

9432

Diag. Cht. No. 1234-3.

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT  
(HYDROGRAPHIC)

Type of Survey ..... HYDROGRAPHIC .....  
Field No. .... AHP-05-2-74 .....  
Office No. .... H-9432 .....

LOCALITY

State ..... NORTH CAROLINA .....  
General Locality .... SHACKLEFORD BANKS .....  
Locality ..... BEAUFORD INLET AND VICINITY .....

1974

CHIEF OF PARTY  
F. T. Smith

LIBRARY & ARCHIVES

DATE ..... 2/18/75 .....

9432

HYDROGRAPHIC TITLE SHEET

H-9432

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-05-2-74

State North Carolina

General locality Shackleford Banks  
~~Beaufort Inlet~~

Locality ~~Offshore~~ Beaufort Inlet and vicinity

Scale 1:5000

Date of survey 8 May<sup>15</sup> June 1974

Instructions dated January 31, 1974

Project No. OPR-513

Vessel Launch 1277

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

Surveyed by W.A. Wert, F.L. Kleinschmidt, J.S. Bradford, D.M. Bryant, R.A. Lewis, W. Hill

Soundings taken by echo sounder, hand lead, pole

Graphic record scaled by Launch Personnel

Graphic record checked by Launch Personnel

Protracted by N/A

Automated plot by AMC Calcomp 618  
~~EDP-618~~

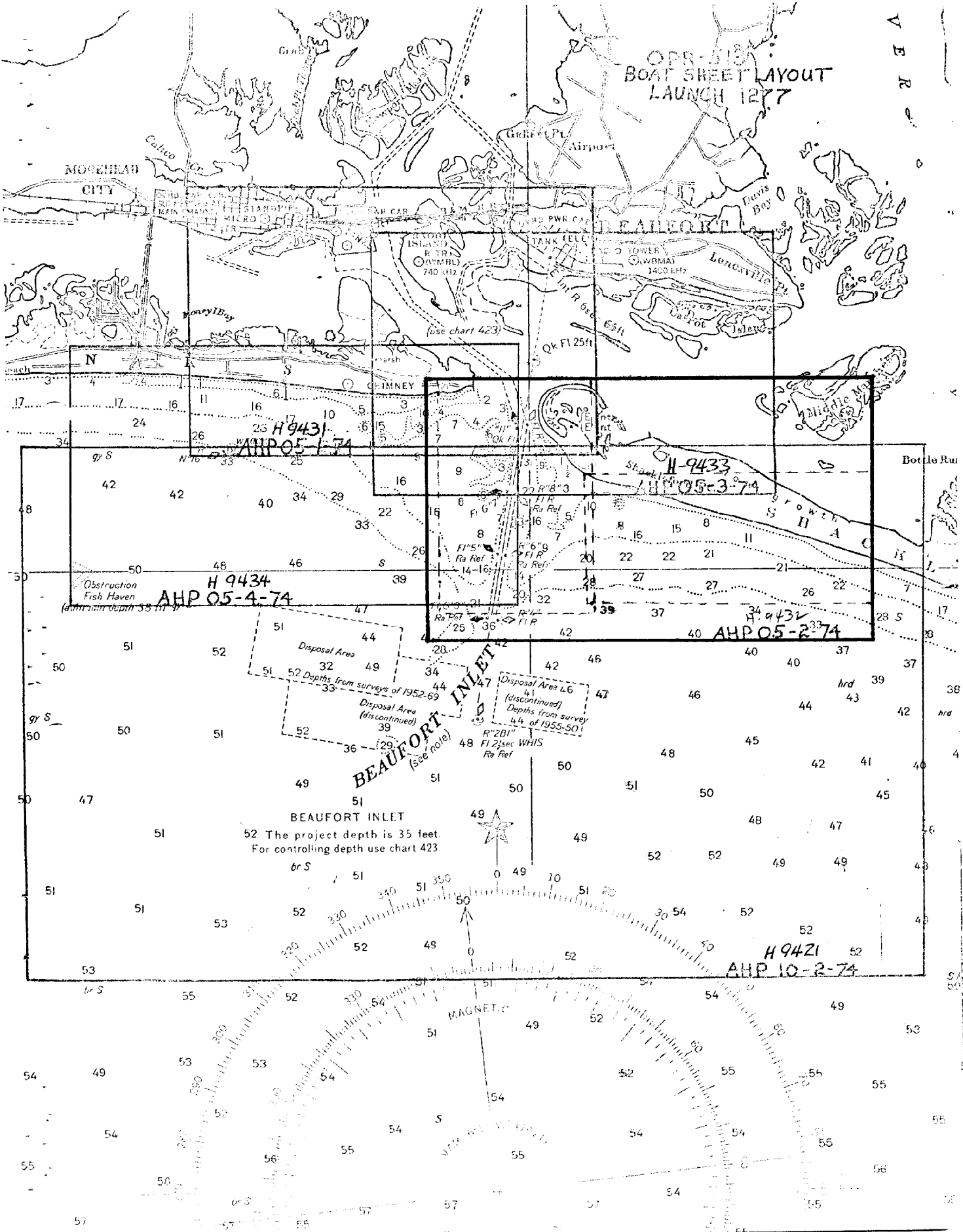
Verification by \_\_\_\_\_

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

REMARKS:

Applied to stds 3-21-75  
JSB

OPR-513  
BOAT SHEET LAYOUT  
LAUNCH 1277



DESCRIPTIVE REPORT  
TO ACCOMPANY  
HYDROGRAPHIC SURVEY H-9432  
AHP-05-2-74, SCALE 1:5000  
OPR-513  
BEAUFORT INLET, NORTH CAROLINA

A. PROJECT

OPR-513 is a cooperative agreement between NOS and the U.S. Army Corps of Engineers to provide a new data base for computer studies of the Beaufort Inlet. The survey was accomplished in accordance with Project Instructions OPR-513-AHP-74, Beaufort Inlet, North Carolina, dated 31 January 1974, and Chapter 3 of the Atlantic Marine Center Manual. ✓

B. AREA SURVEYED

The area encompassed by Sheet <sup>H-9432</sup> AHP-05-2-74 is an irregular section extending offshore from Shackleford Banks in Beaufort Inlet, North Carolina. The approximate limits of this section extend from Shackleford Banks seaward to the 30-foot curve, and from  $076^{\circ} 36' 30''$ W westward to  $076^{\circ} 41' 00''$ , including the portion of Beaufort Inlet Channel between Shackleford and Bogue Banks, south of  $34^{\circ} 41' 30''$  N to the 30-foot curve. ✓

A 1:5000 scale overlay of the Beaufort Inlet Channel is included for plotting clarity.

Junction was made with contemporary surveys:

<sup>H-9421</sup>  
AHP-10-2-74, 1:10000 Scale, 1974 ✓  
<sup>H-9434</sup>  
AHP-05-4-74, 1:5000 Scale, 1974

Detailed prior surveys of the area are:

H-6798, 1:10,000 Scale, 1943  
H-7963, 1:12,500 Scale 1952-53 ✓  
H-8565, 1:5000 Scale, 1960

All field work was accomplished during the time period 8 May 1974 to 15 June 1974.

C. SOUNDING VESSEL

Launch 1277 was used exclusively to accomplish the survey work on AHP-05-2-74. <sup>H-9432 (1974)</sup> ✓

D. SOUNDING EQUIPMENT

A Raytheon Fathometer, Model number DE723D, serial number 1904, was used in Launch 1277. Frequent A to F scale checks were taken to check stylus arm length. All initial settings were adjusted to zero. A TRA correction of 1.5 FT. was determined by drawing the bar check against the transducer and measuring the bar depth. ✓

All soundings using the fathometer were obtained at 2000 RPM. Shoreline development was accomplished at 1500 RPM, and depths were obtained by Pole soundings. Pole soundings were necessary since the fathometer would not sound properly in shoal water. ✓

All fathograms were scanned to mean out sea swell action. Refer to Velocity and Fathometer Corrector Report, OPR-513, Beaufort Inlet, North Carolina. ✓

E. SMOOTH SHEET

Raw master tapes were logged and data plotted on the boatsheet by the Launch's PDP-8/e Hydroplot System. Edited master tapes, corrector tapes, velocity tapes, and TC/TI tapes were logged by Launch Personnel and submitted for smooth plotting by Processing Division, Atlantic Marine Center. ✓

F. CONTROL

Control for Del Norte Hydrography was established with two remote transponders located over third order traverse and triangulation stations: Bogue Banks Station "N" and Beaufort Inlet Channel Range Rear Light. ✓

Calibration of the Del Norte System was accomplished by three point sextant fixes using third order traverse and traingulation stations. Refer to Horizontal Control Report, OPR-513, Beaufort Inlet, 1974. See also enclosed Del Norte note for station locations and discussion of problems encountered.

#### G. SHORELINE

Photogrammetric manuscripts were not available at the time of hydrography and therefore no shoreline or topographical details are shown on this boatsheet. Verification of shoreline will be completed when the manuscripts become available. The MLW Line was not defined in all areas by soundings, due to breakers.

#### H. CROSSLINES

Approximately 15.9 Nautical miles, or 9.1% of the hydrography(exclusive of channel line development) run on Sheet AHP-05-2-74<sup>H-9432</sup> were crosslines. The agreement with main scheme hydro was excellent and all soundings agreed to the nearest foot.

#### I. JUNCTIONS

Junction with AHP-10-2-74<sup>H-9421</sup> was very good and all soundings agreed to the nearest foot. The 30-foot and 36-foot curves are in excellent agreement. Junction with AHP-05-4-74<sup>H-9434</sup> was very good. All depth curves can be drawn continuously from AHP-05-4-74<sup>H-9434</sup> to AHP-05-2-74<sup>H-9432</sup> with no displacement.

#### J. COMPARISON WITH PRIOR SURVEYS

Comparison with H-6798, 1:10000 scale, 1943, showed the present survey to be in excellent agreement, with the soundings, in general, agreeing to within 1 foot.

Comparison with H-7963, 1:12500 Scale, 1952, showed the present survey to be in excellent agreement east of  $76^{\circ} 39'00''W$ , with soundings in general agreeing to within 1 foot.

Comparison with H-8565, 1:5000, 1960, showed the present survey to be in general agreement at the 30-foot curve, with the Beaufort Inlet Channel approximately 1-5 feet deeper on the present survey. The shoreline indicated by the present survey, along the western end of Shackleford Banks, is approximately 300-400 meters SW(seaward) of that shown on H-8565, and the shoal areas to either side of Beaufort Inlet Channel show considerable change. These observed changes are probably attributable to the seasonal effects of current and wave action, dredging operations, and shoaling around the Breakwater at Fort Macon.

#### K. COMPARISON WITH THE CHART

Comparison with C & GS Chart No. 423, 15th Edition, (8 Dec. 73), generally showed that the present survey soundings agree near the 30-foot curve, but differ significantly in the shoal areas on either side of Beaufort Inlet Channel.

Comparison with C & GS Chart No. 420, 42nd Edition, (16 Feb. 74), generally showed that the present survey soundings agree to the nearest foot in the area east of  $076^{\circ} 39'00''$ , but to differ significantly in the shoal areas on either side of the Beaufort Inlet Channel.

The only presurvey review item on sheet AHP-05-2-74 is Item #13:

"Dangerous sunken wreck, PA

Charted at Lat.  $34^{\circ} 40.57'$  Long.

$076^{\circ} 40.27'.$ "

Extensive low speed hydro was run over the general vicinity of the wreck, and no trace of the wreck was found. It is recommended that the symbol be retained ✓ on the chart until such time that its existence can be verified or disproven by wire-drag and/or diver. Concur

#### L. ADEQUACY OF SURVEY

This survey is complete and considered adequate to supersede prior surveys for charting, except that shoreline details were not fully obtained, as discussed ✓ in Section G. *The shoreline was added during verification.*

#### M. AIDS TO NAVIGATION

Comparison of observed floating aids to navigation with Charts no. 420, 42nd Edition, 16 February 1974, and No. 423, 15th Edition, 8 December 1973, ✓ and Light List Volume I, Atlantic Coast, 1974, showed the following differences:

1. Beaufort Inlet Channel Lighted by Buoy "9", Light List #4067.50 (Refer to LNM 9-74, 26 Feb. 74, CG Portsmouth) is a temporary buoy not shown on the charts. The position of this ✓ buoy is subject to change due to dredging operations; the detached position taken on this buoy agreed with the published position at that time.
2. Beaufort Inlet Channel Lighted Buoys 5,6,7,8,9,11, and 12 all were observed to have radar reflectors. The Light List ✓ does not list reflectors for buoys 7 or 8 (LL4066, 4067). The charts (420, 423) do not show reflectors for buoys 7, 11 or 12. *Beaufort Inlet Channel Lighted Buoys transferred from H-9421 (1974) 3 and 4 were - H-9432 (1974)*

There are two fixed aids to navigation on Sheet AHP-05-2-74:



Morehead City Channel Range Front Light, LL 4074

Morehead City Channel Range Rear Light, LL 4075 ✓

The Positions of these aids were not verified; this is assumed to be the responsibility of field edit personnel. *These fixed aids were added during time of review.*

N. STATISTICS

<u>Vessel</u>	<u>Nautical Miles of Soundings</u>	<u>Sq. NMI of Hydro.</u>	<u>No. of Bottom Samples</u>	<u>No. of Positions</u>
Launch 1277	186.2	4.3	13	1826

O. MISCELLANEOUS

The U.S. Army Corps of Engineers will be dredging the Beaufort Inlet Channel beginning in late June, 1974. ✓

P. RECOMMENDATIONS

It is recommended that a wire drag development be run to determine the status of the wreck listed in presurvey review Item #13(see Section K). ✓

Q. REFERENCES TO REPORTS

1. Fathometer and velocity correction report, OPR-513, Beaufort Inlet, North Carolina, 1974. ✓
2. Horizontal Control Report, OPR-513, Beaufort Inlet, North Carolina, 1974.

Respectfully Submitted

Fred L. Kleinschmidt  
Ens., NOAA

ABSTRACT OF VELOCITY CORRECTIONS

AHP 05-2-74, H-9432 (1974)

<u>DEPTH (FT)</u>	<u>CORRECTION (FT)</u>
0.0 - 3.3	+0.0
3.4 - 9.0	+0.2
9.1 - 14.6	+0.4
14.7 - 20.3	+0.6
20.4 - 26.0	+0.8
26.1 - 31.6	+1.0
31.7 - 37.5	+1.2
37.6 - 43.0	+1.4
43.1 - 48.8	+1.6
48.9 - 54.5	+1.8
54.6 - 60.1	+2.0

ABSTRACT OF SETTLEMENT & SQUAT

AHP-05-2-74 (H-9432) (1974)

<u>SPEED(RPM)</u>	<u>CORRECTION(FT)</u>
0-1499	+0.0
1500-2000	+0.2
2001-3000	+0.4

DEL NORTE NOTE

AHP-05-2-74 H-9432 (1974)

Del Norte Electronic Positioning equipment, which operates in a Range-Range Mode, was used to control all of the Hydrography on Sheet AHP-05-2-74. <sup>H-9432 (1974)</sup>

One network was used on this sheet, with the shore stations located over established third order traverse stations.

Calibration was established twice daily by three point sextant fixes; all calibration signals were situated over triangulation or traverse stations (third order or better). Sextant fix positions were converted to Del Norte Ranges by PDP-8/1 computer using the RK561 program.

On any day, the observed difference between the average morning calibration and the average evening calibration seldom exceeded 2 meters, with a maximum difference of 5 meters. Daily correctors were determined by averaging all calibrations taken at the beginning and at the end of the work period. The mean variation between morning and evening calibrations was 1.4 meters.

Performance of the Del Norte system during the project was, in general, good. Remote transponder 188(Pattern 2) was replaced on 17 May 1974 due to a faulty logic card. The DMU main gate card (200-04) was replaced on 17 May.(Refer to Failogs #4712 and #4714)

A problem existed in the Hydroplot System which caused loss of the "8" bit in the least significant digit of pattern 2; thus all "8's" in this position were read as "0's", and all "9's" were read as "1's", and appear so on both the TTY-2 printout and the master tapes This problem was not rectified until 13 June 1974 when the source of the error was finally traced to the Hydroplot Controller and the proper card substitution was made.(Refer to Failog #4883)

During the period in which this problem occurred, all positions affected by this erroneous data transfer were plotted on the boatsheet with an 8-meter displacement from their actual position. This problem was overcome by visually scanning the boatsheet for out-of-line soundings; all such soundings were plotted by time and course on the smooth sheet.

ABSTRACT OF EQUIPMENT UTILIZATION

Shore Station Locations(Remote)

Julian Days 128-135

Unit S/N 252; Directional Antenna on 20' guyed pipe

Location: Bogue Banks Station "N"  
34° 41' 51.961"N, 76° 45' 03.391"W

Unit S/N 188; Directional Antenna on 65' Light tower

Location: Beaufort Inlet Channel Range Rear Light  
34° 42' 52.980"N, 76° 39' 46.373"W

Julian Days 140-166

Unit S/N 252; Same as Julian Days 128-135

Unit S/N 181; Same location as unit S/N 188 on Julian  
Days 128-135.

Mobile Transponder

Julian Days 128-166: S/N 162

DMU

Julian Days 128-166 S/N 179

ELECTRONIC CORRECTOR ABSTRACT

H - 9432 (1974)

VESSEL : 1277

SHEET : AHP-05-2-74

TIME	DAY	PATTERN 1	PATTERN 2
161927	128	+00001	+00005
173449		+00001	+00013
173549		+00001	+00005
143743	130	+00001	+00002
144835		+00001	+00010
150324		+00001	+00002
161021		+00001	+00010
161110		+00001	+00002
163202		+00001	+00010
163323		+00001	+00002
170453		+00001	+00002
144355	135	+00001	-00001
130739	140	+00000	+00003
150532	140	+00000	+00011
150800		+00000	+00003
195747		+00000	+00003
135526	141	-00001	+00003
135903		-00001	+00011
135910		-00001	+00003
145753	145	+00000	+00005
150143		+00000	+00013
150150		+00000	+00005
171157		+00000	+00013
171204		+00000	+00005
184620		+00000	+00005
170203	148	+00002	+00003
173216		+00002	+00003
174200		+00002	+00003
174240		+00002	+00003
174952		+00002	+00003
182013		+00002	+00003
182240		+00002	+00003
183047		+00002	+00003
183054		+00002	+00003
183748		+00002	+00003
183847		+00002	+00003
184159		+00002	+00003
184206		+00002	+00003

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 1277

SHEET : AHP-05-2-74 H-9432 (1974)

TIME	DAY	PATTERN 1	PATTERN 2
163018	155	+00002	+00002
135654	156	+00000	+00003
182514		+00000	+00011
182607		+00000	+00003
192521		+00000	+00011
192528		+00000	+00003
195525		+00000	+00011
195600		+00000	+00003
200932		+00000	+00011
200939		+00000	+00003
202543		+00000	+00011
202550		+00000	+00003
205314		+00000	+00011
205321		+00000	+00003
163610	163	+00001	+00002
151038	166	+00001	+00002



SIGNAL LIST  
OPR-513  
BEAUFORT INLET, N.C.

001	34 42 5301	076 43 2881	BOGUE SOUND LIGHT 4
002	34 42 4572	076 42 5502	BOGUE SOUND LIGHT 2
003	34 42 4766	076 42 4280	PILING, TRIPLE SSS PIER
004	34 42 0046	076 41 0003	FORT MACON CREEK LIGHT 2
005	34 42 4520	076 41 4774	MOREHEAD CITY CHANNEL LIGHT 23
006	34 41 5703	076 39 5734	BEAUFORT INLET CH. RANGE FRNT LT.
007	34 41 1873	076 39 3099	MOREHEAD CH. RANGE REAR LIGHT
008	34 41 2508	076 37 5798	SHACKLEFORD SLUE JNCT LIGHT "NR"
009	34 42 5298	076 39 4637	BEAUFORT INLET CH. RANGE REAR LT.
010	34 40 3519	076 37 1778	SHACKLEFORD BANKS STATION 10
011	34 40 3175	076 37 0661	SHACKLEFORD BANKS STATION 11
012	34 40 2634	076 36 4908	SHACKLEFORD BANKS STATION 12
013	34 40 2212	076 36 3540	SHACKLEFORD BANKS STATION 13
014	34 41 3991	076 40 5695	BOGUE BANKS STATION A
015	34 41 3984	076 41 1284	BOGUE BANKS STATION A1
016	34 41 3977	076 41 3032	BOGUE BANKS STATION B
017	34 41 4022	076 41 4621	BOGUE BANKS STATION B1
018	34 41 4069	076 42 0275	BOGUE BANKS STATION C
019	34 41 4356	076 42 2127	BOGUE BANKS STATION C1
020	34 41 4583	076 42 3600	BOGUE BANKS STATION D
021	34 41 4637	076 42 5629	BOGUE BANKS STATION E
022	34 41 4808	076 43 1041	BOGUE BANKS STATION E1
023	34 41 4922	076 43 2581	BOGUE BANKS STATION F
024	34 41 5029	076 43 3599	BOGUE BANKS STATION G
025	34 40 3977	076 37 3263	+NEW
026	34 40 4340	076 37 4910	SHACKLEFORD BANKS STATION 1
027	34 40 4546	076 37 5846	SHACKLEFORD BANKS STATION 2
028	34 40 5000	076 38 1903	SHACKLEFORD BANKS STATION 3
029	34 40 5237	076 38 2976	SHACKLEFORD BANKS STATION 4
030	34 43 1473	076 42 5341	*MOREHEAD CTY T&T MICRO TWR (1962)
031	34 43 1637	076 42 3226	*MOREHEAD CTY STANDPIPE (1913)
032	34 42 5143	076 41 1149	*MOREHEAD CTY RADIO WMBL (1962)
033	34 43 0803	076 39 4992	*BEAUFORT MUNI WATER TANK (1927)
034	34 41 5196	076 45 0339	BOGUE BANKS STATION N
035	34 42 1613	076 40 4266	BEAUFORT HARBOR CHANNEL LIGHT 1
036	34 41 5025	076 43 4722	BOGUE BANKS STATION K
037	34 41 5108	076 44 0994	BOGUE BANKS STATION L
038	34 41 5210	076 44 3055	BOGUE BANKS STATION M
039	34 41 5204	076 44 4523	BOGUE BANKS STATION M1

\*NOT USED AS  
SIGNAL ON  
H-7432.

THIRD ORDER TRAVERSE  
\*THIRD ORDER TRIANGULATION  
+THREE POINT SEXTANT FIX

FATHOMETER AND VELOCITY  
CORRECTION REPORT OPR-513

H-9432

APRIL-JUNE 1974

A. EQUIPMENT

*good way to determine draft, this value was used to compute value for vel. & inst.*

A Raytheon Fathometer, model number DE 723 D, serial number 1904 was used in Launch 1277. A TRA correction of +1.5 feet was determined by drawing the bar check tightly against the transducer and measuring the bar depth. Frequent A to F scale checks were taken to check stylus arm length. All initial settings were adjusted to zero. The fathometer would not sound in depths less than 3.7 feet and therefore pole soundings were necessary in shoal water. This problem was corrected by M. J. Ward of EED, however the fathometer will not digitize in depths less than 7 feet. Additional work should be performed.

B. VELOCITY AND INSTRUMENT ERROR CORRECTORS

Depth corrections were obtained by averaging all bar check values excluding values which differed by more than 0.4 feet. A graph was constructed and velocity correctors were scaled in accordance with table 2 of the Hydrographic Manual. The values obtained on the five foot bar check were rejected due to the problem cited in Section A. The graph and abstract of corrector values are included with this report.

C. SETTLEMENT AND SQUAT CORRECTORS

Settlement and Squat Correctors were obtained as outlined in Section 5-108 of the Hydrographic Manual. The graph and abstract of corrector values are included with this report.

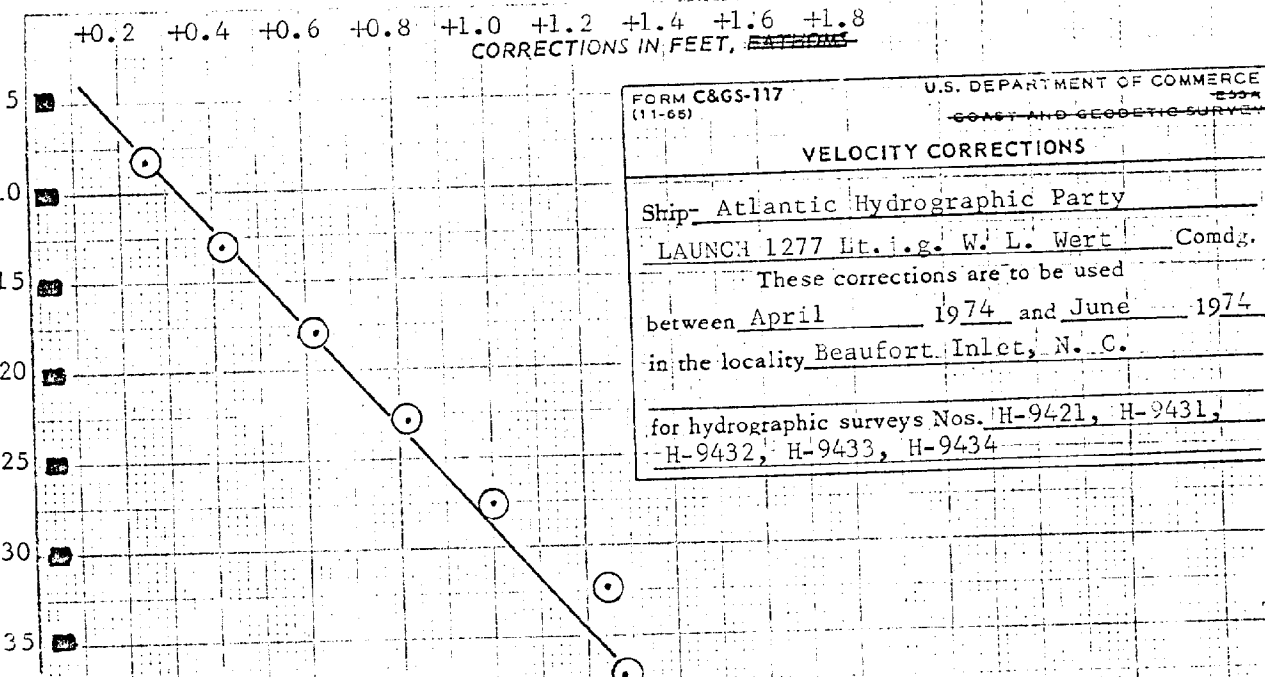
D. MISCELLANEOUS

No appreciable changes in depth corrections occurred between the first and last days of hydrography, therefore bar check data was averaged and one velocity table was constructed which applies to all sounding data obtained during OPR-513.

Respectfully Submitted

William A. Wert  
OIC Launch 1277

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



FORM C&GS-117 (11-65) U.S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY

**VELOCITY CORRECTIONS**

Ship Atlantic Hydrographic Party

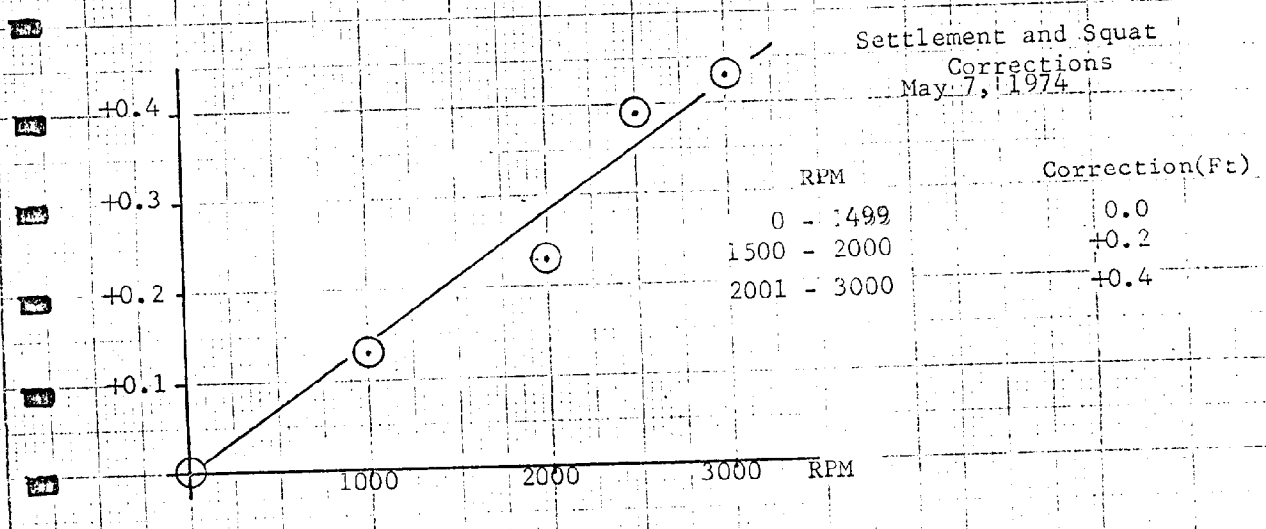
LAUNCH 1277 Lt. i.g. W. L. Wert Comdg.

These corrections are to be used between April 1974 and June 1974 in the locality Beaufort Inlet, N. C.

for hydrographic surveys Nos. H-9421, H-9431, H-9432, H-9433, H-9434

For deep water add a 0 to these figures

Depth (Ft)	Corrections (Ft)	Extrapolated
0.0 - 3.3	0.0	
3.4 - 9.0	+0.2	
9.1 - 14.6	+0.4	
14.7 - 20.3	+0.6	
20.4 - 26.0	+0.8	
26.1 - 31.6	+1.0	
31.7 - 37.5	+1.2	
37.6 - 43.0	+1.4	
43.1 - 48.8	+1.6	
48.9 - 54.5	+1.8	
54.6 - 60.1	+2.0	



Settlement and Squat Corrections May 7, 1974

RPM	Correction (Ft)
0 - 1499	0.0
1500 - 2000	+0.2
2001 - 3000	+0.4

2 1/2 X 20 TO THE INCH 240 U.S. KEU-FEL & ESSER CO.

APRIL - MAY - JUNE 1974  
 BAR CHECK ABSTRACT OPR-513

J.D.	10'	15'	20'	25'	30'	35'	40'	45'
102	+1	+3	+5	+6				
106	+3	+6	+6	+7	+9	+1.0	+1.1	+1.2
107	+2	+4	+6	+6				
108	+4	+6	+8	+1.0	+8	+1.2	+1.4	+1.3
109	+3	+4	+6	+7	+8			
114	+4	+5	+8	+9	+1.3	+1.6	+1.5	+1.8
116	-1	+3	+5					
119	+1	+2	+3	+6	+6	+1.0		
122	+2	+3	+6	+6	+9	+1.0	+1.2	
128	+1	+4	+6	+6	+8			
130	+2	+4	+5	+6	+8	+1.0	+1.2	
133	+3	+4	+6	+7	+1.0	+1.2		
134	+2	+6	+6	+9	+9	+1.2	+1.3	
135	+3	+4	+5	+8	+1.0			
140	+2	+4	+7	+1.0	+1.2	+1.4		
141	+4	+5	+6	+9	+1.0	+1.3		
143	+3	+5	+6	+9	+1.1	+1.4		
144	+4	+5	+7	+1.0	+1.1	+1.2		
148	+3	+5	+6	+8				
155	+2	+3	+6	+8	+9			
157	+2	+3	+6	+8	+1.1			
158	+1	+2	+5	+5	+1.1			
165	+4	+5	+8	+1.0	+1.2	+1.4		
170	+3	+5	+7	+1.0	+1.1	+1.3		
	57	101	105	180	196 ✓	172	77	83
		24	24	23	20	14	6	3
	0.24	0.42	0.60	0.78	0.98	1.23	1.29	1.43

1. Project # OPR-513 2. Reg. # H-9432 3. Field # AHP-05-2-74

4. Type of Control: DEL NORTE (Hi-Fix, Raydist, EPI, etc.)

5. Frequency 1498.35 (for conversion of electronic lanes to meters)

6. Mode of Operation (check one):

Range-Range

Range-Visual

Range One (R<sub>1</sub>)  
Station I.D. Bogue Banks "N"  
Range Two (R<sub>2</sub>)  
Station I.D. Beaufort Inlet Channel  
Range Rear Light

Lat. 34 ° 41 ' 51.96 "  
Long. 076 ° 45 ' 03.39 "  
Lat. 34 ° 42 ' 52.98 "  
Long. 076 ° 39 ' 46.37 "

Hyperbolic (3-station)

Hyper-Visual

Slave One  
Station I.D. \_\_\_\_\_  
Master  
Station I.D. \_\_\_\_\_  
Slave Two  
Station I.D. \_\_\_\_\_

Lat. \_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ "  
Long. \_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ "  
Lat. \_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ "  
Long. \_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ "  
Lat. \_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ "  
Long. \_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ "

7. Location of Survey:

Range-Range  Imagine an observer is standing at R<sub>1</sub> Station and looking directly at R<sub>2</sub> (check one):

Survey area is to observer's Right  A=β

Survey area is to observer's Left  A=1

Hyperbolic  Looking from survey area toward Master Station:

Slave One must be to observer's Left;

Slave Two must be to observer's Right.

8.  This form is submitted as an aid in preparing a boat sheet.

This form applies to all data on this survey.

This form applies to part of the data on this survey.

Vessel EDP #	From		To		Position Numbers (inclusive)
	Time	Day	Time	Day	
_____	_____	_____	_____	_____	_____ to _____
_____	_____	_____	_____	_____	_____ to _____
_____	_____	_____	_____	_____	_____ to _____

9. Remarks: \_\_\_\_\_

3-1  
1/74

ATLANTIC MARINE CENTER

PROJECTION PARAMETERS

POLYCONIC OR MODIFIED TRANSVERSE MERCATOR

- 1. Project No. OPR-513
- 2. Reg. No. H-9432
- 3. Field No. AHP-05-2-74
- 4. Requested By Verification Branch
- 5. Ship or Office AMC
- 6. Date Required \_\_\_\_\_

7. Polyconic  Modified Transverse Mercator

8. Central Meridian of Projection 076 ° 40 ' 00 "

9. Survey Scale: 1: 5000

10. Size of Sheet (check one):

36 x 54  36 x 60  Other  Specify \_\_\_\_\_

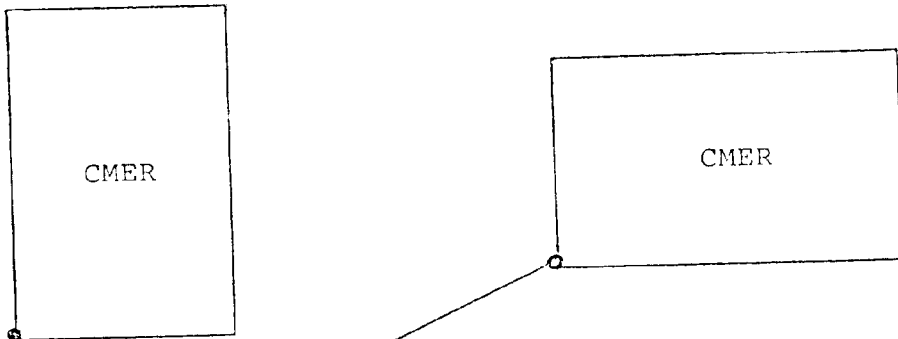
11. Sheet Orientation (check one):

NYX = 1

NYX =  $\emptyset$

N

N



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

Latitude 34 ° 39 ' 20 "

Longitude 076 ° 41 ' 10 "

13. G.P.'s of triangulation and/or signals attached

14. Material Desired: Tracing Paper  Mylar

Smooth Sheet  Other  Specify \_\_\_\_\_

15. Remarks: \_\_\_\_\_

TRANSMITTAL SHEET

The Boatsheet and records were inspected for completeness and no additional work is considered necessary.

*F. T. Smith*

F. T. Smith

LCDR, NOAA

Chief, AHP

ATLANTIC MARINE CENTER  
APPROVAL SHEET  
FOR  
AUTOMATED SURVEY H-9432

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

Date: January 7, 1975

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

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

Date: January 7, 1975

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



11/12/74

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): Beaufort Inlet Channel Range

Period: May 8-June 15, 1974

HYDROGRAPHIC SHEET: H9432

OPR: 513

Locality: Beaufort Inlet, North Carolina

Plane of reference (mean ~~lower~~ low water): 8.8 ft.

Height of Mean High Water above Plane of Reference is 3.8 feet  
(outer coast)

Remarks: Recommended Zoning:

Beaufort Inlet Entrance

Apply Range Ratio

1. Fort Macon (approx.  $34^{\circ}41'45''$ )  
to  
Shackleford Pt. (approx.  $34^{\circ}41'20''$ )  
xl.06 to Channel Range gage
2. Shackleford Pt.-Shackleford Banks


Apply the following corrections to Beaufort Inlet

Time Corrections

Apply Range Ratio

HW ~~3~~ LW ~~3~~  
-0 1~~2~~m -0h 1~~2~~m

xl.27 to Channel Range gage

  
Chief, Tides Branch

ATLANTIC MARINE CENTER  
 VERIFICATION OF SMOOTH TIDES

SURVEY H- 9432

PLANE OF REFERENCE MLW OR MLLW  
 TIME MERIDIAN 0 GMT  
 HEIGHT DATUM ON STAFFS 1. 8.8 2. \_\_\_\_\_ 3. \_\_\_\_\_

TIDE STATIONS	POSITION	TYPE GAGE	TIME CORR.		HEIGHT CORR. *	
			H.W.	L.W.	H.W.	L.W.
1. Beaufort Channel Range, N. C.	1 Y		-13	-13	1.27	1.27
2.	Ø Y					
3.	Ø Y					

HOURLY HEIGHTS  FROM ROCKVILLE OFFICE  
 FROM FIELD MARIGRANS

VERIFIED BY: Rockville

TIDE ZONING  NOT APPLICABLE  
 BY COMPUTER  
 FROM TWO OR MORE GAGES

LIMITS AND DESCRIPTION OF ZONING METHODS

TIDE CORRECTIONS COMPILED  BY COMPUTER  
 MANUALLY

VERIFIED BY: GFT  
 VERIFIED BY: \_\_\_\_\_

HEIGHT OF MHW ABOVE PLANE OF REFERENCE 3.8

TIDE CORRECTIONS VERIFIED ON SOUNDING PRINTOUT BY: GFT

DATE OF VERIFICATION 11/14/74

\*OR RATIO

*W. Jones*  
 EXAMINED & APPROVED

H-9432

GEOGRAPHIC NAMES

Name on Survey	Source of Name											
	A	B	C	D	E	F	G	H	K			
ATLANTIC OCEAN												1
BEAUFORT INLET												2
BOGUE BANKS												3
SHACKLEFORD BANKS												4
SHACKLEFORD POINT												5
ONSLow BAY												6
												7
												8
												9
												10
												11
												12
												13
												14
												15
												16
												17
												18
												19
												20
												21
												22
												23
												24
												25

Approved  
 Chas E. Harrington  
 Staff Geographer  
 31 March 1975

HYDROGRAPHIC SURVEY STATISTICS  
HYDROGRAPHIC SURVEY NO. H-9432 AHP-5-2-74

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET & 2-Overlays		1	BOAT SHEETS		3	
DESCRIPTIVE REPORT		1	OVERLAYS		2	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
Accordian ENVELOPES	5		8			
CANISERS	1		1			
VOLUMES						
BOXES			1 & 1-Bundle Raw Data P/O.			

T-SHEET PRINTS (List)  
TP-00520, 00522

SPECIAL REPORTS (List)  
None

OFFICE PROCESSING ACTIVITIES  
The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				1826
POSITIONS CHECKED		183	23	
POSITIONS REVISED		-	0	
DEPTH SOUNDINGS REVISED or added		310	34	
DEPTH SOUNDINGS ERRONEOUSLY SPACED		-	0	
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		-	0	
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		2	3	
JUNCTIONS		16	15	
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		8	30	
SPECIAL ADJUSTMENTS		-	32	
ALL OTHER WORK		52	40	
TOTALS		99	120 hrs	

PRE-VERIFICATION BY  
I. T. Murphy, B. J. Stephenson

VERIFICATION BY  
B. J. Stephenson

REVIEW BY  
R. W. Darkozan

BEGINNING DATE  
7/23/74

ENDING DATE  
12/10/74

BEGINNING DATE  
1/3/75

ENDING DATE  
1/6/75

BEGINNING DATE  
3/31/75

ENDING DATE  
4/28/75

Insp. D. J. Remsburg 6-8-75 49 hrs  
CARTOG. 6/17/75 16

Reg. No. H-9432

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

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

CARDS CORRECTED

DATE \_\_\_\_\_ TIME REQ'D \_\_\_\_\_ INITIALS \_\_\_\_\_

REMARKS: Digitize

- ① Jetty (Shackleford, USE) 1933      $34^{\circ}41'08.142^{\phi}$       $76^{\circ}36'07.041^{\lambda}$
- ② Morehead City Channel Range Rear Lt.      $34^{\circ}41'18.73$       $76^{\circ}39'30.99$
- ③ " " " " Front Lt.

From H-9421  
④ pos 2119 Bouy R"4"      $34^{\circ}39'32.48^{\phi}$       $76^{\circ}40'21.58^{\lambda}$   
pos 2121 Bouy R"3"      $34^{\circ}39'32.41$       $76^{\circ}40'28.56$

Reg. No. \_\_\_\_\_

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

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

MAGNETIC TAPE CORRECTED

DATE 2/25/81 TIME REQ'D \_\_\_\_\_ INITIALS PEK

REMARKS:

H-9432

Items for Future Presurvey Reviews

The dangerous sunken wreck, PA (Presurvey Review Item #13) charted in lat.  $34^{\circ}40.57'$ , long.  $76^{\circ}40.27'$  was not verified or disproved by the present survey and should be scheduled for investigation in future wire-drag operations in this area.

<u>Position</u>	<u>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>
344	0765	6	2	25 years
344	0764	6	2	25 years
343	0765	5	2	25 years
343	0764	3	0	50 years



B. The usual depth curves are adequately delineated. The 3-ft. depth curve was added to define the nearshore bottom configuration more distinctly. Depth curves were added in pencil at two-foot intervals to supplement the regular curves.

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

### 3. Condition of the Survey

The field work, sounding records, smooth plotting, sounding printouts and Descriptive Report conform to the requirements of the Hydrographic Manual supplemented by the Instruction Manual - Automated Hydrographic Surveys except that the final smooth sounding printout lists the plotted depth unit in fathoms and tenths although the reduced soundings were recorded and smooth plotted in feet.

### 4. Junctions

Adequate junctions were effected with H-9434 (1974) on the west, and H-9421 (1974) on the south. A partial butt junction was effected with H-9431 (1974) on the north because of the highly changeable bottom in this area. The junction with H-9464 (1974) on the east will be discussed in the review of that survey.

Soundings in red were determined by photobathymetric methods using photographs of 11/1973. These soundings were transferred from surveys TP-00520 and TP-00522, and provide supplemental information for unsurveyed areas and areas not adequately surveyed by hydrographic methods.

### 5. Comparisons with Prior Surveys

H-6798	(1943)	1:10,000	
H-7963	(1952-53)	1:12,500	
H-8565	(1960)	1:5,000	(unverified)
H-8934	(1967)	1:10,000	(Boat sheet Bps. 72036-72441)

These surveys taken together cover the area of the present survey. A comparison between these prior surveys and the



present survey reveals minor changes east of long.  $76^{\circ}39'$  as sounding agreement is within 1-2 feet. However, west of this longitude considerable changes have occurred. Shackleford Banks has accreted westward from its 1953 position by approximately 1200 meters. Construction of a jetty on the eastern end of Bogue Banks has caused a 150 meter seaward migration of the shoreline in this area. Depths near the end of the jetty have increased by 16 feet. Changes, such as deepening or shoaling have occurred on the shoal areas adjoining Beaufort Inlet Channel. These changes become less pronounced in greater depths and sounding agreement is very good near the 30-ft. curve.

Changes in the survey area are attributed primarily to the natural shifting of sediments by storms, tidal currents and alongshore currents.

Several bottom samples were carried forward from H-8565 (1960) to supplement the present survey.

The present survey with the addition of several bottom characteristics supersedes these prior surveys in the common area.

#### 6. Comparison with Charts

Chart 420 (latest print date February 16, 1974)  
Chart 11547 (423) (latest print date November 2, 1974)

##### A. Hydrography

The charted hydrography originates with the previously discussed prior surveys which require no further consideration, supplemented by the partial application of boat sheet soundings (Bp's. 90061-63) of the present survey and soundings from C of E surveys. Information charted from U.S. Corps of Engineers surveys (Bp's. 89099, 88995, and 90136) subsequent to the date of the present survey should be retained on the chart.

The sunken wreck PA charted in lat.  $34^{\circ}40.57'$ , long.  $76^{\circ}40.27'$  (PRS item 13) was not disproved and should be retained on the chart.

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

B. Controlling Depths

The charted controlling depth notes of the Beaufort Inlet Channel are based on data furnished by the U.S. Corps of Engineers subsequent to the date of the present survey and supersede the present survey for charting the controlling depths.

C. Aids to Navigation

The fixed and floating aids to navigation on the present survey are in substantial agreement with their charted positions and adequately mark the features intended. The Beaufort Inlet Channel Lighted Buoys "3" and "4" were transferred from H-9421 (1974).

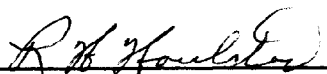
7. Compliance with Project Instructions

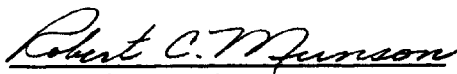
This survey adequately complies with project instructions.

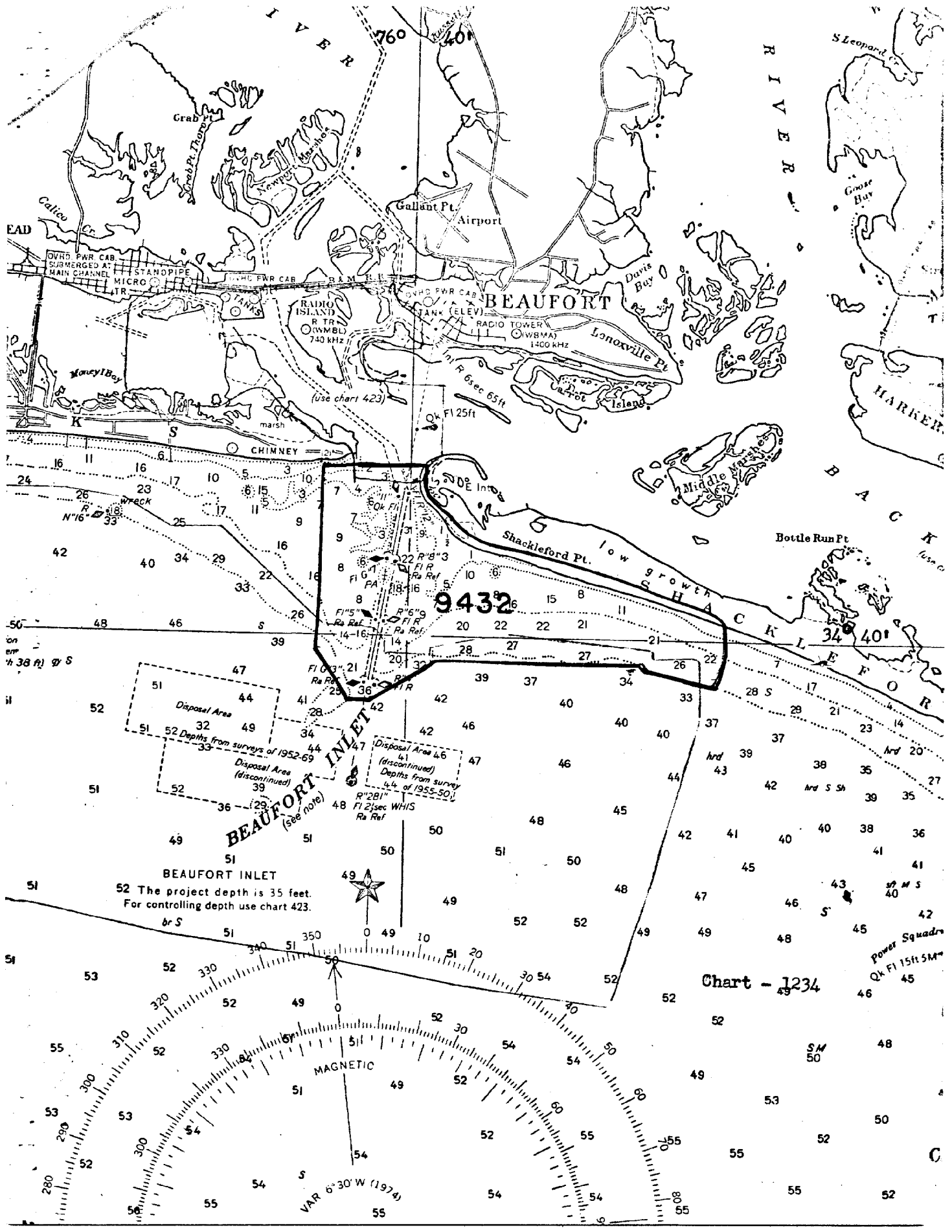
8. Additional Field Work

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

Examined and Approved:

  
\_\_\_\_\_  
Chief  
Marine Chart Division

  
\_\_\_\_\_  
Associate Director  
Office of Marine Surveys  
and Maps



**BEAUFORT INLET**  
 52 The project depth is 35 feet.  
 For controlling depth use chart 423.

Chart - 1234

MAGNETIC  
 VAR 6° 30' W (1974)

Power Squads  
 Qk Fl 15ft 5M

