computed side scan sonar position, on any of these features. It is imperative that the field unit provide the most accurate position possible for features located in the survey area.

b. The sonargrams submitted by the field unit lacked the required annotations at the beginning of each day, the beginning and end of each line, and some of the special annotations described in section 2.6, pages 2-15 through 2-17, of the SIDE SCAN SONAR MANUAL.

c. The required 200% side scan sonar coverage was not achieved throughout the entire survey area. Steering errors, line spacing, and positional errors are all considered contributing factors to the failure to accomplish the required 200% coverage.

d. The Danger to Navigation Report submitted by the field unit to the Eighth Coast Guard District is not the required format described in Hydrographic Survey Guideline (HSG) 66, dated 30 September 1988. A copy of the report is appended to the Descriptive Report.

5. JUNCTIONS

H-10394 (1991) to the south
 H-10403 (1991) to the west
 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 depths to the north.

6. COMPARISON WITH PRIOR SURVEYS

a. Hydrographic

H-10226 (1986-88) 1:20,000

The prior survey listed above covers the present survey area in its entirety.

Present survey depths are generally 0¹ to 0⁵ meters (0.3 to 1.6 feet) shoaler than prior survey depths. The following should be noted:

1) A radical change between prior survey depths and present survey depths exists along a line running from Latitude 30°09'15"N, Longitude 88°05'45"W to Latitude 30°10'00"N, Longitude 88°07'15"W. This area is inside the charted Dump Site. Present survey depths range from 2 to 5 meters (6 to 16 feet) shoaler than prior survey depths. This difference is attributed to the dumping of dredged material. Three soundings that are located within the Dump Site were identified by the field unit for inclusion in a letter to the Eighth Coast Guard District, Office of Aids to Navigation (oan). These soundings are listed as follows:

<u>DEPTH (m/ft)</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
5 ⁵ /18	30°09'30.36"	88°06'21.13"
5 ⁹ /19	30°09'37.27"	88°06'43.17"
6 ³ /20	30°09'48.70"	88°07'07.19"

It is recommended that these soundings be charted as shown on the present survey.

2) Seven (7) AWOIS items originate with the prior survey and are listed as follows:

AWOIS Item #	Latitude (N)	Longitude (W)	Comment	Depth FT/M
#7330	30°09'31.99"	88°07'15.38"	Charted	41/12 ⁵
#7338	30°09'32.39"	88°05'57.85"	Charted	28/ 8 ⁵
#7339	30°09'43.73"	88°05'58.99"	Not Charted	31/ 9 ⁴
#7340	30°09'41.73"	88°05'58.99"	Charted	30/ 9 ¹
#7341	30°09'34.73"	88°05'53.99"	Not Charted	33/10 ¹
#7342	30°09'33.73"	88°05'57.99"	Not Charted	34/10 ⁴
#7443	30°09'18.73"	88°05'53.99"	Charted	33/10 ¹

All of these items are shown as obstructions on the prior survey, and four of these items are presently charted as obstructions. These items were searched for by the field unit with negative results. These items are considered disproved by the present survey. Additionally, these items are located within the limits of the charted Dump Site and are most likely dredged material that has been dumped. It is recommended that the charted items be removed from the chart and the area be charted as shown on the present survey.

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

b. Wire Drag

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

Nine (9) hangs or groundings originating with the prior survey fall within the present survey area. Two additional hangs or groundings are located near the edges of the present survey. Four of the hangs or groundings that are within the limits of the present survey are charted AWOIS items. The following should be noted:

1) AWOIS Item #3641, a charted Shl with a wire drag clearance depth of 35 feet, in Latitude 30°08'30.73"N, Longitude 88°05'32.99"W, originates with H-9374WD (1973). The AWOIS history states that this item will be deleted from the chart. The AWOIS history also states that this item was disproved by H-10226 (1986-88) with depths of 41 to 45 feet (12⁵ to 13⁷ meters). Present survey depths range from 12⁷ to 13⁶ meters (41 to 44 feet). The shoal is shown on the 41st edition of chart 11376. The present survey depths coupled with the absence of side scan sonar contacts in the vicinity reinforce the conclusion that the charted shoal does not exist. It is recommended that the feature be deleted from the chart and the area be charted as

shown on the present survey.

2) A copy of the A&D sheet for survey H-9374WD (1973) was not available for an effective depth comparison with present survey soundings.

7. COMPARISON WITH CHART 11376 (41st Edition, Mar. 16/91)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys. The following should be noted:

1) The following four (4) uncharted obstructions with reported depths were noted during office processing of the present survey for the 1991 field season and recommended for additional work:

<u>Depth (m/ft)</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
14 ⁷ (A)/48(A)	30°08'04.76"	88°03'53.06"
14 ³ (A)/47(A)	30°08'06.67"	88°03'50.61"
12 ⁷ (A)/41(A)	30°08'25.29"	88°04'50.33"
11 ⁶ (A)/38(A)	30°09'53.80"	88°07'31.28"

The above items were developed and resolved by the hydrographer during the 1992 field season with the following results respectively:

<u>Depth (m/ft)</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
15 /49	30°08'05.32"	88°03'53.63" ✓
15 ⁶ /51	30°08'06.87"	88°03'50.49" ✓
13 ⁶ /44	30°08'25.42"	88°04'50.27" ✓
12 ⁴ /40	30°09'54.12"	88°07'31.01" 11377 ✓

These obstructions are shown on the present survey and are considered adequate to supersede the above obstructions with reported depths. Charting recommendations are found in section M. of the report for additional work appended to the Descriptive Report.

2) During office processing five uncharted obstructions were noted in the field survey records and inserted into the present survey records. These obstructions are listed as follows:

<u>Depth (m/ft)</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
10 ⁸ /35	30°10'12.56"	88°06'35.19" 11377 ✓
14 ² /46	30°08'12.07"	88°02'30.76" 11377 ✓
15 ¹ /49	30°08'11.91"	88°02'37.38" ✓

<u>Depth (m/ft)</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
14 ¹ /46	30°08'10.32"	88°02'37.35" 11377 ✓
17 ³ /57	30°08'03.55"	88°02'30.84" 11377 ✓

It is recommended that these obstructions be charted as shown on the present survey. It is also recommended that additional work be conducted on these obstructions at an opportune time.

3) Two charted gas wells and a charted oil platform were located by the field unit in following locations:

<u>Description</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
Gas Well "TI-MO-869-1"	30°08'22.51"	88°04'43.71" ✓
Gas Well "EXXON-MO-868-1"	30°09'01.06"	88°06'14.34" ✓
Oil Platform "SH-MO-132-JB"	30°09'38.72"	88°04'50.10" ✓

These positions compare favorably with the charted positions and the positions listed in the Eighth Coast Guard District's 1991 LISTING OF OFFSHORE OIL, GAS, AND MINERAL RELATED STRUCTURES. It is recommended that the structures be charted as shown on the present survey.

4) AWOIS Item #3627, a charted note Outer limit obstructions Fish Haven, in Latitude 30°06'40"N, Longitude 88°08'00"W, originates with Chart Letter 921 of 1959 (CL921/59) and was revised by CL577/61 and CL638/62. No indication of the fish haven was noted on H-10226 (1986-88). Field unit personnel discussed the item with local residents and determined that the fish haven was never established. The charted notation should be deleted from the chart. ✓

5) A small piece of what appears to be centerline of the "Main Ship Channel" is charted in the vicinity of Latitude 30°08'35.78"N, Longitude 88°03'39.17"W. This line, which is oriented in a southwest to northeast direction, seems to serve no useful purpose. It is recommended that the chart compiler research the origin of this line and determine its appropriateness on future chart editions. ✓

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

this line represents part of the "range line" from the two range lights on Mobile Point. The light place is missing from the front range light. N/C 2273 (Quality Assurance) notified by N/C 241. 6/8/93, SJV

b. Controlling Depths

Three soundings near the edge of the Entrance Channel are shoaler than the 47 foot (14³ meter) depth shown in the tabulation. These depths are as follows:

<u>Depth (m/ft)</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
14 ² /46	30°08'49.91"	88°03'37.76" 11377 ✓
14 ¹ /46	30°08'51.66	88°03'27.99" ✓
14 ¹ /46	30°08'57.62"	88°03'34.22" 11377 ✓

c. Aids to Navigation


The hydrographer located eight (8) floating aids to navigation in the survey area. Two of these aids were removed from the survey area prior to completion of the present survey and are not shown on the present survey. The aids shown on the present survey appear adequate to serve their intended purpose.

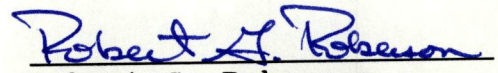
8. COMPLIANCE WITH INSTRUCTIONS


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

9. ADDITIONAL FIELD WORK

This is an adequate basic survey; additional field work recommendations are in section 7.a.2) of this report.


 Franklin L. Saunders
 Cartographic Technician
 Verification of Field Data


 Robert G. Roberson
 Supervisory Cartographer
 Evaluation and Analysis


 Leroy G. Cram
 Supervisory Cartographic Technician
 Verification Check

APPROVAL SHEET
H-10393

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 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: 31 MARCH 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.

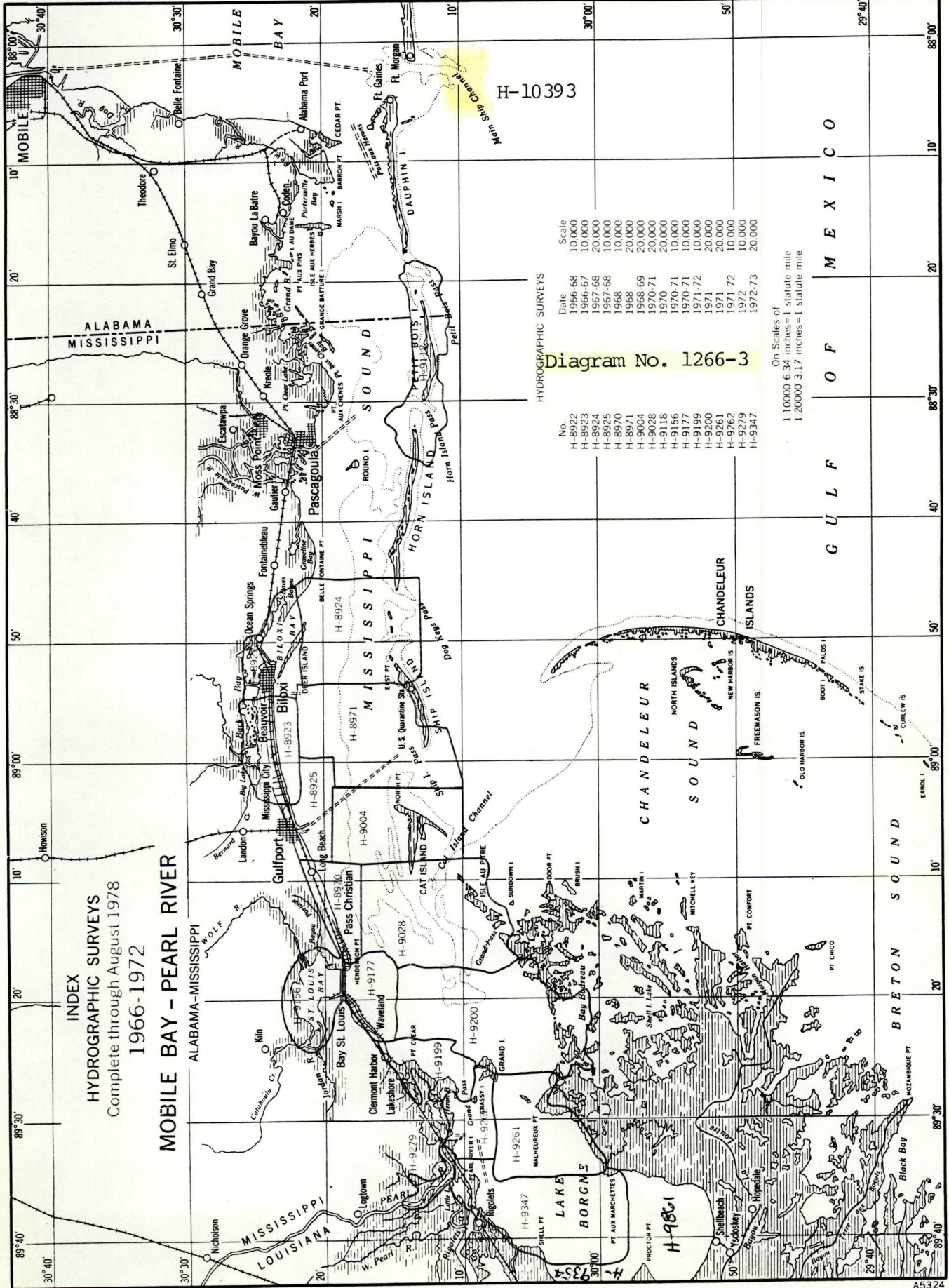
Christopher B. Lawrence Date: 31-March 1993
Christopher B. Lawrence, CDR, NOAA
Chief, Atlantic Hydrographic Section

Final Approval:

Approved: J. Austin Yeager Date: 3-13-95
for 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. 86 E



INDEX
HYDROGRAPHIC SURVEYS
Complete through August 1978
1966-1972

MOBILE BAY - PEARL RIVER

HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-8922	1966-68	10,000
H-8923	1966-67	10,000
H-8924	1967-68	20,000
H-8925	1967-68	10,000
H-8970	1968	10,000
H-8971	1968	20,000
H-9004	1968-69	20,000
H-9118	1970-71	20,000
H-9156	1970-71	10,000
H-9177	1970-71	10,000
H-9195	1971-72	20,000
H-9200	1971	20,000
H-9261	1971	20,000
H-9262	1971-72	10,000
H-9279	1972-73	10,000
H-9347	1972-73	20,000

Diagram No. 1266-3

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

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10393

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
11006	7/17/93	John Barber	Full Part Before After Marine Center Approval Signed Via Drawing No. 38 Exam. no corr's due to scale
411	7/17/93	John Barber	Full Part Before After Marine Center Approval Signed Via Drawing No. 65 Exam. no corr's due to scale
11376	7/26/93	John Barber	Full Part Before After Marine Center Approval Signed Via Drawing No. 55 APP'd critical corr's.
11006	7/26/93	John Barber	Full Part Before After Marine Center Approval Signed Via Drawing No. 38 APP'd critical corr's
11377	7/26/93	John Barber	Full Part Before After Marine Center Approval Signed Via Drawing No. 2 APP'd critical corr's
411	7/26/93	John Barber	Full Part Before After Marine Center Approval Signed Via Drawing No. 65 APP'd critical corr's
11360	7/26/93	John Barber	Full Part Before After Marine Center Approval Signed Via Drawing No. 47 APP'd critical corr's
11360	5/20/94	Don Flish	Full Part Before After Marine Center Approval Signed Via Drawing No. 48
11006	9/15/95	Jason Shadid	Full Part Before After Marine Center Approval Signed Via Drawing No. 39
			Full Part Before After Marine Center Approval Signed Via Drawing No.