

# 9145

Diag. Cht. No. 1001-3

NOAA FORM 76-35A

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

## DESCRIPTIVE REPORT (HYDROGRAPHIC)

Type of Survey ... HYDROGRAPHIC  
Field No. .... WH-40-2-73  
Office No..... H-9145

### LOCALITY

State ..... GEORGIA-SOUTH CAROLINA  
General Locality SAVANNAH, GEORGIA  
Locality ..... OFF TYBEE ROADS

19 73

CHIEF OF PARTY  
Jeffrey G. Carlen

### LIBRARY & ARCHIVES

DATE ..... June 11, 1974

☆ U.S. GOV. PRINTING OFFICE: 1976-669-441

# 9145

Area 3

Cat

11516

11609

411

11480

11513

## HYDROGRAPHIC TITLE SHEET

H-9145

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.

WH-40-2-77<sup>3</sup>State Georgia - S. CarolinaGeneral locality Georgia Coast Savannah, GeorgiaLocality East of Savannah Light Off Tybee RoadsScale 1:40,000Date of survey Sept. 5, 1973 to Oct. 2, 1973  
J.D.-248 275Instructions dated April 11, 1973Project No. OPR-436-73Vessel Ship WHITING > Launch WH-2Chief of party CDR Jeffrey G. CarlenSurveyed by CDR J. G. Carlen, LCDR J.C. Veselenak, LT A.E. Theberge, LTJG B.B. Meyers,  
LTJG Decker, ENS Polvi, ENS McMillan, ENS Gastaldo, CST HillSoundings taken by echo sounder, head lead, etc.  
G.J. K.D. M.C. E. W.A.Graphic record scaled by Ship's PersonnelGraphic record checked by Ship's Personnel

Protracted by \_\_\_\_\_

Automated plot by CALCOMP-AMC  
WHITING SYSTEMSoundings penciled by WHITING shipboard systemSoundings in fathoms feet at MLW MLWREMARKS: Time meridian of this survey was 0°.LAUNCH WH-I and WH-II, Serial Numbers 1206 and 1208, are new  
to the WHITING having been placed on board in April of 1973.Applied to stds 7/29/74  
alt571  
1240  
1111  
1007  
1001



UNITED STATES — EAST COAST

# CHARLESTON LIGHT TO CAPE CANAVERAL

SOUNDINGS IN FATHOMS  
AT MEAN LOW WATER

Meridian Projection  
Scale 1:100,000 at Lat. 30° 30'

USE CHART 440  
(Sheet 5 of 8)

NOTE A  
Navigation regulations are published in  
Chapter 2, Coast Pilot 4, or subsequent  
updates, supplements and notices.  
Refer to section numbers shown on  
area diagram.

SOUTH CAROLINA  
USE CHART 571  
(Sheet 4 of 8)

USE CHART  
(Sheet 2 of 8)

USE  
CHART 1240  
(Sheet  
3 of 8)

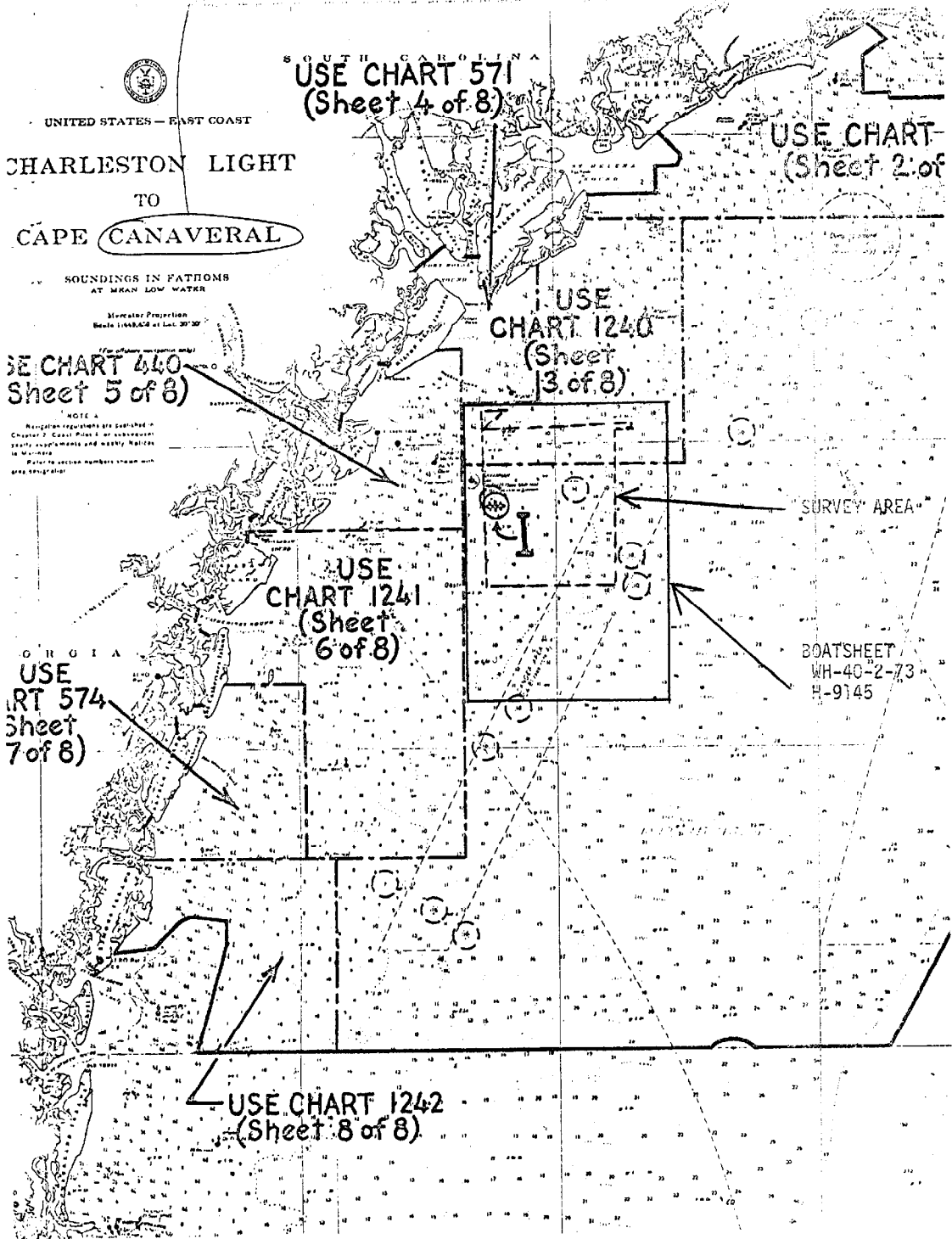
USE  
CHART 1241  
(Sheet  
6 of 8)

USE  
CHART 574  
(Sheet  
7 of 8)

SURVEY AREA

BOATSHEET  
WH-40-2-73  
H-9145

USE CHART 1242  
(Sheet 8 of 8)



#### A. PROJECT

This survey was accomplished in accordance with Project Instructions OPR-436-WH-73, dated April 11, 1973.

#### B. AREA SURVEYED

The boatsheet, registry number, H-9145, is located just east of Savannah Light. Sheet limits are Latitude  $31^{\circ}34'.4$  N and  $32^{\circ}07'.5$  N, Longitude  $80^{\circ}17'.1$  and  $80^{\circ}40'.5$  W.

The bulk of the area surveyed lies within Latitude  $32^{\circ}02'.5$  N and  $31^{\circ}46'.0$  N, and Longitude  $80^{\circ}22'.5$  W and  $80^{\circ}38'.5$  W. A small triangular area in the northwest corner of the sheet and a small easterly extension of the area surveyed in the northeast corner are the two exceptions to the last mentioned coordinates. The surveyed area was divided into two plotter sheets, WH-40-2N-73 and WH-40-2S-73.

The survey area is bound on the north by contemporary survey WH-20-3-73, H-9314, \*and ~~PE-40-1-73, H-9198~~. The eastern boundary of the sheet junctions with prior survey HSL-40-1-71, H-9198, and PE-80-1-72, H-9299. The survey area is bound on the south by prior survey PE-80-1-72, H-9299. The western boundary is contemporary survey WH-40-1-73, H-9144 to Latitude  $31^{\circ}54'.8$  N and overlap with prior survey H-3983, 1916-17, south of that Latitude. \* PE-40-1-73, H-9363

Survey operations began on September 5, 1973, and ended October 2, 1973.

#### C. SOUNDING VESSELS

Over 99% of the hydrography for this survey was accomplished by the NOAA Ship WHITING with the remainder being accomplished by Launch WH II. Launch WH II used positions beginning at 2000 and the ship began its positions at 2100.

#### D. SOUNDING EQUIPMENT

The sounding instrument used aboard the ship WHITING was a Ross Model 5000 Fineline depth recorder, serial number 1055.

Launch WH II was also equipped with a Rosse Model 5000 Fineline depth recorder, serial number 1049.

Velocity and fathometer corrections are based on leadline

✓  
comparisons and temperature-depth-conductivity (TDC) casts which were taken when sea and weather condition permitted. See "Velocity and Fathometer Corrections Report."

✓  
In addition, the fathometer operators continually checked for proper initial setting, and phase comparison.

#### E. SMOOTH SHEET

✓  
The smooth sheet will be plotted on the computer system at the Atlantic Marine Center, Norfolk, Virginia. The boat sheet discussed in this report is divided into two plotter sheets, WH 40-2N-73 and WH 40-2S-73 with appropriate overlays for crosslines and bottom samples.

#### F. CONTROL

✓  
The only method of control utilized during this survey was SEA-FIX in the hyperbolic mode transmitting on a frequency of 1618.65 KHz. See "Electronic Control Report" for details of the SEA-FIX positioning system's characteristics and reliability as control for hydrographic surveying.

The stations are located at:

SLAVE I	Mayport, Florida	30°23'40".366	81°23'41".056	✓
MASTER	Harris Neck, Georgia	31°37'19".524	81°15'56".407	✓
SLAVE II	Seabrook Island, S.C.	32°36'29".611	80°08'30".713	✓

#### G. SHORELINE

✓  
There is no shoreline within the bounds of the surveyed area.

#### H. CROSSLINES

✓  
186.1 nautical miles of crosslines comprised 8.1% of the total length of main sounding lines. As crosslines were run in rough weather, crossings were between 0 and 5 feet. However, it appeared that most crossings averaged between 1 and 2 feet. One ~~bad~~ exception exists at 31°51'.8 N and 80°36'.2 W where a 41 ft. sounding on the crossline lies over a 56 ft. sounding. Soundings in the low 40 ft. range are within 200 meters to the ~~NE~~, however. *Crosslines satisfactory after rescan*

#### I. JUNCTIONS

✓  
Junctions with prior surveys and contemporary surveys are considered good to adequate with the exception of PE-40-1-73,

H 9363

H-9198. The surveyed area junctions very well on the east and south with PE-80-1-72, H-9299. Agreement of 0-2 feet is the norm in this area. On the north and northeast the survey junctions with PE-40-1-73, H-9198, and HSL-40-1-71, H-9198. This is a problem area with WHITING soundings being with few exceptions consistently shoaler than PEIRCE soundings by a difference of 2-6 feet. As the WHITING soundings are internally consistent within the surveyed area and that particular area of the survey was run in calm weather, no obvious explanation of this discrepancy is apparent. Junctions with HSL-40-1-71, H-9198 was over a small area but appeared to be reasonable. Junctions with WH-40-1-73, H-9144 were very good and in the range of 0-2 feet. Spot checks with the overlap of survey H-3983, 1916-1917, ranged from 0-5 feet. Because of the age of the survey this is considered non-meaningful. ✓

H 9314

The small area surveyed by Launch WH II junctions with H-9363 PE-40-1-73 and WH-20-3-73. Junctions are considered good ranging from 0-2 feet with WHITING work. Junctions with the PEIRCE work, on PE-40-1-73, H-9198, show junctions of 0-3 feet. ✓  
9363

#### J. COMPARISON WITH PRIOR SURVEYS

The most urgent item indicated on the presurvey review items was designated I. After communication with AMC, it was ascertained that the RUDE and the HECK had wire dragged for this item earlier in the year. The following is a reference to "Summary of SP-AMC-1-R/H-73, Southeast Coast Investigations Georgia-Savannah", dated 23 March 1973. Item I is designated Item A-3 in this report. ✓

3A 3A

Item A-3

FLENO 1-1975 W.D. (1973)  
WRECK OF F/V SARAH ALICE

A charted wreck at Lat.  $31^{\circ}54'.0$  N, Long.  $80^{\circ}37'.0$  W. This wreck area on Chart 1111, with a charted depth of  $1\frac{1}{2}$  fathoms has been dragged to a one N.M. radius and has not been located. The minimum effective depth (using predicted tides) cleared in the area was 34 ft. at M.L.W.; therefore, it is felt that sufficient information has been gathered to disprove its existence. ✓

The existence of the ten fathom depths inside the dashed circles at  $31^{\circ}48'.5$  N and  $80^{\circ}28'.0$  W was proved as 10 fathom depths are in evidence throughout the area. not proven because. ✓  
*and  $31^{\circ}46.0$  N  $80^{\circ}20.5$  W*  
*neither disproven*  
*Both dashed 10 fathom circles are not within H9145 limits.*  
The shoalest depth found anywhere near the dashed circle PSR item located at  $31^{\circ}55'.3$  N and  $80^{\circ}27'.7$  W was a ~~48~~ 48 ft. ✓  
sounding located at  $80^{\circ}28'.4$  W and  $31^{\circ}54'.1$  N.  
( $6\frac{1}{2}$  fm or 39 ft. from H-3560 disproved by present survey)

#### K. COMPARISON WITH THE CHART

Comparison with Chart 1240, January 1, 1972, ranged from 0 to 5 feet. In one instance at Lat. 32°01'.8 N and Long. 80°27'.4 W, a 13 foot discrepancy was noted. Comparison with small scale Chart NOS 1111 was relatively good as Chart 1111 is in fathoms. However, a 2-3 fathom discrepancy exists in the southeast corner of the surveyed area with the survey showing shoaler depths. (see review 6)

#### L. ADEQUACY OF THE SURVEY

This survey is complete and adequate and should supersede all prior surveys.

#### M. AIDS TO NAVIGATION

A small black and white nun buoy, ~~unnumbered~~, is located in the northwest corner of the surveyed area. Its observed position (30 meters north of position 2530) is 32°00'43" N and 80°36'09" W compares favorably with the charted position of this aid to navigation. (see review 6 B.)

#### N. STATISTICS

	<u>WHITING</u>	<u>WH II</u>
POSITIONS	5225	
L.N.M. SOUNDING LINE	2483.3	83
S.N.M. SURVEYED	239	21.1
BOTTOM SAMPLES	48	1

#### O. MISCELLANEOUS

At first glance the area surveyed appears to be devoid of anything of note. However, contouring shows a series of small ridge and basin type structures trending NE-SW. The relief on these structures is of the order of 3 to 6 feet. Because of the nature of the bottom throughout the area (i.e., and unconsolidated fine to coarse grained sand) these features are highly reminiscent of migrating dune-type ripples. If they are, this could be highly significant to the hydrographer as the whole area could be subject to continual shifting of the bottom. Junctions and overlap with future surveys would be meaningless.

In the northeast corner of the surveyed area a deep exists trending NW-SE. Depths of 100 feet are found in this area. Using our contour pattern in the area and WHITING fathometer

records, as well as PEIRCE survey PE 80-1-72, H-9299, makes the hydrographer believe that this deep is a scour area around a rock out cropping. No bottom samples were taken to prove or disprove this. *Gradual offshore slope to depths of 107 ft. then a rapid rise of 16% slope to 53-59 ft. depths.* ✓

P. RECOMMENDATIONS

I recommend that serious consideration be given to the concept of shifting dune type structures in an area of sandy bottom exposed to the sea and possible strong current action. If this idea is accepted it could save much time, work, and worry in attempting to make junctions fit where the bottom is continually changing. *concur* ✓

Q. REFERENCES TO REPORTS

Tide Note  
Electronic Control Report  
Velocity and Fathometer Corrections Report ✓



APPROVAL SHEET

Submitted by:

*A.E. Theberge Jr.*

A.E. Theberge, Jr.  
LT., NOAA

Supervision of field and office work on this hydrographic survey was continuous on a day to day basis to insure completeness of the survey and that the survey work done was in accordance with the instructions.

Approved/Forwarded:

*Jeffrey G. Carlen*  
Jeffrey G. Carlen  
CDR, NOAA

Commanding Officer, NOAA Ship WHITING

1/17/74

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

✓

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): Savannah Beach  
Savannah Light  
Edisto Beach

Period: 31 May - 1 Oct 1973

HYDROGRAPHIC SHEET: H-9211, H-9314, H-9197, H-9144 and H-9145

OPR: 436

Locality: Coast of South Carolina and Georgia

Plane of reference (mean ~~lower~~ low water):

Height of Mean High Water above Plane of Reference is


Remarks:

Station	Greenwich Intervals		Mean Range (ft)	MLW Datum (ft)
	HW	LW(hrs)		
Savannah Beach	12.55	6.63	6.6	1.7
Savannah Light	12.44	6.34	6.6	1.6 (Digital gage)(July) 8.9 (Marigram)
Edisto Beach	12.50	6.22	6.0	2.4

Zoning: Use automated zoning for the above Hydro Sheets.

Note: Savannah Beach - subtract 0.4 ft. from May 1973 hourly heights.

The difference between intervals represents the approximate time difference between the occurrence of high water or low water at the tide station.

  
Chief, Tides Division

NOAA FORM 76-155 (11-72)		U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION		SURVEY NUMBER H-9145					
GEOGRAPHIC NAMES									
Name on Survey	A ON CHART NO.	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND McNALLY ATLAS	H U.S. LIGHT LIST	K
Atlantic Ocean									1
TYBEE ROADS (Title only)									2
									3
									4
									5
									6
									7
									8
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									24
									25

Approved by  
*C. E. Harrington*  
 Staff Geographer  
 1 Oct. 1974 & 9-27-78

ATLANTIC MARINE CENTER  
APPROVAL SHEET  
FOR  
AUTOMATED SURVEY H- 9145

- A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position printout has/~~has not~~ been made. A new final sounding printout has/~~has not~~ been made.

Date: June 3, 1974

Signed: William L. Jenne  
William L. Jenne  
Title: Chief, Verification Branch

- B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Hydrographic and AMC Manuals. Exceptions are listed in the verifier's report.

Date: June 3, 1974

Signed: C. Dale North Jr.  
C. Dale North Jr. LCDR. NOAA  
Title: Chief, Processing Division

Fig. 19.

FORM C&GS-946 (REV. 11-68) (PRESC. BY HYDROGRAPHIC MANUAL 20-2, 8-64, 7-13)		U.S. DEPARTMENT OF COMMERCE ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION COAST AND GEODETIC SURVEY NAUTICAL CHART DIVISION			
<b>HYDROGRAPHIC SURVEY STATISTICS</b> HYDROGRAPHIC SURVEY NO. <u>H-9145</u> (WH 40-2-73) OPR 436					
RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.					
RECORD DESCRIPTION		AMOUNT		RECORD DESCRIPTION	
SMOOTH SHEET & PNO		1 ✓		BOAT SHEETS	
DESCRIPTIVE REPORT		1 ✓		OVERLAYS	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS
ENVELOPES	<del>2</del>		1		
CANISERS	2 ✓		1		
VOLUMES	0 ✓				
BOXES			3 ✓		
T-SHEET PRINTS (List)					
SPECIAL REPORTS (List)					
<b>OFFICE PROCESSING ACTIVITIES</b> The following statistics will be submitted with the cartographer's report on the survey					
PROCESSING ACTIVITY	AMOUNTS				
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS	
POSITIONS ON SHEET				5308	
POSITIONS CHECKED		150	115	265	
POSITIONS REVISED	57	45	—		
DEPTH SOUNDINGS REVISED		200	141		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		0			
Depth soundings added SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		na	—		
TIME (MANHOURS)					
TOPOGRAPHIC DETAILS		NA	—		
JUNCTIONS		10			
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		50			
SPECIAL ADJUSTMENTS		20			
ALL OTHER WORK		142			
TOTALS		222	198	420	
PRE-VERIFICATION BY		BEGINNING DATE	ENDING DATE		
D.C. Calland, W.H. Guy, L.G. Cram		12/4/73	1/9/74		
VERIFICATION BY		BEGINNING DATE	ENDING DATE		
Dorothy C. Calland		5/15/74	5/29/74		
REVIEW BY		BEGINNING DATE	ENDING DATE		
DE Neumann & F. Saulsbury		9/29/75	11/4/75		
C. Inspect. - F.P. SAULSBURY		10/16/76			
Cartons 8 hr 7/13/78					

REGISTRY NO. H-9145

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey, the following shall be completed:

CARDS CORRECTED

DATE \_\_\_\_\_ TIME REQUIRED \_\_\_\_\_ INITIALS \_\_\_\_\_

REMARKS:

REGISTRY NO. \_\_\_\_\_

The magnetic tape containing the data for this survey has not been corrected to reflect the changes made during evaluation and review.

When the magnetic tape has been updated to reflect the final results of the survey, the following shall be completed:

MAGNETIC TAPE CORRECTED

DATE \_\_\_\_\_ TIME REQUIRED \_\_\_\_\_ INITIALS \_\_\_\_\_

REMARKS:

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Verifier: W. H. Guy

Jan. 24, 1974  
Norfolk, Va. ✓

Note To EDP (AMC)  
Survey H-9145 (WH-40-2-73)

This Office has completed Verification of this Position Overlay for this Survey.

Point of Origin was changed to have a smaller sounding Overlay Sheet. Form CAM3-1 is attached.

There are 57 Positions Deleted by Field.

There are 15 Positions Deleted by Verification Branch.

There are about 30 Records to be Plotted on Time and Course.

DP Aid to Navigation to be Inserted.

Origination of Soundings are to be <sup>45</sup>~~15~~ Degrees.

After the needed changes have been made, Please furnish this Office with a Sounding Overlay and Printout.

Cards have been Punched and are attached.

*W. E. Jonns*  
W. E. Jonns  
Chief Verification Branch

Verifier: R. Cram

12 February 1974

VERIFICATION NOTE TO EDP (AMC)

Survey H-9145 (WH-40-2-73) OPR-436

This office has completed the verification of the sounding corrections.

All needed changes are shown in red pencil on the preliminary corrector check printout. Cards were key-punched by personnel of this branch and accompany this note. There are about 157 changes needed these are broken down and listed below by record number.

Sounding Change	TRA Change	Tide Change
2461	19603 - 19626 ✓	15721 ✓
29249 - 29296	23837 - 23858 ✓	
	28825 - 28840 ✓	

The tides appear in error from record # 29249 thru 29296, the soundings were field entered as 0.0. This problem was resolved by changing the depth to miss as these are bottom samples and the depth was not needed.

RGC

William L. Jonns  
*William L. Jonns*  
Chief, Verification Branch



Verifier: R. Cram

23 April 1974

VERIFICATION NOTE TO EDP (AMC)

Survey H-9145 (WH-40-2-73 OPR-436

This branch has completed the verification of the sounding overlay.

All needed changes are shown in red pencil on the preliminary sounding printout. There are about 300 excess soundings. On day 263 a problem with crossline agreement was found. It is believed to be due to erratic sea-fix control for that day. No sawtooth records are available for this survey and the problem was solved only to the extent that the bad areas were exceeded to level 3. There are about 100 changes in depth one of which involves a TRA error by the field. It occurred on day 254 and covered an area of 12 positions (3301-3312). *may be sound*

Cards were key-punched for all changes by this office and accompany this note.

Please furnish this office with a smooth sheet and new excess level 1 with sounding plotted at 45 rotation.

William L. Jonns

*William L. Jonns*

Chief, Verification Branch

ATLANTIC MARINE CENTER  
VERIFICATION NOTE

SURVEY H-9145

GENERAL

This appears to be an excellent basic survey. Soundings are in good agreement at crossings and depth curves form normal patterns in this lumpy and irregular bottom.

On Julian Day 263 there was a problem with sounding agreement at the crosslines. This office is unable to explain the reason for this disagreement of 3 to 5 ft., therefore, the lines of disagreement were not plotted on the smooth sheet. These lines were plotted on an overlay to accompany the survey. *These discrepancies resolved in rescanning during review.*

This and other problems are discussed within the enclosed "Plotter Notes".

Norfolk, Virginia  
June 3, 1974

*William L. Johns*  
William L. Johns  
Chief, Verification Branch, AMC

OFFICE OF MARINE SURVEYS AND MAPS

MARINE SURVEYS DIVISION

MODIFIED HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-9145

FIELD NO. WH-40-2-73

Georgia - South Carolina, Savannah, Georgia, Off Tybee Roads

SURVEYED: September 5 - October 2, 1973

SCALE: 1:40,000

PROJECT NO.: OPR-436

SOUNDINGS: 5000 Fineline Depth Recorders

CONTROL: Sea Fix, Hyperbolic  
Mode

Chief of Party .....	J. G. Carlen
Surveyed by .....	J. C. Veselenak
.....	A. E. Theberge
.....	B. B. Meyers
.....	G. J. Decker
.....	R. D. Polvi
.....	M. C. McMillan
.....	E. Gastaldo
.....	W. A. Hill
Soundings Plotted by .....	Calcomp - AMC
Verified and Inked by .....	D. C. Calland
Reviewed by .....	D. E. Neumann
	Date: November 1975
Inspected by .....	F. P. Saulsbury

1. Control and Shoreline

The source of control is adequately described in part F of the Descriptive Report.

This offshore survey has no shoreline within its limits.

2. Hydrography

a. Depths at crossings are in good agreement.

b. The usual depth curves are adequately delineated. Several supplemental brown curves were added to delineate sand ridges and to emphasize shoal depths.

c. The development of bottom configuration and investigation of least depths are considered adequate. However, in the vicinity of

latitude 32°04', longitude 80°38', the verification of least depths by lead line would have been desirable.

### 3. Condition of Survey

The field work, various sounding printouts, smooth plotting, and Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual supplemented by the Instruction Manual - Automated Hydrographic Surveys except for the following:

a. Check scanning of the fathograms in review, to ascertain least depths over shoals, resulted in the revision of several "least depths" to shoaler depths. Rescanning also resolved discrepancies at crossings, where deep soundings had been excessed.

b. Lead line-fathogram comparisons on Julian days 274 and 275 were not adequately annotated.

c. No lead line or drift soundings were taken to verify least depths on shoals.

d. Soundings were reentered on the smooth sheet in review to fill in holidays created by undue excessing of soundings on Julian day 263.

e. Several depths curves were revised or added in review.

### 4. Junctions

The junctions with H-9314 and H-9363 of 1973 on the north, H-9198 (1971-72) on the northeast, H-9299 (1972) on the south and southeast, and H-9144 (1973) on the west are discussed in the reviews of those surveys.

### 5. Comparison with Prior Surveys

a.	H-622	(1857)	1:200,000
	H-717	(1858)	1:300,000
	H-728	(1860-1906)	1:300,000
	H-768	(1860)	1:500,000
	H-966	(1866)	1: 40,000

Since these early surveys no longer serve as a source of charted soundings, within the area of the present survey, they are not discussed in the review.

b.	H-5134	(1931)	1: 40,000
	H-3983	(1916-17)	1: 80,000
	H-3926	(1915-16)	1: 80,000
	H-3560	(1912-13)	1:100,000
	H-3561	(1912-13)	1: 50,000
	H-3549	(1910-13)	1:400,000

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A comparison of present survey depths with prior survey depths reveals change in the location of shoals and deeps and in general depths. Differences of 7 to 8 feet over features are common. Some change in depth is noted in the vicinity of latitude  $32^{\circ}01.6'$ , longitude  $80^{\circ}37.7'$  where a shoal on H-3983 with a least depth of 35 feet has shifted southeastward approximately 800 meters and has deepened to least depths of 42 feet on the present survey. Similarly a shoal with a least depth of 39 feet on H-3560 in latitude  $31^{\circ}55.4'$ , longitude  $80^{\circ}28.1'$  has shifted southward approximately 1 mile and is shown with a least depth of 46 feet on the present survey. These changes may be attributed to the effect of strong bottom currents on an unconsolidated sandy bottom with resultant migration of shoals and deeps.

With the addition of two soundings carried forward from H-5134, the present survey is adequate to supersede the prior surveys within the common area.

c. F.E. No. 1 1975 W.D. 1:20,000 (Surveyed in February-March 1973)  
(Unreviewed)

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Effective wire-drag depths are in harmony with present survey depths except in latitude  $31^{\circ}54.53'$ , longitude  $80^{\circ}37.4'$  where a 40-foot sounding falls in an area formerly cleared by a 41-foot drag. This difference may be due to inaccurate information regarding lift or tide correctors.

6. Comparison with Chart 11516 (C&GS 571), 19th Ed., November 2, 1974  
11513 (C&GS 1240), 12th Ed., November 23, 1974  
11480 (C&GS 1111), 18th Ed., November 2, 1974

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a. Hydrography

The charted hydrography originates with the previously discussed prior surveys which need no further consideration, supplemented by partial application of the boat sheets and verified smooth sheet of the present survey and with other miscellaneous sources.

Attention is directed to the following:

(1) The 46- and 51-foot soundings, charted from the boat sheet of H-9145 at latitude  $31^{\circ}58.9'$ , longitude  $80^{\circ}25.5'$  and latitude  $31^{\circ}59.5'$ , longitude  $80^{\circ}27.6'$  respectively, were erroneously plotted on the boat sheet and should be deleted from the chart.

(2) The 1 1/2 fathoms rep wreck PD, charted at latitude  $31^{\circ}54.0'$ , longitude  $80^{\circ}37.4'$  from Notice to Mariners 6, 1967, is disproved by F.E. No. 1 1975 Wire Drag (surveyed in February-March 1973).

(3) Refer to paragraph J of the Descriptive Report for additional discussion of Presurvey Review items.

The present survey is adequate to supersede the charted information.

b. Aids to Navigation

The unnumbered black-and-white nun bouy located at latitude 32°01.8', longitude 80°36.1' on the present survey has subsequently been deleted from chart 11513 by authority of LNM 47 of 1973. There are no other aids to navigation on the present survey.

7. Compliance with Instructions

This survey adequately complies with the project instructions except for the following:


- a. Limits of tide zones were not indicated in the records nor on the boat sheets.
- b. Sounding lines were not run along the axis of contoured sand ridges.

8. Additional Field Work

This is a very good basic survey and no additional field work is recommended.

Examined and Approved:

  
Chief  
Marine Surveys Division

  
Associate Director  
Office of Marine Surveys  
and Maps

- 80° 00' ✓

