FE386

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Field Examination

Field No. HE-10-1-93

Registry No. FE-386

LOCALITY

State Texas

General Locality Gulf of Mexico

Sublocality Approach to Aransas Pass

19 93

CHIEF OF PARTY
LCDR G.E. White

LIBRARY & ARCHIVES

DATE August 9, 1994

FE386

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NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

FE-386SS

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-10-1-93

State TEXAS

General locality GULF OF MEXICO

Locality APPROACH TO ARANSAS PASS

Scale 1:10,000 Date of survey 20 26 SEPT 93 - 28 OCT 93

Instructions dated 17 SEPT 92 Project No. OPR-K320

Vessel NOAA SHIP HECK (EDP 9140)

Chief of party George E. White, LCDR, NOAA

Surveyed by LCDR George E. White, LT Gerd F. Glang, LTJG Michael Williamson
ENS Lawrence T. Krepp, AST Kevin B. Shaver

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

Graphic record scaled by LTJG Williamson, ENS Krepp, AST Shaver

Graphic record checked by ENS Krepp

Protracted by N/A Automated plot by ~~HDAPS~~ XYNETICS 1201

Verification by Atlantic Hydrographic Section, N/CG244

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

REMARKS: Change #1 dated September 14, 1993

All times UTC

Data submitted to Atlantic Hydrographic Section N/CG244

Refer to NOAA Ship WHITING survey H-10392 (1991)

NOTES IN The Descriptive Report were made in Red during office processing

AWOIS/SURF ✓ 8/18/94 SJV

K.W.M.

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

☆ U.S. GOVERNMENT PRINTING OFFICE: 1978-665-010-1174

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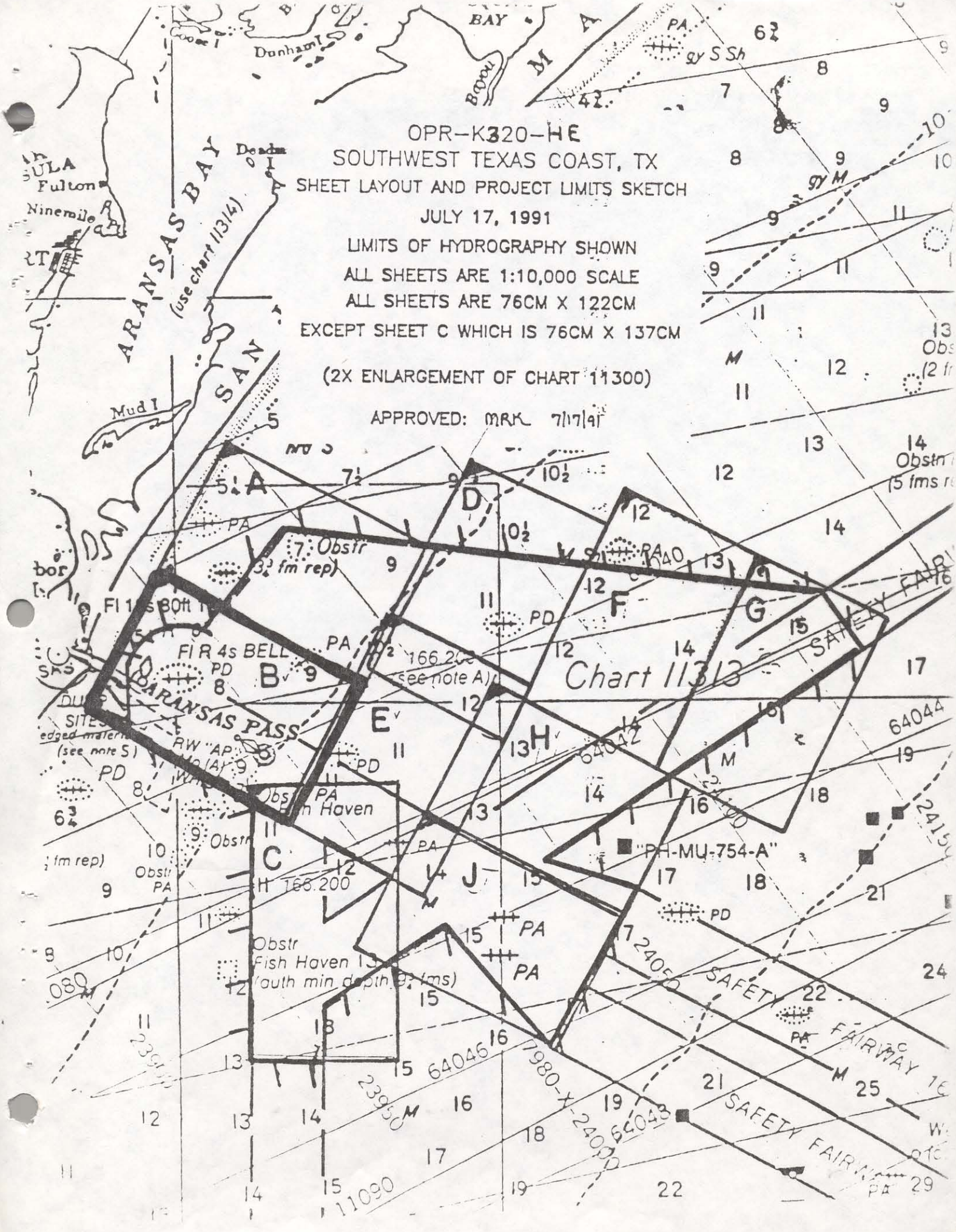
OPR-K320-HE
SOUTHWEST TEXAS COAST, TX
SHEET LAYOUT AND PROJECT LIMITS SKETCH
JULY 17, 1991
LIMITS OF HYDROGRAPHY SHOWN
ALL SHEETS ARE 1:10,000 SCALE
ALL SHEETS ARE 76CM X 122CM
EXCEPT SHEET C WHICH IS 76CM X 137CM
(2X ENLARGEMENT OF CHART 11300)
APPROVED: MRK 7/17/91
ARANSAS BAY
(use chart 11314)
Fulton
Ninemile
Mud I
Dunham I
Chart 11313
ARANSAS PASS
Fl R 4s BELL
Fish Haven
"PH-MU-754-A"
SAFETY FAIRWAY
A
B
C
D
E
F
G
H
J

DESCRIPTIVE REPORT TO ACCOMPANY
FIELD EXAMINATION FE-386SS
FIELD NUMBER HE-10-1-93
TEXAS
GULF OF MEXICO
APPROACH TO ARANSAS PASS
Scale 1:10,000
NOAA SHIP HECK S-591
LCDR GEORGE E. WHITE, NOAA, CMDG.

A. PROJECT

1. This survey was conducted in accordance with Hydrographic Project Instructions OPR-K320-HE, SW Texas Coast, Texas. Data was collected during the 1993 field season.

2. Original project Instructions are dated September 17, 1992.

3. Change one to the Project Instructions are dated September 14, 1993. The project number has been changed from OPR-K220 to OPR-K320 according to the updated instructions.

4. This sheet has been designated as Sheet "B".

5. The purpose of this project is to accomplish complete side scan sonar coverage (200%, <20 meters of water and 100%, >20 meters of water) of the safety fairway and the fairway anchorages at the approaches to Port Aransas, Texas, and to investigate a number of wrecks and obstructions in or near the safety fairway. These fairways and anchorages are used by a large number of commercial ships bound for Corpus Christi, Navy ships stationed at Ingleside Navy Base, and a significant shrimp boat fleet, as well as pleasure craft. The NOAA ship WHITING conducted a survey of this area in 1991 (H-10392), but did not completely resolve all AWOIS items assigned. Also, the WHITING experienced some apparent positioning problems with regard to some of their contacts on this sheet. The purpose of FE-386SS for the HECK was to complete the remaining AWOIS search radii and investigate the significant contacts located during the WHITING H-10392 project.

B. AREA SURVEYED

1. The survey area, designated Sheet "B" in the Project Instructions, lies in the Gulf of Mexico, immediately east of the entrance to Aransas Pass, Texas.

2. The approximate survey sheet limits are formed by connecting, in order, the following points:

	LAT	LON
a.	27° ~~53'~~ 51' ~~10"~~ 32"	097° ~~00'~~ ~~25"~~ 02' 16"
b.	27° ~~49'~~ 51' ~~30"~~ 32'	096° ~~53'~~ ~~30"~~ 56' 54"
c.	27° ~~45'~~ 47' 10"	096° 56' ~~15"~~ 54"
d.	27° ~~48'~~ 47' ~~30"~~ 58"	097° ~~03'~~ ~~00"~~ 02' 16"

The survey area is defined by the following AWOIS/H-10392 search circles:

AWOIS/ TGT#	CENTER LAT	LON	RADIUS
4163	27°47'43.1"N	096°57'22.95"W	500M
2522.17	27°47'56.19"N	096°57'21.23"W	250M
1640.48	27°47'28.23"N	096°57'24.27"W	250M
4090.61	27°47'25.9"N	096°57'23.95"W	250M
7859	27°49'36.0"N	097°00'00.00"W	3000M
1616.34	27°49'38.2"N	097°01'47.0"W	250M
4069.49	27°49'37.3"N	097°01'46.4"W	250M
4039.57	27°49'31.0"N	097°01'11.6"W	250M
1912.75	27°48'56.4"N	097°00'09.4"W	250M
3684.62	27°48'56.2"N	097°00'15.5"W	250M
3689.18	27°48'55.4"N	097°00'16.1"W	250M
1560.70	27°48'09.8"N	096°58'55.3"W	250M

3. Survey operations began on September ~~26~~ 30, 1993 (DOY 263), and were completed on October 28, 1993 (DOY 301).

C. SURVEY VESSELS

1. All hydrographic and side scan data was collected by NOAA Ship HECK (EDP 9140). All offset and layback information is contained in the offset table located in section IV of the separates.

2. No unusual vessel configurations were used.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

1. Survey data acquisition and processing were accomplished utilizing HDAPS hardware and the latest version of the NAVITRONIC NAVISOFT 300 software provided to the ship by N/CG24.

2. A listing of actual programs and versions is appended in Appendix VI.

3. No unusual data collection methods were used.

E. SONAR EQUIPMENT

1. 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 016697	DOY 259 - 260
Towfish	S/N 10823	DOY 260 - 301
Recorder	S/N 0012105	DOY 259 - 265
Recorder	S/N 0012102	DOY 265 - 301

2. The beam width is not adjustable on this unit. The grazing angle dip switch setting are normally set to 01, unless otherwise noted on the sonar records.

3. All SSS data was collected using 100 Khz frequency.

4. a. Line spacings of 160 meters on the 100 meter scale, 120 meters on the 75 meter scale and 80 meters on the 50 meter scale were used to maintain the required line overlap as determined by the equation in the FPM 7.3.2.2.

b. Confidence checks were obtained, and annotated on the sonargrams, by towing the side scan unit either past known items or linear bottom features.

c. Required proof of sonar coverage is demonstrated through sonar coverage plots produced as HDAPS swath plots. Quality of bottom coverage to the outer edges of the sonargrams was assured during check scanning.

d. The muddy bottom type within the survey limits provides a weak sonar return. The bottom is also very flat with few natural bottom features, so a relatively drab side scan record is produced. Trawl scours from the Aransas Pass shrimp boat fleet are also found. The actual depth of these scours are typically less than 0.2 meters, as witnessed by divers, but are still detectable by the system. Also on some days when seas became relatively rough, some surface effects were observed on the sonargrams due to surface turbulence. In some instances in rough weather, bucking action induced on the towfish by the ship caused alternate light and dark bands on the sonargram.

e. The towfish was deployed from the stern. All offset and layback information is provided in the offset table located in section IV of the separates.

5. Contacts were investigated using side scan sonar developments using a two or three pass "wagon wheel" pattern over the target. Diver investigations were conducted on items that were determined to be significant during the side scan sonar developments. Echosounder developments utilizing a reduced line spacing or multiple passes drifting over a target were used for targets lying in or near the entrance channel to Aransas Pass when diving operations in or near the channel were considered hazardous.

6. The sonar contact list (Side Scan Sonar Manual 3.1.1.1.) is provided through the HECK's side scan survey contact abstract table and the automated HDAPS contact printout that is produced during the computation and logging of contacts. Depths on the HDAPS contact printout are raw, however, depths on the side scan survey contact list are manually corrected for draft (+2.1 meters). Both are located in separates Section IV.

Three (3) 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 those cases, the targets plotted on top of each other. However, the recommended charting positions were derived from their DP's.

Targets to develop were chosen based on contact height, strength of return and shape. All contacts with heights greater than 0.6 meters were chosen for further development with side scan sonar or echosounder. Also chosen were contacts with strong returns or interesting shapes. Upon development, those targets still meeting the criteria for significance (1.0m height in depths <20m and heights 10% of water depth in depths over 20m) were investigated by divers. Least depths were determined by using pneumatic depth gauge.

Annotations required by section 2.6 of the Side Scan Sonar manual (ship's speed, ship's head, weather/sea state) are not placed on the sonargrams. This information is located in the digital records and can be examined in the "Depth/Position Edit" sub-routine of the Post-Survey routine. Weather information is in the weather logs found in Appendix VI.

F. SOUNDING EQUIPMENT

1. A Raytheon DSF-6000N echosounder (SN: A116N) was used during this survey. Both low and high frequency depths were digitized, but only high frequency depths were plotted.

Annotations for sea state and weather appear at least once a day on the printout header and the daily data acquisition abstract. Hourly weather observations were also made and can be seen in appendix VI.

Heave information is recorded digitally from the HIPPY and the heave corrector is applied on line. Ship's head and speed are recorded digitally.

2. Diver least depths were determined by using one of two pneumatic depth gauges. The deep gauge was used for depths between 20 and 40 meters. The shallow gauge was used for depths between 0 and 20 meters. Pneumo depth gauge serial numbers were annotated on the diver investigation reports.

3. There were no faults in the equipment that affected sounding accuracy or quality.

G. CORRECTIONS TO ECHOSOUNDINGS

1. a.1. The following table shows dates and locations of velocity casts conducted using the ODOM Digibar sound velocimeter (S/N 168):

TABLE	DATE	LOCATION
1	09/16/93 (DOY 259)	26°46'55"N 096°38'10"W
2	09/30/93 (DOY 272)	26°47'57"N 096°41'38"W
3	10/07/93 (DOY 280)	26°50'20"N 096°38'20"W

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

b. The Digibar was checked on December 14, 1992, 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.

c. There are no instrument corrections on the DSF-6000N.

d. On DOY 115 (1992) a dual leadline comparison was conducted. A mean difference of 0.06 meters was obtained resulting in a corrector of 0.0 meters. Results are shown in Separates Section IV.

e. The computed velocity correctors were applied on line to echosounder depths (both high and low frequency) by entering the correction data into the HDAPS sound velocity table.

f. The static draft of 2.10 meters was applied on line to all echosoundings via the HDAPS offset table. The static draft was measured on April 24, 1992 and is shown in Separates Section IV in the HDAPS offset table #1.

g. Settlement and squat values for NOAAS HECK were determined on March 03, 1993 in the vicinity of Craney Island fuel pier in Norfolk, Virginia using the level rod method. These correctors are on file at N/CG244 and are included in Separates Section IV.

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

h. Heave is measured by a Datawell B.V. (S/N 19110-C) heave, roll, and pitch sensor (HIPPY) located amidships 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.

2. No unusual methods or instruments for determination of correction to soundings were used.

3. No zoning or special correctors were used.

4. Both pneumatic depth gauges were calibrated on February 10, 1993. No gauge error was found during the course of the survey. System checks were performed in 1993 and can be found in Separates Section IV.

5. There were no unusual factors affecting DSF records.

6.a. The tidal datum for this survey was mean lower low water (MLLW). The tide station at Bob Hall Pier, Corpus Christi, Texas was the reference station. The station was inspected and bracketing levels were run by HECK's crew. No tide stations were established by HECK in support of this survey.

b. All hydrographic depths have been corrected for predicted tides. No zone correctors were specified in the project instructions. Tidal correctors were applied on line via the HDAPS predicted tide table. No corrections are needed for the predicted tides. *

c. Zoning was in accordance with project instructions. No zoning was used.

* Approved TIDES and ZONING have been applied during office PROCESSING

H. CONTROL STATIONS

SEE ALSO SECTION H. of the Evaluation Report

1. The horizontal datum for this project is the North American Datum of 1983 (NAD 83).

2. Horizontal control was accomplished using GPS in conjunction with the DGPS beacons in Port Aransas and Galveston.

3. Coast Guard DGPS beacons were positioned by N/CG241. All control stations were positioned to Third order, Class 1 standards.

4. No horizontal control stations were installed or maintained by HECK.

5. No horizontal control report has been submitted to NOAA Atlantic Hydrographic Section, N/CG 244.

6. No known anomalies or unconventional methods of horizontal control were used.

I. HYDROGRAPHIC POSITION CONTROL

1. Position control was determined by Differential Global Positing System (DGPS). Control station positions were entered into the HDAPS Control Station Table. The first, and most commonly used, was the Port Aransas beacon (304 kHz). The Galveston DGPS beacon (296 kHz) was also used. The list of the DGPS beacons and their positions appear in appendix III, LIST OF HORIZONTAL CONTROL STATIONS submitted with this survey.

2. Accuracy requirements were met as specified by the Hydrographic Manual and Field Procedures Manual.

3. Equipment serial numbers appear as part of the header information on each day's data print out. The GPS receivers on board are Ashtech OEM sensors. The serial numbers are listed in HDAPS header printout for each days data. The differential receivers are Magnavox MX50R receivers. The serial number for DGPS receiver one is 079. The serial number for DGPS receiver two is 077.

4. Performance checks using both DGPS positions (Port Aransas and Galveston) were conducted using the SHIPDIM program. These checks compare positions computed by both DGPS beacons and compare their subsequent differences. The performance checks were sent to the processing unit as part of the data.

5. When Differential GPS was used, the maximum allowable HDOP was set at 3.7 when monitoring the Port Aransas beacon, and 3.0 when monitoring the Galveston beacon, to avoid EPE's in excess of the allowable 15 meters for this scale survey. Data not meeting these requirements were examined and either accepted, smoothed or rejected.

6. a. No unusual methods of operating or calibrating electronic position equipment were used.

b. The Port Aransas beacon was prone to significant outages. The beacon would lock-up resulting in no correctors being transmitted until the beacon was reset by Coast Guard personnel. Coast Guard personnel also informed HECK that there were pieces missing out of the transmit antenna ground plane which affects signal strength in various directional sectors.

There were no outages of the Galveston DGPS beacon that can be readily attributed to mechanical or electrical failure of the beacon. There were no failures of the DGPS positioning on board HECK.

c. DGPS outages frequently occurred at sunrise, noon, sunset and midnight while surveying in the project area. During these times, there were no significant losses of visible satellites. The losses outages are suspected to be caused by solar disturbances of the DGPS corrector signals.

d. The problems discussed in sections 6b and 6c above did not affect position accuracy but did cause frequent manual shifting between the two available DGPS stations to maintain positioning while collecting data on line.

e. No systematic errors were discovered.

f. and g. All survey offsets were applied on-line using the HDAPS Offset Table 1.

J. SHORELINE

Not applicable as per project instructions.

K. CROSSLINES

1. No crosslines were run for this field examination.
2. N/A.
3. N/A.
4. N/A.

L. JUNCTIONS

See Evaluation Report Section L.

This field examination did not junction with any other survey sheets. Refer to WHITING survey discussed in Section M.

M. COMPARISON WITH PRIOR SURVEYS

1. The prior surveys relevant to this field examination are as follows:

REGISTRY NUMBER	SCALE	YEAR SURVEYED
H-10392	1:10,000	1991
H-6395	1:20,000	1938
H-6402	1:40,000	1938

2. The prior surveys mentioned were compared with FE-386SS. A datum shift from NAD 83 to NAD 27 was applied to FE-386SS using the NADCON program to aid in comparison. The results of the datum shift are included in Section III of the Separates.

a. **H-10392** is a 1:10,000 scale survey conducted by the NOAA ship WHITING in 1991. All of the areas covered during FE-386SS fall within the limits of H-10392. Depth comparisons between the two surveys have fairly good coincidence, with a range of discrepancy between 0.0 and 0.6 meters.

Junctional Survey

b. **H-6395** is a 1:20,000 scale survey which covers the waters from near shore to approximately two nautical miles offshore of Aransas Pass and Mustang Island. Only the most inshore portions of FE-386SS fall within the limits of H-6395. A comparison of the depths between the two surveys shows moderate agreement, with discrepancies of up to two meters. This apparent deepening south of the entrance channel, is most likely due to erosion.

c. **H-6402** is a 1:40,000 scale survey which was conducted in 1939. H-6402 covers the waters adjacent to St. Joseph Island, Aransas Pass and Mustang Island from near shore to approximately fourteen nautical miles offshore. A comparison of depths between H-6402 and FE-386SS shows a good correlation, with a range of difference of approximately 0-2 meters.

N. ITEM INVESTIGATION REPORTS

N1. SUMMARY OF ITEMS INVESTIGATED

AWOIS #/ TGT #	SECTION	STATUS	RECOMMENDATION
277.23	N2	Found	Chart Obstruction
280.53	N3	No Further Investigation	
291.43	N4	Found	Chart Obstruction
3.69	N5	Found	Do Not Chart
4163	N2	Found	Chart Obstruction
7859	N6	Disproved	Delete Wreck

N2. DISCUSSION OF ITEMS

N2. CONTACT NO. 277.23

This contact is listed in contact table #1, with a computed height of 1.0 meters in 18.9 meters of water. The contact was further developed on DOY 277 between positions 319-324 and 329-336 with the side scan sonar on the 75 meter range scale. Divers investigated the item on DOY 277 during two consecutive dives finding two sunken buoys in close proximity. The most significant of the two buoys had a height off the bottom of 1.9 meters. This buoy was positioned by DP #341. This contact corresponds closely with the position of the previous WHITING contacts 1640.48 and 4090.61. Also, because these contacts lie within the circle search radius of AWOIS #4163, described as an old entrance buoy to Aransas Pass, the hydrographer believes this AWOIS item to be resolved.

DP #341
Date: October 4, 1993
Time (UTC): 220000
Averaged measured depth: 16.8 M
Predicted Tide Corrector: -0.2 M
Corrected Least Depth: 16.6 M

LAT: 27°47'25.5"N
E: 24988.0
Datum: 1983

LON: 096°57'24.3"W
N: 23030.8

Recommendation: Chart an obstruction with least depth ~~17.5~~ 16.1 M (53 ft) based on ~~predicted~~ SMOOTH tides at the above location. Concur

N3. CONTACT NO. 280.53

This target is listed in contact table #1 with a computed height of 1.4 meters in 18.7 meters of water. The contact was further investigated on DOY 277 between fixes 325-328, 337-340 with the side scan sonar on the 75 meter range scale. Divers investigated the item on DOY 277 with a thirty meter search radius, finding nothing. A detached position (DP #342) was taken at the center of the search radius to assure that the search was conducted in the correct area. CONCUR

N4. CONTACT NO. 291.43

This target is listed in contact table #1 with a computed height of 1.2 meters in 18.0 meters of water. The contact was further investigated on DOY 278 between fixes 354-357 with the side scan sonar on the 75 meter range scale. Divers investigated the item on DOY 278 finding a sunken buoy. The item was positioned by DP #359. The location of this detached position is closely related to the position of WHITING target #2522.17.

DP #359
Date: October 5, 1993
Time (UTC): 185600
Averaged Measured Depth: 17.2 M
Predicted Tide Corrector: ~~-0.74~~ M
Corrected Least Depth: 16.5 ~~M~~ 8

LAT: 27°47'56.~~4~~36"N LON: 096°57'21.~~2~~23"W
E: 25074.9 N: 23981.1
Datum: 1983

Recommendation: Chart an obstruction with least depth 16.5 8 (55 ft) meters based on ~~predicted~~ SMOOTH tides at the above position. CONCUR and delete Obstn PA (55 ft reported) SJV 8/18/94

N5. CONTACT NO. 3.69

This contact is listed in contact table #1 with a computed height of 1.1 meters in 12.7 meters of water. The contact was further investigated on DOY 278 between fixes 364-369 with the side scan sonar on the 75 meter range scale. Divers investigated the item on DOY 278 finding a buoy block set flush in the bottom, with approximately three feet of chain attached. The block was very near the red "6" entrance buoy but outside of the dredged channel. The block was positioned by DP #370. No pneumo gauge readings were taken. The position of this block closely approximates the position of WHITING contact #4039.57.

DP #370
Date: October 5, 1993
LAT: 27°49'31.0"N LON: 097°01'12.2"W
E: 18761.2 N: 26919.7
Datum: 1983

Recommendation: Do not chart. CONCUR

N6. AWOIS ITEM 7859

1. Area of Investigation

Reported Position:
Latitude: 27°49'~~36.0~~ 37.09"N
Longitude: 097°00'00.0 .95"W
Datum: NAD83
Depth: N/A
Feature: Wreck

2. Description of Item

This item is listed as the 37 foot fishing vessel "Destiny Lane"

3. Survey Requirements

Survey requirements specify determining the existence of this item through salvage documentation, diver investigation or 200% side scan sonar coverage over a 3000 meter search radius. The NOAA ship WHITING completed the eastern 75% of this search radius in 1991. The NOAA ship HECK was to complete the remaining 25% area.

4. Method of Investigation

200% side scan sonar coverage was conducted in the western 25% area not covered by the WHITING in 1991.

5. Results of Investigation

No significant contacts fitting the description of the "Destiny Lane" were found during the sonar investigation. The item is disproved. The hydrographer recommends deleting this wreck from the chart. CONCUR

N7. Previous WHITING Contacts 1616.34 and 4069.49

These targets originally appeared in Attachment 1 of the HECK's original project instructions but were not assigned in the HECK's final AWOIS listing. These contacts are located in the vicinity of the green "7" buoy at the entrance to Aransas Pass. 200% side scan sonar coverage was completed over a 250 meter search radius. No significant contacts were found. concur

N8. Previous WHITING Contacts 1912.75, 3684.62 and 3698.18

These targets originally appeared in Attachment 1 of the HECK's project instructions but were not assigned in the HECK's final AWOIS listing. The NOAA ship WHITING had discovered these items during their survey of the area in 1991. The NOAA ship HECK completed a 250 meter search radius for each item using 100% side scan sonar coverage. No significant items were found. concur

N9. Previous WHITING Contact 1560.70

This target originally appeared in Attachment 1 of the HECK's project instructions but was not assigned in the HECK's final AWOIS listing. This target was identified by the NOAA ship WHITING during their survey of the area in 1991. 100% side scan sonar coverage was completed by the HECK over a 250 meter search radius. No significant contacts were observed. concur

O. COMPARISON WITH THE CHART

1. The charts relevant to this project area are as follows.

CHART	EDITION	DATE	SCALE
11300	31st	SEP 92	1:460,732
11307	32nd	AUG 92	1:80,000
11309	31st	AUG 91	1:40,000
11313	20th	JUL 92	1:80,000

The survey limits fall within all of the charts listed above, which were compared to ~~the~~ FE-386SS.

2. No Danger to Navigation Reports were filed during this survey.

3. a. The charted soundings compare favorably with the depths of the present survey.

b. The survey shows greater depths (up to 0.3 meters) than those charted throughout the survey area.

c. The depths from this survey should replace all prior depths in the area.

f. No significant hydrographic features were noted.

g. The Aransas Pass entrance channel lies within the survey limits. The centerline of the channel was investigated using side scan sonar. The outer left and right quarters of the channel were investigated using echosounder. Soundings inside the channel were deeper than the minimum channel depths shown on the chart.

h. Fairway soundings were compared to the chart. The soundings in the fairway compare well to those on the chart.

4. a. There are no non-sounding features found within the survey limits.

b. PA, ED, and PD features were investigated as assigned and their existence and position evaluated in section N.

C. No wrecks, obstructions or other significant features other than those previously mentioned were observed.

5. No changes are recommended to scale, coverage or format of published charts in this survey area.

P. ADEQUACY OF SURVEY

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

2. There are no areas within the survey limits that are incomplete or substandard.

Q. AIDS TO NAVIGATION

1. No correspondence was initiated with the Coast Guard regarding floating aids to navigation.

2. No floating aids to navigation were positioned for this field examination.

3. No aids to navigation not shown in the light list were noted in the survey area.

4. No bridges, overhead cables or pipelines were observed within the limits of this survey.

5. No submarine cables, submarine pipelines, or ferry routes were noted in this survey area.

R. STATISTICS

ITEM	AMOUNT
1. Total No. of Positions	1275 Fixes
2. Lineal NM of Soundings	188 NM
3. Square NM Hydrography	12 NM^2
4. Days of Production	15 Days
5. Bottom Samples	None
6. Tide Stations Established	None
7. Current Stations Established	None
8. Velocity Casts Performed	3 Casts
9. Magnetic Stations Established	None
10. Detached Positions	4

S. MISCELLANEOUS

1. a. The water in this area of the Gulf of Mexico has a high silt content which results in a muddy bottom type.

   b. No unusual submarine features were noted.

   c. No anomalies in either tide or current were noted.

   d. No current observations were made.

   e. No magnetic anomalies were noted.

2. No bottom samples were taken during this survey.

T. RECOMMENDATIONS

1. No additional field work is recommended.

2. No dredging operations are being conducted or are planned within the limits of this survey at the time of this survey.

3. No further investigation of unusual features or sea conditions is recommended.

U. REFERRAL TO REPORTS

1. User Evaluation information will be sent at the completion of the project.

2. A Coast Pilot report will be sent at the completion of the project.

3. LORAN-C chart verifications can be found on the dive investigation sheets in Separates Section VI.

Respectfully Submitted,

Lawrence T. Krepp, ENS, NOAA
Junior Officer
NOAA Ship HECK

Checked By:

Michael Williamson, LT(jg), NOAA
Operations Officer
NOAA Ship HECK

CONTROL STATIONS as of 14 Jan 1994

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MM/DD/YY	Station Name
1		027:50:18.000	097:03:32.000	0	0	0.0	0.0		03/01/92	PORT ARANSAS DGPS BEACON
2		029:19:44.000	094:44:10.000	0	0	0.0	0.0		03/01/92	GALVESTON DGPS BEACON

No.	YR	CODE	Name	Lat	Lon	HT
102	93	250	DEL Mar, 1991 (Field Positim) Not IN Survey Area	26/00/43.012	97/09/12.091	5.0
103	93	250	NUTS, 1992 (Field Positim) (NOT IN Survey Area)	26/05/06.850	97/09/41.098	86.0
104	93	250	INVE.92, 992 (Field Positim) (NOT IN Survey Area)	26/07/42.123	97/10/03.070	34.0
105	93	250	Beach, 1939 (NOT IN Survey Area	26/11/11.400	97/10/37.572	2.0
106	93	250	COAST, 1939 (NOT IN Survey Area)	26/14/29.466	97/11/23.283	5.0
200	93	250	PORT Aransas, TX GPS, 1992 (Field Positim) (NOT IN Survey Area)	27/50/18.156	97/03/32.646	0.0
300	93	250	Galveston, TX GPS, 1992 (Field Position) (NOT IN Survey Area)	29/19/45.092	94/44/10.484	0.0

JoHB

320

DIVING OPERATIONS
OPR-~~K370~~-HE-93 ARANSAS PASS 8/24/94 SJV
APPROACHES TO ~~PORT ISABEL~~ TX
NOAA SHIP HECK S-591

DOY 277
TARGET # 277.23

DATE 10/4/93

SEARCH RADIUS 30 m
DEPTH FROM : PNEUMO/LEAD LINE

MAX DEPTH : 64 FT
MAX TIME : 26 MIN
LEAST DEPTH : 55.1 FT
TIME : 2200 UTC

ATM. CONDITIONS
WIND: DIR SE SPEED 10 KNTS
TEMP: 28° C

SEA CONDITIONS
SEAS: DIR 105° HEIGHT 2-4 FT
TEMP: 27.8 C
VISIBILITY: 1-2'

DIVER NAME	SUR F INT	GP	RNT	TNK PRESSURE IN/OUT	dP	DIVE TIMES UP/DOWN	BOTTOM TIME	DEP TH	GR
WILL				3000/200	2800	2112/2046	26	62	F
KREPP				3100/850	2240	2112/2046	26	62	F
WHITE				2900/400	2500	2205/2138	24	64	
KREPP				2800/600	2200	2205/2138	24	64	

DETACHED POSITION NUMBER: 341
POSITION: LAT 27°47'25.49" LONG 096°57'24.27"
E: 24988.0 N: 23030.8

LORAN RATES: W: 11076.0 (7980) X: 23992.8 (7980)
Y: 46766.5 (7980) Z: 64050.8 ~~(9610)~~ 7980
4

SJV 8/18/94

DIVER COMMENTS:
1st DIVE FOUND SUNKEN BUOY, SECOND DIVE FOUND SUNKEN BUOY CLOSE TO 1st STICKING ABOVE SURFACE APPROX 6 FEET. SECOND BUOY IS MORE SIGNIFICANT. DP TAKEN AT SHOALEST POINT OF SECOND BUOY

PNEUMO DEPTH READINGS: 16.8, 16.8, 16.8 m. @ 2200 UTC = 16.8m
- 0.7m Smooth Tide

120m VDAB

320

DIVING OPERATIONS
OPR-K~~370~~-HE-93
APPROACHES TO ~~PORT ISABEL~~ TX
NOAA SHIP HECK S-591

ARANSAS PASS
8/24/94 SJ

B sheet
HE-10-1-93
FE 38655

DOY 277
TARGET # 28053

DATE 10/4/93

SEARCH RADIUS 30m
DEPTH FROM : PNEUMO/LEAD LINE

MAX DEPTH : 62 FT
MAX TIME : 20 MIN
LEAST DEPTH : N/A FT
TIME : N/A UTC

ATM. CONDITIONS
WIND: DIR NNE SPEED 09 KNTS
TEMP: 26.5 C

SEA CONDITIONS
SEAS: DIR 110 HEIGHT 2 FT
TEMP: 27.8 C
VISIBILITY: 1-2'

DIVER NAME	SUR F INT	GP	RNT	TNK PRESSURE IN/OUT	dP	DIVE TIMES UP/DOWN	BOTTOM TIME	DEP TH	GR
WHITE	allow	:26		~~3100~~ 2700 / 700	2000	1752 1732	:20	62	
								62	
WILL	1:00	E	26/24	3100 / 900	2200	1752 1732	:20	62	

NOTHING FOUND

DETACHED POSITION NUMBER: 342
POSITION: LAT 27° 47' 19.36" LONG 096° 57' 23.44"
E: 25010.0 N: 22842.1

LORAN RATES: W: 11076.1 X: 23992.2
Y: 46766.3 Z: 64050.8

DIVER COMMENTS:

PNEUMO DEPTH READINGS:

✓ OVW ✓ DAB

320

DIVING OPERATIONS
OPR-K370-HE-93 ARANSAS PASS 8/23/94 SJ
APPROACHES TO PORT ISABEL TX
NOAA SHIP HECK S-591

DOY 278
TARGET # 3.49 (3.60)

B sheet
HE-10-1-93
FE-386 SS

DATE 5 OCT 93

SEARCH RADIUS 30m
DEPTH FROM : PNEUMO/LEAD LINE

MAX DEPTH : 50 FT
MAX TIME : 25 MIN
LEAST DEPTH : N/A FT
TIME : [redacted] UTC

ATM. CONDITIONS
WIND: DIR SSE SPEED 03 KNTS
TEMP: 27.2 C

SEA CONDITIONS
SEAS: DIR 110 HEIGHT 2-3 FT
TEMP: 27.5 C
VISIBILITY: <1'

DIVER NAME	SUR F INT	GP	RNT	TNK PRESSURE IN/OUT	dP	DIVE TIMES UP/DOWN	BOTTOM TIME	DEP TH	GR
WHITE	—			2900/1400	1500	1700/1635	25	50	
WILLIAMS	2:30 Cx	C	21/79 @ 50	2900/1400	1500	1700/1635	25	50	

F

DETACHED POSITION NUMBER: 370
POSITION: LAT 27:49:31.02 LONG 097:01:12.33
E: 18761.2 N: 26919.7

LORAN RATES: W: 11075.0 X: 23992.9
Y: 46768.2 Z: 64050.2

NO dive delete
least depth

DIVER COMMENTS:
- OLD BUOY 6 ANCHOR BLOCK FOUND - SUNK IN SAND/MUD BOTTOM WITH 3 FEET OF CHAIN ATTACHED. SURFACE OF BLOCK IS FLUSH WITH BOTTOM AND SHOWS NO HEIGHT.
- ACTIVE BUOY 6 ANCHOR BLOCK IS MOST LIKELY IN SAME CONDITION. DIVERS FOLLOWED THE CHAIN TO THE BOTTOM WHERE IT SUBMERGED INTO THE SANDY MUD BOTTOM.

PNEUMO DEPTH READINGS: N/A.

JVM
1266 05/24/94

370

DIVING OPERATIONS
OPR-K370-HE-93 ARANSAS PASS 8/23/94 SJI
APPROACHES TO PORT ISABEL TX
NOAA SHIP HECK S-591

B sheet
HE-10-1-93
FE 38655

DOY 278
TARGET # 291.43

DATE 05 OCT 93

SEARCH RADIUS 30 m
DEPTH FROM : PNEUMO/LEAD LINE

MAX DEPTH : 62 FT
MAX TIME : 23 MIN
LEAST DEPTH : 56.4 FT
TIME : 1856 UTC

ATM. CONDITIONS
WIND: DIR SSE SPEED 06 KNTS
TEMP: 26.9 C

SEA CONDITIONS
SEAS: DIR 140 HEIGHT 2-3 FT
TEMP: 27.5 C
VISIBILITY: 3'-4'

DIVER NAME	SUR F INT	GP	RNT	TNK PRESSURE IN/OUT	dP	DIVE TIMES UP/DOWN	BOTTOM TIME	DEP TH	GR
Williamson				2900/1000	1900	1400/1337	23	62	
Krepp				3100/1200	1900	1400/1337	23	62	

DETACHED POSITION NUMBER: 359
POSITION: LAT 27:47:56.37 LONG 096:57:21.23
E: 25074.9 N: 23981.1

LORAN RATES: W: 11075.5 X: 23997.0
Y: ~~4676.75~~ 46767.5 Z: 64050.5

DIVER COMMENTS:
Sunken Sea Buoy (AP)

PNEUMO DEPTH READINGS: 17.2 m 17.2 m 17.2 m (1856 UTC) = 17.2 m = 56.4 ft DAP
(56.4 ft) (56.4 ft) (56.4 ft)
[1.40 FT GAGE]

-0.4 S.TIDES
Reduced to 16.8

DVM
1/96

VII. LETTER OF APPROVAL

Field operations contributing to the accomplishment of this survey were conducted under my direct supervision with daily 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.

George E. White

George E. White, 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
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: March ~~30~~ 16, 1994

MARINE CENTER: Atlantic

HYDROGRAPHIC PROJECT: OPR-K320

HYDROGRAPHIC SHEET: FE-386SS

LOCALITY: Texas Gulf of Mexico, Approach to Aransas Pass, Tx.

TIME PERIOD: September 20 - October 28, 1993

TIDE STATION USED: 877-5870 Bob Hall Pier, Tx.
Lat. 27° 34.8'N Lon. 97° 13.0'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 20.58 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.6 ft.

REMARKS: RECOMMENDED ZONING

Times and heights are direct on Bob Hall Pier, Tx. (877-5870).

Note: Times are tabulated in Central Standard Time.

for Brian K. Cronin

CHIEF, DATUMS SECTION

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

FE-386

Name on Survey	A ON CHART NO. 11300	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
ARANSAS PASS	X									1
MEXICO, GULF OF	X									2
TEXAS (title)	X									3
										4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
				Approved:						16
										17
				Charles E. Harrington						18
				Chief Geographer - N/CG2x5						19
				APR 12 1994						20
										21
										22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 61-29
(12-71)

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

REFERENCE NO.
N/CG244-35-94

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
SSMC3, STATION 6815
1315 EAST-WEST HIGHWAY
SILVER SPRING, MARYLAND 20910

DATE FORWARDED
AUG 2, 1994

NUMBER OF PACKAGES
1(ONE) TUBE, 2(TWO) 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.

FE-386SS
TEXAS, GULF OF MEXICO, APPROACH TO ARANSAS PASS

1 TUBE CONTAINING:
1 FINAL SMOOTH SHEET
1 ORIGINAL DESCRIPTIVE REPORT FOR FE-386SS

1 BOX CONTAINING:
1 ACCORDIAN FILE CONTAINING FATHOGRAMS AND RAW DATA PRINTOUTS FOR VESNO 9140 FOR THE FOLLOWING DAYS: 263, 271, 274, 277-280, 285, 287-288, 291, 295, 298-299, AND 301
1 CAHIER WITH FINAL CONTROL, SOUNDING, AND LINE FILE LISTINGS
1 ENVELOPE CONTAINING MISCELLANEOUS DATA REMOVED FROM THE ORIGINAL DESCRIPTIVE REPORT

1 BOX CONTAINING:
18 ENVELOPES CONTAINING SONARGRAMS FOR DAYS: 263, 271 (2), 274, 277, 278, 279, 280, 285, 287 (2), 288 (2), 291, 295, 298, 299, AND 301.

FROM: *(Signature)*
DEBORAH A. BLAND Deborah A Bland

RECEIVED THE ABOVE
(Name, Division, Date)
S. Clark
AUG 17 1994

Return receipted copy to:

ATLANTIC HYDROGRAPHIC SECTION
N/CG244
439 WEST YORK STREET
NORFOLK, VA 23510-1114

*U.S.GPO:1983-0-664-006/1192

08/01/94

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: FE-386SS

NUMBER OF CONTROL STATIONS	2
NUMBER OF POSITIONS	1273
NUMBER OF SOUNDINGS	7032

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	227	06/02/94
VERIFICATION OF FIELD DATA	121	06/29/94
ELECTRONIC DATA PROCESSING	58	
QUALITY CONTROL CHECKS	12	
EVALUATION AND ANALYSIS	18	07/20/94
FINAL INSPECTION	4	07/21/94
TOTAL TIME	440	

ATLANTIC HYROGRAPHIC SECTION APPROVAL 07/28/94

COAST AND GEODETIC SURVEY
ATLANTIC HYDROGRAPHIC SECTION
EVALUATION REPORT FOR FE-386SS (1993)

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

H. CONTROL STATIONS

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83). Office processing of this survey is based on these values. The smooth sheet has been annotated with ticks showing the computed mean shift between the survey datum and the North American Datum of 1927 (NAD27).

To place this survey on the NAD27 datum move the projection lines 1.097 seconds (33.777 meters or 3.38 mm at the scale of the survey) north in latitude, and 0.954 seconds (26.101 meters or 2.61 mm at the scale of the survey) west in longitude.

All geographic positions listed in this report are on NAD83 datum unless otherwise specified. See also Section H. of the Descriptive Report.

L. JUNCTIONS

H-10392	**(1991)**	**in its entirety**
FE-381SS	**(1992)**	**at LAT 27°48'43.5" LON 97°00'00"**

Junctioning survey H-10392 is incorrectly listed as a prior survey in the Descriptive Report, and FE-381SS was neither listed as a junctioning survey in the Project Instructions nor the Descriptive Report.

An adequate junction was effected with the junctional surveys listed above. These junctional surveys adjoin the present survey area in its entirety. The present survey soundings are in general harmony with the charted hydrography.

N. COMPARISON WITH CHART

11300 (31st Ed., SEP 1992)
11307 (32nd Ed., AUG 1992)
11309 (31st Ed., JAN 1993)
11313 (20th Ed., JUL 1992)

Hydrography

The charted hydrography within the common area originates with the previously addressed prior surveys and other unavailable sources and requires no further discussion

in this report. An adequate chart comparison is discussed in Section N. of the Descriptive Report with the exception of Section N.3.f. which is discussed below:

3.f. A fathometer spike was found and investigated by the field with an echosounder development. Due to the spike's close proximity to the entrance channel to Aransas Pass, diving operations were considered hazardous thus an echosounder development was used to investigate this spike. The spike was found to be a submerged jetty with a fathometer least depth of 6^3 meters (20 feet) in Latitude 27°49'40.33"N Longitude 97°01'57.70"W. A fathometer least depth 6^3 *obstruction (subm jetty)* is being shown on the smooth sheet. Due to the congestion on the chart in this area and the closeness to already charted items, no changes in charting are recommended.

P. ADEQUACY OF SURVEY

This is an adequate side scan sonar/item investigation survey. It is recommended that a field party unit further investigate the charted items in this area at an opportune time.

HECK Processing Team

Douglas V. Mason
Cartographic Technician
Verification of Field Data

Deborah A. Bland
Cartographer
Evaluation and Analysis

APPROVAL SHEET
FE-386SS

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.

Leroy G. Cram
Cartographer, Atlantic Hydrographic Section

Date: 07/20/94

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.

Nicholas E. Perugini, LCDR, NOAA
Chief, Atlantic Hydrographic Section

Date: 7-28-94

****

Final Approval:

Approved: J. Austin Yeager

Date: 10/27/94

J. Austin Yeager
Rear Admiral, NOAA
Director, Coast and Geodetic Survey

(10-83)

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. FE-3865S

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
11307	7/20/94	L.G. CRAM	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No.
11313	7/20/94	L.G. CRAM	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No.
11309	7/30/94	L.G. Cram	Full Part Before After Marine Center Approval Signed Via
			Drawing No.
11312	1/27/97	Travis Newman	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED