9198

DIAG. CHT. NO.1001-3 & 1240-3

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. HSI-40-1-71 Office No. H-9198
LOCALITY
State SOUTH CAROLINA General Locality . ST. HELENA ISLAND. Locality OFF ST. HELENA SOUND
19 71 -72 CHIEF OF PARTY E. K. McCaffrey, B. I. Williams, D. North
LIBRARY & ARCHIVES DATE 4/15/71

☆U.S. GOVERNMENT PRINTING OFFICE: 1974-763-098

Descriptive Report

To Accompany

 ${\tt Hydrographic~Survey~HSL-40-1-71}$

Registry Number H-9198

OPR-436-MI-71

(Coast of South Carolina and Georgia)

1971 Field Season

NOAA Ship MT MITCHELL (MSS-22)

Edwin K. McCaffrey CAPT, NOAA Commanding Officer

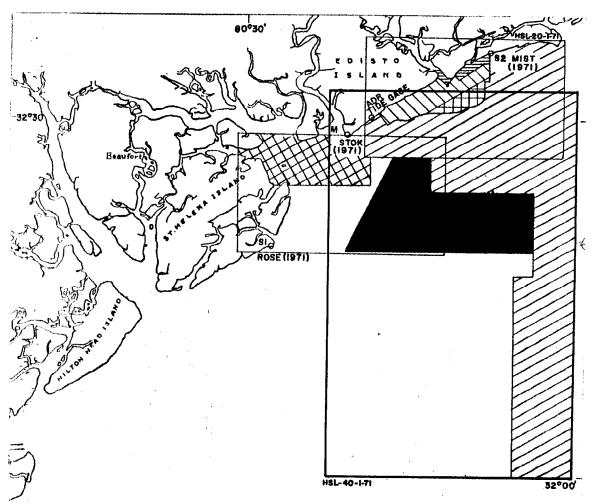
	C9 CC 527
URM	C&GS-537

U.S. DEPARTMENT OF COMMERCE REGISTER NO. ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

H-9198

	Hydrographic Sheet should be accompanied by this form, as possible, when the sheet is forwarded to the Office.
State	South Carolina
General locality	Edista Taland St. Helena Island
Locality	Entrance to North Edicto River OH St. Helena Sound See also title sheet for 1972.
Scale	1:40,000 Date of survey Aug. 2 to Sep. 10, 1971
Instructions dated_	July 9, 1971 Project No. OPR-436-MI-71
Vessel	NOAA Ship MT MITCHELL (MSS-22)
Chief of party	Edwin K. McCaffrey, CAPT, NOAA, Commanding Officer LCDR C.W. Fisher, LT J. Wallace, LT C.L. Hardt, LTJG S.C.
Surveyed by	Schwartz, LTJG S. McGee Jr., LTJG G. Bass, LTJG S.L. Wood.
Soundings taken by	ENS G.L. Sundin, ENS G.M. Adair, ENS M.F. Kolesar echo sounder, band tend publications
Graphic record scal	ed by Ship Personnel
Graphic record chec	ked by
Protracted by	Automated plot by AMC - Calcomp Plotter 6
Soundings penciled	bv
	by
	hans feet at MLW MEKW
REMARKS: Incl Sect (Ove 253. lay Usir mark scal Pre-	



SAVANNAH LIGHT

0 777 200 L.N.M. SOUNDING LINE, SHIP

NANSEN CAST

LEGEND

JUL AUG SEP

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70

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<u>- i 3</u>

0

PROGRESS SKETCH OPR-436-MI-71

Coast of South Carolina and Georgia Hydrographic Operations Jul-Aug-Sep 1971

NOAA Ship MT MITCHELL (MSS-22) 2.3 L.N.M. SOUNDING LINE, LAUNCH (BERTRAMS) Edwin K. McCaffrey, CAPT, NOAA, Com'd'g. Scale of CBGS Chart IIII

32 L.N.M. SOUNDING LINE, LAUNCH (UNIFLITE) Q HYDROGRAPHIC SIGNALS ERECTED HYDROGRAPHIC SIGNALS RE-BUILT East Coast Field Party 1956 Survey HYDRÓGRAPHIC SIGNALS RE-DRESSED

High Speed Launch & PEIRCE 1971 Surveys MT MITCHELL July -71

MT MITCHELL" August -7/ MT MITCHELL - September - 7/

BOTTOM SAMPLE (GRAB)

80°30'

Descriptive Report

To Accompany

Hydrographic Survey HSL-40-1-71

Registry Number H-9198(1971-72)

OPR-436-MI-71

(Coast of South Carolina and Georgia)

1971 Field Season

Scale 1:40,000

NOAA Ship MT MITCHELL (MSS-22)

Edwin K. McCaffrey CAPT, NOAA Commanding Officer

A. FROJECT

The survey was accomplished as part of Project OPR-436-MI-71 in accordance with the project instructions dated 9 July 1971.

B. AREA SURVEYED

The survey work accomplished by the Ship MT MITCHELL was conducted between 2 August 1971 and 10 September 1971 off the south coast of South Carolina, south of Charleston Harbor.

The survey work done by the ship comprises 977.6 nautical miles of sounding lines covering an area 92.5 square nautical miles. The limits of the survey compose a six-sided figure as can be seen on the progress sketch found in this report. The western limit of the survey approximates the 30 foot curve. The extreme northern limit is Latitude 32°28'30"N. The extreme eastern limit is Longitude 80°01'30"W. The southern limit of the sheet was "squared-off" at Latitude 32°19'00"N. The survey work junctions with prior surveys H-8477 (1956) on the

northern extremities of the western limits, and H-8871 (1965) on the eastern limit. The survey junctions with contemporary surveys H-9196 on the extreme northern limits of the sheet, and H-9198 (work done by the High Speed Launch 1257 in 1971) along Latitude 32°24'00"N. and along Longitude 80°12'00"W.

C. SOUNDING VESSEL

Hydrography done on this boatsheet was accomplished by NOAA Ship MT MITCHELL (MSS-22). The ship carried on board a Digital Equipment Corporation PDP-8/E computer and used the HYDRO-PLOT System with a COMPLOT PP3-5 roll plotter.

D. SOUNDING EQUIPMENT

Soundings obtained were recorded in feet (digitized to the nearest 0.1 foot) using a Raytheon Survey Fathometer, Model DE-723D (digital), Serial Number 37010. The ship's skeg (aft) transducer was used exclusively.

Velocity corrections were determined from measurements obtained with a Nansen cast near the project area. A copy of the Abstract of Velocity Corrections is included in this report. The required graphs and abstracts are included in the report "Corrections to Echo Soundings" for the project.

Settlement and Squat correctors were obtained from data gathered on 8 October 1969 for Standard Speed (175 RPM, 10' Pitch) and Half Speed (105 RPM, 10' Pitch) using the skeg transducer. Since the variation between these two speeds amounts to a difference in correctors of 0.7 of a foot, linear interpolation between the two values was used to determine correctors for intermediate speeds.

A 14.0 foot draft corrector was applied to the soundings plotted on-line, and appears in the corrector word on the Hyperbolic Master Tape. Several observations during the course of the work indicated that the draft aft (where the transducer is mounted) deviated slightly from the 14.0' and these deviations are included in the TRA correctors on the Electronic Corrector Tape.

Two vertical cast comparisons with the depth recorder were taken in calm water in the vicinity of the project area on 10 September 1971. The information from these comparisons, taking into account velocity corrections, resulted in an instrument error of +0.4 feet.

Soundings entered on the Hyperbolic Master Tape are taken directly from the digital depth interface which has the initial set electronically to 0.0 feet. When comparing analog and digital depths, initial drift (from 0.0 feet) must be taken into consideration. Soundings on the graphic record were scanned and corrected for initial drift error during the scanning procedure. These soundings were then compared with the Hyperbolic Master Tape printout for entry on the Electronic Corrector Tape.

Frequent checks for A-F Scale comparison, stylus arm alignment, MRV, speed count, digital-analog readings of depths and navigation interface for Hi-Fix were made. The initial on the depth recorder trace was checked periodically and maintained at 0.0 feet.

The Instrument Error, Settlement and Squat corrections, and deviations from 14.0' draft, are combined into a TRA correction and appear on the Electronic Corrector Tape. The 14.0' draft correction appears on the Hyperbolic Master Tape.

The fathograms were scanned by trained personnel and spot checks were made by the Officer in Charge to verify that the scanning procedure was done correctly as per requirements specified in Paragraphs 1-34, 5-121, and 5-122 of the Hydrographic Manual (Publication 20-2).

The fathogram scanning is deemed adequate for this survey.

E. SMOOTH SHEET

The smooth sheet for this project will be produced by the Atlantic Marine Center, Norfolk, Virginia.

The following tapes with respective printouts were furnished to the Atlantic Marine Center to construct the smooth sheet:

- 1. Hyperbolic Master Tape: produced on-line by the HYDRO-PLOT System. Data on this tape consists of predicted tide correctors; ship's draft corrector (14.0'); Hi-Fix lane correctors used exclusively for the on-line plot; raw soundings; and raw Hi-Fix lane readings associated with the soundings.
- 2. Electronic Corrector Tape: prepared on board. Data on this tape consists of an indicator defining the rotation of the plotted soundings; TRA correctors; Hi-Fix

correctors to be used in the off-line plot; corrected soundings, insert soundings which are plotted on time and course; and regular soundings which are to be plotted on time and course.

- 3. Unverified Observed Tides Tape: prepared on board from observed tides data gathered from the Edisto Beach tide gage. Smooth tides have been requested from the Tides Section, Rockville.
- 4. <u>Velocity Corrector Tape</u>: prepared on board from Nansen cast data.
- 5. TC/TI Tape: prepared on board.
- 6. ASCII Signal Tape: prepared on board.

F. CONTROL

Hi-Fix, operating at a frequency of 1618.650 KHz, was used in the hyperbolic mode for position control during all operations. The Hi-Fix shore stations were:

Master Shore Station (STOK, 1971) Latitude 32°28'39"688N., unodj.
Longitude 80°20'07"565W.

Slave 1 Shore Station(ROSE, 1971) Latitude 32°19'21"894N., unodj.
Longitude 80°27'14"800W.

Slave 2 Shore Station(MIST, 1971) Latitude 32°35'47"693N., unadj. Longitude 80°06'15"193W.

The shore stations are all recoverable Topographic Stations.

The Hi-Fix was calibrated at the beginning of each day. Calibrations were effected at the end of the day when possible. The Hi-Fix corrections were averaged from the two calibrations, and appear on the Electronic Corrector Tape for each day's operation. An Abstract of Hi-Fix Lane correctors is included with this report.

Calibration was accomplished by observing a 3-point visual sextant fix with check angle off-shore of Edisto Island, South Carolina and simultaneously recording the Hi-Fix receiver dial values. The true Hi-Fix lane values were then computed from the visual fix using the H/R CALIBRATION PROGRAM (AM560). The

observed lane values subtracted from the computed lane values yielded the Hi-Fix correction. A list of the signals used for calibration is included in this report.

G. SHORELINE

There is no shoreline in the limits of this survey.

H. CROSSLINES

The crosslines compared excellently with the system of regular sounding lines.

I. JUNCTIONS

SEE REVIEW ...

Prior survey H-8477 (1956) junctions with a small portion of the northwest of the sheet in the vicinity of Latitude 32°27' 30"N., Longitude 80°15'30"W. The soundings obtained during this survey compare fairly well with H-8477.

Prior survey H-8871 (1965) junctions with the eastern edge of the boatsheet along Longitude 80°02'00"W. Soundings on boatsheet appear to be a constant 2 feet deeper than soundings on H-8871.

Contemporary survey H-9196 (work done by the High Speed Launch in 1971) junctions with the north edge of the boatsheet along Latitude 32°28'00"N. Soundings on the boatsheet are a constant 1 foot deeper than on the contemporary survey.

Contemporary survey H-9198 (work done by the High Speed Launch, 1971) junctions with the boatsheet along Latitude 32°24'00"N. and along Longitude 80°12'00"W. Soundings on the boatsheet compare fairly well with a few exceptions in areas where the boatsheet soundings are 1' - 2' deeper than corresponding soundings of the High Speed Launch.

These discrepancies may be due to plotting the boatsheet using velocity corrections and unverified observed tides, rather than predicted tides.

J. COMPARISON WITH PRIOR SURVEYS See Review

Soundings on the boatsheet compare very well with the soundings on prior survey H-3926 (1916).

Κ. COMPARISON WITH CHARTS

- Final smooth The boatsheet compares favorably with soundings from C&GS Chart 1239, 9th Edition; C&GS Chart 1240, 9th Edition; and with least C&GS Chart 793, 5th Edition. The boatsheet depicts a 30 foot depth of shoal area not shown on C&GS Chart 1239. The shoal area is 28' in the vicinity of Latitude 32°24'30"N., Longitude 80°12'00"W.

 It is recommended that the 30 foot shoal area be charted. Concur D/H 4'25'15 Sheet least
- Development #1 is of the 27' Pre-Survey Review Item Latitude 32°22'02"N., Longitude 80°10'41"W. The development revealed a shoalest depth of 27.8' (near Position 2198) after reduction Jeph of for TRA, draft, unverified observed tides and velocity. It is 25' recommended that no change be made to C&GS Charts 1239 and 793 at this position. recommend 25' sdg be charted
- Development #2 showed a least depth of 29' at Latitude 32°26' 52"N., Longitude 80°13'52"W. (near Position 2212). Sounding is corrected for TRA, draft, unverified observed tides, and velocity. This is not considered a new hazard to navigation.
- 4. Development #3 conducted in the area of Latitude 32°24'00"N., Longitude 80°13'00"W. was not completed. The shoalest sounding in the area of the projected development was 28' found at Latitude 32°24'30"N., Longitude 80°11'50"W. in work done by recommend 28' sdg be charted (this is the same least depth sounding found in item (1) of this para) the High Speed Launch.

L. ADEQUACY OF SURVEY

With the exception noted in Section P, this survey is complete and adequate to supersede previous surveys of the area.

Μ. AIDS TO NAVIGATION

None.

N. STATISTICS

Nautical miles of regular sounding lines Nautical miles of crosslines Total nautical miles of sounding lines Square nautical miles developments Square nautical miles surveyed	908.0 69.6 977.6 2.0 92.5
Position numbers used	1,242
Position numbers rejected	3
Percentage crosslines	7.7
Bottom samples	12

O. MISCELLANEOUS

All times used were Greenwich Mean Time.

A Fischer & Porter (Punched Tape) Tide Gage (Serial Number C301A4338M12) was installed at Collin's Pavilion, Edisto Beach, Edisto Island, South Carolina, and tide staff connected to levels by ship personnel. Due to the fact that the tidal range in the survey area was in excess of 7 feet, and a considerable portion of the work done was when tides were reported to be unusually high, unverified observed heights of tide were used to obtain a final plot of the soundings on the boatsheet submitted to the Atlantic Marine Center, and are included in this report.

Bottom samples were obtained using a clamshell type sampler, with 6 ounce capacity, attached to a 14 pound sounding lead. The samples were air mailed to Dr. J. W. Pierce, Division of Sedimentology, Smithsonian Institute as per directive in the project instructions. The samples were double-bagged in plastic bags. A sample label was completed and placed between the two plastic bags. Copies of C&GS Form 733M "Log Sheet M" were completed and forwarded with the samples along with a copy of the "Abbreviations and Symbols" page from the Nautical Chart Manual. A copy of the log sheet is included in this report. The log sheet also shows, with prescribed information, the Position Number assigned each sample. The depths associated with the bottom samples were obtained using the echo sounder with the ship dead in the water. These soundings and Hi-Fix readings, for the samples, are on the Hyperbolic Master Tape.

Using the HYDROPLOT System, every sounding is a position fix. The Hi-Fix dials, however, may occasionally spin due to strong atmospheric disturbances; and so soundings that were obtained at the same time the Hi-Fix dials spun are plotted on the basis of time and course. These soundings have an indicator of "3" on the Electronic Corrector Tape and will be plotted on time and course using an off-line plotting program. Insert soundings appear on the Electronic Corrector Tape and are also plotted on time and course.

A double trace on the graphic record appears when the digital depth interface is correctly digitizing the soundings. The true analog depth is the shoaler of the two traces. A dark single trace appears on the graphic record when the digital interface is not gating and digitizing the depth properly. It is this single trace that was scanned and entered on the Electronic Corrector Tape for the soundings not digitized

by the interface. The on-line system interjects a "LJ" on the Hyperbolic Master Tape printout when there exists a possible lane jump of the Hi-Fix. This "LJ" is not indicative of a confirmed lane jump and does not appear on the Hyperbolic Master Tape.

P. RECOMMENDATIONS

not recommended

It is recommended that a development be scheduled for the 28' shoal area found at Latitude 32°24'30"N., Longitude 80°11'50"W. to find the least depth. (See Section K, Sub-Paragraph Development #3 on Page 6 of this report).

Q. REFERENCE TO REPORTS

The 1971 Field Season reports listed below should be used as reference for a complete evaluation of this survey:

Report On Calibration of Hi-Fix (OPR-436-MI-71)
Report on Corrections to Echo Soundings (OPR-436-MI-71)
Report on HYDROPLOT & HYDROLOG System, NOAA Ship MT
MITCHELL, 1971
Descriptive Report, HSL-40-1-71 (High Speed Launch)
Registry Number H-9198

Respectfully Submitted:

Gregory R. Bass LTJG, NOAA

Approved and Forwarded:

Edwin K. McCaffrey

CAPT, NOAA

Commanding Officer

(8

Approval Sheet

Field Number HSL-40-1-71

Registry Number H-9198 (1971-72)

The field work and processing of data from this hydrographic survey was under my immediate daily supervision. The boatsheets and all records have been reviewed and are approved by me. This survey is complete and adequate to supersede all prior surveys of the area.

Edwin K. McCaffrey CAPT, NOAA

Commanding Officer

Actual Times of Hydrography

(Bracketed on Tides: Hourly Heights Forms)

Boatsheet HSL-20-1-71 and HSL-40-1-71 (H-9196) (H-9198)

Greenwich Mean Time

Date (1971)	Julian Day	From	<u>To</u>
Jul. 26 Jul. 27 Jul. 28 Jul. 29 Aug. 2 Aug. 3 Aug. 4 Aug. 12 Aug. 13 Aug. 14 Aug. 16 Aug. 17 Aug. 18 Aug. 16 Aug. 17 Aug. 18 Aug. 19 Aug. 20 Aug. 28 Aug. 29 Aug. 30 Aug. 31 Sep. 27 Sep. 7 Sep. 7 Sep. 9 Sep. 10	207 208 209 210 2115 215 217 217 217 217 217 217 217 217 217 217	143900 130200 135500 133000 132502 134400 144015 132315 044523 173200 212300 000200 000000 144900 000000 000000 000000 152031 131620 132849 135349 000000 141400 125630 000000	185830 193827 195030 134315 185945 194315 185415 194250 200600 230600 235900 002100 235959 235959 235959 235959 235959 193204 143851 200111 235959 192915 183300 190000 145100 235900 193730
Sep. 13	256	142500	151400

Descriptive Tide Note

HSL-20-1-71 and HSL-40-1-71 (H-9196) (H-9198)

A portable tide gage was located on the fishing pier at Collins Pavilion at Edisto Beach, South Carolina (Latitude 31°30'07"N. Longitude 80°17'44"W.) to provide tide data during the NOAA Ship MT MITCHELL's 1971 hydrographic operations on Project OPR-436-MI-71. The data was recorded in binary format on a punched paper tape by a Fischer & Porter ADR Tide Gage so that there was no field marigram. All tide records employed Greenwich Mean Time.

The Standard Tide Gage at Fort Pulaski, Georgia, was the basic control station, and prior to commencing hydrographic field operations Mr. Curtis G. Tootle, (tide gage tender), was contacted to determine that the gage was operational.

During hydrographic operations, predicted tides proved unsatisfactory, primarily due to storm surge. Ship's personnel applied unverified observed tides, from the Edisto Beach Tide Gage, and more satisfactory results were obtained. Since a Mean Low Water datum, based on the records, was not available at this time from the Tides Section, National Ocean Survey, Mean Low Water on the tide staff was calculated as follows:

- 1. Bench Mark 4 (1965), which is also PAVILION, 1963, has an established elevation of 13.75 feet above MLW.
- 2. The vertical distance from the zero on the tide staff was measured, compared to the elevation of PAVILION, 1963 and the height on the tide staff corresponding to datum Mean Low Water was calculated to be 4.27 feet.

Hourly tidal heights were tabulated from the ADR gage binary tapes, the unverified datum was applied, and the resultant tidal heights were called unverified observed tides. These hourly observed tidal heights were used to produce unverified tide correctors which were applied to all soundings.

No corrections for tidal lag or range differences were applied since the working grounds were in the immediate vicinity of the tide gage. The maximum tide range, as taken from the tabulated hourly heights, was 8.80 feet.

ATLANTIC MARINE CENTER

TIDE NOTE

1.	Project No: OPR-	436	2. Vessel	/Field Unit	: NOAA Ship	MT MITCHELL			
3.	Year: 1971	4	4. Meridi	an Time Zon	e: <u>Greenwic</u>	h Mean Time			
5.	Tide Station Name	∍: Edi	sto Beach,	Edisto Isla	nd, South Ca	arolina			
6.	Position: Lat.	31				°17.7'W.			
7.	Plane of Reference feet on the tide	-	<i>~</i>		orresponds furnished(
8.	Hourly Heights:		Standard Gav Unverified	uge, furnis	hed from Ro	ckville.			
		1 2			field/maxi inary Tape	XXNXX			
9.	Tidal Zoning:		Not applical	ble.	•				
	By two or more gauges automatically zoned. By applying tidal differences and constants for the area(s): a.								
		•							
			HETC	3HT	HETGHT	RATIO			
	TIME (Hour, Minute	e)	HEIO (Feo	et)		licable)			
	TIME		(Fe	et)	HEIGHT (If App High Water	licable)			
	TIME (Hour, Minute		(Fe	et)	(If App	licable)			
	TIME (Hour, Minute		(Fe	et)	(If App	licable)			
	TIME (Hour, Minute	Vater	(Fe	et)	(If App	licable)			
. 114	TIME (Hour, Minute	vater b.	(Fe	et) Low Water	(If App High Water	Low Water			
	TIME (Hour, Minute High Water Low W	b.	(Fed High Water	et) Low Water GHT et)	(If App High Water	Low Water RATIO licable)			
	(Hour, Minute High Water Low W	b.	(Fee	et) Low Water GHT et)	(If App High Water HEIGHT (If App	Low Water RATIO licable)			
	(Hour, Minute High Water Low W	b.	(Fee High Water HEIG (Fee High Water	CHT et) Low Water SHT et) Low Water itional are	HEIGHT (If App High Water as on separ	RATIO licable) Low Water RATIO licable) Low Water			
10.	High Water Low W (Hour, Minute High Water Low W Werified Remarks: Tides Se	b. b. d tide ection	(Fee High Water HEIG (Fee High Water Include add datum and (National	Et) Low Water GHT et) Low Water itional are smooth tide Ocean Surve	HEIGHT (If App High Water App High Water as on separas were reques	RATIO licable) Low Water RATIO licable) Low Water ate sheet(s) ested from not avail-			

ATLANTIC MARINE CENTER

ELECTRONIC CONTROL PARAMETERS

1.	Project # OPR-436 2. Reg. # H-9198 3. Field #HSL-40-1-71
4.	Type of Control: Hi-Fix (Hi-Fix, Raydist, EPI, etc.)
5.	Frequency 1618.650 KH_{Z} (for conversion of electronic lanes to meters
6.	Mode of Operation (check one):
	Range-Range Range-Visual
	Range One (R_1) Lat. $"$ " Station I.D. Long. $"$ " Range Two (R_2) Lat. $"$ " Station I.D. Long. $"$ "
	Hyperbolic (3-station) A Hyper-Visual
	Slave One Station I.D. ROSE, 1971 Master Station I.D. STOK, 1971 Slave Two Station I.D. MIST, 1971 A sheet Lat. 32 28 29 21,894 Long. 80 20 27 21,894 Long. 80 28 39,688 Lat. 32 35 47.693 Long. 80 06 15.193
7.	Location of Survey:
	Range-Range \square Imagine an observer is standing at R ₁ Station and looking directly at R ₂ (check one):
	Survey area is to observer's Right \blacksquare A= \emptyset
	Survey area is to observer's Left A=1
	Hyperbolic X Looking from survey area toward Master Station:
	Slave One must be to observer's Left;
	Slave Two must be to observer's Right.
8.	This form is submitted as an aid in preparing a boat sheet.
	X This form applies to Ata on this survey.
	This form applies to part of the data on this survey.
	VesselFromToPosition NumbersEDP #TimeDay(inclusive)
	2220 154450 214 072330 253 7000 to 8244 to to
9.	Remarks: This form is submitted in accordance with AGC Menual (19)

ATLANTIC MARINE CENTER

PROJECTION PARAMETERS

POLYCONIC OR MODIFIED TRANSVERSE MERCATOR

1.	Project No.	OPR-463-MI-71 4. Requested By
2.	Reg. No.	H-9198 5. Ship or OfficeNOAA Ship MT MITCHAIL
3.	Field No.	HSL-40-1-71 6. Date Required
	Polyconic [— — — — — — — — — — — — — — — — — — —
8.	Central Meri	dian of Projection 80 ° 14 ' 30 "
9.	Survey Scale	e: 1: 20,000
10.	Size of Shee	et (check one):
	36 x 54	36 x 60 Other X Specify 10 x 9
11.	Sheet Orient	cation (check one):
	$NYX = 1 \begin{bmatrix} 2 \\ 2 \end{bmatrix}$	$NYX = \emptyset$
	<i>V</i> / N	
		N N
	CMER	CMER
12.	Plotter Orig	in: S.W. Corner of Sheet (not necessarily a grid
	Latitude	intersection) 32 0 1 30 "
	Longj.tude	80 ° 12 ' 30 "
13.	G.P.'s of tr	iangulation and/or signals attached
14.	Material Des	ired: Tracing Paper X Mylar
	Smooth Sho Thes Remarks: inse	eet Other Specify the projection parameters are for a 1:20,000 scale out of the 1:40,000 scale survey. Soundings may be ted to tenths of a foot. Refer to "Remarks" of a dydrographic Title Sheet

NOAA SHIP MT MITCHELL (MSS-22)

COMPUTER PARAMETERS

USED IN CONSTRUCTION

OF

BOATSHEET HSL-40-1-71 REGISTRY NUMBER H-9198 (1971-72)

FEST=30000

CLAT=3572000

CMER=80/14/30

GRID=2/O

PLSCL=40000

PLAT=32/17/30

PLON=80/22/30

MLAT=32/28/39.688

MLON=80/20/07.565

S1LAT=32/19/21.894

S1LON=80/27/14.800

S2LAT=32/35/47.693

S2LON=80/06/15.193

Q=1618.65

VESNO=2220

YR=71

OPR-436-MI-71

Coast of South Carolina and Georgia Entrance to North Edisto River

List of Signals

Boatsheet HSL-40-1-71

Registry Number H-9198(1911-72)

```
03.25"
                                                        800
                                                                 11'
                             32°
                                      341
                                             05.11"
               KE12
220
                                                                 11'
                             32°
                                      341
                                             16.02"
                                                        80°
224
               KE19
                                                                 11'
                                                                        26.93"
                             32°
                                      341
                                             22.58"
                                                        80°
               KE17
228
                                             35.32"
56.35"
                                                                 11'
                                                                        42.79"
                             32°
                                      341
                                                        80°
               KE16R
232
                                                                 12'
                                                                        30.14"
                             32°
                                      341
                                                        80°
           N. Edisto R.
236
           Front Range
                                                                 12.
                                             19.91"
                                                        800
                                                                        58.04"
                                      351
          N. Edisto R.
238
         Rear Range
VEAU 1971
CENT 1971
END 1971
EDISTO 1913
                  Range
                                            44.71"
58.87"
                                                                 101
                                                                        20.11"
                                                        80°
                            32°
                                      321
240
                                                                 101
                                                                        39.08"
                                                        80°
244
248
                            32°
                                      321
                                                                        12.15"
                            32°
32°
32°
                                      331
                                                        80°
                                                                 11'
                                             19.20"
                                      34!
                                                                        52.38"
                                             06.07"
                                                        800
                                                                 11'
252
                                             55.18"
                                                                 11'
                                                                        45.60"
                                      33' 33' 33' 33' 32'
                                                        809
              KE15
256
                                             38.19"
                                                        009
                                                                 11'
                                                                        54.43"
                             32°
260
              .KE14
                                            28.27"
23.15"
                            32°
                                                                 121
                                                                        07.24"
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               KE13
264
                                                                        31.78"
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                                                                 12'
                            32°
               KE18
272
                                            23.15"
03.82"
56.38"
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              EF-02R
296
                                                                 13'
14'
                                                                        47.95"
                                                        80°
                                      321
                            32°
             EF-02-AR
300
                                                        80°
                                                                        00.34"
                            32°
                                      321
               EF-03
304
                                                                 141
                                                                        14.74"
                                                        800
                            32°
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               EF-03A
308
                                                                        34.02"
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          FRAMP 1963
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312
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               EP01
320
                                                                        17.96"
31.30"
                             32°
                                      31'
                                            42.18"
                                                        80°
               EPOLA
324
                                                                 151
                                             36.49"
29.37"
                            32°
                                      31'
                                                        80°
328
               EPO2
                                                        80°
                                                                 151
                                                                        40.72"
                             32°
                                      31'
               EPO2A
332
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                            32°
                                      31'
                                             21.45"
                                                        800
                                                                 151
              EPO3
336
                                            13.27"
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                                                                        08.53"
                                                                 161
                             32°
                                      31'
               EPO3A
340
                                                                        20.74"
                            320
                                      31'
                                                        800
                                                                 16'
              EPO4
344
                                                                 161
                            32°
                                             59.64"
                                                                        33.60"
                                      301
                                                        80°
348
               EPO4A
                                             54.56"
46.98"
39.76"
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                                                                 16'
16'
                            32°
                                                                        43.80"
                                      301
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              EPO5
352
                                                                        56.49"
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                             32°
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356
                                                                 17!
                                                                        07.76"
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                                      301
               EPO6
360
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                             32°
                                      301
               EPO6A
364
                                                                        36.86"
38.96"
                                                                 17'
                                             23.49"
                                                        800
                             32°
                                      301
368
              EPO7
                            320
                                                        809
                                                                 171
                                      301
    Lifeguard Stand
```

376 380 384	PPO1 PPO1A PPO2	32° 32° 32°	30' 30' 29'	09.21" 00.90" 53.81"	80° 80°	17' 18' 18'	47.03" 00.18" 11.39"
388 392 E	NEW Edisto Beach State Park	32° 32°	29' 30'	34.16" 41.24"	80°	18' 17'	37.56" 57.63"
396 E	Mater Tank Edisto Beach Mater Co.	32°	291	02.04"	80°	19'	55.70"

ABSTRACT OF POSITION NUMBERS

NOAA SHIP MT MITCHELL

HSL-40-1-71 H-9198 (1971-72)

214	JULIAN DAY	POSITION NUMBERS
266 71060-20152	214 215 216 217 228 229 230 231 232 243	7 7 7000-1052 71053-1106 71107-1182 71183-1286 71287-1363 71364-12579 71580-12656 71657-12808 71809-12961 71962-11968
252 \$2153 \$2176 253 \$2177 \$2244	252	82153 -8 2176

Position Numbers 2099, 2100, and 2183 were not used.

NOAA SHIP MT MITCHELL (MSS-22)

BOATSHEET HSL-40-1-71 REGISTRY NUMBER H-9198 (1971-72)

TRA CORRECTION ABSTRACT

	JUL	DAT	E	FROM	TO	INST.	DRAFT	SETTLEMENT&	TRA
	DAY	197	1	TIME	TIME	corr.	CORR.	SQUAT CORR.	CORR.
;	214	AUG	ø2	154450	194315	+0.4	+0 • 1	+0.8	+1.3
i	215	AUG	ø3	144015	185415	+0.4	+ؕ1	+0 • 8	+1 • 3
1	216	AUG	04	132315	194250	+0•4	+0 • 1	+0 • 8	+1 • 3
1	217	AUG	05	044523	113744	+0•4	+0 • 1	+0 • 8	+1 • 3
				133630	200600	+0 • 4	+0 • 1	+0.8	+1.3
2	828	AUG	16	144900	190100	+0.4	-0.2	+0.8	+1.0
				221315	235959	+0 • 4	-0.2	+0.8	+1.0
2	229	AUG	17	000000	094814	+0-4	-0.2	+0.8	+1.0
				101030	101229	+0.4	-0.2	+0.2	+0-4
				101230	131315	+0-4	-0.2	+0.8	+1.0
				173800	235959	+0-4	-0.2	+0.8	+1.0
2	30	AUG	18	000000	013700	+0-4	-0.2	+0.8	+1.0
				140745	190800	+0 • 4	-0.2	+0•8	+1.0
				223230	235959	+0.4	-0.2	+0•8	+1.0

NOAA SHIP MT MITCHELL (MSS-22)

BOATSHEET HSL-40-1-71 REGISTRY NUMBER H-9198 (1971-72)

TRA CORRECTION ABSTRACT

JUL	DATE	Ξ	FROM	TO	INST.	DRAFT	SETTLEMENT&	TRA
DAY	197	ì	TIME	TIME	CORR.	CORR.	SQUAT CORR.	CORR.
231	AUG	19	000000	013915	+0 • 4	-0.2	+0.8	+1.0
	٠		014022	014610	+0 • 4	-0.2	+0.2	+0.4
			014615	110515	+0 • 4	-0.2	+0 • 8	+1-0
			230400	235959	+0.4	-0.2	+0 • 8	+1.0
232	AUG	20	000000	133330	+0.4	-0.3	+0 • 8	+0.9
243	AUG	31	232900	235959	+0 • 4	-0.6	+0.8	+0.6
244	SEP	øı	000000	150300	+0 • 4	-0.7	+0.8	+0.5
252	SEP	09	200000	212718	+0 • 4	-1.3	0.0	-0.9
			214240	235959	+0-4	-1.3	+0 • 8	-0.1
253	SEP	10	000000	000230	+0.4	-1 - 4	+0 • 8	-0.2
			004538	012531	+0 • 4	-1 - 4	0 • 0	-1.0
			013745	030930	+0•4	-1 • 4	+0 • 8	-0.2
			Ø33426	043000	+0 • 4	-1.4	0.0	-1.0
			045300	072300	+0 • 4	-1.4	+0 • 8	-0.2
			•		(27)			

ABSTRACT

OF

HI-FIX

LANE CORRECTORS

HSL-40-1-71 H-9198 (1971-72)

JULIAN DAY	TIME (GMT)	P ₁ CORRECTOR	P ₂ CORRECTOR
214 215 216 217 228 **********************************	154450 144015 132315 044523 063218 133630 144900 221315 073030 173800 140745	11 21 20 20 20 20 20 20 34 34 46	+ .55 + .28 + .45 + .45 + .38 + .05 + .03 + .99
231 231 232 243 244 252 253	223230 230400 000000 232900 000000 200000	+ .40 + .20 + .19 + .19 + .18 05 05	+ .41 + .48 64 64 32 32 + .51 + .51

NOAA SHIP MT MITCHELL (MSS-22)

BOATSHEET HSL-40-1-71

REGISTRY NUMBER H-9198

1971-72

TC/TI TAPE PRINTOUT

154450 0 0000 0001 214 222000 009198 240000 0 0000 0001 253 222000 009198

ABSTRACT OF VELOCITY CORRECTIONS

4		ADOIMA	/1 OF		COMPOSITONS			
				CORR.	DEPTH (FT)			
					-0.0			7
				0.0				T
			i		1.7			7
-				0.2				7
					5.5			7
-				0.4				7
					9.2		l	1
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		 	-	0.8				1-
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(<u> </u>				27.8			+
	<u> </u>			1.6				
					31.5			+-
				1.8			<u> </u>	
	<u> </u>				35.3			
				2.0				ļ
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				2.2				<u> </u>
			•	<u>'</u>	42.7			
				2.4				
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				2.6	1			
					50.1			
				2.8	.			
					53.6			
		٠.		3.0		•		
1					57.3			
				3.2				1
					60.8	,		1
				3.4		 ,		†
					64.5			
				3.6	·			
 -(`					68.2			
<u> </u>	·			2 4				
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	l				11.0			-
1				4.0	75.4			ļ
				(30)	17.14			
1 Martin all 10 4 10 10 10 10 10 10 10 10 10 10 10 10 10			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		andrinani in anti-la primi la primi la la colonia della del	kast ürkennemen	ويدون والمرابعة والمرابعة	· · · · · · · · · · · · · · · · · · ·

TABLE #11

TRANSDUCER DRAFT CORRECTIONS MT MITCHELL

		CORRECTOR (FT)	DRAFT AFT (FT)			CORRECTOR (FT)	DRAFT AFT (FT)
July	26	+0.3	14.3		Sep_1	-0.7	13.3
	27_	+0.3	14.3		2	-0.8	13.2
	28	+0.2	14.2			-0.9	13.1
	29	+0.2	14.2			-0.9	13.1
	30_	+0.2	14.2			-1.0	13.0
	31	+0.2				-1.1	12.9
Aug	1	+0.2	14.2		7	-1.2	12.8
	2	+0.1	14.1			-1.2	12.8
	3	+0.1	14.1			-1.3	12.7
	4	+0.1	14.1			-1.4	12.6
	5	+0.1	14.1			!	
	6	0.0	14.0				
	7	0.0	14.0				
	8	0.0	14.0				
	9	0.0	14.0				
	10	0.0	14.0				
	11	-0.1	13.9				
	12	-0.1	13.9				
	13	-0.1	13.9				
	14_	-0.1	13.9				
	15	-0.2	13.8		İ		
2	16	-0.2	13.8			1	
	17_	-0.2	13.8				
	18	-0.2	13.8				
	19_	-0.2	13.8				
	20	-0.3	13.7				
	21_	-0.3	13.7		11.		
	22	-0.3	13.7			1.	
	23	-0.3	13.7		İ		
	24.	0.4	13.6				
	25	-0.4	13.6				
	26	-0.4	13.6		1		
	27	-0.4	13.6				
	28	-0.4	13.6	· · · · · · · · · · · · · · · · · · ·			
	29	-0.5	13.5				
		-0.6	13.4		1		
· (31,	-0.6	13.4				4,-4
		and the second s	and the second s	(31)-	Committee of the commit		
		والمستحدث والمستحدث والمستحدث	ه و دهند موده ده معمد شهري دميدومون م			<u> </u>	

SSA VEY		OBS.	RC	R C	R.C	RC	RC	RC	EC 2	RC	BG	P S	 B3	23					
COAST AND GEODETIC SURVEY -1-71 H-9198	9-10-71	REMARKS (Unusus! conditions, cohesiveness, dented cutter, stat. no., type oi botten: relief i.e., slope, plain, disposition, etc.)	2153	worms) 2154	2155	2156	2157	2182	2184	2185	2206	2207	2208	2209					
coast A 10-1-71	e Glimet	REMARKS to a conditions, cohe to the conditions, type of but, plain, disposition,	s. No. 2	sea No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	s. No.	s. No.	s. No.	s. No.	s. No.
الا 1 HSL-4	T. McConnel	(Unus cutter slope,	.20s.	(live Pos.	Pos.	Pos.	Pos.	Pos.	Pos.	Pos	Pos.	Pos.	Pos	Pos,	Pos.	Pos.	Pos.	Pos	Pos
H-9198 Boatsheet HSL-40-1		FIELD DESCRIPTION	S brk Sh		S Sh	S brk Sh		S Sh	S brk Sh	S brk Sh	S Sh	S Sh		S Sh		τ			
1EET - M SATA	Carolina	FIEL	fne br	brk Sh	fne br	fne br	brk Sh	fne br	fne br	fne br	crs br	crs br	Sh	fne br					
OCEANOGRAPHIC LOG SHEET BOTTOM SEDIMENT DATA	South C	COLOF SEDI-	brown		brown	brown	1	brown	brown	brown	brown	brown	1	brown					
	۱ ا	1 N 9 8	N.																
CEANO	Offshore	PROX.	N A																
សួ	\vdash	₽°S.g	20 1.																
sounding	1971	DEPTH XXXX	39	745	39	32	27	37	33	28	35	26	30	29					
นุญ	.436	POSITION LONG TUDE	03.1	06.31	19.60	12.91	16.21	03.21	06.31	09.71	13.11	16.31	14.31	13.41					
ೡ	PROJ. NO. OPR-436	SAMPLE North	19.71	19.7	19.71	19.71	19.7	22.31	22.31	22.31	22,31	22,31	24.21	26.31					
imbedde	4A Ship HELL	(1971) SAMPLE NATIONE SAMPLE	0	6	6	6	6	6	6	6	6	6	6	6					
FORM C&65-/33M (6-66)	vesser NOAA Ship MT MITCHELL	SERIAL NO.	- 1	7.2	, 3	ή,	: 15	9 /	, 7	€	6	, 10	, 11	,12			(32)	

ATLANTIC MARINE CENTER APPROVAL SHEET FOR AUTOMATED SURVEY H-9198 (1971-72)

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/ Nasx not been made. A new final sounding printout has/ ** been made.

April 11,1974 Date:

Signed:

Title:

Chief, Verification Branch

в. 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: <u>April 11,1974</u>

Signed: A C. Dale North Jr. LCDR NOAA

Chief, Processing Division

FORM C&GS-537 5-66)	U.S. DEPARTMENT OF COMME ENVIRONMENTAL SCIENCE SÉRVICES ADMINISTRAT COAST AND GEODETIC SUR	RCE REGISTER NO. 10N VEY
	HYDROGRAPHIC TITLE SHEET	н-9198
	ne Hydrographic Sheet should be accompanied by this for ly as possible, when the sheet is forwarded to the Office	·
State South	Carolina	
General locality_	Coast of Couth Carolina St.	Helena Island
Locality Entr	rance to North Edisto River Off	St. Helena Sound
Scale 1:40	0,000 Date of	survey March 14 - April 1, 19
Instructions dated	January 15, 1971 Project	No. OPR 436
Vessel <u>NOAA</u>	Launch 1257	
Chief of party	CDR Bruce I. Williams, C.O., NO LT C. Dale North, O.I.C., NOAA	DAA Ship PEIRCE: Launch 1257
L7	T C. Dale North, LTJG Andrew Lor cank L. Saunders, Oiler, and Dor	nnie Sikes, wald B. Gerock, Seaman
Soundings taken by	y echo sounder, TEXEXIXEX, FAX Raytheon DE LT C. Dale North, LTJG And led by Frank L. Saunders, Oiler,	5-723D, Ser. #37204 & #1904 drew Lonnie Sikes,
Graphic record che	cked by LTJG Andrew Lonnie Sikes a	and LT C. Dale North
Protracted by		AMC-Calcomp Plotter 6 (a compared plot by Laurah 1353)
Soundings Kenkika	!	
Soundings in xs	thoms feet at MLW XMXXXX	
REMARKS: Th	nis survey does not constitute a	completed boat sheet, but
	section assigned to Launch 1257	, , , , , , , , , , , , , , , , , , ,
_	mes based on 0°W Time Meridian	

 	Danca	011 0	** 1 11116	riciali	TOT CITE	entire survey.
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				-	CAS .	Eninge Ferrage

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY FIELD NO. HSL 40-1-71 H-9/98(/97/-72)

SCALE: 1:40,000

1971

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NOAA LAUNCH 1257

C. DALE NORTH, LT, NOAA

OFFICER IN CHARGE

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY, FIELD NO. HSL 40-1-71 H-91990(1971-72)

A. PROJECT

Project OPR 436, Coast of South Carolina and Georgia, was undertaken as directed by Project Instructions dated 15 January 1971 and Sailing Orders dated 2 February 1971.

B. AREA SURVEYED

The survey covered that area bounded by the following limits:

Latitude 32°28'N on the north; Latitude 32°24'N on the south; Longitude 80°11'54"W on the west; Longitude 80°01'42"W on the east.

All hydrography was accomplished during the period 14 March through 1 April 1971.

Junction was made with contemporary survey HSL 20-1-71 %-9/96 (1971) on the north, and Sheet H-8871, 1965, scale 1:40,000, on the east.

C. VESSEL

All work was accomplished by NOAA Launch 1257, operating at a sounding speed of approximately 20 nautical miles (1850 RPM) per hour.

D. SOUNDING EQUIPMENT

All soundings were accomplished with a Raytheon DE-723D survey fathometer. Instrument number 37024 was used for soundings between position numbers 0001 and 0258 and between position numbers 0669 and 0770. The remainder of the soundings were accomplished using instrument number 1904.

Instrument number 37024 was replaced because the takeup reel was not operating properly. Instrument number 1904 was replaced after the repair of 37024 because of excessive needle burning and breakage.

26 (actual fider)

(other) hd(r) gy Depths encountered ranged from approximately 25 feet to 50 feet. Echo sounder corrections were determined by a TDC (temperature, depth, conductivity) observation supplemented by bar checks. A tabulation of these velocity corrections is included in this report.

The fathometer initial was maintained at zero feet throughout this survey. The physical draft of the transducers was determined to be 2.55 (used 2.6) feet by measurement in August 1970. This value was combined with a squat and settlement correction (dependent on sounding speed) to come up with a TRA correction, which was set into the launch's Hydroplot Controller each day or each time the sounding speed changed. Settlement and squat corrections were derived from tests conducted on 16 April 1971 in Savannah River, Georgia. A tabulation follows:

RPM	CORRECTOR				
525	+0.3 feet				
900	+0.4 feet				
1100	+0.4 feet				
1400	+0.4 feet				
1600	+0.0 feet				
1850	-0.3 feet				

E. SMOOTH SHEET

No smooth sheet was made by Launch 1257. The boat sheet and electronic control arcs were constructed using the Complot Plotter on board Launch 1257.

E. CONTROL

The entire survey was controlled by Hastings Raydist (Range-Range) at a frequency of 3300.495 kc, with shore stations located as follows:

Station l (Red) Pavilion RM3	Long.	32°30'17.05"N 80°17'39.16"W	•
Station 2 (Green) Mist, 1966 of sheet	Lat. Long.	32°35'47.69"N 80°06'15.20"W	unacljusted

Station sites were established and located by Photo Field Party #62, using third-order traverse methods.

Raydist corrections were determined by three-point sextant fix calibrations taken during the course of the hydrographic survey. The signals used for calibration were located by Photo Field Party #62, using third-order traverse methods. Visual fixes were converted to rangerange Raydist lane values by the launch's computer program. The corrections were determined by comparing the computed values to the simultaneously observed digital readout of the Raydist lane values. A tabulation of Raydist corrections is included in this report.

G. SHORELINE

No shoreline is within the survey limits.

H. CROSSLINES

The percentage of the total miles of sounding line devoted to crosslines is 11.5%.

The comparison between the crosslines and regular lines is very good. The discrepancies found can be attributed to the erroneous use of Savannah, Georgia, predicted tides on Julian Day 91 rather than Savannah River Entrance tides, which was the reference station used for the rest of the survey. Crosslines and some development were run on Julian Day 91.

I. JUNCTIONS

H-9196(1971)

Junction with contemporary survey HSL 20-1-71 on the north showed excellent comparison.

No junction soundings were available for comparison from Sheet H-8871, 1965, scale 1:40,000.

J. COMPARISON WITH PRIOR SURVEYS

Copies of prior surveys are not available for comparison.

K. COMPARISON WITH THE CHART

Comparison with 9th Edition, February 21, 1970, Chart 1239 is very good.

A 34-foot sounding from Pre-Survey Review, dated 16 December 1964, charted at latitude 32°27'35"N, longitude 80°02'45"W, was found as charted with a least depth of 31 feet MLW (predicted tides).

32. feet MAW (predicted tides)

L. ADEQUACY OF SURVEY

This survey is adequate to supersede all prior surveys.

M. AIDS TO NAVIGATION

There are no aids to navigation within the survey area.

N. STATISTICS

Number of Positions	
Nautical Miles Sounding Line	374
Square Nautical Miles	35
Number of Bottom Samples	8

O. MISCELLANEOUS

This survey constitutes only a portion of a 1:40,000 sheet assigned to the launch by Ship PEIRCE. The area surveyed covered that area where the PEIRCE had very weak Hi-Fix control. The sheet was not completed by the PEIRCE as anticipated.

P. RECOMMENDATIONS

It is recommended that this survey be considered adequate for charting.

Q. REFERENCES TO REPORTS

- 1. "TDC Report, Project OPR 474, USC&GSS WHITING", December 1969.
- "High-Speed Data Acquisition for Large Scale Hydrographic Surveys", March 1970, by Clinton D. Upham, CDR, USESSA.

SEPARATES FOLLOWING TEXT

Tide Note

Abstract of Corrections to Echo Soundings; including Velocity Corrections, Settlement and Squat Abstract, and Abstract of Bar Checks

Abstract of Corrections to Distance Measurements

Computer Parameters Used in Construction of Boat Sheet

Abstract of Daily Position Numbers Used

Abstract of Bottom Sample Data

Approval Sheet

ABSTRACT OF CORRECTIONS TO ECHO SOUNDINGS

HYDROGRAPHIC SURVEY

FIELD NO. HSL 40-1-71 (4-9/98(1971-72)

NOAA LAUNCH 1257

The following pages contain an abstract in tabular form of the velocity corrections which are to be applied by the AMC Processing Division to echo soundings contained in this survey.

An abstract of bar checks and a settlement and squat table are also included.

VELOCITY CORRECTIONS

HYDROGRAPHIC SURVEY

FIELD NO. HSL 40-1-71 H-9/98 (1971-72)

14 MARCH - 1 APRIL 1971

Velocity Correction

0.0	- 6.7	+0.0 feet
6.8	- 16.0	+0.2 feet
16.1	- 24.2	+0.4 feet
24.3	- 31.5	+0.6 feet
31.6	- 39.2	+0.8 feet
39.3	- 46.8	+1.0 feet
46.9	- 54.5	+1.2 feet
54.6	- 62.2	+1.4 feet

SETTLEMENT AND SQUAT

HYDROGRAPHIC SURVEY

FIELD NO. HSL 40-1-71 / 9/98 (197/-72)

TEST CONDUCTED 16 APRIL 1971

<u>RPM</u>	CORRECTION
525	+0.3 feet
900	+0.4 feet
1100	+0.4 feet
1400	+0.4 feet
1600	+0.0 feet
1850	-0.3 feet

NOTE: Initial = 0.0

OPR 436 - HSL 40-1-71 H-9/98 (1971-72)

BAR CHECK ABSTRACT

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			DEP	TH IN FE	ET	25			
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	3/15/71			<u> </u>		<u> </u>			
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MATERIAL CONTRACTOR OF THE SECOND				-1		ļ	 ,	i	
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ABSTRACT OF CORRECTIONS

TO DISTANCE MEASUREMENTS

HYDROGRAPHIC SURVEY

FIELD NO. HSL 40-1-71 H-9/98 (1971-72)

Julian Day	Lane Corr. Pat. I	Lane Corr. Pat. II
73	-0.76	-0.31
74	-0.67	-0.45
75	-0.54	-0.28
91	-1.11	-0.54

COMPUTER PARAMETERS USED IN CONSTRUCTION OF BOAT SHEET #-9/98(1971-72)

FEST=100000

CLAT=3500000

CMER=80/30/00

GRID=2/0

PLSCL=40000

PLAT=32/23/00

PLON=80/18/30

R1LAT=32/30/17.045

R1LON=80/17/39.156

R2LAT=32/35/47.694

R2LON=80/06/15.198

Q=3300.495

VESNO=1257

YR=71

ABSTRACT OF DAILY POSITION NUMBERS HYDROGRAPHIC SURVEY FIELD NO. HSL 40-1-71 #-9/98(/01/-72)

Julian Day	Position Numbers
73	001 - 258
74	259 - 467
75	468 - 668
91	669 - 770

Position Number 709 was not used.

Use more than one line per sample if necessary.

USCOMM-DC 37019-P86	טו								•	If necessary	more than one line per sample if necessary.	se more than one	Use
													<u> </u>
780	HSC-20-1-71	Ine brn 5, sml wh sh	Ine bra					28	80 o'6 13	32 3/53	=	43	
5g.		fne brn 5, sml wh Sh	fne brn					28	32.15 60 04 10	32 32/5	<u>=</u>	42	T
N' Co	•	fne brn 5, sml brt Sh	fne brn					3	10 02 4/	32 32 24 80 02 41		41	T
2 N		5	fne brn S					33	80 01 13	33, 33, 30	=	40	T
" c ^D "		fre bin S, smlbit Sh	fne brn					28	79 59 56	32 32 12	= ,	39	T
of that BN	H56 20-1-71	sml brk Sh, freben S	sm/ brk					42	20 00 14	32 29 04 80 00 14	۵ (ن	38	I
M ₂	HSC 40-1-71	ζ,	fne byn S					29	90 10 53	32 27 57 80 10 53	2	/ 37	1
Ng.		S, sml brk Sh	fae bra S, sm					37	80 07 35	32 27 42	=	36	T
[™] 2		1+5	very fne 1+ 5					36	90 ož 16	31 27 /1	*	35	T
%0°		fne bras, smlbrksh, ous Sh	fre bras					40	80 02 42	32 26 53 80 02 42	=	134	
0°C		very fine 1+5, sm/ brk sh	very fine /+					43	80 03 00	32 24 57 8	=	33	1
≥e c		fne bras, smlbrks, Co	fne bras					43	80 06 13	32 24 50 80	=	32	Τ.
200	•	med brn 5, smlbut Sh	med br					34	74 59 80 08 59	32 24 59	=	3/	1
200	H5L 40-1-71	med 1+ 5, sml bet Sh	med /+					45	10 240	32 25 22 80	4-01-71 3	/30	7
ottom relief i.e., INIT.	REMARKS (Unusual conditions, cohesiveness, denied cutter, sist.no., type of bottom relief i.e., slope, plain, disposition, etc.)	FIELD DESCRIPTION.		COLOR SEDI- MENT	LENGTH OF CORE	PEROX.	WEIGHT	DEPTH IN FEET (Fathome)	ğ	SAMPLE POSITION	DATE	SERIAL NO.	v
DATE CHECKED	0	СНЕСКЕО ВҮ	South CAROliNA	outh c	s fo	Coast		78AR	436	OPR-436	LAUNCH 1257	VESSEL NOAA LAU	2
DEPARTMENT OF COMMERCE ESSA OAST AND GEODETIC SURVEY	U.S. DEPARTME		SHEET - M	IC LOG	OCEANOGRAPHIC LOG SHEET BOTTOM SEDIMENT DATA	OCEANO BOT					X	FORM C&GS-733M	
													1

APPROVAL SHEET

HYDROGRAPHIC SURVEY

FIELD NO. HSL 40-1-71 +-9/98 (1971-72)

The Officer-in-Charge participated in all phases of this survey.

No additional recommendations other than those stated in this Descriptive Report are required.

C. Dale North C. Dale North LT, NOAA

TIDE NOTE

HYDROGRAPHIC SURVEY

FIELD NO. HSL 40-1-71 H-9198 (1971-72)

All tides used in this survey were based on the Standard Tide Gage at Savannah River Entrance, Georgia. A portable tide gage was established and maintained at Edisto Beach, South Carolina, by NOAA Ship PEIRCE personnel. Time and height correctors were applied to Savannah River Entrance tides to obtain predicted tides for the survey.

Hourly heights for both gages have been requested from the Rockville office (see enclosed leter).

U. S. DEPARTMENT OF COMMERCE MATIONAL 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 7/-12): Fort Pulaski, Ga.

Period: March 14-April 1, 1971

1257 1971 WORK

HYDROGRAPHIC SHEET: H-9198 Part II

OPR: 436

Locality: Coast of Georgia

Plane of reference (mean known low water): 3.3ft.

Height of Mean High Water above Plane of Reference is 6.9 ft.

Remarks: Zoning: Use Fort Pulaski with the following corrections:

Approx. lat. 32030'N-32010'N long. 80025'W-80010'W

 $\frac{\text{Range}}{6.0/6.9} = 0.87$ Time -30 min.

lat. 32°10'N-31°50'N

Range 6.276.9 = 0.90 Nor NoED -30 min.

.lat. 31°50'-31°30'

Chief, Tides Branch

26 May 1971

010, Launch 1257

Hourly Heights

Chief, Tides Section 0 3312

Hourly heights for the Savannah River Entrance, Georgia, standard tide gage No. 2709 at Lat. 32 02', Long. 80 54', are hereby requested for the period 1 March 1971 through 25 April 1971.

In addition, hourly heights for the automatic gage at Edisto Beach, South Carolina, Lat. 32 30', Long. 80 18', are also required for the period 1 March 1971 through 2 April 1971.

C. Dale North LT, NOAA

DRM C&GS-537 U.S. DEPAR -66) ENVIRONMENTAL SCIENCE SERV COAST AN	TMENT OF COMMERCE ICES ADMINISTRATION ND GEODETIC SURVEY	REGISTER NO.
HYDROGRAPHIC TITLE SHEET		н-9198
INSTRUCTIONS - The Hydrographic Sheet should be accom	panied by this form,	FIELD NO.
filled in as completely as possible, when the sheet is forward	arded to the Office.	HSL 40-1-71
State South Carolina General locality Const of South Carolina	St. Helena	
General locality Const of South Carolina		sland OH St. Helena Sound
General locality Const of South Carolina	Acuth Covolina	
General locality Const of South Carolina Locality Vicinity of St. Helena Sound	Gouth Carelina Date of sur	OH St. Helena Sound

Instructions d	ated 23 January I	1972	Project No <u>UP</u>	K-430-PE-/2	
Vessel <u>NO</u>	AA Ship PEIRCE C	CSS-28	1	· 	
Chief of party	Ralph J. Land.	CDR. NOAA ir. C. Davis, Lt	. D. North, Ltjg	. J. Hudson, Ltjg	, T. Gofort
Surveyed by_	Ens. S. Manzo, Er	ns. G. Jamerson,	Ens. R. Perment	er	
Soundings tak	en by echo sounder, 🖫	COOPCASOPORX D	E-723, S#N 928	· .	
Graphic record	iscaled by Ship's	personnel	·		
Graphic record	checked by Ship's	Officers			
Protracted by	Atlantic Marin	e-Center -	Automated ple	ot by <u>AMC - Calcomp Plo</u>	Her 618
Soundings po	William by Shaple-1	Officers			
Soundings in	XXXXXX feet s	at MLW XXXXV_			·
					
REMARKS:	This completes a	survey underta	ken by Launch 12	57 and NOAA Ship N	MT MITCHELL
<u>in 19</u>	71.				
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Descriptive Report

to Accompany

Hydrographic Survey HSL 40-1-71

Registry Number H-9198

OPR-436-PE-72

Coast of South Carolina and Georgia

1972 Field Season

NOAA Ship PEIRCE CSS-28

Ralph J. Land CDR, NOAA Chief of Party

A. PROJECT

This survey was accomplished in accordance with Project Instructions-OPR-436-PE-72, Coast of South Carolina and Georgia dated 25 January 1972 and is a continuation of surveys conducted by the PEIRCE at various times over the past seven years.

B. AREA SURVEYED

The area surveyed is off the coast of South Carolina in the vicinity of Edisto Beach, S. C. and Hilton Head, S. C. It is bounded on the north by its junction with the portion of H-9198, 1:40,00, 1971, completed by the MT MITCHELL and on the east by its junction with H-8299, 1:80,000, 1966, and on the south by its junction with H-8299, 1:80,000, 1972. It is bounded on the west by longitude 80 19.4 W. The area surveyed encompasses approximately 247 square nautical miles. The survey began on 1 May 1972 and operations were completed 1 June 1972.

C. SOUNDING VESSEL

All soundings were obtained by the NOAA Ship PEIRCE without the use of launches or skiffs.

D. SOUNDING EQUIPMENT

All soundings were observed with a Raytheon Survey Fathometer, Model 723, Serial Number 928. The initial was maintained at 10 feet. Soundings were all in feet, the depth varying from a minimum of 36 feet to a maximum of 83 feet. No problems were encountered with the fathometer which would affect the accuracy of the soundings.

Phase checks were performed on the fathometer on 19 May and 1 June 1972 using a Digital Phase Checker obtained from AMC. Results were very good with no appreciable phase error noted.

E. SMOOTH SHEET

All field records were transmitted to the Atlantic Marine Center for smooth computer plotting.

F. CONTROL

Raydist was used for horizontal control, operating on a frequency of 3294,400 KHz. Two portable Raydist shore stations were utilized. Pattern I was ENOK 1971 located at Edisto Beach, S. C., Latitude 32 28' 39,687"N, Longitude 80 20' 07.566"W. Pattern II was HEAD 1972 located on Hilton Head Island, S. Island, S. C., Latitude 32 13 22.485"N, Longitude 80 10' 14.996"W.

Calibration was accomplished using three-point sextant fixes. A 1:20,00 calibration sheet covering the area offshore from Edisto Beach, S. C. and St. Helena Sound, S. C. was used for Raydist calibration. The calibration signals used were as follows:

Signal Number

Object

711	Fripps Island Water Tank
902	Hunting Island Lighthouse, 1902
122	Edisto Beach Water Co. Tank
103	25' Tripod, Orange, 32 23' 31.773N, 80 25' 48.465"W
118	25' Tripod, Orange, 32 20' 19.677N, 80 27' 06.483"W

The first three objects are established triangulation while the last two were located by Photo Party 62 using third order thaverse methods.

G. SHORELINE

There is no shoreline to be considered on this sheet.

H. CROSSLINES

Crosslines constitute 4% of the total hydrographic miles run. Crosslines depths were in good agreement with those on the sounding lines, generally within one or two feet.

I. JUNCTIONS

Satisfactory junction was made with the portion of H-9198 completed by the MT MITCHELL and H-8932. Soundings were in good agreement.

J. COMPARISON WITH PRIOR SURVEYS

Soundings are in good general agreement with those from prior surveys and those shown in the pre-survey review.

K. COMPARISON WITH THE CHART

A comparison was made with Chart IIII, Charleston Light to Cape Kennedy, Edition 15, 20 November 1971. Soundings were in general agreement with the charted depths.

L. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede prior surveys for charting.

M. AIDS TO NAVIGATION

Buoy R "6HI" F1. 6 sec. WHIS was found to be (0.2) two-tenths of a nautical mile due west of its charted position, and its position as given in the "Light List, Volume II". A detached position was taken on the buoy using Raydist and it was found to be located at Latitude 32 12' 30"N, Longitude 80 19' 42"W.

N.STATISTICS

Total Number of Positions Total Hydro Miles Total Crossline Miles

3,760 2,665.1 n. m. 103,5 n. m.

Total Square Miles Surveyed	247 Sq. n. m.
Number of Tide Gages	1
TDC Observations	3
Bottom Samples	35
Leadline Comparisons	1

O. MISCELLANEOUS

This survey lies within a naval operations area administered by the Office of the Commander, U. S. Naval Base, Charleston, S. C. The Charleston Operating Area Coordinator assigns ships to various areas for maneuvers and exercises that include drill mine fields and aerial and naval gunnery.

No definite or constant boundary was found to exist between Gulf Stream and inland waters on this survey.

The northern portion of the boatsheet, predominantly above latitude 32 10'N shows the results of inshore deposition, removal and other sedimentary processes.

Difficulties were encountered with the first weeks calibrations. This will be dealt with separately in the Report on Raydist Electronic Position Control. However, when the sounding lines with 200 meter spacing were later split to 100 meters, the depths agreed.

It is suggested that radio communications be kept to a minimum and limited to voice transmissions whenever possible. Teletype transmissions were found to seriously affect the Raydist, once completely knocking it off the air. Voice transmissions were found to interfere to a lesser extent than the teletype, but some slight interference was noted on occasion. For this reason, careful watch should be kept on the Raydist during all radio transmissions.

All times were in Greenwich Mean Time.

On a sounding line between Latitude 32 06.4'N, Longitude 80 16.6'W, and Latitude 32 06.6'N, Longitude 80 14.6'W there are depths generally ten feet chealer t shoaler than the surrounding area. These depths are in error and were disproven on Day 153 during a development of the area. However, due to an oversight, the boatsheet was not changed to reflect the proper depths. It is believed the shoal depths resulted by improper reduction of soundings while inking them on the boatsheet.

P.RECOMMENDATIONS

It is recommended that this survey be considered adequate for charting purposes,

Q. REFERENCE TO REPORTS

For a detailed discussion of the methods used to determine the velocity corrections and the Raydist lane correctors, refer to the following reports:

- Report on Corrections to Echo Soundings OPR-436, H-9198, Coasts of South Carolina and Georgia 1972; Field Season NOAA Ship PEIRCE
- 2 . Report on Raydist Electronic Position Control
 OPR-436, H-9198
 1972 Field Season
 Coast of South Carolina
 NOAA Ship PEIRCE

Respectfully Submitted

Richard W. Permenter

Ensign, NOAA

Approval Sheet

Field Number HSL 40-1-71

Registry Number H-9198(/97/-72)

The field work and processing of data from this hydrographic survey was under my immediate daily supervision. The boastsheets and all records have been reviewed and are approved by me. This survey is complete and adequate to supersede all prior surveys of the area.

Ralph J Land

ATLANTIC MARINE CENTER

TIDE NOTE H-9198 (/97/-72)

1.	Project No:	PR-436	2. Vessel/	Field Unit	NOAA Ship PE	IRCE		
3.	Year: 1972		4. Meridia	n Time Zon	e: <u>000</u> w	GMT		
5.	Tide Station	Name:	Edisto Beach,	South Caroli	na			
6.	Position: I	at. <u>32</u>	° 30.1	' Long	·80°	17.8		
7.	Plane of Ref							
8.	Hourly Heigh	nts:	Standard Gau	ige, furnis	hed from Roc	ckville.		
	•	XXX	Scaled and 1	logged from	field marig	grams. ·		
9.	. Tidal Zoning: Not applicable.							
· •	By two or more gauges automatically zoned. By applying tidal differences and constants							
	for the area(s): a.							
	(Hour,	ME Minute)	HEIO (Fee	GHT et)	HEIGHT	RATIO licable)		
	High Water		High Water	Low Water	High Water	Low Water		
		b.						
	(Hour, I	ME Minute)	HEI (Fe	GH T et)	HEIGHT (If App	RATIO licable)		
	High Water	Low Water	High Water	Low Water	High Water	Low Water		
					-	ate sheet(s).		
10.	Remarks:	Staff value	of Edisto Beac	ch Gage reque	sted from Rock	ville.		
	Soo attached	latter						

7

21 June 1972

Cormanding Officer

Tide Data, OPR-436, Sheet HSL 40-1-73

Chief, Tides Section, C3312

Please provide the staff value of MAN for the Edisto Beach, South Carolina tide page established by the Ship PEIRCE on 25 March 1972. The two marigrams obtained during this field season are being transmitted on this date under separate cover.

Please provide hourly heights for the Savannah River Entrance Standard Tide Cage for the following dates:

1 May 1972 through 3 June 1972

Plense provide a time and height correction from the Savannah River Entrance Standard Tide Gage to the Edisto Beach Tide Gage.

Please recommend any tidal zoning that may be necessary for sheet ISL 40-1-71. The area surveyed this field season extends from 32 01 N to 32 20 N and from 80 20 N to 80 01 W.

Mply Juland

Commanding Officer

HOAL Ship PEIRCE

ATLANTIC MARINE CENTER

ELECTRONIC CONTROL PARAMETERS

1.	Project # OPR-136 2. Reg. # H-9198	_ 3. Field # <u>HSL 40-1-71</u>
4.	Type of Control Raydist	(Hi-Fix, Raydist, EPI, etc.)
5.	Frequency 3291,100 (for conversion	of electronic lanes to meters)
6.	Mode of Operation (check one):	
	Range-Range XX	ange-Visual unspuded values
	Range One (R_1) Station I.D. STOK 1971 Range Two (R_2) Station I.D. HEAD 1972 of sheet	Lat. 32 ° 28 ' 39.687 " Long. 80 ° 20 ' 07.566 " Lat. 32 ° 13 ' 22.485 " Long. 80 ° 40 ' 14.996 "
	Hyperbolic (3-station) Hy	yper-Visual
	Slave One Station I.D. Master Station I.D. Slave Two Station I.D.	Lat.
7.	Location of Survey:	
	Range-Range $\boxed{\chi\chi}$ Imagine an observer looking directly at	is standing at R_1 Station and R_2 (check one):
	Survey area is to	observer's Right A=Ø
	Survey area is to	observer's Left XX A=1
	Hyperbolic Looking from survey	area toward Master Station:
	Slave One must be	to observer's Left.
	Slave <u>Two</u> <u>must</u> be	to observer's Right.
8.	This form is submitted as an aid in	preparing a boat sheet.
	This form applies to all data on the	is survey.
	This form applies to part of the dat	ta on this survey.
	Vessel From To EDP # Time Day Time	Position Numbers Day (inclusive)
	2830 155400 122 180030	/53 00/00 to 03760 to to to
9.	Remarks:	

Visual Objects Used in Raydist Calibration on HSL 40-1-71, H-9198 (1971-72)

Signal No.	<u>Date</u>	Description	Latitude	Longitude
711	1971	Fripps Island W. T.	32 19 02.799	80 28 41.806
* 902	1902/34	Hunting Island Light	32 22 31.358	80 26 15.689
121	1972	Edisto Is. Micro Tw.	32 29 18.920	80 19 14.229
12 322	1964	Edisto Beach Water Company Tank	3 2 2 9 9 0 2.042	80 19 55.696
123	1963	Edisto Beach State Park Water Tank	32 30 41.241	80 17 57.626
103	1972	25 Ft. Tripod	32 23 31.773	80 25 48.465
118	1972	25 Ft. Tripod	32 20 19.677	80 27 06.483

Signal No.	Method of Location
711	Theodolite established triangulation station
902	Established triangulation station
121	G. P. established by Photo Party 62
122	3rd order traverse
123	3rd order traverse
103	Photo Party 62 3rd order traverse
118	Photo Party 62 3rd order traverse

^{*} this signal established 1902, recovered most recently in 1934

Abstract of Raydist Lane Correctors

H-9198(1971-72)

Position Numbers	Corrector Pattern I	Corrector <u>Pattern II</u>
0001 - 0839	+0.57	+1.25
0840 - 1618	+0.33	+0.54
1619 - 1930	-0.44	+0.74
1931 - 1988	+0.03	+0.49
1989 - 2 2 00	-0.35	+0.51
2201 - 2694	+0.72	+0.40
2695 - 2917	-0.22	+0.35
2918 - 3084	-0.29	+0.77
3086 - 3186	+0.40	-0.53
3187 - 3760	+0.29	+0.26
5001 - 5035	+0.33	+0.54

TC/T1 Tape
OPR 436
Smooth Tape
HSL 40-1-71
DAY #\$ 122-153 Juli

49198

155400 0 0012 0001 122 283000 040171

000000 0 0012 0001 123 283000 040171

000000 0 0012 0001 124 283000 040171

032000 0 0011

035200 0 0010

042800 0 0009

050430 0 0012

164630 0 0011

171800 0 0010

174600 0 0009

180800 0 0012

200100 0 0011

202500 0 0010

204900 0 0009

510000 0 0008

212610 0 0012

000000 0 0012 0001 125 283000 040171

001600 0 0014

002800 0 0015

004000 0 0016

004800 0 0017

005445 0 0012

020100 0 0007

020830 0 0012

022530 0 0014

022900 0 0016

023100 0 0012

054800 0 0011 0001 130 283000 040171

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061600 0 0006
062920 0 0011
064900 0 0013
065200 0 0015
070130 0 0011
194100 0 0013
194520 0 0011
201700 0 0009
203300 0 0008
205100 0 0011
213100 0 0009
215100 0 0008
221200 0 0007
221500 0 0011
000000 0 0011 0001 131 283000 040171
180300 0 0013
182600 0 0011
202100 0 0009
205700 0 0008
212300 0 0007
212700 0 0011
555800 0 0009
224000 0 0011
000000 0 0011 0001 132 283000 040171
123100 0 0009
124200 0 0011
000000 0 0011 0001 133 283000 040171
030415 0 0006
031000 0 0011
043915 0 0005
050000 0 0011
061000 0 0009
064315 0 0011
```

143100 0 0011 0001 137 283000 040171

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184015 0 0015
 190315 0 0011
 000000 0 0011 0001 138 283000 040171
 032600 0 0009
 034600 0 0008
 035400 0 0007
040715 0 0011
093700 0 0013
095300 0 0015
100900 0 0016
102500 0 0018
111130 0 0011
000000 0 0011 0001 139 283000 040171
000000 0 0011 0001 140 283000 040171
143630 0 0009 0001 143 283000 040171
000000 0 0009 0001 144 263000 040171
041000 0 0011
042200 0 0009
053800 0 0011
055200 0 0009
000000 0 0009 0001 145 283000 040171
045800 0 0007
053000 0 0005
054600 0 0004
055330 0 0009
081000 0 0007
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000000 0 0009 0001 146 283000 040171

000000 0 0009 0001 147 283000 040171

083800 0 0008 085730 0 0009

123900 0 0007 130130 0 0009

023200 0 0007

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025600 0 0005
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030400 0 0004

032100 0 0009

150600 0 0011 0001 151 283000 040171

183800 0 0013

185500 0 0011

000000 0 0011 0001 152 283000 040171

000000 0 0011 0001 153 283000 040171

054630 0 0009

060100 0 0011

075200 0 0009

080830 0 0011

153900 0 0009

160930 0 0008

162930 0 0007

165345 0 0011

Velocity Corrections

Velocity corrections were computed through AMC computer facilities using data obtained during the survey from Beckman TDC meter 40218. The results of the TDC observations on days 123, 137 and 153 are three curves which are similar, however shifted so that no two are identical. Due to their similarity, Velocity Table 1 was compiled by averaging the three curves using TDC 13 as the average curve. The velocity table is used for the entire boatsheet area.

No Nansen casts were taken on this survey. TDC computations and velocity correction curves are included in the Report on Gorrections to Echo Soundings. Velocity correction tables follow.

Velocity Correction Table 1

-	
Depth (from)	<u>Correction</u>
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July 5, 1973 U.S. DEPARTMENT OF COMPERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY VERIFIERS

TIDE NOTE FOR HYDROGRAPHIC SHEET

Marine Center Processing Division: Atlantic

Hourly heights are approved for

Tide Station Used (NOAA form 77-12): Edisto Beach, SC

PEIRCE 1972 WORK Period: April 30, 1972-June 29, 1972

HYDROGRAPHIC SHEET: H-9198 .

OPR: 436

Locality: coast of South Carolina and Georgia

3.2 ft.√ Plane of reference (mean kowow low water):

Height of Mean High Water above Plane of Reference is 6.0 ft.

Remarks: Zoning:

Approx.lat. 32°30'N - 32°10'N long. 80°25'W - 80°10'W

-30 min.

Approx. lat. 32°10'N - 31°50'

-30 min.

6.2/6.0 =

Approx. lat. 31°50' - 31°30'N

-45 min.

Chief, Tides Branch

NOAA FORM 76-155 (11-72) NA	TIONAL	OCEANIC			ENT OF CO		l l	RVEY NI		
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FORM C&GS-946 (REV. 11-85) (PRESC. RY HYDROGRAPHIC MANUAL 20-2. 6-94, 7-13)

4KM

U.S. DEPARTMENT OF COMMERCE
AERTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEOGRETIC SURVEY
NAUTICAL CHART DIVISION

HYDROGRAPHIC SURVEY STATISTICS

				r is registered.		
	DESCRIPTION	AMOL	TAL	RECORD DESC	RIPTION	AMOUNT
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DESCRIPTION	DEPTH RECORDS	HORIZ, CONT. RECORDS	PHINTOUTS	TAPE ROLLS	PUNCHED CARD	ABSTRACTS' SOURCE DOCUMENTS
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VOLUMES		3 ~				
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Reg. No. <u>H-9198</u>

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

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Reg. No. <u>#-9198</u>

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:

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H-9198
Information for Future Presurvey Reviews

This survey is offshore from St. Helena Island, South Carolina. The northwest portion of the survey area is experiencing some shoaling and shifting of sand features.

Position Lat.	Index Long.	Bottom Change Index	Use <u>Index</u>	Resurvey Cycle
320	0801	2	2	50 years
320	0802	2	2	50 years
321	0801	3	2	50 years
321	0802	3	2	50 years
322	0801	4	2	25 years
322	0802	4	2	25 years

OFFICE OF MARINE SURVEYS AND MAPS

MARINE CHART DIVISION

MODIFIED HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-9198

FIELD NO. HSL-40-1-71

South Carolina, St. Helena Island, Off St. Helena Sound

March 14 through September 10, 1971 SURVEYED:

May 1 through June 1, 1972

1:40,000 SCALE:

PROJECT NO.:

OPR-436-MI-71

OPR-436-PE-72

SOUNDINGS:

Raytheon DE-723, DE-723D

CONTROL:

Raydist (Range-

Depth Recorders

Range) Hi-Fix (Hyperbolic)

Chief of Party B. I. Williams E. K. McCaffrey R. J. Land

..... D. C. Calland

Reviewed by D. J. Hill

Inspected by F. B. Powers

Date: April 28, 1975

Control and Shoreline

The origin of control is adequately covered in Part F of the Descriptive Report. However, the geodetic position of all electronic control stations is based upon unadjusted field values acquired in 1971-72.

There is no shoreline within the limits of this survey.

2. Hydrography

- Depths at crossings are in good agreement. Α.
- The usual depth curves are adequately delineated. Supplemental and brown curves have been added to correspond with charting practice and to further define the bottom configuration.

C. The development of the bottom configuration and investigation of least depths are considered adequate.

3. Condition of Survey

The survey records, automated plotting, and Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual and the Instruction Manual - Automated Hydrographic Surveys except as follows:

- A. Bottom samples were not completely annotated on the smooth sheet.
- B. Several soundings plotted on the smooth sheet differ from smooth printout values by one foot, apparently due to incorrect rounding procedures.

4. Junctions

Adequate junctions were effected with H-9196(1971) on the north, H-9364(1973) and H-8477(1956-57) on the northwest, H-8871(1965) on the northeast, H-9299(1972) on the south, H-9145(1973) on the southwest, H-8932(1966) on the southeast, and H-9211(1973) and H-9363(1973) on the west.

5. Comparison with Prior Surveys

Α.	H-620(1856-57) H-622(1857) H-649(1853-57) H-717(1858)	1:15,000 1:200,000 1:40,000 1:300,000	H-728(1860) H-3546(1913) H-3549(1910-1	1:300,000 1:100,000 3) 1:400,000
	H-/1/(1030)	1:300,000		

These early surveys fall in the area of the present survey but are not discussed in this review. The present survey is adequate to supersede these prior surveys within the common area.

B. H-3560(1912-13) 1:100,000 H-3561(1912-13) 1:50,000 H-3926(1915-16) 1:80,000

These surveys together comprise the latest prior coverage of the present survey area.

A comparison with the present survey indicates variable differences of minus 14 to plus 10 feet.

In the vicinity of the 30-foot curve there is indicated random shifting of shoals, sand ridges, and depressions, with an overall general deepening of depths.

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

Comparison with Charts 11517 (793), 7th Ed., Aug. 24, 1974 11513 (1240), 12th Ed., Nov. 23, 1974 11480 (1111), 18th Ed., Nov. 2, 1974 1239, 11th Ed., Oct. 6, 1973

Hydrography Α.

The charted hydrography originates with the previously discussed prior surveys which require no further consideration and with other prior National Ocean Survey sources supplemented by the partial application of depths from the boat sheet and verified smooth sheet of the present survey.

A fish haven (PSR Item FF) charted from Chart Letter 1003 (1969) at latitude 32°25.0', longitude 80°14.65', was not located on the present survey and should be retained as charted. The charted position on chart 1239 is in error and should be revised to agree with chart 11517 (formerly C&GS 793).

Additional Presurvey Review Items are discussed in Section K of the Descriptive Report.

Except as noted, the present survey is adequate to supersede the charted hydrography within the common area.

Aids to Navigation

Buey R "6HI" charted at latitude 32°12.5', longitude 80°19.5', adequately serves the purpose intended.

Compliance with Project Instructions

This survey adequately complies with the Project Instructions.

Additional Field Work

This is an adequate basic survey and no additional field work is recommended.

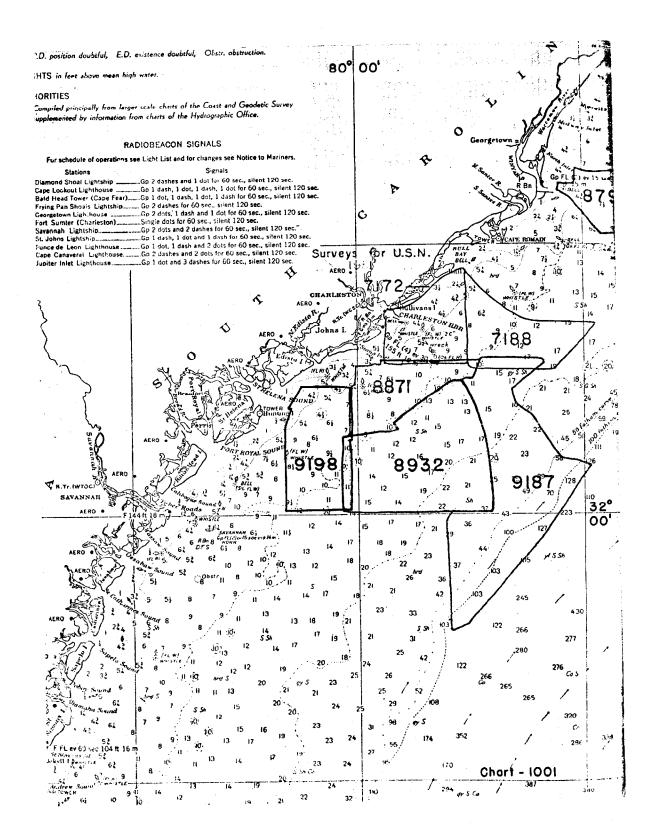
Examined and Approved:

Marine Chart Division

Associate Director Office of Marine Surveys

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and Maps



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NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO.

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.

2. In "Remarks" column cross out words that do not apply.

3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

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