

9526

Diag. Cht. No. 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. AHP-5-1-75
Office No. H-9526

LOCALITY

State NORTH CAROLINA
General Locality OREGON INLET
Locality ROANOKE SOUND CHANNEL TO OLD HOUSE...
CHANNEL

19 75

CHIEF OF PARTY
J. O. ROLLAND

LIBRARY & ARCHIVES

DATE 3/1/76

9526

HYDROGRAPHIC TITLE SHEET

H-9526

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-05-1-75

State North Carolina

General locality Oregon Inlet

Locality Roanoke^{Sound} Channel to Old House Channel

Scale 1:5000 Date of survey May-July 1975

Instructions dated 28 February 1975 Project No. OPR-513-AHP-75

Vessel Launch 1277

Chief of party John O. Rolland

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

Soundings taken by echo sounder, ~~and~~ lead, pole _____

Graphic record scaled by Launch Personnel

Graphic record checked by Launch Personnel

Protracted by N/A. CALCOMP 618 ~~AMG~~ Automated plot by AMC - Calcomp 618
~~FDP-87c EDP-AMC~~

Verification by ~~AMS~~ BSJ & RGC

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

REMARKS: Corrections in red by RGC AMC

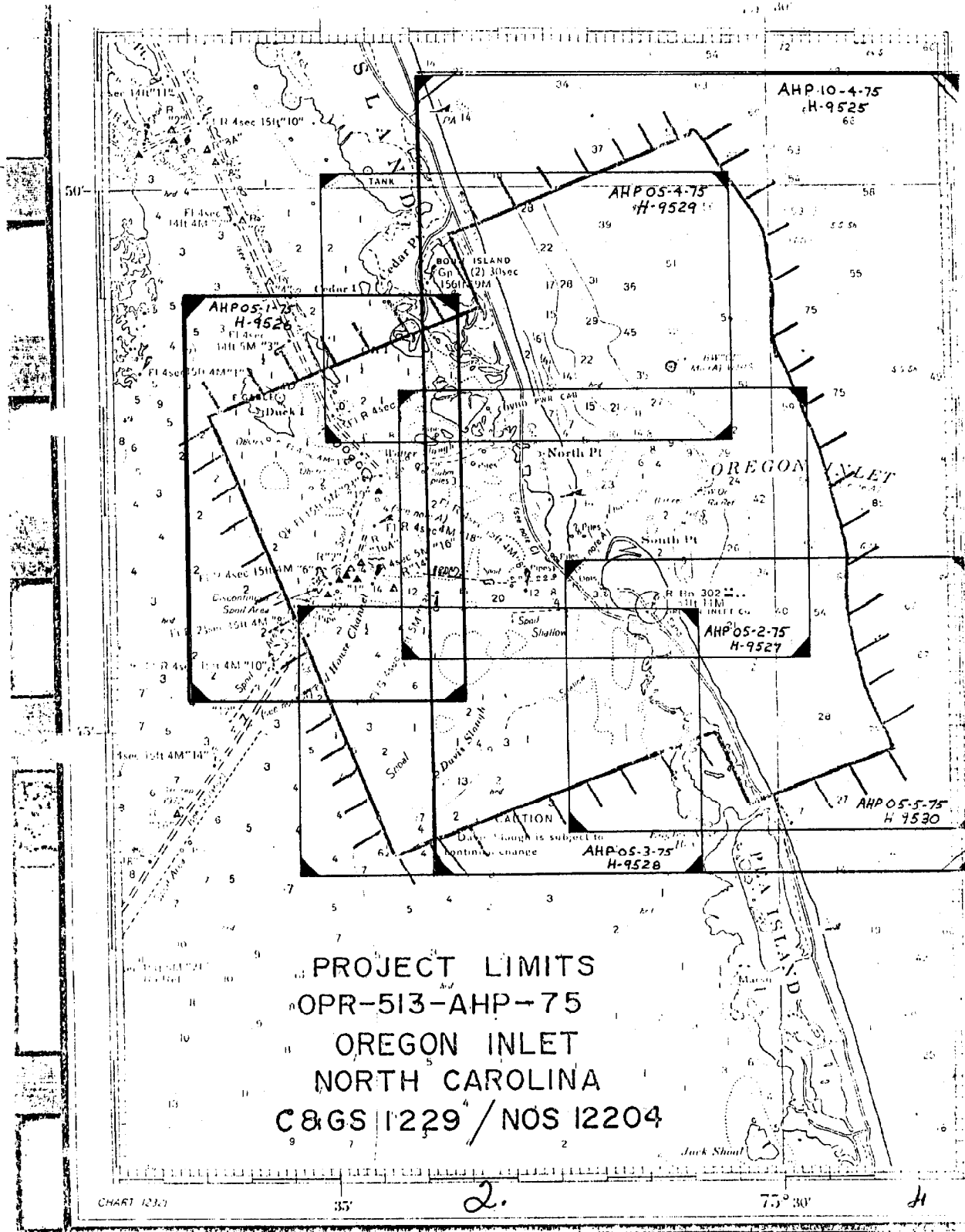
Applied to sheets 11/19/76
CRB

1.

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* This data filed with field records.



PROJECT LIMITS
 OPR-513-AHP-75
 OREGON INLET
 NORTH CAROLINA
 C&GS 1229 / NOS 12204

DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SURVEY H-9526 (AHP-05-1-75)

SCALE: 1:5,000 1975
VESSEL: ATLANTIC HYDROGRAPHIC PARTY CHIEF OF PARTY JOHN O. ROLLAND

A. Project

OPR-513 is a cooperative agreement between NOS and the U.S. Army Corps of Engineers to provide a new Hydrographic Data Base for computer model studies of Oregon Inlet. The survey was accomplished in accordance with Project Instructions OPR-513-AHP-75 dated 28 February 1975, change number 1 dated 21 March 1975, the ~~Revised~~ Hydrographic Manual, and Chapter 3 of the AMC Manual. (Provisional)

B. Area Surveyed

H-9526
The area encompassed by Sheet AHP-05-1-75 is an irregular section extending from 75° 33' 50" W westward, toward Pamlico Sound, to the project limits. The approximate limits of hydrography are bounded by 35° 45' 50"N, 75° 33' 50"W; 35° 48' 05"N, 75° 34' 05"W; 35° 48' 00"N, 75° 36' 00"W; and 35° 45' 20"N, 75° 34' 40"W. Junction was made with contemporary survey H-9528, AHP-05-3-75. Detailed prior survey of the area is H-6228, 1:10000 scale, 1937. All field work was accomplished during the period 1 May 1975 to 31 July 1975.

H-8765(962) 1:10,000.

C. Sounding Vessel

Launch 1277 was used exclusively to accomplish the survey work on AHP-05-1-75. (H-9526)

D. Sounding Equipment and Corrections to Echo Soundings

A Raytheon Fathometer, model number DE 723D, serial number 1904, was used in Launch 1277. This fathometer often fails to sound (digital and analog) in depths under the transducer ranging from 2.4 feet or less and never sounds in depths less than 1.9 feet; therefore numerous pole soundings were necessary in shoal water. Depth corrections were obtained by averaging bar check values. A graph was constructed and velocity correctors were scaled in accordance with table 3 of the Revised Hydrographic Manual. Only two bar checks were taken for this sheet; however, the correctors agreed within 0.2 ft. with those determined for the adjacent sheet AHP-05-3-75, H-9528, which was run during the same period.

No appreciable changes occurred between the first and last days of hydrography; therefore, one velocity table was constructed. The graph, corrector value abstract and bar check abstract are included with this report. Settlement and squat correctors were obtained as outlined in Section 4.9.4.2 of the ^{Provisional} Revised Hydrographic Manual. Daily TRA corrections were determined as outlined in section 4.9.4.1 of the Revised Hydrographic Manual to reflect gain/loss of fuel load. Frequent A to F scale checks were taken to insure correct ^{phase} ~~stylus and arm length~~. All initial settings were adjusted to zero. All fathograms were scanned to mean out sea swell action where applicable.

E. Hydrographic Sheets

Field sheets were constructed, raw master tapes were logged and data plotted on the field sheets by the launch's on board PDP-8/e Hydroplot System. Edited master and corrector tapes, velocity tape, and TC/TI tape were logged by launch personnel and submitted for smooth plotting by Processing Division, Atlantic Marine Center.

F. Control Stations

Control stations Bodie Island, Lighthouse 1875, Light "18" 1975, Light "6" 1975, ~~Light "8" 1975, P-02 1975, P-03 1975,~~ and PD-06 1975 were established or verified by Coastal Mapping Division, Atlantic Marine Center. Refer to Horizontal Control Report OPR-513 Oregon Inlet, N.C., for surveying methods, geodetic abstracts and computations. Control station Bodie Island Lighthouse 1875 (ecc.) was established by party personnel using a steel tape measure, magnetic compass, and program RK407. Refer to Descriptive Report H-9525, AHP 10-4-75 for RK407 printout. ~~LIGHT "8" and P-02 were not used~~

G. Hydrographic Position Control

Del Norte positioning equipment, which operates in a range-range mode, was used to control all hydrography on sheet AHP-05-1-75. ^(H-3526) Seven separate control networks were used on this sheet. All shore stations were located at or eccentric to established third-order triangulation or traverse stations. Whenever possible, calibration was established twice daily by positioning the launch at a known third-order traverse or triangulation station. Del Norte ranges were compared to ranges calculated by PDP-8/e computer using the RK407 program. Refer to daily raw data printouts for calibration data, and see appendix for Abstract of Correctors. A maximum difference of 5 meters between morning and evening calibrations was observed, with mean daily changes ranging between 1.4 and 2.5 meters. The mean standard deviations of calibrations throughout the project ranged between 1.65m and 2.25 meters.

These figures do not adequately reflect the generally poor performance of the Del Norte equipment, which was due to the presence of extensive skip zones throughout the project area. This resulted in an excessive number of erroneous positions which had to be plotted by time-and-course interpolation (approximately 3% of all soundings on the sheet). On day 184 the DMU failed, and was returned to service following field repair (see FAILog #5139). Water seepage into sealed antennas continually caused work stoppages. The following is a summary of equipment utilization during the project; refer to the enclosed signal list for shore station names and locations:

Shore Stations

<u>Signal #</u>	<u>S/N</u>	<u>Julian Days Used</u>
2	181	121-212
3	189	204, 209-211
4	189	212
6	188	204-212
16	188	121-126
16	216	204-209

Mobile Transponder

<u>S/N</u>	<u>Julian Days Used</u>
162	121-126
159	163-212

Distance Measuring Unit

<u>S/N</u>
159

H. Shoreline

Shoreline and topographic details were transferred from incomplete manuscripts TP-00886 and TP-00888. The MLW line was not delineated by hydrographic in all areas, due to the small tidal range; however, the 3 foot curve was defined by hydrography.

I. Crosslines

Approximately 7.0 nautical miles or 11.1% of the main scheme hydrography run on sheet AHP-05-1-75 were crosslines.

The agreement with main scheme lines was good, with most soundings agreeing to the nearest foot. Occasional 2 foot discrepancies occurred at crossings run at tidal extremes; actual tidal ranges observed in the project area were substantially less than predicted tidal ranges at Oregon Inlet. Crossings in the vicinity of $35^{\circ} 45' 20''N$, $75^{\circ} 34' 00''W$ differed by up to 4 feet; however, closer examination of the fathograms shows large closely spaced sand ridges in this region; for purposes of clarity of the smooth field sheet, all peaks and deeps were not plotted in this area.

J. Junctions

(AHP-5-3-75)
Junction with H-9528, 1:5000, 1975 was excellent and soundings agreed exactly. Junctions with photobathymetry on incomplete manuscripts TP-00886 and TP-00888 proved to be inconclusive. Soundings on Sheet 9528 AHP 05-1-75 were reduced for predicted tidal ranges at Oregon Inlet whereas actual tidal ranges observed inshore were substantially less. In general contemporary survey soundings were from 1 to 3 feet shallower. In the area southwest of Duck Island contemporary survey soundings were 4 feet shallower. The majority of pole soundings and shallow water hydrography was run at or near high water where maximum depth errors exist between actual and predicted tides. *Smooth sheet soundings confirm shoaling since Oct 1974*

K. Comparison with prior surveys

Comparison with H-6228, 1:10000, 1937 showed general disagreement. Dredging operations by the U.S. Army Corps of Engineers have created numerous sand islands which were not present at the time of the prior survey, and have shifted the position of the deep channels 200 to 400 meters westward. The location of the principal east-west channel has shifted southward approximately 2000 meters and has a maximum depth of 14 feet compared to 21 feet on the prior survey. Pre-survey review items were investigated with the following results:

3. Dangerous Sunken Wreck, PA, charted in Lat. $35^{\circ} 48.16'$, Long. $75^{\circ} 35.19'$.
The charted position of this wreck presently lies in one foot of water. This area was visually examined at low water and closely spaced lines were run in the general vicinity with no indication of the wreck. Recommend that the wreck symbol be deleted from future editions of the chart. See verifiers report para. 3.D PSR #3
5. Obstructions charted in the immediate vicinity of Lat. $35^{\circ} 47.5'$, Long. $75^{\circ} 35.2'$, and numerous pipes and pilings charted in the vicinity of Oregon Inlet. These specific items were not investigated; however all visible pipes, pilings and obstructions found within the limits of hydrography were located. Refer to field edit sheet, OPR-513, Oregon Inlet. See QC report item 5

L. Comparison with the Chart

A comparison with C&GS Chart 129-SC, 8th Edition, 23 February 1974 shows general agreement within 2 feet in the vicinity of Duck Island, general agreement within 1 foot north of Latitude 35° 46' 45" with the exception of a 12 foot charted sounding at Latitude 35° 47' 15", Longitude 75° 34' 15" presently found to be 6 feet deep, and shows general disagreement south of Latitude 35° 46' 45". Contemporary survey soundings show 5 to 10 foot depths in the vicinity of Spoil Islands to the east of Old House Channel. Old House Channel is now approximately 2 to 5 feet deeper. Contemporary survey soundings near the junction of Oregon Inlet Channel and Old House Channel Lat. 35° 46' 25", Long. 75° 34' 40" are from 2 to 8 feet deeper as a result of continual dredging.

M. Adequacy of Survey

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

N. Aids to Navigation

Comparison of the floating aids to navigation with the Light List Volume 1, 1975 and C&GS 129-SC, 8th Edition 23 February 1974 showed no discrepancies. (Floating aids marking Walter Slough are not shown on the chart)

Comparison of the fixed aids to navigation with the Light List Volume 1, 1975 and C&GS 129-SC, 8th Edition 23 February 1974 showed several discrepancies.

The fixed aids near the junction of Old House Channel and Oregon Inlet Channel have been relocated following recent dredging. Day Beacon "15" has recently been established and is not shown on the chart or in the Light List. Old House Channel Light "8" (LL 3977.60) is incorrectly located in column three of the light list. Detached positions for these aids were determined by positioning the launch alongside and were used only to insure proper placement with respect to their designed purpose. Refer to field edit sheet, OPR-513 Oregon Inlet for geodetic positions.

O. Statistics

<u>Vessel</u>	<u>Nautical Miles of Sounding</u>	<u>Sq. Nautical Miles</u>	<u>No. of Bottom Samples</u>	<u>No. of Positions</u>
Launch 1277	70.1	1.9	22	1513

P. Miscellaneous

Velocity corrections have not been applied to soundings due to the large number of pole soundings and the inability to use TC/TI tapes on the off line plot, RK211.

Q. Recommendations

None

R. Automated Data Processing

<u>Program Title</u>	<u>Program Number</u>	<u>Version Date</u>
On-Line R/R R.T.S.	RK111	8/7/74
Grid & Signal Plot	RK201	2/19/75 and 4/18/75
Off Line R/R Non R.T.S.	RK211	8/16/74
Utility	AM300	5/24/73
Utility	RK300	5/22/75
Corrector Abstract	PM360	3/21/74
Geodetic Direct/Inverse	RK407	8/15/74
Predicted Tides	AM500	11/10/72
Elinore	AM602	3/10/72 and 5/21/75

S. References to Reports

1. Horizontal Control Report OPR-513, Oregon Inlet, N.C. 1975.
2. Field Edit Report OPR-513, Oregon Inlet, N.C. 1975.
3. Descriptive Report H-9525, AHP 10-4-75.

Respectfully Submitted

William A. Wert
LT, NOAA
OIC, Launch 1277

Detached Positions
H-9526 (AHP-05-1-75)

<u>Pos. #</u>	<u>Rec. #</u>	<u>Object</u>	<u>Latitude</u>	<u>Longitude</u>
1248	06015	Pile (3) (4)	35° 48' 05.47"	75° 34' 23.28" ✓
302	01509	B.S. fne gy S brk Sh	35° 48' 10.10"	75° 35' 08.21" ✓
1247	06014	B.S. fne gy S brk Sh	35° 47' 57.79"	75° 34' 29.07" ✓
1231	05953	Pile (5) (4)	35° 47' 59.35"	75° 34' 30.62" ✓
1246	06013	Pile (5) (4)	35° 47' 56.01"	75° 34' 26.17" ✓
1211	05854	B.S. fne gy S bk M	35° 47' 51.32"	75° 34' 44.15" ✓
215	01123	Platform (6)	35° 47' 53.44"	75° 34' 52.45" ✓
214	01122	Lt. "2"	35° 47' 53.44"	75° 34' 57.23" * ✓
1482	07058	B.S. fne gy S	35° 47' 54.22"	75° 35' 56.78" ✓
1329	06388	Pile (3)	35° 47' 43.15"	75° 35' 17.58" ✓
1490	07100	B.S. fne gy S	35° 47' 39.32"	75° 35' 20.92" ✓
1462	06974	B.S. fne gy S	35° 47' 37.21"	75° 35' 52.85" ✓
1210	05853	B.S. fne br S	35° 47' 34.51"	75° 34' 39.40" ✓
139	00740	Lt. "1"	35° 47' 33.53"	75° 34' 37.10" ✓
140	00741	Lt. "23"	35° 47' 21.63"	75° 34' 23.37" ✓
459	02249	B.S. fne gy S	35° 47' 38.75"	75° 34' 14.33" ✓
1507	07146	B.S. fne gy S	35° 47' 21.27"	75° 35' 19.99" ✓
276	01386	Buoy C"5"	35° 47' 28.17"	75° 33' 51.58" ✓
275	01385	Buoy N"4"	35° 47' 26.97"	75° 33' 51.50" ✓
274	01384	Buoy C"3"	35° 47' 24.41"	75° 33' 57.43" ✓
273	01383	Buoy N"2"	35° 47' 20.81"	75° 34' 00.23" ✓
272	01382	Buoy C"1"	35° 47' 17.62"	75° 34' 10.28" ✓
1167	05671	B.S. bk M	35° 47' 15.48"	75° 34' 17.68" ✓

<u>Pos. #</u>	<u>Rec. #</u>	<u>Object</u>	<u>Latitude</u>	<u>Longitude</u>
253	01303	Buoy N"20"	35° 47' 14.56"	75° 34' 19.88" ✓
141	00742	Daybeacon "19"	35° 47' 12.47"	75° 34' 25.05" ✓
1282	06162	B.S. fne gy S bk M	35° 47' 14.03"	75° 34' 54.86" ✓
1310	06294	D.P. iron pipe (7)	35° 47' 07.72"	75° 35' 13.54" ✓
1169	05673	B.S. fne br S bk M	35° 47' 06.80"	75° 34' 30.04" ✓
1168	05672	B.S. fne gy S bk M	35° 47' 01.67"	75° 34' 08.31" ✓
1127	05466	Iron pipe	35° 46' 55.57"	75° 34' 37.97" ✓
1019	04998	B.S. fne gy S	35° 46' 42.33"	75° 34' 35.04" ✓
1018	04997	Daybeacon "16A"	35° 46' 31.20"	75° 34' 41.74" ✓
1017	04996	Lt. "16"	35° 46' 27.43"	75° 34' 42.36" ✓
1021	05000	Daybeacon "15"	35° 46' 22.54"	75° 34' 33.14" ✓
1022	05001	Daybeacon "14"	35° 46' 24.51"	75° 34' 18.10" *
1016	04995	Daybeacon "2"	35° 46' 27.92"	75° 34' 47.57" ✓
1015	04994	Daybeacon "1"	35° 46' 25.47"	75° 34' 48.49" ✓
1014	04993	Daybeacon "3"	35° 46' 25.28"	75° 34' 52.23" *
848	04158	Daybeacon "5"	35° 46' 23.54"	75° 34' 55.15" *
1020	04999	B.S. fne gy S brk Sh	35° 46' 16.62"	75° 34' 38.19" ✓
1096	05358	B.S. fne gy S	35° 46' 16.52"	75° 34' 06.53" ✓
700	03513	Daybeacon "7"	35° 46' 11.69"	75° 35' 04.36" ✓
950	04643	Iron pipe ⁶ (β)	35° 46' 12.13"	75° 34' 41.55" ✓
695	03493	B.S. fne br S	35° 46' 07.72"	75° 34' 56.86" ✓
662	03314	Metal ruins (swash)(1)	35° 46' 06.64"	75° 34' 51.07" ✓
694	03492	B.S. crs gy S brk Sh	35° 45' 56.65"	75° 35' 13.43" ✓
618	03097	Lt. "8"	35° 45' 51.52"	75° 35' 17.74" * ✓

<u>Pos. #</u>	<u>Rec. #</u>	<u>Object</u>	<u>Latitude</u>	<u>Longitude</u>
610	03057	File ⁷ (8)	35° 45' 51.55"	75° 34' 49.82" * ✓
819	04023	B.S. fne gy S brk Sh	35° 45' 56.77"	75° 34' 13.47" ✓
693	03491	B.S. fne br S	35° 45' 40.61"	75° 35' 01.02" ✓
554	02771	B.S. fne br S	35° 45' 30.55"	75° 34' 49.21" ✓
793	03928	File (8)6	35° 45' 58.16"	75° 34' 08.63" ✓
910	04422	B.S. crs gy S bk M	35° 46' 33.95"	75° 35' 00.24" ✓ <i>pl. 13</i>

* Deleted from records as these objects were located by Photogrammetry.

APPROVAL SHEET
SURVEY H-9526 AHP-05-1-75

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



John O. Rolland
LCDR, NOAA
Chief, Atlantic Hydrographic Party

SIGNAL LIST

OPR-513

AHP-05-1-75

H-9526

<u>SIGNAL</u>	<u>I</u>	<u>LATITUDE</u>			<u>LONGITUDE</u>			<u>DPC</u>	<u>ELEV</u>	<u>FRQA</u>	<u>NAME</u>
002	5	35	49	06100	075	33	49225	254	0046	000000	BODIE IS LIGHTHOUSE 1875, (occ.
003	2	35	46	53157	075	34	32252	254	0003	000000	LIGHT "A" 1975
004	0	35	46	21081	075	35	00530	254	0003	000000	LIGHT "6" 1975
005	5	35	46	16584	075	32	48495	254	0003	000000	LIGHT "B" 1975
006	3	35	46	28151	075	32	24045	254	0009	000000	P-03 1975 (BRIDGE)
009	4	35	46	18151	075	31	55153	243	0004	000000	P-02 1975 (DOLPHIN)
016	2	35	44	17202	075	30	05126	254	0010	000000	PD-06 1975

POSITION DATA SHEET

LAUNCH 1277

SHEET AHP-05-1-75

REGISTRY NO. H-9526

Jul. Day	First Pos. No.	Time (GMT)	Last Pos. No.	Time (GMT)	Develop- ment Positions	Detached Positions	Rejected Positions	Duplicate Positions	Omitted Positions	Bottom Sample
121	1	133933	5	134157	NONE	NONE	NONE	NONE	NONE	NONE
122	6	162048	141	185939	"	139-141	"	"	66	"
125	142	150219	271	193642	"	214, 215, 253	216-217, 254	"	161	"
126	272	160804	295	165244	"	272-276	295	"	NONE	"
163	296	150456	379	191656	"	NONE	309, 301, 316, 330-332, 344, 365	"	308, 312, 319, 367	302
204	380	171931	473	195823	"	"	448, 458, 461	"	435	459
205	474	142018	729	191633	"	610, 618, 662, 700	623	"	606, 644, 666	554, 693-695
209	730	143500	1003	194920	"	793, 848, 950	750-751, 810-811, 829	825	775, 808, 853	819, 910
210	1004	141301	1086	163909	"	1014-1018, 1021, 1022	1055-1056	NONE	1050, 1063, 1083	1019, 1020
211	1087	135743	1282	193630	"	1127, 1231, 1246, 1248	105, 1173, 1201-1204, 1238, 1239	"	1160	1096, 1167-1169, 1219, 1211, 1247, 1282
212	1283	163725	1513	213245	"	1310, 1329	1338-1340, 1355, 1386-1391, 1504-1506	"	1378, 1403, 1473	1462, 1482, 1490, 1507

- .3 - .2 - .1 0 + .1
 (Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

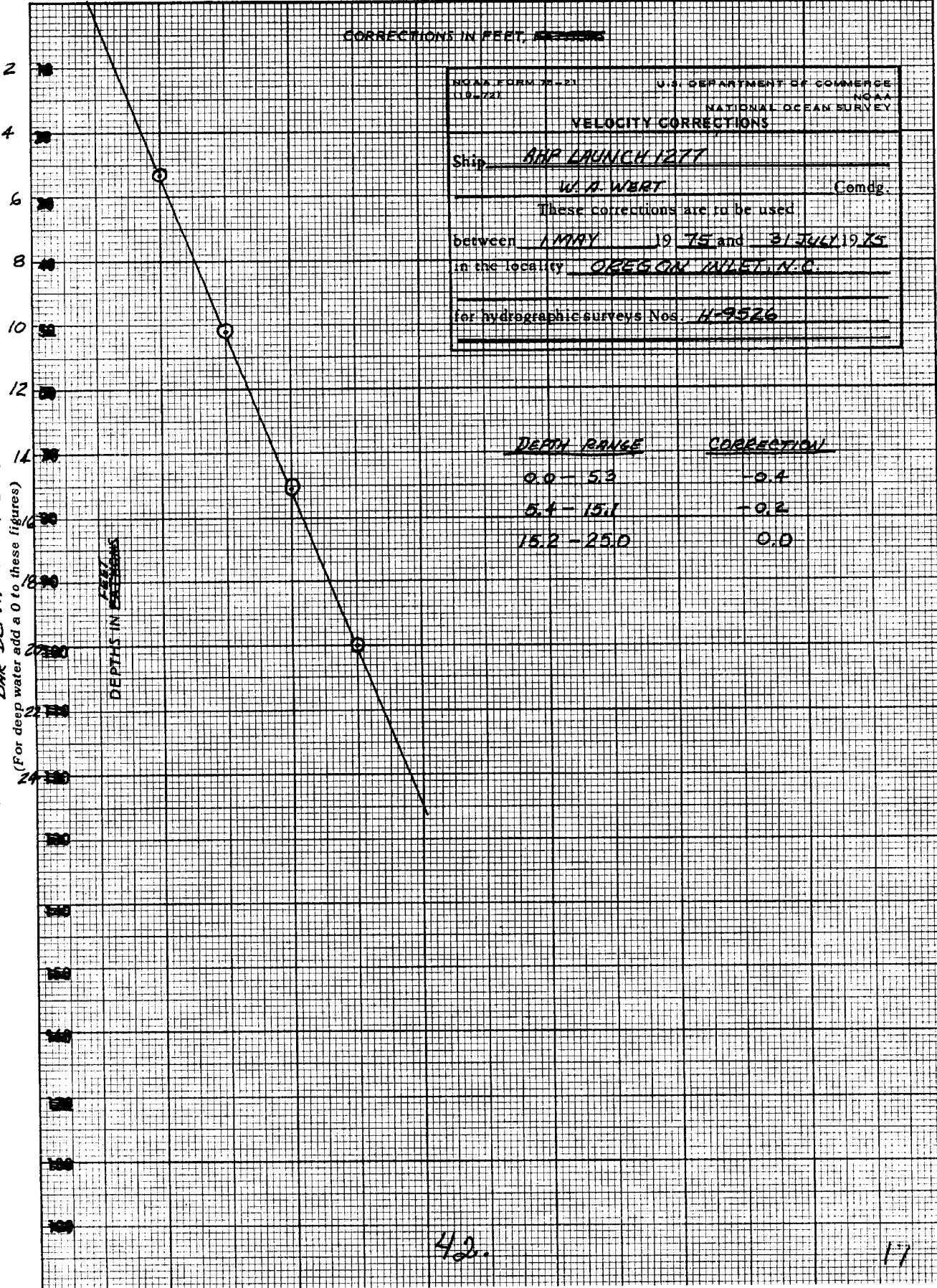
CORRECTIONS IN FEET, FATHOMS

NOAA FORM 20-21 (10-22)		U.S. DEPARTMENT OF COMMERCE NOAA NATIONAL OCEAN SURVEY	
VELOCITY CORRECTIONS			
Ship <u>BAR LAUNCH 1277</u>		Comdg. _____	
Comdg. <u>W.A. WERT</u>		Comdg. _____	
These corrections are to be used between <u>1 MAY</u> 19 <u>75</u> and <u>31 JULY</u> 19 <u>75</u> in the locality <u>OREGON INLET, N.O.</u>			
for hydrographic surveys Nos. <u>H-9526</u>			

BAR DEPTH - DEPTH CORRECTION
 (For deep water add a 0 to these figures)

DEPTHS IN FATHOMS

DEPTH RANGE	CORRECTION
0.0 - 5.3	-0.4
5.4 - 15.1	-0.2
15.2 - 25.0	0.0



KE 20 X 20 TO THE INCH 46 1240
 MADE IN U.S.A.
 KEUFFEL & ESSER CO.

42.

17

SETTLEMENT & SQUAT

LAUNCH 1277

MAY 7, 1974

ABSTRACT OF SETTLEMENT & SQUAT

RPM

CORRECTION (FT)

0-1499

0.0

1500-2000

+0.2

2001-3000

+0.4

CORRECTION (FT)

4

3

2

1

0

1000

RPM

2000

3000

19

43.

ENGINE DRAWING (D)
MADE IN U.S.A.

NO. 1011-101 DIETZEN GRAPH PAPER
23 X 20 PER

CAM3-1
1/31/74

ATLANTIC MARINE CENTER
PROJECTION PARAMETERS
POLYCONIC OR MODIFIED TRANSVERSE MERCATOR

1. Project No. OPR-513 4. Requested By R.G. Cram
2. Reg. No. H-9526 5. Ship or Office Verification Branch
3. Field No. AHP-05-1-75 6. Date Required A.S.A.P.

7. Polyconic Modified Transverse Mercator
8. Central Meridian of Projection 75 ° 35 ' 00 "
9. Survey Scale: 1: 5,000

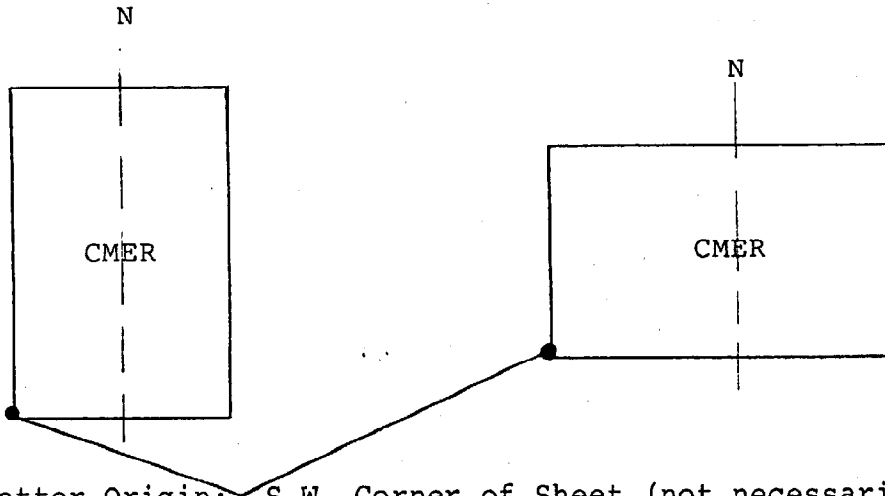
10. Size of Sheet (check one):

36 x 54 36 x 60 Other Specify _____

11. Sheet Orientation (check one):

NYX = 1

NYX = 0



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

Latitude 35 ° 45 ' 00 "

Longitude 75 ° 36 ' 27 "

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

14. Material Desired: Tracing Paper Mylar

Smooth Sheet Other Specify _____

15. Remarks: _____

10/28/75

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): Davis Slough, Oregon Inlet Channel,
Old House Channel, Roanoke Sound
Channel

Period: May 1 - July 31, 1975

HYDROGRAPHIC SHEET: H-9526

OPR: 513

Locality: Oregon Inlet
Plane of reference (mean ~~lower~~ low water):

Davis Slough	1.49 ft.
Oregon Inlet Channel	1.71 ft.
✓Old House Channel	2.22 ft.
✓Roanoke Sound Channel	1.87 ft.

Height of Mean High Water above Plane of Reference: *

Remarks: Recommend the use of automatic zoning.

<u>*Station</u>	<u>MHW Above Plane of Reference (ft.)</u>
Davis Slough	1.0
Oregon Inlet Channel	1.2
Old House Channel	0.7
Roanoke Sound Channel	0.4

James R. Hubbard
for Chief, Tides Branch

9526

GEOGRAPHIC NAMES

Name on Survey	Source of Name									
	A	B	C	D	E	F	G	H	I	J
	ON CHART NO.	ON PREVIOUS SURVEY NO.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	RAND McNALLY ATLAS	U.S. LIGHT LIST		
BIG TIM ISLAND										1
DUCK ISLAND										2
HERRING SHOAL ISLAND										3
LITTLE TIM ISLAND										4
OFF ISLAND										5
OLD HOUSE CHANNEL										6
OREGON INLET CHANNEL										7
PAMLICO SOUND										8
ROANOKE SOUND CHANNEL										9
WALTER SLOUGH										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25

APPROVED
Chas. E. Harrington
 STAFF GEOGRAPHER - CS1X2
 30 July 1976

22

ATLANTIC MARINE CENTER
APPROVAL SHEET
FOR
AUTOMATED SURVEY H-9526

- 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: 2/13/76

Signed: C. Oshbach

Title: Chief, Processing Division

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

Date: 2/14/76

Signed: Ronald M. Buffington

Title: Chief, Operations Division

- C. Approved and forwarded.

Date: 2/20/76

Signed: Alfred C. Kimes

Title: Director, Atlantic Marine Center

HYDROGRAPHIC SURVEY STATISTICS

HYDROGRAPHIC SURVEY NO. H-9526
AHP-5-1-75

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET & 2-Overlays		1	BOAT SHEETS (2 parts)		1	
DESCRIPTIVE REPORT		1	OVERLAYS		2	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES	*		*			
CAHIERS	1 & P/O.		1			
VOLUMES						
BOXES			1			
T-SHEET PRINTS (List)						
SPECIAL REPORTS (List)						

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				1496
POSITIONS CHECKED	1513	151		
POSITIONS REVISED	0	13		
DEPTH SOUNDINGS REVISED		25		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		0		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		0		
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		16		
JUNCTIONS		8		
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		16		
SPECIAL ADJUSTMENTS		40		
ALL OTHER WORK		101		
TOTALS		181	18	
PRE-VERIFICATION BY	BEGINNING DATE	ENDING DATE		
B.J. Stephenson & R.G. Cram	14 Oct. 1975	22 Dec. 1975		
VERIFICATION BY	BEGINNING DATE	ENDING DATE		
R.G. Cram	21 Jan. 1976	31 Jan. 1976		
REVIEW BY	BEGINNING DATE	ENDING DATE		
HIT AMC	02 Feb. 1976	09 Feb. 1976		

QC. Inspection: R.W. Derkazanian 48 hrs. 8/10/76

U.S. G.P.O. 1972-789-562/439 REG.#6

REGISTRY NO. H-9526

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:

Pos. 610

REGISTRY 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 15 Dec TIME REQUIRED _____ INITIALS LG

REMARKS:

H-9526

Items for Future Presurvey Reviews

This survey is located in an area very changeable because of natural causes and dredging. Any future survey should consider investigation of the many pipes and submerged obstructions (Presurvey Review Item #5) throughout the common area.

<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>
354	0754	5	2	25 years

HYDROGRAPHIC INSPECTION TEAM

ATLANTIC MARINE CENTER

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO.: H-9526

FIELD NO.: AHP-05-1-75

GENERAL LOCALITY and SPECIFIC LOCATION

Oregon Inlet, North Carolina - Roanoke ^{Sound} Channel to Old House Channel

SURVEYED: May 1, 1975 through July 31, 1975

PROJECT NO.: OPR-513

SCALE: 1:5,000

SOUNDINGS BY: Raytheon Fathometer
DE-723D, Pole

CONTROL: Del-Norte
(Electronic)

Chief of Party J.O. Rolland
Surveyed by W.A. Wert
..... K.L. Kleinschmidt
..... J.S. Bradford
..... D.M. Bryant
Automated Plot by Calcomp Plotter #618 (AMC)
Verified and Inked by Leroy G. Cram

1. Description of the Area

The area covers portions of Old House, Walter Slough and Oregon Inlet Channels. There are numerous small islands, sand bars and spoil areas throughout the area. The bottom is predominantly sand and shells. It is relatively flat. The area of this survey is bounded on the north at 35° 48' 15" and 35° 45' 15" to the south.

2. Control and Shoreline
Type-Source-Origin

The shoreline and photobathymetric depths originate with Class I, unreviewed Bathymetric and Topographic manuscripts TP-00886 and TP-00888. Date of photographs - October 1974. Field Edit - July 1975.

3. Hydrography

A. Crossings: The crossings are in good agreement. The photobathymetric depths are in fair agreement in most areas, differences of one to three feet appear in the region of spoil banks.

B. Depth Curves: The depth curves adequately delineate the survey area.

C. Low-water Line: Due to the small tide range the low-water line was delineated by the hydrographer. The photobathymetry delineated only isolated areas.

D. Developments: One development was run on this survey. This was a pre-survey review item (#3). The sunken wreck was described as visible in 1965, but later information indicates the wreck to be not visible. No hydrographic information accompanied the survey records on this development. Photobathymetry covers the area of the wreck and no indication of a wreck is shown on the photobathymetric survey. Recommend deletion from chart. *Originates with C/L 1619 (65)*

4. Condition of the Survey

The sounding records, automated plotting and the Descriptive Report are adequate and conform to the requirements of the Provisional Hydrographic Manual, supplemented by the AMC Manual with the following exceptions:

- A. There are no sounding volumes noting detached positions and objects located.
- B. Excessive gain on the fathometer.
- C. There were only two bar checks made within the survey, therefore it does not comply with Section 1.5.2. of the Provisional Hydrographic Manual.
- D. There are large areas with no coverage by either photo or hydro bathymetry. Explained by photobathymetry compiler as a sun glare area on photos.

All photobathymetry soundings were rounded off using hydrographic rounding guidelines. i.e.: 8.7 becomes 8 feet, 8.8 becomes 9 feet.

5. Junctions

Junctions were made with H-9528 (1975) and H-9527 (1975). They are both in excellent agreement. H-9527 was largely a junction with photobathymetric soundings, as the hydro does not extend to the limits of either sheet. Photobathymetry was used for junction extensively on the west. Agreement is fair.

6. Comparisons

A. Prior Surveys: Comparison with H-6228 (1937) 1:10,000, showed general disagreement over entire survey area. Dredging operations and possible storm transport of bottom material have created numerous islands in survey area. The channels have shifted 200 to 400 meters westward. The location of the principal E - W channels have shifted southward approximately 2,000 meters with a maximum depth of fourteen feet compared to twenty-one feet on the prior survey. Recommend using the current survey (H-9526) for charting purposes.

B. Published Chart #12205, formerly 129-SC, 9th Edition, dated March 1975.

(a) Hydrography

The comparison shows general agreement within two feet in the vicinity of Duck Island, general agreement within one foot north of Latitude $35^{\circ} 46' 45''$ with the exception of a twelve foot charted sounding at Latitude $35^{\circ} 47' 15''$, Longitude $75^{\circ} 34' 15''$ presently found to be seven feet deep, and shows general disagreement south of Latitude $35^{\circ} 46' 45''$.

(b) Attention is directed to the following:

The six pipes located along the edge of Old House Channel, Latitude $35^{\circ} 46' 00''$, Longitude $75^{\circ} 35' 40''$ were not located by the field. The T-sheets show three circles in this area, but do not describe what they are. It is recommended that all six pipes be retained on the chart. It is recommended that the seven foot sounding mentioned in paragraph ~~B~~^B, item "a" be charted.

(c) Aids to Navigation

The aids to navigation, as charted, adequately mark the features intended with the following exceptions: *See Q.C. Report Item #5*

(1) Chart comparison of the floating aids show that the buoys N"2", C"3", C"5", and N"20" have been added to the area and do not appear on the chart.

(2) The fixed aids near the junction of Old House Channel and Oregon Inlet Channel have been relocated. There are two; Day Beacon "15" and Old House Channel Light "8".

7. Compliance with Instructions

This survey does comply with the Project Instructions.

8. Additional Field Work

This is a good basic survey. Additional field work is not recommended.

9. Hydrographic Inspection Team Comments

The Hydrographic Inspection Team comments are included in Section 4, items B and C. Verification deficiencies found, if any, have been corrected on the Smooth Sheet.

Additional Notes:

Attention is directed to ^{35°46'17"} three pile symbols which exist on TP-00888 in the area of Latitude ~~46°15'05"~~, Longitude 75° 35' 00". These symbols are not described on T-sheet, nor are they located by hydrographer. An effort was made to see if photogrammetry had any information on them, negative results. The verifier has put them on smooth sheet and described them as pipes, using the chart #12205 (formerly 129-SC), 9th edition, dated March 1975, as the guide.

The photobathymetric depths that did not agree with the hydrographic depths were not plotted on the Smooth Sheet. In most cases the photobathymetric depths were one to two feet deeper than the hydrographic depths. The difference between the photobathymetric and the hydrographic depths is contributed to the approximately six month time lag between the photobathymetric and hydrographic surveys in this area of highly changeable bottom.

William L. Jones
Chief, Verification Branch
Atlantic Marine Center



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

C352

August 9, 1976

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

THRU: Chief, Quality Control Branch

FROM: R. W. DerKazarian *R. W. DerKazarian*
Quality Evaluator

SUBJECT: Quality Control Report for H-9526 (1975), Roanoke Sound
Channel to Old House Channel, Oregon Inlet, North Carolina

Survey H-9526 was inspected with respect to data acquisition, development of least depths and bottom configuration, adequacy of junctions and sounding-line crossings, shoreline transfer, cartographic presentation, smooth plotting, verification, and review. In general, it was found to conform to the National Ocean Survey standards and requirements except as follows:

1. Several detached positions were improperly referred to mean low water when they should have been referred to mean high water. Features extending two feet or greater above mean high water on the east coast should be referred to mean high water. See Provisional Hydrographic Manual section 7.3.75. Also features referred to mean high water should have vertical lettering for their descriptions.
2. One landmark feature was added to the smooth sheet from the topographic records, NOAA Form 76-40. See Provisional Hydrographic Manual section 7.3.11.1.
3. Several detached day beacons and piles were unnecessarily deleted in the final printouts by the verifier. This data even though located by the topographic manuscripts affords the survey descriptive data and elevations.
4. The item "Comparison with Prior Survey" should conclude that the present survey is adequate to supersede that prior survey H-6228 (1937), in the common area.

A comparison was not made with a recent survey H-8765 (1962) 1:10,000. This verified survey shows that notable differences have occurred to the



shoreline and bottom. Many islets adjacent to the channels have changed in shape and size, with one new one appearing and four having disappeared. Deepening of 2-4 feet in several areas and as much as 15 feet in latitude $35^{\circ}46.30'$, longitude $75^{\circ}34.55'$ has occurred. These changes can be attributed to the immensely unstable bottom, current action, and dredging of channels. Old House Channel was relocated further west in the vicinity of latitude $35^{\circ}46.40'$, longitude $75^{\circ}34.45'$ by approximately 200 meters. The present survey is adequate to supersede these prior surveys in the common area.

5. The verifier did not use the same edition of the chart for his chart comparison as used by the hydrographer, nor did he forward it to this office with the survey records. See Provisional Hydrographic Manual section 6.3.10. A statement should be made as to the origin and disposition of the charted data and the adequacy of the present survey to supersede the charted information.

The charted hydrography on C&GS chart 129-SC, 8th Edition, February 23, 1974, originates with the previously discussed survey H-8765 (1962), which needs no further consideration, supplemented by various Corps of Engineers drawings (Bp's).

Submerged piles (Presurvey Review item #5) along Walter Slough, pipes off light 6 and beacon 7, and piles and obstructions south of Duck Island charted from 1971-73 Corps of Engineers' surveys were not disproved by the present survey and should be retained as charted.

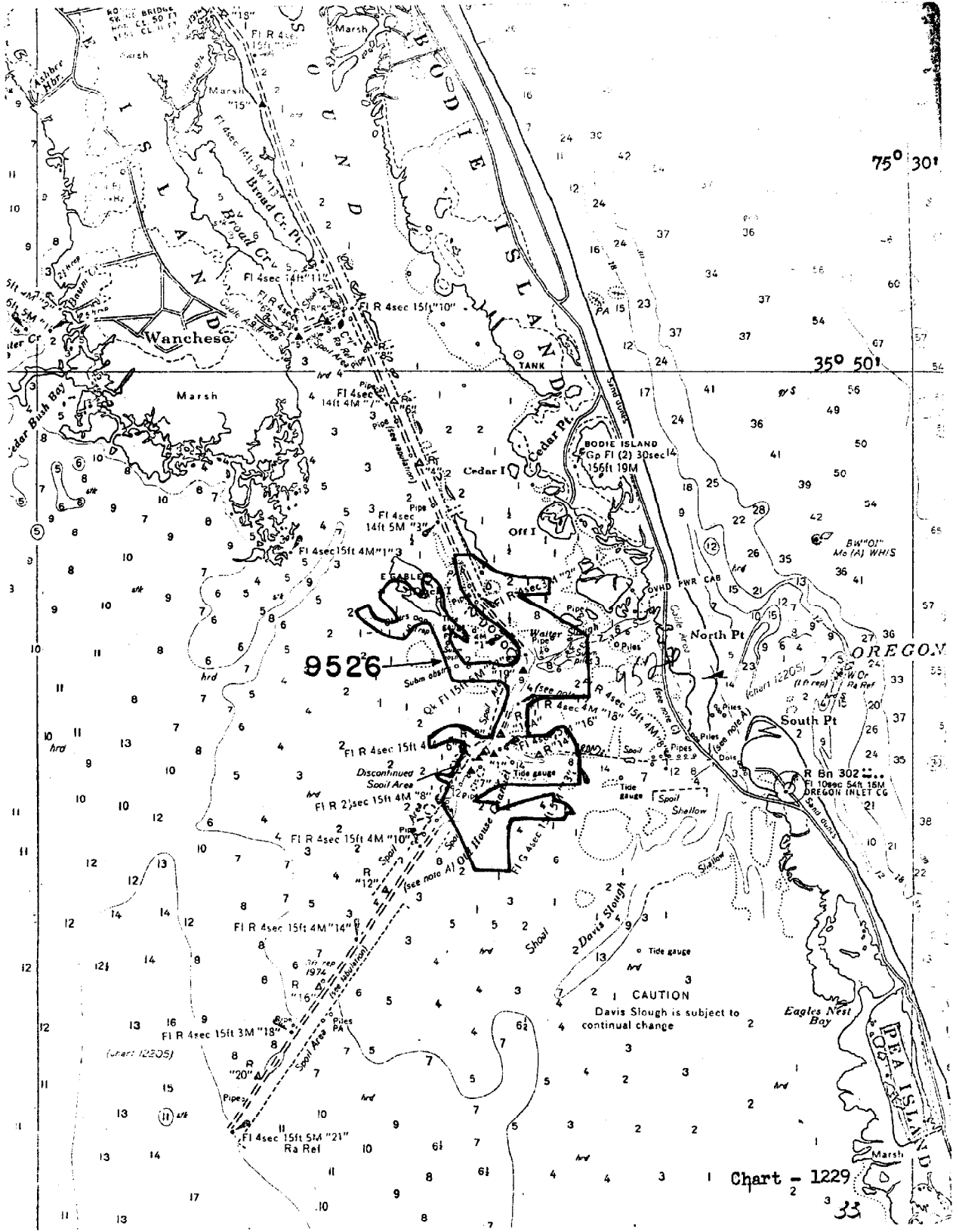
Except as noted, the present survey is adequate to supersede the charted information in the common area.

The charted controlling depth note of the Roanoke Sound Channel is based on data furnished by the U.S. Corps of Engineers and is in agreement with the present survey depths.

The fixed aids to navigation adequately mark the features for which they were intended. The charted positions of Old House Channel Light 8; Oregon Channel Lights 13 and 16; and daymarkers 1, 2, 3, 5, 7, 14, and 16a should be replotted to agree with the present survey positions.

6. The note on the smooth sheet giving the source of the photo-bathymetric depths should give the date of the photographs.

cc:
C351



RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9526

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
129-SC	11-30-76	MIKE PANAS	Full Part Before After Verification Review Inspection Signed Via Drawing No. FULLY APPLIED
1229	12-13-76	Paul L. Jones	Full Part Before After Verification Review Inspection Signed Via Drawing No. Fully applied through 129 SC
1109	1/4/77	Richard L. Hagen	Full Part Before After Verification Review Inspection Signed Via Drawing No. No CORR AREA IS BLUED ON CHART 1109
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
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