

H10270

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Hydrographic
Type of Survey Side Scan Sonar
Field No. MI-10-1-94
Registry No. H-10270

LOCALITY

State Florida
General Locality Tampa Bay
Sublocality Southwest Channel

19 94

CHIEF OF PARTY
CAPT N. A. Prah1

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DATE MAY 7 1996

DIAGRAM 1257-3

Ⓔ Bp158084

Charts

CPS

11414

11411 'A'

11412

11400 Appd 9-20-96 OBR

11420 Appd thru Bp 158084 9/19/96 cml.

11425

11424

110013 NC

HYDROGRAPHIC TITLE SHEET

H-10270

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.

MI-10-1-94

State FloridaGeneral locality ~~Gulf of Mexico~~ TAMPA BAYLocality Tampa Bay, FL SOUTHWESTScale 1:10,000 Date of survey April 27 - June 7, 1994Instructions dated March 8, 1994 Project No. OPR-J343-MI-94Vessel NOAA Ship MT MITCHELLChief of party CAPT Nicholas A. PrahSurveyed by J.C. Gardner, J.A. Ferguson, M.P.M. Soracco, J.D. Swallow, S.R. Williams, E.J. Van Den Ameele, J.J. Mann,
S.A. Shaulis, I.L. Gardner, P.G. Lewit, M.E. Ahern, M.J. Annis, M.T. Lathrop, L.A. ButlerSoundings taken by echo sounder, hand lead, pole DSF-6000NGraphic record scaled by MT MITCHELL survey personnelGraphic record checked by MT MITCHELL survey personnelProtracted by N/A Automated plot by ENCAD NOVATET III PLOTTER (AHS)
HP 7959B, Bruning (FIELD)Verification by ATLANTIC HYDROGRAPHIC BRANCH PERSONNELSoundings in XXXXXXXXXXXXXXXXXXXX fathoms feet at MLW MLLW meters FEETREMARKS: Basic Hydrographic Survey including two AWOIS Items: 8793 and 8794Time zones used: 0 (UTC) for data collection, 0 (UTC) for tidal data200% side scan sonar coverage of navigable areas and AWOIS itemsNOTES IN RED WERE MADE DURING OFFICE PROCESSINGAWOIS/SURF 5/10/96 MCRMAY 7 1996 SC

APR	MAY	JUN		TOTAL
11.0	25.0	10.0	DAYS AT SEA	46.0
20.0	1070.6	194.4	LNH HYDRO	1285.0
5.0	571.8	322.8	LNH SSS	899.6
0	55.6	25.9	SQNM	81.5
1	2	1	CTD 'S	4
5	14	6	DIVES	25
		3	AVOIS RESOLVED	3
		1	NEW ITEMS	1

▲ GPS REF STATION

■ TIDE GAUGE



HYDRO



100% SSS



200% SSS

REDINGTON

SHORES
GAUGE

ST
PETERSBURG
GAUGE

PASS-A-GRILLE
GAUGE

PORT
MANATEE
GAUGE

PROJECT SKETCH
TAMPA BAY
OPR-J343-MI-94
NOAA SHIP MT MITCHELL
CAPT. NICHOLAS A. PRAHL

H-10536 '94

H-10539 '94

H-10270 '94

D

E

G

F

PORT
MANATEE
GAUGE

TAMPA

BRADENTON

27 | 50

27 | 40

27 | 30

82 | 40

82 | 30

82 | 50

83 | 00

K

A

B

C

H

J

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- III. List of Horizontal Control Stations
- *IV. Geographic Names (*FIELD*)
- *V. Tides and Water Levels
- VI. Supplemental Correspondence
- VII. Approval Sheet

** FILED WITH THE ORIGINAL FIELD RECORDS.*

A. PROJECT

A.1 This survey was conducted in accordance with Project Instructions OPR-J343-MI-94, Approaches to Tampa Bay, FL.

A.2 The original date of the instructions is March 8, 1994.

A.3 There were no supplemental instructions.

A.4 Sheet letter "D" was assigned in Project Instructions OPR-J343-MI-94.

A.5 Project OPR-J343-MI-94 is being conducted to accomplish a navigable area basic hydrographic survey and complete 200 percent side scan sonar coverage of the safety fairway and fairway anchorages at the approaches to Tampa Bay, FL, and in waters adjacent to dredged channels within Tampa Bay, FL. In addition, the project includes the investigation of a number of wrecks and obstructions in or near the project area.

B. AREA SURVEYED

B.1 This survey sheet is located in lower Tampa Bay; south of Mullet Key and north of Anna Maria Island. AWOIS Items 8793 and 8794 are covered on this sheet.

The primary traffic in the survey area is commercial shipping vessels, pleasure craft, and small fishing vessels.

B.2 The area is delineated by 27° 31' 47" to 27° 35' 55" North latitude, and from 082° 40' 20" to 082° 48' 35" West longitude. Only the navigable areas and search radii for AWOIS items were surveyed. The navigable area was covered with main scheme hydrography at a line spacing of 50 meters (reduced to 25 meters in areas of special interest such as spoils), and with 200% side scan sonar. The AWOIS items were covered with 200% side scan sonar only. The charted positions and search radii for AWOIS items on this sheet are as follows:

<u>Item</u>	<u>Charted Position</u>	<u>Search Radius</u>
AWOIS 8793	27° 35' 00.00"N 082° 45' 00.00"W	500 meters
AWOIS 8794	27° 34' 01.12"N 082° 45' 59.36"W	1000 meters

B.3 The tide gages to control this survey were installed on April 24 and 27, 1994 (DN 114 and 117), and were removed on June 8, 1994 (DN 159). Data acquisition began on April 27, 1994 (DN 117) and concluded on June 7, 1994 (DN 158).

C. SURVEY VESSELS

C.1 The following vessels were used during this survey:

<u>VESSEL</u>	<u>ELECTRONIC DATA PROCESSING NUMBER</u>	<u>PRIMARY FUNCTION</u>
JENSEN LAUNCH 1004 (MI-3)	2223	Hydrography/Side Scan Operations, Diving Operations
JENSEN LAUNCH 1002 (MI-4)	2224	Hydrography/Side Scan Operations, Diving Operations
JENSEN LAUNCH 1021 (MI-5)	2225	Bottom Sampling
BOSTON WHALER (MI-1)	N/A	Diving Operations, CTD Casts Tide Gage Support

C.2 The standard Jensen launch stern tow of the side scan sonar towfish was used for data acquisition. The following paragraph describes the only unusual vessel configurations used for side scan sonar data acquisition during survey operations on this sheet.

On May 22, 1994 (DN 142) VesNo 2224 tested a configuration designed for shallow water survey work. A 20 meter polypropylene line was attached to the towfish at the point where the swing-arm pivots. A small float was attached to the end of this line to increase the drag on the towfish, thereby causing it to ride higher in the water column at a given cable length and launch RPM. This would ideally allow the towfish to ride further back from the launch (due to increased cable length) which would reduce noise on the sonargram from prop wash and engine vibration. Several attempts were made with this configuration. However, no improvement in side scan sonar record quality was seen. This configuration was not used at any other time during survey operations.

D. AUTOMATED DATA ACQUISITION AND PROCESSING *SEE ALSO THE EVALUATION REPORT.*

D.1 Survey data acquisition and processing were accomplished using the HDAPS system with the following software versions:

<u>Program Name</u>	<u>Version</u>	<u>Date Installed</u>
BACKUP	2.00	April 15, 1994
BASELINE	1.14	April 15, 1994
BIGABST	2.07	April 15, 1994
BIGAUTOST	3.01	April 15, 1994
BLKEDIT	2.02	April 15, 1994
CARTO	2.13	April 15, 1994
CLASSIFY	1.05	April 15, 1994
CONTACT	2.34	April 15, 1994
CONVERT	3.62	April 15, 1994
DAS_SURV	6.70	May 4, 1994
DIAGNOSE	3.04	April 15, 1994
DISK_UTIL	1.00	April 15, 1994
DP	2.14	April 15, 1994
EXCESS	4.21	April 15, 1994
FILESYS	3.24	April 15, 1994
GRAFEDIT	1.06	April 15, 1994
HIPSTICK	1.01	April 15, 1994
HPRAZ	1.26	April 15, 1994
INVERSE	2.01	April 15, 1994
LISTDATA	1.02	April 15, 1994
LOADNEW	2.10	April 15, 1994
LSTAWOIS	3.07	April 15, 1994
MAINMENU	1.20	April 15, 1994
MAN_DATA	2.01	April 15, 1994
NEWPOST	6.01	April 15, 1994
PLOTALL	2.27	April 15, 1994
POINT	2.10	April 15, 1994
PREDICT	2.01	April 15, 1994
PRESURV	7.08	April 15, 1994
PRINTOUT	4.03	April 15, 1994
QUICK	2.05	April 15, 1994
RAMSAVER	1.02	April 15, 1994
REAPPLY	2.10	April 15, 1994
RECOMP	1.02	April 15, 1994
SCANNER	1.00	April 15, 1994
SELPRINT	2.04	April 15, 1994
SYMBOLS	*,**	April 15, 1994
VERSIONS	1.00	April 15, 1994
ZOOMEDIT	2.24	April 15, 1994

D.2 Two programs were used to determine velocities: *VELOCITY* (Ver. 2.10), dated March 15, 1994 and *CAT* (Ver. 2.00), dated December 18, 1992.

D.3 There were no nonstandard automated acquisition or processing methods used.

E. SONAR EQUIPMENT

E.1 Side scan sonar operations were conducted using an EG&G Model 260-TH slant range corrected side scan recorder and a Model 272-T (single frequency) towfish. All side scan operations were conducted from either Launch MI-3 or Launch MI-4 (VesNo 2223 and 2224). The following list shows the equipment serial numbers and corresponding dates used for each boat:

<u>Vessel Number</u>	<u>Equipment Type</u>	<u>Serial Number</u>	<u>Dates Used</u>
2223	Recorder	016672	DN 125 - DN 158
2223	Towfish	016989	DN 125 - DN 132
2223	Towfish	011904	DN 132 - DN 136
2223	Towfish	011591	DN 141 - DN 158
2224	Recorder	016946	DN 117 - DN 155
2224	Towfish	011904	DN 117 - DN 125
2224	Towfish	011902	DN 126 - DN 155

E.2 All side scan sonar towfish were configured with a 20° beam depression, which is the normal setting.

E.3 The 100 kHz frequency was used throughout this entire survey.

E.4 a) In sufficiently deep water the 100 meter range scale was used for main scheme coverage. On the shoal area of the sheet (under 8 meters water depth) the 75 meter range scale was used. Occasionally, if it was felt that the edges of the 100 meter range were not being picked up sufficiently, main scheme was run off the shoal on the 75 meter range scale.

Both the 25 meter and 50 meter range scales were used for contact development, as it yields a trace of higher definition.

Line spacing for main scheme coverage was determined using the formula provided in section 7.3.2.2 of the Field Procedures Manual ($LS_{max} = 2RS - 2EPE_{max}$). The predicted maximum estimated position error (EPE) did not exceed 15 meters within the survey area, so a maximum line spacing of 170 meters was established for the 100 meter range scale and a 120 meter line spacing for the 75 meter range scale.

b) Daily opening and closing confidence checks were obtained either by towing the towfish past the anchor of the MT MITCHELL, or by towing it over an area of distinct sand waves.

c) Two hundred percent side scan sonar coverage was obtained over both AWOIS search areas. One hundred percent side scan sonar coverage was obtained over the navigable area on the sheet. A few gap lines on the two hundred percent coverage of the navigable area were not completed due to time restrictions. This is discussed further in section E.6.

d) Through the course of data acquisition we had to overcome several problems with our side scan trace. The problems were as follows:

There is quite a bit of "noise" on the side scan traces. On several occasions schools of fish were observed both in the water and on the trace. Other vessels approaching created turbulence in the water resulting from their wakes, restricting side scan visibility through those areas. When these factors obscured the sonar traces the entire line (or that portion of the line affected) was rejected and rerun.

To maintain a given swath width one needs to keep the towfish in 8% to 20% of the range scale, i.e. 6 meters off the bottom on the 75 meter scale, 8 meters on the 100 meter scale. Achieving this in the shoal water or in high currents required improvisation. Launches would occasionally run lines into the current only. Doing this allowed higher RPM's to raise the fish while keeping the speed low.

During the first hundred percent side scan sonar coverage of South West Channel, MI-4 (VesNo 2224) experienced difficulty with the towfish properly tracking the bottom. This problem possibly resulted from turbidity in the water column or the high current (2.5 knots) existing in that area. To compensate, the launch OIC switched from automatic towfish height to manual towfish height. This procedure was questioned by verifiers from the Atlantic Hydrographic Section, their concern being the reduced swath width resulting from switching to manual towfish height (due to the fact that the fish may drop below 8% and HDAPS would not know). The existing sonargrams were accepted as good data, but additional side scan sonar lines were run splitting the original lines, thus guaranteeing complete coverage of the area. Automatic towfish height was used for the remainder of the survey.

e) The towfish were deployed from the sterns of both launches during the entire survey period.

E.5 Once a contact was considered significant, based on shadow height or fathometer readings, a launch was sent back to the contact for further development. Contact development consisted of either splitting main scheme hydro lines with more hydro lines or ensonifying the contact on the 25 meter or 50 meter range scales for more detailed sonargrams.

Based on the results of the contact development, the contact was judged to be a "No Further Development" or a "Dive Site". For each Dive Site investigation the divers would locate the contact, obtain a leadline least depth on the contact, and place a marking buoy on a short stay at the point of least depth. A survey launch would then obtain a Detached Position on the marking buoy and then retrieve the buoy.

E.6 Any contact thought to be significant was entered into the contact tables (tables 1, 2, 3, 4, and 8 were used for this survey). Significance was based on shadow height and general appearance of the contact. Once 200% coverage was achieved, the contact tables were compared to see which contacts were rediscovered. Based on rediscovery and shadow heights, most of the contacts were judged to require no further investigation. The contacts deemed important were then developed using the procedures described in section E.5 above.

Overlap was checked on-line using the real-time swath plot and checked again during processing using the edited swath plot. Any overlap less than two millimeters at the scale of the survey was considered a gap. Gaps were filled by running additional side scan sonar lines.

During routine data acquisition for this sheet several gaps in the side scan sonar coverage were created. The sources of these gaps include reduced swath width, DGPS reception failures, bad helm, and starting or breaking line inappropriately. However the principal source of rejected side scan sonar was unacceptable sonargrams due to shallow water. The majority of these gaps were found during data processing and a launch was sent to run a "gap line" to achieve the appropriate side scan sonar coverage.

As mentioned above, degraded sonargrams due to shallow water (4.0 meters and shoaler) was the major cause of rejected side scan data. These gaps in coverage were rerun, some areas were rerun 4 or 5 times, until an acceptable sonargram was obtained. Due to time restrictions, a few of the most problematic shoal areas could not be filled with gap lines. The following list details gaps in side scan sonar coverage:

	Fix - Fix	Length (m)	Width (m)
100% Gaps:	None		
200% Gaps:	6394 - 6395	350	130
	6396 - 6400	1,300	130
	6414 - 6416	850	130
	6429 - 6431	950	130
	6448 - 6449	500	130
	6495 - 7760	350	130
	6509 - 6511	800	130
	6498 - 7763	110	130

All of the above 200% side scan sonar gaps are located in the northern portion of the sheet along a spoil area.

Please see Separate V: ^{*} Side Scan Sonar Data for a detailed listing of data rejected due to unacceptable sonargrams.

F. SOUNDING EQUIPMENT

F.1 All hydrographic soundings were acquired using a Raytheon 6000N digital survey fathometer (DSF). The following list shows the equipment serial numbers and corresponding dates used for each boat:

<u>Vessel Number</u>	<u>Serial Number</u>	<u>Dates Used</u>
2223	A122N	DN 123 - DN 125
	C066	DN 126 - DN 158
2224	B051N	DN 117 - DN 124
	B042N	DN 125 - DN 128
	B051N	DN 129 - DN 131
	B042N	DN 132 - DN 155

F.2 All diver-determined least depths were measured with a calibrated leadline.

F.3 On several occasions mechanical malfunctions in the DSF 6000N fathometers resulted in lost data or unacceptable paper trace. On these occasions the affected data was rejected and the fathometer was inspected by electronics technicians. At no time was there an equipment fault that resulted in poor accuracy or quality in the accepted data.

F.4 Both the high (100 kHz) and the low (24 kHz) frequency sounding data were recorded during data acquisition. Only high frequency soundings were selected for plotting.

G. CORRECTIONS TO SOUNDINGS

G.1 a) Detailed information and tables used to determine all corrections to soundings can be found in the SOUNDING EQUIPMENT CALIBRATION AND CORRECTIONS REPORT included in the separates. ^{*}

The velocity of sound through water was determined using two Seacat conductivity, temperature and density gauges (S/N 192472-0284 and 192472-0285) manufactured by Sea-Bird Electronics, Inc. A Data Quality Assurance Test was conducted with each velocity cast to ensure the meter was within tolerance. The DQA test was performed using hydrometers manufactured by H-B Instrument Company.

On DN 114 simultaneous casts were made with both Seacat units as an additional check of data reliability. The results of the two casts showed excellent agreement (see the SOUNDING EQUIPMENT CALIBRATION AND CORRECTIONS REPORT included in the separates)* Seacat S/N 192472-0284 was used exclusively for all casts resulting in survey corrector tables.

All data were processed using *VELOCITY* Version 2.10 and *CAT* Version 2.00 software. The computed velocity correctors were entered into the HDAPS sound velocity tables and applied on-line to digitized high frequency soundings. Sound velocity correctors applied to this survey were obtained on the following dates:

<u>Cast Number</u>	<u>Date</u>	<u>Latitude</u>	<u>Longitude</u>	<u>HDAPS Table #</u>	<u>Applied To Day #'s</u>
1	04/24/94	27° 36.50' N	082° 46.00' W	1	114-122
2	05/03/94	27° 36.00' N	082° 45.50' W	2	123-135
3	05/16/94	27° 36.25' N	082° 45.50' W	3	136-151
4	06/01/94	27° 36.25' N	082° 45.51' W	4	152-158

- b) There was no variation in the DSF-6000N instrument initial.
- c) No instrument correctors to the DSF-6000N were required.
- d) No instrument corrections were determined from leadline comparisons. Bar checks were not performed. Lead line comparisons with the DSF-6000N were made for each launch weekly. Results are tabulated in the SOUNDING EQUIPMENT CALIBRATION AND CORRECTIONS REPORT included in the separates.*
- e) All sounding correctors were applied to both the narrow (100 kHz) and the wide (24 kHz) beams.
- f) The static draft of launch MI-4 (VesNo 2224) was determined in April, 1993 while the launch was out of the water at the Atlantic Marine Center, Norfolk, Virginia. A calibrated steel tape was used to measure the distance from the transducer to a reference line on the launch above the waterline. The launch was then put in the water and the distance from the waterline to the reference line was measured. The static drafts of launches MI-3 (VesNo 2223), MI-5 (VesNo 2225), and MI-6 (VesNo 2226) were determined in April, 1994 in Norfolk, Va using the same procedures. See the SOUNDING EQUIPMENT CALIBRATION AND CORRECTIONS REPORT included in the separates for details.*

g) Settlement and squat correctors for launch MI-4 (VesNo 2224) were determined, using procedures outlined in the Hydrographic Manual, on the Elizabeth River in April, 1993. Settlement and squat correctors for launches MI-3 (VesNo 2223), MI-5 (VesNo 2225), and MI-6 (VesNo 2226) were determined in April, 1994 in Norfolk, Va. An observer, stationed with a level on a pier, measured changes in relative height as each launch ran toward and away from the observer at various speeds. Settlement and squat correctors were applied to soundings through the HDAPS offset table. See the SOUNDING EQUIPMENT CALIBRATION AND CORRECTIONS REPORT included in the separates for details.*

h) None of the launches are equipped with a heave, roll and pitch indicator.

G.2 The HDAPS program "Reapply" was frequently used for data from the first day of each leg of survey operation. Velocity casts were performed at the start of each leg. On that first day the launches ran on velocity table 0, and on the appropriate one thereafter. Once the new HDAPS velocity table became available the data was reapplied correspondingly.

G.3 Velocity casts were run at the start of each leg of operation. All data collected during that leg has the appropriate velocity table applied to it. There were no special corrections due to differing water masses or equipment peculiarities.

G.4 Pneumatic depth gages were not used in diver investigations for this survey. All diver investigation least depths were obtained with properly calibrated inverted leadlines.

G.5 Generally, sea conditions greater than one meter affected the fathogram, creating a trace of constant peaks and deeps (since the launches are not equipped with heave, pitch, and roll sensors). To compensate for this, the sea action was manually scanned out and selected sounding depths were edited by the MT MITCHELL data processing team.

G.6 a) The tidal datum for this project is mean lower low water. The operating tide stations at Redington Long Pier, FL (872-6575) and St. Petersburg Coast Guard Base, FL (872-6520) served as reference stations for predicted tides, and tide stations at Port Manatee, FL (872-6384) and St. Petersburg Beach South, FL (872-6430) were established by ship's personnel as the direct control for datum determination. Predicted tidal data for Redington Long Pier, FL and St. Petersburg Coast Guard Base, FL was provided on floppy magnetic disk by N/OES334 before the start of the project. *APPROVED TIDES AND ZONES HAVE BEEN APPLIED DURING OFFICE PROCESSING*

b) The height and time correctors were provided in the Project Instruction for the project area, and applied to predicted tides to generate an on-line predicted tide table. The tide tables were applied on-line and during processing of sounding data. For a more detailed overview of tidal information please refer to Appendix V.*

c) Zoning for this project is consistent with the project instructions. For a more detailed overview of tidal information please refer to Appendix V.*

H. CONTROL STATIONS

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

H.2 A list of horizontal control stations is located in Appendix III.

H.3 NOAA HF and VHF DGPS reference stations were established on Egmont Key and used for positioning. The NOAA HF reference station was established at the Third Order horizontal control station TAMPA PILOTS (PID AG9476), and the NOAA VHF reference station was established at the Third Order horizontal control station EGMONT KEY LH ECC (PID AG9474). Both stations were monumented by the National Ocean Service in 1981, and recovered as described by MT MITCHELL personnel in March, 1994. The position for each station was obtained from the NGS database and verified by MT MITCHELL and AMC EED personnel using the NOS *MONITOR* (version 2.0) program.

The *MONITOR* program was run over the HF station TAMPA PILOTS. The M-XII setup on the station received the correctors from the VHF base station at EGMONT KEY LH ECC and computed a differentially corrected position. This position was then output to a PC running the *MONITOR* program. The program was run for a complete twenty-four hour period and showed that no multi-path or other site specific problems existed. The *MONITOR.SUM* file, and scatterplot can be found in Appendix III. *FILED WITH THE ORIGINAL FIELD RECORDS*

H.4 No horizontal control stations were established by the MT MITCHELL during this survey. However, the Field Surveys Unit of the Field Photogrammetry Section conducted a horizontal control survey in the Tampa Bay area to establish and verify landmarks and fixed aids to navigation for MT MITCHELL's hydrographic survey.

H.5 The Horizontal Control Report will be submitted by the Field Surveys Unit.

H.6 No problems or anomalies were encountered in positioning control of this survey.

I. HYDROGRAPHIC POSITION CONTROL

I.1 The primary method of sounding position control was Differential Global Positioning System (DGPS).

I.2 At no time in this survey did the estimated position error (EPE) consistently exceed 15 meters (1.5mm at the survey scale). On occasion, DGPS correctors would not be received for a few seconds at a time. When this happened HDAPS entered "DR mode" and continued to collect data unless correctors were not received within 30 seconds at which point HDAPS will break the line automatically.

I.3 The manufacturer, model number and serial number of all DGPS equipment used during this survey is identified below:

<u>STATION</u>	<u>MODEL</u>	<u>S/N</u>	<u>DATES USED</u>
HF Shore Station	Ashtech M-XII DGPS Receiver	700354B2504	03 May - 06 June
HF Shore Station	LRD-2 HF Radio	613	03 May - 06 June
HF Shore Station	GPS Antenna	70228D2311	03 May - 06 June

<u>STATION</u>	<u>MODEL</u>	<u>S/N</u>	<u>DATES USED</u>
VHF Shore Station	Ashtech M-XII DGPS Receiver	700354B2503	03 May - 06 June
VHF Shore Station	TAD MD-150 VHF Radio	57531	03 May - 06 June
VHF Shore Station	GPS Antenna	700228D2317	03 May - 06 June

<u>VESSEL #</u>	<u>MODEL</u>	<u>S/N</u>	<u>DATES USED</u>
2223	Ashtech DGPS Receiver	A002541	27 April - 07 June
2223	LRD-1 HF Receiver	A006147	27 April - 07 June
2223	Maxon SM-3010-H VHF Receiver	A006185	27 April - 07 June
2223	GPS Antenna	700391A0518	27 April - 07 June
2224	Ashtech DGPS Receiver	A000436	27 April - 07 June
2224	LRD-1 HF Receiver	A006148	27 April - 07 June
2224	Maxon SM-3010-H VHF Receiver	A004831	27 April - 07 June
2224	GPS Antenna	700378A0468	27 April - 07 June

2225	Ashtech DGPS Receiver	A000434	22 May - 22 May
2225	LRD-1 HF Receiver	A002720	22 May - 22 May
2225	Maxon SM-3010-H		
	VHF Receiver	20813457	22 May - 22 May
2225	GPS Antenna	700391A0517	22 May - 22 May

I.4 DGPS performance checks were performed on DN 117, 123, 128, 132, 138, 146, 152, 155, and 158 by comparing positioning of the launches by the HF and VHF DGPS stations. The inverse distance between the computed launch positions by the HF and VHF stations was calculated to ensure it did not exceed the EPE_{max} of 15 meters. For the comparison each of two launches brought up HDAPS, one using the HF station for positioning, and the other using the VHF station for control. The launches would lay dead in the water alongside each other with their GPS antennas as close together as sea conditions permitted. The launch OIC's would then simultaneously mark their position by dumping the on-line HDAPS screen to the printer. The Easting and Northing values from each launch, along with the HDOP, and number of satellites used were entered into a spreadsheet for computation of position error. The following constant values were used in the spreadsheet:

<u>Reference Station</u>	<u>ESE</u>	<u>EDE</u>	<u>MAX HDOP</u>
HF Fly-away	4.0	0.0	3.0
VHF Fly-away	4.0	0.0	3.0

A copy of the spreadsheet can be found in Separate III. Of the nine performance checks obtained, none had an observed inverse greater than 7.5 meters.

I.5 No calibration data is applied to the DGPS positioning data.

I.6 a) No unusual methods of operation were employed with the DGPS equipment.

b) No major equipment malfunctions were encountered. Occasionally on calm days holidays in the VHF coverage of the sheet was found. These holidays were attributed to multipath.

J. SHORELINE *SEE THE EVALUATION REPORT*

No shoreline areas were considered for this survey.

K. CROSSLINES

K.1 Mainscheme hydro lines were run in a north-south orientation. The majority of the one hundred percent side scan sonar lines were run in an east-west orientation and were used for crossline comparisons. One hundred percent side scan lines in the southwest channel were run in a 236/056 orientation. The percentage of cross lines to mainscheme hydro lines is 15.7%.

K.2 Agreement between mainscheme hydro depths and crossline depths was generally excellent. Typical discrepancies between soundings fell well within a 0.3 meter limit. Depth curves from mainscheme hydro soundings also agreed very well with the depth curves generated from crosslines. *CONCUR.*

K.3 Only in spoil areas did comparisons between soundings fall outside the 0.3 meter limit. These differences are readily explained by the high degree of vertical relief found in spoil areas.

K.4 Launch MI-3 (VesNo 2223) and launch MI-4 (VesNo 2224) participated in mainscheme hydro data acquisition. Likewise, both launches participated in one hundred percent side scan sonar data acquisition. The generally excellent agreement between mainscheme hydro and crosslines serves as an additional verification that no launch specific systematic error in sounding equipment exists.

L. JUNCTIONS *SEE ALSO THE EVALUATION REPORT.*

This survey junctions with survey H-10536 in the vicinity of Egmont Channel north of Egmont Key. Survey H-10536 is also a 1:10,000 scale survey and was conducted by MT MITCHELL personnel during the same time period as surveys H-10270 and H-10539.

Sounding comparisons at the junction with survey H-10536 showed that the soundings from the two surveys are quite similar. Sounding agreement along relatively flat bottoms is excellent, with agreement within 0.3 meters. Part of the junction area contains large, steep sided sandwaves (3 meter waves in 10 meter water depth), so many of the soundings have depth differences even though they are only a few meters apart. Contour agreement between the two surveys is excellent throughout the junction area.

M. COMPARISON WITH PRIOR SURVEYS *SEE THE EVALUATION REPORT*

Prior survey comparison will be performed by the Atlantic Hydrographic Section as described in the project instructions.

N. ITEM INVESTIGATION REPORTS

There were two AWOIS items in the survey area. Descriptions are as follows:

AWOIS 8793

State and Locality: Florida, Tampa Bay

Charted Position: 27/35/00.00 N 082/45/00.00 W POSITION APPROXIMATE

Datum: MLLW Reported Depth: Partially Submerged

Type of Feature: Partially submerged, 20 foot wreck

Source: LNM 03/91 -- 7th CGD, 1/15/91; Part. Subm. 20 ft wreck reported in approx. pos. lat. 27-35-00N, long. 82-45-00W (NAD 83).

Survey Requirements: 200% side scan sonar coverage, 500 meter search radius, visual investigation, diver investigation, side scan developments

Method of Investigation: A 500 meter search radius was covered by 200% side scan sonar coverage. The first hundred percent was run in east-west lines and the second hundred percent was run in north-south lines. The side scan range scales used were 50 meter and 25 meter. A visual search found no wreckage above the water surface.

Results of Investigation: There were no significant contacts within the search radius. One dive investigation was performed at the location of the only side scan sonar contact (fix 6298.78) within the search radius. Divers performed a 15 meter circle search - nothing found.

Comparison with Prior Surveys: Item not found on prior surveys.

Comparison with Chart: Chart 11414, 34th edition, Jan. 1993
The charted item that corresponds to this AWOIS item was not found during this survey.

Recommendation: Delete ^{VISIBLE} ~~part. subm.~~ wreck charted at Latitude 27° 35' 00.00" N
Longitude 082° 45' 00.00" W.
CONCUR

AWOIS 8794

State and Locality: Florida, Tampa Bay

Charted Position: 27/34/01.12 N 082/45/59.36 W POSITION APPROXIMATE

Datum: MLLW Reported Depth: 28 feet

Type of Feature: Submerged wreck, position approximate

Source: LNM 29/79 -- 7th CGD, 1979; The 18 ft Cobia, SEADUCER has been reported sunk in SW Channel in about 28 ft of water in pos. lat. 27-34.0N, long. 82-46.0W (NAD 27).

Survey Requirements: 200% side scan sonar coverage, 1000 meter search radius, diver investigation, side scan developments

Method of Investigation: A 1000 meter search radius was covered by 200% side scan sonar coverage. Shoal waters prevented running the second 100% on a 90° angle to the first 100%.

Results of Investigation: Several side scan sonar contacts were observed within the search radius. There was only one contact with correlation on the second hundred percent side scan. A dive investigation was performed on this contact (Fix numbers 5567.41, 5569.13, 7211.13, 7333.13). Divers discovered a sunken metal barge (see diver investigation report). The DP number for this item is 3096 (DN 142, 1514 UTC) with a fathometer least depth of ~~5.6~~ ^{4.9} meters (5.0 meters corrected with ~~predicted~~ ^{APPROVED} tides). A Danger to Navigation Report was submitted for this item (see Appendix I). All other side scan sonar contacts within the search radius were reviewed and judged insignificant.

Comparison with Prior Surveys: Neither item found on prior surveys.

Comparison with Chart: Chart 11414, 34th edition, Jan. 1993
The charted item that corresponds to this AWOIS item was not found during this survey.

Recommendation: Delete subm. wreck charted at Latitude 27° 34' 01.12" N
CANCEL Longitude 082° 45' 59.36" W.

Add subm. wreck at Latitude 27° 34' 15.35" N
CHART A WRECK WITH A Longitude 082° 45' 27.30" W.
DEPTH OF 16 FT (16 WK)

NOAA SHIP MT. MITCHELL DIVER INVESTIGATION REPORT

Dive Operations Information:

DATE/DN: 22 May 1994 / 142

Project/Sheet: ORR J343-MI-94

Dive Supervisor: Williams / Soracco

Dive Item #: D1

Vessel #: MT-1 MT-3

AWOIS #: _____

DIVE # 1

DIVERS: Soracco VAN DEN AMEELE Surface Interval/RNT: _____
TIME IN: 1010 DEPTH: 22 feet
TIME OUT: 1035 Bottom Time: 25 minutes
Diver Type (Letter Class): B

DIVE DESCRIPTION:

DIVERS DESCENDED DOWN BUOY LINE DROPPED ON SSS CONTACT. A BARBE (SUNKEN)
WAS DISCOVERED. THE CORRECTED LEAST DEPTH WAS 5.0m. DP# 3096.

SEE SKETCH ON REVERSE.

DIVE # _____

DIVERS: _____ Surface Interval/RNT: _____
TIME IN: _____ DEPTH: _____
TIME OUT: _____ Bottom Time: _____
Diver Type (Letter Class): _____

DIVE DESCRIPTION:

DIVE # _____

DIVERS: _____ Surface Interval/RNT: _____
TIME IN: _____ DEPTH: _____
TIME OUT: _____ Bottom Time: _____
Diver Type (Letter Class): _____

DIVE DESCRIPTION:

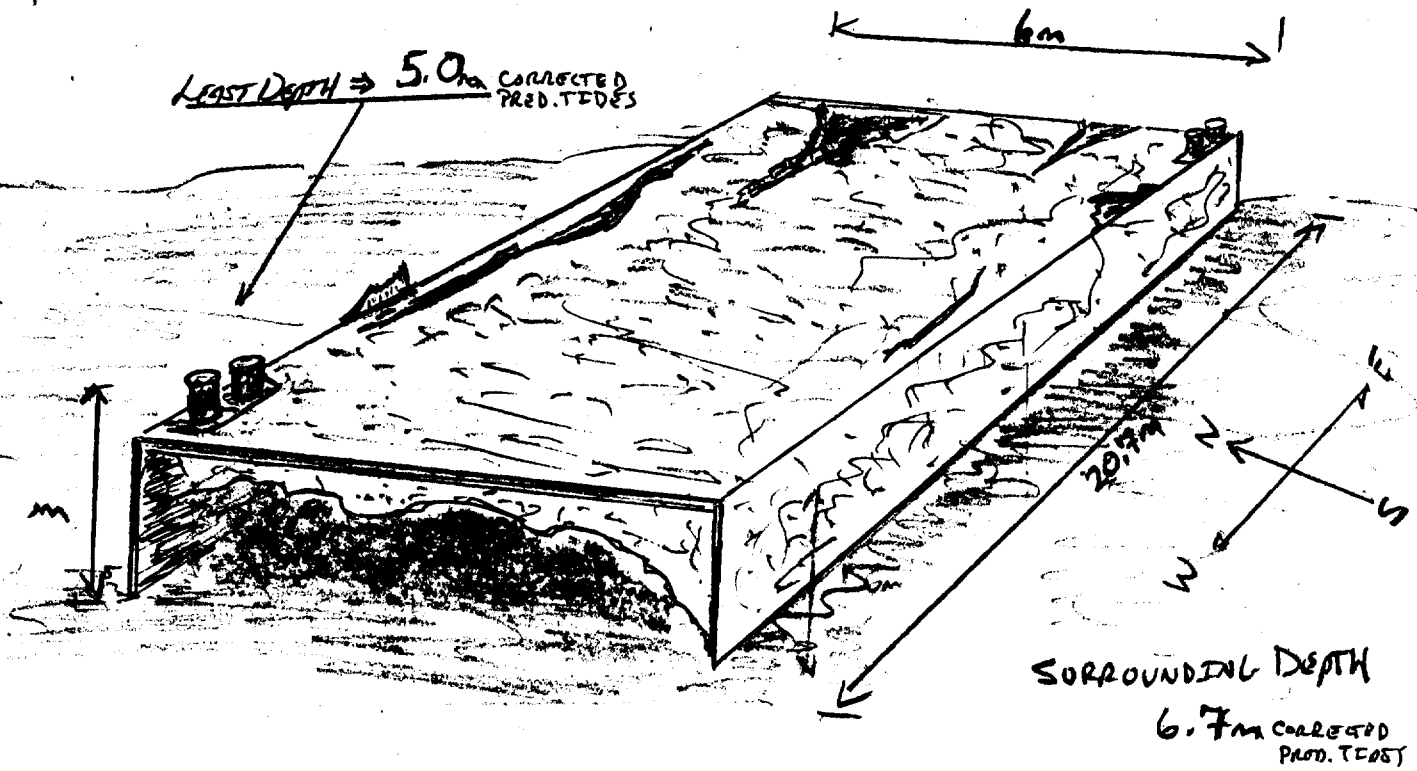
DIVE # _____

DIVERS: _____ Surface Interval/RNT: _____
TIME IN: _____ DEPTH: _____
TIME OUT: _____ Bottom Time: _____
Diver Type (Letter Class): _____

DIVE DESCRIPTION:

-----USE BACK FOR MORE DESCRIPTION/DRAWING SPACE-----

D1



Side Scan Contact 7500.84, 7813.87

<u>History:</u>	<u>DN</u>	<u>REF. FIX #'S</u>	<u>ACTIVITY</u>
	153	7500.84	200% SSS
	155	7813.87	100% SSS GAPS

VICINITY OF 27°33'55"N, 82°45'27.4"W

This contact was seen twice during side scan operations in South West Channel. Both sonargrams are of good quality for accurate height determination and both indicate a contact height of approximately 2.0 meters. There was no further development of the contact due to time restrictions. *SEE SECTION N., ITEM 04-95 OF THE DESCRIPTIVE REPORT ADDENDUM FOR A DESCRIPTION AND CHARTING RECOMMENDATION*

The water depth immediately surrounding the contact is approximately 11.0 meters. On all sides of the contact, at a distance of 200 to 250 meters, the water depth decreases to approximately 8.5 meters. The controlling depth of South West Channel with respect to commercial freighters is 6.0 meters. This contact poses no danger to navigation within South West Channel; however, fishing boats may snag nets or trawls on the contact.

Other Contacts

As stated previously, several contacts were discovered and entered into the contact tables. Most of the items were later labeled "No Further Investigation" when no correlation was seen on the second hundred percent side scan. After careful examination of fathograms and sonargrams, these contacts were explained away as bottom texture characteristics, sea state interference, fathometer/side scan interference, or depressions and scours. Although many of these are actual contacts on the bottom, they are not noteworthy for charting purposes.

Three additional side scan sonar contacts were thought to be significant, however, and were developed using 25 meter and 50 meter side scan sonar coverage.

Development 1 *VICINITY OF 27°33'05.4"N, 82°46'53.9"W*

<u>History:</u>	<u>DN</u>	<u>REF. FIX #'S</u>	<u>ACTIVITY</u>
	127	5722.53	100% SSS
	138	6182.37	100% SSS SPLITS
	152	7385.43	200% SSS
	155	4013.42	SSS DEVELOPMENT
	155	4015.48	SSS DEVELOPMENT
	155	4017.31	SSS DEVELOPMENT

Results of Investigation: Side scan sonar revealed a possibly significant item. A dive investigation found a rubber tractor tire 2.44 M (8 feet) in diameter extending above the bottom 0.46 M (1.5 feet). A ten meter circle search found no other items in the vicinity. This item is considered insignificant and no further investigation is necessary.

Recommendation: Insignificant item, do not chart. *Concur*

Development 2 *VICINITY OF 27°34'23.9"N, 82°43'22.2"W*

<u>History:</u>	<u>DN</u>	<u>REF. FIX #'S</u>	<u>ACTIVITY</u>
	124	5418.50	100% SSS
	155	7921-7936	SSS DEVELOPMENT

Results of Investigation: Side scan sonar revealed no significant contacts. This contact is considered insignificant and no further investigation is necessary.

Recommendation: Insignificant item, do not chart. *Concur*

Development 3 *VICINITY OF 27°34'02.7"N, 82°43'37.0"W*

<u>History:</u>	<u>DN</u>	<u>REF. FIX #'S</u>	<u>ACTIVITY</u>
	125	5489.18	100% SSS
	125	5498.52	100% SSS
	155	7885-7920	SSS DEVELOPMENT

Results of Investigation: Side scan sonar revealed no significant contacts. This contact is considered insignificant and no further investigation is necessary.

Recommendation: Insignificant item, do not chart. *Concur*

Two additional echosounder developments were performed over areas of localized shoaling. These echosounder developments do not reveal any significant isolated spikes off the bottom. The two developments serve to better define the localized shoaling for more accurate depth curve determination.

Development 4 *VICINITY OF 27°32'46.5"N, 82°47'33.3"W*

<u>History:</u>	<u>DN</u>	<u>REF. FIX #'S</u>	<u>ACTIVITY</u>
	155	4019-4037 <i>28</i>	ECHOSOUNDER DEVELOPMENT

Results of Investigation: Development defines an area of localized shoaling. Depths are in the range of 4.0 - 4.5 meters which is 1.0 - 2.0 meters shoaler than surrounding depths

Recommendation: Significant for depth curve determination and charting purposes.
CONCUR CHART SHOAL AS SHOWN ON THE PRESENT SURVEY

Development 5 *VICINITY OF 27°35'14.7"N, 82°43'52.5"W*

History: DN REF. FIX #'S ACTIVITY
156 4130-4137 ECHOSOUNDER DEVELOPMENT

Results of Investigation: Development defines an area of localized shoaling. Depths are in the range of ~~5.0 - 6.0~~ meters which is 1.0 - 2.0 meters shoaler than surrounding depths
4.4 - 5.0

Reccomendation: Significant for depth curve determination and charting purposes.
CONCUR. CHART AS SHOWN ON THE PRESENT SURVEY

O. COMPARISON WITH THE CHART *SEE ALSO THE EVALUATION REPORT.*

O.1 The following charts are affected by this survey:

<u>Chart #</u>	<u>Edition</u>	<u>Date</u>	<u>Scale</u>
11400	28th	February 27, 1993	1:456,394
11411	8th	November 14, 1992	1:40,000
11412	35th	April 24, 1993	1:80,000
11413	39th	September 12, 1992	1:40,000
11414	34th	January 9, 1993	1:40,000

During the period of survey operations, there have been no pertinent notice to mariner updates from the above charts affecting the survey area.

O.2 a) Danger to navigation reports referencing one item (refer to AWOIS item 8794) was submitted on May 23, 1994. A copy of the report is included in Appendix I. *APPENDED TO THIS REPORT*

b) No other dangers to navigation (other than those mentioned in Section N) were found during this survey.

O.3 The charted soundings from chart 11414 which lie within the survey limits were compared to soundings from this survey. The agreement is excellent in the central and eastern areas of the survey sheet. Survey soundings in the South West Channel approach to Tampa Bay were, on average, 0.5 meters *(1 FT)* deeper than charted depths, but individual survey soundings varied from 2.0 meters *(6 FT)* deeper than charted depths to 0.5 meters *(1 FT)* shoaler than charted depths. The South West Channel is a fairly narrow natural channel with tidal currents as high as 2.5 knots. The bottom type in this area is soft sand and the changes in depths may be due to shifting sand and migrating sandwaves.

There are no maintained channels, safety fairways, or traffic schemes within the survey area.

O.4 The following non-sounding features are in the survey area:

<u>ITEM</u> ^N	<u>DP FIX</u>	<u>LAT.</u>	<u>LON.</u>	<u>DIST. FROM CHARTED ITEM</u>
Buoy R "4"	3839	27/35/50.20	82/43/46.13	6.9 meters
Day Mark R "2" (Manatee Channel)	3844	27/32/37.53	82/40/41.84	31.9 meters
Day Mark R "70"	3846	27/34/25.34	82/41/12.28	117.9 meters (TAMPA BAY LIGHT 70)
Buoy G "3"	3656	27/34/44.70	82/44/40.73	22.2 meters
Day Mark R "2" (South West Channel)	3657	27/33/29.21	82/46/08.26	33.9 meters
Buoy G "1" ^{BELL}	3658	27/32/30.78	82/47/54.54	23.2 meters

Detached positions on the fixed aids (day marks) were double checked by a second DP using positioning from a separate reference station:

<u>ITEM</u>	<u>DP Fix</u>	<u>EASTING</u>	<u>NORTHING</u>	<u>DISTANCE</u>
Day Mark R "2" (Manatee Chnl.)	3844	47083.1	08544.5	
^{RIVER LIGHT 2}	3845	47084.4	08539.7	4.9 meters
Day Mark R "2" (South West Chnl.)	3657	38127.3	10133.5	
^(SOUTHWEST CHANNEL LIGHT 2)	3412	38130.2	10129.7	4.7 meters
Day Mark R "70"	3846	46246.0	11862.6	
^{TAMPA BAY LIGHT 70}	3843	46242.9	11868.4	6.5 meters

NOTE: Day Mark R "2" ^{*}, South West Channel was also positioned by a photogrammetric field party. See Sections H.4 and H.5 of this report. ^{*MANATEE RIVER LIGHT 2}

O.5 No changes to the scale or coverage of the published charts of the survey are recommended.

P. ADEQUACY OF SURVEY ^{SEE ALSO THE EVALUATION REPORT}

P.1 All AWOIS items reported on this sheet have been resolved. This survey is sufficiently complete and adequate to supersede all prior surveys.

P.2 This survey is adequate for the purpose of updating the wrecks, obstructions and fixed objects in the survey area. Please see Section E.6 of this report for a discussion of gaps in side scan sonar coverage of spoil areas within navigable limits. The basic hydrography conducted during this survey is complete and adequate for updating the nautical chart.

Q. AIDS TO NAVIGATION

Q.1 The MT MITCHELL conducted no correspondence with the U.S. Coast Guard regarding floating aids to navigation.

Q.2 All lights and buoys described in Section O.4 of this report are accurately characterized in the latest, updated edition of the Light List. *THESE AIDS APPEAR ADEQUATE TO SERVE THEIR INTENDED PURPOSES.*

Q.3 No other aids were located during the survey.

Q.4 No bridges, overhead cables or pipelines are within the survey limits.

Q.5 a) No submarine cables crossing to shore are present within the survey limits.

b) No pipelines crossing to shore are present within the survey limits.

c) There are no ferry routes in the survey area.

Q.6 There are no ferry terminals in the survey area.

R. STATISTICS

	<u>VN 2223</u>	<u>VN 2224</u>	<u>Total</u>	
R.1 a) Number of positions:	3374	2936	6310	(accepted + rejected)
			5915	(accepted)
b) Lineal nautical miles of sounding lines:	348.1	105.1	453.2	(accepted + rejected)
			452.4	(accepted)
c) Lineal nautical miles of side scan lines:	195.8	412.9	608.7	(accepted + rejected)
			566.5	(accepted)

R.2	a) Total square nautical miles of hydrography:	16.6	28.7	45.3	
	b) Total days of production:	25	23	28	
	c) Detached positions:	8	0	8	
	d) Bottom samples:	0	0	37	(VN 2225)
	e) Tide stations:			2	
	f) Current stations:			0	
	g) Velocity casts:			4	(VN 2221)
	h) Magnetic stations:			0	
	i) XBT drops:			0	
	j) Dives:	6		6	

S. MISCELLANEOUS *SEE ALSO THE EVALUATION REPORT*

- S.1**
- a) No unusual silting was noted during this survey.
 - b) All unusual submarine features have been discussed previously.
 - c) No anomalous tidal conditions were encountered.
 - d) No current observations were made.
 - e) No magnetic anomalies were encountered during this survey.

S.2 Bottom samples were submitted to the Smithsonian Institution. A copy of the transmittal letter is included in Separate II.

T. RECOMMENDATIONS

T.1 No inadequacies have been noted other than those discussed in Section E.6 of this report.

T.2 There is no present or planned construction or dredging that will affect results of this survey.

T.3 This survey should supersede all other prior surveys. No further investigation of this area is recommended.

U. REFERRAL TO REPORTS

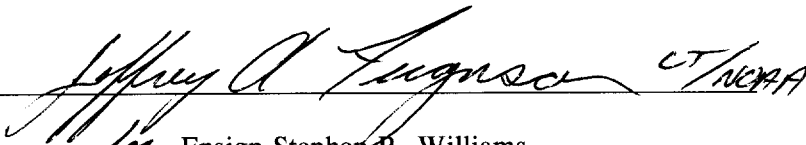
The following reports are not included with the survey records:

Horizontal Control Report.

SUBMITTAL SHEET

Survey H-10270

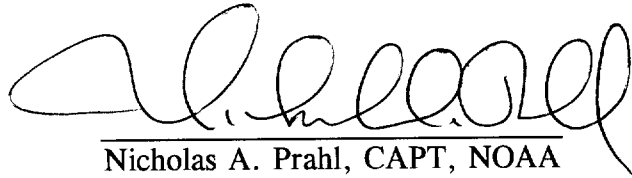
This Descriptive Report accurately describes all activities pertaining to the control, collection, and processing of data for this survey, and is respectfully submitted by:


for Ensign Stephen R. Williams

Letter of Approval

Registry No. H-10270

Field operations contributing to the accomplishment of this survey were conducted under my supervision with frequent personal checks of progress and adequacy. This report and field sheets have been closely reviewed and are considered complete and adequate for updating the AWOIS database and nautical chart.

A handwritten signature in black ink, appearing to read 'N. A. Prahl', written over a horizontal line.

Nicholas A. Prahl, CAPT, NOAA
Commanding Officer
NOAA Ship MT MITCHELL

Horizontal Control Stations

Station TAMPA PILOTS (#AG9476)

LAT: 27° 35' 06.21396" N

LONG: 082° 45' 40.51161" W

ANTENNA ELEVATION: -14.2 meters

SOURCE: NGS Database, established in 1981

Station EGMONT KEY LH ECC (#AG9474)

LAT: 27° 36' 02.89170" N

LONG: 082° 45' 38.39070" W

ANTENNA ELEVATION: -1.0 meters

SOURCE: NGS Database, established in 1981

APPENDIX II

Non-Floating Aids and Landmarks for Charts

NOTE: Day Mark R "70" was located during this survey 117.9 meters from it's charted location.

Survey Location:	27/34/25.34 N	082/41/12.28 W	(DP #3846)
Charted Location:	27/34/29.00 N	082/41/11.00 W	(Chart 11414, Jan. 93)

This aid marks the Intrcoastal Waterway in Tampa Bay between the Sunshine Skyway Bridge and Anna Maria Sound.

Recommendation: Update the position of this aid on subsequent editions of affected charts (11411, 11412, 11413, 11414).



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic Atmospheric Administration
Office of NOAA Corps Operations
NOAA Ship MT. MITCHELL S-222
439 W. York Street
Norfolk, VA 23510-1114

May 23, 1994

MEMORANDUM TO: Rear Admiral Freddie L. Jeffries, NOAA
Director, Atlantic Marine Center

FROM: Captain Nicholas A. Prahl, NOAA
Commanding Officer, NOAA Ship MT MITCHELL

SUBJECT: Danger to Navigation Reports

On 23 May 1994, MT MITCHELL submitted two reports of dangers to navigation (Date/Time Groups 231200Z, and 231201Z MAY 94).

The messages were addressed to NOAAMOA NORFOLK VA, CCGD SEVEN MIAMI FL, and DMAHTC (NAVWARN) WASHINGTON DC//MCNMN//. A copy of these messages and accompanying chartlets have been attached. In accordance with HSG 66, a copy of this memorandum, radio message, and chartlet will be forwarded to N/CG221.

Attatchments

cc: Mr. Dennis Romesburg N/CG221



=R=(N=6,A=MCU043)
R 231200Z MAY 94
FM NOAAS MT MITCHELL
TO NOAAMOA NORFOLK VA
CCGDSEVEN MIAMI//JJJ//
DMAHTC (NAVWARN) WASHINGTON DC//MCNM//

BT
UNCLAS

SUBJ: REPORT OF DANGER TO NAVIGATION

HYDROGRAPHIC SURVEY REGISTRY NUMBER: H-10270
SURVEY TITLE: APPROACHES TO TAMPA BAY, FLORIDA
STATE: FLORIDA
GENERAL LOCALITY: TAMPA BAY
SUBLOCALITY: SOUTHWEST CHANNEL
PROJECT NUMBER: OPR-J343-MI-94, NOAA SHIP MT MITCHELL

THE FOLLOWING ITEM WHICH IS A POTENTIAL DANGER TO NAVIGATION WAS
DISCOVERED DURING HYDROGRAPHIC SIDE SCAN SONAR SURVEY AND DIVING
OPERATIONS BY THE NOAA SHIP MT MITCHELL:

OBJECT DISCOVERED: A SUBMERGED SUNKEN BARGE WAS DISCOVERED AT POSITION 27-
34-15.348N7, 082-45-27.299W8. THE DIMENSIONS OF THE BARGE ARE APPROXIMATELY
68 FT X 20 FT X 5 FT (20.7M X 6M X 1.6 M). THE LEAST DEPTH OF THE VESSEL IS
16.4FT (5.0M) CORRECTED TO MLLW USING PREDICTED TIDES. THE POSITION OF THE
BARGE WAS DETERMINED USING DIFFERENTIAL GPS. THE CHARTED WATER DEPTH IS 21FT
(6.4M).

THIS ITEM AFFECTS NAUTICAL CHARTS:

CHART NUMBER	11412	11414
EDITION NUMBER	35TH	34TH
DATE	24 APR 93	9 JAN 93
CHARTED HORIZ. DATUM	NAD 83	NAD 83
GEOGRAPHIC POSITION		
LATITUDE	27-34-15.348N7	
LONGITUDE	082-45-27.299W8	

QUESTIONS CONCERNING THIS REPORT SHOULD BE DIRECTED TO THE
ATLANTIC MARINE CENTER AT (804) 441-6206.

BT
NNNN

NOAA Ship MT MITCHELL

Least-Depth Dive Investigations

Dive Operations Information: GAUGE S/N 0-21 m S/N 245419

0-42m S/N 245418

0-70m S/N 8302079N

DATE/DN: 22 May 1994 / 142

Project/Sheet: CPR J343-ME-94 D

Dive Supervisor: WILLIAMS/SORACCO

Dive Item #: D 1

Vessel #: MI-1, MI-3

AWOIS #: _____

DIVE

DIVERS: 1 SORACCO 2 ~~WJ~~ VAN DEN AMEELE

TIME IN: 1010

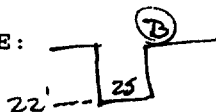
Pressure In: 3000

TIME OUT: 1035

Pressure Out: 1600

BOTTOM TIME: 25m MAX DEPTH: 22'

PROFILE:



DISCOVERED BARGE 68' x 20' x 5' (20.7m x 6m x 1.6m)
SEE SKETCH

PNEUMOFATHOMETER CALIBRATED: Y (N)

LEAST-DEPTH DETERMINATION ☐ Pneumogauge ☐ Leadline ☒ Depth gage / other FATHO

DP FIX NUMBER(s): 3096 AVERAGE DEPTH READING: 4.9 m

FATHOMETER DEPTH: 4.9 m TIME OF READINGS (GMT): 15:14:41

DRAFT CORRECTOR: + 0.6 m PREDICTED TIDE CORR.: - 0.6 m

VELOCITY CORR.: + 0.1 m CORRECTED LEAST-DEPTH: 5.0 m = 16.4 Ft

PRED. TIDE CORR.: - 0.6 m HAZNAV REPORT FILED: Y N

READING #1: _____

READING #2: _____

READING #3: _____

AVG: _____

POSITION / SUPPORTING INFORMATION

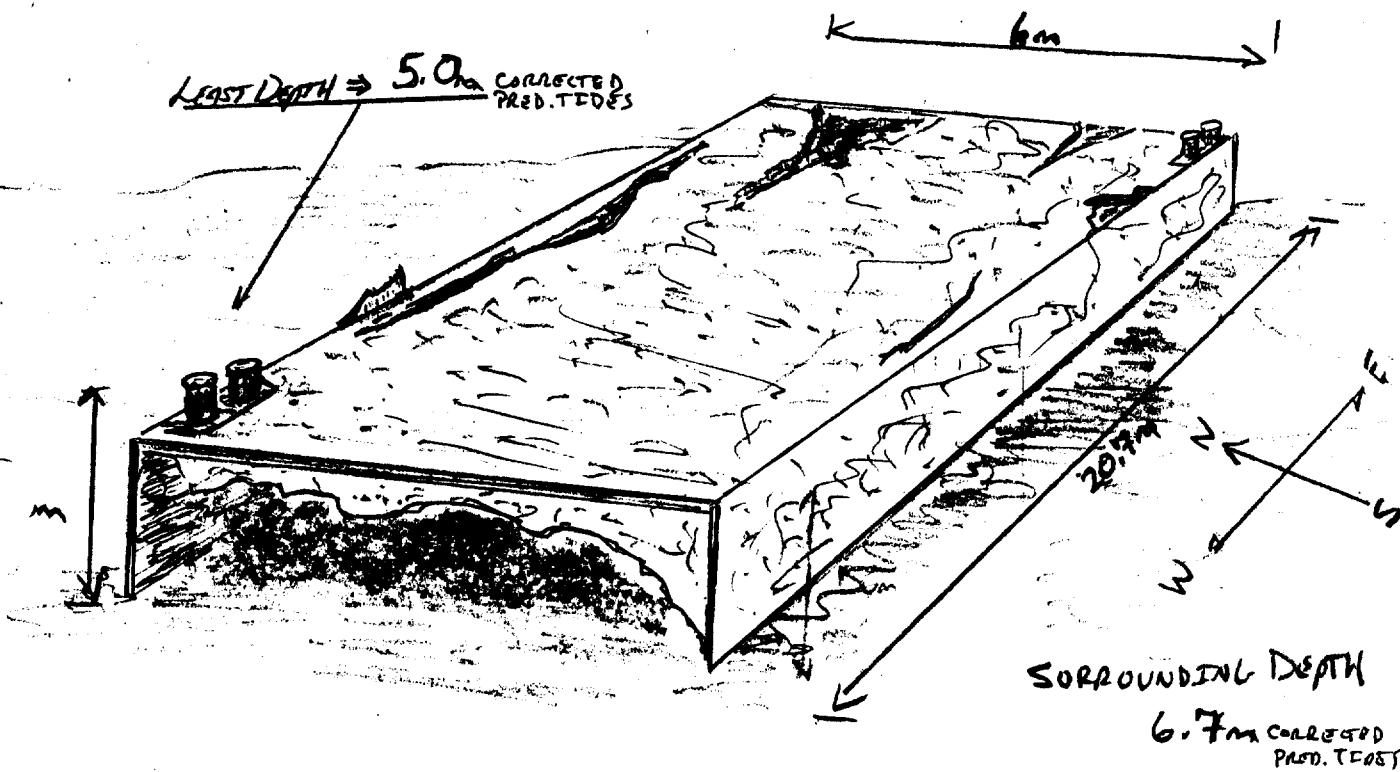
LAT: 27 34 15.348 N LONG: 082 45 27.299 W

EASTING: 39251.2

NORTHING: 11553.4

Surrounding Depths (Corr'd) = 6.7m
= 22.0 Ft

D1



NOAA SHIP MT. MITCHELL DIVER INVESTIGATION REPORT

Dive Operations Information:

DATE/DN: 22 May 1994 / 142

Project/Sheet: OR J343-MI-94

Dive Supervisor: Williams / Soracco

Dive Item #: D1

Vessel #: MT-1 MT-3

AWOIS #: _____

DIVE # 1

DIVERS: Soracco VAN DEN AMEELE Surface Interval/RNT: _____
TIME IN: 1010 DEPTH: 22 feet
TIME OUT: 1035 Bottom Time: 25 minutes
Diver Type (Letter Class): B

DIVE DESCRIPTION:

DIVERS DESCENDED DOWN BUOY LINE DROPPED ON SSS CONTACT. A BARBE (SUNKEN)
WAS DISCOVERED. THE CORRECTED LEAST-DEPTH WAS 5.0m. DP# 3096.

SEE SKETCH ON REVERSE.

DIVE # _____

DIVERS: _____ Surface Interval/RNT: _____
TIME IN: _____ DEPTH: _____
TIME OUT: _____ Bottom Time: _____
Diver Type (Letter Class): _____

DIVE DESCRIPTION:

DIVE # _____

DIVERS: _____ Surface Interval/RNT: _____
TIME IN: _____ DEPTH: _____
TIME OUT: _____ Bottom Time: _____
Diver Type (Letter Class): _____

DIVE DESCRIPTION:

DIVE # _____

DIVERS: _____ Surface Interval/RNT: _____
TIME IN: _____ DEPTH: _____
TIME OUT: _____ Bottom Time: _____
Diver Type (Letter Class): _____

DIVE DESCRIPTION:

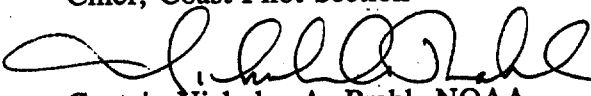
-----USE BACK FOR MORE DESCRIPTION/DRAWING SPACE-----



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic Atmospheric Administration
Office of NOAA Corps Operations
NOAA Ship MT. MITCHELL S-222
439 W. York Street
Norfolk, VA 23510-1114

June 28, 1994

MEMORANDUM FOR: Thomas Jackson
Chief, Coast Pilot Section

FROM: 
Captain Nicholas A. Prah, NOAA
Commanding Officer
NOAA Ship MT MITCHELL

SUBJECT: Coast Pilot Report for Hydrographic Project OPR-J343-MI-94,
Approaches to Tampa Bay, Florida

The survey was conducted from 23 April - 08 June. During this period survey operations covered Egmont channel near buoys 5 and 6 east to buoys 21 and 22 in Mullet Key channel. The Southwest channel and anchorage east of Egmont Key were also covered. Other observations were made during the transits of the ship to port at St. Petersburg.

The Coast Pilot reviewed for the project area was Coast Pilot 5, 24th Edition, 1993. Items of note are listed here with the affected page and paragraph numbers.

Page 128. (17): The radiobeacon on the North end of Egmont Key began transmissions as a differential GPS beacon in April of this year at 310.0 KHz and 200 bps. The reference station equipment is supplied and maintained by the state of Florida, and the U.S. Coast Guard has allowed the equipment to be connected to the marine beacon. This beacon will not be part of the final Coast Guard network of differential beacons. A new beacon will be established at another location in the future. The beacon tower is a red and white painted metal structure approximately 25 meters east of the Egmont Key Light.

The buildings near the center of Egmont Key are no longer part of a Coast Guard station. There is one building designated as the Tampa Bay Pilots dispatch station. Several other small buildings are temporary homes for pilots. In addition, the pilot boats are docked at the pier at this center inshore part of the key. Depths of 3.5 meters were reported at the pier. There is a prominent communications tower near the pilot station lookout tower.

Shoaling exists at the small pier just inside the north end of the key. Depths of 2.5 meters or less were observed by MT MITCHELL personnel.

Small recreational vessel traffic were observed as heavy during the weekends and holidays of the survey period primarily near the state parks of Egmont and Mullet keys.



Page 128, (18): The water tank shape on St. Jean Key should be noted as spherical supported by one column. A tower with red aircraft warning lights stands out near the north end of Mullet Key, approximate position 27° 38.6' N, 82° 44.2' W, determined by MT MITCHELL anchor bearings.

Page 129, (79): In the vicinity of buoys 7 & 8 of Egmont channel, depths as shallow as 7.7 meters were observed extending from the spoil areas northward to the southern edge of the channel.

Page 129, (81): Reported shoaling position was observed at 27° 36.1' N, 82° 44.3' W with depths as shallow as 7.3 meters.

Page 129 (85): A Physical Oceanographic Real Time System (PORTS) has been established in Tampa Bay. The system provides real time current, water level, and wind measurements at multiple locations. Data is disseminated by telephone voice response on 813-822-5836, as well as modem dial up on 813-822-5931, 8 data bits, 1 stop bit, no parity, keyword PORTS. In addition, Tampa Bay PORTS data are broadcast over NOAA weather Radio hourly.

Page 130, (93): The pilot boats TAMPA and ST. PETERSBURG are no longer used. The boats kept at the pilot station and used to transfer pilots to vessels are named MANATEE, DE SOTO, and EGMONT.

Page 130, (95): Vessels are requested to have pilot ladders 2.5 meters above the water.

Page 138, (256): There is an airport runway near the entrance to the Port of St. Petersburg with low flying private aircraft.

SPECIAL NOTE: Survey data (depths) are subject to final verification.



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 5, 1994

MARINE CENTER: Atlantic

HYDROGRAPHIC PROJECT: OPR-J343

HYDROGRAPHIC SHEET: H-10270

LOCALITY: Tampa Bay, Florida

TIME PERIOD: April 27 - June 7, 1994

TIDE STATION USED: 872-6384 Port Manatee, Tampa Bay, Fl.
Lat. $27^{\circ} 38.2'N$ Lon. $82^{\circ} 33.8'W$

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 7.88 ft.
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.9 ft.

TIDE STATION USED: 872-6430 St. Petersburg Beach, South End, Fl.
Lat. $27^{\circ} 41.0'N$ Lon. $82^{\circ} 44.3'W$

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 9.73 ft.
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.1 ft.

REMARKS: RECOMMENDED ZONING

1. East of $82^{\circ} 55.0'W$, and west of a line between the southern point of Mullet Key and Bean Point on Anna Maria Key, times are direct, and apply a X0.95 ratio to heights using St. Petersburg Beach, Fl. (872-6430).
2. East of a line between the southern point of Mullet Key and Bean Point on Anna Maria Key, apply a -36 minute time correction, and a X0.96 ratio to heights using Port Manatee, Fl. (872-6384).

Notes: Times are tabulated on Greenwich Mean Time.
Data for Port Manatee, Fl. (872-6384) and St. Petersburg Beach, Fl. (872-6430) are stored in temporary files #672-6384 and #672-6430 respectively.


CHIEF, DATUMS SECTION

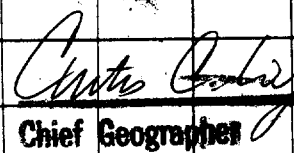


GEOGRAPHIC NAMES

H-10270

Name on Survey	ON CHART NO. 11414										
	A	B	C	D	E	F	G	H	K		
	ON PREVIOUS SURVEY NO.	CON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	RAND McNALLY ATLAS	U.S. LIGHT LIST				
EGMONT KEY	X		X							1	
FLORIDA (title)	X		X							2	
MEXICO, GULF OF	X		X							3	
PASSAGE KEY	X		X							4	
SOUTHWEST CHANNEL	X		X							5	
TAMPA BAY	X		X							6	
										7	
										8	
										9	
										10	
										11	
										12	
										13	
										14	
										15	
										16	
										17	
										18	
										19	
										20	
										21	
										22	
										23	
										24	
										25	

Approved


Chief Geographer

SEP 27 1995

DESCRIPTIVE REPORT ADDENDUM

to Hydrographic Survey
MI-10-01-94
H-10270

Tampa Bay and Approaches
Gulf of Mexico
Florida

MT MITCHELL conducted survey work on H-10270 in 1994, completed the Descriptive Report (DR) and submitted the survey to the Atlantic Hydrographic Section (AHS) for verification. During the verification process, several items requiring additional field work were discovered. This addendum describes the field work conducted in 1995 to resolve the items.

A. PROJECT

No change, refer to original DR.

B. AREA SURVEYED

Data acquisition in 1995 began on April 25 (DN 115) and concluded on May 4 (DN 124).

C. SURVEY VESSELS

The following vessels were used during 1995 operations:

<u>VESSEL</u>	<u>ELECTRONIC DATA PROCESSING NUMBER</u>	<u>PRIMARY FUNCTION</u>
JENSEN LAUNCH 1021 (MI-5)	2225	SSS development
JENSEN LAUNCH 1002 (MI-4)	2224	Dive support, Detached Position
BOSTON WHALER (MI-1)	N/A	Dive support

D. AUTOMATED DATA ACQUISITION AND PROCESSING

Survey data acquisition and processing for data collected in 1995 were accomplished using the HDAPS system with the following software versions.

<u>Program Name</u>	<u>Version</u>	<u>Date</u>	<u>Date Installed</u>
BACKUP	2.00	27-OCT-93	15-MAR-95
BASELINE	1.14	07-APR-93	15-MAR-95
BIGABST	2.07	01-OCT-93	15-MAR-95
BIGAUTOST	3.01	01-FEB-93	15-MAR-95
BLKEDIT	2.02	11-MAR-93	15-MAR-95
CARTO	2.17	06-FEB-95	15-MAR-95
CLASSIFY	2.11	24-FEB-95	15-MAR-95
CONTACT	2.46	24-FEB-95	15-MAR-95
CONVERT	3.65	10-FEB-95	15-MAR-95
DAS_SURV	6.76	08-FEB-95	15-MAR-95
DIAGNOSE	3.05	04-MAY-94	15-MAR-95
DISK_UTIL	1.00	01-FEB-93	15-MAR-95
DP	2.18	27-OCT-94	15-MAR-95
DP_CONVERT	1.03	24-FEB-95	15-MAR-95
DSNEDITS	1.04	03-MAR-95	15-MAR-95
EXCESS	4.32	25-NOV-94	15-MAR-95
FILESYS	3.31	24-FEB-95	15-MAR-95
GRAFEDIT	1.06	16-NOV-93	15-MAR-95
HIPSTICK	1.01	28-JUL-93	15-MAR-95
HPRAZ	1.26	22-MAY-93	15-MAR-95

INVERSE	2.02	06-FEB-95	15-MAR-95
LISTDATA	1.02	19-APR-93	15-MAR-95
LOADNEW	2.13	24-FEB-95	15-MAR-95
LSTAWOIS	3.10	24-FEB-95	24-MAR-95
MAINMENU	1.20	02-NOV-93	15-MAR-95
MAN_DATA	3.02	24-FEB-95	15-MAR-95
NEWPOST	6.13	26-SEP-94	15-MAR-95
PLOTALL	2.32	06-FEB-95	15-MAR-95
POINT	2.12	24-FEB-95	15-MAR-95
PREDICT	2.01	07-APR-93	15-MAR-95
PRESURV	7.11	06-FEB-95	15-MAR-95
PRINTOUT	4.04	26-JUL-94	15-MAR-95
QUICK	2.07	23-SEP-94	15-MAR-95
RAMSAVER	1.02	07-APR-93	15-MAR-95
REAPPLY	2.12	27-SEP-94	15-MAR-95
RECOMP	1.04	24-FEB-95	15-MAR-95
SCANNER	1.00	10-JUL-93	15-MAR-95
SELPRINT	2.05	07-JUN-94	15-MAR-95
SYMBOLS	2.00	01-FEB-93	15-MAR-95
SYSBOOT	2.17	06-FEB-95	19-APR-95
VERSIONS	1.00	24-NOV-93	15-MAR-95
ZOOMEDIT	2.33	06-FEB-95	15-MAR-95

E. SIDE SCAN SONAR EQUIPMENT

Identical procedures and equipment types were used as described in the original DR.

Side scan data collected in 1995 used side scan recorder serial number 016672 and side scan fish serial number 11591.

F. SOUNDING EQUIPMENT

Identical procedures and equipment types were used as described in the original DR.

Fathometer serial number B053N was used in MI-5, fathometer serial number C066 was used in MI-4.

G. CORRECTIONS TO SOUNDINGS

Identical procedures and equipment were used as described in the original DR.

The Seacat units were recalibrated on February 24, 1995.

<u>Cast Number</u>	<u>Date</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Table #</u>	<u>Day #'s</u>
01	24APR95	027/36/25 N	082/45/40 W	1	116
02	02MAY95	027/33/37 N	082/58/08 W	2	124

Settlement and squat correctors were recomputed in 1995. The offset tables were forwarded to AHS and approved prior to conducting survey operations in 1995. Offset tables are included in Separate III.*

Refer to Separate IV* for specific calibration and corrector data.

Predicted tidal data, provided by N/CG241, have been applied to all data.

H. CONTROL STATIONS

No change, refer to original DR.

I. HYDROGRAPHIC POSITION CONTROL

The primary method of sounding position control was Differential Global Positioning System (DGPS). The United States Coast Guard differential beacon on Egmont Key was used as the source of differential correctors.

Refer to Appendix III for station positions and reference station verification results. *APPENDED TO THIS REPORT*

Performance Checks were performed on a regular basis using the launch to launch method described in the original DR, or by pulling along side a fixed known point. Refer to Separate III for Performance Check results.

J. SHORELINE

No change, refer to original DR.

K. CROSSLINES

No change, refer to original DR.

L. JUNCTIONS

No change, refer to original DR.

M. COMPARISON WITH PRIOR SURVEYS

No change, refer to original DR.

N. ITEM INVESTIGATION REPORTS

** FILED WITH THE ORIGINAL FIELD RECORDS*

Item D1-95

State and Locality: Tampa Bay, Florida

Location: 27/35/09.67 N 082/42/18.59 W

Type of Feature: SSS contact

History: During preprocessing of the 1994 data by AHS, an item was found which was not thoroughly investigated by MT MITCHELL (SSS contacts 1427.28 and 4321.45). AHS recommended that the item be investigated by a dive or fathometer development during 1995 field operations.

Description: On DN 115 a side scan sonar and fathometer development (FIX 5000-5007) was conducted at the site, and several side scan and fathometer contacts were found. The item appears to be a slight rise in bottom relief next to a small depression. A fathometer least depth of 5.3 meters was obtained at fix 5006.12. The item was considered insignificant, and therefore, a dive was not conducted.

Recommendation: Do not chart. *Concur*

Item D2-95

State and Locality: Tampa Bay, Florida

Location: 27/34/33.47 N 082/42/23.32 W

Type of Feature: Piling

History: During preprocessing of the 1994 data by AHS, an item was found which was not thoroughly investigated by MT MITCHELL (fathometer spike 1711.3 and SSS contacts 5393.71 and 6930.21). AHS recommended that the item be investigated by a dive or fathometer development during 1995 field operations.

Description: On DN 116 a side scan sonar and fathometer development (FIX 5044-5073) was conducted at the site, and several side scan contacts were found. The contacts were a short straight line, with a very small shadow. A dive was performed on DN 124. Divers found a piling laying on its side, buried in the sand, exposed less than a foot.

Recommendation: Do not chart. *Concur*

Item D3-95

State and Locality: Tampa Bay, Florida

Location: 27/34/05.09 N 082/44/50.82 W

Type of Feature: Sunken small craft

History: During preprocessing of the 1994 data by AHS, an item was found which was not thoroughly investigated by MT MITCHELL (SSS contacts 3161.15 and 7252.55). AHS recommended that the item be investigated by a dive or fathometer development during 1995 field operations.

Description: On DN 116 a side scan and fathometer development (FIX 5034-5043) was conducted at the site, and several side scan contacts were found. A dive was performed on DN 124. Divers found two small boat hulls (possibly the inner shell and outer shell of the same boat). The hulls were 4.9 meters (16 feet) by 1.5 meters (5 feet) and made of fiberglass and aluminum. The objects did not extend more than 0.7 meters off the bottom in 7.5 (24 FT) meters of water. The safe navigable depth of the southwest channel is 16 feet (4.9 meters). Due to the small size of the items, and their least depth, the items do not pose a hazard to navigation.

Recommendation: Do not chart. *Concur*

Item D4-95

State and Locality: Tampa Bay, Florida

Location: 27/33/54.96 N 082/45/27.61 W

Type of Feature: Sunken boat

History: During preprocessing of the 1994 data by AHS, an item was found which was not thoroughly investigated by MT MITCHELL (SSS contacts 7500.84 and 7813.87). AHS recommended that the item be investigated by a dive or fathometer development during 1995 field operations.

Description: On DN 116 a side scan and fathometer development (FIX 5020-5033) was conducted at the site, and several side scan contacts were found. A dive was performed on DN 124. Divers found a decayed metal boat partially buried in the sand. The boat is 11.6 meters (38 feet) long with a 4.6 meter (15 foot) beam. The stern was buried in the sand, while the bow extended 1.5 meters (5 feet) off the bottom. A least depth of 9.4⁰ meters (29 FT) was obtained at 1355 GMT with the MOD III diver depth gage.

Recommendation: Chart a submerged wreck with least depth of 9.4⁰ (29 FT) meters. *CONCUR. CHART AS A 29 WA*

O. COMPARISON WITH THE CHART

No change, refer to original DR.

P. ADEQUACY OF SURVEY

No change, refer to original DR.

Q. AIDS TO NAVIGATION

No change, refer to original DR.

R. STATISTICS

Statistics for data collected in 1995:

2.0 lineal nautical miles of SSS development,
2 detached positions,
8 dives,
60 position numbers,
3 days of production.

S. MISCELLANEOUS

No change, refer to original DR.

T. RECOMMENDATIONS

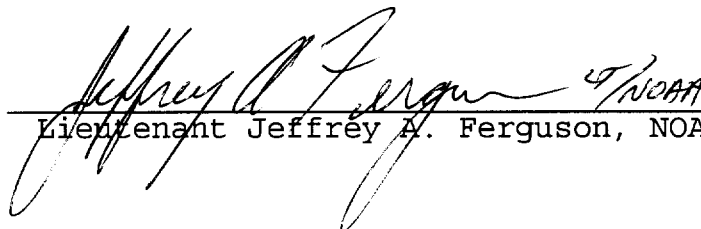
No change, refer to original DR.

U. REFERRAL TO REPORTS

No change, refer to original DR.

SUBMITTAL SHEET
for Descriptive Report Addendum
Survey H-10270

This descriptive report addendum accurately describes all activities pertaining to the control, collection and processing of data for this survey, and is respectfully submitted by:

 ^{US/NOAA}
Lieutenant Jeffrey A. Ferguson, NOAA

APPENDIX I
Danger to Navigation Reports

None.

APPENDIX II
Non-Floating Aids and Landmarks for Charts

No change, refer to original DR.

APPENDIX III
List of Horizontal Control Stations

1. List of Horizontal Control Stations.
2. Copy of MONITOR program output plot and statistics (reference station verification results).

Horizontal Control Stations

Station 000 - United States Coast Guard, Egmont Key, Florida Differential Beacon

Lat:27° 36' 01.488" N Transmission Frequency: 310 KHz
Long:082° 45' 37.170" W Transmission Rate: 200 bps
Source: USCG DGPS Radiobeacon Prototype Status & Operating
Specifications

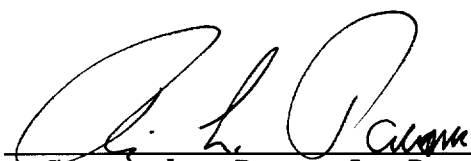
Station 001 - TAMPA PILOTS, Egmont Key, Florida (NOAA-HF System)

Lat:27° 35' 06.214" N Transmission Frequency: 2774.50 KHz
Long:082° 45' 40.512" W Transmission Rate: 100 bps
Source: NGS, established in 1981 and position confirmed by MT
MITCHELL in 1994

APPENDIX VII
Approval Sheet

Letter of Approval
for Descriptive Report Addendum
Registry Number H-10270

This report and all accompanying data have been closely reviewed and are considered complete and adequate for updating the nautical chart.



Commander Roger L. Parsons, NOAA
Commanding Officer
NOAA Ship MT MITCHELL

NOAA Ship MT MITCHELL

Least-Depth Dive Investigations

DATE/DN: 124 3 4 May

Project/Sheet: _____

Dive Supervisor: Swallow

Dive Item #: PL D2

Vessel #: 114

AWOIS #: _____

DIVE # 3

DIVERS: 1 Mam

2 S/DOS

TIME IN: 1204/1238

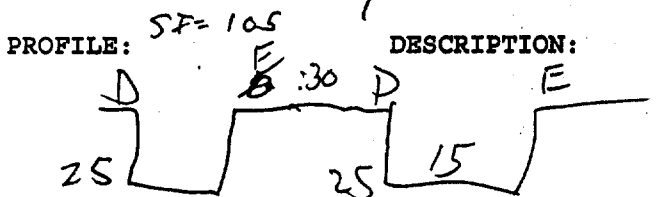
Pressure In: 1750/1900/1250/1100

TIME OUT: 1218/1253

Pressure Out: 1350/1100

BOTTOM TIME: 14/15

MAX DEPTH: 25/25



DESCRIPTION:

Nothing found

$$\begin{array}{r} RNT=54 \\ 14 \\ \hline 68 \end{array}$$

$$\begin{array}{r} RNT=70 \\ 15 \\ \hline 85 \end{array}$$

FOUND A PILING LAYING ON SIDE
BURIED IN SAND. EXPOSED ONLY.
A FEW INCHES. < 1 FT

LEAST-DEPTH DETERMINATION ☐ Leadline ☐ MOD III Depth gage S/N. 68337

SEACAT CTD S/N: _____

PREDIVE MOD III GAUGE PRESSURE: _____ psia

CTD CAST #: _____

AVG. LEAST DEPTH GAUGE READING: _____ psia

TIME OF LEAST DEPTH READING (GMT): _____

DP FIX NUMBER(s): _____

COMPUTED LEAST DEPTH READING: _____ psia

FATHOMETER DEPTH: _____

COMPUTED LEAST DEPTH: _____ meters

DRAFT CORRECTOR: + _____

PREDICTED TIDE CORR.: - _____

VELOCITY CORR.: + _____

CORRECTED LEAST-DEPTH: _____ meters

PRED. TIDE CORR.: - _____

HAZNAV REPORT FILED: Y N

CORRECTED FATHO DEPTH: _____

POSITION / SUPPORTING INFORMATION

LAT: _____

LONG: _____

EASTING: _____

NORTHING: _____

NOAA Ship MT MITCHELL

Least-Depth Dive Investigations

DATE/DN: 124 / 04 May

Project/Sheet: D

Dive Supervisor: Swallow

Dive Item #: D3

Vessel #: MD-1/4

AWOIS #: N/A

DIVE # 2

DIVERS: 1 Mann

2 Sipos

TIME IN: 1037

Pressure In: 2850

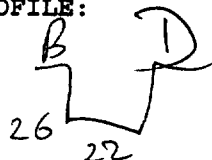
TIME OUT: 1059

Pressure Out: 1900

BOTTOM TIME: 22

MAX DEPTH: 26

PROFILE:



DESCRIPTION:

2 overturned rec boats

Height ~ 2.5' off bottom

NO least depth taken

LEAST-DEPTH DETERMINATION

☐ Leadline ☐ MOD III Depth gage S/N: 68337

SEACAT CTD S/N: _____

PREDIVE MOD III GAUGE PRESSURE: N/A psia

CTD CAST #: _____

AVG. LEAST DEPTH GAUGE READING: _____ psia

TIME OF LEAST DEPTH READING (GMT): _____

DP FIX NUMBER(s): 2

COMPUTED LEAST DEPTH READING: _____ psia db

FATHOMETER DEPTH: 6.7

COMPUTED LEAST DEPTH: _____ meters

DRAFT CORRECTOR: + .5

PREDICTED TIDE CORR.: _____

VELOCITY CORR.: + .2

CORRECTED LEAST-DEPTH: _____ meters

PRED. TIDE CORR.: - .4

HAZNAV REPORT FILED: Y N

CORRECTED FATHO DEPTH: 7.0

POSITION / SUPPORTING INFORMATION

LAT: 27/34/05.001

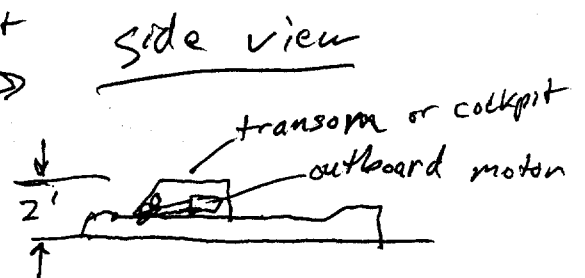
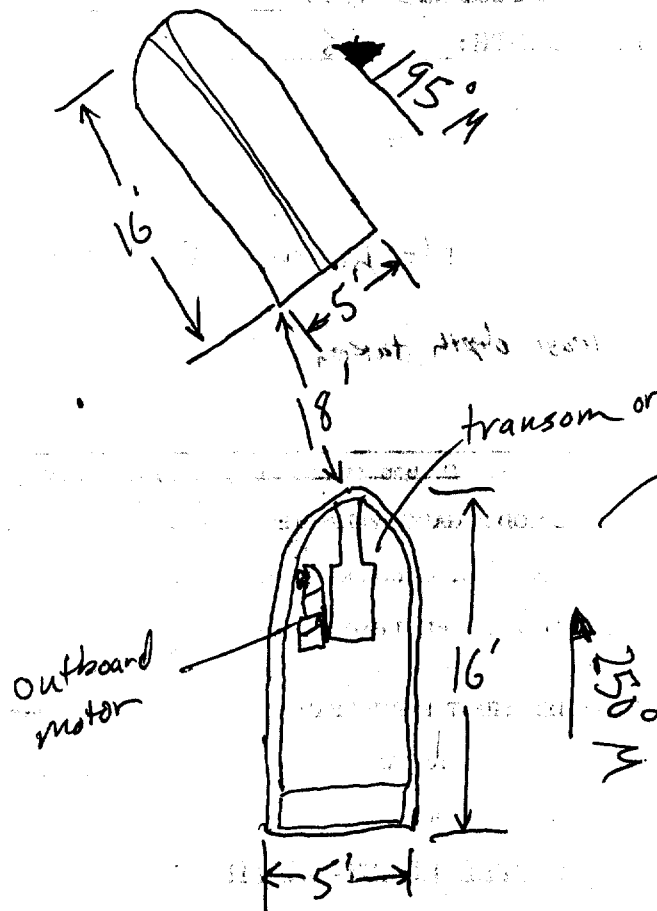
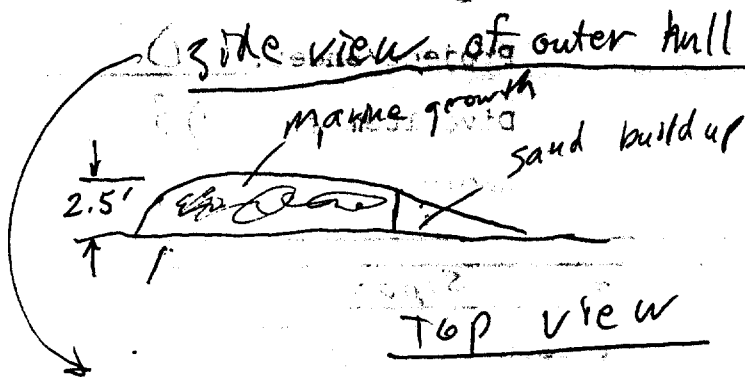
LONG: 082/44/50.711

EASTING: 40254.8

NORTHING: 11234.9

03

LABORATORY
Investigation



Appears to be 2 pieces of hull
of same boat, i.e., inner
shell and outer shell.
Outer shell is overturned.
Both made of fiberglass
and Aluminum.

Hydrometer 6690-AE

Logan Gregory

(813)570-5352

NOAA Ship MT MITCHELL Least-Depth Dive Investigations

DATE/DN: 124

Project/Sheet: D

Dive Supervisor: Swallow

Dive Item #: D4

Vessel #: M-1 / M-4

AWOIS #: N/A

DIVE # 1

DIVERS: 1 Mann

2 Sipos

TIME IN: 0936

Pressure In: 2900/2800

TIME OUT: 1000

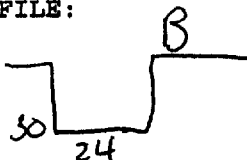
Pressure Out:

BOTTOM TIME: 24

MAX DEPTH: 30

PROFILE:

DESCRIPTION: Decayed Boat



LC Depth 9.3m

LEAST-DEPTH DETERMINATION

☐ Leadline ☐ MOD III Depth gage S/N: 68337

SEACAT CTD S/N: 192472-284

PREDIVE MOD III GAUGE PRESSURE: 14.70 psia

CTD CAST #: 182

AVG. LEAST DEPTH GAUGE READING: 28.35 psia

TIME OF LEAST DEPTH READING (GMT): 1355 955 EDT

DP FIX NUMBER(s): 1

COMPUTED LEAST DEPTH READING: 9.39 psia db

FATHOMETER DEPTH: 8.0

COMPUTED LEAST DEPTH: 9.40 meters

DRAFT CORRECTOR: + .5

PREDICTED TIDE CORR.: -.4

VELOCITY CORR.: + .2

CORRECTED LEAST-DEPTH: 9.0 meters

PRED. TIDE CORR.: -.4

HAZNAV REPORT FILED: Y N

CORRECTED FATHO DEPTH: 8.3

POSITION / SUPPORTING INFORMATION

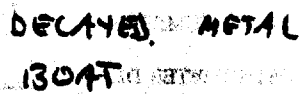
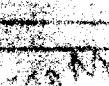
LAT: 27 33 54.962

LONG: 082 45 27.611

EASTING: 39242.6

NORTHING: 10925.9

42



STOD SIDE VIEW

D4

LEAST DEPTH USING SMLGAUGE PROGRAM, VERSION 2.2

NOAA UNIT: MI 1

YEAR 1995

AWOS NUMBER:

CONTACT NUMBER: SHEET D ITEM D4

DAY-OF-THE-YEAR 124

LATITUDE 27/33/55 N

START TIME 13:46

LONGITUDE 082/45/28 W

CAST MEASUREMENT INSTRUMENT SEACAT S/N:284 CD:02/24/95

LEAST DEPTH DIVER GAUGE, SERIAL NUMBER 68337

DIVER'S PRE-DIVE GAUGE PRESSURE 14.70 psia

DIVER'S GAUGE PRESSURE AT DESIGNATED LEAST DEPTH 28.35 psia

COMPUTED PRESSURE AT DESIGNATED LEAST DEPTH 9.39 decibars

COMPUTED LEAST DEPTH 9.40 meters

Time of LD Measurement (UTC): _____

LD Measurement (m): _____

Tide Corrector (m): _____

Corrected Least Depth (m): _____

Comments: _____

Recommendation: _____



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: February 9, 1996

MARINE CENTER: Atlantic

HYDROGRAPHIC PROJECT: OPR-J343

HYDROGRAPHIC SHEET: H-10270

LOCALITY: Tampa Bay, Florida

TIME PERIOD: April 25 - May 4, 1995

TIDE STATION USED: 872-6384 Port Manatee, Tampa Bay, Fl.
Lat. $27^{\circ} 38.2'N$ Lon. $82^{\circ} 33.8'W$

PLANE OF REFERENCE (MEAN LOWER LOW WATER): -0.05 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.9 ft.

TIDE STATION USED: 872-6430 St. Petersburg Beach, South End, Fl.
Lat. $27^{\circ} 41.0'N$ Lon. $82^{\circ} 44.3'W$


PLANE OF REFERENCE (MEAN LOWER LOW WATER): 8.79 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.0 ft.

REMARKS: RECOMMENDED ZONING

1. East of $82^{\circ} 55.0'W$, and west of a line between the southern point of Mullet Key and Bean Point on Anna Maria Key, times are direct, and apply a X0.95 ratio to heights using St. Petersburg Beach, Fl. (872-6430).
2. East of a line between the southern point of Mullet Key and Bean Point on Anna Maria Key, apply a -1 hour time correction, and heights are direct using Port Manatee, Fl. (872-6384).

Notes: Times are tabulated on Greenwich Mean Time.
Data for Port Manatee, Fl. (872-6384) and St. Petersburg Beach, Fl. (872-6430) are stored in temporary files #672-6384 and #672-6430 respectively.


CHIEF, DATUMS SECTION



**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H-10270 (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.

During office processing of the present survey, four items were noted that required additional field work. The addendum to the Descriptive Report describes the field work conducted in 1995.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

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

Hydrographic Processing System (HPS)
AUTOCAD Release 12
QUICKSURF, version 5.1
Microstation version 5.0
NADCON, version 2.10
I/RAS B version 5.01

The smooth sheet was plotted using an ENCAD NovaJet III plotter.

H. CONTROL

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 sheets have been annotated with ticks showing the computed mean shift between the NAD 83 and the North American Datum of 1927 (NAD 27).

To place this survey on the NAD 27, move the projection lines 1.126 seconds (34.650 meters or 3.46 mm at the scale of the survey) north in latitude and 0.638 seconds (17.504 meters or 1.75 mm at the scale of the survey) east in longitude.

J. SHORELINE

Shoreline for the present survey originates with National Ocean Service (NOS) chart 14414 (34th Ed., Jan. 9/93). The shoreline is shown in brown and is for orientation purposes only.

L. JUNCTIONS

H-10536 (1994) to the northwest
H-10598 (1995) to the northeast

A standard junction was effected between the present survey and H-10536 (1994).

A standard junction could not be effected with survey H-10598 (1995). The survey has not reached the sounding stage of office processing. Any adjustments to the depth curves in the junctional area will have to be made during chart compilation.

There are no contemporary surveys to the south and west of the present survey. Present survey depths are in harmony with the charted hydrography to the south and west.

M. COMPARISON WITH PRIOR SURVEYS

Hydrographic

H-8042 (1953-55) 1:20,000

H-8427 (1958) 1:40,000

H-8428 (1958) 1:40,000

Prior survey H-8042 (1953-55) is common to the southwest corner of the present survey. Prior survey soundings are in good agreement with present survey soundings. Soundings vary plus or minus (\pm) 1 foot (0^3 m).

Prior survey H-8427 (1958) is common to the central section of the present survey. The present hydrography is in good agreement, with prior soundings generally varying plus or minus (\pm) 1 foot (0^3 m). The present survey shows significant shoaling in the vicinity of Latitude $27^{\circ}35'45''$ N, Longitude $82^{\circ}43'30''$ W due to the build up of dumping in a charted spoil area.

Prior survey H-8428 (1958) is common to the eastern section of the present survey. The present hydrography is in good agreement, with prior soundings generally varying plus or minus (\pm) 1 foot (0^3 m). The present survey shows significant shoaling in the vicinity of Latitude $27^{\circ}35'45''$ N, Longitude $82^{\circ}43'30''$ W Latitude $27^{\circ}35'55''$ N, Longitude $82^{\circ}42'25''$ W due to dumping in two charted spoil areas.

The differences in depths between the prior surveys and the present survey depths can be attributed to natural causes, dumping of dredged material, and improved hydrographic surveying methods and equipment.

The present survey is adequate to supersede the prior surveys in the common area.

O. COMPARISON WITH CHARTS 11411 (8th Ed., Nov. 14/92)
11412 (35th Ed., Apr 24/93)
11414 (34th Ed., Jan. 9/93)

The charted hydrography originates with the previously discussed prior surveys and needs no further discussion. The following should be noted:

It is recommended that the charted discontinued disposal area in the vicinity of Latitude 27°35'38"N, Longitude 82°44'33"W be deleted from the chart. Soundings in the common area should be revised to reflect the present survey soundings.

Three charted Spoil Areas in the vicinities of Latitude 27°35'50"N, Longitude 82°43'20"W, Latitude 27°36'00"N, Longitude 82°42'15"W, and Latitude 27°36'07"N, Longitude 82°41'10"W were developed by the hydrographer. It is recommended that the charted limits and the notation Spoil Area be retained and the blue tint be deleted within the limits of the spoil areas. Soundings in the common areas should be charted to reflect the present survey soundings.

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

P. ADEQUACY OF SURVEY

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

S. MISCELLANEOUS

Chart compilation using the present survey was done by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland.

MT MITCHELL Processing Team



Richard H. Whitfield

Cartographer

Verification and Evaluation and Analysis

APPROVAL SHEET
H-10270

Initial Approvals:

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

Robert G. Roberson Date: 13 MARCH 1996
Robert G. Roberson
Cartographer
Chief, Cartographic Section

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

Nicholas E. Perugini Date: 13 March 1996
Nicholas E. Perugini
Commander, NOAA
Chief, Atlantic Hydrographic Branch

Final Approval:

Approved: Andrew A. Armstrong, III Date: 5/15/96
Andrew A. Armstrong, III
Captain, NOAA
Chief, Hydrographic Surveys Division

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H10270

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.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED