

# 9802

NOTE: THIS SURVEY IS PLOTTED ON  
TWO SEPARATE SMOOTH SHEETS.

Diagrams 1232-2 & 1229-2

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. HSB-20-7-78  
Office No. H-9802

### LOCALITY

State North Carolina  
General Locality Pamlico Sound  
Locality Long Shoal to Clam Shoal

1978-79

CHIEF OF PARTY  
LCDR Thomas W. Richards

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DATE September 17, 1980

☆ U.S. GOV. PRINTING OFFICE: 1978-666-172

AREA 2  
CHARTS  
11555  
12204

9802

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HYDROGRAPHIC TITLE SHEET

H-9802

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.

HSB-20-7-78

State North Carolina

General locality Pamlico Sound

Locality South of Long Shoal to Clam Shoal

Scale 1:20,000 Date of survey Nov. 14, 1978 to May 1, 1979

Instructions dated September 9, 1977\* Project No. OPR-F201-HFP-77

Vessel NOAA Launch 1255 (HFP4), and Launch 1280

Chief of party Thomas W. Richards, LCDR., NOAA

Surveyed by David A Waltz, LT., NOAA

Soundings taken by echo sounder, ~~hand held, pole~~ Raytheon DE 723 D

Graphic record scaled by SW, KA, MP, MH

Graphic record checked by SW, KA, MP, MH, AF, DAW L.G. Cram, Verification Branch  
Field - PDP8/Hydroplot

Protracted by \_\_\_\_\_ Automated plot by AMC - Xynetics 1200  
Xynetics 1201 PLOTTER

Verification by AMC - Processing Division Leroy G. Cram

Soundings in ~~fathoms~~ feet at MLW ~~MLLW~~ Low Water Datum

REMARKS: \*Change No.1 10/18/77 SW Steve Weisner

Change No.2 11/3/77

Change No.3 2/27/79 KA Ken Ainsley

Change No.4 4/13/79 MP Mike Phillips

Changes in red ink made by MH Maurice Hickson

verifier during verification AF Alan Fryar

DAW David Waltz

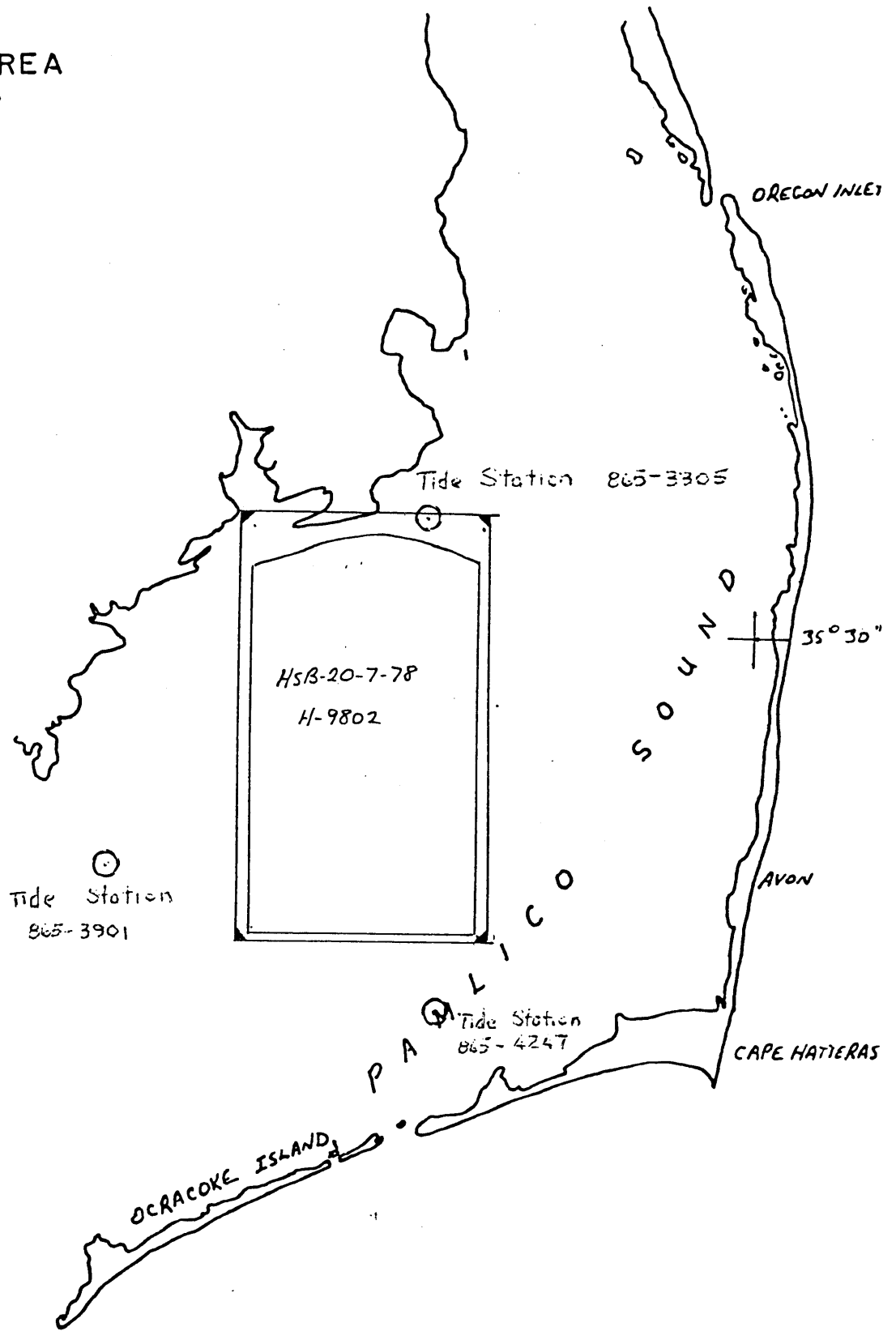
Misc. items have been removed from this DR and are filed with the field records

STANDARDS CK'D 8-3-83

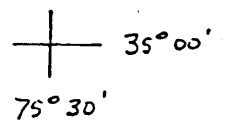
C. Loy

(1.)

SURVEY AREA  
CHART 12200



(2.)



DESCRIPTIVE REPORT  
TO ACCOMPANY  
HYDROGRAPHIC SURVEY H-9802 (HSB-20-7-78)

Scale: 1:20,000  
Vessel: NOAA Launch 1255 (HFP-4) Launch 1280  
Chief of Party: LCDR Thomas W. Richards  
Officer in Charge: LT David A. Waltz

A. PROJECT

This project was accomplished under the following Project Instructions: OPR-F201-HFP-77, Pamlico Sound, North Carolina, with the following changes:

*dated Sept. 9, 1977*

- Change No. 1, October 18, 197~~8~~7
- Change No. 2, November 3, 197~~8~~7
- Change No. 3, February 27, 1979
- Change No. 4, April 13, 1979

B. AREA SURVEYED

The area encompassed by the survey was east of Avon, North Carolina. The following points form the boundary of the area surveyed:

- |    |  |    |  |
|----|--|----|--|
| 1. | 35°18. <sup>1</sup> <sub>8</sub> 'N<br>75°42. <sup>2</sup> <sub>3</sub> 'W | 3. | 35°32. <sup>7</sup> <sub>8</sub> 'N to 35°34.2'N<br>75°52. <sup>2</sup> <sub>6</sub> 'W to 75°51.1'W |
| 2. | 35°18. <sup>1</sup> <sub>8</sub> 'N<br>75°52. <sup>2</sup> <sub>6</sub> 'W | 4. | 35°32. <sup>4</sup> <sub>5</sub> 'N to 35°32.9'N<br>75°42. <sup>2</sup> <sub>4</sub> 'W to 75°42.3'W |

See the "Survey Area and Boat Sheet Layout" sketch. The survey was conducted from November 14, 1978, to May 1, 1979. The survey was interrupted during December, 1978, and in January and March, 1979, for personnel leave, training, and engine repair reasons.

C. SOUNDING VESSEL

All hydrography on this survey was obtained by NOAA Launch 1255 (VESNO 1255). NOAA Launch 1280 was used to check tide gages and to obtain a position for a stranded wreck located in water too shallow for Launch 1255.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

The following Raytheon sounding equipment was used to obtain soundings during the survey:

Recorder	Model DE-723	S/N 37010
ECU	Model DE-723D	S/N 37011
Digitizer	Model DDM	S/N 1907

Velocity corrections were determined solely by means of bar checks, which were taken as frequently as possible, weather permitting. Bar checks were taken only when sea conditions were calm enough to accurately read the line markings. Chain was used for the bar check line, resulting in a zero line correction. The chain was measured against a steel tape at the beginning and end of the survey.

The velocity corrections were determined by averaging the digital depth (both up and down) for the various depths. These were added to the transducer draft to obtain the digital depth. This value was then compared to the true depth, which is the bar depth plus a zero line correction.

Settlement and squat was determined on August 23, 1978, in Ocean City, Maryland, using the "Level Method" as explained in the Hydrographic Manual, Section 4.9.4.2. Data from the settlement and squat determinations are included in the Appendices. } See Verifiers Report

The draft (water line to the bottom of the transducer) of Launch 1255 was measured in April 1977, when the vessel was drydocked. It was determined to be 2.6 feet and used for the entire survey.

The fathometer was calibrated and operated according to the manufacturer's specifications. Technicians monitored the fathometer continually during the survey. Fathometer frequency and voltage, as well as any analog-digital correction, was annotated in the survey records. There were no problems encountered which would have affected the accuracy of the survey.

Since the periodic tide in Pamlico Sound is less than one-half foot, no predicted tides were used for the on-line plot. Non-periodic changes dominate the water level in the sound, primarily due to wind setup. Daily observations of the tide staff at Oliver Reef Lt. were made and recorded in the sounding volume, in addition to the automatic recording tide gages. The field sheets were corrected for tides with a "rough" tide tape made from these observations and reduced to a mean water level for the sound of 1.7 feet on the Oliver Reef Staff. The preliminary mean water level on Oliver Reef Staff was supplied by Tides and Water Levels Branch, Rockville, from data obtained prior to the 1978-1979 field season.

### E. HYDROGRAPHIC SHEETS

The field sheets were prepared aboard Launch 1255 using the hydroplot system, complot roll plotter. The survey area was divided into two plotter sheets along Long. 75°48.1'W. Bottom samples and crosslines were plotted on an overlay sheet. The mainscheme sheet also contains detached positions and buffer lines along the twelve-foot curve. The data on the final field sheets has been corrected for approximate tides (as explained in Section D), draft, velocity, and electronic correctors. Verification and smooth plotting will be performed at the Atlantic Marine Center, Norfolk, Virginia. Projection parameter listings are included in the Appendices of this report.

### F. CONTROL STATIONS

The following control stations were used for electronic positioning control during this survey:

<u>Name</u>	<u>Position</u>	<u>Hydroplot Station No.</u>
H-2-NC-77 (1977)	35°35'12.464"N 75°28'07.683"W	001 (Raydist) 101 (ARGO)
H-3-NC-77 (1977)	35°21'17.568"N 75°30'22.843"W	002 (Raydist) 102 (ARGO)
H-1-NC-79 (1979)	35°12'28.207"N 75°42'22.736"W	103 (ARGO)

These stations were located by Operations Division, Atlantic Marine Center in November, 1977, and March 1979. A list of signals and calibration points is included in the Appendices of this report.

### G. HYDROGRAPHIC POSITION CONTROL

Two control systems were used for this survey: the Hastings - Raydist System and the new ARGO DM-54 system, manufactured by Cubic Western Data Corporation. No known difficulties were encountered which would have degraded the positional accuracy of the survey. Both survey systems were operated in the range-range mode at all times.

The following equipment was used:

#### Raydist Equipment (used JD 318 through 347)

Antenna Loading Coil	QB-52B	S/N 119 (JD 318-331) S/N 143 (JD 332-347)
Transmitter	TA-96B	S/N 85
Navigator	ZA-67A	S/N 59

The shore station equipment used was:

H-2-NC-77 (Hydroplot Station #001)  
Transmitter AA-60 S/N 55  
Power Supply SA-192 S/N 34  
Frequency Used: 1650.015 KHz

H-3-NC-77 (Hydroplot Station #002)  
Transmitter AA-60 S/N 54  
Power Supply SA-192 S/N 33  
Frequency Used: 1650.435 KHz

Argo DM-54 Equipment (JD 011-121)

Mobile Station (Aboard 1255)

Range Processing Unit S/N R047843 (JD 11-17)  
S/N R047854 (JD 38-121)

Control and Display Unit S/N C047822 (JD 11-47)  
S/N C047824 (JD 52-121)

Antenna Loading Unit S/N A047854 (JD 11-38)  
S/N A047859 (JD 39-121)

Power Supply S/N V0478103 (JD 11-47)  
S/N V0478100 (JD 52-121)

H-2-NC-77 (Hydroplot Station No. 101)

Range Processing Unit S/N R047851 (JD 11-52)  
S/N R047859 (JD 58-95)  
S/N R0379100 (JD 96-121)

Antenna Loading Unit S/N A047851 (JD 11-121)

Power Supply S/N V0478104 (JD 11-95)  
S/N V0379131 (JD 96-121)

H-3-NC-77 (Hydroplot Station #102)

Range Processing Unit S/N R047859 (JD 11-52)  
S/N R047851 (JD 58-59)

Antenna Loading Unit S/N A047851 (JD 11-59)

Power Supply S/N V0478106 (JD 11-59)

H-1-NC-79 (Hydroplot Station #103)

Range Processing Unit S/N R047851 (JD 92-119)  
S/N R0379115 (JD 120-121)

Antenna Loading Unit S/N A047846 (JD 92-119)  
S/N A0379122 (JD 120-121)

Power Supply S/N V0478106 (JD 92-95)  
S/N V0379127 (JD 96-119)  
S/N V0379112 (JD 120-121)



Calibration of the Raydist system was done by comparing the digitized Raydist values with calculated values while making passes at Oliver Reef Lt. (Station #006). Position information for this light was provided by Hydrographic Surveys Branch, Operations Division, Atlantic Marine Center and is included in the Appendices of the report. The offset distance from the Raydist antenna to the center of the light was accounted for by averaging pairs of observed readings taken on opposite sides of the aid. Four values (two pairs) were observed for each calibration. Calibrations were made before and after hydrography was run each day, and were recorded on the master printouts.

On a few days, the Raydist equipment failed to function during hydrographic operations, either for equipment reasons or because of weather. If no ending calibration could be made for the day, the single morning calibration was used to determine partial lane correctors and whole lane count was verified by strip chart. If the Raydist signal was lost and then regained, an afternoon calibration was made and partial correctors obtained after correcting for whole lanes jumped. At no time were hydrographic operations continued during or after Raydist problems were encountered, without first recalibrating the system.

On JD 347, the Raydist system was calibrated in a different part of Pamlico Sound, at Avon Channel Light "1" (Sta. #005). Partial correctors obtained at this calibration differed from the average JD 347 calibration at Oliver Reef Lt. by (3.6m) .08 lane for Pattern 1, and (16.8m) 0.37 lane for Pattern 2. The average shift in morning and afternoon Raydist correctors for the entire survey was .08 lane (3.6m) for Pattern 1 and 0.11 lane (4.9m) for Pattern 2. An abstract of calibration data is included in the Appendices.

Daily calibration of the ARGO system was accomplished in the same manner, and used the same objects, as the Raydist system. Since the relatively large steel structure of Oliver Reef Light could be expected to affect antenna tuning and possibly change partial correctors, a sextant angle comparison calibration was made on JD 59. Partial correctors obtained by this method differed from the average JD 59 values at Oliver Reef Lt. by only 0.06 lane (5.4m) for Pattern 1 and Pattern 2. The average daily shift in ARGO correctors determined at Oliver Reef Light from morning to afternoon was 0.020 lane (1.8m) for Pattern 1 and 0.035 lane (3.2m) for Pattern 2. These shifts are considered to be insignificant at the scale of the survey.

Since this survey is the first to use the ARGO positioning system, some problems were experienced which are note worthy:

1. Due to interfacing problems, there were some large digitizing errors in both timing and in horizontal control. These were corrected in the field.

2. All calibration values prior to JD 43 were manually observed from the ARGO digital readout. It was noted that there is a time lag between the indication of lane crossing on the ARGO and the indication on the strip chart recorder. The same time lag occurs with data digitized by the hydroplot system, with discrepancies being on the order of 0.05 to 0.10 lane. From JD 43 to the end of the survey, all calibrations were obtained via hydroplot digitized data, since it is assumed that the hydroplot system samples the data at the point of actual phase measurement. See the Sounding Volume, Page 28, for a comparison of digitized and manually observed data.

3. The ARGO system has a software smoothing feature which was used for this survey. Smoothing code "2" was recommended by the manufacturer for this survey vessel and was used from JD 011 to JD 95. At that time, it was observed that under some conditions, lane jumps would not be detected on the sawtooth record when using smoothing code "2." Therefore, from JD 100 to the end of the survey, a smoothing code of zero (unsmoothed data) was used. Days of hydrography were rejected in which undetected sawtooth lane jumps occurred when morning and evening calibrations were in whole lane disagreement.

#### H. SHORELINE

There was no shoreline delineated on this survey. Brown shoreline is drawn on the field sheet for information purposes only. It was transferred from a 1:20,000 scale enlargement of Chart 11555, 24th Edition. (1:80,000)

#### I. CROSSLINES

Crosslines amounted to 11.5% of the main scheme system of sounding lines. Agreement is excellent with differences averaging one foot, or less.

#### J. JUNCTIONS

The Contemporary Survey, H-9748 (HSB-20-1-78), junctions with this survey to the east. Soundings from the present survey were compared to field sheet soundings from H-9748, and agreement was generally within one foot. This difference is mainly due to the choice of datum for H-9748, which was 0.5 feet on the Oliver Reef Lt. tide staff. Since the datum used for the present field sheet is 1.7 feet on the Oliver Reef Staff, junctional soundings disagreed by one to two feet.

SEE Verifiers Report

## K. COMPARISON WITH PRIOR SURVEYS

This survey was compared with the following prior surveys:

~~H-1363A (1875-77) 1:40,000~~  
H-1362A (1876)<sup>(1875-76)</sup> (soundings in red), 1:20,000 scale. Eighty-three soundings were compared, 79% of which agreed within one foot, 96% agreed within two feet. There were no soundings found to disagree more than four feet.

H-3922 (1916) (Soundings in green) 1:20,000 scale. Fifty-one soundings were compared, with all of the soundings agreeing within one foot. This survey only covered the extreme south end of the present survey.

~~(1858-83)~~  
H-672 ~~(1883)~~<sup>(1858-83)</sup> (Soundings in violet) 1:40,000 scale. One hundred, forty-seven soundings were compared, with 80% being within one foot, 97% agreeing within two feet, and no soundings disagreed by more than four feet.

~~H-1012 (1975) 1:40,000~~  
In all cases, the soundings from the present survey should be charted in lieu of the prior survey soundings in the common area. *Concur*

## L. COMPARISON WITH CHART

Comparison with charted features was made from enlargements of Chart 11555, 1:80,000 scale, 24th edition. The charted soundings on the field sheets are in brown. General agreement is excellent, with 82% of all soundings compared being within one foot, and 95% within two feet. The area of largest disagreement occurs at the north end of the survey area, along the twelve foot curve. Most notable is a 9-foot charted sounding surveyed to be in 13 feet, at Lat. 35°33.8'N, Long. 75°45.0'W.

In all cases, it is recommended that the present survey's sounding supersede the charted soundings. *Concur*

## PRESURVEY REVIEW ITEMS

Item 21 - Reported to be the 68-foot cabin cruiser PRANSCO II, sunk in 1970, in charted position 35°25.5'N, 75°50.2'W. This item was investigated on JD 92 by a limited fathometer search of north-south lines spaced 100m apart. The area searched was a one-mile square centered on the reported position of the wreck. No evidence of the wreck was found. These sounding lines were not plotted since they did not add any new information to the survey. 200

Recommendation: Retain wreck as charted. *Concur*

(vicinity of latitude 35°34.22'N, longitude 75°49.97'W)  
A stranded wreck was located at Position 2913<sup>A</sup> by sextant fix on hydro signals described on page 42 of the Sounding Volume. It should be charted. *Concur*

Item 24 - Reported to be a submerged dangerous wreck, PA, 12 feet under water, charted in position 35°30.0'N, 75°52.0'W. A fathometer search of north-south lines spaced 50 meters apart was conducted on JD 120. No evidence of the wreck was found. Recommendation: Retain wreck as charted. *Concur*

Item 28 - Reported to be a submerged dangerous wreck, PA, 17 feet under water, charted in position 35°21.6'N, 75°43.8'W. A fathometer search consisting of north-south lines spaced 50 meters apart was conducted on JD 116 and 120. No evidence of the wreck was found.

Recommendation: Retain the wreck as charted. *Concur*

M. ADEQUACY OF SURVEY

This survey, H-9802, HSB-20-7-78, is complete and adequate to supersede prior surveys for charting in the common areas. *Concur*

N. AIDS TO NAVIGATION

There were no floating aids to navigation within the survey area. Fixed aids were located with the ARGO positioning system, and positions are tabulated on NOAA Form 76-40 which is included in the Appendices to this report. These aids adequately serve the purpose for which they were intended and are adequately described in the Light List. See Q.C. Report- items 2 and 3)

O. STATISTICS ✓

Total Positions	4804
Total Nautical Miles of Hydrography	1507
Square Nautical Miles of Hydrography	130.2
Bottom Samples	117
Nautical Miles of Crossline	128
Nautical Miles of Development	82

P. MISCELLANEOUS

Suspicious traces on fathograms are listed below along with the dates and position numbers of their investigation. Investigations consisted of rerunning the original line over the position of the suspicious trace. All investigations affirmed that the suspicious traces were spurious and are not to be smooth plotted since they add nothing new to the survey.

<u>Suspicious Trace</u>	<u>Investigation</u>
<sup>017</sup> JD <sub>A</sub> Pos. 3016-3017	JD 92 Pos. 4337-4339
Pos. 3022-3023	Pos. 4333-4336
Pos. 3035-3038	Pos. 4328-4332
Pos. 3042-3044	Pos. 4340-4343

Pos. 3109-3110  
Pos. 3116-3119

Pos. 4344-4346  
Pos. 4324-4327

Q. RECOMMENDATIONS ✓

A. Fish Net Areas - There are numerous fish nets and fish net stakes in the area covered by Chart 11555. Net stakes have been located by this field unit if within the survey area. Their positions are in the survey records. These stakes are definitely permanent structures, primarily being small logs 3 to 6 inches in diameter which are driven into the bottom. If a net stake is abandoned, it will often break off at or just below the water surface, producing an extreme hazard to navigation for small craft. These net stakes generally are localized in several areas of Pamlico Sound, and their approximate positions are recorded by the North Carolina Wildlife Resources Commission.

At certain times of the year, other types of fishing gear are used in the net stake areas, these being primarily gill nets (October through March) and crab pots (April through September). These types of fishing gear present a fouling hazard to small craft, as well as causing serious economic loss to local fisherman whose nets are fouled.

It is recommended that these localized fish net areas be marked on the chart, either with a tinted area on the chart itself, or by a special inset, similar to that now used on Great Lakes charts. (Example is Chart 14820). General fish net areas found by this field unit are as follows:

Area 1: Bounded by the following points connected in a clockwise manner:

35°12.5'N	75°43.0'W
35°17.0'N	75°51.5'W
35°22.5'N	75°44.5'W
35°25.0'N	75°38.0'W

Area 2: Bounded by the following points connected in a clockwise manner:

35°33.0'N	75°55.0'W
35°32.5'N	75°51.0'W
35°27.0'N	75°55.0'W
35°27.0'N	75°00.0'W

B. Chart Inset for Hatteras Inlet - It is recommended that a 1:20,000 scale inset be made of the Hatteras Inlet area, including the dredged channels leading to the state ferry docks and the town of Hatteras, as far east as Daymark "17" of Rollinson Channel. At the scale of Chart 11555, this area is extremely difficult to read. Its heavy use and proximity to shoal water make an inset desirable. (Area falls beyond the limits of the present survey)

R. AUTOMATED DATA PROCESSING

<u>PROGRAM #</u>	<u>PROGRAM NAME</u>	<u>VERSION DATE</u>
RK111	Range-range Real Time Plot	1/30/76
RK201	Grid, signal, & Lattice Plot	4/18/75
RK211	Range-range Non-real Time Plot	1/15/78
RK300	Utility Computations	2/5/76
RK330	Data Reformat and Check	2/2/76
RK407	Geodetic Direct/Inverse	10/23/75
AM602	Elinore	5/20/75

S. REFERENCE TO REPORTS

Horizontal Control Report, Project OPR-F201-HFP-7<sup>7</sup>~~8~~, submitted by Hydrographic Surveys Branch, Atlantic Marine Center.

Respectfully submitted,

*Robert Lewis*  
for/ David A. Waltz  
LT, NOAA  
Officer-in-Charge  
NOAA Launch 1255

FIELD TIDE NOTE

Predicted tides were not applied to the sounding data on the field sheet since Pamlico Sound has a periodic tide of less than one-half foot. Non-periodic changes dominate the water level, due to wind setup and rainfall. Water level corrections were applied to the data by reducing the daily soundings to a preliminary low water datum supplied by the Rockville Tides Branch. This datum corresponded to 1.7 feet on the Oliver Reef Lt. (857-4247) Tide staff. Morning and afternoon staff observations were made of the Oliver Reef Staff, and the daily average was reduced to low water datum by means of a "rough" tide tape on the off-line field plot.

ADR water level gages were installed at the following locations:

<u>Site and Number</u>	<u>Location</u>	<u>Period</u>
Cedar Island Ferry 865-5151	35°01.2'N 76°18.6'W	10 NOV 1977 End of Survey
Long Shoal Lt. 865-3305	35°33.8'N 75°44.1'W	11 AUG 1978 End of Survey
Oliver Reef Lt. 865-4247	35°15.8'N 75°45.6'W	11 AUG 1978 End of Survey
Gull Shoal Lt. 865-3901	35°22.0'N 75°57.5'W	14 AUG 1978 End of Survey
Oregon Inlet 865-2587	35°47.8'N 75°33.0'W	24 AUG 1978 End of Survey

Contract observers monitored the Cedar Island Ferry and Oregon Inlet gages. Launch personnel were observers of the other gages. A direct line of communication was maintained with contract observers.

The Cedar Island Ferry and Oregon Inlet gages were leveled at the time of installation. All other gages were not leveled since they are located on offshore platforms. All gages operated satisfactorily except as noted on the weekly records and on NOAA Form 77-79, Preliminary Evaluation of Tide Record.



**U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration**

NATIONAL OCEAN SURVEY  
Atlantic Marine Center  
Hydrographic Surveys Branch  
439 W. York Street  
Norfolk, Virginia 23510

CAM11/RAL

June 28, 1979

TO: Chief, Tides Branch (C331)  
*Robert Lewis*  
FROM: Lt. Cdr. Thomas W. Richards  
Chief, Hydrographic Surveys Branch

SUBJECT: Request for Tide Data

Please furnish smooth tide correctors and zoning information to AMC, Processing Division (CAM3), for Survey H-9802 (HSB-20-7-78), Project OPR-F201-HSB-78, Pamlico Sound:

<u>Julian Day</u>	<u>Hydro Begins (GMT)</u>	<u>Hydro Ends (GMT)</u>
<u>1978</u>		
318	1434	2100
319	1218	2113
320	1214	2137
321	1202	2152
325	1616	2127
332	1313	2145
333	1223	2145
334	1159	2020
340	1541	2214
341	1213	2211
342	1155	2053
347	1216	1814
<u>1979</u>		
011	1622	2328
015	1236	2205
016	1222	2158
017	1214	2151
038	1218	2121
039	1236	2236
043	1230	2149
045	1241	2333





<u>Julian Day</u>	<u>Hydro Begins (GMT)</u>	<u>Hydro Ends (GMT)</u>
046	1252	2038
047	1209	1950
052	1232	2024
058	1208	2131
059	1356	2318
092	1219	1759
095	1229	1857
100	1312	2129
116	1120	1613
120	1119	2035

BAR CHECK ABSTRACT

WORKSHEET

H-9802

HSPB-20-7-78

YEAR	DAY	5'	10'	15'	20'				
1978	318	-0.1	+0.2	+0.2	+0.4				
	320	0.0	+0.2	+0.2	-		Table #1		
	334	-0.1	+0.2	+0.2	+0.2				
	341	-0.2	0.0	+0.1	-				
	347	0.0	0.0	0.0	+0.1				
MEAN	→	-.08	+1.12	+1.12	+1.22				
1979	015	0.0	+0.1	-0.2	-				
	017	-0.1	0.0	-0.3	-0.1				
	039	-0.1	-0.1	-0.3	-		Table #2		
	045	0.0	-0.1	-0.4	-0.4				
	100	+0.2	+0.2	-	-		COMPUTED: DMW		
	114	0.0	+0.2	-0.1	-		CHECKED: SWY		
	115	-0.2	-0.4	-	-				
MEAN	→	-.03	0	-.26	-.26				
<p><u>NOTE:</u> THE FIELD SHEET IS NOT CORRECTED FOR VELOCITY</p> <p>TWO VELOCITY TAPES WERE MADE FROM THIS DATA SINCE THERE IS A CHANGE IN CORRECTORS FOR THE DEEPER DEPTHS BETWEEN 1978 AND 1979.</p> <p><del>NO VELOCITY CURVE HAS BEEN DRAWN FOR THIS DATA</del></p>									
(19)									

CORRECTIONS IN FEET, ~~TABLES~~

NOAA FORM 75-21  
110-721

U.S. DEPARTMENT OF COMMERCE  
NOAA  
NATIONAL OCEAN SURVEY

VELOCITY CORRECTIONS

Ship HSB-HERA - NOAA Lch 1255

Lt. Dave Waltz Comdg.

These corrections are to be used

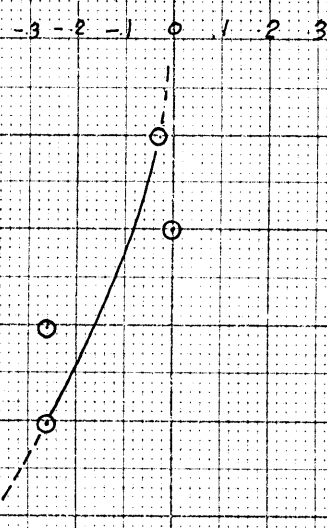
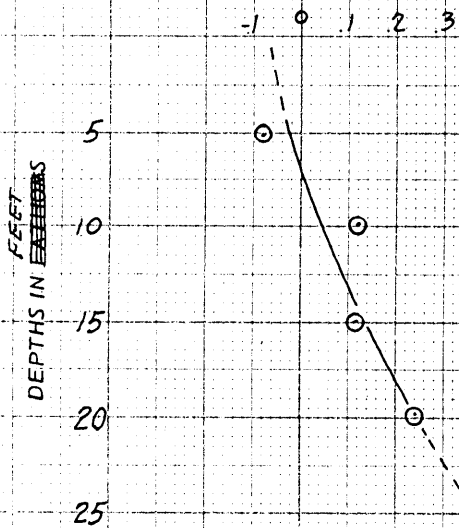
between Nov 14 19 78 and May 1 19 79

in the locality Pamlico Sound, N.C.

for hydrographic surveys Nos. H-9802

Table #1

Table #2



depth	Corr.
0-13.0	0.0
22.2	0.2
40.0	0.4

depth	Corr.
0-11.3	0.0
21.9	-2
40.0	-4

(For deep water add a 0 to these figures)

✓RL

H-9802  
Velocity Tables  
VESNO 1255

000130 0 0000 0001 000 125500 009802  
000222 0 0002  
000400 0 0004  
999999 0 0000

000113 0 0000 0002 000 125500 009802  
000219 1 0002  
000400 1 0004  
999999 0 0000

HYDROGRAPHIC MANUAL

OPR F201-HCP-78										
SOUNDING CORRECTION ABSTRACT										
NOTE: +2.6 DRAFT CORRECTION APPLIED VIA CORRECTION TAPE										
VESSEL LAUNCH 1255										
FIELD NO. HSB-20-7-78										
REGISTRY NO. H-9802										
Julian Date	From Time (GMT)	To Time (GMT)	Velocity Corr Table No.	(Note: TRA Corr. is the algebraic sum of these columns)					TRA Corr ft/fm	Remarks
				Draft Corr	Instrument Error Corr	Initial Corr	S&S Corr	TRA Corr		
318	163400		0001	0	0	0	+0.26	+0.26	YEAR 1978	
319	182055		0001	0	0	0	+0.1'	+0.1'	* Revised to agree	
	184444		0001	0	0	0	+0.26	+0.26	with settlement &	
	191009		0001	0	0	0	-0.6	+0.6 <sup>0.2</sup>	squat test run	
341	183143		0001	0	0	0	+0.26	+0.26	in 1979-80	
	184349		0001	0	0	0	-0.6	-0.24 0.6		
011	182259		0002	0	0	0	-0.6	-0.6	YEAR 1979	
039	162213		0002	0	0	0	+0.26	+0.26		
	165344		0002	0	0	0	+0.1'	+0.1'		
	174223		0002	0	0	0	+0.26	+0.26		
	181249		0002	0	0	0	-0.6	+0.6 <sup>0.2</sup>		
100	151236		0002	0	0	0	+0.26	+0.26		
	153628		0002	0	0	0	-0.6	-0.24 0.6		
	170953		0002	0	0	0	+0.26	+0.26		

FIGURE 5-7.—Sounding Correction Abstract

SIGNAL TAPE H-9802

001	2	35	35	12464	075	28	07683	250	0000	330040	H-2-NC-77 (1977) RAYDIST
002	2	35	21	17568	075	30	22843	250	0000	330040	H-3-NC-77 (1977) RAYDIST
005	2	35	22	44814	075	33	36445	139	0000	000000	AVON CHANNEL LT. "I"
006	2	35	15	47664	075	45	38576	139	0000	000000	OLIVER REEF LT. (1978)
015	2	35	13	00797	075	40	41434	139	0000	000000	HATTERAS TANK (1978)
016	2	35	15	17025	075	31	15980	139	0000	000000	CAPE HATTERAS LT. (1938)
017	2	35	15	04938	075	32	24002	139	0000	000000	BUXTON NAT. PARK SERVICE TANK
018	2	35	13	59772	075	37	19222	139	0000	000000	BILLY MITCHELL AIRPORT TANK (1962)
019	2	35	11	50893	075	43	57448	139	0000	000000	HATTERAS INLET LOOKOUT TWR. (1978)
101	2	35	35	12464	075	28	07683	250	0000	165270	H-2-NC-77 (1977) ARGO (1978)
102	2	35	21	17568	075	30	22843	250	0000	165270	H-3-NC-77 (1977) ARGO
103	2	35	12	28207	075	42	22736	250	0000	165270	H-1-NC-79 (1979) ARGO

\*See Operations Division AMC (Jim Shea) for verification of above G.P.s.

(28.)

**NONFLOATING AIDS OR LANDMARKS FOR CHARTS/**

Replaces C&GS Form 567.

TO BE CHARTED  
 TO BE REVISED  
 TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office)  
 HSB/HFP4

LOCALITY  
 Pamlico Sound

DATE  
 3/3/79

STATE  
 North Carolina

DATUM  
 N.A. 1927

The following objects HAVE  HAVE NOT  been inspected from seaward to determine their value as landmarks.

JOB NUMBER  
 H-9802

SURVEY NUMBER

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	LATITUDE		LONGITUDE		OFFICE	FIELD	CHARTS AFFECTED
		° /	'	° /	'			
		D.M. Meters	"	D.P. Meters	"			
LIGHT	Pingleton Shoal Light (green & black marker on 15' piling)	35	32	75	51		F-L-Argo 2/8/79	11555
LIGHT	Long Shoal Light (black & white marker on 60' wood structure)	35	33	75	43		F-L-Argo 2/7/79	11555
DAYBEACON	Long Shoal River Channel Daybeacon 2 (red triangle on 15' piling)	35	34	75	51		F-L-Argo 2/8/79	11555

*DUP of L-643(83)*

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	David A. Waltz, LT., NOAA
POSITIONS DETERMINED AND/OR VERIFIED	David A. Waltz, LT., NOAA
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	<input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'	
(Consult Photogrammetric Instructions No. 64.)	
<b>OFFICE</b> <b>I. OFFICE IDENTIFIED AND LOCATED OBJECTS</b> Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E(C)6042 8-12-75	<b>FIELD (Cont'd)</b> <b>B. Photogrammetric field positions* require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.</b> EXAMPLE: P-8-V 8-12-75 74L(C)2982
<b>FIELD</b> <b>I. NEW POSITION DETERMINED OR VERIFIED</b> Enter the applicable data by symbols as follows: F - Field P - Photogrammetric L - Located Vis - Visually V - Verified 1 - Triangulation 5 - Field identified 2 - Traverse 6 - Theodolite 3 - Intersection 7 - Planetable 4 - Resection 8 - Sextant A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75	<b>II. TRIANGULATION STATION RECOVERED</b> When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75 <b>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</b> Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75
*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods. **PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.	



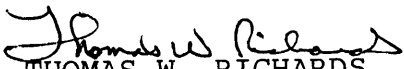
APPROVAL SHEET  
SURVEY H-9802 (HSB-20-7-78)

The hydrographic records transmitted with this report are complete and adequate to supersede prior surveys for charting in the common areas.

Presurvey Review Items 21, 24 and 28 (all submerged wrecks) were searched for by fathometer but were not found nor disproved. Wire drag vessel operations will be required to disprove these three wrecks. At present, they should remain as charted.

Direct daily supervision was not given by me during the field work. Except as noted above no additional field work is recommended.

Approved and forwarded,



THOMAS W. RICHARDS

Lt. Cdr., NOAA

Chief, Hydrographic Surveys Branch

Atlantic Marine Center  
Hydrographic Surveys Branch  
439 W. York Street  
Norfolk, Virginia 23510

August 2, 1979

CAM11/RD

TO: Director, National Geodetic Survey, OA/C13X4  
FROM: R. Adm. Robert C. Munson  
Director, Atlantic Marine Center  
SUBJ: Project Report: Cape Hatteras, North Carolina

In support of the Hydrographic Surveys Branch's (HSB) Hydrographic Field Party (HFP) #4, personnel from the Field Support Section of HSB with the assistance of personnel from HFP#4, performed five related surveys from Avon, North Carolina to Hatteras, North Carolina.

The separate traverse commenced at station Billy (1962), a 2nd Order station and ended at station MP545 (1962) also a 2nd Order station. This traverse began on March 29, 1978 and resulted in four new 3rd Order horizontal stations as well as a strong indication of a positioning error on the Oliver Reef Light. Two new landmarks were located during this traverse for charting on the navigational charts of the area.

The second portion of the horizontal control work began on August 22, 1978 resulting from a request by the U. S. Coast Guard, Group Hatteras for a more accurate geodetic position of the Diamond Shoal Light.

A traverse was begun at station Kinna (1962), a 2nd Order station, and proceeded along the northern shore, east to the Cape Hatteras Light-house. Three 3rd Order stations were set from which intersection angles were taken to the Diamond Shoal Light.

The third portion consisted of a Polaris observation from one of the traverse stations set during the second portion. This was accomplished by personnel of the Operations Division and was done on August 23, 1978.

The fourth portion was begun on March 6, 1979, using again station MP545 NPS (1962) and one of the stations set earlier. This traverse re-located the Oliver Reef Light and set a new Raydist station for HFP#4's hydrographic survey within the area.

The fifth and final portion of this project was begun on April 10, 1979 and resulted in a tie to another 2nd Order station, Avon (1962).

All five portions of this report had one common tie, the Cape Hatteras Lighthouse. It was believed this would result in a horizontal tie for the entire area from Avon, North Carolina to Hatteras, North Carolina, a distance of approximately eighteen and one half miles. This does not include the Diamond Shoal Lighthouse or Oliver Reef Light.

Third order methods were observed in establishing the new station. All data has been entered, computed and adjusted utilizing the NGS computer via remote terminal. Task station numbers 500 to 528 were utilized for entries made into the NGS system.

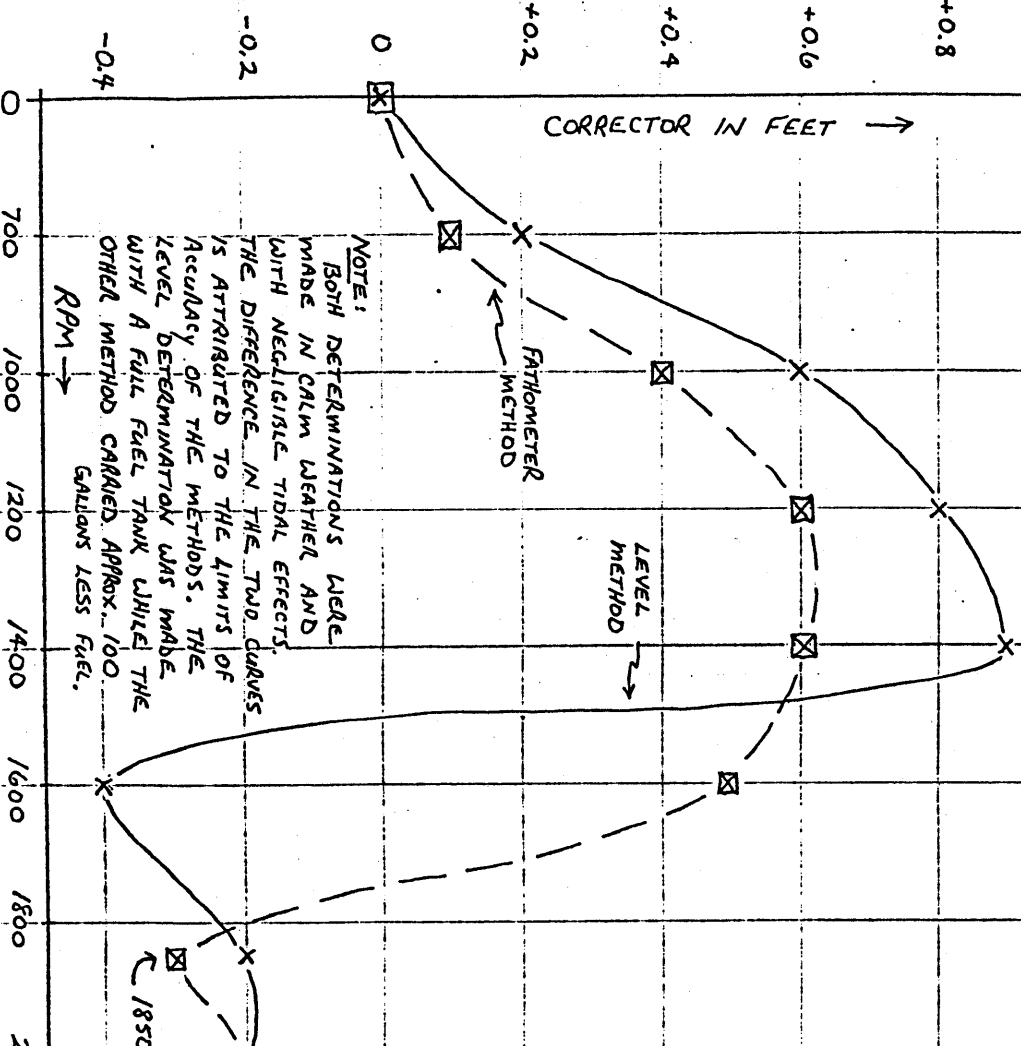
All physical data will be forwarded under separate cover.

NOAA LAUNCH 255 SETTLEMENT 8 SQUAT

DETERMINED IN PANLICO SOUND, NC  
 BY THE LEVEL METHOD (MARCH 24, 1980)  
 AND THE FATHOMETER METHOD (APRIL 2, 1980)

COMPUTED BY - DAW  
 CHECKED BY - JW

ORIGINAL DATA LOCATED IN H-9821 (HSB-20-1-8) SURVEY RECORDS



NOTE:  
 BOTH DETERMINATIONS WERE MADE IN CALM WEATHER AND WITH NEGLIGIBLE TIDAL EFFECTS. THE DIFFERENCE IN THE TWO CURVES IS ATTRIBUTED TO THE LIMITS OF ACCURACY OF THE METHODS. THE LEVEL DETERMINATION WAS MADE WITH A FULL FUEL TANK WHILE THE OTHER METHOD CARRIED APPROX. 100 GALLONS LESS FUEL.

LEVEL METHOD

RPM	Level Readings	Mean	Corrector
0	11.215	11.34	0
700	11.50	11.46	+0.2
1000	11.89	11.82	+0.6
1200	12.09	12.08	+0.8
1400	12.22	12.20	+0.9
1600	11.00	10.95	-0.4
1850	11.08	11.08	-0.4
2000	11.15	11.10	-0.2

FATHOMETER METHOD

RPM	Scalped Soundings	Mean	Corrector
0	18.3	18.3	0
700	18.2	18.1	+0.1
1000	17.9	17.9	+0.4
1200	17.7	17.7	+0.6
1400	17.7	17.7	+0.6
1600	18.6	17.9	+0.5
1850	18.6	18.6	-0.3
2000	18.6	18.4	-0.2

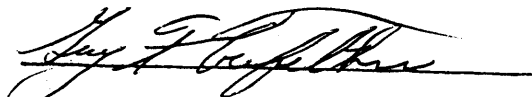
1850 RPM IS NORMAL SURVEY SPEED

APPROVAL SHEET  
FOR  
SURVEY H- 9802

- 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 Hydrographic Manual. Exceptions are listed in the Verifier's Report.

Date: 8/26/80

Signed:



Title: Chief, Verification Branch

U.S. DEPARTMENT OF COMMERCE  
August 1, 1979 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): 865-3305 Long Shoal Light, NC  
865-3901 Gull Shoal, NC

Period: November 14, 1978 - April 30, 1979

HYDROGRAPHIC SHEET: H-9802

OPR: F201

Locality: Pamlico Sound, North Carolina

(low water datum): 1.50 ft. - Long Shoal Light  
Plane of reference ~~(mean lower low water)~~: 2.21 ft. - Gull Shoal, NC

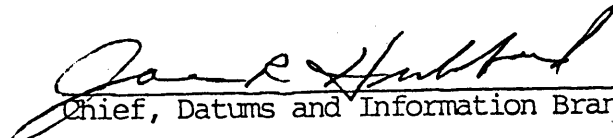
Height of Mean High Water above Plane of Reference is:

Long Shoal Light = 0.7 ft } Per J.R. Hubbard  
Gull Shoal = 0.6 ft } 11-19-80

REMARKS: Recommend automatic zoning.

NOTE: Low water datum is ~~not~~ 0.5 ft. below mean water level.

Delete "...not..." (per Bill Stoney - Typographical error)

  
Chief, Datums and Information Branch

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				
LONG SHOAL	11555	✓										1
LONG SHOAL PT.	11555	✓										2
PINGLETON SHOAL	11555	✓										3
PAMLICO SOUND	11555	✓										4
CLAM SHOAL	11555	✓										5
												6
												7
												8
												9
												10
												11
												12
												13
												14
												15
												16
												17
												18
												19
												20
												21
												22
												23
												24
												25

Approved:

*Chris E. Huntington*

Chief Geographer - C375

29 Nov 1982

(18.)

HYDROGRAPHIC SURVEY STATISTICS

H-9802

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		2	BOAT SHEETS & PRELIMINARY OVERLAYS		640	
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						
CAHIERS	2 - with raw printouts & misc. data.					
VOLUMES	1					
BOXES			2 - smooth with sawtooth records & punched tape			

T-SHEET PRINTS (List)

SPECIAL REPORTS (List) 1 - Cht. mark-up

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			4921
POSITIONS CHECKED		15	
POSITIONS REVISED		0	
SOUNDINGS REVISED		30	
SOUNDINGS ERRONEOUSLY SPACED		-	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		-	
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	4		
VERIFICATION OF CONTROL		-	
VERIFICATION OF POSITIONS		62	
VERIFICATION OF SOUNDINGS		302	
COMPILATION OF SMOOTH SHEET		44	
APPLICATION OF TOPOGRAPHY		-	
APPLICATION OF PHOTOBATHYMETRY		-	
JUNCTIONS		2	
COMPARISON WITH PRIOR SURVEYS & CHARTS		10	
VERIFIER'S REPORT		10	
OTHER		8	
<b>TOTALS</b>	<b>4</b>	<b>430.38</b>	<b>434.42</b>
Pre-Verification by S. Kelley	Beginning Date 01/04/80	Ending Date 01/04/80	
Verification by S. Kelley, F. Laminson, L. Cram	Beginning Date 01/15/80	Ending Date 08/11/80	
Verification Check by Harry R. Smith	Time (Hours) 6	Date 08/13/80	
Marine Center Inspection by Hydrographic Inspection Team (AMC)	Time (Hours) 6	Date 08/21/80	
Quality Control Inspection by X.W. Wellman	Time (Hours) 72	97	Date 10-4-82
Requirements Evaluation by R.W. DeKazanai	Time (Hours) 5 hrs.	Date 5/16/83	

N. Myer 16 hrs 10/15/82



REGISTRY NO. H-9802

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

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

MAGNETIC TAPE CORRECTED

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

REMARKS:

ATLANTIC MARINE CENTER  
VERIFIER'S REPORT

REGISTRY NO: H-9802 (1 of 2) (2 of 2)

FIELD NO: HSB- 20-7-78

North Carolina, Pamlico Sound, Long Shoal to Clam Shoal

SURVEYED: November 14, 1978 to May 1, 1979

SCALE: 1:20,000

PROJECT NO: OPR-F201

SOUNDINGS: DE-723 D Fathometer

CONTROL: RAYDIST  
(Range-Range)  
ARGO DM-54  
(Range-Range)

Chief of Party

T. W. Richards

Surveyed by

D. A. Waltz

Automated Plot by

Xynetics I201 Plotter (AMC)

Verified and Inked by

L. G. Cram

11 August 1980

I. INTRODUCTION

a. Two unusual problems were encountered; the sheet size exceeded the maximum size allowed under Hydrographic Survey Guideline No. 6 dated May 23, 1980. The survey was split into two smooth sheets labeled H-9802 (1 of 2), (2 of 2). The soundings datum in this area is a Low Water Datum. Tidal conditions are such that Mean Low Water is not definable. Elevations of features such as stakes, etc., are referenced to Low Water. Features a foot or more above Low Water are exposed during high water conditions.

b. Some notes and changes were made in red in the Descriptive report by the verifier during verification.

## 2. CONTROL AND SHORELINE

a. The control was adequately described in Sections F. and G. of the Descriptive Report and in the Control report, OPR-F201-HFP-77, Pamlico Sound, North Carolina, dated March 1978.

b. There is no shoreline available for this survey.

## 3. HYDROGRAPHY

a. The agreement at crossings on this survey is adequate; depths agree within the limits prescribed by the Hydrographic Manual.

b. The standard depth curves were drawn in their entirety. Some dashed curves were added for further delineation of the bottom configuration.

c. This survey is considered adequate to delineate the basic bottom configuration and least depths in the area prescribed by the project instructions with the exceptions of the three 12 and 13 ft. shoal area's in the south<sup>ea</sup>west corner and the northeast corner of the survey area. These areas should have been split and some lines run in an east-west direction for better development of the bottom configuration.

#### 4. CONDITION OF SURVEY

The smooth sheet and accompanying overlays, hydrographic records and reports comply with the requirements of the Hydrographic Manual with the following exceptions:

a. The sounding volume was incomplete in regards to indexing of objects located (detached positions) and general information.

b. The Settlement and Squat correctors were found to be in error. These were redone by the field unit and copies are included in the Descriptive Report of these correctors as applied to the smooth sheet.

c. Two dangerous submerged wrecks, Presurvey Review Items 24 and 28, were not investigated as prescribed by the Presurvey Review Instructions, OPR-F201-HFP-77. *(See section 7a of this report)*

d. *(See Q.C. Report-item 1)*

e., f. *(See Q.C. Report-item 2)*

#### 5. JUNCTIONS

An adequate junction with H-9748 (1978) was effected to the east. The penciled curves on H-9748 (1978) will have to be inked to agree with H-9802 (1978)<sup>-79</sup>. No other contemporary surveys have been completed at this time in the survey area. *(The junction with H-9863 (1980) is discussed in the Verifier's Report for that survey)*

#### 6. COMPARISON WITH PRIOR SURVEYS

H-672	( <del>1875</del> <sup>58-83</sup> )	1:40,000
H-1362A	(1875-76)	1:20,000
H-1363A	(1875-77)	1:40,000

H-3922 (1916) 1:20,000

H-4012 (1917) 1:40,000

These are the most recent prior surveys in this area that provide complete coverage.

In general the present survey is in good agreement with these prior surveys; about 60% of the soundings agree, with 35% being 1 to 2 feet shoaler than the prior surveys and the remaining 5% are from 1 to 3 feet deeper on the present survey. The bottom configuration and general depths appear to have remained fairly stable within the hydrographic area. The differences can be attributed to natural changes and improved survey methods.

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

## 7. COMPARISON WITH CHART NO. 11555 (24th Edition, November 19, 1977)

### a. Hydrography

Close to all of the charted hydrography (99.5%) originates with the previously discussed prior surveys, which require no further consideration. The remaining .5% (8 or 9 soundings) are in good agreement with the present survey. (See Q.C. Report - item 5)

The present survey is adequate to supersede the charted information when attention is given to the following items:

1. Presurvey Review Item #21, dangerous submerged wreck<sup>charted</sup> at Lat. 35°25'30" Long. 75°50'12" originates with Local Notice to Mariners No. 36 dated

and LNM 41/70.

September 1, 1970. The field's investigation did not find this item, very limited search; however, see section L. of the Descriptive Report.

2. Presurvey Review Item #24, dangerous submerged wreck<sup>charted</sup> at Lat.  $35^{\circ}30'00''$  Long.  $75^{\circ}52'00''$  originates with Chart Letter 1868 of 1975. An inadequate investigation of this item was done by the field.

3. Presurvey Review Item #28, dangerous submerged wreck<sup>charted</sup> at Lat.  $35^{\circ}43'37''$  Long.  $75^{\circ}43'54''$  originates with Local Notice to Mariners 27 of 1972. This item was not adequately developed by the field.

These items are all recommended for retention as charted as the investigations were not adequate to disprove them. Consideration of these wrecks should be given to determine the desirability of additional work being conducted to determine their location and or existence.

#### b. Aids to Navigation

The aids to navigation appear to adequately mark the intended features, on this survey. (See Q.C. Report-item 3)

#### 8. Compliance with Instructions

This survey complies with the Project Instructions with the exceptions listed in section 4 of this report.


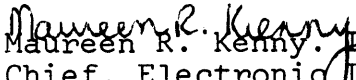
## 9. Additional Field Work

This is a good basic survey. Additional work is recommended as per Section Q. paragraph b. of the Descriptive Report and if it is desirable to verify the existence of the wrecks listed under Section 7 of this report.

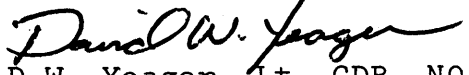

INSPECTION REPORT  
H-9802

The completed survey has been inspected by the Hydrographic Inspection Team with regard to survey coverage, cartographic symbolization, and verification or disproval of charted data. The Verification Report has presented the facts accurately and properly, the procedures used were appropriate, and the recommendations are logical and justifiable. The survey records comply with NOS requirements except where noted in the Verification Report. The Hydrographic Inspection Team concurs with the verifier's findings, actions, and recommendations.

The Hydrographic Inspection Team notes that this survey did not comply with the Project Instructions in that Presurvey Review Items 24 and 28 were not located or disposed of and that the "100 meter-north south lines" run in the case of Item 21 do not meet the requirements of a "limited fathometer search". The Team recommends that additional work on Items 21, 24 and 28 be scheduled to locate or dispose of these Items that are the controlling feature of this sheet.

  
Karl Wm. Kieninger, CDR, NOAA  
Chief, Processing Division  
  
Maureen R. Kenny, LT, NOAA  
Chief, Electronic Data  
Processing Branch

Examined and Approved  
Hydrographic Inspection Team  
DATE: August 21, 1980

  
D.W. Yeager, Lt. CDR, NOAA  
Field Procedures Officer  
  
Robert G. Roberson  
Team Leader  
Verification Branch

Approved/Forwarded

  
Richard H. Houlder, RADM, NOAA  
Director, Atlantic Marine Center





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

C35x2:KWW

October 4, 1982

TO: Glen R. Schaefer *GRS*  
Chief, Hydrographic Surveys Division

THRU: Chief, Quality Control Branch *guy*

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

SUBJECT: Quality Control Report for H-9802 (1978-79), North Carolina, Pamlico Sound, Long Shoal to Clam Shoal (Two Smooth Sheets)

A quality control inspection of H-9802 was accomplished to monitor the survey for adequacy with respect to data acquisition, delineation of the bottom, determination of least depths and navigation hazards, junctions, sounding line crossings, decisions made and actions taken by the verifier, and cartographic presentation of data.

Additional processing was requested of CAM3 per OA/C35x1:DEW memorandum, dated December 23, 1980, Revisions Required for H-9802 (1978-79). The present survey and pertinent records were returned to CAM3 in January 1981. The survey was subjected to additional processing by CAM3 and returned to headquarters in August 1982. A followup inspection of the survey conducted in September 1982 revealed that the enumerated deficiencies were satisfactorily rectified.

In general, the survey now conforms to the National Ocean Survey's standards and requirements except as stated in the Verifier's Report, the HIT Report, and as follows:

1. The extent of the row of stakes located in the vicinity of latitude  $35^{\circ}18.23'N$ , longitude  $75^{\circ}47.05'W$  should have been determined by the hydrographer.

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

- d. The southern edge of the survey should have been delimited in a manner such that the entire row of stakes identified at detached position 1781 could have been depicted within the limits of one survey.



2. Locations of fixed aids to navigation falling within the limits of the present survey should have been determined by conventional ground survey methods that meet prescribed Third-order, Class I accuracy standards. (See section 1.6.5 of the Hydrographic Manual.)

The survey positions for Pingleton Shoal Light and Long Shoal Light fall approximately 250 meters north and 280 meters southeast of their respective charted positions. It is noted that the survey positions of these lights were determined by the ARGO positioning system.

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

e. Fixed aids to navigation charted in the area of the present survey were inappropriately located by electronic control methods. It is an established requirement that such fixed aids be located in accordance with ". . . conventional ground survey methods that meet the accuracy of Third-order, Class I horizontal control."

f. Section N of the Descriptive Report is deficient in that there is no reference to the positional discrepancies between the survey and charted positions of Pingleton Shoal Light and Long Shoal Light.

3. Inasmuch as features marked by charted aids were not investigated, or developed on the present survey, no statement as to the adequacy of the aids to serve a given purpose can be made.

4. The row of stakes in the vicinity of latitude 35°18.82'N, longitude 75°42.28'W which originate with the present survey extend into the area of adjoining survey H-9748. A portion of this feature was appropriately transferred to supplement the adjoining survey.

5. Reference section 7.2 of the Verifier's Report:

The use of percentages in discussing the results of the chart comparison is considered misleading and unnecessary. It is sufficient to state the results of the comparison by referring to the previously discussed prior surveys as per customary practice. The references to percentages implies a false degree of detailed analysis.

The first paragraph of section 7.a of the Verifier's Report is superseded by the following:

The charted hydrography originates with the previously discussed prior surveys which require no further consideration. The source(s) of a few soundings could not be readily ascertained. These soundings are in good general agreement with present survey depths and are adequately superseded by the present survey.

cc:  
C351



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
~~NATIONAL OCEANOGRAPHY~~  
~~ROCKVILLE, MD 20852~~  
National Ocean Service  
CHARTING AND GEODETIC SERVICES  
Rockville, Md. 20852

JUL 6 1983

N/CG241:RWD

TO: N/MOA - Richard H. Houlder  
FROM: *fa* N/CG2 - C. William Hayes *Carson B P*  
SUBJECT: H-9802 (1978-79), OPR-F201, North Carolina, Pamlico Sound, Long Shoal to Clam Shoal, Report of Compliance with Project Instructions

The smooth sheets and Descriptive Report for the subject survey have been examined. In addition to the Quality Control Report, dated October 4, 1982 (copy attached), and the Hydrographic Survey Inspection Team Report, dated August 21, 1980, the following is submitted:

The smooth sheets are deficient in that the investigations (presurvey review wrecks) were not plotted as described in section 7.3.8.3 of the Hydrographic Manual.

Except as noted, the survey is complete and adequate for the purposes intended and is in compliance with Project Instructions OPR-F201-HFP-77, dated September 9, 1977.

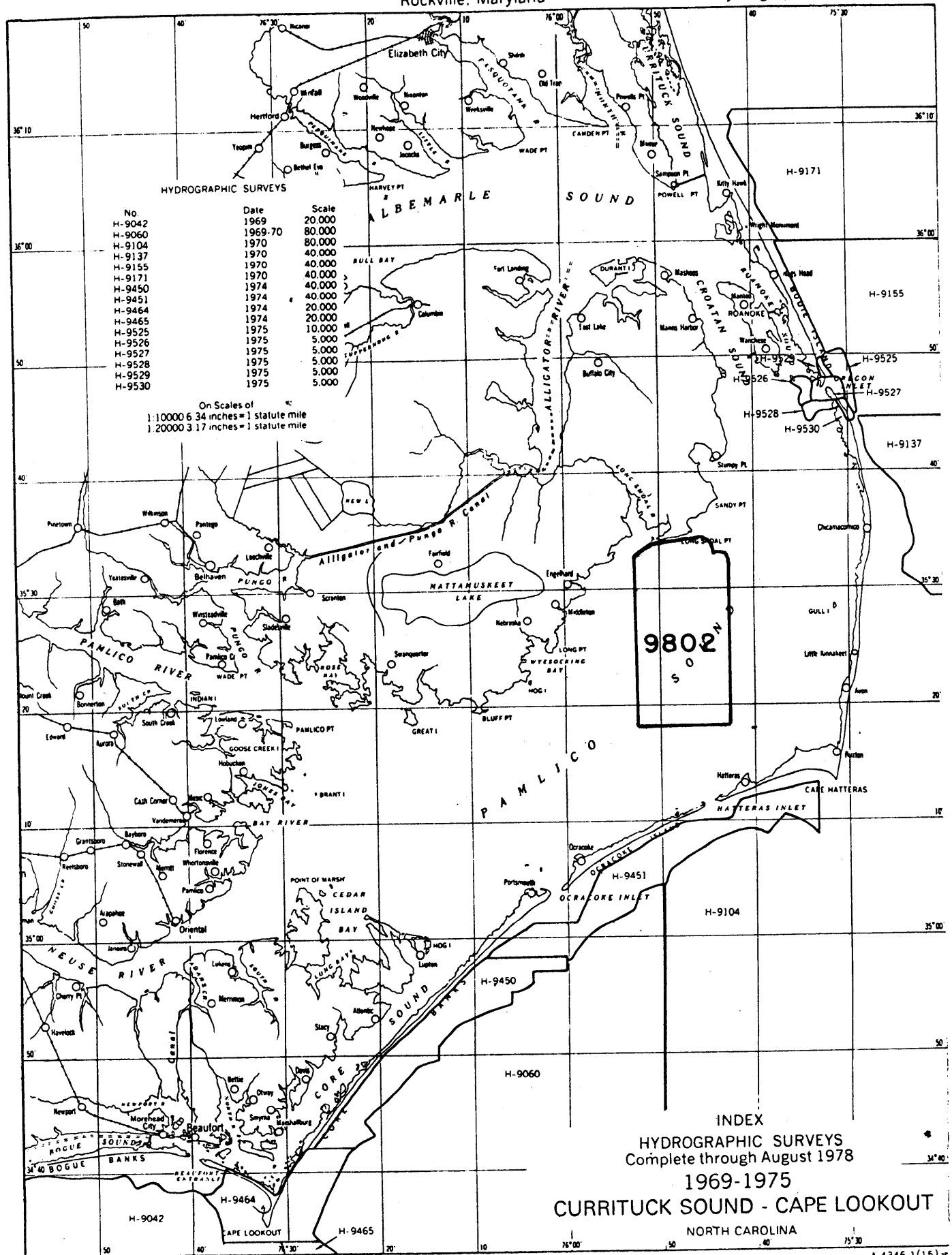
Attachment

cc:  
N/CG242 w/o att.



DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Ocean Survey  
Rockville, Maryland

Hydrographic Index No. 71 G



**RECORD OF APPLICATION TO CHARTS**

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 9802

**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
11555	9/20/83	Bell Wankers	Full <del>Part Before</del> After Verification Review Inspection Signed Via Drawing No. #44
12204	12-16-83	Martha Sorpeira	Full <del>Part Before</del> After Verification Review Inspection Signed Via Drawing No. 43
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
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