

9500

Diag. Cht. No. 1235

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-10-1-75
Office No. H-9500

LOCALITY

State NORTH CAROLINA
General Locality ... CAPE FEAR RIVER
Locality VICINITY OF WILMINGTON

19 75

CHIEF OF PARTY
Fidel T. Smith

LIBRARY & ARCHIVES

DATE April 5, 1978

9500

4-3
115

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✓ = Misc. items removed from the D.R. and filed with the field records.

HYDROGRAPHIC TITLE SHEET

H-9500

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-10-1-75

State North Carolina

CAPE FEAR RIVER

General locality Wilmington

VICINITY OF WILMINGTON

Locality Cape Fear River, Northeast Cape Fear River, Brunswick River

Scale 1:10,000

Date of survey 6 January 1975 to 14 April '75

Instructions dated 10 July 1974

Project No. OPR-437-AHP-74

Vessel AHP-Launch 1260, Skiff 570

Chief of party LCDR Fidel T. Smith

Surveyed by Lt.(jg) Wm. E. George, L. Gilden, R. Snow, W. Sprye, S. Weisner

Soundings taken by echo sounder, ~~and~~ pole R. Snow, W. Sprye, S. Weisner

Graphic record scaled by R. Snow, S. Weisner

Graphic record checked by W.E. George, L. Gilden, R. Snow

Protracted by W. E. George, L. Gilden

Automated plot by AMC - CALCOMP-618

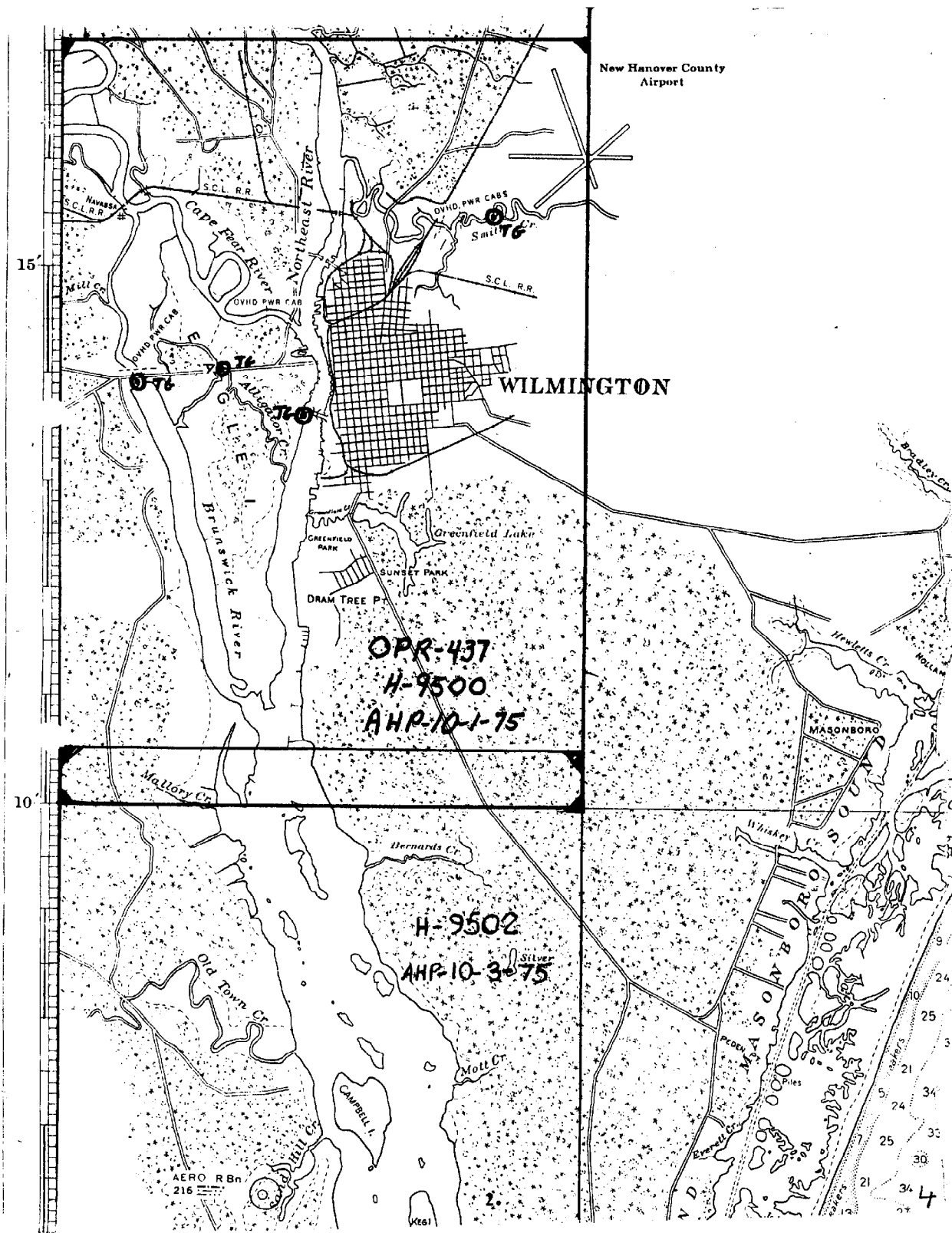
Verification by Atlantic Marine Center (H.R. Smith) AMC

Soundings in ~~fathoms~~ feet at MLW ~~MLLW~~ reduced by Smooth ~~predicted~~ tides

REMARKS: All times are in GMT

Notes in Red by Verifier

Applied to Ads 9-12-78



New Hanover County
Airport

WILMINGTON

OPR-437
H-9500
AHP-10-1-75

H-9502
AHP-10-3-75

AERO R Bn
216

15'

10'

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DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SURVEY H-9500 (AHP-10-1-75)

SCALE: 1:10,000
VESSEL: ATLANTIC HYDROGRAPHIC PARTY

1975
CHIEF OF PARTY JOHN O. ROLLAND

A. PROJECT

The project number for this survey is OPR-437-AHP-74. The date of the original instructions was 10 July 1974. No supplemental instructions were issued.

B. AREA SURVEYED

The areas covered by this survey are parts of the Cape Fear River, Northeast Cape Fear River, and the entire Brunswick River in the vicinity of Wilmington, North Carolina.

The general locality of the area is 24 to 31 nautical miles up the Cape Fear River at Wilmington, North Carolina.

The northern limit of this survey is at Latitude $34^{\circ} 17'$. The southern limit of this survey is at Latitude $34^{\circ} 10'$.

The survey was started on 6 January 1975 and was completed on 14 April 1975.

No prior surveys were provided for this project.

This survey junctions to the south with the following contemporary survey:

Registry No.	H-9502
Scale	1:10,000
Date	1975

C. Sounding Vessels

The following survey vessels were used to obtain soundings:

<u>Vessel</u>	<u>Color to Identify Work</u>
Launch 1260 (28' Monark, Tunnel drive)	Blue
Skiff 570 (16' Fiberglass Outboard)	Red

D. Sounding Equipment and Corrections to Echo Soundings

Raytheon Fathometer No. 535, DE-723, was used on Launch 1260 for all depths greater than three feet. All depths less than three feet were obtained by a sounding pole.

A sounding pole was used on Skiff 570 to obtain some soundings. All other soundings were obtained on Raytheon Fathometer No. 1888, DE-723.

The general depth range of this survey was from $\frac{1}{2}$ to 48 feet.

Echo sounder corrections were determined from daily bar checks; no trouble was encountered with the sounding equipment.

The bar check gear and the sounding poles were measured before and after the completion of this survey with a steel tape measure. No change in length was observed in any of the equipment.

All fathograms were checked by the hydrographer and found to be adequate. All fathograms were check scanned by trained personnel for peaks, deeps, strays, and initial error on the trace.

Digital phase checks were also performed as frequently as possible. Frequent F-scale checks were made routinely as the hydrography progressed.

An abstract of all barchecks, correction to depth curves and velocity tables will accompany this report.

Settlement and squat corrections for both Launch 1260 and Skiff 570 were determined 31 May 1973. These values are assumed to be unchanged because no modifications or changes in weight distribution have been made to either vessel.

E. Hydrographic Sheets

The boat sheet projection was ruled by AMC computer-plotter. Field records and logging punch tape, prepared by party personnel, have been transmitted to AMC Processing Division for smooth plotting and verification.

F. Control Stations

Horizontal control stations were located by Photo Party 61. Methods used to locate these stations are discussed in the Horizontal Control Report submitted by Photo Party 61. Copies of geodetic abstracts and computations are included with the field records of this survey. Inverse distances furnished by Party 61 for calibration of Del Norte equipment are included in this report.

G. Hydrographic Position Control

All electronic control was provided by Del Norte distance measuring equipment. The following is a list of techniques used to position the survey vessels during this survey:

- Range-Range
- Range-Visual (Del Norte distance - Sextant Angle)
- Range-Azimuth (Del Norte distance - T2 cut)
- Visual
- "See - Boat Sheet" method

When "See - Boat - Sheet" method was used to position the boat, visual fixes were scaled from the boatsheet to facilitate electronic data processing.

The calibration of electronic control is discussed in a Special Report as specified by the Project Instructions. A copy of this Electronic Control Report accompanies this Descriptive Report.

H. Shoreline

Shoreline detail for this survey was obtained from the following shoreline manuscripts:

- TP-00669
- TP-00670
- TP-00671
- TP-00672

All field edit was done by Photo Party 61. The mean high and low water line was not defined by hydrography in most areas due to the foul shoreline and marshy banks. It was found that unnatural depths existed at the shoreline due to extensive dredging of the maintained channels.

I. Crosslines

Crosslines were run in excess of 10% of the regular system of hydrography. The crosslines were in good agreement with the regular system of hydrography. Any differences between the echo soundings and the pole soundings will be resolved when settlement and squat, actual tides, and velocity corrections are applied to echo soundings.

J. Junctions

There were no prior surveys available for junction comparison. This survey junctions with contemporary survey H-9502(AHP-10-3-75-scale 1:10,000, 1975). Agreement between the two surveys is very good with no adjustment to soundings or depth contours necessary.

K. Comparison with Prior Surveys

The following are the presurvey review items which fall within the limits of this survey.

PSI #16 ✓

from NKM No. 52 of 1966

Described as: (1) Submerged pile, charted in Lat. 34° 11.14', Long. 77° 57.58'. This item is the remains of Clark Island Light. (2) obstruction reported, PA charted in Lat. 34° 11.8', Long. 77° 57.58' is reported to be the concrete remains of a former buoy platform. ✓ *From CL-1582 of 1971 and CL-1433 of 1973.*

Instructions:

The pile and obstruction should be verified or disproved; their positions and least depths or elevations should be determined.

Results of Investigation:

This item has been verified as described. It is a square ^{concrete} ~~concrete~~ structure that is ^{19.5'} 19.5' ft. above ^{M.L.W.} M.L.W. (Ref: J.D. 56 position #1405). Retain this item on chart 426. ✓ *The pile was not located, Retain pile on chart*

PSI #17 ✓

Described as: Submerged pile charted in Lat. 34° 11.64', Long. 77° 57.48', originally charted as a pile from Corps of Engineers survey, of 1960, was reported nonexistent. (SP.81996)

Instructions:

This pile should be verified or disproved, and if found, the position and least depth determined.

Results of Investigation:

A search was made for this item at low water as hydrography progressed. No evidence of a submerged piling was found. Delete this item from the chart. ~~See Verifier's Report, for recommendation.~~
The investigation is considered inadequate to verify or disprove the existence of the pile. Recommend it be retained as charted.

PSI #18

Described as: Two visible wrecks and piling, PA charted in the vicinity of Lat. 34° 14.02', Long. 77° 59.166. The northern most wreck has been reported to be approximately 100 ft. in length and 30 to 40 ft. of it is visible above the waterline. The southern most wreck is reported to be a 100 ft. barge, mostly submerged.

Instructions:

The present condition of the wrecks should be determined and their positioning ascertained. The piling should be proved or disproved on the present survey, and if found, their condition and position ascertained.

Results of Investigation:

The position of the wreck was found to be:

North Latitude $34^{\circ} 14.11$ South Latitude $34^{\circ} 14.09$
end Longitude $77^{\circ} 59.30$ end Longitude $77^{\circ} 59.28$

The wreck bares its entire length at high water. It is a steel hull and should be a landmark for many years to come. (Ref: J.D.029 pos. #859 & 860).
Delimitation from TP-00671 used on smooth sheet.

Two piling were also found in this area. Both piling are wooden.

One pile is located at Lat. $34^{\circ} 13.97'$, Long. $77^{\circ} 59.13'$. It is crooked as if it had been hit by a barge. It covers about 0.2 ft. at high water and bares about 3" at MLW. (Pos. 842)

The other pile was located by Photo Party 61 at Lat. $34^{\circ} 13' 59.4609''$ Long. $77^{\circ} 59' 08.3373''$. It bares ~~approx 10 feet~~ at high tide.

The barge was located at Lat. $34^{\circ} 14.002$, Long. $77^{\circ} 59.15'$. At low water it is mostly covered. The most prominent sign of this sunken barge is its bits which uncover 2.5 ft. The barge itself uncovers approximately one foot at MLW.

TP-00671 location and elevation used on smooth sheet.

It is suggested that all items listed in PSI #18 of this report be charted. *Concur*

As a note of general information, the bridge just south of these items prohibits passage of large vessels in this area.

PSI #19

Described as: Three visible wrecks, PA charted in Lat. $34^{\circ} 14.87'$, Long. $77^{\circ} 58.33'$, Lat. $34^{\circ} 14.70'$, Long. $77^{\circ} 58.16'$, and Lat. $34^{\circ} 13.75'$, Long. $77^{\circ} 57.18'$, respectively originate with Chart Letter of 1971.

No. 1574

Instructions:

The position and present condition of these wrecks should be determined.

Results of Investigation:

The wreck located at Lat. $34^{\circ} 14.88'$, Long. $77^{\circ} 58.333$, is wooden, in good shape, and adequately located. Do not delete this wreck from the chart. *Recommend that this wreck be charted as shown the T-sheet. TP-00671*

The wreck located at Lat. $34^{\circ} 14.70'$, Long. $77^{\circ} 58.16'$ does not exist and should be deleted from the chart.

The wrecks located at Lat. 34° 13.75', Long. 77° 57.18' do exist. They are a pair of wooden tug boats. They are found to be within an area which is foul and is no danger to navigation. It appears that it would be more advantageous to mark the area foul instead of using the wreck symbol on the chart. Because of the wreck's location to the bridge crossing the Concur river, it has little value as a landmark. *Recommend this area remain charted.*

PSI #20

by N Tom No. 11 of 1961 & CL-1574 of 1971

Described as: Dangerous submerged wreck, 4 ft. reported, charted in Lat. 34° 13.87', Long. 77° 57.13'. This wreck was reported to be a barge sunk in 30 ft. of water.

Instructions:

This wreck should be verified or disproved, and if found its position and least depth determined.

Results of Investigations:

The wreck has been verified, but it falls within the limits of an area marked foul. It is recommended that the wreck symbol be deleted from the chart and the area marked foul as found on the boatsheet. *CONCUR.*

PSI #21

Described as: Piling PA charted in the vicinity of Lat. 34° 14.35', Long. 77° 57.33'. *CL-1433 of 1973.*

Instructions:

The present existence of this piling should be verified or disproved, and if found, their position and condition determined.

Results of Investigation:

The piling in question were located by Photo Party 61, and a foul area was determined by their efforts. This foul area is shown on the boatsheet. This foul area is outside of the channel but it should be depicted on the chart. *Recommend the area be charted as shown on T-sheet and smooth sheet. See Verifier's Report*

PSI #22

Described as: Visible wreck, PA charted in Lat. 34° 16.07', Long. 77° 56.90'. The wreck is reported to be a barge approximately 100 ft. long.

Instructions:

by CL-1433 of 1973.

The position and present condition of this wreck should be determined.

Results of Investigation:

Pass 513 in Snd. Vol. Visual Search - not found. Concur with Hy dragage.

Disproved. Delete from the chart.

PSI #23

by CL-1433 of 1973.

Described as: Shoaling rep. charted in Lat. $34^{\circ} 14.7'$, Long. $77^{\circ} 58.2'$, making passage through the entrance to the bend dangerous.

Instructions:

This area should be adequately developed to adequately delineate the shoaling.

Results of investigation:

Drastic departures from the data on the chart have been recorded and displayed in this area. Refer to the boatsheet for the most complete picture of the depths that actually exist. *recommend the area be charted as shown on the smooth sheet.*

Unnumbered PSI

No description given. Charted in Lat. $34^{\circ} 13.3$, Long. $77^{\circ} 57.1$; appears to indicate the investigation of three sunken wrecks.

Results

This area falls well outside the limits of the river's navigable channel. The wrecks are there as charted but in a highly disintegrated state. It is strongly advised that this area be marked on the chart as foul. *PSI 4183-*

No prior survey was provided for this project; no comparison with prior survey was made.

Extended foul area shown on TP-01671 to include D.P. at pos 4183 - descriptive note from TP 00671 adequately describes area.

L. Comparison with the Chart

A comparison of this survey was made with Chart 426, 13th Ed., April 20, 74.

Particular attention should be given to the following charted features:

(1) Smith Creek in Lat. $34^{\circ} 15' 50''$, Long. $77^{\circ} 56' 30''$ is described as 6 ft. REPT 1973.

This survey has found the controlling depth to be 10 ft. from the mouth of the creek to Lat. $34^{\circ} 15.5'$ and $77^{\circ} 55.9'$, then 8 ft. from that point to the end of the commercially navigable waters at the fixed bridge at Lat. $34^{\circ} 15.45'$, Long. $77^{\circ} 55.2'$. Special attention to the application of smooth tides should be taken into consideration before the final controlling depth is published. ✓

Chart present survey depths. (See Q.C. Report-item 2)

(2) Cape Fear River in Lat. $34^{\circ} 14' 53''$, Long. $77^{\circ} 58' 07''$, shoaling reported in what appears to be an old bend in the river or an old turning basin. ✓

Soundings in this area depart greatly from what appears on the chart. ✓

This survey has found the controlling depth to range from zero to 1 foot at MLW by applying predicted tides to all soundings. ✓

There does not appear to be any shoaling in the navigable part of the Cape Fear River which adjoins this area. ✓ *Chart present survey depths.*

(3) 9 Ft. Rep. 1973 in Lat. $34^{\circ} 14' 12''$, Long. $77^{\circ} 59' 20''$. This survey has found the controlling depth to be ~~18~~¹⁵ ft. at MLW by applying predicted tides to all soundings. It should be noted that like all narrow bodies of water with swift currents, the deepest soundings are found on the far side of its bends. ✓ *Chart present survey depths.*

It should also be noted that the ebb currents are very swift above the HWY 17 Bridge which crosses the upper Brunswick River.

(4) Alligator Creek in Lat. $34^{\circ} 13' 30''$, Long. $77^{\circ} 57' 45''$ does not exist and should be deleted from the chart.

There is no evidence of this creek on the shoreline manuscripts provided with this survey. See TP-00671

No trace of this creek was found during the survey. This creek should be deleted from the chart from its mouth on the west bank of the Cape Fear River to Lat. $34^{\circ} 14' 00''$, Long. $77^{\circ} 58' 09''$. ✓ *Concur*

(5) This survey has revealed a large body of water that is shown on the manuscript but not on the chart. Because of its distinctive shape and depth, this body of water appears to be the result of dredging.

The approximate center of this body of water is at Lat. $34^{\circ} 14' 04''$, Long. $77^{\circ} 58' 00''$. This item should be placed on the chart. The depths in this body of water range from $\frac{3}{3}$ to 18 ft. *Chart present survey information.*

(6) Marsh Island in Lat. $34^{\circ} 10' 47''$, Long. $77^{\circ} 57' 45''$, was supplied on the shoreline manuscripts and is on Chart 426. *Least depth of 1 ft. Pos 1401.*

Evidence of a shoal was found after developing the area. A pile of rocks and shells were found and a least depth obtained ~~by pole sounding~~ of 2.6 ft. at Lat. $34^{\circ} 10.80'$, Long. $77^{\circ} 57.73'$. No trace of a Marsh Island was found as indicated on the chart. *recommend that the Marsh Island be deleted from the chart. Chart present survey information.*

(7) A $\frac{1}{2}$ foot sounding charted ~~as PA~~ⁱⁿ Lat. $34^{\circ} 16' 07''$, Long. $77^{\circ} 57' 00''$, was not found after a development was run. It is suggested that this item be deleted from the chart. *Least depths in this area now 7 ft. Chart present survey information.*

(8) A charted 41 foot sounding at Lat. $34^{\circ} 11.15'$ and Long. $77^{\circ} 58.1$ was disproved. The controlling depths at the mouth of this basin ~~is~~^{are} now $\frac{1}{2}$ to 2 ft. at MLW.

Local residents report that such areas usually silt in rapidly after dredging for fill. *Chart present survey information.*

(9) It is respectfully requested that the roads and highways that cross Eagles Island, (Lat. $34^{\circ} 14'$, Long. $77^{\circ} 58'$), be charted as they actually exist.

At the present time the major route, HWY 17, is not charted and sections of the roads that are charted have been abandoned and their entrances blocked.

This oversight has been pointed out to the survey party in the field. One person pointed out, "How can you people adequately chart the depths of a river, if you cannot keep track of the roads on the chart you sell?"

One Notice to Mariners was reported in Lat. $34^{\circ} 16' 00''$, Long. $77^{\circ} 56' 58''$. The item was a tree awash at low water. This item possibly could have been the 1/2 ft. PA sounding described in paragraph 7 of this section.

The PA is associated with the visible wreck charted in the vicinity. The present survey did however locate a tree in the vicinity and that information is considered adequate to verify the N to M report.

M. Adequacy of Survey

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

Soundings were not obtained in a few pier slips, also a number of wharfs don't have soundings along their faces. *It has been noted in the sounding volumes that vessels were present in these areas during survey operations.*

N. Aids to Navigation

All charted aids to navigation on this survey were checked and found to be in position and adequately serve the purpose for which they were established except as listed below:

Day Markers No. 4 and No. 6 in approximate Lat. $34^{\circ} 15.95'$, Long. $77^{\circ} 57.0'$ should be moved west of their present position. Day Marker No. 4 should be moved ¹⁴⁰75 meters south southwest. Day Marker No. 6 should be moved ²⁰50 meters west.

The correct positioning of these aids ~~on the chart~~ will more adequately define the dredged channel.

O. Statistics

Launch 1260	
N.M. of Sounding Lines	113.4
Number of Positions	1415
Skiff 570	
N.M. of Sounding Lines	13.5
Number of Positions	204
Total lineal NM	126.9
Total Tide Gauges	84
Total of Bottom Samples	31
Total of Sq. Mi	6

P. Miscellaneous

All predicted tides applied to this survey are from Wilmington, N.C.

Q. Recommendations

None

R. Automated Data Processing

This survey was logged manually utilizing a new logger format devised by AMC Processing Division. This format enables the hydrographer to change methods of control without the necessity of separating tapes according to control types or having to prepare numerous Electronic Parameters, whenever control stations changed.

S. Reference to Reports

The following reports or records are necessary for a complete report:

Report on Electronic Control by AHP Launch 1260

Report on Horizontal Control by Photo Party 61.

August 13, 1975

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): Brunswick River, Smith Creek
Wilmington, Alligator Creek

Period: January 14-April 14, 1975

HYDROGRAPHIC SHEET: H-9500

OPR: 437

Locality: Brunswick, Cape Fear and Northeast Rivers

Plane of reference (mean ~~lower~~ low water) 0.5 ft-Alligator Creek
2.8 ft-Brunswick River
1.1 ft-Smith Creek
2.4 ft-Wilmington

Height of Mean High Water above Plane of Reference is 4.2 ft

Remarks: Recommended zoning:

- (1) In the Brunswick River zone direct on the Brunswick River gage
- (2) In Alligator Creek zone direct on the Alligator Creek gage
- (3) In Smith Creek zone direct on the Smith Creek gage
- (4) In the Cape Fear and Northeast Rivers zone direct on Wilmington

James R. Hubbard

Chief, Tides Branch

CAPE FEAR RIVER
OPR-437 H-9500

Descriptive Tide Note:

This survey was supplied predicted tides based on:

Wilmington, N.C. Lat. $34^{\circ} 13' 34''$
Long. $77^{\circ} 57' 15''$

These predicted tides were used for reduction of data for boatsheet processing.

The following is a list of tide gauges and tide staffs established during this survey:

- | Tide Gauges | OPR 437 | H-9500 | 1975 |
|--|----------------------------|-----------------------------|------|
| 1. Brunswick River was a 30 day gauge | Lat. $34^{\circ} 13' 54''$ | Long. $77^{\circ} 59' 10''$ | |
| It was a standard Bubbler gauge with a 0 to 9 ft. staff screwed to a 2 x 6 plank then nailed to a piling on the end of a pier at N.C. State Maintenance Yard at the intersection of U.S. 17 South and U.S. 133 South, 3 miles south of Wilmington, N.C. | | | |
| 2. Alligator Creek was a temporary gauge | Lat. $34^{\circ} 14' 5''$ | Long. $77^{\circ} 58' 12''$ | |
| It was a standard Bubbler gauge with a 0 to 6 ft. staff screwed to a 2 x 4 then secured to a concrete bridge support which permits U.S. 17 to cross Alligator Creek. This gauge was used during the survey of Alligator Creek. It was used in place of a tide staff. | | | |
| 3. Smith Creek was a temporary gauge | Lat. $34^{\circ} 15' 28''$ | Long. $77^{\circ} 55' 12''$ | |
| It was a standard Bubbler gauge with a 0 to 6 ft. staff screwed to a 2 x 4 then secured to a concrete bridge support which permits 23 rd. st. on the outskirts of Wilmington to cross Smith Creek. This gauge was used during the survey of Smith Creek. It was used in place of a tide staff. | | | |

All data that was collected was sent to Rockville for tidal zoning and determination of smooth tides for processing the Smooth Sheet.

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

0.0 0.25 0.5 1.0 1.5

CORRECTIONS IN FEET. ZEROED.

FORM 2265-117 (2-24)	U.S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY
VELOCITY CORRECTIONS	
Ship <u>USS Launch 1260</u>	
Comd'g. <u>LCDR John Rolland</u>	
These corrections are to be used	
between <u>Jan 19 25</u> and <u>April 19 25</u>	
in the locality <u>Coast East River</u>	
for hydrographic surveys Nos. <u>14-7500</u>	

TABLE No. 1

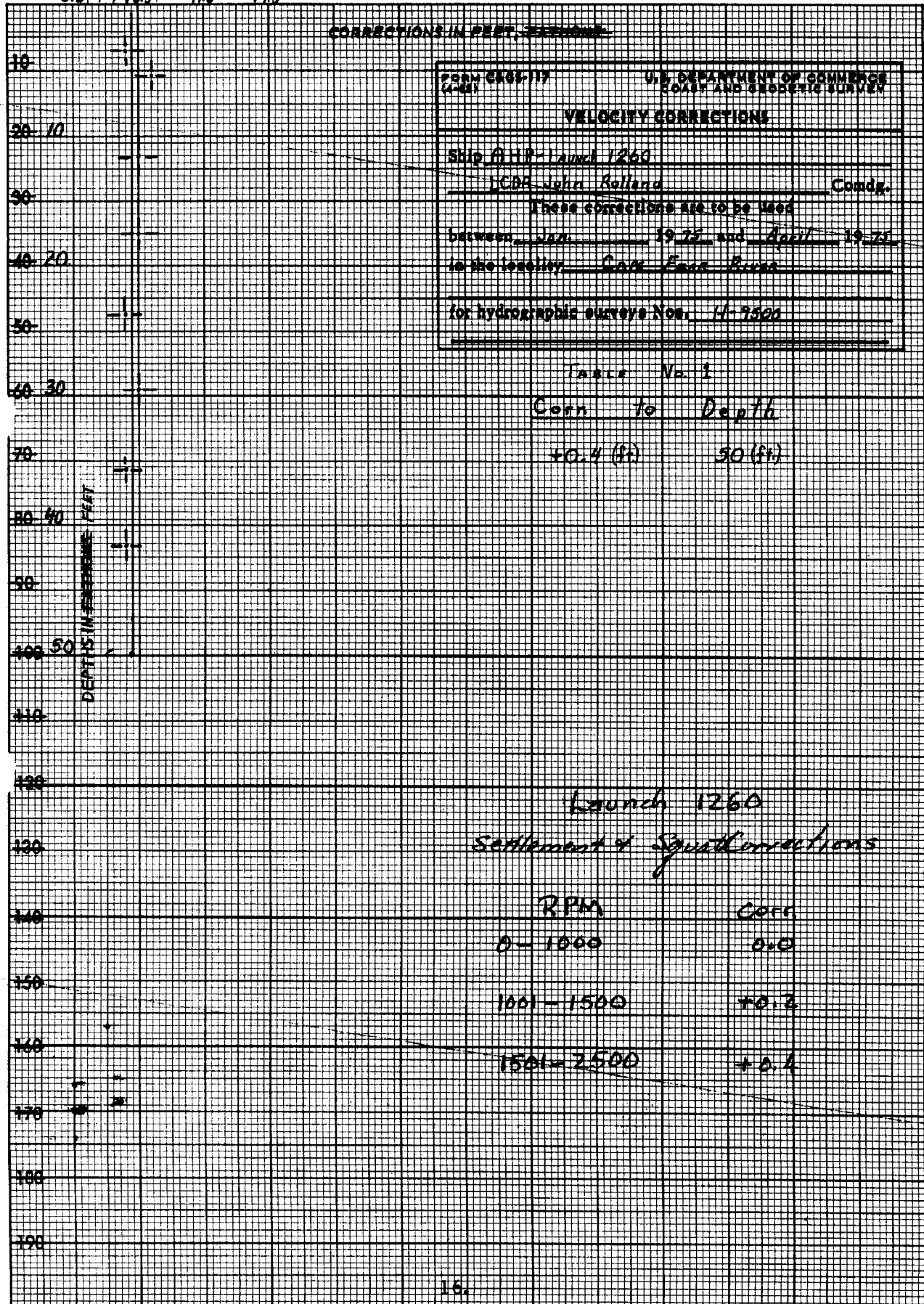
Corr. to	Depth
+0.4 (ft)	50 (ft)

Launch 1260
Settlement & Squat Corrections

RPM	Corr.
0-1000	0.0
1001-1500	+0.2
1501-2500	+0.4

In deep water add ± 0 to these figures

DEPTH IN FATHOMS



Corr. Ft.
 - .6 - .4 - .2 0 .2 .4 .6
 (Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

CORRECTIONS IN FEET, FATHOMS

NOAA FORM 78-21 U.S. DEPARTMENT OF COMMERCE
 110-72 NOAA
 NATIONAL OCEAN SURVEY

VELOCITY CORRECTIONS

Ship ANP SKIP 570

LCDR John E. Rolland Comdg.

These corrections are to be used
 between January 19 75 and April 19 75
 in the locality Cape Fear River

for hydrographic surveys Nos. H-9500 & H-9502

Vel Table No. 2

Fath. Depth	Corr.
12.0	-0.4
23.0	-0.2
deeper	0.0

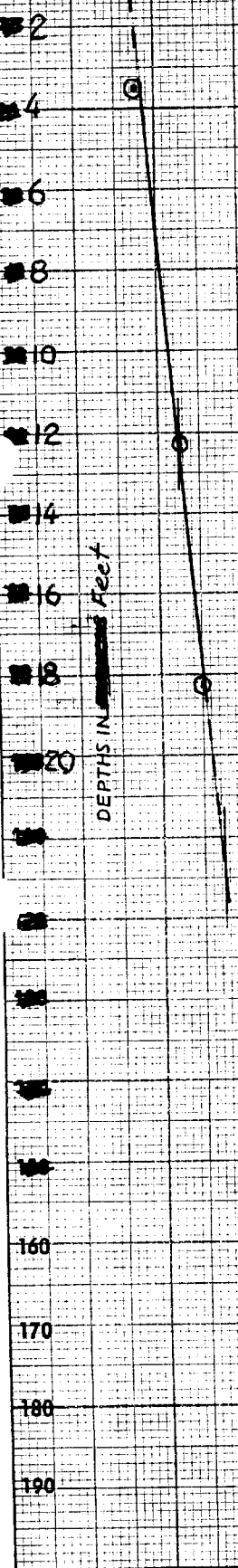
Settlement & Squat Corr.

SKIP 570

RPM	Corr.
All Speeds	+0.3

For deep water add a 0 to these figures

DEPTHS IN Feet



SIGNAL LIST

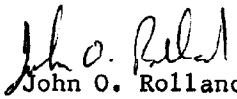
H-9500 (AHP-10-1-74)

001✓	34	11	3044	077	57	2182	
002✓	34	11	3678	077	57	2924	-Del Norte
003✓	34	11	4952	077	57	2065	
004✓	34	12	0382	077	57	3851	-Del Norte
005✓	34	12	2731	077	57	2061	
006✓	34	12	4576	077	57	3428	
007✓	34	13	1973	077	57	0842	
008✓	34	14	0988	077	57	0216	-Del Norte
009✓	34	14	2747	077	57	1914	
010✓	34	15	3026	077	56	5385	-Del Norte
011✓	34	12	5606	077	57	1389	
012✓	34	13	3840	077	57	0962	
013✓	34	13	3764	077	57	0442	
014✓	34	13	5481	077	56	5930	
015✓	34	13	4791	077	57	0007	
016✓	34	13	5571	077	57	0678	
017✓	34	14	0761	077	57	1048	
018✓	34	15	2099	077	56	5259	
019✓	34	15	0712	077	56	5912	
021✓	34	15	2336	077	56	5827	
022✓	34	15	2918	077	56	5969	
023✓	34	15	3159	077	56	5986	
024✓	34	15	5991	077	57	0746	
025✓	34	16	2220	077	56	5270	
026✓	34	15	4255	077	56	5334	
027✓	34	15	3142	077	56	5675	-Del Norte
028✓	34	16	1568	077	57	0724	
029✓	34	16	0391	077	56	5268	
030✓	34	15	5224	077	56	5400	
031✓	34	16	3378	077	57	0712	
032✓	34	16	5293	077	57	0732	
033✓	34	16	4125	077	56	5628	
034✓	34	14	3947	077	57	2028	
035✓	34	14	2252	077	57	0902	
036✓	34	15	0408	077	57	0417	-Del Norte
037✓	34	14	3522	077	57	1186	
039✓	34	14	3723	077	57	3434	-Del Norte
040✓	34	14	2830	077	58	0260	-Del Norte
041✓	34	14	4810	077	58	2780	-Del Norte
042✓	34	15	3998	077	58	4558	-Del Norte
044✓	34	15	1603	077	59	0829	-Del Norte
045✓	34	14	4985	077	59	2797	-Del Norte

046✓	34	14	2531	077	59	1559	
047✓	34	14	0964	077	59	2334	
048✓	34	13	5784	077	59	0657	
050✓	34	10	5992	077	58	1057	
053✓	34	14	3293	077	57	4184	
056✓	34	13	2706	077	58	4398	
061✓	34	09	5826	077	57	5234	- Del Norte - Lower Brunswick Range Rear Light
063✓	34	09	4385	077	57	3482	- Fourth Easter Jetty Rear Range Light
068	34	07	5229	077	56	0608	
070	34	07	3688	077	55	4250	
076	34	05	1191	077	55	4961	
082✓	34	16	1119	077	59	1454	- Del Norte
096	34	05	4440	077	55	4094	
501✓	34	12	1138	077	57	1153	- Tank
502✓	34	16	5778	077	59	0283	- Tank
503✓	34	16	5660	077	59	0283	
504✓	34	13	3489	077	59	2089	- T.U. Tower Highest of Three
507✓	34	15	3348	077	59	2708	- Tank - NAVASSA
900✓	34	17	0000	077	59	3000	- Grid intersection
901✓	34	16	0000	077	59	3000	
902✓	34	16	0000	077	59	3000	
903	34	07	0000	077	59	3000	
904	34	08	0000	077	59	3000	
905	34	09	0000	077	59	3000	
906	34	06	0000	077	57	3000	
907	34	07	0000	077	57	3000	
908	34	07	0000	077	57	3000	
909	34	03	0000	077	57	0000	
910	34	04	0000	077	57	0000	
911	34	04	0000	077	57	0000	
912	34	05	0000	077	57	0000	- Grid intersection
111✓	34	11	27359	077	57	01696	- Wilmington, North Carolina Shipbuilding Co, TK 1942 139
112✓	34	14	08932	077	57	09578	- NAVAL 1908-17 139
113	34	12	34002	077	57	33337	- Eagle Island Light, Br. 1, 1917 139

APPROVAL SHEET
SURVEY H-9500 (AHP-10-1-75)

The hydrographic records transmitted with this report are complete and adequate.


John O. Rolland
Lt. Cdr., NOAA
Chief, Atlantic Hydrographic Party

APPROVAL SHEET
FOR
SURVEY H-9500

- A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position printout has/~~has not~~ been made. A new final sounding printout has/~~has not~~ been made.
- B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Provisional Hydrographic Manual. Exceptions are listed in the Verifier's Report.

Date: 3/8/78

Signed: *R. D. Sunkin*
Title: Chief, Verification Branch

H-9500

GEOGRAPHIC NAMES

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
	ON CHART NO.	ON PREVIOUS SURVEY NO.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	GRAND MCNALLY ATLAS	U.S. LIGHT LIST			
ALLIGATOR CREEK ✓											1
BRUNSWICK RIVER ✓											2
BURNT MILL CREEK ✓											3
CAPE FEAR RIVER ✓											4
CARTWHEEL BRANCH ✓											5
DRUM TREE POINT ✓											6
EAGLE ISLAND ✓											7
JACKEYS CREEK ✓											8
MUDDY POINT ✓											9
NORTHEAST CAPE FEAR RIVER ✓											10
POINT PETER ✓ REDMOND (PER LTR 1970)											11
REDMAN CREEK ✓											12
SMITH CREEK ✓											13
STURGEON CREEK ✓											14
SUNSET PARK ✓											15
WILMINGTON ✓											16
NAVASSA											17
HILTON BASQUE BRIDGE											18
											19
											20
											21
											22
											23
											24
											25

APPROVED

Chas E. Harrington

CHIEF GEOGRAPHER -C3x8

26 MAY 1978

HYDROGRAPHIC SURVEY STATISTICS

H-9500

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS & PRELIMINARY OVERLAYS	2/85
DESCRIPTIVE REPORT	1	SMOOTH OVERLAYS: POS. ARC, EXCESS	3

DESCRIP-TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS SOURCE DOCUMENTS
ENVELOPES						1
CAHIERS	1 with printouts					
VOLUMES	7					
BOXES			1-smooth			

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	TOTALS
POSITIONS ON SHEET			1611
POSITIONS CHECKED		500	
POSITIONS REVISED		340	
SOUNDINGS REVISED		120	
SOUNDINGS ERRONEOUSLY SPACED		75	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		3	
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	6		
VERIFICATION OF CONTROL		9	
VERIFICATION OF POSITIONS		198	
VERIFICATION OF SOUNDINGS		211	
COMPILATION OF SMOOTH SHEET		161	
APPLICATION OF TOPOGRAPHY		41	
APPLICATION OF PHOTOBATHYMETRY		0	
JUNCTIONS		6	
COMPARISON WITH PRIOR SURVEYS & CHARTS		48	
VERIFIER'S REPORT		31	
OTHER			
TOTALS	6	705	711

Pre-Verification by

F. Saunders

Beginning Date

07/28/75

Ending Date

07/29/75

Verification by

M. Hickson, D. Mason, H. Smith

Beginning Date

08/06/76

Ending Date

08/25/77

Verification Check by

R. D. Sanocki, W. L. Jonns

Time (Hours)

40

Date

12/16/77

Marine Center Inspection by

Hydrographic Inspection Team (AMC)

Time (Hours)

24

Date

03/08/78

Quality Control Inspection by

A. W. Wellman

Time (Hours)

45

Date

6-6-78

Requirements Evaluation by

A. Baumgardner

Time (Hours)

5

Date

9-1-78

CFGKM

REGISTRY 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 REQUIRED _____ INITIALS _____

REMARKS:

REGISTRY NO. H-9500

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 6-30-82 TIME REQUIRED 30 Hrs INITIALS JAC

REMARKS:

1. Digitize positions 580, 582, and 583 in the vicinity of latitude $34^{\circ}14'30''$, longitude $77^{\circ}57'30''$.
2. Digitize hand plotted soundings between 4199 to 4200 and 4201 to 4202 as indicated in the printout.

H-9500

Items for Future Presurvey Reviews

Three charted piles in the vicinity of latitude 34°11.25', longitude 77°57.36' were carried forward to the present survey as submerged piles from T-5191 (1933). During future work in the area the retained piles should be investigated and verified or disproved.

In addition, certain charted features originating with miscellaneous sources were not verified or disproved by the present survey and were referred to the compiler for identification and appropriate action. Such questionable charted features not shown on the present survey should be identified and recommended for investigation during the preparation of future Presurvey Reviews.

<u>Position Index</u>		<u>Bottom Change</u>	<u>Use</u>	<u>Resurvey</u>
<u>Lat.</u>	<u>Long.</u>	<u>Index</u>	<u>Index</u>	<u>Cycle</u>
341	0780	3	2	50 years

2. Control and Shoreline

a. The source of the control is adequately described in Sections F^V of the Descriptive Report.
_{and G}

b. The shoreline was taken from the following final reviewed manuscripts: TP-00669, TP-00670, TP-00671, and TP-00672, all photographed in October 1973; field edit dates of February 1975, March 1975, February 1975, and January - March 1975; respectively. (See Q.C. Report - item 1)

3. Hydrography

a. Depths at crossings are in good agreement.

b. The standard depth curves were adequately delineated. The low water line was not defined by hydrography in most areas due to the foul shoreline, inshore dredging, and marshy banks. Depth curves could not be drawn consistently where the dredge channels extend from shore to shore. Brown curves and dashed curves were added to emphasize important features.

c. While there are no specific developments on this survey; the development of the bottom configuration and the determination of least depths are considered adequate. See Section M of the Descriptive Report for note on lack of soundings in slips and at wharfs.

4. Condition of Survey

The smooth sheet and accompanying overlays, hydrographic records and reports are adequate and conform to the requirements of the Provisional Hydrographic Manual, except:

a. Signal 502 (a Tank) was not plotted on the field sheet nor included in the signal list. Signal 63 was not plotted on the field sheet.

b. Some D.P.s (580-583) were not plotted on the field sheet. No check angles were taken on these D.P.s. The azimuth angle obtained on these positions was observed from the right of the observer rather than the left and subsequently could not be plotted by the automated processing system. The positions were hand plotted on the smooth sheet.

c. Numerous counter-clockwise angles were taken by the field on some positions. These positions had to be replotted during verification.

5. Junctions

An adequate junction was effected with H-9502 (1975) to the south, with good agreement. There is no contemporary survey to the north. This survey extends beyond the limits of charted hydrography to the north.

6. Comparison With Prior Surveys

T- 5191	(1933)	1:10,000
H-1191a	(1873)	1:10,000
H-1190b	(1873)	1:10,000 (See Q.C. Report - item 3)

The above prior surveys cover the common area of the present survey. A comparison with the above prior surveys and the present survey reveals the following differences:

The Brunswick River depth differences range from 30 to 35 feet deeper (at the mouth of the river) on the present survey to good agreement (half way between the mouth and the bridge).^{*-1} The shoreline on the Cape Fear River below the mouth of the Brunswick has filled in on the west bank. The shoreline on the rest of the survey shows a similar configuration.^{*-2} The horseshoe bend on the prior survey (between Wilmington and Narassa) has shoaled to 1 foot on the present survey, from 31 feet on the prior survey. Alligator Creek is no longer in existence.^{*-3} Changes are attributed to natural and artificial causes. (* See Q.C. Report - items 4a, 4b and 4c respectively)

The present survey is adequate to supersede the above prior hydrographic surveys within the common area. Three piles were carried forward as submerged piles from T-5191

7. Comparison With Chart 11537 (14th Edition, March 8, 1975)

(The 13th Edition, dated April 20, 1974, which was used for the field comparison, was not available at the Atlantic Marine Center.)

a. Hydrography

The two prior surveys (H-1191a and H-1190b of 1873) are the latest NOS surveys of this area. No charted data could be verified from these surveys. Some of the charted information is from unascertainable sources and is referred to Quality Control for determination.

With the exceptions noted in Sections K and L of the Descriptive Report, attention is directed to the following:

- (1) Presurvey Review Item #21 - The piling, P.A.,

charted in the vicinity of latitude $34^{\circ} 14.35'$, longitude $77^{\circ} 57.33'$ originates with Chart Letter No. 1433 of 1973.

The piling is shown on the T-sheet. It is recommended that the area be charted as shown on the present survey.

(2) Presurvey Review Item #26 - The submerged jetties charted at several locations in the area north of Campbell Island originates with 1945 photography.

The present survey took 1 D.P., position 1290, on the north most jetty; this position agrees with the T-sheet. These jetties are all shown on the T-sheet (two on this survey). One jetty, position 1290, bares 2 feet at MLW and the other has an elevation of 3 feet at MLW, taken from the T-sheet. It is recommended that these jetties be charted as shown on the T-sheet and the present survey.

(3) There are numerous features throughout the survey area, some of which are shown on the T-sheet but were not located by the present survey; however, the field did locate many features which, when all are plotted on the smooth sheet at a scale of 1:10,000, is too much detail for charting at a scale of 1:40,000. A number of features are discussed in Section L of the Descriptive Report.

(4) A pile charted in latitude $34^{\circ} 13.30'$, longitude $77^{\circ} 57.31'$ - Not included in Presurvey Review. Not shown on the T-sheet and not located by the present survey. It is doubtful that this pile exists in the charted location, which is within Corps of Engineers maintained dredged channel. It is recommended that this pile be charted, as existence doubtful (Referred to compiler for evaluation and concurrence)

(5) An overhead power cable in the vicinity of latitude $34^{\circ} 13.95'$, longitude $77^{\circ} 59.10'$, south of Highway 17 bridge on the Brunswick River, is not shown on the chart; recommend this feature be charted. (Referred to compiler for concurrence)

b. Controlling Depths

Differences in controlling depths between the present survey and the charted depths are listed below:

Channel	Charted depths U.S. Corps of Engineers (3/8/75)			
	Left Outside Quarter	Left Inside Quarter	Right Inside Quarter	Right Outside Quarter
Upper Brunswick	26.9/26.0*	X *	X *	34.9/30.0*
Fourth East Jetty	X	X	X	X
Between Channel	38.0/35.0	X	X	38.0/34.0
Anchorage Basin	36.8/32.0	37.3/35.0	X	X
To Turning Basin	19.5/30.0	X	X	25.0/30.0
Turning Basin	X	X	X	27.8/30.0
Thru Turning Basin	X	X	X	X
Hilton Bridge	X	X	X	X
To Upper Turning Basin	25.0/21.0	25.0/21.0	25.0/21.0	23.5/20.0
Upper Turning Basin	24.9/19.0	25.0/21.0	X	X
To End of Chart	13.6/11.0	X	X	X
			Middle	
Cape Fear River from Wilmington to Narassa			11.0/22.0	

* Denotes depths on present survey

X Denotes depths with no conflict

Except as noted above, and in the Controlling Depths of this report and sections K and L of the Descriptive Report, the present survey is considered adequate to supersede the charted data within the common area.

c. Aids to Navigation

The charted positions of the aids adequately mark the features intended and are in substantial agreement with the present survey location, except as noted below:

(1) The field took D.P.s on beacons No. 8 (position 442), No. 10 (position 443), No. 6 (position 472), and No. 4 (position 473). The positions of the D.P.s do not agree with the T-sheet locations. It is noted that the date of field edit is subsequent to the date of the D.P.s. A discussion with Photo Review Branch revealed that these beacons were relocated during field edit (March 1975). The T-sheet positions were used.

(2) The chart shows 9 beacons centered around latitude 34° 10.30', longitude 77° 57.28', marked privately maintained. The field did not locate these beacons. The T-sheet shows only 6 beacons (Nos. 3, 4, and 5 are missing). The present survey information should be charted unless subsequent information

indicates otherwise.

8. Compliance With Instructions

This survey adequately complies with Project Instructions.

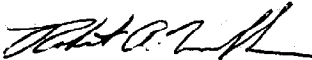
9. Additional Field Work

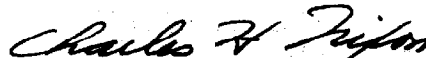
This is considered to be an adequate basic survey and no additional field work is recommended.


Inspection Report
H- 9500

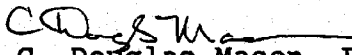
Any verification errors regarding procedures and presentation of survey data detected during inspection by the Hydrographic Inspection Team have been corrected before submission for administrative approval. HIT comments regarding quality of field work, compliance with instructions, and adequacy of the survey have been incorporated within the Verifier's Report.


Examined and Approved:
Hydrographic Inspection Team
Date: MARCH 8, 1978


Robert A. Trauschke, CDR, NOAA
Chief, Processing Division

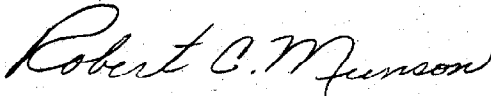

Charles H. Nixon, CDR, NOAA
Chief, Operations Division


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Guy F. Trefethen
Team Leader
Verification Branch

Approved/Forwarded


Robert C. Munson
RADM, NOAA
Director, Atlantic Marine Center



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Rockville, Md. 20852

C352/KWW

June 6, 1978

TO: *A. J. Patrick*
A. J. Patrick
Chief, Marine Surveys Division

THRU: Chief, Quality Control Branch

FROM: K. W. Wellman *K. W. Wellman*
Quality Evaluator

SUBJECT: Quality Control Report for H-9500 (1975), North Carolina,
Cape Fear River, Vicinity of Wilmington

A quality control inspection of H-9500 was accomplished to monitor the survey for obvious deficiencies with respect to data acquisition, delineation of the bottom, determination of least depths and navigation hazards, junctions, shoreline transfer, decisions and actions by the verifier, and cartographic presentation of data.

In general the present survey was found to conform to National Ocean Survey standards and requirements except as discussed in the Verifier's Report, the HIT Report, and as follows:

1. The shoreline in the upper portion of Cape Fear River (vicinity of latitude $34^{\circ}16.50'$, longitude $78^{\circ}00.00'$) was inked in black on the smooth sheet and ostensibly originates with reviewed TP-00669. The referenced T-sheet, however, does not show any shoreline in this area. Therefore, it was appropriately revised during quality control evaluation. Further, the situation should have been addressed in section 2 of the Verifier's Report.

Section 2 of the Verifier's Report is supplemented by the following:

There is no contemporary topographic survey for the shoreline along the upper reaches of the Cape Fear River in the vicinity of latitude $34^{\circ}16.50'$, longitude $78^{\circ}00.00'$. The shoreline in the referenced area is therefore delineated by a red-dashed line and is shown for orientation purposes only.

2. Reference section L(1) of the Descriptive Report:

The indicated controlling depth of 7 feet at the mouth of Smith Creek (vicinity of latitude $34^{\circ}16.00'$, longitude $77^{\circ}56.8'$) was noted to be



inconsistent with the depth curves in the area. Examination of the survey records during quality control inspection revealed that two positions were erroneously logged, thus adversely affecting the plotting of two lines of hydrography. During quality control evaluation the affected hydrography was corrected. Present depths of 7 feet fall in a charted 8-foot dredged channel in this area.

Section L(1) of the Descriptive Report is supplemented by the following:

It is noted, however, that lesser depths of 1 to 3 feet in proximity to the entrance to Smith Creek limit the effective width of the navigable channel in the area. It is recommended that consideration be given to establishing suitable aids to navigation to delineate the navigable channel entrance in the area.

3. Reference section 6 of the Verifier's Report:

Listed prior survey H-1190 b (1873) does not have any area in common with the present survey and was erroneously included in the referenced section of the Verifier's Report. Prior survey H-1191 b (1873) covers a portion of the area of the present survey and is considered to be the survey intended for inclusion in the referenced section of the Verifier's Report.

4. Section 6 of the Verifier's Report is supplemented by the following:

a. In addition, present depths throughout the area are generally as much as 26 feet deeper with scattered indications of shoaling of 6 to 8 feet in the upper Brunswick River.

b. The southern portion of the Brunswick River (south of latitude $34^{\circ}13.90'$, longitude $77^{\circ}59.10'$), however, is approximately 250 meters wider than shown on the prior surveys.

c. . . . no longer in existence; i.e., as shown on the prior surveys; however, an Alligator Creek is shown on the present survey in the area of the northern half of Eagle Island where no such creek was either delineated or extant at the time of the prior surveys.

5. The four silos charted as landmarks in the vicinity of latitude $34^{\circ}15.38'$, longitude $77^{\circ}57.03'$ were added to the smooth sheet from TP-00669 during quality control inspection.

6. Reference section 7 of the Verifier's Report:

The edition of chart 11537 used for comparison during verification was a later edition than the one current at the time of the survey. (See provisional manual--sections 5.3.4(L) and 6.3.10.) Past editions of charts

which are not available at the Marine Center should be ordered from the Physical Science Services Branch (C513) at Rockville.

7. Some charted items not verified or disproved by the present survey are not addressed in the Verifier's Report. Such items originate with miscellaneous sources and are referred to the compiler for identification and appropriate action.

cc:
C35
C351

3000
3400
3800
4200

K.A. MacDonald
R.J. Land

40,000
40,000

1974



15

10

14

34°10'

(39)

