9359

Diag. Cht. No. 1236-2.

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. ... AHP-10-7-73

Office No. ... H-9359

LOCALITY

State ... NORTH CAROLINA

General Locality ... CAPE FEAR RIVER

Locality ... CAPE FEAR RIVER ENTRANCE

1973-74

CHIEF OF PARTY
F. T. SMITH

LIBRARY & ARCHIVES

DATE ... 12/20/74

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

9359

FORM C&GS-537 (8-15-59) U.S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY	REGISTER NO.
HYDROGRAPHIC TITLE SHEET	H-9359
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. (AHP) 742-10-7-73

State North Carolina

General locality Cape Fear River, North Carolina

Locality Cape Fear River Entrance

Scale 1:10,000 Date of survey ~~4~~ 6 December 73 thru ~~23~~ 22 January 74

Instructions dated 6 November 1973 Project No. OPR-437-PE-73

Vessel Atlantic Hydrographic Party Launch 1259, 1260

Chief of party F. T. Smith, LCDR, NOAA

Surveyed by R. A. Lewis, Ens. C.P. Berg, NOAA, G.S. Lloyd, D.M. Bryant

Soundings taken by echo sounder, hand lead, pole DE 723 B Raytheon Shoal water echo sounder & pole.

Graphic record scaled by party personnel

Graphic record checked by party personnel

Protracted by ______ Automated plot by AMC - Calcomp 618

Soundings penciled by ______

Soundings in ~~fathoms~~ feet at MLW ~~MLLW~~

REMARKS: Time meridian for hydrography is GMT

Applied to stds 1/30/75 ~~28~~

USCOMM-DC 19086-P65

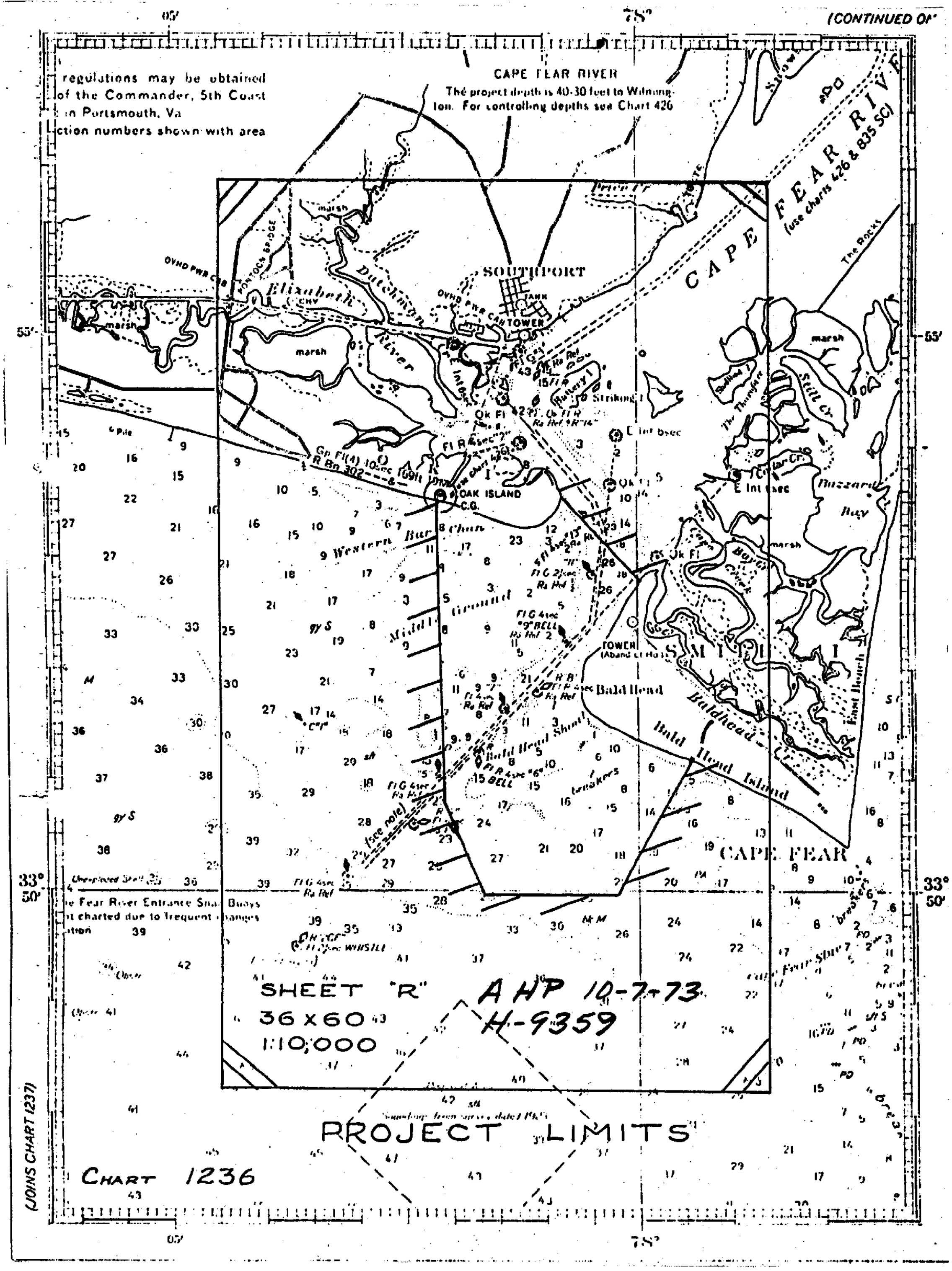

(CONTINUED ON
regulations may be obtained
of the Commander, 5th Coast
in Portsmouth, Va
ction numbers shown with area
CAPE FEAR RIVER
The project depth is 40-30 feet to Wilmington. For controlling depths see Chart 426
CAPE FEAR RIVER
(use charts 426 & 835 SC)
SOUTHPORT
Elizabeth
Dutchman
River
marsh
OAK ISLAND C.G.
Western Bar Chan
Middle Ground
Bald Head Shoal
Bald Head
Bald Head Island
Baldhead Cr
SMITH I
CAPE FEAR
Buzzard Bay
The Rocks
Fear River Entrance Sea Buoys
charted due to frequent changes
SHEET "R"
36 X 60
1:10,000
AHP 10-7-73
H-9359
PROJECT LIMITS
CHART 1236
(JOINS CHART 1237)

TABLE OF CONTENTS

Sheet Layout

See Special Report

DESCRIPTIVE REPORT

HYDROGRAPHIC SURVEY

FIELD NO. AHP-10-7-73

H-9359

A. PROJECT

Sheet AHP-10-7-73 (H-9359) of project OPR 437-PE-73, North Carolina Coast, was done in accordance with Project Instructions dated November 6, 1973.

B. AREA SURVEYED

The southern limit of this survey is latitude 33° 49' 00" and extends north including Bald Head Shoal Channel and Smith Island channel to approximately latitude 33° 53' 30". The eastern limit of this survey is longitude 78° 00' 00" and the western limit is 78° 02' 30". This survey makes junctions with H-9115, 1:20,000, 1970; H-9323, 1:20,000, 1973; and H-9398, 1:20,000, 1973. Hydrography began 6 December 1973 and ended 22 January 1974.

C. SOUNDING VESSELS

Launch 1259 (742-1) was used for one day of hydrography. Launch 1260 (742-2) was used on the remainder of the survey.

D. SOUNDING EQUIPMENT

Raytheon Fathometer DE 723 S.N. 1998 was used on Launch 1259 (Penn Yan) and S.N. 1884 on Launch 1260 (Monark). A sounding pole was used for sounding under 3 feet. Correction to soundings obtained by DE 723 B were as follows:

1. Velocity corrections were obtained by bar checks. An abstract of reduced bar checks is included in the appendix. A graph of the reduced bar checks is shown in Figures 1 and 2.in this section. The velocity table printout is shown here.

Velocity Tables

000072	0	0008	0001	000	742100	009359
000210	0	0010				
000350	0	0012				
999999	0	0014				
000400	0	0010	0002	000	742200	0009359
999999	0	0012				

2. Settlement and squat for the boats were determined from previous tests. The test data and graphs are in the appendix. Since the settlement and squat was a function of rpm and depth, the correction was listed in the TRA Abstract by this method.

3. In addition numerous A-F checks were made and there was no stylus arm correction. The fine arc did not agree on one fathometer due to paper alignment and care must be used when scaling sounding in order to get the proper time on soundings.

4. A digital phase checker was used on both fathometers and instrument error was found to be very small. There was no phase error.

5. The initial was set to 0.0 and then the fathogram was scanned for index (initial) error. The index error is marked in the sounding volume and on the TRA Correction Abstract in the appendix of this report.

6. The TC/TI was compiled from the TRA Abstract and is listed in the appendix.

E. SMOOTH SHEET

The smooth sheet will be prepared by the Atlantic Marine Center, Processing Division from punched tapes compiled by the party.

F. CONTROL

Most positions (fixes) were by two ranges obtained using Del Norte (SHF) equipment. However, some fixes were by visual-range methods. The most common being one saxtant angle and one range. Occasionally a three point fix was used. One area was surveyed using a range and an intersection angle observed from shore. In all cases the logged (punch tape) data is for two ranges. The second range being scaled when necessary from the boat sheet.

Calibration of the Del Norte equipment was accomplished in the field by maneuvering the sounding vessel alongside dredging ranges. These ranges had known positions and the true Del Norte reading was obtained by (computing) inversing between the Del Norte transmitter position and the position of the dredging range. Calibration was to the nearest meter and was determined twice daily. The inversing of the distance was done after completion of the survey and is the reason for corrections of 3-5 meters on the station. Prior to the survey the distance was scaled from the manuscript.

In the appendix of this report is a Record of Daily Electronic Control Correction. The daily calibration was recorded in the sounding volume and has been abstracted for this report. An Electronic Control Abstract is included in this ~~Appendix~~ Section and was used to compile the Electronic Corrector Tapes which are listed in the appendix.

In this section is the signal list. This signal list was compiled from information supplied by Photo Party 62. All signals were determined by traverse or from published positions.

Signal List

Signal	Latitude	Longitude	
111	33° 52' 24".06	78° 00' 02".34	
112	33° 53' 33".38	78° 00' 55".64	
113	33° 53' 33".54	78° 02' 06".77	Signal 130 on SS uses this position
114	33° 53' 35".73	78° 01' 09".89	
116	33° 53' 41".111	78° 00' 17".145	
117	33° 54' 06".763	78° 00' 12".689	
118	33° 53' 45".32	77° 58' 55".99	
119	33° 53' 00".40	77° 59' 47".00	
130	33° 53' 33".545	78° 02' 06".643	
307	33° 51' 02".73	77° 59' 01".48	

G. SHORELINE

Shoreline details for this survey were obtained from shoreline manuscripts TP-00682, TP-00683, and TP-12291(2). Field Edit of these manuscripts will be performed by Photo Party 62.

H. CROSSLINES

Crosslines were run at approximately 10% of the regular lines. Crossline soundings are in good agreement except for the area near the southwest corner of the Middle Ground and the shoal. These discrepancies may be due to the use of predicted tides for boat sheet soundings. Some discrepancy may be noted on the crosslines in shoal areas between the December soundings and the January soundings due to strong winds and sea conditions in late December.

I. JUNCTIONS

Junctions were made with H-9115 (1970) on the west, H-9323 (1973-74) on the south and H-9398 (1973) on the east. Soundings were in agreement and depth curves can be adequately drawn at these junctions. In one area on H-9115 the sounding lines had to be extended westward to agree.

J. COMPARISON WITH PRIOR SURVEYS

A comparison was made with prior survey reg. no. 4312 A, scale 1:20,000, date 1923.

Soundings in "Middle Ground" shoal have become shallower adjacent to the Bald Head Shoal channel. Consequently, the 6 foot depth curve in this area has shifted offshore or southwesterly, approximately 1/2 mile. The remaining areas of the survey show general agreement to this survey. The PSI items will be discussed under comparison with the chart (Section K).

K. COMPARISON WITH THE CHART

A comparison with chart 426, 12th Ed, April 21, 1973, scale 1:40,000, was made. There is general agreement in all areas except the "Middle Ground" shoal. The six foot depth curve has shifted offshore or southwesterly, the shift starting approximately, at Latitude 33° 52' 15" and Longitude 78° 00' 55" (general agreement) to Latitude 33° 51' 30" and Longitude 78° 02' 00" (1/2 mile sw shift) the shift was gradual between these two points. In other areas of the "Middle Ground", there is some evidence of general changes in depth from 1 to 3 feet, some being deeper and some shallower at this time.

Item 30 in the project instructions was found to have been in error in the instructions. As written it appeared Latitude 33° 51.45', Longitude 78° 01.48' an indicated uncharted shoaling causing a small craft grounding (in the Middle of the channel). Referring to Chart Letter 2011 of 1972 from the U.S. Power Squadrons, this location was found to be Latitude 33° 51' 45", Longitude 78° 01' 48". Shoaling in this area has been verified as indicated previously in the shift in the six foot depth curve. Depths in this area now are 3½ to 6¼ feet. ~~This interpretation for position of shoal is incorrect. See Review Part 7~~ See Review-sect. 6-A-4

PSI #8, Vol 7, p. 42-43, sunken wreck charted at Latitude 33° 51' 20" Longitude 78° 00' 40" (C-565(1963)) was thoroughly searched for using a fathometer at 20 meter spacing between sounding lines, with no indication of the wreck being obtained. ~~Recommend removal from Chart~~ See Review-section 6-A-1

PSI #8, Vol 7, p. 51, visible wreck along west beach of Bald Head, Smith Island, was thoroughly searched for visually and by fathogram (undetermined source) by running several lines parallel and close into(10-15 feet) the shoreline at slow speed. The slope into the water from the beach was steep, being 10 feet deep, 20 feet from the shoreline due to strong currents alongshore. No evidence or indication of the wreck was obtained. It is recommended that it be removed from the chart. Concur This wreck is not presently charted.

PSI #8, visible wrecks at Latitude 33° 54' 04", Longitude 77° 59' 42", and PSI #8 visible wreck at Latitude 33° 54' 51", Longitude 77° 59' 27" were not developed in this survey as time did not permit and were outside the survey area.

PSI #10, Vol 4, p. 46-50, sunken wreck charted at Latitude 33° 51' 25", Longitude 78° 02' 14" was thoroughly searched for using a fathometer at 20 meter spacing between sounding lines with no indication of the wreck being obtained.

In the general area of Latitude 33° 52' 55", Longitude 78° 00' 00" the chart indicates 4 piles. These are dredging ranges maintained by the Army Corps of Engineers on steel beams approximately 20 feet high. See Review-sections 6-A-2 and 6-A-3

Their positions are as follows:

	Latitude	Longitude
Left front	33° 52' 52".781 (1626.2m)	77° 59' 59".729 (1535.2m)
right front	33° 52' 51".929 (1599.9m)	77° 59' 59".935 (1540.5m)
left rear	33° 52' 40".398 (1244.6m)	78° 00' 06".415 (1641.9m)
right rear	33° 52' 39".117 (1205.2)	78° 00' 07".065 (1811.6m)

Volume 7, p. 52, piling extending up to 15 meters offshore serving as a boat-barge landing has been located and observed to be covered at high water; Latitude 33° 52' 33", Longitude 78° 00' ~~10~~ 09". It is recommended that they be indicated on the chart.

L. ADEQUACY OF THE SURVEY

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

M. AIDS TO NAVIGATION

There are 8 charted aids to navigation located in the survey and maintained by the USCG. A comparison with these aids and the Light List indicates no changes or corrections are necessary. These aids adequately serve the purposes for which they were established.

N. STATISTICS

LAUNCH	TOTAL NO. OF POSITIONS	MILES OF SOUNDING LINES
1259	113	17.5
1260	1422	211.6
	1535	

This survey covers 8.2 square miles and 19 bottom samples were taken in this survey area.

O. MISCELLANEOUS

Dredging operations by the Army Corps of Engineers took place in Bald Head Shoal Channel and Smith Island Channel during the month of December 1973 while survey operations were taking place.

Sounding lines run on different days failed to agree in several cases. This may have been due to predicted tides. In the SW corner of the Middle Ground the difference was around 2-3 feet.

P. RECOMMENDATIONS

Additional surveys in the future are recommended in order to determine the movement of the shoals.

Q. REFERENCES

None

Respectfully Submitted

Fidel T Smith

LCDR Fidel T. Smith
Chief, Atlantic Hydrographic Party

Appendix A

Tide Note

Tide reducers for all boat sheet soundings are from predicted tides for Cape Fear River, Southport, North Carolina. A 0-10 foot bubbler was installed at Ft. Carswell, North Carolina for the duration of the survey. There was a contract observer and gage at Maupon Beach. This gage did not operate during all of the survey. The scaled hourly heights of the Fort Carswell gage, level records, etc. were transmitted to C331 on January 30, 1974. C331 was requested to transmit smooth tides to CAM 54.

APPROVAL SHEET
SURVEY AHP-10-7-73
H-9359

The field work, hydrographic records, and processing are complete and adequate.

Fidel T. Smith
LCDR, NOAA, Chief AHP

SIGNAL LIST ✓

H-9359 (1975-74)

111 Bald Head Lighthouse, 1851-1968 1006 (330781)
33° 52' 24.06300" 78° 00' 02.34499"

112 Fort Caswell, 1962-64 1038 (330781)
33° 53' 33.37861" 78° 00' 55.63840"

130 Oak Island Lighthouse, 1962-64. 1071 (11072) (330781)
33° 53' 33.53717" 78° 02' 06.76573"

116 Smith Island Range Front Light, 1962 1095
33° 53' 41.11073" 78° 00' 17.14893"

6/6/74

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 Form 362

Tide Station Used (NOAA Form 77-12): Yaupon Beach

Period: December 6, 1973 - January 22, 1974

HYDROGRAPHIC SHEET: H9359

OPR: 437

Locality: Atlantic Ocean, North Carolina

Plane of reference (mean ~~lower~~ low water): 7.6 ft.

Height of Mean High Water above Plane of Reference is 4.7 ft.

Remarks: Recommend zoning direct on Yaupon Beach gage.

James R Hubbard
for Chief, Tides Branch

ATLANTIC MARINE CENTER
VERIFICATION OF SMOOTH TIDES

SURVEY H-9359

PLANE OF REFERENCE MLW OR MLLW
TIME MERIDIAN 0 GMT
HEIGHT DATUM ON STAFFS 1. 7.6 2. _____ 3. _____

TIDE STATIONS	POSITION	TYPE GAGE	TIME CORR. H.W.	TIME CORR. L.W.	HEIGHT CORR. * H.W.	HEIGHT CORR. * L.W.
1. Yaupon Beach, N. C.	ø 33° 54' 00" Y 78° 05' 00"		0.0	0.0	0.0	0.0
2.	ø Y					
3.	ø Y					

HOURLY HEIGHTS [ ] FROM ROCKVILLE OFFICE [X] FROM FIELD MARIGRAMS VERIFIED BY: Rockville

TIDE ZONING [X] NOT APPLICABLE [ ] BY COMPUTER [ ] FROM TWO OR MORE GAGES

LIMITS AND DESCRIPTION OF ZONING METHODS

TIDE CORRECTIONS COMPILED [X] BY COMPUTER [ ] MANUALLY VERIFIED BY: GFT VERIFIED BY: _____

HEIGHT OF MHW ABOVE PLANE OF REFERENCE 4.7

TIDE CORRECTIONS VERIFIED ON SOUNDING PRINTOUT BY: GFT

DATE OF VERIFICATION 7/1/74

*OR RATIO

EXAMINED & APPROVED

CAM3-1
1/31/74

ATLANTIC MARINE CENTER

PROJECTION PARAMETERS

POLYCONIC OR MODIFIED TRANSVERSE MERCATOR

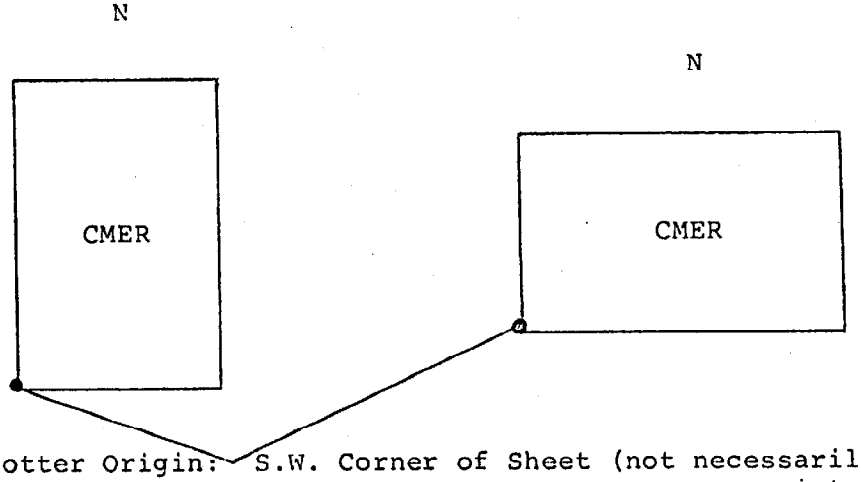
1. Project No. OPR 437
2. Reg. No. H-9359
3. Field No. AHP-10-7-73
4. Requested By Verification Branch
5. Ship or Office AMC
6. Date Required Smooth Sheet

7. Polyconic [x] Modified Transverse Mercator [ ]
8. Central Meridian of Projection 78 ° 01 ' 00 "
9. Survey Scale: 1: 10,000
10. Size of Sheet (check one):

    36 x 54 [ ] 36 x 60 [ ] Other [x] Specify 36" x 44"

11. Sheet Orientation (check one):

    NYX = 1 [x] NYX = Ø [ ]



12. Plotter Origin: S.W. Corner of Sheet (not necessarily a grid intersection)

    Latitude 33 ° 48 ' 15 "

    Longitude 78 ° 03 ' 25 "

13. G.P.'s of triangulation and/or signals attached [x]
14. Material Desired: Tracing Paper [ ] Mylar [x]

    Smooth Sheet [ ] Other [ ] Specify _____

15. Remarks: _____

ATLANTIC MARINE CENTER
APPROVAL SHEET
FOR
AUTOMATED SURVEY H-9359

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/~~xxxxxxxx~~ been made. A new final sounding printout has/~~xxxxxxxx~~ been made.

Date: December 4, 1974

Signed: William L. Johns
William L. Johns
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: December 4, 1974

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

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-9359

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
BALD HEAD										2
BALD HEAD SHOAL										3
CAPE FEAR										4
CAPE FEAR RIVER										5
FORT CASWELL										6
MIDDLE GROUND										7
OAK ISLAND										8
SMITH ISLAND										9
WESTERN BAR CHANNEL										10
BALD HEAD ISLAND										11
										12
										13
										14
										15
										16
										17
										18
					Approved					19
					Chas. E. Harrington					20
					Staff Geographer					21
					10 Feb 1975					22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

U.S. G.P.O. 1972-769-565/516 REG.#6

NOAA FORM 77-27
(9-72)
(PRESC. BY HYDROGRAPHIC MANUAL 20-2, 6-94, 7-13)

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

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-9359 (AHP 10-7-73)

RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET & 3-Overlays	1	BOAT SHEETS	1(2 parts)
DESCRIPTIVE REPORT	1	OVERLAYS	2

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES Accordian	*					
CAHIERS		*				
VOLUMES	8					
BOXES			1			

T-SHEET PRINTS *(List)*

SPECIAL REPORTS *(List)*

OFFICE PROCESSING ACTIVITIES
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				1535
POSITIONS CHECKED		150	–	
POSITIONS REVISED		40	–	
DEPTH SOUNDINGS REVISED		1256	21	
DEPTH SOUNDINGS ERRONEOUSLY SPACED		-	–	
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		-	–	
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS 6		4	4	
JUNCTIONS 25		0	16	
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS * 2	84		* Rescanning fathograms	
SPECIAL ADJUSTMENTS			2	
ALL OTHER WORK		136	10	
TOTALS		~~224~~ 242	48	

	BEGINNING DATE	ENDING DATE
PRE-VERIFICATION BY W. H. Guy, B. J. Stephenson	7/11/74	9/26/74
VERIFICATION BY B. J. Stephenson	11/5/74	11/6/74
REVIEW BY Dennis Hill	Dec. 22, 1975	1-18-76

Inspection K. W. Wellman 82 hrs 3/30/76 ; ~~Carter~~ 17 hr 6/25/76

* U.S. G.P.O. 1972-769-562/439 REG.#6

Reg. No. _____

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 REQ'D_____ INITIALS_____

REMARKS:

Reg. No. H-9359

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 6-16-82 TIME REQ'D._____ INITIALS JHC

REMARKS: March 29, 1977

In addition to the update procedures followed to effect revisions made during review and inspection, the following should be accomplished at the time of update of H-9359:

A 20-foot sounding in latitude 33°53.22', longitude 78°00.17' was excessed to effect the junction with H-9489 (1974) on the north. Inasmuch as the records or position overlay for H-9359 are not presently available, this sounding should be excessed from the smooth plot data bank at the time of update. OK KBC

K. W. Wellman 3-30-77

H-9359

Information for Future Presurvey Reviews

This survey includes the approach to the Cape Fear River. The area is subject to random shifting of bottom materials and the deposition of dredge spoils adjacent to the dredged entrance channel. The present survey adequately develops the area.

Future work in the area should verify or disprove items discussed in sections 6.A.(1) through 6.A.(3) of the review.

Position Index		Bottom Change Index	Use Index	Resurvey Cycle
Lat.	Long.			
334	0781	4	2	25 years
335	0781	4	2	25 years

OFFICE OF MARINE SURVEYS AND MAPS

MARINE SURVEYS DIVISION

MODIFIED HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-9359 FIELD NO. AHP 742-10-7-73

North Carolina, Cape Fear River, Cape Fear River Entrance

SURVEYED: December 6, 1973, through January 22, 1974

SCALE: 1:10,000 PROJECT NO.: OPR-437

SOUNDINGS: Raytheon DE-723 Depth Recorder, Sounding Pole

CONTROL: Del Norte (Range-Range) Visual-Range Intersection Sextant Fixes on Shore Signals

Chief of Party	F. T. Smith
Surveyed by	R. A. Lewis
	C. P. Berg
	G. S. Lloyd
	D. M. Bryant
Automated Plot by	Calcomp 618 (AMC)
Verified by	B. J. Stephenson
Reviewed by	D. J. Hill
	Date: January 8, 1976
Cursory inspection made--survey processing considered complete	K. W. Wellman March 30, 1976

1. Control and Shoreline

The origin of control is adequately covered in part F of the Descriptive Report.

The shoreline originates with Class I unreviewed photogrammetric manuscripts TP-00682 and TP-00705 compiled from photography of 1972-73 and field edited in 1973; and Class I unreviewed manuscript T-12291(2) compiled from photography of 1969-70 and field edited in 1973.

The shoreline extending north of latitude 32°52.50', longitude 78°00.18', from TP-12291(2) was not added to the smooth sheet since the adjoining sheet, TP-00682, reveals a 50-meter discrepancy in the high water line location due to natural processes subsequent to TP-12291(2). The above photogrammetric manuscripts are scheduled for formal review in the near future at which time a final high water line determination will be made.

The mean high water line is for guidance purposes only; the true position is shown on the topographic surveys previously mentioned.

2. Hydrography

A. Depths at crossings are in good agreement.

B. The usual depth curves are adequately delineated. Dashed and supplemental 3-foot curves were added to improve the delineation of the bottom configuration.

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

3. Condition of the 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. Several piles located by the hydrographer were not plotted on the boat sheet or the smooth sheet and were added during review.

B. The Descriptive Report Data Record was not initiated or included in the Descriptive Report as required by sections 11-5 and 12-1 of the automated surveys manual.

C. The fix at position 5330 is not in accordance with section 6-2 of the automated surveys manual. The above fix, a detached position on piling extending from the shoreline, was taken in an area of weak control thus resulting in two possible plotted positions for the given fix. The verified smooth sheet position of the piling was in conflict with the boat sheet position. During review it was necessary to reevaluate this position and select the most likely position as shown on the boat sheet.

4. Junctions

Adequate junctions have been effected with H-9115 (1970) on the west, H-9323 (1973-74) on the south, and H-9398 (1973) on the east. Present depths are in general harmony with charted depths on the north where no contemporary surveys junction with the present survey. The junction with previously verified H-9115 had not been made by the verifier and was effected during review.

The junction with H-9115 revealed minor junctional depth differences in the hydrography extending along the axis of the Baldhead Shoal Channel. These depth differences are attributed to dredging by the Corps of

Engineers subsequent to the 1970 hydrography on H-9115. Accordingly this area has been demarcated on H-9115 and is superseded by the present survey.

5. Comparison with Prior Surveys

A.	H-277	(1851)	1:20,000	H-870	(1865-70)	1:10,000
	H-278	(1851)	1:10,000	H-1014	(1870)	1:5,000
	H-306	(1851)	1:20,000	H-1089	(1871)	1:5,000
	H-372	(1852)	1:10,000	H-1128a	(1872)	1:10,000
	H-619	(1856)	1:10,000	H-1128b	(1874)	1:10,000
	H-624	(1857)	1:10,000	H-1190a	(1873)	1:10,000
	H-642	(1858)	1:10,000	H-1547	(1883)	1:10,000
	H-685	(1859)	1:40,000	H-4313	(1923)	1:40,000

These early surveys fall in the area of the present survey but are not discussed in this review.

B.	H-1547a	(1914)	1:10,000	H-5655	(1934)	1:10,000
	H-4312a	(1923)	1:20,000	H-6541	(1940)	1:40,000

These prior surveys taken together provide the latest coverage of the present survey area. A comparison between these prior surveys and the present survey reveals a shifting bottom with ± 2 to 3 foot general differences and a maximum difference of minus 17 feet occurring west of the Bald Head Shoal Channel. Here a shoal as depicted by the 12-foot curve has extended approximately 2000 meters in a southwesterly direction. Spoil banks baring at mean low water now exist west of the channel which has been dredged extensively since the prior surveys. Bald Head Shoal shows both an expansion of up to 400 meters southwestward as depicted by the 18-foot curve and a reduction in size at the 6-foot depth of approximately 400 meters.

The deposition of materials on the southeast tip of Oak Island has extended the shoreline approximately 200 meters offshore. In addition, variable accretion and erosion within a range of 100 to 150 meters has occurred in the vicinity of the western shoreline of Bald Head Island.

Except as a result of dredging and spoil deposition, the noted depth and shoreline changes are attributed to natural causes.

The pier on H-1547a (1914) in latitude 33°52.56', longitude 78°00.22' has probably been removed by Corps of Engineers dredging and except for remains retained from T-12291 (1962-64) should be disregarded.

A visible wreck shown on the prior surveys in the vicinity of latitude 33°51.28', longitude 78°00.63' and subsequently reported submerged in

CL 565/63, was not verified or disproved by the present survey development. Inasmuch as there may be submerged remnants of this feature it has been appropriately carried forward to the present survey. With this addition, the more completely developed present survey is adequate to supersede the prior surveys within the common area.

C. H-6129a W.D. (1936) 1:20,000

This is an unconventional wire-drag survey showing no effective cleared depths and therefore offering no adequate basis for comparison with the present survey.

6. Comparison with Chart 11537 (formerly C&GS 426), Latest print date, March 8, 1975

A. Hydrography

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

Attention is directed to the following:

(1) The submerged wreck PD charted in latitude 33°51.40', longitude 78°02.20' originates with CL 294/47. The present survey does not disprove this wreck and it should be retained on the chart.

(2) The two piles charted in latitude 33°52.80', longitude 78°00.07' and latitude 33°52.71', longitude 78°00.08' originate with an unascertainable source. They first appeared on the first edition of chart 426 in 1950. The present survey does not disprove these piles and they should be retained on the chart.

(3) The two piles charted in the immediate vicinity of latitude 33°52.68', longitude 78°00.15' originate with the Corps of Engineers [Bp. 81995 (1971)]. The present survey does not disprove these piles and they should be retained on the chart.

(4) The shoaling reported charted in latitude 33°51.45', longitude 78°01.48' originates with CL 2011/72. This source indicates the position to be in latitude 33°51'45", longitude 78°01'48" and is consistent with the hydrographic development in that area of the present survey. The charted note "Shl. rep." should be removed from the chart.

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

B. Controlling Depths

The charted controlling depths for the Bald Head Shoal Channel Range and the Smith Island Range are based on Corps of Engineers information of 1975 and supersede present survey information.

C. Aids to Navigation

The aids to navigation located on the present survey are in substantial agreement with their charted positions and adequately serve the purpose intended.

7. Compliance with Project Instructions

This survey adequately complies with the Project Instructions.

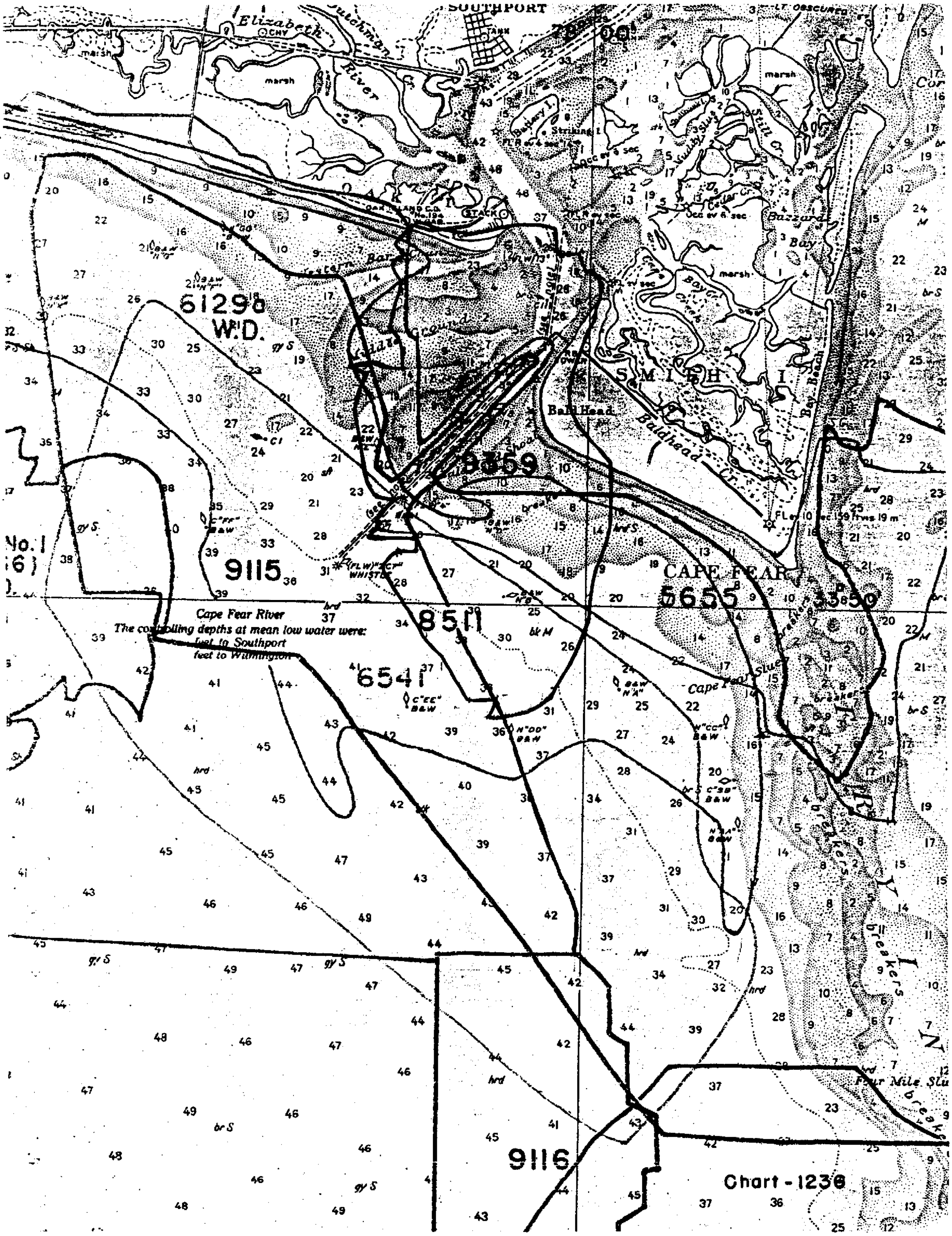
8. Additional Field Work

This is a good basic survey and no additional field work is recommended. During future work in the area however, the items discussed in review sections 6.A.(1) through 6.A.(3) should be investigated and verified or disproved.

Examined and Approved:

A. J. Patrick
Chief
Marine Surveys Division

R. K. Houlton
Associate Director
Office of Marine Surveys
and Maps


SOUTHPORT
Elizabeth
River
marsh
SMITH I.
Bald Head
Baldhead Cr.
Bay Beach
Bazzard Bay
Still Cr.
CAPE FEAR
Cape Fear Slue
breakers
Four Mile Slue
61290 W.D.
9115
8511
6541
9359
5655
3350
9116
Cape Fear River
The controlling depths at mean low water were:
feet to Southport
feet to Wilmington
Chart - 1236

(3-25-83) NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9359

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.

CHART	DATE	CARTOGRAPHER	REMARKS
426	3-10-75	G Moore	~~Full~~ Part ~~Before~~ After Verification Review Inspection Signed Via
			Drawing No.
11536 (1236)	10-22-75	G Moore	~~Full~~ Part ~~Before~~ After Verification Review Inspection Signed Via
			Drawing No.
11520 (1110)	11-19-75	G Moore	~~Full~~ Part ~~Before~~ After Verification Review Inspection Signed Via
			Drawing No.
426	8/20/76	F B Powers	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. Category 1 (Scope Project)
835	11-17-76	E N Badowski	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. Category 1 (Scope Project)
11536 (1236)	8 May 79	Alex. Rudichevich	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. FULLY APPD CAT. 1 (SCOPE PROJECT) via ch. 11537 (426)
~~11536~~	~~10/24/82~~	~~Mary J Brown~~	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. ~~41 Fully appd through Chart 11536~~
11536	10/24/82	Mark Friese	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 41 Fully Appd through Chart 11536
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.

FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975. USCOMM-DC 8558-P83