H10624

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. WH-10-8-95

Registry No. H-10624

LOCALITY

State GEORGIA

General Locality NORTH ATLANTIC OCEAN

Sublocality 9 NM SE OF GASKIN BANKS

19 95

CHIEF OF PARTY
CDR J. D. WILDER, NOAA

LIBRARY & ARCHIVES

DATE JUN 11 1996

☆U.S. GOV. PRINTING OFFICE: 1987—756-980

DIAGRAM 1111-1

(E)
Bp 15B535
Charts
CP4
11513 Appd 3/5/97 TLW
11480 Appd 3/5/97 TLW
11009
411 Examined, NC. 10-3-96

NOAA FORM 77-28 (11-72)

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

REGISTER NOS.

H-10624

HYDROGRAPHIC TITLE SHEET

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

FIELD NO.

WH-10-8-95

State: Georgia

General locality: North Atlantic Ocean

Locality: 9 NM SE of Gaskin Banks

Scale: 1:10,000 Date of Survey: June 28 - July 26, 1995

Instructions dated: March 14, 1995 Project No.: OPR-G398-WH-95

Vessel: WHITING(2930), Launch 1014(2932) and Launch 1015(2931)

Chief of Party: Commander John D. Wilder

Surveyed by: J.D. Wilder, M.R. Kenny, W.G. Kitt, A.L. Beaver, J.T. Michalski, C.E. Parrish, J.D. Garte, M.M. Cisternelli, K.B. Shaver, F.R. Cruz, C.A. Neely

Soundings taken by echo sounder: DSF-6000N

Graphic record scaled by: WHITING Survey Personnel

Graphic record checked by: WHITING Survey Personnel

Protracted by: N/A Automated plot by: ENCAD NOVAJET III Plotter (AHB) HP 7959B, Bruning (Field)

Verification by: ATLANTIC Hydrographic Branch Personnel

Soundings in MLLW: Meters

REMARKS: Time Zone Used, 0 (UTC)

Notes in The Descriptive Report were made in Red During Office Processing.

JUN 11 1996
3/31/97

AWOIS and SURF ✓ RWD 6/96

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

PROGRESS SKETCH

HYDROGRAPHIC SURVEY

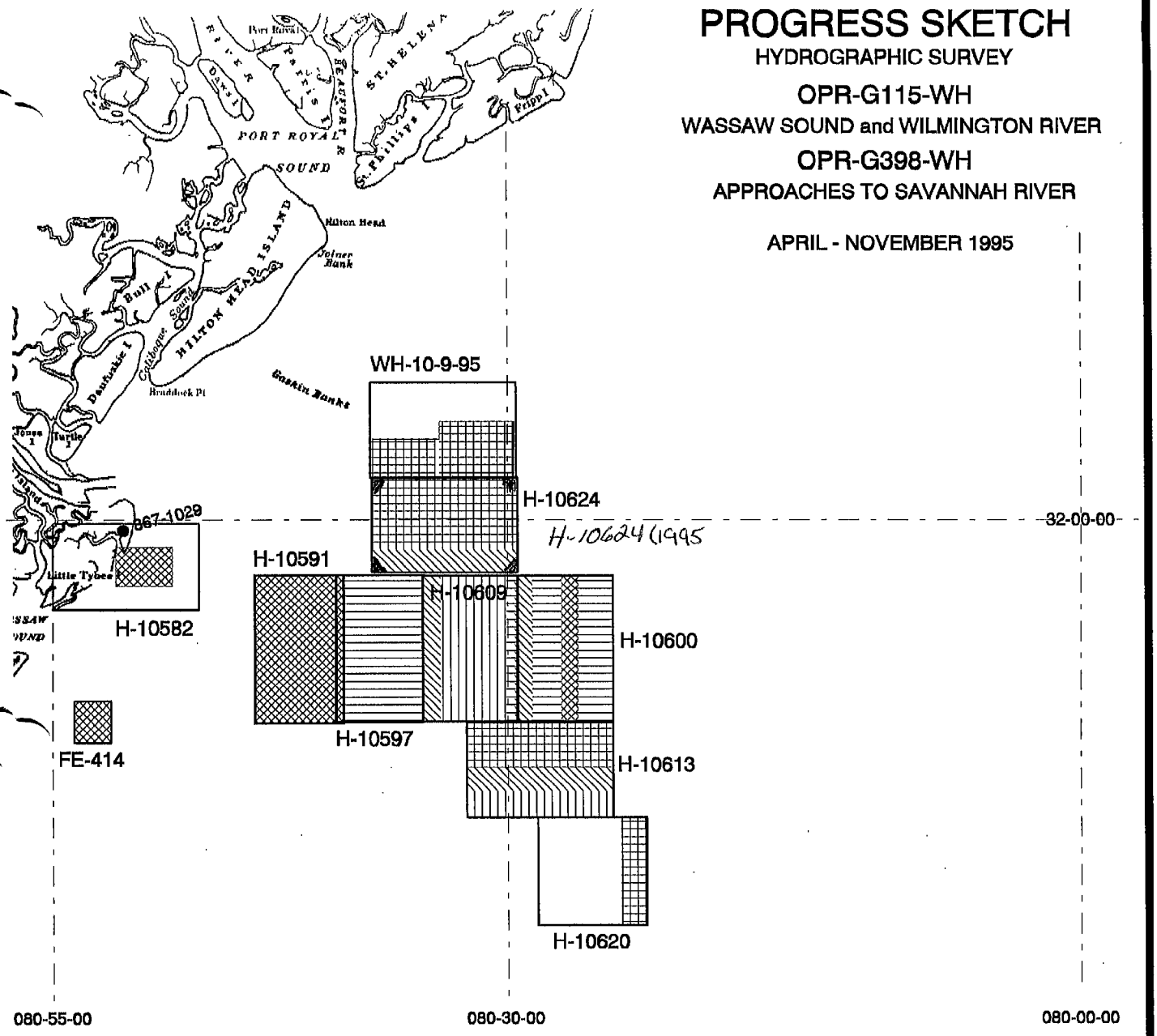
OPR-G115-WH

WASSAW SOUND and WILMINGTON RIVER

OPR-G398-WH

APPROACHES TO SAVANNAH RIVER

APRIL - NOVEMBER 1995



NOAA SHIP WHITING S329

CDR JOHN D. WILDER, COMMANDING

APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	
24	25	27	22					DAYS AT SEA
156	83	218						LNM SOUNDINGS (SHIP)
173	10	24						LNM SOUNDINGS (LAUNCHES)
904	1208	1550						LNM SIDE SCAN (SHIP)
7	14	52						LNM SIDE SCAN (LAUNCHES)
38	49	64						SQ NM SURVEYED
6	10	22						ITEMS INV/DIVES
	8	4						VELOCITY CASTS
45	19	15						BOTTOM SAMPLES
20	0	0						WATER CLARITY OBS
								HYDROGRAPHY

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY
OPR-G398-WH-95
WH-10-8-95
H-10624

NOAA SHIP WHITING
CDR John D. Wilder, NOAA
Commanding Officer

A. PROJECT

The purpose of project OPR-G398-WH is to provide contemporary hydrographic survey data for existing nautical charts. This project responds to requests from the Georgia Ports Authority and the Savannah Pilots Association. In 1994, a 31-mile stretch of the Savannah River shipping channel was deepened from 38 to 42 feet. This project will determine the deepest and safest approach to the 42-foot dredged channel.

Project OPR-G398-WH, Approaches to Savannah, Georgia, is divided into twelve survey sheets. The survey described in this report addresses sheet "D". The survey was assigned field sheet number WH-10-8-95 and registry number H-10624.

Survey operations were conducted in accordance with Hydrographic Project Instructions OPR-G398-WH dated March 14, 1995. There was one change to the project instructions dated May 17, 1995.

B. AREA SURVEYED

Hydrographic survey H-10624 is a 4 nm by 7 nm survey positioned 9 NM SE of Gaskin Banks. Sheet limits are bounded by 32° 02' 49.5" N and 31° 58' 26.4" N to the north and south respectively, and by 080° 29' 13.1" W and 080° 37' 18.9" W to the east and west respectively.

Survey operations commenced on June 28, 1995 (DN 179), and were completed on July 26, 1995 (DN 207).

C. SURVEY VESSELS

WHITING (VESNO 2930) was used for main-scheme side scan sonar and sounding data acquisition, as well as velocity casts.

Launch 1014 (2932) acquired main-scheme side scan sonar data, development splits, holidays, positioned aids to navigation and conducted all dive operations.

Launch 1015 (2931) conducted crosslines and acquired bottom samples.

No unusual vessel configurations were used nor were any problems encountered.

D. AUTOMATED DATA ACQUISITION AND PROCESSING See also Evaluation Report

Survey data acquisition and processing were accomplished using the HDAPS system with the following software:

PROGRAM NAME	VERSION	DATE INSTALLED
BACKUP	2.00	February 27, 1995
BASELINE	1.14	February 27, 1995
BIGABST	2.07	February 27, 1995
BIGAUTOST	3.01	February 27, 1995
BLKEDIT	2.02	February 27, 1995
CARTO	2.17	February 27, 1995
CLASSIFY	2.11	April 17, 1995
CONTACT	2.46	April 17, 1995
CONVERT	3.65	February 27, 1995
DAS_SURV	6.80	April 17,1995
DIAGNOSE	3.05	February 27, 1995
DISC_UTIL	1.00	February 27, 1995
DP	2.18	February 27, 1995
DPCONVERT	1.03	March 07, 1995
DSNEDITS	1.04	March 07, 1995
EXCESS	4.32	February 27, 1995
FILESYS	3.31	March 07, 1995
GRAFEDIT	1.06	February 27, 1995
HIPSTICK	1.01	February 27, 1995
HPRAZ	1.26	February 27, 1995
INVERSE	2.02	February 27, 1995
LISTDATA	1.02	February 27, 1995
LISTSETUP		June 26, 1995
LOADNEW	2.13	March 07, 1995

LSTAWOIS	3.07	March 27, 1995
MAINMENU	1.20	February 27, 1995
MAN_DATA	3.02	March 07, 1995
NEWPOST	6.13	February 27, 1995
PLOTALL	2.32	February 27, 1995
POINT	2.12	March 07, 1995
PREDICT	2.01	February 27, 1995
PRESURV	7.11	February 27, 1995
PRINTOUT	4.04	February 27, 1995
QUICK	2.07	February 27, 1995
RAMSAVER	1.02	February 27, 1995
REAPPLY	2.12	February 27, 1995
RECOMP	1.04	March 07, 1995
SCANNER	1.00	February 27, 1995
SELPRINT	2.05	February 27, 1995
SYMBOLS	2.00	February 27, 1995
VERSIONS	1.00	February 27, 1995
ZOOMEDIT	2.33	February 27, 1995

Sound velocity corrections were determined using *CAT* version 2.00 and *VELOCITY* version 2.11. The DGPS station was checked using *MONITOR* version 3.0. Program *DAILYDQA* ensured the proper functioning of the MOD-3 diver gauge.

There were no nonstandard automated acquisition or processing methods used.

E. SIDE SCAN SONAR EQUIPMENT

Side scan sonar (SSS) operations were conducted using an EG&G model 260 slant-range corrected SSS recorder and an EG&G 272-TH dual-channel, dual-frequency towfish. The towfish was operated on the 100 kHz frequency and configured with a 20° beam depression. Data were collected using the 100 meter range scale. The following sonar equipment was used throughout the survey, however, it should be noted that continual replacment of inner parts occurred during the survey, thereby making the listing of serial numbers (s/n) less meaningful.

Type	S/N's
Towfish	16835, 16699, 11902
Recorder	016942, 016673

On WHITING, the SSS towfish was deployed from a Reuland winch (model number 8377-XF5461A, S/N 814861A-1) using armored cabling in conjunction with an A-frame on the stern. The armored cable was connected to the SSS recorder via a slip-ring assembly.

On launch 1014 the SSS towfish was deployed using a Superwinch Model W115 in conjunction with an adjustable davit arm on the stern of the launch. The SSS towfish was towed with vinyl-coated Kevlar cable and was connected to the recorder via a slip ring assembly.

Side scan sonar data were collected utilizing the 100 meter range scale. In order to acquire the required 200% SSS coverage, main-scheme lines were run at a spacing of 75 meters. Adequate coverage was determined by producing an 'A' and 'B' swath plot and ensuring 100% coverage on each plot. Main scheme lines were split or re-run in all areas where 200% coverage was questionable, especially in the shallow water on the NW quarter of the sheet.

The SSS towfish was maintained at a height off the bottom of 8 to 20 percent of the range scale in use. SSS operations were limited to a speed-over-ground of 6.0 knots.

Confidence checks were performed on a routine basis, primarily by noting changes in bottom texture on the outer edges of the sonagram and by comparing cross references.

All potentially significant contacts in the survey area were measured off the sonagram and entered into an HDAPS contact table. Using the contact utility program, WHITING hydrographers determined contact heights, positions and correlations to one another. Significant items were further developed by diver investigation. Refer to section N and to Separate V for more information. DATA filed with field Records.

F. SOUNDING EQUIPMENT

A Raytheon Digital Survey Fathometer (DSF-6000N) echo sounder was used to measure water depths during the survey. The DSF-6000N produced a graphic record of the high frequency (100 kHz) and low frequency (24 kHz) depth. The high and low frequency digitized depths were recorded by the HDAPS acquisition system. The high frequency depths were selected as the primary depths as shown on the sounding plots. In addition, echograms were carefully reviewed for significant features along the track line and any significant features on the graphic record that were not selected as primary soundings were manually inserted.

The following fathometers were used during this survey, A105N, A106N and B050N, however, it should be noted that continual replacment of inner parts occurred during the survey, thereby making the listing of serial numbers (s/n) less meaningful.

Electronic technicians performed daily accuracy checks and preventive maintenance on the DSF-6000N. Bar checks were conducted on a routine basis.

Diver determined least depths were measured with a Diver Least Depth Gauge Module (MOD3) S/N 68332.

G. CORRECTIONS TO SOUNDINGS

Sound velocity profiles of the water column were determined using a Seacat Conductivity, Temperature and Depth (CTD) profiler (model SBE-19, S/N 286). The profiler was calibrated on February 15, 1995, during WHITING's winter inport period and Data Quality Assurance tests were performed during each CTD cast.

Data Quality Assurance (DQA) for the Seacat CTD profiler were performed by using a hydrometer and a thermometer to measure the density and temperature of a surface water sample taken during the CTD cast. Program *CAT* 2.00 compared these values to the CTD surface values, and determined if the velocity probe was working properly.

After the CTD cast, programs *CAT 2.00* and *VELOCITY 2.11* were used to process the data, select significant data points, and create a corrector table. The velocity correctors were manually entered into an HDAPS velocity table. The correctors were applied to both high (100 kHz) and low (24 kHz) frequency beams during data acquisition. Velocity profile data are included in Separate IV. *

The casts are summarized in the following table:

DN	Vel.Table#	Latitude	Longitude	Depth
165	31	31° 51' 38"N	080° 30' 22"W	20.9 m
186	33, 34	31° 59' 00"N	080° 30' 00"W	16.8 m
198	37, 38	32° 01' 35"N	080° 30' 11"W	20.8 m

There were no variations in instrument initials.

Bar checks were performed on launches 1014 and 1015 on a routine basis. Leadline comparisons were performed on the WHITING on May 11 and August 3, 1995 with good results. No corrections to soundings were applied based on bar check or leadline data.

The correction for static draft on WHITING (2930) is 3.2 meters and was verified on May 11, 1995 with the MOD III diver least depth gauge. The correction for the static draft for launches 1014 and 1015 is 0.55 meters, as measured on July 28, 1993.

Settlement and Squat measurements for WHITING were conducted and determined on November 10, 1993 (Offset Table 9).* Settlement and squat measurements for launch 1014 (Offset Table 2)* and launch 1015 (Offset Table 1)* were conducted and correctors determined on March 29, 1995. The settlement and squat correctors were applied to the sounding data in real time on each survey platform. Settlement and squat corrector tables are in Separate IV.*

On the WHITING, heave correctors were generated and logged in real time from a heave, roll and pitch sensor (HIPPY, S/N 19109-C). For launches 1014 and 1015 heave corrections were applied during post processing by manually scanning the echograms.

The tidal datum for this project is Mean Lower Low Water. The operating tide station at Fort

* DATA Filed with Field Records.

Pulaski, Georgia (867-0870) served as the reference station for predicted tides. Tidal data used during data acquisition were taken from Table 2 of the East Coast of North and South America Tide Tables and were applied to the digital data during acquisition by HDAPS. Digital tidal data were received on floppy disk from N/CS3, Hydrographic Surveys Division. Predicted tides were applied to data using a time correction of -0:10 for high and low tides and a 0.94 tidal height ratio.

WHITING installed a tide station at Tybee Marina (867-1029) for datum control of H-10624. Opening levels were run on March 30, 1995. Requests for smooth tides were submitted to the Product and Services Branch, N/OFS231, Datums Section, on August 25, 1995. Approved Tides and Zoning were applied during office processing.

H. CONTROL STATIONS See also Evaluation report.

The horizontal datum for this project is the North American Datum of 1983 (NAD-83). The source of differential correctors was a HF Differential GPS station erected by WHITING personnel over a surveyed mark at Skidaway Institute of Oceanography. Additionally, WHITING used the forward range marker on Jones Island Range for performance checks. The adjusted NAD-83 position for Skidaway Institute (SKID) was provided by the Field Photogrammetry Section on March 6, 1995. The positions of SKID and Jones Island Front Range follow:

	Latitude	Longitude
SKID	31° 59' 19.22599" N	081° 01' 12.26294" W
Jones Island Range, Front	32° 02' 31.71243" N	080° 51' 10.09256" W

WHITING used *MONITOR* version 3.0 to verify the station position, and to check for multipath in the area.

I. HYDROGRAPHIC POSITION CONTROL

An HF Differential Global Positioning System (DGPS) was used as the navigation system for this survey. Both ship and launches used an Ashtech Sensor GPS receiver with an LRD-1 HF receiver supplying correctors for DGPS navigation. Ashtech receivers were initialized by HDAPS; LRD-1 radios were set to the appropriate frequency.

DGPS positioning was accomplished in accordance with the FPM, section 3.4. The Horizontal Dilution of Precision (HDOP) limit was computed as required in section 3.4.2 of the FPM and found to be 3.75. No position flyers were encountered. All suspect positions (high HDOP, DR'ed positions, high EPE) were examined for reliability. Questionable positions were either smoothed or rejected.

The serial numbers of the Ashtech Sensor and MAXON radio-receivers used are as follows:

	Device	Serial Number
WHITING	Ashtech Sensor LRD-1	AMC# A002785 202
Launch 1014	Ashtech Sensor LRD-1	700417B1203 233
Launch 1015	Ashtech Sensor LRD-1	700417B1191 204

DGPS performance checks were done in two stages. The first stage was to send a Launch to the Jones Island Front Range marker. The launch would then take ten detached positions and compare them to the known position. Stage two was conducted with each launch securely housed in WHITING's davits. Simultaneous HDAPS positions were compared between WHITING and each launch; an offset in distance and azimuth was then applied between the ship and each launch system. All DGPS performance checks confirmed that the DGPS beacon was operating properly. DGPS performance checks were submitted under separate cover to N/CG244.

DGPS antenna offsets and laybacks were measured on July 28, 1993, for launches 1014 and 1015 and on March 19, 1993 for the WHITING. Offsets and laybacks were measured using the 100 kHz (high frequency) echosounder transducer as the reference. Antenna heights were also measured on the same respective dates shown above, using the water line as the reference. The offsets and laybacks were applied by HDAPS on-line. A minimum of four satellites were used during survey H-10624 (1:10,000), providing altitude unconstrained positioning.

Offset, layback, and height corrections for each launch's SSS aft towing boom were measured on July 28, 1993, and verified on April 5, 1994. The same measurements were made on the WHITING on March 19, 1993.

All offset, layback, and height data were applied by HDAPS on-line via correctors from offset tables 1, 2 and 9 for 1015, 1014 and WHITING respectively. These tables are on file at N/CG244. DATA FILED WITH FIELD RECORDS

J. SHORELINE

There is no shoreline within the survey area of H-10624.

K. CROSSLINES

A total of 77.72 nautical miles of crosslines were run for H-10624. This amounts to 9.9% of

the mainscheme miles run. Using predicted tides there was good agreement throughout the survey sheet. In general, all the crosslines followed the same contours as mainscheme lines. 70% of the crosslines soundings agreed within 0.3 meter of mainscheme lines with select areas as different as 0.7 meter. There were scattered differences as great as 1.0 meter.

L. JUNCTIONS See also Evaluation Report.

Survey H-10624 is surrounded on all sides by surveys from OPR-G398-WH-95, H-10624 junctions with H-10630 on the east edge, H-10631 on the west edge, H-10627 on the north edge and H-10597 and H-10609 on the South edge. The following table shows how each survey compares with H-10624:

Survey	Agreement (meters)	Remarks
H-10627	0.3 to 0.5	H-10627 soundings are deeper
H-10597	0.3 to 0.6	H-10597 soundings are shallower
H-10609	0.3 to 0.5	H-10609 soundings are shallower
H-10631	within 0.3	H-10631 soundings are deeper
H-10630	within 0.4	No trends were noticed

M. COMPARISONS WITH PRIOR SURVEYS See also Evaluation Report.

No prior surveys are available for the area covered by H-10624.

N. ITEM INVESTIGATIONS

The following table summarizes the investigations of all side scan sonar contacts. Note that all least depths were determined using predicted tides and positions determined using Differential GPS. The contacts are arranged according to fix number:

AWOIS 9333		Fish Haven
AWOIS 9334		Fish Haven
N.1	Fix 4124 (9087.44P)	150' Landing Craft Utility (LCU)
N.2	Fix None (9375.11P)	False Contact
N.3	Fix 4126 (3080.38P)	80' Army tug boat
N.4	Fix 4131 (8811.24S)	False Contact
N.5	Fix 4133 (7844.59)	Large box
N.6	Fix 4137 (7448.17S)	Barge wreck
N.7	Fix 4138 (7448.25)	Barge wreck
N.8	Fix 4139 (8258.04P)	Pipe
N.9	Fix 4140 (9011.13P)	Fish Haven, tires and pipes
N.10	Fix 4141 (9177.55S)	80' Army tug boat

N.11	Fix 4142 (9012.20P)	150' LCU
N.12	Fix 4143 (9421.15P)	Nest of cable
N.13	Fix 4144 (9503.08P)	Fishing boat wreck
N.14	Fix 4145 (10118.33P)	Dead reef
N.15	Fix 4148 (7495.22S)	80' Navy Landing Craft Vehicle/Personnel (LCVP)
N.16	Fix 4150 (7846.17S)	45' boat wreck
N.17	Fix 4151 (3082.42P)	150' barge wreck
N.18	8810.16S	False Contact
AWOIS 9335		S/V AIR SUPPLY

AWOIS 9333 Fish Haven on the SW quarter of the sheet

Reported Latitude:	32° 00' 00" N
Reported Longitude:	080° 35' 45" W
Reported Depth:	Minimum Authorized Depth 30ft
Datum:	NAD 83
Search Technique:	ES, SSS, BD, DI
Search Area:	Fish Haven Boundaries

AWOIS 9333 is marked on the chart as a fish haven. Included in the fish haven boundaries are N.3, N.6, N.7, N.15, N.16, and N.17. The 80' Army/Navy LCVP (N.15) is outside the charted west edge of the fish haven boundary. WHITING recommends that the west edge of the fish haven boundary be extended to include this wreck. CONCUR, See also Section N.15, Page 13 of Descriptive Report. 4

AWOIS 9334 Fish Haven on the NE quarter of the sheet

Reported Latitude:	32° 01' 15" N
Reported Longitude:	080° 30' 00" W
Reported Depth:	Minimum Authorized Depth 40ft
Datum:	NAD 83
Search Technique:	ES, SSS, BD, DI
Search Area:	Fish Haven Boundaries

AWOIS 9334 is marked on the chart as a fish haven. Included in the fish haven boundaries are N.1, N.9, N.10, and N.11. Item N.10 has a least depth of 39 feet, this minimum depth rises above the authorized minimum depth of 40 feet as indicated on the chart. WHITING recommends that the authorized minimum depth be revised to accommodate item N.10. Concur, 4
See also Section N.10, Page 12 of Descriptive Report

N.1 Fix 4124 (9087.44P) 150' Navy LCU (AWOIS 9334)

Latitude:	32° 01' 15.063" N
Longitude:	080° 30' 35.050" W
Source:	Side scan sonar contact
Least Depth:	~~13.0~~ 12.8 meters (42 feet)

Divers investigated a large (150') Army/Navy Landing Craft Utility (LCU) sunk inside the boundaries of a marked fish haven. The least depth was measured by diver placed MOD III least depth gauge on the after mast of the wreck. ~~Concur (chart 42 wk)~~ DO NOT CONCUR, DO NOT CHART WRECK FALLS WITHIN LIMITS OF OBSTN, FISH HAVEN

N.2 (9375.11P) False Contact

Divers Completed a 30 meter circle search to investigate this possible SSS contact but found nothing. No change in charting recommended, Do not chart.

N.3 Fix 4126 (3080.38P) 80' Army tug boat (AWOIS 9333)

Latitude:	31° 59' 56.124" N
Longitude:	080° 35' 30.641" W
Source:	Side scan sonar contact
Least Depth:	~~11.6~~ 11.3 meters (~~38~~ 37 feet)

Divers investigated an 80' Army tug boat sunk within the boundaries of a fish haven The least depth was measured by a diver placed MOD III least depth gauge on the tug boat's flying bridge. ~~Concur, (chart 37 wk)~~ DO NOT CONCUR DO NOT CHART WRECK FALLS WITHIN LIMITS OF OBSTN, FISH HAVEN

N.4 Fix 4131 (8811.24S) False Contact

Divers Completed a circle search out to 30 meters to investigate this possible SSS contact but found nothing. No change in charting recommended, Do not chart.

N.5 Fix 4133 (7844.59) Large box

Reported Latitude:	32° 00' 11.176" N
Reported Longitude:	080° 36' 15.700" W
Source:	Side scan sonar contact
Least Depth:	~~13.9~~ 13.8 meters (45 feet)

Divers investigated a large metal box rising approximately 8 feet off the bottom. The least depth on this significant contact was measured by a diver placed MOD III least depth gauge. Concur, (chart 45 Obstn)

N.6 Fix 4137 (7448.17S) Barge wreck (AWOIS 9333)

Latitude:	31° 59' 44.801" N
Longitude:	080° 35' 35.530" W
Source:	Side scan sonar contact
Least Depth:	12.4 meters (40 feet)

Divers investigated a barge wreck filled with debris rising off the main deck. The least depth was measured by diver placed MOD III least depth gauge on the highest debris. ~~CONCUR, (CHART 40 WK)~~
DO NOT CONCUR DO NOT CHART WRECK FALLS WITHIN LIMITS OF OBSTN, FISH HAVEN

N.7 Fix 4138 (7448.25) Barge wreck (AWOIS 9333)

Latitude:	31° 59' 44.072" N
Longitude:	080° 35' 37.498" W
Source:	Side scan sonar contact
Least Depth:	~~12.7~~ 12.6 meters (41 feet)

Divers investigated another barge wreck adjacent to and similar to item number 7448.17S described above. This barge had no debris rising from the main structure. The least depth was measured by a diver placed MOD III least depth gauge. ~~CONCUR, (CHART 41 WK)~~
DO NOT CONCUR DO NOT CHART WRECK FALLS WITHIN LIMITS OF OBSTN, FISH HAVEN

N.8 Fix 4139 (8258.04P) Pipe

Latitude:	32° 00' 34.902" N
Longitude:	080° 37' 02.685" W
Source:	Side scan sonar contact
Least Depth:	14.5 meters (47 feet)

Divers found a concrete pipe. The least depth was measured by diver placed MOD III least depth gauge. WHITING recommends this contact not be charted due to insignificant height.
NO CHANGE IN CHARTING RECOMMENDED, DO NOT CHART.

N.9 Fix 4140 (9011.13P) Fish Haven, tires and pipes (AWOIS 9334)

Buoy Latitude:	32° 01' 10.363" N
Buoy Longitude:	080° 30' 18.180" W
Source:	Side scan sonar contact
Least Depth:	Insignificant

Divers investigated scattered tires and concrete pipes surrounding the fish haven buoy. None of the debris rose more than 0.5 meters off the bottom. No least depth was taken on the numerous and insignificant contacts. NO CHANGE IN CHARTING RECOMMENDED, DO NOT CHART.

N.10 Fix 4141 (9177.55S) 80' Army tug boat (AWOIS 9334)

Latitude:	32° 01' 17.892" N
Longitude:	080° 30' 25.664" W
Source:	Side scan sonar contact
Least Depth:	~~12.0~~ 11.9 meters (39 feet)

Divers investigated an 80' army tug boat. The least depth was measured by a diver placed MOD III Least Depth Gauge. Note that this contact lies within a fish haven with an Authorized Minimum Depth of 40 feet. ~~CONCUR (CHART 39 WK) DO NOT CONCUR DO NOT CHART WRECK FALLS WITHIN LIMITS OF OBSTN, FISH HAVEN~~ CONCUR (CHART 39 WK)

N.11 Fix 4142 (9012.20P) 150' Navy LCU (AWOIS 9334)

Latitude:	32° 01' 10.576" N
Longitude:	080° 30' 29.622" W
Source:	Side scan sonar contact
Least Depth:	13.1 meters (~~43~~ 42.9 feet)

Divers investigated a 150' Navy LCU. The least depth was measured by a diver placed MOD III least depth gauge on the flying bridge mast. ~~CONCUR (CHART 44 WK)~~ DO NOT CONCUR DO NOT CHART WRECK FALLS WITHIN LIMITS OF OBSTN, FISH HAVEN

N.12 Fix 4143 (9421.15P) Nest of cable

Latitude:	32° 01' 35.804" N
Longitude:	080° 35' 24.761" W
Source:	Side scan sonar contact
Least Depth:	Insignificant

Divers investigated an insignificant, tangled nest of cable rising 1 foot off the bottom. WHITING recommends this contact not be charted due to insignificant height. NO CHANGE IN CHARTING RECOMMENDED, DO NOT CHART.

N.13 Fix 4144 (9503.08P) Fishing boat wreck

Latitude:	32° 01' 40.014" N
Longitude:	080° 36' 23.670" W
Source:	Side scan sonar contact
Least Depth:	~~13.7~~ 13.5 meters (~~45~~ 44 feet)

Divers investigated a wrecked, wooden fishing vessel scattered on the bottom. The least depth was measured by a diver placed MOD III least depth gauge on a significant spar or mast sticking out of the sand. WHITING recommends this contact be charted as a sunken wreck. CONCUR, (CHART 44 WK)

N.14 Fix 4145 (10118.33P) Dead reef

Divers investigated an insignificant dead reef. no change in charting recommended, Do not chart.

N.15 Fix 4148 (7495.22S) 80' Navy LCVP (AWOIS 9333)

Latitude:	31° 59' 48.134" N
Longitude:	080° 36' 08.043" W
Source:	Side scan sonar contact
Least Depth:	~~13.9~~ 13.8 meters (45 feet)

Divers investigated an 80' Navy LCVP front loading carrier. The least depth was measured by a diver placed MOD III least depth gauge. Note that this contact lies 60 meters to the west of the charted fish haven boundaries. Concur, (chart 45 wk)

N.16 Fix 4150 (7846.17S) 45' boat wreck (AWOIS 9333)

Latitude:	32° 00' 09.038" N
Longitude:	080° 36' 00.268" W
Source:	Side scan sonar contact
Least Depth:	14.9 meters (49 feet)

Divers investigated a 45' boat wreck surrounded by tires and sheet metal debris. The least depth was measured by a diver placed MOD III least depth gauge on the bow of the boat. ~~Concur, (chart 49 wk)~~ DO NOT CONCUR DO NOT CHART WRECK FALLS WITHIN THE LIMITS OF OBSTN, FISH HAVEN

N.17 Fix 4151 (3082.42P) 150' barge wreck (AWOIS 9333)

Latitude:	31° 59' 55.648" N
Longitude:	080° 35' 52.473" W
Source:	Side scan sonar contact
Least Depth:	13.4 meters (44 feet)

Divers investigated a 150' barge. Least depth was measured by a diver placed MOD III least depth gauge on the bow of the barge. ~~Concur, (chart 44 wk)~~ DO NOT CONCUR DO NOT CHART WRECK FALLS WITHIN THE LIMITS OF OBSTN, FISH HAVEN

N.18 8810.16S False Contact

This questionable contact was investigated using SSS. No contact was found during the re-investigation. no change in charting recommended, Do not chart.

N.21 AWOIS 9338 AIR SUPPLY (31ft S/V)

Reported Latitude:	32° 02' 36.75" N
Reported Longitude:	080° 34' 29.38" W
Reported Depth:	None
Datum:	NAD 83
Search Technique:	ES, SSS, BD, DI, SD
Search Radius:	2000 meters

AWOIS 9338 was not found during routine 200% SSS coverage. The search radius for this AWOIS item extends into sheet H-10627 to the north of H-10624 and nothing here was found. Concur, Delete from chart

O. COMPARISON WITH THE CHART See also Evaluation report.

Soundings from chart 11513 (21st Ed., June 4/94 1:80,000) were compared to H-10624 soundings. 70% of the charted soundings agreed within 0.2 meters of H-10624 soundings. Of the remaining 30% most of the H-10624 soundings were deeper by 0.3 to 1.5 meters with the greatest difference of 1.5 meters at latitude 31° 59.5'N, longitude 80° 30.0'W. Survey H-10624 also found soundings shallower than charted soundings at two locations, 0.6 meters at latitude 32° 01.0'N, longitude 80° 31.0'W and 0.4 meters at latitude 32° 00.5'N, longitude 80° 31.0'W. Both of these shallower soundings are in 19 meter surrounding depths.

P. ADEQUACY OF SURVEY See also Evaluation report.

This survey is complete and of adequate quality to supersede all prior surveys of the area.

Q. AIDS TO NAVIGATION

WHITING personnel investigated two buoys located within the boundaries of H-10624. The plastic, yellow nuns topped with radar deflectors were placed by the South Carolina Department of Natural Resources to mark the two fish havens within H-10624. The items examined were as follows:

Name	Latitude	Longitude	ΔD
Y N Priv	31° 59' 55.382"N	080° 35' 58.554"W	80 meters
Y N Priv	32° 01' 10.363"N	080° 30' 18.180"W	350 meters

ΔD is the distance from the survey position to the charted position of the buoy.

Note that the chart shows 3 buoys marking the fish haven on the southwest quarter of H-10624, WHITING personnel found only one buoy marking this fish haven. Concur, The Aids To Navigation Located by the Field unit appear to be adequate for its intended purpose.

R. STATISTICS

Number of Positions	6171
Main-scheme SSS Lines (Nautical Miles)	786.35
Crosslines (Nautical Miles)	77.72
Square Nautical Miles Surveyed	27.04
Days of Production	13
Detached Positions	16
Bottom Samples	15
Tide Stations Installed	0
Current Stations	None
Number of CTD Casts	3
Magnetic Stations	None

S. MISCELLANEOUS *See also Evaluation report.*

Bottom samples for the survey area were acquired in accordance with the Hydrographic Manual, 4th Edition. As a result of the recent 1970's surveys and the consistent sand bottom characteristics, bottom samples were taken at 3000 meter grid spacing. All samples confirmed the charted bottom characteristics of sand and shell. In addition, several diver investigations within the survey area observed only sand and broken shell as the bottom characteristics. Oceanographic log sheets for H-10624 are submitted with the separates for this survey. Bottom samples were submitted to the Smithsonian Institution.

No current studies were done in the area. No unusual magnetic variations were encountered in the survey area. No unusual submarine features were discovered.

T. RECOMMENDATIONS *See also Evaluation report.*

H-10624 is complete and without inadequacies. No additional fieldwork is required.

U. REFERRAL TO OTHER REPORTS

None.

Submitted By:

Christopher E Pair

for Ensign Joel T. Michalski, NOAA
Junior Officer, NOAA Ship WHITING

NOAA SHIP WHITING
ITEM INVESTIGATION REPORT
OPR-G398-WH

SURVEY H-10624 FIELD SHEET WH-10-8-94

ITEM NUMBER 9087.44P AWOIS NUMBER _____

SSS POSITION: E 55296.0

N 39328.0

DESCRIPTION OR CROSS REFERENCES: x-ref = 9012.50S
9103.44P

Large wreck
18 meters

METHOD OF INVESTIGATION (circle):

Echosounder (Diver) Other (specify) _____

INVESTIGATION NOTES:

Large wreck - ≈ 150' long, least depth is after mast.