

10436

10436

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic/Side Scan Sonar..

Field No. HE-20-3-92

Registry No. H-10436

LOCALITY

State Texas

General Locality Gulf of Mexico

Sublocality Eastern Approach to Brazos

Santiago Pass

19 92

CHIEF OF PARTY

LCDR. G. E. White

LIBRARY & ARCHIVES

DATE August 16, 1994

HYDROGRAPHIC TITLE SHEET

H-10436

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-20-3-92

State TEXAS

General locality GULF OF MEXICO

Locality EASTERN APPROACHES TO PORT ISABEL BRAZOS SANTIAGO PASS

Scale 1:20,000

Date of survey 04 AUG 92 - 03 SEPT 93

Instructions dated 02 APRIL 92

Project No. OPR-K370-HE

Vessel NOAA SHIP HECK (EDP 9140)

Chief of party George E. White, LCDR, NOAA

Surveyed by LCDR. George E. White, LT. Gerd Glang, LTJG J.E. MARTIN, LTJG M. Williamson, AST K. Shaver

Soundings taken by echo sounder ~~XXXXXXXXXX~~

Graphic record scaled by LTJG J.E. MARTIN, LTJG M. WILLIAMSON, AST SHAVER

Graphic record checked by LTJG M. WILLIAMSON

Protracted by N/A

Automated plot by HDAPS XYNATICS 1201

Verification by Atlantic Hydrographic Section, N/CG244

Soundings in ~~feet~~ Meters at MEAN MLLW

REMARKS: Change #1 dated February 16, 1993

All timed UTC

Data submitted to Atlantic Hydrographic Section N/CG244

AWOS/SURF MCR

10/27/94

50 12-13-95
R.W.W.

TABLE OF CONTENTS

A. PROJECT.....	1
B. AREA SURVEYED.....	1
C. SURVEY VESSELS.....	2
D. AUTOMATED DATA AND ACQUISITION PROCESSING.....	2
E. SONAR EQUIPMENT.....	2
F. SOUNDING EQUIPMENT.....	4
G. CORRECTIONS TO ECHOSOUNDINGS.....	5
H. CONTROL STATIONS.....	7
I. HYDROGRAPHIC POSITION CONTROL.....	8
J. SHORELINE.....	9
K. CROSSLINES.....	10
L. JUNCTIONS.....	10
M. COMPARISON WITH PRIOR SURVEYS.....	10
N. ITEM INVESTIGATION REPORTS.....	12
O. COMPARISON WITH THE CHART.....	31
P. ADEQUACY OF SURVEY.....	32
Q. AIDS TO NAVIGATION.....	32
R. STATISTICS.....	34
S. MISCELLANEOUS.....	34
T. RECOMMENDATIONS.....	34
U. REFERRAL TO REPORTS.....	35
SUBMISSION.....	36

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



SOUNDINGS	
DEPTH	CHARACTER
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
47	47
48	48
49	49
50	50
51	51
52	52
53	53
54	54
55	55
56	56
57	57
58	58
59	59
60	60
61	61
62	62
63	63
64	64
65	65
66	66
67	67
68	68
69	69
70	70
71	71
72	72
73	73
74	74
75	75
76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

UNITED STATES COAST AND GEODETIC SURVEY
 TEXAS
 SOUTHERN PART OF LAGUNA MADRE

OPR-K470-HE
 APPROACHES TO PORT ISABEL, TEXAS
 SHEET LAYOUT AND PROJECT LIMITS SKETCH
 SEPTEMBER 26, 1991
 LIMITS OF HYDROGRAPHIC SURVEY
 ALL SHEETS ARE 1:62,500 SCALE
 SHEETS A & B ARE 8 1/2" X 11 1/2"
 SHEET C IS 8 1/2" X 9 1/2"

SOUNDINGS	
DEPTH	CHARACTER
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
47	47
48	48
49	49
50	50
51	51
52	52
53	53
54	54
55	55
56	56
57	57
58	58
59	59
60	60
61	61
62	62
63	63
64	64
65	65
66	66
67	67
68	68
69	69
70	70
71	71
72	72
73	73
74	74
75	75
76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

SOUNDINGS	
DEPTH	CHARACTER
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
47	47
48	48
49	49
50	50
51	51
52	52
53	53
54	54
55	55
56	56
57	57
58	58
59	59
60	60
61	61
62	62
63	63
64	64
65	65
66	66
67	67
68	68
69	69
70	70
71	71
72	72
73	73
74	74
75	75
76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

DESCRIPTIVE REPORT TO ACCOMPANY
SURVEY H-10436
FIELD NUMBER HE-20-3-92
TEXAS
GULF OF MEXICO
EASTERN APPROACH TO BRAZOS SANTIAGO PASS
Scale 1:20,000
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-K370-HE, Approaches to Port Isabel, Texas. Data was collected during both the 1992 and 1993 field seasons.
2. Original project Instructions are dated April 02, 1992.
3. Change one to the Project Instructions are dated February 16, 1993. The project number has been changed from OPR-K470 to OPR-K370 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 Isabel, Texas, and to investigate a number of wrecks and obstructions in or near the safety fairway. Port Isabel has a large shrimp boat fleet, and is a resort for sport fishing. The project area is also traversed by vessels accessing the port of Brownsville.

B. AREA SURVEYED

1. The survey area, designated Sheet "B" in the Project Instructions, lies in the Gulf of Mexico, east of the entrance to Port Isabel, Texas.
2. The approximate survey area is a polygon formed by connecting, in order, the following points:

a. LAT 26°03'15"N	LON 097° 10'00" ^{09'43"} W
b. LAT 26°03'15"N ^{14'}	LON 096°55'45"W
c. LAT 26°03'54"N	LON 096°55'45"W ✓
d. LAT 26°04'00"N	LON 096°57'27"W ^{56'49"}
e. LAT 26°09'03"N	LON 096°57'18"W ^{10"}
f. LAT 26°09'03"N	LON 097° 10'00" ^{09'43"} W
3. Survey operations began on August 8⁴, 1992 (DOY 216⁷), and

were completed on September 3, 1993 (DOY 246).

C. SURVEY VESSELS

1. All hydrographic and side scan data were 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. Digital data was lost on DOY 217, 222, and 223 of 1993. An explanation of this data loss is provided in Appendix VI.

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:

1992

Towfish	S/N 10823	DOY 216 - 260
Towfish	S/N 11591	DOY 260 - 302
Recorder	S/N 016671	DOY 216 - 225
Recorder	S/N 0012106	DOY 225 - 225
Recorder	S/N 0012102	DOY 225 - 226
Recorder	S/N 0012106	DOY 226 - 302

1993

Towfish	S/N 10823	DOY 112 - 139
Towfish	S/N 11908	DOY 139 - 190
Towfish	S/N 016697	DOY 190 - 245
Recorder	S/N 0012102	DOY 112 - 118
Recorder	S/N 016673	DOY 118 - 140
Recorder	S/N 016671	DOY 140 - 160
Recorder	S/N 0012102	DOY 160 - 193
Recorder	S/N 0012105	DOY 193 - 245

2. The beam width is not adjustable on this unit. The grazing angle dip switch setting are normally set to 01.

3. All SSS data was collected using 100 Khz frequency.
4.
 - a. Line spacing 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 An additional 10 M overlap was added to allow for imprecise steering.
 - b. 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 MOST CASES.
 - 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, broken at times by a mottled record produced over bottom where sand and mud are interspersed. Trawl scours from a very large shrimp boat fleet are prevalent in some areas. 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 can be seen on the sonargrams due to surface turbulence.
 - 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 followed by diver or echosounder investigation if needed.
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.
Thirty-Five ³⁵ (45) contact tables were used during this survey. In order to prevent confusion all items were identified

using their position number. Some contacts have more than one target number from successive hits during 200% coverage, developments, and detached positions. In this case the targets plotted on top of each other, however, the recommended charting positions were derived from their DP's.

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. Also chosen were contacts with strong returns and 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 20 m) were investigated by divers. Least depths were determined using a leadline or 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. The following Raytheon DSF-6000N echosounders were used during this survey:

1992

S/N A110A	DOY 217 - 231
S/N A107N	DOY 231 - 248
S/N A1101A	DOY 248 - 253
S/N A107A	DOY 253 - 302

1993

S/N B042N	DOY 112 - 207
S/N A116N	DOY 207 - 245

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

2. A leadline was used to determine diver least depths during the 1992 field season. Good diving visibility near the surface (<9 m) and minimal currents allowed scope to be minimized. A pneumofathometer was used to measure all diver least depths during the 1993 field season. 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. DSF failures were primarily caused by "lock-up", where the DSF would not work at all. The unit was changed and the broken unit was sent to AMC for repairs. The DSF recorders either worked correctly or not at all, resulting in no erroneous DSF data. Annotations for sea state and weather appear at least once a day on the printout header, or 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.

G. CORRECTIONS TO ECHOSOUNDINGS

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

<u>TABLE</u>	<u>DATE</u>	<u>LOCATION</u>
1	08/03/92 (DOY 216)	26°03'42"N 096°56'06"W
2	09/01/92 (DOY 245)	26°03'14"N 096°55'34"W
3	10/05/92 (DOY 279)	26°03'30"N 096°56'12"W
4	04/16/93 (DOY 106)	26°09'00"N 096°57'12"W
5	05/11/93 (DOY 131)	26°09'05"N 096°57'10"W
6	06/15/93 (DOY 167)	26°09'00"N 096°59'36"W
7	07/13/93 (DOY 194)	26°09'06"N 097°01'00"W
8	08/11/93 (DOY 223)	26°05'42"N 096°58'36"W
9	09/07/93 (DOY 250)	26°10'10"N 096°57'46"W

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

c. 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.

d. On DOY 115 (1992) a dual leadline comparison was

conducted. A mean difference of 0.06 meter was obtained resulting in a corrector of 0.0 meter. Results are shown in Seperates 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 Seperates Section IV.

g. Settlement and squat values for NOAA'S HECK were determined on March 03, 1993 in the vicinity of Craney Island fuel pier in Norfolk, Virginia using the level rod method. Settlement and squat values for NOAA'S HECK were also determined on March 13, 1991 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 HDAP offset table located in section IV of the separates.

h. Heave is mesured 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 Seperates Section IV.

5. In some of the DSF records, schools of shrimp and fish caused spikes in the low frequency trace, but no pertubation of the high frequency trace. These biological masses were also detected by the side scan sonar at times.

6. a. The tidal datum for this survey was mean lower low water (MLLW). The tide station at South Padre Island, Texas (877-9750) was the reference station. Contact with the

observer was made, 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. The time and height correctors are 0:00 and *1.00, respectively.

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

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

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

3. Horizontal control stations for this project were established jointly by HECK personnel and personnel from N/CG23322, Coastal Surveys Unit. All control stations were positioned to Third order, Class 1 standards. The Port Aransas DGPS radiobeacon was installed by personnel from N/CG241 circa 1991.

4. All stations were established using NAD 83 and Third order, Class 1 methods.

5. The Horizontal Control Report for OPR-K470/K370 has been submitted to NOAA Atlantic Hydrographic Section, N/CG244.

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

I. HYDROGRAPHIC POSITION CONTROL

1. Position control was Differential Global Positioning System or multiple LOP utilizing Motorola Falcon Mini-Ranger shore stations. Control station positions were entered into the HDAPS Control Station Table which can be found in appendix III.

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 Mini-Ranger remote units are identified by their position and code

numbers which relates to serial numbers in the appropriate C-0 table.

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 2 is 077.

Ashtech M-XII DGPS units were used at the corrector station. The following "fly-away" DGPS equipment was used to determine differential correctors at the INVE station during the 1993 field season:

Receiver	S/N 700354B2502	112 - 187
Receiver	S/N 700354B2395	187 - 245
Antenna	S/N 700228D2316	112 - 187
Antenna	S/N 700228D2192	187 - 245

4. System checks were conducted in accordance with the Field Procedures Manul. System check using mini-ranger appear as HDAPS screen dumps on the data printouts. System checks using both DGPS positions (Port Aransas and the "Fly-Away" system) appear as performance checks using the SHIPDIM program. System checks were sent to the processing unit as part of the data. The performance checks compare GPS positions using DGPS correctors from a VHF "Fly-Away" system with GPS positions using DGPS correctors from the Port Aransas DGPS beacon. A scatter plot test was conducted on the "Fly-Away" DGPS system in accordance with the GPS User's Manual on April 20, 1993. The results are provided in Seperates Section III.

5. At no time during this project using mini-ranger control did the maximum residual consistently exceed 0.5 mm at the survey scale (10 meters) nor did the 95% confidence ECR consistently exceeded 1.5 mm at the survey scale (30 meters). Data not meeting these requirements were examined and either accepted, smoothed, or rejected.

When Differential GPS was used, the maximum allowable HDOP was set at 4.0 to avoid EPE's in excess of the allowable 30 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 Motorola Mini-Ranger system is starting to show its age. Baseline calibrations revealed a few weak

remotes, and receiver/transmitters. The MASS setting for some combinations made long range work all but impossible.

The working area in Port Isabel is close to the limit of maximum distance from Port Aransas for DGPS signal reception. At the completion of the survey, equipment problems at the Port Aransas DGPS station resulting in system shut-downs were detected, resulting in no DGPS signal to be received from Port Aransas. A ground plane problem has also been found at the station, which may cause signal outage "holes" at certain locations. The loss of signal does not affect position accuracy but does cause frequent shifting between Port Aransas Correctors and "Fly-Away" correctors.

c. DGPS correctors were not received from Port Aransas as thunderstorms or rain squalls passed through between Port Isabel and Port Aransas. DGPS correctors were also not received from the "Fly-Away" system during rain squalls and thunderstorms. These losses of corrector signals do not affect data quality. During outages of both systems, no data is collected using GPS.

d. See 6b above (in this section).

e. No systematic errors were discovered.

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

J. SHORELINE *See also Section 3b of the Evaluation Report

*Not applicable as per project instructions.

K. CROSSLINES

1. 65.3 miles of crosslines were run on this survey, representing 5.3% of all mainscheme hydrography.
2. Comparison to mainscheme soundings showed good agreement with random maximum differences of ± 0.3 meters.
3. No significant discrepancies between crossline sounding and mainscheme soundings were noted.
4. When sounding equipment changes were made, the new echosounder was returned and adjusted as required.

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

This survey junctions with surveys H-10472 and H-10429. Comparison between surveys showed a random maximum difference of 0.4 meters.

M. COMPARISON WITH PRIOR SURVEYS

1. The prior surveys relevant to this project are as follows

<u>Registry Number</u>	<u>Scale</u>	<u>Year Surveyed</u>
H-6491 to the NW	1:20,000	1939
H-6493 to the SW	1:10,000	1939
H-6496 over entire area	1:40,000	1939

Prior surveys H-6496, H-6493 and H-6491 partially fall within the limits of this survey.

2. The prior surveys mentioned were compared with the present survey. A datum shift from NAD 83 to NAD 27 was applied to the present survey using the NADCON program to aid in comparison. The results of the datum shift are provided in section III of the Separates. The present survey compares reasonably well with the three prior surveys. Some disparity between soundings is to be expected due to the age of the most recent survey. All AWOIS items post-date the prior survey.

a. **H-6496** is a 1:40,000 scale survey extending beyond the north, south and east (offshore) limits of the survey area. The inshore limits of this survey extend inshore of the limits of H-6496. The offshore depths (> 60 feet) compare very well between the two surveys, with differences no greater than two feet. Inshore depths compare less favorably. To the north of the jetties, comparison is still good. South of the jetties, depths from the present survey are up to 10 feet* deeper than H-6496 depths. Due to the steep gradient in this area, greater difference in depths are expected. Significant deepening in this area has occurred due to erosion. (m)(u)

b. **H-6493** is a 1:10,000 scale survey, inshore of H-6496. Comparison of depths north of the jetties is good, * [with depths from the present survey being no more than two feet (1.2m) deeper than those of H-6493.] South of the jetties, depths from the present survey are up to *12 feet deeper than those of H-6493. *(0.36m)

c. **H-6491** is a 1:20,000 scale survey, inshore of H-6493. Depths compare favorably with the present survey north of

the jetty* [South of the jetty, present depths are up to 12 feet deeper than those of H-6491.]

* with depths of 0-1 m (0-3 ft) difference between the prior and present survey. South of the jetty, present survey depths are from 0-1.2 m (0-4 ft) deeper in depths less than 11.9 m (39 ft). In depths of (12.2-13.7 m) 40-45 ft, present survey depths are 1.2-4.2 m (4-14 ft) deeper than prior survey depths.

N. ITEM INVESTIGATION REPORTS

SEE ALSO EVALUATION Report Section No.

N1. SUMMARY OF ITEMS INVESTIGATED

AWOIS NO. TGT #	SECTION	STATUS	RECOMMENDATION
109	N2	Further Investigation	✓
110	N3	Further Investigation	✓
111	N4	Further Investigation	✓
114	N5	Unassigned	
116	N6	Disproved	Delete wreck
5825	N7	Further Investigation	✓
5826	N8	Disproved	Delete Wreck
5827	N9	Disproved	Delete Wreck
5828	N10	Further Investigation	✓
5829	N11	Unassigned	
5830	N12	Disproved	Delete Wreck
5831	N13	Unassigned	
5832	N14	Further Investigation	✓
5833	N15	Unassigned	
5834	N16	Unassigned	
5843	N17	Further Investigation	✓
5844	N18	Further Investigation	✓
5845	N19	Unassigned	
7845	N20	Disproved	Delete Wreck
8135	N21	Hydrography conducted	✓
8136	N22	Unassigned	
8224	N23	Unassigned	
430.41	N24	Found	Do Not Chart
27.55	N25	Found	Chart Obstruction
2715.49	N26	Found	Chart Obstruction
4517.01	N27	Found	Chart Obstruction
4513.17	N28	Found	Chart Obstruction

N2. AWOIS ITEM 109

1. Area of Investigation

Reported Position:
 Latitude: 26°03'49.28"
 Longitude: 097°08'36.89"
 Datum: NAD83 converted from NAD27
 Depth: 30 feet
 Feature: Obstruction

2. Description of Item

This ^{charted} item is listed as Brazos Santiago south jetty light. The light was established in 1962 as a black skeleton tower on a platform of piles, 44 feet above the water. This structure was established 100 yards off the south jetty.

3. Survey Requirements

Survey requirements specify determining the existence of this item through salvage documentation, diver investigation or side scan sonar investigation over a 50 meter search radius. Operational constraints considered, side scan investigation may not be feasible.

4. Method of Investigation

Due to the proximity to the jetties, side scan sonar and diver investigations were not conducted. HECK does not have a launch equipped for hydrography.

5. Results of Investigation

Further investigation by a field party or launch is recommended. CONCUR - NO CHANGES IN CHARTING ARE RECOMMENDED!

N3. AWOIS ITEM 110 and 5825

1. Area of Investigation

Reported Position:

Latitude: 26°03'51.28"

Longitude: 097°08'41.89"

Datum: NAD83 converted from NAD27

Depth: N/A

Feature: Visible Wreck

2. Description of Item

This item^{charted} is listed as the LSM type vessel "Palmetto", previously reported sunk near the outer end of the south jetty. This wreck has been reported shifted with its bow now on the jetty.

3. Survey Requirements

Survey requirements specify determining the existence of this item through salvage documentation, diver investigation or visual search over a 50 meter search radius. Mariners are advised to proceed with caution in this area.

4. Method of Investigation

Due to the proximity to the jetties, diver investigations were not conducted. HECK does not have a launch equipped for hydrography. A visual search by the jetties was conducted. However, visibility in the water is limited to a

few feet. During salvage research, The hydrographer was told that this item has^o been buried underneath the Port Isabel south jetty when it was extended. This information has been provided by William Kenny of Marine Services of Port Isabel. He can be reached at (210) 943-2648. There is no documentation to substantiate this claim.

***5. Results of Investigation** * See SECTION N.3.5 of the Evaluation Report

This item is not visible above water at low tide. Further investigation by a field party or launch is recommended.

It is recommended that the charted label be changed from WK to WKS to cover items 110 and S825, which are both charted in the same location.

N4. AWOIS ITEM 111

1. Area of Investigation

Reported Position:

Latitude: 26°03'52.28"
Longitude: 097°08'40.89"
Datum: NAD83 converted from NAD27
Depth: N/A
Feature: Wreck

2. Description of Item

This item is listed as the 54ft fishing vessel "Little Chris", reported sunk about 75 ft. off and in line with Brazos Santiago south jetty.

3. Survey Requirements

Survey requirements specify determining the existence of this item through salvage documentation, diver investigation or visual search over a 50 meter search radius. Operational constraints considered, side scan investigation may not be feasible.

4. Method of Investigation

Due to the proximity to the jetties, diver investigations were not conducted. HECK does not have a launch equipped for hydrography. The ocean bottom is not visible in this area.

5. Results of Investigation

Further investigation by a field party or launch is recommended. CONCUR: NO CHARTING CHANGES ARE RECOMMENDED

N5. AWOIS ITEM 114 NOT IN SURVEY Area

1. Area of Investigation

Reported Position:

Latitude: 26°04'19.28"
Longitude: 097°09'04.89"
Datum: NAD83 converted from NAD27
Depth: N/A
Feature: Stranded Wreck

2. Description of Item

This item is listed as the "S.S. Cuahuhtemnoc", stranded 500 yds. off the beach about 500 yds. north of Brazos Santiago north jetty. This wreck has been revised from visible to submerged.

3. Survey Requirements

This item is unassigned.

4. Method of Investigation

No investigation of this item was conducted.

5. Results of Investigation

Not Applicable.

N6. AWOIS ITEM 116

1. Area of Investigation

Reported Position:

Latitude: 26°08'25.27"
Longitude: 097°06'00.88"
Datum: NAD83 converted from NAD27
Depth: N/A
Feature: Wreck

2. Description of Item

This ^{CHARTED} item is listed as the fishing vessel "Huckleberry Finn", 45ft. in length, 16ft. beam, and a 20ft. mast.

3. Survey Requirements

Survey requirements specify determining the existence of this item through salvage documentation, diver investigation, echosounder development or 200% side scan sonar investigation over a 1500 meter search radius.

4. Method of Investigation

200% side scan sonar coverage was conducted in this area.

5. Results of Investigation

No significant contacts were found during the sonar investigation. The item is disproved. The hydrographer recommends deleting this wreck from the chart. *CONCUR*

N7. AWOIS 5825 and 110

1. Area of Investigation

Reported Position:
Latitude: 26°03'51.28"
Longitude: 097°08'41.89"
Datum: NAD83 converted from NAD27
Depth: N/A
Feature: Wreck

2. Description of Item

This ^{*charted*} item is listed as the fishing vessel "Norther", reported sunk in 1967 at the east end of the south jetty. Wreck was reported partially above water and unmarked.

3. Survey Requirements

Survey requirements specify determining the existence of this item through salvage documentation, diver investigation or visual search over a 50 meter search radius.

4. Method of Investigation

Due to the proximity to the jetties, diver investigations were not conducted. The ocean bottom is not visible in this area. HECK does not have a launch equipped for hydrography.

5. Results of Investigation

Further investigation by a field party or launch is recommended. *It is recommended also, that the charted label be changed from WK to WKS to cover Items 110 and 5825.*

N8. AWOIS ITEM 5826

1. Area of Investigation

Reported Position:

Latitude: 26°04'01.28"
Longitude: 097°08'00.89"
Datum: NAD83 converted from NAD27
Depth: N/A
Feature: Wreck

2. Description of Item

This ^{charted} item is listed as the sailing vessel "Incognito", reported sunk with 8ft. of the mast extending above the water, approx. 50yds. north of Brazos Santiago Pass entrance channel. The mast has been reported salvaged.

3. Survey Requirements

Survey requirements specify determining the existence of this item through salvage documentation, diver investigation, echosounder development or 200% side scan sonar investigation over a 500 meter search radius.

4. Method of Investigation

200% side scan sonar coverage was conducted in this area.

5. Results of Investigation

This vessel has been salvaged by Marine Services in Port Isabel, TX. The present owner of the vessel is David Emard, employed at Valley Ice and Fuel of Brownsville, TX. His telephone number is (210)831-4123 at work and (210) 541-1885 at home. As of October 21, 1993, the boat is sitting in Mr. Emard's back yard. A photograph of the vessel is in Appendix VI.

The item is disproved. The hydrographer recommends deleting this wreck from the chart. *CONCUR*

N9. AWOIS ITEM 5827

1. Area of Investigation

Reported Position:

Latitude: 26°04'01.28"
Longitude: 097°02'00.87"
Datum: NAD83 converted from NAD27
Depth: N/A

Feature: Wreck

2. Description of Item

This ^{Charted} item is the 28 foot pleasure craft "Hook-Em". The vessel has been reported totally destroyed by fire.

3. Survey Requirements

Survey requirements specify determining the existence of this item through salvage documentation, diver investigation, echosounder development or side scan sonar investigation over a 3000 meter search radius.

4. Method of Investigation

200% side scan sonar coverage was conducted in this area.

5. Results of Investigation

No significant contacts were found during the sonar investigation. The item is disproved. The hydrographer recommends deleting this wreck from the chart. *CONCUR*

N10. ANOIS ITEM 5828

1. Area of Investigation

Reported Position:
Latitude: 26°04'10.28"
Longitude: 097°08'18.89"
Datum: NAD83 converted from NAD27
Depth: Approximately 30 feet
Feature: Wreck

2. Description of Item

This ^{Charted} item is listed as the fishing vessel "Margaret Webster", reported sunk and broken up in approximately 30ft. of water.

3. Survey Requirements

Survey requirements specify determining the existence of this item through salvage documentation, diver investigation, echosounder development or 200% side scan sonar investigation over a 400 meter search radius. Operational constraints considered, the search area to west is restricted by the submerged portion of the north jetty.

4. Method of Investigation

Due to the proximity to the jetties, 200% side scan sonar investigation was conducted in the eastern 70% of AWOIS circle.

5. Results of Investigation

Further investigation by a field party or launch of western 30% of AWOIS circle is recommended. *Concur. No charting changes are recommended*

N11. AWOIS ITEM 5829

1. Area of Investigation

Reported Position:
Latitude: 26°05'22.27"
Longitude: 097°06'38.89"
Datum: NAD83 converted from NAD27
Depth: Minimum 48 feet
Feature: Artificial Reef

2. Description of Item

The Game and Fish Commission, Marine Laboratory, Rockport, TX, has placed an artificial reef composed of concrete rubble or old automobile bodies in a square area with sides a maximum of 1320ft.

3. Survey Requirements

This item is unassigned.

4. Method of Investigation

No investigation of this item was conducted.

5. Results of Investigation

Not Applicable. *No spikes appear on the fathograms and NO contacts found on the sonar GRAMS in this area. Present survey depths 176-18 meters (58-59 Ft)*

N12. AWOIS ITEM 5830

1. Area of Investigation

Reported Position:
Latitude: 26°06'01.27"
Longitude: 097°07'00.89"
Datum: NAD83 converted from NAD27
Depth: N/A
Feature: Wreck

2. ^{charted} **Description of Item**

This item is listed as the 40ft. cabin cruiser "Laspresis", with a white wood-hull, fiberglass cabin and inboard motor.

3. **Survey Requirements**

Survey requirements specify determining the existence of this item through salvage documentation, diver investigation, echosounder development or 200% side scan sonar investigation over a 3000 meter search radius.

4. **Method of Investigation**

200% side scan sonar coverage was conducted in this area.

5. **Results of Investigation**

No significant contacts were found during the sonar investigation. The item is disproved. The hydrographer recommends deleting this wreck from the chart. *CONCUR*

N13. AWOIS ITEM 5831

1. **Area of Investigation**

Reported Position:

Latitude: 26°07'01.27"

Longitude: 097°09'42.89"

Datum: NAD83 converted from NAD27

Depth: N/A

Feature: Visible Wreck

2. **Description of Item**

This item is listed as the fishing vessel "Mermaid". A portion of wheelhouse has been reported showing above water. This item is unassigned.

3. **Survey Requirements**

This item is unassigned.

4. **Method of Investigation**

No investigation of this item was conducted.

5. **Results of Investigation**

Not Applicable.

N14. AWOIS ITEM 5832 NOT IN SURVEY AREA

1. Area of Investigation

Reported Position:

Latitude: 26°07'21.27"
Longitude: 097°09'30.89"
Datum: NAD83 converted from NAD27
Depth: N/A
Feature: Wreck

2. Description of Item

This ^{chart} item is listed as an unknown, 15ft. pleasure craft.

3. Survey Requirements

Survey requirements specify determining the existence of this item through salvage documentation, diver investigation, echosounder development or side scan sonar investigation.

4. Method of Investigation

Due to the depth of water, side scan sonar and echosounder development were not conducted. HECK does not have a launch equipped for hydrography.

5. Results of Investigation

Further investigation by a field party or launch is recommended. CONCUR: No charting changes are recommended.

N15. AWOIS ITEM 5833 NOT IN SURVEY AREA

1. Area of Investigation

Reported Position:

Latitude: 26°08'25.27"
Longitude: 097°09'48.89"
Datum: NAD83 converted from NAD27
Depth: N/A
Feature: Obstruction

2. Description of Item

This ^{charted} item is listed as a 2" diameter steel pipe that was jettied into the ocean bottom approx. 700ft. seaward of the shoreline at the Gulfside Fishing Pier (now in ruins).

3. Survey Requirements

This item is unassigned.

4. Method of Investigation

No investigation of this item was conducted.

5. Results of Investigation

Not Applicable.

N16. AWOIS ITEM 5834 NOT IN SURVEY AREA

1. Area of Investigation

Reported Position:

Latitude: 26°08'54.00"

Longitude: 097°10'04.00"

Datum: NAD83

Depth: N/A

Feature: Visible Wreck

2. Description of Item

This item is listed as a partially submerged shrimp boat on the beach, 0.5 miles north of Park Road.

3. Survey Requirements

This item is unassigned.

4. Method of Investigation

No investigation of this item was conducted.

5. Results of Investigation

Not Applicable.

N17. AWOIS ITEM 5843 NOT IN SURVEY AREA

1. Area of Investigation

Reported Position:

Latitude: 26°04'01.28"

Longitude: 097°08'38.89"

Datum: NAD83 converted from NAD27

Depth: N/A

Feature: Wreck

2. Description of Item

This item is listed as a 21ft. pleasure craft that ran up on Brazos Santiago Pass north jetty, capsized and sank.

3. Survey Requirements

Survey requirements specify determining the existence of this item through salvage documentation, diver investigation, echosounder development or 200% side scan sonar investigation from the centerline of the channel to the north jetty at the discretion of the commanding officer.

4. Method of Investigation

No contacts were found while running the side scan sonar through the channel. Both sides of the channel were covered by the side scan sonar swath. Due to the proximity to the jetties, investigations were restricted to side scan investigation at the centerline of the channel.

5. Results of Investigation

Further investigation by a field party or launch is recommended. CONCUR - No CHARTING changes are recommended

N18. AWOIS ITEM 5844 NOT IN SURVEY AREA

1. Area of Investigation

Reported Position:

Latitude: 26°04'03.28"

Longitude: 097°08'40.89"

Datum: NAD83 converted from NAD27

Depth: N/A

Feature: Visible Wreck

2. Description of Item

This item is listed as a visible shrimp boat wreck on the rocks at the tip of the north jetty.

3. Survey Requirements

Survey requirements specify determining the existence of this item through salvage documentation, diver investigation or 200% side scan sonar investigation in conjunction with AWOIS 5843.

4. Method of Investigation

Investigation was conducted simultaneously with investigation of AWOIS 5843.

5. Results of Investigation

No contacts were found during the side scan sonar investigation through the channel. The side scan sonar swath extended to both sides of the channel. Further investigation by a field party or launch is recommended. CONCUR

No charting changes are recommended

N19. AWOIS ITEM 5845 NOT IN SURVEY AREA

1. Area of Investigation

Reported Position:
Latitude: 26°04'04.28"
Longitude: 097°08'30.89"
Datum: NAD83 converted from NAD27
Depth: N/A
Feature: Rock

2. Description of Item

This item is listed as submerged rock lying seaward from the visible end of the north jetty at Brazos Santiago Pass for a distance of about 200ft.

3. Survey Requirements

This item is unassigned.

4. Method of Investigation

No investigation of this item was conducted.

5. Results of Investigation

Not Applicable.

N20. AWOIOS ITEM 7845

1. Area of Investigation

Reported Position:

Latitude: 26°04'49.28"
Longitude: 097°06'06.88"
Datum: NAD83 converted from NAD27
Depth: 20 feet
Feature: Wreck

2. Description of Item

This item is listed as the fishing vessel "Cochise", covered by approximately 20ft. of water.

3. Survey Requirements

Survey requirements specify determining the existence of this item through salvage documentation, diver investigation, echosounder development or 200% side scan sonar investigation over a 1000 meter search radius.

4. Method of Investigation

200% side scan sonar coverage was conducted in this area.

5. Results of Investigation

No significant contacts were found during the sonar investigation. The item is disproved. The hydrographer recommends deleting this wreck from the chart. CONCUR

N21. AWOIS ITEM 8135

1. Area of Investigation

Reported Position:
Latitude: 26°04'23.00"
Longitude: 097°07'18.00"
Datum: NAD83 converted from NAD27
Depth:
Feature: Spoil Area

2. Description of Item

^{change}
This item is a discontinued spoil area addressed in the project instructions.

3. Survey Requirements

Survey requirements specify 200% side scan sonar investigation and developments of all significant contacts. Basic hydrography is to be conducted at no more than 50M line spacing.

4. Method of Investigation

200% side scan sonar coverage was conducted in this area. Basic hydrography was conducted in this area using 40 meter line spacing.

5. Results of Investigation

No significant contacts were found during the sonar investigation. Least depths for this area can be determined from the digital data and should be used to supercede the charted depths. All contacts in this area were investigated in the same manner as the remainder of the survey. No significant contacts were found in this area. *CONCUR. It is recommended that the chart be updated to reflect present survey soundings in the vicinity of the item. Present survey depths are 125-173 meters (41-57 feet).*

N22. AWOIS ITEM 8136

1. Area of Investigation

Reported Position:
Latitude: 26°05'19.28"
Longitude: 097°09'25.89"
Datum: NAD83 converted from NAD27
Depth: N/A
Feature: Visible Wreck

2. Description of Item

This item is listed as a visible derelict fishing vessel.

3. Survey Requirements

This item is unassigned.

4. Method of Investigation

No investigation of this item was conducted.

5. Results of Investigation

Not Applicable.

N23. AWOIS ITEM 8224

1. Area of Investigation

Reported Position:

Latitude: 26°05'00.00"
Longitude: 097°04'36.00"
Datum: NAD83 converted from NAD27
Depth: 42 feet
Feature: Spoil Area

2. Description of Item

This item is listed as a designated disposal area of dredged material from the Brazos I. Harbor "42ft. project". Site to be 5300ft. in a direction parallel to the channel (E/W) and 2895ft. in a direction perpendicular to the channel (N/S). This item is unassigned.

3. Survey Requirements

This item is unassigned.

4. Method of Investigation

No special investigation of this item was conducted. 200% side scan sonar coverage was conducted in this area. All contacts in this area were investigated in the same manner as the remainder of the survey. No significant targets were found in this area. *concur*

5. Results of Investigation

Not Applicable. Present survey depths are 19²-20⁷ meters (63-68 Ft)

The following list of contacts were initially determined to be significant and warranted further investigation by additional passes with side scan sonar using either the 75-meter or 50-meter range scale and/or by ship's divers. Diver Item Investigation Reports for all dives can be found in separates section VI.

N24. CONTACT NO. 430.41

This target is listed in contact table #3 with a computed height of 0.4 meters in 25.2 meters of water. The contact was further investigated on DOY 166 (1993) between positions 4042-4043 with the side scan sonar on the 75 meter range scale. Divers investigated the item on that day finding a metal cylinder with a height off the bottom of 1.2 meters. HECK was unable to get a detached position on the item after the dive. The item was further investigated on DOY 223 (1993) between positions 4640-4643. The item did not appear

N.25a.

Contact No. 587.71, 1927.07, 2788.18 DEU by Pos # 3010-3013
and found at Pos 3012.15. The fathometer least depth was
24.1 m (79 ft) at Pos # 2788.18. in Lat 26/05/31.75 N
Lon 97/01/14.09 W. No dive was done ^(PH) in the area.
The present survey is showing a 24' m fathodepth obstr^m
25m ^(82ft) of water. This depth is insignificant as an
obstruction and should NOT be charted. The chart should
be updated to reflect the findings on the present survey.

on the sonar trace, but a trawl scour did. The area was investigated by divers. The trawl scour was followed to a hole of the approximate dimensions of the item. The hydrographer concludes that the item was picked up by a shrimp trawl net. *concur*

Recommendation: This item should not be charted. *concur*

N25. CONTACT NO. 27.55

This target is listed in contact table #1 with a computed height of 1.1 meters in 17.4 meters of water. The contact was further investigated on DOY 140 (1993) between positions 3771-3776 with the side scan sonar on the 75 meter range scale. Divers investigated the item on DOY 165 (1993). The item appeared to be a winch embedded in the sand. On DOY 223, divers again investigated the item in order to get Loran rates. The item appears to be a pipe surrounded by truck tires, arranged as a ship fender. The object was positioned by DP #4041.

DP #4041

Date: June 14, 1993

Time (UTC) 193000

Averaged measured depth: 16.2 M

Actual Predicted Tide Corr: ~~-0.02 M~~

Corrected Least Depth: 16.2 M

LAT: 26°03'30.⁷⁴8" LONG: 097°06'42.⁰⁷1"

E: 8326.9 ✓ N: 13873.1 ✓

Datum: 1983

Recommendation: Chart an obstruction with least depth 16.2⁰ M based on ~~predicted~~ tides at the above position. *concur* 16⁰ obstr (52 ft)

→ *Invert N25a* *actual*
N26. CONTACT NO. 2715.49

This target is listed in contact table #25 with a computed height of 2.5 meters in 26.2 meters of water. The contact was further investigated on DOY 302 (1992) between positions 2994-2999 with the side scan sonar on the 75 meter range scale. Divers found a drilling pipe and casing 3.1 meters off the bottom. The obstruction was positioned by DP #3003.

DP #3003

Date: October 28, 1992

Time (UTC) 180500

Averaged measured depth: 24.0¹ M

Actual Predicted Tide Corr: ~~-0.4² M~~

Corrected Least Depth: 23.6 M

LAT: 26°04'38.⁵8" LONG: 097°00'56.94"

N.27.

* Recommendation: A 16.6 m (54ft) obstr (coner block) is being shown on the smooth sheet. This 16.6 m SWD falls in 17.3 m (56ft) of water. The depth is insignificant for charting as an obstruction. The chart should be updated to reflect the findings of the present survey.

* N.28. Recommendation: A 16.9 m obstr (cable debris) is being shown on the smooth sheet. This 16.9 m (55ft) SWD falls in 17.3 m (56ft) of water. The depth is insignificant for charting as an obstruction. The chart should be updated to reflect present survey findings.

E: 17919.8
Datum: 1983

N: 15967.8

Recommendation: Chart an obstruction with least depth 23.8⁹ M (78 ft) based on ~~predicted~~ ^{actual} tides at the above location. 23⁹ abstr (pipe)

N27. CONTACT NO. 4517.01

This target is listed in contact table #45. This item was further investigated on DOY 245 (1993) by diver investigation. Divers found a 1M cubic buoy anchor weight with one corner sticking off the bottom 0.7 meters in 17.5³ meters of water. The item is positioned by DP # 4745.

DP #4745

Date: September 2, 1993

Time (UTC) ~~1834~~ 183900

Averaged measured depth: 16.9 M

~~Predicted~~ Tide Corr: -0.3 M

Corrected Least Depth: 16.6 M

LAT: 26°03'59.47"

LONG: 097°06'40.30"

E: 8376.6

N: 14756.8

Datum: 1983

* Recommendation: Chart an obstruction at the above location with least depth 16.7⁶ M based on ~~predicted~~ ^{actual} tides at the above location. Do NOT concur *

N28. CONTACT NO. 4513.17

This target is listed in contact table #45. This item was further investigated on DOY 245 (1993) by diver investigation. Divers found cable debris piled up 1.3 meters in 17.5³ meters of water, with a length of 1.8 meters. The item is positioned by DP # 4747.

DP #4747

Date: September 2, 1993

Time (UTC) 192700

Averaged measured depth: 17.2 M

Predicted Tide Corr: -0.4² M

Corrected Least Depth: 16.8 M

LAT: 26°03'55.94

LONG: 097°06'38.00

E: 8440.5

N: 14648.2

Datum: 1983

* Recommendation: Chart an obstruction with least depth 16.8⁹ (55 ft) meters based on ~~predicted~~ ^{actual} tides at the above position. Do NOT concur

1000

1000

1000

O. COMPARISON WITH THE CHART

1. Comparisons were made with the following charts.

<u>CHART</u>	<u>EDITION</u>	<u>DATE</u>	<u>SCALE</u>
11301	19th	SEP 92	1:80,000
11302 SC	22nd	JAN 92	1:40,000

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

3. a. The charted soundings are consistently shoaler than the surveyed depths, with variations from 0.5 to 3 meters.

b. The ^{present} survey shows greater depths throughout the survey area.

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

f. No significant hydrographic features other than those mentioned above were noted.

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

h. Fairway soundings were compared to the chart and prior surveys. The soundings in the fairway compare well to those on the chart, except to the south of the entrance to the jetties, where deepening has occurred likely due to erosion.

4. a. Non-Sounding features associated with AWOIS items have been discussed in section N.

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 1:20,000 specifications, and is adequate to supersede all prior surveys for the purposes of charting the depths, obstructions, and hazards to navigation within the survey area.
2. HECK was unable to investigate AWOIS items in the immediate vicinity of the jetties due to waters too shoal for safe navigation of the survey vessel. Section N of this report summarizes AWOIS items not resolved.

Q. AIDS TO NAVIGATION

1. No correspondence was initiated with the Coast Guard regarding floating aids to navigation.
2. Three floating aids to navigation fell within the limits of the survey area. Sea Buoy "BS" and Buoys R "2" and G"3" are used to mark the entrance channel. Buoys R "2" and G"3" are seaward of the north and south jetties, respectively. All three buoys are as described in the Light List, Volume IV.

Buoy "BS" (LL #1545, #27850) was positioned with DP # 4453.

POSITION #4453
LAT 26°03'54.8" LON 097°06'35.5"³⁰
E: 8515.4 N: 14614.5

Buoy R"2" (LL #27855) was positioned with DP 4429#.

POSITION #4429
LAT 26°04'02.3" LON 097°08'27.7"
E: 5391.2 N: 14844.4

Buoy G"3" (LL #27870) was positioned with DP 4431#.

POSITION #4431
LAT 26°03'50.9" LON 097°08'29.1"²⁰
E: 5351.2 N: 14494.7

3. There are no aids to navigation which are not shown in the Light List. All positions in the light list were within the rounding error of the positions noted above.
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	4575 Fixes
2. Lineal NM of Soundings	1213.5 NM
3. Square NM Hydrography	63.5 NM ²
4. Days of Production	66 Days
5. Bottom Samples	218
6. Tide Stations Established	None
7. Current Stations Established	None
8. Velocity Casts Performed	9 Casts
9. Magnetic Stations Established	None
10. Detached Positions	226

S. MISCELLANEOUS

1. a. Waters of the Laguna Madre carry a high sediment load out of the Brazos Santiago Pass into the Gulf of Mexico adjacent to the pass. This high silt content accounts for the low visibility waters and muddy bottom type in the survey area.
- 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. Two hundred and eighteen bottom samples were taken and recorded on Log Sheet M. The log sheet was submitted to the Smithsonian Institution; a copy is included in section II of the separates. The bottom samples were sent to the Smithsonian Institute as per project instructions.

T. RECOMMENDATIONS

1. No Additional field work other than unresolved AWOIS items listed in section N is recommended.
2. No dredging operations currently in progress will affect this survey area. The Corps of Engineers have last dredged the entrance channel in October of 1992. ~~The dredging plans (File number RIO 901-239) has been sent to the Atlantic Hydrographic section in April 1992. [Not Related to 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 end of the 1993 field season.
2. A Coast Pilot report will be sent at the end of the 1993 field season.
3. LORAN-C chart verification has been transmitted to Commandant, Eighth Coast Guard District on September 9, 1993. A copy can be found in Seperates Section VI.

Respectfully Submitted,

Michael Williamson

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

CONTROL STATIONS as of 30 Oct 1993

No	Type	Latitude	Longitude	H Cart	Freq	Vel Code	MM/DD/YY	Station Name
101	F	027:50:18.000	097:03:32.000	22 250	0.0	0.0	0 03/01/91	PORT ARANSAS, TX GPS, BEACON 1992 (Field Position) (Not In Survey Area)
102	F	026:00:43.006	097:09:12.092	12 250	0.0	0.0	2 03/01/91	DEL MAR 1991
103	F	026:05:06.817	097:09:41.098	100 250	0.0	0.0	4 03/01/91	NUTS 1992
104	F	026:07:42.090	097:10:03.070	40 250	0.0	0.0	1 03/01/91	INVE 1992
105	F	026:11:11.400	097:10:37.572	12 250	0.0	0.0	7 03/01/91	BEACH 1939
112	F	026:00:43.006	097:09:12.092	12 250	0.0	0.0	8 04/11/93	DEL MAR 1991
113	F	026:05:06.817	097:09:41.098	100 250	0.0	0.0	C 04/10/93	NUTS 1992
114	F	026:07:42.090	097:10:03.070	40 250	0.0	0.0	D 04/10/93	INVE 1992, FLY-AWAY GPS
115	F	026:11:11.400	097:10:37.572	12 250	0.0	0.0	A 04/10/93	BEACH 1939
116	F	026:14:29.466	097:11:23.283	12 250	0.0	0.0	B 04/28/93	COAST 1939

NO.	4R	Carto	Name	Lat	Lon	HT
101	92	250	Rio Bravo Light, 1992 (Field Position) (Not in Survey Area)	25/57/00.771	97/08/49.821	19.0
102	92	250	DEL MAR, 1991 (Field Position) (NOT IN Survey Area)	26/00/43.001	97/09/12.091	5.0
103	92	250	NUTS, 1992 (Field Position)	26/05/06.850	97/09/41.098	86.0
104	92	250	INVE 92, 1992 (Field Position)	26/07/42.123	97/10/03.070	34.0
105	92	250	Beach, 1939 (NOT IN Survey Area)	26/11/11.400	97/10/37.572	2.0
112	93	250	Del Mar, 1991 (Field Position) (Not in Survey Area)	26/00/43.011	97/09/12.091	5.0
113	93	250	NUTS, 1992 (Field Position)	26/05/06.850	97/09/41.098	86.0
114	93	250	INVE 92, 1992 (Field Position)	26/07/42.123	97/10/03.070	34.0
115	93	250	Beach, 1939 (NOT IN Survey Area)	26/11/11.400	97/10/37.572	2.0
116	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 Position) (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

✓ JOMB 6/27/94

DIVING OPERATIONS
OPR-K370-HE-93
APPROACHES TO PORT ISABEL TX
NOAA SHIP HECK S-591

DOY 165
 TARGET # 27.55

DATE 14 June 93

SEARCH RADIUS 40
 DEPTH FROM : PNEUMO/LEAD LINE

MAX DEPTH : 57 FT
 MAX TIME : 48 MIN
 LEAST DEPTH : 53 FT
 TIME : 1930 UTC ✓

ATM. CONDITIONS
 WIND: DIR E SPEED 10 KNTS
 TEMP: 26.5 C

SEA CONDITIONS
 SEAS: DIR SE HEIGHT 2-3 FT
 TEMP: C
 VISIBILITY: < 1 M at bottom

DIVER NAME	SURF INT	GP	RNT	TNK PRESSURE IN/OUT	dP	DIVE TIMES UP/DOWN	BOTTOM TIME	DEP TH	GR
OPS				2750/450	2300	1856/1833	23	60	
JO				2750/900	1850	"	"	60	
OPS	cont			2700/500	2200	1936/1914	22	60	
JO	cont			2700/1500	1300			60	

DETACHED POSITION NUMBER: 4041 ✓
 POSITION: LAT: 26-03-30.8.74 LONG: 097-06-42.X.07
 E: 8326.9 N: 13873.1

LORAN RATES: W: 11187.6 X: 23435.0
 Y: 46558.2 Z: 64088.0

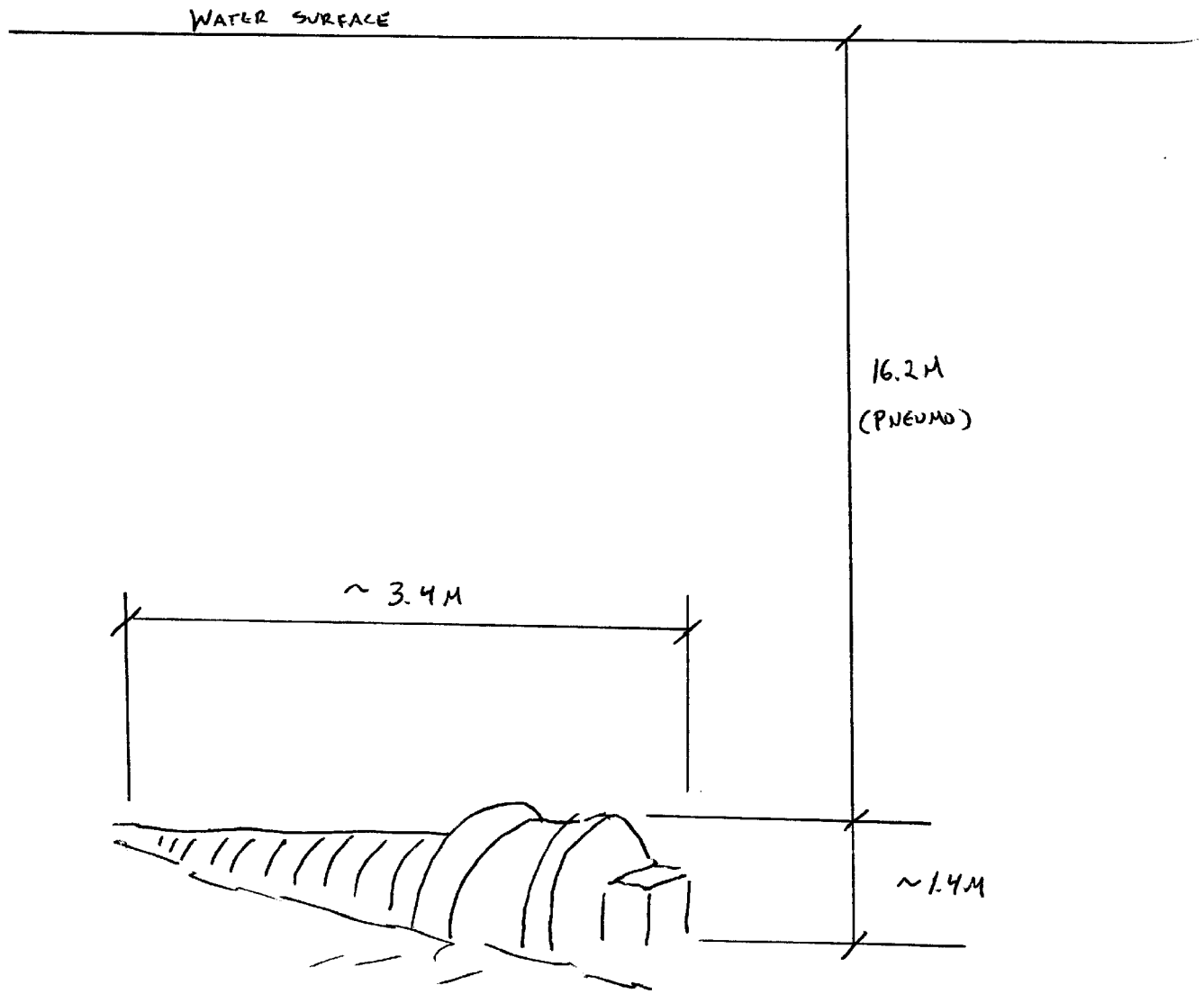
* Another dive was conducted on DOY 222 to get LORAN rates.

DIVER COMMENTS:

The object appeared as a metal cylinder, perhaps part of a winch or windlass. The object was partially submerged in the sand. The object measured 3.4 M long, 1.4 M high off the bottom with a max diameter of 1.2 M.

PNEUMO DEPTH READINGS: 16.2 M, 16.2 M, 16.2 M = 16.2m
 Reduced to 16m Obstr (ship fender) 54ft with smooth tides
 pneumo gauge S/N 8704986

TGT 27.55



DIVING OPERATIONS
 OPR-K370-HE-93
 APPROACHES TO PORT ISABEL TX
 NOAA SHIP HECK S-591

DOY 166
 TARGET # 430.41

DATE 15 JUNE 93

SEARCH RADIUS: 30 M
 DEPTH FROM : PNEUMO/LEAD LINE

MAX DEPTH : 80 FT
 MAX TIME : 19 MIN
 LEAST DEPTH : FT
 TIME : 1725 UTC

ATM. CONDITIONS
 WIND: DIR NE SPEED 10 KNTS
 TEMP: 27.5 C

SEA CONDITIONS
 SEAS: DIR SE HEIGHT 2-3 FT
 TEMP: 26.5 C
 VISIBILITY: 5-6 FT

DIVER NAME	SURF INT	GP	RNT	TNK PRESSURE IN/OUT	dP	DIVE TIMES UP/DOWN	BOTTOM TIME	DEP TH	GR
OPS	CONT			2700/300 2700/1500	2400 1200	1211/1254 1231/1309	19/10	84/ 84	F/ H
						"	"		
CO	CONT			2750/700 2700/1700	2050 1000	"	"	84/ 84	F/ H

DETACHED POSITION NUMBER: Due to control problems, unable to obtain detached position.

POSITION: LAT LONG
 E: N:

LORAN RATES: W: X:
 Y: Z:

DIVER COMMENTS:
 METAL CYLINDER WITH I BEAM ON ONE END, LYING 140 DEG PMC ALONG AXIS. OBJECT WAS APPROXIMATELY 7 FEET LONG, 3 FEET IN DIAMETER WITH TWO SUPPORT BRACKETS ON EITHER SIDE.

PNEUMO DEPTH READINGS: 23.8, 24.2, 24.2, 24.0 = 24.05

GAUGE S/N 8704986 (DEEP)

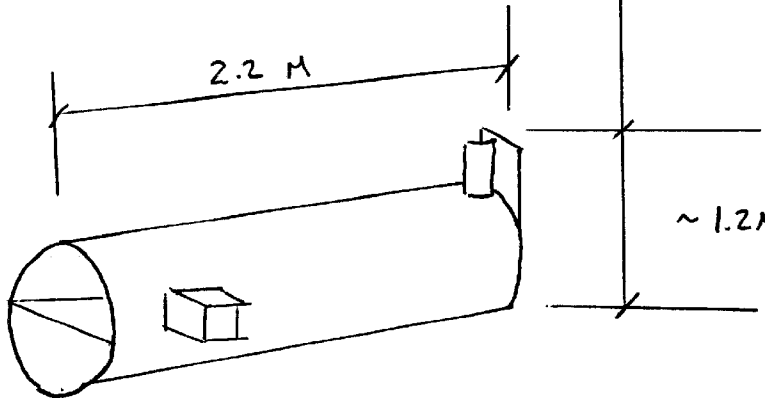
TGT = 43041

WATER SURFACE

240 M
PNEUMO

2.2 M

~ 1.2 M



DIVING OPERATIONS
 OPR-K370-HE-93
 APPROACHES TO PORT ISABEL TX
 NOAA SHIP HECK S-591

DOY 223
 TARGET # 430.41

DATE 11 AUG 93

SEARCH RADIUS 40
 DEPTH FROM : PNEUMO/LEAD LINE

MAX DEPTH : 80 FT
 MAX TIME : 27 MIN
 LEAST DEPTH : FT
 TIME : UTC

ATM. CONDITIONS
 WIND: DIR SE SPEED 07 KNTS
 EMP: 29.5 C

SEA CONDITIONS
 SEAS: DIR SE HEIGHT 2 FT
 TEMP: 29.5 C
 VISIBILITY: 50 FT AT SURFACE

DIVER NAME	SURF INT	GP	RNT	TNK PRESSURE IN/OUT	dp	DIVE TIMES UP/DOWN	BOTTOM TIME	DEP TH	GR
OPS				2900/300	2600	1303/1330	27	80	
JO				3100/400	2700	"	"	80	
CO				3200/600	2600	"	"	80	

DETACHED POSITION NUMBER: 4644 *✓ Reject*
 POSITION: LAT: 26-04-55.98 LONG: 097-01-05.76
 E: 17674.4 N: 16494.6

LORAN RATES: W: X:
 Y: Z:

DIVER COMMENTS:
 This object was first located on DOY 219 in 1992. Divers investigated this item on DOY 166 in 1993. Sonar development of this area revealed a trawl scour and an indentation in the approximate position of the item. Divers investigated area finding the trawl scour and an indentation where the pipe/cylinder was first found. Nothing else was found in the area. Strongly suspect item was picked up by a shrimp trawl net. Item resolved. *CONCURE*

PNEUMO DEPTH READINGS:

DIVING OPERATIONS
 OPR-K370-HE-93
 APPROACHES TO PORT ISABEL TX
 NOAA SHIP HECK S-591

DOY 302
 TARGET # 2715.49

DATE 28 October 1992

SEARCH RADIUS: 20 M
 DEPTH FROM : PNEUMO/LEAD LINE

MAX DEPTH : 90 FT
 MAX TIME : 23 MIN
 LEAST DEPTH : 79 FT
 TIME : 1805 UTC ✓

ATM. CONDITIONS
 WIND: DIR SSE SPEED 15 KNTS
 TEMP: 26.0 C

SEA CONDITIONS
 SEAS: DIR SSE HEIGHT 2-3 FT
 TEMP: 26.0 C
 VISIBILITY: 20 feet at bottom

DIVER NAME	SURF INT	GP	RNT	TNK PRESSURE IN/OUT	dP	DIVE TIMES UP/DOWN	BOTTOM TIME	DEP TH	GR
CO				3100/700	2400	1810/1747	23	90	
OPS				2900/200	2700	"	"	"	

DETACHED POSITION NUMBER: 3003 ✓
 POSITION: LAT: 26-04-38.8⁸⁵ LONG: 097-00-56.94 ✓
 E: ~~15967.8~~ 17919.8 N: 17919.8 15967.8

LORAN RATES: W: 11190.5 X: 23488.9
 Y: 46557.1 Z: 64088.1

LORAN rates taken on DOY 210, 1993.

DIVER COMMENTS:

Divers found a drilling pipe and casing standing on end, 1.5 M diameter, 3.1 M height off bottom.

PNEUMO DEPTH READINGS: Depths determined by leadline. least depth 24.0 m (79 feet). Surrounding depths of 25.0⁵ meters (85 feet).
 Reduced to 23.9m obstr (pipe) (78 ft)

DIVING OPERATIONS
 OPR-K370-HE-93
 APPROACHES TO PORT ISABEL TX
 NOAA SHIP HECK S-591

DOY 210
 TARGET # 2715.49

DATE 29 July 199³

SEARCH RADIUS: 20 M
 DEPTH FROM : PNEUMO/LEAD LINE

MAX DEPTH : 83 FT
 MAX TIME : 24 MIN
 LEAST DEPTH : FT
 TIME : UTC

ATM. CONDITIONS
 WIND: DIR E SPEED 08 KNTS
 TEMP: 28.7 C

SEA CONDITIONS
 SEAS: DIR SE HEIGHT 2-3 FT
 TEMP: 27.8 C
 VISIBILITY: 20 feet at bottom

DIVER NAME	SURF INT	GP	RNT	TNK PRESSURE IN/OUT	dP	DIVE TIMES UP/DOWN	BOTTOM TIME	DEP TH	GR
CO				3000/375	2625	1328/1304	24	83	G
OPS				2800/100	2700	"	"	"	G

DETACHED POSITION NUMBER: 4564 ✓
 POSITION: LAT: 26-04-38.769 LONG: 097-00-56.31
 E: ~~15967.8~~ 17937.2 N: ~~17919.8~~ 15962.7

LORAN RATES: W: 11190.5 X: 23488.9
 Y: 46557.1 Z: 64088.1

DIVER COMMENTS:

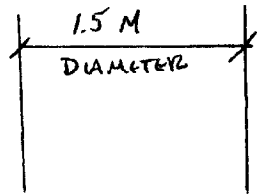
Dive was conducted to re-position target in order to get LORAN rates.

PNEUMO DEPTH READINGS:

TGT 2715.49

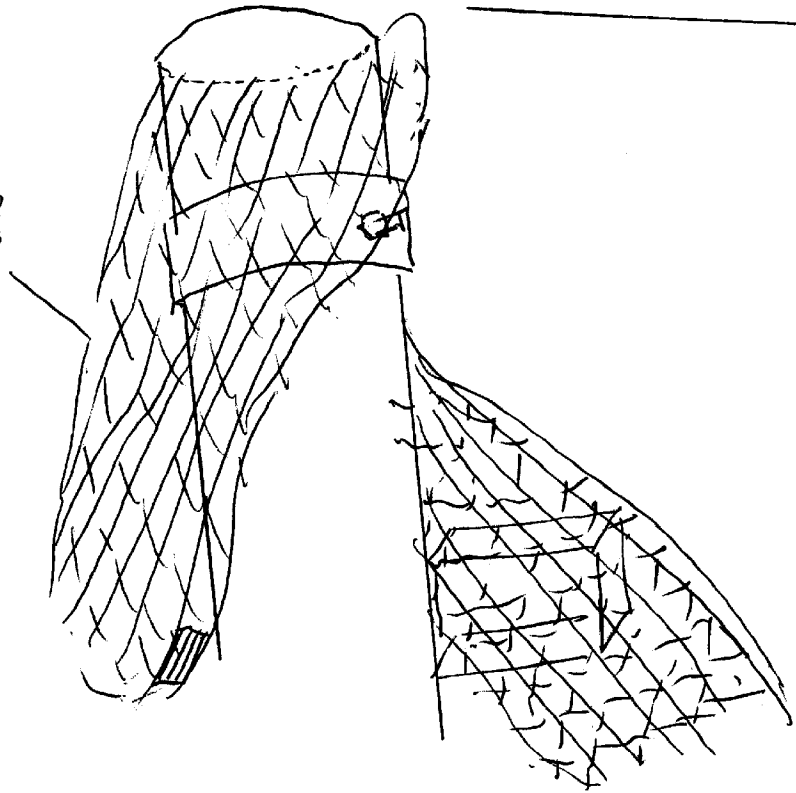
WATER SURFACE

24.0 M
(LEADLINE)



SHRIMP
NETS

3.1 M
(MEASURED LINE)



DIVING OPERATIONS
 OPR-K370-HE-93
 APPROACHES TO PORT ISABEL TX
 NOAA SHIP HECK S-591

DOY 245
 TARGET # 4513.17

DATE 2 september 93

SEARCH RADIUS: 30 M
 DEPTH FROM : PNEUMO/LEAD LINE

MAX DEPTH : 57 FT
 MAX TIME : 21 MIN
 LEAST DEPTH : FT
 TIME : 1927 UTC

ATM. CONDITIONS
 WIND: DIR SE SPEED 11 KNTS
 TEMP: 27.6 C

SEA CONDITIONS
 SEAS: DIR 140 HEIGHT 2-3 FT
 TEMP: C
 VISIBILITY: 10 feet at bottom

DIVER NAME	SURF INT	GP	RNT	TNK PRESSURE IN/OUT	dP	DIVE TIMES UP/DOWN	BOTTOM TIME	DEP TH	GR
JO				2900/1200	1700	1431/1410	21	57	
OPS	cont			2800/950	1750	"	"	"	

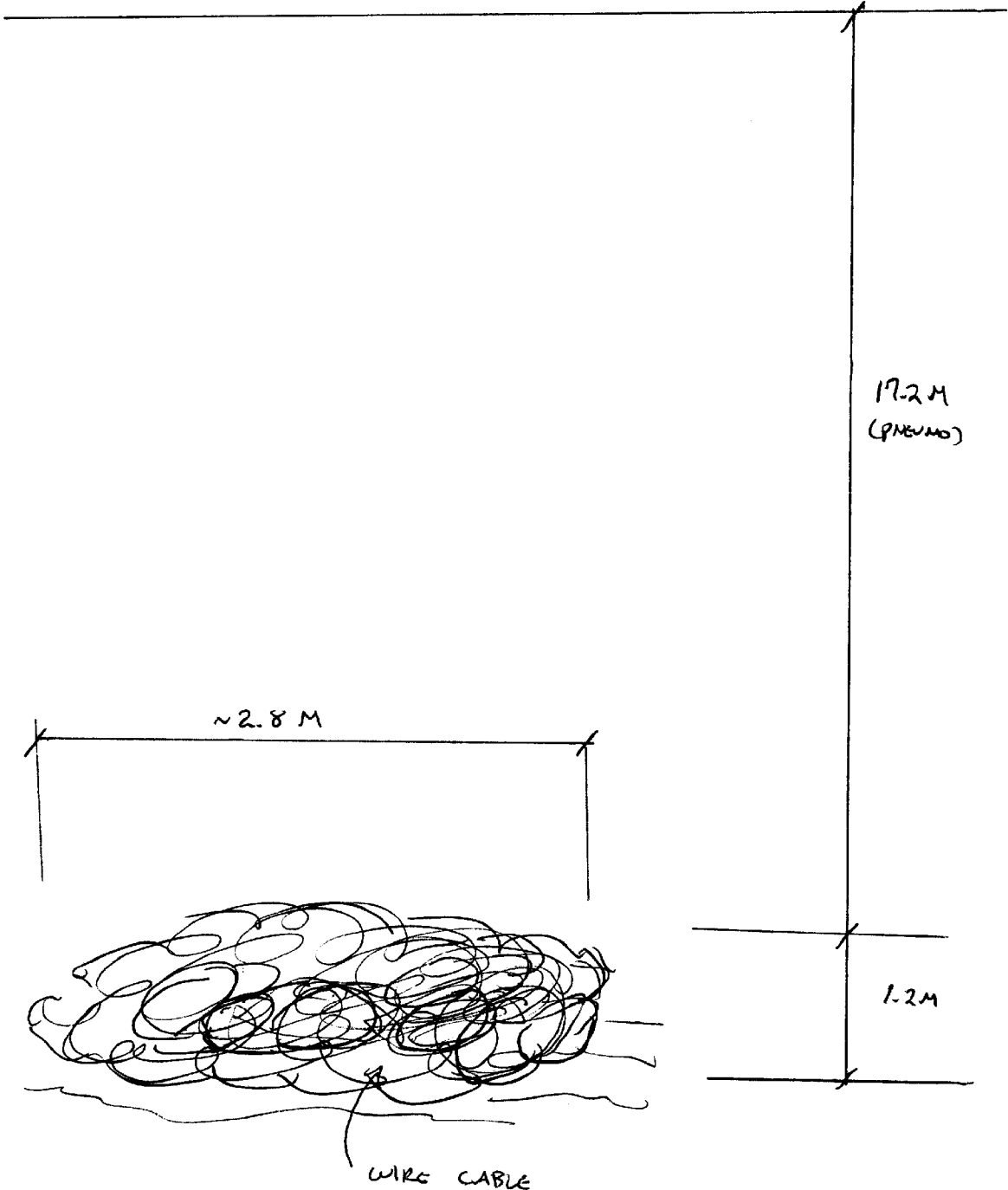
DETACHED POSITION NUMBER: 47A7
 POSITION: LAT: 26-03-55.94 ✓ LONG: 097-06-38.0
 E: 8440.5 ✓ N: 14648.2 ✓

LORAN RATES: W: 11870.0 X: 23435.0
 Y: 46558.9 Z: 64078.2

DIVER COMMENTS:

Divers found cable debris in a pile with a length of 8'-4" and height 3'-6" off bottom.

PNEUMO DEPTH READINGS: 17.2, 17.2, 17.2 = 17.2m Reduced to 16.9m *obstr (cable debris)*
 gauge s/n 8704986 (55 ft)



DIVING OPERATIONS
 OPR-K370-HE-93
 APPROACHES TO PORT ISABEL TX
 NOAA SHIP HECK S-591

DOY 222
 TARGET # 4515.26, 4515.46

DATE 10 August 1993

SEARCH RADIUS: 20 M
 DEPTH FROM : PNEUMO/LEAD LINE

MAX DEPTH : FT
 MAX TIME : 26 MIN
 LEAST DEPTH : FT
 TIME : UTC

ATM. CONDITIONS
 WIND: DIR NNE SPEED 06 KNTS
 TEMP: 29.0 C

SEA CONDITIONS
 SEAS: DIR NNE HEIGHT 1-3 FT
 TEMP: C
 VISIBILITY: 20 feet at bottom

DIVER NAME	SURF INT	GP	RNT	TNK PRESSURE IN/OUT	dP	DIVE TIMES UP/DOWN	BOTTOM TIME	DEP TH	GR
JO				2900/500	2400	1350/1319	26	57	E
OPS				3100/1300	1800	"	"	"	E

DETACHED POSITION NUMBER: 4564
 POSITION: LAT: LONG:
 E: N:

LORAN RATES: W: X:
 Y: Z:

DIVER COMMENTS:

Dive was conducted to investigate targets by the sea buoy. Divers followed buoy chain until chain was buried in ground. Divers found a lump of chain with a small scour, and three pieces of re-bar grouped together coming off the bottom 1.5 feet. No significant targets found on this dive.

PNEUMO DEPTH READINGS:

DIVING OPERATIONS
 OPR-K370-HE-93
 APPROACHES TO PORT ISABEL TX
 NOAA SHIP HECK S-591

DOY 245
 TARGET # 4517.01

DATE 2 September 93

SEARCH RADIUS: 40 M
 DEPTH FROM : PNEUMO/LEAD LINE

MAX DEPTH : 59 FT
 MAX TIME : 21 MIN
 LEAST DEPTH : FT
 TIME : 1839 UTC

ATM. CONDITIONS
 WIND: DIR SE SPEED 11 KNTS
 TEMP: 27.6 C

SEA CONDITIONS
 SEAS: DIR 140 HEIGHT 2-3 FT
 TEMP: 28.0 C
 VISIBILITY: 10 feet at bottom

DIVER NAME	SURF INT	GP	RNT	TNK PRESSURE IN/OUT	dP	DIVE TIMES UP/DOWN	BOTTOM TIME	DEP TH	GR
CO				2900/900	2000	1342/1321	21	59	
OPS				2800/600	2200	"	"	"	

DETACHED POSITION NUMBER: 4745
 POSITION: LAT: 26-03-59.4⁶ LONG: 097-06-40.3 ✓
 E: 8376.6 N: 14756.8 ✓

LORAN RATES: W: 11186.9 X: 23434.6
 Y: 46559.2 Z: 64078.1

DIVER COMMENTS:

Divers found a cement buoy anchor block approximately 1 M square. Block was tipped with one corner exposed above ground. Height off bottom is approximately 2'.

PNEUMO DEPTH READINGS: 16.7, 17.0, 17.0 M = 16.9 m Reduced to 16⁶m obstr
 gauge S/N 8704986 (concr. block) (54 ft)

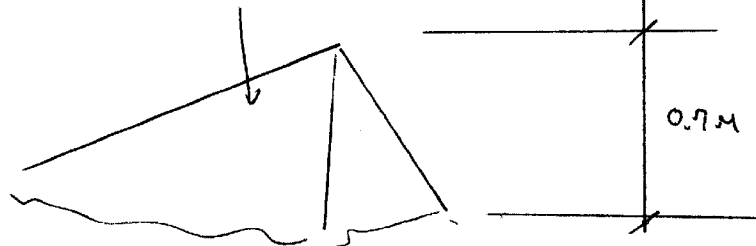
TGT 4517.01

WATER SURFACE

16.9 m
AVG PNEUMO
READING

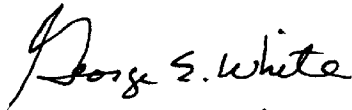
CEMENT
BLOCK

0.7 m



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.



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: December 14, 1993

MARINE CENTER: Atlantic

HYDROGRAPHIC PROJECT: OPR-K470

HYDROGRAPHIC SHEET: H-10436

LOCALITY: Texas Gulf of Mexico, Eastern Approaches to Brazos
Santiago Pass

TIME PERIOD: August 4, 1992 - October 28, 1992
April 22, 1993 - September 3, 1993

TIDE STATION USED: 877-9751 South Padre Island, Tx.
Lat. $26^{\circ} 4.1'N$ Lon. $97^{\circ} 9.4'W$

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 1.55 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.5 ft.

REMARKS: RECOMMENDED ZONING

Times and heights are direct on South Padre Island, Tx. (877-9751).

Note: Times are tabulated in Central Standard Time.

Rudolph M. Gibson

CHIEF, DATUMS SECTION



GEOGRAPHIC NAMES

H-10436

Name on Survey	<div style="display: flex; justify-content: space-between;"> A ON CHART NO. 11301 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 </div>										
	A	B	C	D	E	F	G	H	I	J	K
BRAZOS SANTIAGO PASS	X										1
MEXICO, GULF OF (title)	X										2
TEXAS (title)	X										3
											4
											5
											6
											7
											8
											9
											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25

Approved:

Charles P. Hamilton
Chief Geographer - NJ/C62x5

SEP 30 1993

N/CG244-34-94

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

JULY 29, 1994

NUMBER OF PACKAGES

1 (ONE) TUBE, 7 (SEVEN) 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-10436

TEXAS, GULF OF MEXICO, EASTERN APPROACH TO BRAZOS SANTIAGO PASS (PART 1)

1 TUBE CONTAINING:

- 1 FINAL SMOOTH SHEET
- 1 BOTTOM SAMPLE OVERLAY
- 1 ORIGINAL DESCRIPTIVE REPORT FOR H-10436

1 BOX CONTAINING:

- 2 ACCORDIAN FILES CONTAINING FATHOGRAMS AND RAW DATA PRINTOUTS FOR VESNO 9140 FOR THE FOLLOWING DAYS IN 1992: 217-219, 224-226, 231-234, 240-241, 245, 248, 252-254, 258-261, 268, 279-281, 287, 293, 295, AND 301-302; AND FOR THE FOLLOWING DAYS IN 1993: 112, 118, 123, 131-134, 140-141, and 145.
- 1 9-TRACK MAGNETIC TAPE FOR SURVEYS H-10436 AND FE-386SS.

1 BOX CONTAINING:

- 1 ACCORDIAN FOLDER CONTAINING FATHOGRAMS AND RAW DATA PRINTOUTS FOR VESNO 9140 FOR THE FOLLOWING DAYS IN 1993: 146-148, 152, 162, 165-166, 176, 182, 188-190, 193-195, 197, 200-201, 207-208, 210, 217, 222-223, 225, and 244-246.
- 1 ENVELOPE CONTAINING MISCELLANEOUS DATA REMOVED FROM THE ORIGINAL DESCRIPTIVE REPORT
- 1 CAHIER WITH FINAL CONTROL, SOUNDING, AND LINE FILE LISTINGS

1 BOX CONTAINING:

- 11 ENVELOPES CONTAINING SONARGRAMS FOR DAYS 217-219, 224-226, AND 231-232

FROM: (Signature)

DEBORAH A. BLAND



RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

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



AUG 15 1994

N/CG244-34-94

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

JULY 29, 1994

NUMBER OF PACKAGES

7 (SEVEN) 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-10436

TEXAS, GULF OF MEXICO, EASTERN APPROACH TO BRAZOS SANTIAGO PASS (PART 2)

1 BOX CONTAINING:

11 ENVELOPES CONTAINING SONARGRAMS FOR VESNO 9140 FOR DAYS 240-241, 245, 248, 252-254, AND 258

1 BOX CONTAINING:

11 ENVELOPES CONTAINING SONARGRAMS FOR DAYS 259-261, 281, 287, 293, 295, AND 301-302

1 BOX CONTAINING:

8 ENVELOPES CONTAINING SONARGRAMS FOR DAYS 112, 118, 123, AND 131-133

1 BOX CONTAINING:

22 ENVELOPES CONTAINING SONARGRAMS FOR DAYS 134, 140-141, 146, 148, 152, 162, 166, 193-195, 197, 200-201, 208, 217, 222-223, AND 244-246

FROM: (Signature)

DEBORAH A. BLAND

Deborah A. Bland

RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

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

08/01/94

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER: H-10436

NUMBER OF CONTROL STATIONS	2
NUMBER OF POSITIONS	4398
NUMBER OF SOUNDINGS	25994

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	795	01/05/94
VERIFICATION OF FIELD DATA	275	06/21/94
ELECTRONIC DATA PROCESSING	146	
QUALITY CONTROL CHECKS	85	
EVALUATION AND ANALYSIS	92	07/26/94
FINAL INSPECTION	16	06/24/94
TOTAL TIME	1409	
ATLANTIC HYDROGRAPHIC SECTION APPROVAL		07/27/94

**COAST AND GEODETIC SURVEY
ATLANTIC HYDROGRAPHIC SECTION
EVALUATION REPORT FOR H-10436 (1992)**

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

To place this survey on the NAD 27 datum move the projection lines 1.278 seconds (39.326 meters or 1.96 mm at the scale of the survey) north in latitude, and 0.877 seconds (24.375 meters or 1.22 mm at the scale of the survey) west in longitude.

All geographic positions listed in this report are on NAD 83 datum unless otherwise specified.

See also Section H. of the Descriptive Report.

M. COMPARISON WITH PRIOR SURVEYS

2.b. Prior survey H-6493 is a 1:10,000 scale survey, inshore of prior survey H-6496. Depths north of the jetties compare well with soundings from the present survey being no more than 1² meters (4 feet) different from those of the prior survey. South of the jetties, depths from the present survey are 0 to 3⁶ meters (0 to 12 feet) deeper than those of H-6493.

2.c. Prior survey H-6491 is a 1:20,000 scale survey, inshore of prior survey H-6493. Depths compare favorably with the present survey north of the jetty, with 0 to 1 meter (0 to 3 feet) difference in depths from the prior and present survey. South of the jetty, present survey depths are from 0 to 1² meters (0 to 4 feet) deeper than prior survey depths in water less than 11⁹ meters (39 feet) deep. In depths of 12² to 13⁷ meters (40 to 45 feet) present survey depths are 1² to 4² meters (4 to 14 feet) deeper than prior survey depths.

See also Section M. of the Descriptive Report.

N. ITEM INVESTIGATION REPORTS**N.3.5. Results of Investigation - AWOIS Items 110 and 5825**

The Descriptive Report states that this item is not visible above water at low tide and that further investigation by a field party or launch is recommended. In addition to the field recommendations it is further recommended that the charted label be changed from *Wk* to *Wks* to accommodate items 110 and 5825 which are both charted in the same location.

N.7.5. Results of Investigation - AWOIS Items 5825 and 110

The Descriptive Report states that further investigation by a field party or launch is recommended. In addition to the field recommendation it is also recommended that the charted label be changed from *Wk* to *Wks* to accommodate items 5825 and 110 which are both charted in the same location.

N.11.5. Results of Investigation - AWOIS Item 5829

This item was unassigned, however, 200% side scan sonar coverage was accomplished in this area during mainscheme hydrography. No spikes appear on the fathograms or sonargrams in this area. Present survey depths are 17⁶ to 18 meters (58 to 59 feet). No changes in charting are recommended at this time.

N.21.5. Results of Investigation - AWOIS Item 8135

Present survey depths are 12⁵ to 17³ meters (41 to 57 feet). It is recommended that the chart be updated to reflect present survey soundings in the area of this item.

N.23.5. Results of Investigation - AWOIS Item 8224

This item was unassigned, however, 200% side scan sonar coverage was accomplished in this area during mainscheme hydrography. No spikes appear on the fathograms or sonargrams in this area. Present survey depths are 19² to 20⁷ meters (63 to 68 feet). No changes in charting are recommended at this time.

N.25.a. Contact No. 587.71, 1927.07, 2788.18

This group of contacts were not discussed in the Descriptive Report. Target 587.71 is listed in contact table #5 with a computed height of 0⁶ meters (2 feet) in 22⁵ meters

(74 feet) of water. The contact was investigated on DOY 302 (1992) between positions 3010-3013 with the side scan sonar on the 75 meter range. The contact was found at FIX 3012.15. The fathometer least depth of 24¹ meters (79 feet) was found at FIX 2788.18 in Lat 26°05'31.75"N, Lon 97°01'14.09"W. No dives were done in the area. The present survey is showing a 24¹ meter (79 feet) **Obstr** in 25 meters (82 feet) of water.

Recommendation: This depth is insignificant as an obstruction and should not be charted as such. The chart should be updated to reflect soundings found on the present survey.

N.27. CONTACT NO. 4517.01

Recommendation: A 16⁶ meter (54 feet) **Obstr (concr block)** is being shown on the smooth sheet. This sounding falls in 17³ meters (56 feet) of water. The field recommends charting this obstruction, however, during office evaluation it was determined that this depth is insignificant as an obstruction and should not be charted as such. The chart should be updated to reflect soundings found on the present survey.

N.28. CONTACT NO. 4513.17

Recommendation: A 16⁹ meter (55 feet) **Obstr (cable debris)** is being shown on the smooth sheet. This sounding falls in 17³ meters (56 feet) of water. The field recommends charting this obstruction, however, during office evaluation it was determined that this depth is insignificant as an obstruction and should not be charted as such. The chart should be updated to reflect soundings found on the present survey.

O. COMPARISON WITH CHART 11301 (19th Ed., SEP 1992)
11302 SC (22nd Ed., JAN 1992)

3.g. The Brazos Santiago Pass Entrance Channel's tabulated depths appear to be in conflict with present survey soundings, but are not. Advance information, via telephone conversation with Nautical Charting Division personnel in Silver Spring, MD, confirmed that there is no conflict between present survey depths and depths from the most recent Corps of Engineers (COE) survey. The 1993 COE survey depths will be used to determine controlling depths in this area on the next issue of the above charts. These COE survey depths agree very well with the present survey depths.

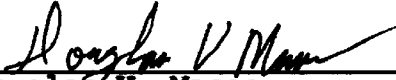
S. MISCELLANEOUS

3. Chart Pre-Compilation using the present survey data was done by personnel in the Atlantic Hydrographic Section in Norfolk, VA. Pre-compilation data will be forwarded upon completion of the project.

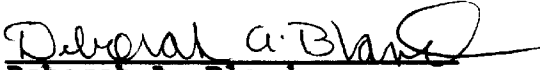
P. ADEQUACY OF SURVEY

This is an adequate basic hydrographic/side scan sonar survey. No additional work is recommended.

HECK Processing Team



Douglas V. Mason
Cartographic Technician
Verification of Field Data

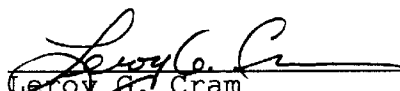


Deborah A. Bland
Cartographer
Evaluation and Analysis

APPROVAL SHEET
H-10436

Initial Approvals:

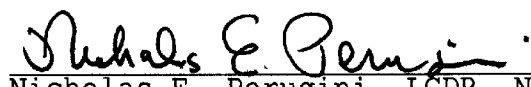
The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disapproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet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



Leroy S. Cram
Cartographer, Atlantic Hydrographic Section

Date: 07/18/94

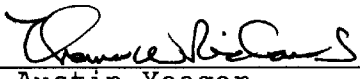
I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.



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

Date: 07/27/94

Final Approval:

Approved: 

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

Date: 12-1-94

