

9115

Smooth Copy

Lot 1257 Report Attached

Diag. Cht. No. 1236-2.

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. WH-20-1-70 Office No. H-9115

LOCALITY

State North Carolina

General locality Long Bay

Locality Cape Fear R. to Lockwoods
West of Frying Pan Shoal
Folly Inlet

19 70

CHIEF OF PARTY

CDR Melvin J. Umbach, USN

LIBRARY & ARCHIVES

DATE 1-28-74

USCOMM-DC 37022-P66

Charts
8355C
426
1236
1110

9115

HYDROGRAPHIC TITLE SHEET

H-9115

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.

WH-20-1-70

State North Carolina

General locality Long Bay

Locality Cape Fear R to Lockwoods Holly Inlet
~~West of Frying Pan Shoals~~

Scale 1:20,000

Date of survey Feb. 18, thru May 7, 1970

Instructions dated January 16, 1970

Project No. OPR-437

Vessel USC&GSS Whiting

Chief of party CDR. Melvin J. Umbach ✓

Surveyed by CDR. M.J. Umbach, LCDR. J.D. Carpenter, LT. G.L. Boyack,
LTJG L.T. Gilman, LTJG P.L. Campbell, ENS D.W. Nostrant, CST W. Hill

Soundings taken by echo sounder, hand lead, pole _____

Graphic record scaled by Same as above

Graphic record checked by Same as above

Protracted by Computer plotter system Automated plot by Computer plotter system

Soundings penciled by Computer plotter system

Soundings in fathoms feet at MLW MLLW Feet, at MLW

REMARKS:

*Applied to Stds 3/8/74
CAB*

*Chart
1236
835'50
426
1110*

DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SURVEY WH 20-1-70
1970 FIELD SEASON

USC&GS SHIP WHITING
MELVIN J. UMBACH, LCDR USESSA

SCALE 1:20,000
CHIEF OF PARTY

A. PROJECT

This survey was accomplished in accordance with Project Instructions for OPR-437, Coast of North and South Carolina dated January 16, 1970 as amended January 22, 1970 - February 11, 1970.

B. AREA SURVEYED

The area surveyed extends seaward from the shoreline for a distance of approximately 2 1/2 miles and westward from the mouth of the Cape Fear River at Oak Island, N. C. to Lockwoods Folly Inlet, a distance of approximately 2 1/2 miles. The survey junctions on the east with prior survey H-8511 which was completed in 1956 at a scale of 1:20,000; and on the south with a contemporary survey by the High Speed Launch 1257 (the southerly half of this sheet, see addendum); and on the west with a contemporary survey by the Z Launches of the WHITING, sheet WH 20-3-70, registry No. H-9096. During the course of the survey, the western half of the area surveyed was indexed as sheet K-1, while the eastern half of the sheet was indexed as sheet K-2. The sheet with which the survey junctions on the west, WH 20-3-70 (H-9096) was indexed as J-2. The portion of the sheet that was surveyed by Launch 1257 and which junctions with the southerly border of the area herein described, was indexed as sheet K-1257. A diagram showing the limits of the various sheets is included in this report.

The survey was accomplished between Feb. 18 and May 7, 1970. The main system of lines was run at 200 meter spacing. The spacing was reduced to 100 meters near the entrance to the Cape Fear River and in the area of Lockwoods Folly Inlet in order to determine the limits of sand bars and shoals.

C. SOUNDING VESSEL

The sounding vessels used in the survey were WHITING Launch #1 and Launch #2. The shoals at the entrance to Lockwoods Folly Inlet were surveyed with the "Zee Bird", a 15 ft. rubber raft powered by a 15 HP outboard motor.

D. SOUNDING EQUIPMENT

For the major portion of the survey, the sounding instruments used were Raytheon DE-723 D Survey Fathometers. The "D" suffix denotes a unit with digitized output. The Fathometer used in Launch #1 was serial No. 37019. The Fathometer used in Launch #2 was serial No. 37018.

On February 10th, Julian Day No. 069, due to a malfunction of the Digital Fathometer, the unit in Launch # 1 was replaced with a Raytheon DE-723 Survey Fathometer, serial No. 934 and the depths were manually logged, as the DE-723 has no digital output. At the conclusion of this one day's work the regular Fathometer was repaired and re-installed.

Bar checks were taken and recorded daily in the deepest water of the survey as often as sea conditions permitted. The depths as measured by the Bar check, Fathometer trace, and Digitized output were recorded. When the system would not register a digitized output of the depth to the Bar, a vertical cast was taken.

The Lockwoods Folly Inlet shoals were surveyed by the Zee Bird using a 12 foot sounding pole for determining depths, and plotted by the WHITING'S Computer Plotter System on a 1:5,000 scale inset. Soundings, in feet, were inked in by hand at a later time. Soundings were plotted in integral feet except on both sides of the low water line, when they were plotted to the nearest 1/2 ft. The soundings of both sides of the low water line on the insert of Lockwoods Folly Inlet at a scale of 1:5,000 were inadvertently plotted in tenths of feet. The corrections to the raw soundings were from predicted and from smooth tides. The soundings on the northern half of the sheet (sheet K-2) were corrected for predicted tides for Bald Head, N.C. Predicted tides were used because at the time the boatsheet was plotted, the datum for the portable tide gage had not yet been established. The soundings on the southern half of the sheet (sheet K-1) were reduced from smooth tides on the portable tide gage at Ocean Crest Pier at Long Beach, N. C. Velocity correctors were not applied on the boatsheet. The corrections should be made prior to plotting of the smooth sheet. A table of velocity corrections is appended to this report.

E. SMOOTH SHEET

The smooth sheet will be plotted on the Computer Plotter System at Atlantic Marine Center in Norfolk, Virginia. Position corrections have already been applied.

F. CONTROL

Three basic methods of control were used during the survey: visual, hyper-visual, and intersection cuts by T-2.

The major portion of the survey was controlled hyper-visual. The sounding vessel would follow the hyperbolic lane running normal to the depth curves. The position of the vessel on the arc was located by a single sextant angle shot to signals which straddle the inshore extension of the hyperbolic arc. The signals were located by third-order traverse from existing 2nd order triangulation stations.

Two portions of the survey were controlled visually. The lines at the

eastern edge of the sheet extending easterly into the junction with prior survey H-8511 of 1936 were run visually because the Hi-Fix lanes curved too sharply to make running lines productive. Zee Bird hydrography in the vicinity of Lockwoods Folly Inlet, was run visually on shore based ranges for line control.

The intersection cuts by T-2 were used only for locating the entrance buoys to Lockwoods Folly Inlet. The instrument was set up on traverse points used for signals and angles were turned from other traverse points to the buoys. Horizontal angle volumes with theodolite cuts are included in the survey records.

The hyper-visual method was calibrated 5 times daily by comparison with a three point fix. Corrections to the Hi-Fix pattern are listed in the appendix to the report.

The master station was located west of the sheet limits at Cherry Grove Beach, S. C. Slave #1 was located west of the master at Pawley's Island near Georgetown, S. C. Slave #2 was located at the eastern limits of the sheet on Oak Island near Fort Caswell, N. C. The stations were located by third order methods.

<u>STATION</u>	<u>NAME</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
Master	Cabana, 1970	33-49-33.00	78-38-57.79
Slave #1	Pawley, 1970	33-25-57.76	79-07-09.93
Slave #2	Ben, 1970	33-53-26.79	78-01-50.95

G. SHORELINE

Shoreline was pencilled from Advance Manuscript T-12290, dated April 1965 and Advance Manuscript T-12291, dated February 1967 only as an aid to the hydrographer. The shoreline for the smooth sheet should be taken from the 1969 Aerial Photography, which had not been compiled at the time of the survey. Substantial difference between the old manuscripts and the new Aerial Photography is expected as great concern has been expressed by the local residents about the eroding shoreline.

Shoreline pencilled on the Smooth Sheet from above T-sheets

H. CROSSLINES

Crosslines composed 10.9% of the total length of sounding lines. The agreement between crosslines and the main system of lines was very good in all areas except for the southerly 1 3/4 miles of the 6 eastern most main sounding lines on the western half of the portion of WH 20-1-70 (H-9115) surveyed by the WHITING'S Launches in the vicinity of longitude 78°08' W. Positions No. 3364-3387; 3513-3524; 3531-3554; and 3560-3569 were rejected because the initial on the Fathometer was in error. The lines were re-run and positions No. 4427 to 4481 inclusive, were substituted in their place and good agreement noted.

I. JUNCTIONS

The western limit of the sheet junctioned with contemporary survey by the Ship's Launches on sheet WH 20-3-70 (H-9096), field referenced as sheet J-2. The southern limit of the sheet junctioned with that portion of a contemporary survey of WH 20-1-70 run by Launch 1257, (H-9115) which was also known as K-1257. The eastern limit of the sheet junctioned with the prior survey H-8511 of 1956.

The agreement on the western edge of the sheet where it junctions with sheet WH 20-3-70 is good, as both the left half of this sheet and sheet WH 20-3-70 were plotted with smooth tides. The junction between the two halves of the sheet is fairly good in light of the fact that the western half was plotted with smooth tides and the eastern half was plotted with predicted tides due to lack of an established datum when the eastern half was plotted. There is a consistent 2 to 3 feet difference with the portions plotted with actual tides plotting a shoaler depth than those plotted using predicted tides. This 2-3 feet difference is also reflected in the junction with the prior survey H-8511 at the eastern edge of the sheet.

Along the southern limit of the sheet, differences of 3 feet exist between sheets surveyed by the WHITING and those surveyed by Launch 1257. These discrepancies are due to the difference between smooth and predicted tides and will be rectified when all sheets are re-plotted with smooth tides.

J. COMPARISON WITH PRIOR SURVEYS

Comparison was made with the following prior surveys: H-4324 of 1923 at a scale of 1:20,000; H-4454 of 1924 at a scale of 1:40,000; and H-8511 of 1956 at a scale of 1:20,000. The agreement was fairly good, again in light of the 2-3 feet difference between predicted and smooth tides. Overall there is a general trend toward shoaler depths on the western half of the sheet than were previously noted in the area near Lockwoods Folly River Inlet and there is a general trend toward deeper depths than were previously reported on the eastern half of the sheet near Fort Caswell Beach. Similarly there is a noticeable increase in depth in the inshore areas along the old zero curve. This would be consistent with the concern for beach erosion as expressed by local residents.

Pre-Survey Review Items

Item #13

The two wrecks, assumed to be the blockade runners Elizabeth and Bendigo, were located in the entrance of Lockwoods Folly Inlet. The inshore wreck is located at $33^{\circ}54' - 48.89''$ N, $78^{\circ}14' - 19.97''$ W and bares 4.4 feet at mean low water. The offshore wreck is located at $33^{\circ}54' - 35.027''$ N, $78^{\circ}14' - 14.123''$ W and bares 3.2 feet at mean low water. The position number of the inshore wreck is 4857 and the offshore wreck is position No. 2309.

Item #10 A

The wreck was located at position $33^{\circ}53.85' N$, $78^{\circ}03.18' W$. The wreck is not visible and has an estimated least depth of 0.2 feet.

BARS 1 ft at MLW - Posn 1555-1556

Item #23

The pre-survey review item note is in error in that no photography was flown in the area in 1968. Photography was flown in the fall of 1969 and the structure, Ocean Fishing Pier, appears on the cover prints. The end of the pier was located using a T-2 three point fix to known hydro signals at position $33-54-37.59 N$, $78-08-49.44 W$. The control data for this position is contained in Volume II, Observation of Horizontal Directions which accompanies the hydrographic survey data.

Posn 4575-2576

A new previously uncharted wreck was located at $33^{\circ}54'-43.34'' N$, longitude $78^{\circ}12'-40.25'' W$. A hand lead was used to determine the least depth as 1.5 feet below mean low water. *Pos 4900*

K. COMPARISON WITH THE CHART

The boatsheets were compared with the sixth edition of Chart #1236, dated February 17, 1969 and with the eighth edition of Chart #426, dated July 26, 1969. Agreement between the charts and the boatsheets was fairly good in light of the difference between smooth and predicted tides. There was a general trend toward shoaler depths on the western side of the sheet and deeper depths on the eastern side of the sheet than are shown on the existing charts. The difference in depths is not greater than 1 to 2 feet.

L. ADEQUACY OF THE SURVEY

The survey is complete and adequate and should be considered to supercede any prior surveys for charting. There is small holiday at $33^{\circ}53'30'' N$, $78^{\circ}03'10'' W$ in an area that was unable to be developed due to breakers. The information missing in this area is not such that it will impair the reliability of the survey.

M. AIDS TO NAVIGATION

The following black and white vertically stripped snag buoys were located. No comparison was made with previous known positions as snag buoys are not charted due to frequent change in position.

<u>BUOY</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
H	33/53/31.97	78/03/57.50
J	33/53/30.30	78/05/04.63
L	33/52/19.61	78/06/43.00
M	33/53/34.55	78/07/11.94
N	33/52/34.66	78/07/07.75
O	33/53/16.77	78/08/26.75
P	33/53/30.06	78/09/47.81
T	33/53/36.67	78/08/56.38
Q	33/54/13.70	78/11/04.81
R	33/54/11.38	78/14/51.56

The following buoys were located at the channel entrance to Lockwoods Folly Inlet.

<u>NAME</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
B1	33-54-30.975 N	78-13-41.350 W
R2	33-54-27.633	78-13-34.396
B3	33-54-36.520	78-13-46.130
R4	33-54-37.754	78-13-44.407
B5	33-54-42.873	78-13-55.439

N. STATISTICS

<u>SURVEY VESSELS</u>	<u>NAUTICAL MILES OF SOUNDING LINE</u>	<u>NO. OF POSITIONS</u>
Z-Bird	6.5	76
Launch #1	190.5	904
Launch #2	238.5	1257
TOTAL	435.5	2237

Area of sheet: 26.0 square nautical miles

Number of bottom samples: 59

O. MISCELLANEOUS

Duplicate fix numbers exist on positions No. 344, 376, and 377. The duplicate fix number is immediately adjacent to the original position.

Small holidays exist around several of the ocean fishing piers due to the impracticality of running launches near the piers during fishing season. These piers are privately owned and are not used for boat mooring.

An insert of Lockwoods Folly Inlet at a scale of 1:5,000 was plotted on the lower half of the boatsheet covering the western half of the portion of WH 20-3-70 (H-9115) surveyed by the Ship's Launches.

The Hi-Fix arcs drawn on the boatsheets are of non-integral values due to change in the computer-plotter system of drawing arcs. The change involves using a dummy station location and saves approximately 4 to 6 hours of computer time per boatsheet. The arc drawn were extensively used on the launch sheets as lanes were run on 2.5 lane increments starting with an even lane No., i.e. 600, 602.5, 605, 607.5, etc.

The visual data has been compiled on single indicator visual tapes as per the Automated Manual-(soundings and positions on the same tape) in addition, the signal tape, smooth tides, velocity tables, and corrector tape have been furnished in a separate box to enable this small portion of visual data to be singularly processed in Seattle.

There are no corrector tapes for the hyper-visual data. All master tapes were re-edited since the only program available at the time of the survey was one which does not have the corrector tape feature.

P. RECOMMENDATIONS

None.

Q. REFERENCES TO REPORTS

Report on OPR-437 on the Coast of North and South Carolina, USC&GS Ship WHITING, 1970 Field Season.

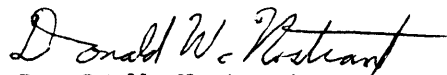
Descriptive Report of H-9096, USC&GS Ship WHITING, 1970 Field Season.

Descriptive Report of K-1257, USC&GS Ship WHITING, 1970 Field Season.

Hi-Fix Report, USC&GS Ship WHITING, 1970 Field Season.

Corrections to Echo Soundings, USC&GS Ship WHITING, 1970 Field Season.

Respectfully submitted,

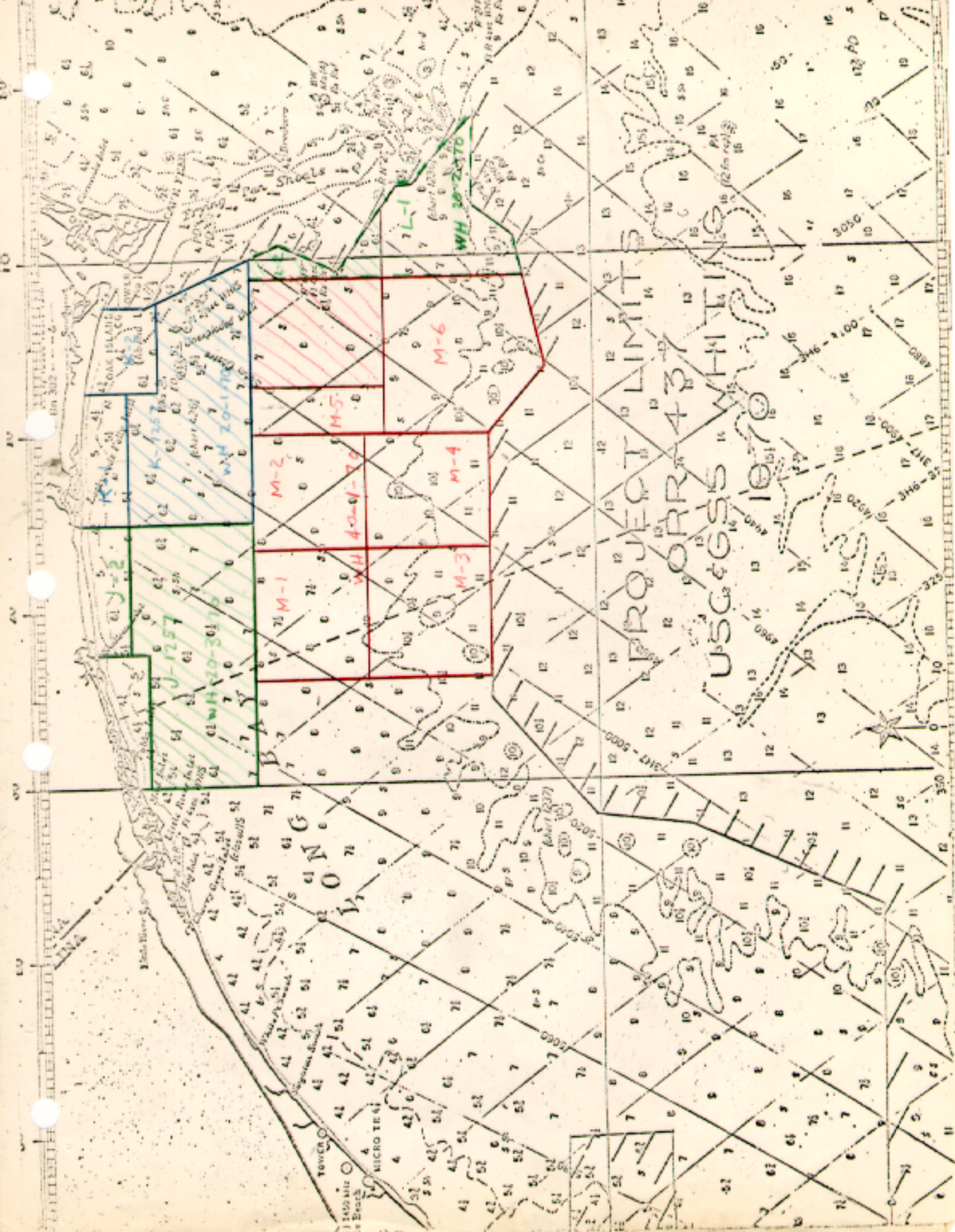


Donald W. Nostrant
ENSIGN USESSA

APPROVED/FORWARD



Melvin J. Umbach
LCDR USESSA
Commanding Officer



TIDE NOTE FOR HYDROGRAPHIC SHEET

~~XXXXXXXXXXXXXXXXXXXX~~ Director, Atlantic Marine Center

Plane of reference approved ~~XX~~ for hourly heights of tide for
~~XXXXXXXXXXXXXXXXXXXX~~ Feb. 12 - May 14, 1970
Mar. 2 - Apr. 27, 1971

HYDROGRAPHIC SHEET

WHITING SURVEYS - OPR-437

Locality: North Carolina Coast

H-9096
H-9115
H-9116
H-9117

~~XXXXXXXXXX~~ Year: 1970 - 71

Plane of reference is mean low water

Tide Station Used (Form C&GS-681): Long Beach, North Carolina

Height of Mean High Water above Plane of Reference is as follows: 4.8 feet

Remarks Hourly heights have been revised in red and verified as follows:

<u>Day</u>	<u>Time</u>	<u>Date</u>	<u>Time</u>
2/20/70	1000 & 1100	5/7/70	1300
3/26/70	0300		
4/4/70	0900 - 1900		
4/29/70	0900		

Robert A. Cummings
Robert A. Cummings

Chief, Tides and Currents Branch

Verifier: B.T. Davis

Note to EDP
Survey H-9115 (WH-20-1-70)
OPR-437

This office has completed the verification of the preliminary printout made to check the correctors prior to the sounding overlay. The following is the results of this check:

- (1) The velocity corrections checked O.K.
- (2) There were 6 sounding changes.
(Cards have been punched)
- (3) The TRA corrections are in error on all of Lch. 1 and Lch. 2 work. (Record No. 15081 thru 24942, cards have been punched) See attached note
- (4) The tide correction is in error between record No. 24202 thru 24223. This is due to a error in the hourly height, day 126 time 1600, Long Beach, N.C., Raw tide 6.2 (Corrections has not been made)

After these corrections have been applied and the edit run, furnish this office with a new sounding printout and sounding overlay.

W.L. Jonns

W.L. Jonns
Chief, Verification Br.

TIDE NOTE

Smooth tides for WH-40-1-70 were obtained from a fixed bubbler tide gage located at Ocean Crest Pier, Long Beach, N. C., latitude 33-54-48N, longitude 78-08-50W.

The gage was installed on February 7, 1970 and maintained by ship personnel. Mean low water was 3.9 feet on the tide staff as determined by Tides Division (C3312), Rockville, Maryland.

Hourly heights were scaled by ship's personnel and correctors made by computer, using a parabolic fit program. The time meridian used was 75°W and no time or height corrections were applied. A list of smooth tide correctors is included with this report.

LIST OF GEOGRAPHIC NAMES

Bald Head Lighthouse

Cape Fear River Entrance

Caswell Beach

Lockwoods Folly Inlet

Long Beach

Oak Island Lighthouse

Southport Municipal Watertank

COAST OF NORTH AND SOUTH CAROLINA

VELOCITY TAPE # 1, 3, 5, 7, 9, 11

SHEETS WH-20-1-76 (H-9115)

000270 0 0006
000312 0 0007

000356 0 0008

000395 0 0009

000438 0 0010

000480 0 0011

000520 0 0012

199999 0 0000

000021 0 0000 0011 000 000000 000000

000066 0 0001

000106 0 0002

000135 0 0003

000164 0 0004

000193 0 0005

000224 0 0006

000255 0 0007

000285 0 0008

000316 0 0009

000347 0 0010

000380 0 0011

000410 0 0012

000444 0 0013

000475 0 0014

000505 0 0015

000535 0 0016

000565 0 0017

000595 0 0018

199999 0 0000

000233 0 0004

000278 0 0005

000320 0 0006

000364 0 0007

000410 0 0008

000450 0 0009

000493 0 0010

000538 0 0011

000581 0 0012

000625 0 0013

000669 0 0014

199999 0 0000

000052 0 0000 0007 000 000000 000000

000088 0 0001

000124 0 0002

000160 0 0003

000202 0 0004

000233 0 0005

000285 0 0006

000327 0 0007

000370 0 0008

000410 0 0009

000452 0 0010

000496 0 0011

000540 0 0012

199999 0 0000

000047 0 0000 0009 000 000000 000000

000091 0 0001

000119 0 0002

000156 0 0003

000192 0 0004

000047 0 0000 0001 000 000000 000000

000130 0 0001

000199 0 0002

000262 0 0003

000326 0 0004

000390 0 0005

000454 0 0006

000516 0 0007

000578 0 0008

000640 0 0009

199999 0 0000

000046 0 0000 0003 000 000000 000000

000123 0 0001

000182 0 0002

000234 0 0003

000291 0 0004

000338 0 0005

000375 0 0006

000420 0 0007

000476 0 0008

000538 0 0009

000610 0 0010

000689 0 0011

199999 0 0000

000059 0 0000 0005 000-000000 000000

000103 0 0001

000146 0 0002

000190 0 0003

ABSTRACT OF HI-FIX CORRECTORS

WH 20-1-70

H-9115

K-1

LAUNCH I

<u>Day</u>	<u>Time</u>	<u>PAT II</u>
069	094000	- .02
	113200	- .09
	133500	+ .07
080	131100	- .03
094	130000	+ .18
097	091300	+ .22
	102120	- .78
	132520	+ .22
	133540	- .78
	150220	+ .22
	160500	+1.22
098	100740	+ .22
105	092940	+ .17
	132500	+ .12
	151440	+ .35
	151700	+ .12
	152620	- .09
	152820	+ .12
106	062840	+ .17
	081400	+2.17
	083720	+ .17
	094820	- .83
	102900	+ .17
	104700	- .83
	130300	+ .25
	135500	- .75
	141800	+ .25
	153440	- .75
	160658	+ .25
	171000	- .75
	172600	-1.75
181015	+ .14	

(Continued)

<u>Day</u>	<u>Time</u>	<u>PAT II</u>
107	075340	+ .15
	080520	- .85
	080840	-1.85
	081900	+ .15
	082520	- .85
	083720	-1.85
	090605	+ .15
	130554	- .78
	130600	-1.78
	132220	-2.78
	133900	-3.78
	134820	- .78
	140000	-1.78
	144320	-3.78
	144420	-4.78
	145000	-5.78
	145320	-6.78
	150740	-1.78
	150800	-2.78
	151600	-3.78
	152240	-4.78
	152940	+ .22
	153400	-1.78
	153840	-2.78
	154440	-3.78
	154700	-4.78
	155300	-5.78
	155640	-6.78
	155720	-5.78
	160040	-7.78
	161040	- .78
	161520	-1.78
	163200	-2.78
	164340	-3.78
	164540	+ .22
	164600	-4.78

(Continued)

<u>Day</u>	<u>Time</u>	<u>PAT II</u>
108	095820	+ .19
	095940	- .81
	100920	-1.81
	101840	-2.81
	103400	-1.81
	103620	- .81
	104040	-1.81
	104640	-2.81
	113220	+ .19
	113820	- .81
	114040	+ .19
	114300	- .81
	115300	-1.81
	120020	-2.81
	120740	-3.81
	121100	-4.81
	122020	-5.81
109	094300	+ .16
	094820	- .84
	103320	+ .16
	103920	+1.16
	104220	+ .16
	104520	- .84
	104720	-1.84
	105920	-2.84
	110820	-3.84
	111300	-4.84
	111720	-5.84
	132000	+ .34
	132220	+1.34
	132420	- .66
	132640	-2.66
	132900	-3.66
	133220	-4.66
	133540	-5.66
	133700	-6.66
	134000	-7.66
	134020	-8.66
	134800	-9.66
	134940	-11.66
	135200	-12.66
	140940	-14.66
	143920	+0.34
	144700	-1.66
145040	-2.66	
145240	-1.66	
145700	-3.66	
151440	-4.66	
151920	-5.66	

(Continued)

<u>Day</u>	<u>Time</u>	<u>PAT II</u>
109 (Cont'd)	152120	-6.66
	152440	-8.66
	153500	-9.66

LAUNCH II

126	091100	+ .10
	103700	+ .11
	121500	+ .13
	145300	+ .14
127	084940	+ .05
	090420	+ .06

ABSTRACT OF HI-FIX CORRECTORS

WH 20-1-70

H-9115

K-2

LAUNCH II

<u>Day</u>	<u>Time</u>	<u>PAT II</u>
053	094700	- .16
	124800	- .07
054	134500	- .12
	150600	- .16
055	091300	- .10
	095900	- .08
	111600	- .06
	125600	- .04
	145300	- .05
	154600	- .09
	171500	- .14
174300	- .17	
063	092100	-1.08
	094800	-1.04
	123500	- .04
065	091600	- .02
	104100	- .05
	115200	- .07
	135100	- .03
	145600	- .07
	161700	- .11
066	092700	- .06
	095300	- .08
067	094100	- .02
	122800	- .05
	142000	- .04
069	092700	+ .14
	104100	+ .01
094	095400	+ .30
	154400	+ .24
	165600	+ .18
097	094706	+ .27
	110723	+ .20
	145227	+ .12
098	093900	+ .27
105	135600	+ .13

COAST OF NORTH AND SOUTH CAROLINA

OPR 437 1970

POSITIONS OF HYDRO SIGNALS

099	Δ	33	55	1666	078	01	1292	1913-64 TOWER (FT CASWELL BAPTIST ASSEM CH CAMP TANK) 1962 BALD HEAD LIGHTHOUSE, 1851-1964 SOUTHPORT MUNICIPAL W.T., 1962-64
100	Δ	33	52	2406	078	00	0234	
101	Δ	33	53	3573	078	01	0989	
102	Δ	33	53	3354	078	02	0677	OAK ISLAND LIGHTHOUSE, 1962-64
103	Δ	33	53	3172	078	02	0448	
104		33	53	3692	078	02	3478	
105		33	53	4545	078	03	0626	
106		33	53	5219	078	03	3368	
108		33	53	5996	078	04	0073	
109		33	54	0728	078	04	2890	
110		33	54	0451	078	04	5906	
111	Δ	33	54	1584	078	05	0467	POND, 1934-36
112		33	54	2328	078	05	3996	
113		33	54	2652	078	06	0437	
114		33	54	2963	078	06	2482	
119		33	54	1975	078	05	2324	
120		33	54	2472	078	05	5076	
124		33	54	3004	078	06	3238	
126		33	54	3260	078	06	4638	
128		33	54	3520	078	07	0434	

1 30 33 54 3732 078 07 1617
1 32 33 54 3904 078 07 3099
1 34 33 54 4111 078 07 4634
1 36 33 54 4289 078 08 0009
1 38 33 54 4415 078 08 1350
1 40 33 54 4548 078 08 2874
1 42 33 54 4643 078 08 4306
1 44 33 54 4767 078 08 5788
1 46 33 54 4888 078 09 1464
1 48 33 54 4967 078 09 2616
1 50 33 54 5050 078 09 4244
1 52 33 54 5084 078 09 5802
1 54 33 54 5113 078 10 1348
1 56 33 54 5131 078 10 2934
1 58 Δ 33 54 5630 078 10 4917
1 60 33 54 5120 078 11 0277
1 62 33 54 5114 078 11 2102
1 64 33 54 5079 078 11 3580
1 66 33 54 5058 078 11 4972
1 68 33 54 5044 078 12 0648
1 70 33 54 4965 078 12 1911
1 72 33 54 4864 078 12 3518
1 74 33 54 4800 078 12 4986
1 76 33 54 4750 078 13 0141
1 78 33 54 4676 078 13 1846
1 80 33 54 4629 078 13 2941
1 82 33 54 5150 078 13 5406

WOLTZ, 1962

TRAVERSE STATION ESTABLISHED 1970

183	33 54 5345	078 13 5675
184	33 54 5807	078 14 2741
186	33 54 5071	078 14 4370
188	33 54 5080	078 14 5925
190	33 54 5038	078 15 1451
192	33 54 5023	078 15 3045
194	33 54 5130	078 15 3771
196	33 54 4926	078 15 4782
198	33 54 4806	078 16 0218
200	33 54 4695	078 16 1758
202	33 54 4563	078 16 3336
204	33 54 4445	078 16 4765
206	33 54 4320	078 17 0593
208	33 54 4149	078 17 2061
210	33 54 4070	078 17 3246
212	33 54 3922	078 17 4688
214	33 54 3737	078 18 1007
216	33 54 3611	078 18 2438
218	33 54 3492	078 18 3801
220	33 54 3319	078 18 5464
222	33 54 3180	078 19 0983
224	33 54 3008	078 19 2583
226	33 54 2897	078 19 4390
228	33 54 2727	078 19 5864
230	33 54 2537	078 20 1654
232	33 54 2367	078 20 3277
234	33 54 2221	078 20 5136
236	33 54 1978	078 21 0672

BOONE, 1962

238	Δ	33	54	2121	078	21	2446
240		33	54	1695	078	21	3829
242		33	54	1441	078	22	0058
244		33	54	1147	078	22	3029
246		33	54	0591	078	23	0712
248		33	53	5086	078	23	2270
250		33	53	4687	078	23	3981
252		33	53	4538	078	23	5536
254		33	53	4339	078	24	0947
256		33	53	4119	078	24	2292
260		33	53	3114	078	25	0127
262		33	53	2781	078	25	1459

SHEET OF K-2
WH 20-1-70
(H-9115)

JULIAN DAY	DATE	POS. NUMBERS	No. POS.	N.M. SOGS.	LCH	CONTROL	NOTES
ø49	2-18-70	1-45	45	5.5	IX	VIS	
ø51	2-18-70	46-74	29	4.0	I	VIS	
ø52	2-21-70	75-178	104	16.0	II	VIS	
ø53	2-22-70	179-278	100	13.0	II	H-V	
ø54	2-23-70	279-402	124	13.0	II	H-V	
ø55	2-24-70	403-612	210	42.0	II	H-V	
ø63	3-4-70	613-684	72	16.0	II	H-V	
ø65	3-6-70	685-773	88	21.0	II	H-V	
ø66	3-7-70	774-800	26	6.0	II	H-V	
ø67	3-8-70	801-865	63	15	II	H-V	
ø69	3-10-70	866-902	59	18	II	H-V	
ø94	4-4-70	925-1044	120	36	II	H-V	
ø97	4-7-70	1500-1522 1550-1552	26	0	II	H-V	BOTTOM SAM A.P.'s
ø98	4-8-70	1045-1070	26	6	II	H-V	
1ø5	4-15-70	1071-1082 1553-1554	12 2	3	II	H-V	D.P.'s
119	4-29-70	1577-1556 4701-4702	2	0	II	VIS	A.P.'s

SHEET OF K-1
WH 20-1-70 (H-9115)

ø69	3-10-70	3500-3578	99	23.8	I	H-V	
ø80	3-21-70	3599-3606	8	2.0	I	H-V	
ø94	4-4-70	3607-3636	30	7.0	I	H-V	
ø97	4-7-70	3637-3723	97	20.0	I	H-V	
ø98	4-8-70	3734-3828	95	6.5	I	H-V	
1ø5	4-15-70	3829-3900	70	15.0	I	H-V	
106	4-16-70	3901-4001	101	20.0	I	H-V	
		4002-4118	116	30.2	I	H-V	
107	4-17-70	4119-4141	23	5.0	I	H-V	
		4142-4235	97	25.0	I	H-V	
108	4-18-70	4236-4292	54	15.0	I	H-V	
109	4-19-70	4294-4406	113	21.0	I	H-V	
112	4-22-70	2012-2035	24	0.0	I	H-V	
119	4-29-70	4900	1	0.0	II	VIS	BOTTOM SAM.
		4900-4872	76	4.0	Z-BIRD	VIS	D.P.'s LOCKWOODS POLLY INSECT
126	5-6-70	4407-4489	83	19.0	II	H-V	
127	5-7-70	4490-4575	86	5.0	II	H-V	

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

SERIAL NO.	DATE	SAMPLE POSITION		DEPTH (Fathoms) (ft)	YEAR	WEIGHT OF SAM- PLER	AP. PROX. PENE- TRA- TION	LENGTH OF CORE	COLOR OF SEDI- MENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, corals, sponges, den- tation, strat. no., type of bottom relief i.e. slope, plain, disposition, etc.)	CHECKED BY	DATE CHECKED
		LATITUDE	LONGITUDE										
		PROJ. NO. <i>OPR-437</i>			<i>1970</i>								
		VESSEL <i>LAUNCH 1</i>											
		Voyage <i>W/H-20-1-70</i>											
		STATION <i>Coast of North Carolina</i>											
2000	107 DAY 4/17/70	33° 54-25	78° 14-37			5 lbs				M	477.83 182-180 44-02		
2001	"	33 53-43	78 14-35			"				fne gy S, brk Sh	477.35 182-168 60-24		
2002	"	33 53-04	78 14-30			"				fne gy S, brk Sh	477.43 182-168 43-31		
2003	"	33 52-25	78 14-26			"				S, Wd, Sh	477.38 182-168 33-36		
2004	"	33 52-24	78 13-35			"				S, Sh	492.86 182-168 32-54		
2005	"	33 53-04	78 13-40			"				gy S, brk Sh	492.58 182-168 44-21		
2006	"	33 53-44	78 13-45			"				fne gy S, brk Sh	492.53 182-168 66-03		
2007	"	33 54-25	78 13-49			"				M	492.37 178-168 101-26		
2008	"	33 54-25	78 13-01			"				M	507.03 168-166 29-52		
2009	"	33 53-44	78 12-56			"				fne gy S, brk Sh	507.61 168-158 44-43		
2010	108 DAY 4/18/70	33 53-00	78 11-46			"				gy S, M, Sh	509.25 > 182- 168 158 34-44 31-08		
2011	"	33 52-24	78 11-41			"				fne gy S	509.25 > 182- 168 158 28-44 24-05		
2012	112 DAY 4/22/70	33 52-21	78 07-39	38.4		"				hrd, br S, Sh	582.44 148-132 33-50		
2013	"	33 53-02	78 07-46	35.5		"				hrd, br S, Sh	582.39 148-132 45-03		
2014	"	33 53-41	78 07-50	30.2		"				br S, M	582.50 148-132 64-48		
2015	"	33 54-22	78 07-50	21.9		"				fne gy S, brk Sh	582.43 136-132 63-32		
2016	"	33 54-23	78 08-40	21.1		"				fne gy S, brk Sh	567.45 144-138 76-20		

Use more than one line per sample if necessary.

SHEET K-1

2 OF 2

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

FORM C&GS-733M
(8-23-60)

VESSEL
Lanuch 1

PROJ. NO.
OPR-437

YEAR
1970

Coast of North Carolina

CHECKED BY
DATE CHECK

SERIAL NO.	DATE	SAMPLE POSITION		DEPTH (Fathoms) (ft)	WEIGHT OF SAM- PLER	AP. PROX. PENE- TRA- TION	LENGTH OF CORE	COLOR OF SEDI- MENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, det cutter, stat. no., type of bottom relief, slope, plain, disposition, etc.)
		LATITUDE	LONGITUDE							
2017	112 DAY 4/22/70	33 53-40	78 08-38	31.9	5/65				br S, M, Sh	567.53 148-132 73-20
2018	"	33 53-02	78 08-34	34.0	"				br S, M	567.50 148-132 50-05
2019	"	33 52-21	78 08-28	37.5	"				br S, M	567.47 148-132 37-00
2020	"	33 52-22	78 09-18	38.2	"				br S, M	552.36 158-132 59-16
2021	"	33 53-01	78 09-23	35.5	"				br S, brk Sh	552.50 158-132 76-15
2022	"	33 53-41	78 09-28	31.3	"				br S, M, Sh	552.49 158-132 101-11
2023	"	33 54-23	78 09-30	23.3	"				fne br S, brk Sh	552.68 150-146 46-15
2024	"	33 54-24	78 10-19	25.0	"				fne br S	537.77 158-152 69-49
2025	"	33 53-42	78 10-17	31.0	"				fne br S, sml Sh	537.42 158-148 52-08
2026	"	33 53-03	78 10-12	32.0	"				fne br S	537.55 158-148 35-00
2027	"	33 52-24	78 10-07	34.5	"				fne br S, sml Sh	537.42 158-148 25-55
2028	"	33 52-23	78 10-56	34.8	"				fne br S	522.34 168-158 24-08
2029	"	33 53-03	78 11-01	32.8	"				fne br S	522.54 168-158 32-03
2030	"	33 53-42	78 11-05	29.8	"				fne br S	522.48 168-158 47-41
2031	"	33 54-24	78 11-08	24.4	"				fne br S	522.50 162-158 47-54
2032	"	33 54-26	78 14-26	21.0	"				fne br S	462.29 186-182 75-41
2033	"	33 53-44	78 14-22	33.1	"				fne br S, sml Sh	462.39 186-182 33-49

Use more than one line per sample if necessary.

USCOMM-DC 8

SHEET - K-1

3 of 3

FORM C&GS-733M
(8-23-60)

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

U.S. DEPARTMENT OF COM.
COAST AND GEODETIC S

SHEET K-1 (WH-201-70)
VESSEL *Lanuch 1* PROJ. NO. *OPR-437* YEAR *1970* CHECKED BY DATE CHECKED

Coast of North Carolina

SERIAL NO.	DATE	SAMPLE POSITION		DEPTH (ft.)	WEIGHT OF SAMPLER	AP. PENETRATION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, distribution, slope, plain, disposition, etc.)
		LATITUDE	LONGITUDE							
2034	11Z DAY 4/22/70	33-07	78 14-18	34.1	5 lbs				fine br S	462.60 186-182 22-18
2035	"	33-52	78 14-11	35.8	"				fine br S	462.65 186-168 45-33

Use more than one line per sample if necessary.

USCOMM-DC 8

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

COAST OF NORTH CAROLINA

SERIAL NO.	DATE	SAMPLE POSITION		DEPTH (Fathoms)	WEIGHT OF SAM- PLER	AP. PROX. PENE- TRA- TION	LENGTH OF CORE	COLOR OF SEDI- MENT	FIELD DESCRIPTION	PART II REMARKS (Unusual conditions, cohesiveness, dotted cutter, stat. no., type of bottom relief, etc., slope, strain, disposition, etc.)	ANGLE OBS. INIT.
		LONGITUDE									
		LATITUDE	LONGITUDE								
LAUNCH II		OPR 437		YEAR	K-2 SHEET						
				70	CHECKED BY						
					DATE CHECKED						
1500	4/7/70	33-53	78 02-55						fne gy S, Sh	673.33	105-102
1501	4/7/70	33-52	78 02-40						fne gy S, Sh	673.11	109-102
1502	4/7/70	33-52	78 02-11						fne gy S, Sh	673.07	109-102
1503	4/7/70	33-51	78 02-52						fne br S, Slit	657.35	109-102
1504	4/7/70	33-52	78 03-27						fne br S, Slit	657.19	109-102
1505	4/7/70	33-53	78 03-43						gy S, M, Sh	657.25	96-05
1506	4/7/70	33-53	78 03-46						fne gy S	657.49	108-105
1507	4/7/70	33-53	78 04-40						fne gy S, Sh	641.17	110-109
1508	4/7/70	33-53	78 04-38						fne gy S, M	641.04	114-42
1509	4/7/70	33-53	78 04-27						fne gy S, Sh	640.68	110-102
1510	4/7/70	33-52	78 04-10						fne gy S	641.03	113-102
1511	4/7/70	33-52	78 05-08						fne gy S, brk Sh	624.97	113-102
1512	4/7/70	33-52	78 05-22						S, Sh, M	625.03	85-30
1513	4/7/70	33-53	78 05-30						S, Sh	625.34	113-109
1514	4/7/70	33-54	78 05-32						S, Sh	625.01	71-26
1515	4/7/70	33-54	78 06-12						Sh	613.20	113-111
1516	4/7/70	33-53	78 06-12						gy S, fne brk Sh	613.20	109-28
										626.35	126-113
										638.39	70-00
										612.91	132-113
										50.52	50-52

than one line per sample if necessary.

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

733M

COAST OF NORTH CAROLINA

PROJ. NO.

OPR-437

YEAR

70

CHECKED BY

DATE CHECKED

SHEET K-2

NO.	DATE	SAMPLE POSITION		DEPTH (Fathoms)	WEIGHT OF SAMPLER	AP. PENETRATION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	PATT. II (Unusual conditions, cohesiveness, dented cutter, stat. no., type of bottom relief i.e., slope, plain, disposition, etc.)	REMARKS	ANGLE	OBS. INIT.
		LATITUDE	LONGITUDE										
1517	4-7-70	33° 52-43	78° 06-06						S, Sh	612.63		132-109	
1518	"	33° 52-04	78° 05-57						S, Sh	613.11		132-109	
1519	"	33° 52-10	78° 06-52						S, Sh	596.63		132-109	
1520	"	33° 52-48	78° 06-58						S, Sh	596.92		71-13	
1521	"	33° 53-36	78° 07-03						S, Sh	597.29		132-113	
1522	"	33° 54-19	78° 07-04						S, Sh M	597.09		132-126	
												94-32	

3 than one line per sample if necessary.

SHEET M-1257
 Sheet M-1257

FORM CGS-733M
 (8-23-60)

OCEANOGRAPHIC LOG SHEET - M
 BOTTOM SEDIMENT DATA

U.S. DEPARTMENT OF
 COAST AND GEODE

SERIAL NO.	DATE	SAMPLE POSITION		DEPTH (Fathoms)	WEIGHT OF SAM- PLER	AP- PROX- PENE- TRA- TION	LENGTH OF CORE	COLOR OF SEDI- MENT	FIELD DESCRIPTION	REMARKS (-43 (Unusual conditions, coherent cutter, etc.; no. of bottom rel.; slope, plain, disposition, etc.)			
		LATITUDE	LONGITUDE								YEAR	CHECKED BY	DATE C.
984	4-22-70	53-50-33.39	78-03-58.69	23.0					Crs br s sh, M	47.93 ✓ 632.86			
985	4-22-70	53-50-36.77	78-05-52.69	27.0					Crs br s sh	46.05 604.14			
986	4-22-70	53-50-35.48	78-07-11.00	10.5					fine br s sh, M	44.96 582.17			
987	4-22-70	53-50-35.44	78-08-49.15	10.0					Crs br s sh	43.41 553.64			
988	4-22-70	53-50-32.42	78-10-31.25	32.5					fine br s silt	41.96 523.42			
989	4-22-70	53-50-34.67	78-11-53.69	32.5					Crs gy s & sh	40.36 498.94			
990	4-22-70	53-50-34.95	78-13-42.25	30.0					fine gy s	38.37 466.23			
991	4-22-70	53-52-02.48	78-13-41.19	26.0					fine gy s & silt	31.78 471.30			
992	4-22-70	53-51-57.16	78-12-01.25	28.5					fine gy s & silt	34.08 501.59			
993	4-22-70	53-51-56.09	78-10-24.63	28.0					fine gy s & silt	35.92 531.01			
994	4-22-70	53-51-58.16	78-08-49.19	30.0					fine gy s, silt	37.45 560.13			
995	4-22-70	53-51-42.08	78-07-13.06	28.0					fine gy s & silt	40.16 587.90			

VESSEL WHITTING
 PROJ. NO. OPR-4377
 YEAR 1970
 Coast of North Carolina

Use more than one line per sample if necessary.

Sta M 1257
 Sheet 13-1257

U.S. DEPARTMENT OF COAST AND GEOD.

OCEANOGRAPHIC LOG SHEET - M
 BOTTOM SEDIMENT DATA

SERIAL NO.	DATE	SAMPLE POSITION		DEPTH (Fathoms)	WEIGHT OF SAMPLER	AP. PROX. PENETRATION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, color, etc.; no. or type of bottom; slope, plain, disposition, etc.)
		LATITUDE	LONGITUDE							
967	4-21-70	33 47-44.03	78 00-58.63	30.0					fne gy S, M, Sh	62.79 634.98
968	4-21-70	33 47-46.33	78 02-08.13	33.0					fne gy S, M	61.89 625.05
969	4-21-70	33 47-47.92	78 03-49.00	35.0					fne brs, M	60.68 607.22
970	4-21-70	33 47-48.77	78 05-34.38	42.0					sh	59.41 584.84
971	4-22-70	33 47-49.77	78 07-12.38	45.5					crs brs, fne sh	58.16 561.46
972	4-22-70	33 47-49.06	78 08-53.31	45.5					S, M, silt	56.96 535.25
973	4-22-70	33 47-49.61	78 10-29.56	45.0					fne gy S, M	55.64 509.26
974	4-22-70	33 47-49.05	78 12-09.81	47.0					fne gy S, M	54.31 481.16
975	4-22-70	33 47-49.63	78 13-47.69	46.0					fne gy S, sh, M	52.83 453.23
976	4-22-70	33 49-12.66	78 13-35.63	47.4					fne gy S, sh, M	45.39 462.82
977	4-22-70	33 49-13.72	78 12-03.13	43.5					fne gy S, M	46.83 490.15
978	4-22-70	33 49-12.02	78 10-28.06	37.0					fne gy S, M	48.48 517.60
979	4-22-70	33 49-14.48	78 08-44.81	45.5					fne gy S, M	49.83 547.10
980	4-22-70	33 49-12.31	78 07-10.25	42.0					fne gy S, sh	51.36 572.68
981	4-22-70	33 49-10.73	78 05-32.38	40.0					crs S, sh	52.82 537.53
982	4-22-70	33 49-11.72	78 03-57.88	47.0					fne gy S, sh, M	53.97 619.44
983	4-22-70	33 49-12.27	78 02-10.13	47.0					fne gy S, M	55.27 639.98

PROJ. NO. OPR-437
 YEAR 70
 VESSEL WHITING
 CHECKED BY
 DATE C

Use more than one line per sample if necessary.

*Smooth Gyr -
High Speed Launch*

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

ADDEMDUM TO THE
DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC
Field No. WH 20-1-70 Office No. H-9115

LOCALITY

State North Carolina
General locality Long Bay
Locality Cape Fear Channel to Lockwoods
Folly Inlet

1970

CHIEF OF PARTY

CDR MELVIN J. UMBACK, USESSA, CMDG.
LCDR RALPH J. LAND, USESSA, OIC, LAUNCH
1257

LIBRARY & ARCHIVES

DATE

**ADDENDUM TO THE
HYDROGRAPHIC TITLE SHEET**

H-9115

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. *WH 20-1-70
Southern Part*

State NORTH CAROLINA

General locality LONG BAY

Locality CAPE FEAR CHANNEL TO LOCKWOODS FOLLY INLET

Scale 1:20,000 Date of survey 3/25/70 - 5/8/70

Instructions dated 16 January 1970 Project No. OPR-437

Vessel USC&GS LAUNCH 1257

Chief of party CDR MELVIN J. UMBACH, USESSA

Surveyed by LCDR RALPH J. LAND, LT. C. DALE NORTH, JR., FRANKLIN L. SAUNDERS, CHARLES L. BROWN

Soundings taken by echo sounder, hand lead, pole RAYTHEON DE-723 (DIGITAL)

Graphic record scaled by LT. C. DALE NORTH, JR. AND FRANKLIN L. SAUNDERS

Graphic record checked by LCDR RALPH J. LAND

Protracted by N/A Automated plot by COMPLOT

Soundings penciled by COMPLOT - AMC

Soundings in ~~fathoms~~ feet at MLW XXXX

REMARKS: This report is to serve as an addendum to the Descriptive Report submitted by Ship WHITING on contemporary survey work on the same hydrographic sheet - WH20-1-70. Launch 1257 performed this survey in cooperation with and under the supervision of the WHITING.

All time is EST (75th Meridian)

AN ADDENDUM
DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SURVEY WH 20-1-70
1970 FIELD SEASON
SCALE 1:20,000

CDR MELVIN J. UMBACH, USESSA, CHIEF OF PARTY

A. PROJECT

No change from the original Descriptive Report

B. AREA SURVEYED

The Launch's plotter sheets were designated from West to East - K1, K2, and K3. Junction on the southern portion of the area surveyed by Launch 1257 was made with WH-20-2-70 and WH 40-1-70 (L & M Sheets).

The survey was accomplished between 3/25/70 and 5/8/70.

C. SOUNDING VESSEL

All soundings on the portion assigned to Launch 1257 were performed by her.

D. SOUNDING EQUIPMENT

Raytheon DE-723 Digital Fathometer, S/N 1904, was used throughout the survey.

Plotter Sheet K3 was replotted using smooth tides. However, some splitting and, on Day 126, basic lines were run using predicted tides.

E. SMOOTH SHEET

No change.

F. CONTROL

Hi-Fix in the hyperbolic mode was used throughout the survey utilizing the same Hi-Fix stations as the WHITING.

G. SHORELINE

No shoreline was in the area surveyed by 1257.

H. CROSSLINES

Approximately 7% crosslines were run. Agreement generally is from excellent to good. It is expected that one to two foot differences will be resolved with the application of smooth tides.

I. JUNCTIONS

The southern portion of Launch 1257's area junctioned with WH 40-1-70 and agreement was good except where tides were not compatible. All other areas junctioned as described in the main report.

Agreement at the junction with prior survey H-8511 (1956) is very good.

J. COMPARISON WITH PRIOR SURVEYS

Comparison was made with H-4454 (1:40,000; 1924) and differences of 1' - 4' were noted. Generally, the prior survey soundings are deeper.

K. COMPARISON WITH THE CHART

The boatsheets were compared with chart 1236, 6 Ed., 17 Feb. 69, and chart 426, 8th Ed., 26 July 69. Comparison shows from 1 - 3 ft. difference with the boatsheet soundings shoaler. Better agreement is noticeable closer to shoreward.

Charted obstructions and wire drag cleared obstructions were not discernible on the Fathograms.

L. ADEQUACY OF THE SURVEY

No change.

M. AIDS TO NAVIGATION

Two black and white vertically striped snag buoys were located on this portion of the survey; they do not appear on the charts. They were lettered "G" and "B".

Channel marker buoys for Cape Fear entrance were:

<u>Fix No.</u>	<u>Number</u>	<u>Light List No.</u>
5694	R "2CF" W ^H S	190 & 4116
5698	"3" LT	Not listed, but charted
5700	"4" LT	4119
5702	"5" LT	4119.50
5704	"6" LT	4120

N. STATISTICS

Number of positions = 2795
Nautical miles of sounding line = 772
Square nautical miles of hydrography = 60.7

All bottom samples were taken by Ship WHITING.

O. MISCELLANEOUS

Cape Fear Channel was surveyed. Besides the normal basic lines run at 100 meters spacing over the channel, 5 lines were run along its axis to the first turn. The Corps of Engineers surveyed the channel in April 1970 according to Mr. Allen Grimstead, Chief, Survey Branch, in the Wilmington, N. C. Office of the Corps of Engineers.

Plotter sheet K3 was replotted using smooth tides to verify a one lane discrepancy in pattern one of the Hi-Fix. The DCU had a reading one lane higher than the Hi-Fix dials.

No notable or unusual features were found on this survey.

P. RECOMMENDATIONS

None.

Q. REFERENCE TO REPORTS

All reports listed in this same section are pertinent in addition to the special "Corrections to Distance Measurement" and "Corrections to Echo Soundings" submitted by Launch 1257 for OPR-437, 1970. An abstract of barchecks, an abstract of correctors to distance measurements, and an abstract of daily position numbers are attached to this report.

SEPARATES FOLLOWING TEXT

Page

ABSTRACT OF DAILY HI-FIX CORRECTORS

ABSTRACT OF BAR CHECKS

ABSTRACT OF DAILY POSITION NUMBERS

APPROVAL SHEET

OPR - 437

COAST OF NORTH CAROLINA

ABSTRACT OF HI-FIX CORRECTORS

LOCATION	DATE	JULIAN DAY	MEAN PI	MEAN PII	REMARKS
YAUPON PIER (S)	3/21/70	80	-1.35	-1.15	
YAUPON PIER(S) & C#	3/25/70	84	-1.39	+1.02	REJECT DAYS WORK HI-FIX LANE BEST OF UNKNOWN AMOUNT
YAUPON PIER (SE)	4/3/70	93	-1.32	+1.13	
YAUPON PIER (SE)	4/4/70	94	-1.36	+1.13	
YAUPON PIER (S)	4/6/70	96	+1.35 -1.65	+1.10 +1.10	FOR POS. # 5489 - 5713 FOR POS. # 5424 - 5488
YAUPON PIER (S)	4/7/70	97	+1.35	+1.12	
YAUPON PIER (S)	4/8/70	98	+1.34	+1.12	
YAUPON PIER (SW of)	4/15/70	105	-1.42	+1.11	
YAUPON PIER (SW)	4/16/70	106	-1.44	+1.15	
YAUPON PIER (SW)	4/17/70	107	-1.43	+1.13	
Signal 132 (South of)	4/18/70	108	-1.41	+1.14	
Signal 168 (South of)	4/19/70	109	-1.40	+1.16	
Signal 168 (S)	4/22/70	112	-1.43	+1.10	
Signal 168 (S)	4/23/70	113	-1.39	+1.13	
Signal 168 (S)	4/29/70	119	-1.43	+1.12	
Signal 168 (S)	4/30/70	120	-1.42	+1.14	
Signal 168 (S)	5/1/70	121	-1.43	+1.13	
Signal 168 (S)	5/5/70	125	-1.43	+1.12	
Signal 113 (SE)	5/6/70	126	-1.42	+1.10	
YAUPON PIER (S)	5/7/70	127	-1.42	+1.14	

ABSTRACT OF Hi-Fix CORRECTORS (cont)

LOCATION	DATE	JULIAN DAY	MEAN PI	MEAN PII	REMARKS
YARCON PIER(S) & C4'	5/8/70	128	-0.40	+1.12	
C4'	5/10/70	130	-0.42	+1.12	
C4'	5/11/70	131	-0.39	+1.13	
			-0.39	+1.13	Pos # 6284-
	5/12/70	132	-0.40	+1.12	
	5/13/70	133	-0.39	+1.12	
OAK ISLAND(NW)	5/14/70	134	-0.42	+1.14	

BAR CHECK

Launch 1257

OPR-437

COAST OF NORTH CAROLINA
1970

Date	5'	10'	15'	20'	25'	30'	35'
3/21/70							
FATH	5.0	9.5	14.1	18.9	23.5		
DIG	-	-	-	-	-		
DIG	-	-	-	-	-		
FATH	-	-	-	19.0	23.5		
3/25/70							
FATH	4.2						
DIG	4.1						
DIG	-						
FATH	-						
4/3/70							
FATH	4.7	8.4					
DIG	4.4	8.3					
DIG	4.5	8.5					
FATH	4.7	8.8					
4/3/70							
FATH	4.3	9.3					
DIG	4.2	9.2					
DIG	4.4	9.4					
FATH	4.5	9.6					
4/4/70							
FATH	4.4	9.6	14.3	19.0	23.9	28.9	
DIG	4.4	9.4	14.15	19.0	23.8	28.6	
DIG	4.45	9.2	14.15	19.0	23.8	-	
FATH	4.8	9.5	14.2	19.1	23.9	-	
4/6/70							
FATH	4.7	9.3	14.2	19.0	23.9		
DIG	4.5	9.2	14.3	19.0	23.85		
DIG	4.55	9.45	14.3	18.8	-		
FATH	4.8	9.5	14.3	18.9	-		

comp. HES 4/12/70

BAR CHECK
 Launch 1257
 OPR 437
 COAST OF NORTH CAROLINA
 1970

Date	5'	10'	15'	20'	25'	30'	35'
4/17/70							
FATH	4.6	9.4	14.0	18.8	23.7		
DIG	4.45	9.35	14.05	19.0	23.8		
DIG	4.35	9.3	14.0	18.9			
FATH	4.4	9.3	14.0	18.9			
4/18/70							
FATH	4.6	9.5	14.3	19.2	23.9	28.7	33.0
DIG	4.4	9.35	14.2	19.15	23.8	28.6	33.05
DIG	4.5	9.3	14.25	19.1	23.95	28.8	
FATH	4.8	9.4	14.3	19.2	24.0	28.8	
4/16/70							
FATH	4.4	9.3	14.0				
DIG	4.3	9.3	13.9				
DIG	4.4	9.4	-				
FATH	4.6	9.6	-				
4/17/70							
FATH	4.6	9.5	14.0	18.7	23.3	28.2	
DIG	4.5	9.3	14.0	18.6	23.4	28.2	
DIG	4.65	9.35	14.1	18.7	23.2		
FATH	4.8	9.4	14.2	18.7	23.3		
4/18/70							
FATH	4.8	9.3	14.3	19.0	23.8	28.4	
DIG	4.55	9.2	14.2	19.0	23.8	28.45	
DIG	4.4	9.1	14.2	18.9	23.9		
FATH	4.6	9.2	14.3	18.9	23.9		
4/19/70							
FATH	4.4	9.1	13.7	18.6	23.1		
DIG	4.3	9.05	13.5	18.45	22.9		
DIG	4.4	9.0	13.55	18.55			
FATH	4.5	9.0	13.6	18.7			

BAR CHECK
 Lunch 1257
 OPR 437
 COAST OF NORTH CAROLINA
 1970

Date	5'	10'	15'	20'	25'	30'	35'
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4/22/70

FATH	4.6	9.3	14.2	18.9	23.8		
DIG	4.45	9.15	14.2	18.9	23.55		
DIG	4.45	9.15	14.1	18.95	23.6		
FATH	4.5	9.2	14.2	19.0	23.8		

4/30/70

FATH	4.5	9.0	13.5				
DIG	4.4	9.1	13.4				
DIG	4.45	9.1	13.6				
FATH	4.7	9.2	13.7				

5/1/70


FATH	4.6	9.0					
DIG	4.45	8.95					
DIG	4.5	9.1					
FATH	4.7	9.2					

5/5/70


FATH	4.7	9.3					
DIG	4.45	9.2					
DIG	4.4	9.1					
FATH	4.6	9.1					

APPROVAL SHEET

The Officer-in-Charge participated in every aspect of this survey. Approval is thereby attested.


Ralph J. Land
LCDR, NOAA

Approval:


Melvin J. Umbach
CDR, NOAA
Chief of Party

ATLANTIC MARINE CENTER

PROJECTION PARAMETERS

POLYCONIC OR MODIFIED TRANSVERSE MERCATOR

- 1. Project No. OPR 437
- 2. Reg. No. H-9115
- 3. Field No. (WH 20-1-70)
- 4. Requested By VERIFICATION BEAM H
- 5. Ship or Office AMC
- 6. Date Required ASAP

7. Polyconic Modified Transverse Mercator

8. Central Meridian of Projection 78° 07' 00"

9. Survey Scale: 1:20,000

10. Size of Sheet (check one):

36 x 54 36 x 60 Other Specify _____

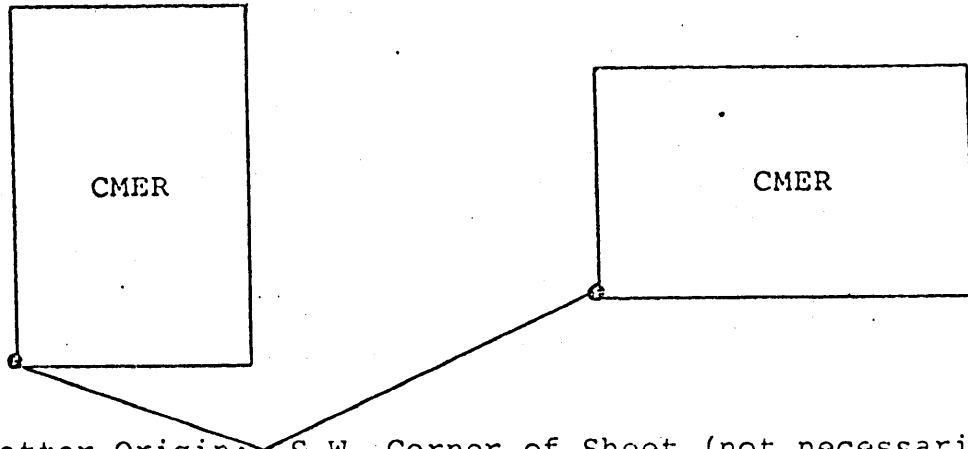
11. Sheet Orientation (check one):

NYX = 1

NYX = 0

N

N



- 12. Plotter Origin: S.W. Corner of Sheet (not necessarily a grid intersection)
 Latitude 33° 46' 00"
 Longitude 78° 16' 00"

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

14. Material Desired: Tracing Paper Mylar

Smooth Sheet Other Specify _____

15. Remarks: _____

ELECTRONIC CONTROL PARAMETERS

1. Project # OPR-437 2. Reg. # H-9115 3. Field # WH 20-1-70
 4. Type of Control: HI-FIX (Hi-Fix, Raydist, EPI, etc.)
 5. Frequency 1799.6 KHz (for conversion of electronic lanes to meters)
 6. Mode of Operation (check one):

Range-Range

Range-Visual

Range One (R₁)
 Station I.D. _____
 Range Two (R₂)
 Station I.D. _____

Lat. _____ ° _____ ' _____ "
 Long. _____ ° _____ ' _____ "
 Lat. _____ ° _____ ' _____ "
 Long. _____ ° _____ ' _____ "

Hyperbolic (3-station)

Hyper-Visual

Slave One
 Station I.D. PAWLEY
 Master
 Station I.D. CABANA
 Slave Two
 Station I.D. BEN

Lat. 33 ° 25 ' 57.764 "
 Long. 79 ° 07 ' 09.929 "
 Lat. 33 ° 49 ' 33.004 "
 Long. 78 ° 38 ' 57.788 "
 Lat. 33 ° 53 ' 26.794 "
 Long. 78 ° 01 ' 50.951 "

7. Location of Survey:

Range-Range

Imagine an observer is standing at R₁ Station and looking directly at R₂ (check one):

Survey area is to observer's Right A=∅

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 Time Day	To Time Day	Position Numbers (inclusive)
-----------------	------------------	----------------	---------------------------------

_____	_____	_____	_____ to _____
_____	_____	_____	_____ to _____
_____	_____	_____	_____ to _____

9. Remarks: _____

ATLANTIC MARINE CENTER
APPROVAL SHEET
FOR
AUTOMATED SURVEY H-9115

- 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: 18 Jan. 1974

Signed: C. Dale North
C. Dale North, LCDR., NOAA
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: 18 Jan. 1974

Signed: William L. Jonns
William L. Jonns
Title: Chief, Processing Division

VERIFICATION NOTES
SURVEY H-9115

GENERAL

This appears to be an excellent basic survey. Soundings are in good agreement at crossings and the depth curves adequately delineate the features.

The development of positions 4490 thru 4570 was plotted on a 1:5,000 overlay, only the shoaler soundings were retained on the smooth sheet. The area of the entrance of Lockwoods Folly Inlet was also plotted on a 1:5,000 overlay and accompanys the smooth sheet.

Problems encountered during verification and the methods used to resolve them are explained in the accompanying AMC Plotter Notes to EDP.

Norfolk, Va.
Jan. 7, 1974

William L. Jonns
William L. Jonns
Chief, Verification Br. AMC.

ABSTRACT OF DAILY POSITION NUMBERS USED

H-9115

<u>JULIAN DAY</u>	<u>POSITION NUMBERS</u>
84	5001-5102 - Rejected by field See Pg 1 of 2 abstracts of H1-Fix corr.
93	5103-5423
96	5424-5713
97	5714-5992
98	5993-6331
105	6332-6616
106	6617-6929
107	6630-7202
108	7203-7564
126	7565-7676
128	7677-7795

FORM C2GS-946
(REV. 11-65)
(PREP. BY
HYDROGRAPHIC
MANUAL 20-2,
6-64, 7-13)

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
NAUTICAL CHART DIVISION

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-9115

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS		5	
DESCRIPTIVE REPORT		1	OVERLAYS		4	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
Accordian Folders ENVELOPES						
CANISERS	1					
VOLUMES						
BOXES			2 & 2 Packages			2
T-SHEET PRINTS (LIST)			(2)			
SPECIAL REPORTS (LIST)						

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			TOTALS
	PRE-VERIFICATION	VERIFICATION	REVIEW	
POSITIONS ON SHEET				5091
POSITIONS CHECKED		1000		
POSITIONS REVISED or deleted		841		
DEPTH SOUNDINGS REVISED		650		
DEPTH SOUNDINGS ERRONEOUSLY SPACED				
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED				
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		24		
JUNCTIONS		8		
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		100		
SPECIAL ADJUSTMENTS Key punch		6		
ALL OTHER WORK		236		
TOTALS		374		
PRE-VERIFICATION BY D.C. CALLAND, R.G. ROBERSON	BEGINNING DATE 5-17-73	ENDING DATE 12-11-73		
VERIFICATION BY B.J. STEPHENSON	BEGINNING DATE 12-20-73	ENDING DATE 1-9-74		
REVIEW BY	BEGINNING DATE	ENDING DATE		

Fig. 20.

FORM C&GS-946A (REV. 11-65) (PRES. BY HYDROGRAPHIC MANUAL, 6-94)		U.S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY					
VERIFIER'S REPORT HYDROGRAPHIC SURVEY, H-9115							
<p>INSTRUCTIONS - This form serves to identify items of a checklist in verification together with items which are separately reported to the Reviewer. The form is not to be forwarded to the Reviewer. A report, which is prepared for the Reviewer, should identify items by number and letter and will be filed in the Descriptive Report until the survey is reviewed.</p> <p>CL - Check List Items: should be checked as having been completed during the verification processes.</p> <p>R - Report Item: This column refers to those items reported to the reviewer and is used to indicate the items discussed.</p>							
Part I - DESCRIPTIVE REPORT		CL	R	Part III - JUNCTIONS (Continued)			
<p>Note: The verifier should first read the Descriptive Report for general information and problems.</p> <p>1. The Descriptive Report was consulted, paragraphs checked if found satisfactory, and notations were made in soft black pencil regarding action taken. Remarks Required: -- None</p>		*		<p>10. Junctions with contemporary surveys were satisfactory except as follows: Remarks Required: -- Consider conditions after adjustments have been made; note adjustments made. Make special notes of Butt junctions and areas which are SUPERSEDED.</p>		*	
<p>2. Soundings originating with the survey and mentioned in the Descriptive Report have been verified and checked in soft black pencil, including latitude and longitude, together with position identification. Remarks Required: -- None</p>		*		<p>Part IV - VOLUMES</p> <p>11. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken and exceptions noted in the volumes. Remarks Required: -- None</p>		*	
<p>3. All reference to survey sheets mentioned in the Descriptive Report should include registry number and year. Remarks Required: -- None</p>		*		<p>12. Condition of sounding records was satisfactory except as follows: Remarks Required: -- Mention deficiencies in completeness of notes or actions for the following: (a) rocks (b) line turns (c) position values of beginning and ending of lines (d) bar check or velocity correctors (e) time recording (f) notes or markings on fathograms (g) was reduction of soundings accurately done? (h) was scanning accurate? (i) were peaks at uneven intervals missed? (j) were stamps completed? (k) references to adjacent features</p>		*	
Part II - SHORELINE AND SIGNALS		CL	R	Part V - PROTRACTING			
<p>4. Source of shoreline signals Remarks Required: -- List all surveys a. Give earliest and latest dates of photographs b. Field inspection date c. Field Edit date d. Reviewed-Unreviewed</p>		*		<p>13. All positions verified instrumentally were check marked in color in the sounding records, and verifier initialed the processing stamp. Remarks Required: -- None</p>		*	
<p>5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences.</p>		*		<p>14. The protracting and plotting of all unsatisfactory crossings were verified. Remarks Required: -- None</p>		*	
<p>6. The plotting of all triangulation stations, topographic stations and hydrographic signals has been checked and noted in processing stamp No. 42 on the smooth sheet. Remarks Required: -- None</p>		*		<p>15. All detached positions locating critical soundings, rocks, buoys, breakers, obstructions, kelp, etc., were verified and the position numbers are legible. Remarks Required: -- None</p>		*	
<p>7. Objects on which signals are located and which fall outside of the high-water line have been described on the sheet. Remarks Required: -- List those signals still unidentified.</p>		*					
Part III - JUNCTIONS		CL	R				
<p>Note: Make a cursory comparison preliminary to inking soundings in area of overlap.</p> <p>8. All junctions of contemporary or overlapping sheets were transferred in colored ink and overlapping curves were made identical. Remarks Required: -- None</p>		*					
<p>9. The notation in slanted lettering "JOINS H--- (19)" was added in colored ink for all verified contemporary adjoining or overlapping sheets. Those not verified are shown in pencil. Remarks Required: -- None</p>		*					

Fig. 20 (Cont'd.)
Form 946A (back of form)

Part V - PROTRACTING (Continued)	CL	R	Part VIII - AIDS TO NAVIGATION	CL	R
16. The protracting was satisfactory except as follows: Remarks Required: -- Refers to protracting in general except for specific faults repeated often, or faults in control information, which required considerable replotting or adjustments.	*		26. All fixed aids located together with those on the contemporary topographic sheets, have been shown on the survey. Remarks Required: -- Conflicts of any nature listed.	*	
17. The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number.	*		27. All floating aids listed in the Descriptive Report should be verified and checked in soft black pencil, including latitude and longitude and position identification. Remarks Required: -- None	*	
Part VI - SOUNDINGS 18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None	*		Part IX - BOATSHEET 28. The boat sheet was constantly compared with the smooth sheet with reference to notes, position of sounding lines and supplemental information. Remarks Required: -- None	*	
19. Sounding line crossings were satisfactory except as follows: Remarks Required: -- Discuss adjustments.	*		29. Heights of rocks awash were correctly reduced and compared with topographic information. Remarks Required: -- Note excessive conflicts with topographic information.	N.A.	
20. The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None	*		Part X - GENERAL 30. All information on the sheet is shown in accordance with figures 82 and 83 in the Hydrographic Manual (Pub. 20-2). Remarks Required: -- None	*	
21. The scanning, reduction, spacing, plotting of questionable soundings have been verified. Remarks Required: -- None	*		31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None	*	
22. The smooth plotting of soundings was satisfactory except as follows: Remarks Required: -- Refer to legibility, errors in spacing, and errors in numbers - but not to errors in scanning.	*		32. Degree, minute values and symbols have been checked; also electronic distance arcs have been properly identified and checked on the smooth sheet. Remarks Required: -- None	*	
Part VII - CURVES 23. The depth curves have been inspected before inking. Remarks Required: -- By whom was the penciled curves inspected.	*		33. The bottom characteristics are adequately shown. Remarks Required: -- None	*	
24. The low-water line and delineation of shoal areas have been properly shown in accordance with the following: a. From T-Sheet in dotted black lines b. From soundings in orange c. Approximate position of sketched curve is dashed orange d. Approximate position of shoal area not sounded in black dashed Remarks Required: -- None	*		Part XI - NOTES TO THE REVIEWER 34. Unresolved discrepancies and questionable soundings.	*	
25. Depth curves were satisfactory except as follows: (This statement should not refer to the manner in which the curves were drawn). Remarks Required: -- Indicate areas where curves could not be drawn completely because of lack of soundings. For some inshore areas a general statement is sufficient.	*		35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.	*	
Verified by B.J. STEPHENSON			Date 1-9-74		

Shoreline penciled from incomplete manuscripts.

FIG. 18.

DESCRIPTIVE REPORT DATA RECORD		
PART I SMOOTH SHEET PREPARATION		
	PREPARED BY/OPERATOR	DATE
A.	PLOTTER OPERATOR	
B.	DISTORTION MARKS PLOTTED	
C.	PROJECTION INTERSECTIONS PLOTTED	
D.	POINTS OF ELECTRONIC CONTROL ARCS PLOTTED	
E.	OVERLAYS PREPARED BY	
	1. POSITION NUMBER	
	2. EXCESS SOUNDINGS	
	3. PRELIMINARY SMOOTH PLOT	
	4. LIST OTHERS	
	A.	
	B.	
F.	SOUNDING SELECTION BY	
G.	PLOTTER INPUT PREPARED	
H.	CHECKED	
I.	DESCRIPTIVE REPORT ADDENDUMS	
PART II SMOOTH SHEET COMPLETION		
	B.J. STEPHENSON	1-9-74
	CARTOGRAPHER	DATE
A.	DISTORTION SCALE TICKS IDENTIFIED BY NOTE	
B.	PROJECTION INTERSECTIONS VERIFIED BY	EDP-AMC B.J. STEPHENSON 3-23-73
C.	PROJECTION LINES RULED BY	" "
D.	ELECTRONIC CONTROL ARCS RULED AND LOCATION VERIFIED	EDP-AMC B.J. STEPHENSON 12-14-73
E.	OVERLAYS COMPLETED BY	EDP-AMC 1-9-74
	1. POSITION NUMBER LEADERS ADDED	
	2. EXCESS SOUNDING OVERLAY COMPARED	
	3. PRELIMINARY SMOOTH PLOTS COMPARED	R.G. ROBERSON 12-11-73
	4. OTHERS UTILIZED	
	A.	
	B.	
F.	DESCRIPTIVE REPORT ADDENDUM	W.L. JONNS 1-16-74
G.	CONTROL STATIONS VERIFIED	" 3-22-73
H.	POSITIONS MANUALLY PLOTTED	
I.	MANUAL PLOT VERIFIED	
J.	SHORELINE ADDED	Penciled from incomplete manuscripts.
K.	BOUNDARY LINES ADDED	B.J. STEPHENSON 1-4-74
L.	NOTES AND INDEX DATES ADDED	" "

VERIFIER: B.J. Stephenson

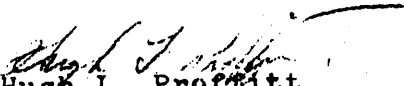
Norfolk, Va.
Nov. 3, 1971

VERIFICATION BRANCH
PLOTTER NOTE TO EDP (AMC)
SURVEY H-9115 (WH 20-1-70)

Before plotting the fathograms for this survey were check scanned by personnel of this Branch.

The field scanning was well done, but additional may be needed during verification to further mean wave action on depths obtained in heavy seas. A short list of needed sounding revisions is attached.

On Days 69 and 109, Launch 1, initial corrections are applicable. Corrector printouts, when available, should be checked to be sure this discrepancy has been accounted for by the field.


Hugh L. Proffitt
Chief, Verification Br., AMC

June 13, 1973

VERIFICATION BRANCH
PLOTTER NOTE TO EDP (AMC)
SURVEY H-9115 (WH-20-1-70) OPR 437

This branch has completed the verification of the preliminary position overlay. About 841 changes to be made are as follows:

	1257	LCH I	LCH II	ZEEBIRD	WHITING
POSITIONAL	0	18	9	1	0
DELETIONS	529	152	3	0	0
TIME & COURSE	2	0	0	0	0
INSERTS	12	28	38	1	29
PATT CORR ENTRY	5	13	156	0	0

Deletions--- 513 of the 529 deletions of Lch 1257 were day 84 positions 5001 - 5102 rejected by field, see descriptive report addendum, page 1 of 2 of Abstract of Hi-fix Correctors, the other 16 were also rejects by the field. The 152 deletions of Lch I were all rejects by the field.

Pattern corrector entry for Lch II has 156 corrections in a block from position 279 thru position 340.

All corrections were made on the print out with purple pencil. No cards have been punched.

After the above changes have been made, please furnish this branch with a sounding overlay, an excess overlay and an enlargement sounding overlay and an excess overlay for same--parameter form herewith.

Dorothy C. Calland
Dorothy C. Calland
Verification Branch
wls

Verifier: R.G. Roberson

11-December-1973

H-9115(WH 20-1-70)
OPR-437
NOTE TO EDP

This branch has completed a check of the preliminary sounding overlay of this survey.

All of the signal numbers should be plotted to the north-east except numbers 1, 100, 101, and 182 which should be to the southeast; number 110 should not have its number plotted.

Buoys at the entrance of Lockwoods Folly Inlet were not located by hydrography. Cuts were taken to the buoys using a T-2. The positions were not plotted on the preliminary position overlay. The buoys were plotted on the preliminary sounding overlay using the geographic positions that were listed in the Descriptive Report (paragraph M.). The positions were inserted and position numbers (9003-9007) assigned.

An intensive investigation was run on this survey at Lat. $33^{\circ}53'15''$ Long. $78^{\circ}12'30''$ (approximately) to find a sounding (stray of fish) found on 106 day near position 4051. The ~~entire~~ development should be deleted from the survey except areas where soundings were retained. This investigation produced negative results. A printout of an area from record number 24150 thru record number 24500 is requested after sounding changes have been made; then this area will be deleted before making a final sounding printout. This deletion is necessary to clear up unnecessary congestion on the smooth sheet.

There were about 600 sounding and excess cards. Several soundings were off of the sheet, but these problems were corrected. One (1) detached position was not plotted and will be inserted.

After these corrections are entered, please furnish this branch with a smooth sheet, new excess level 1, printout, and special area printout. The smooth sheet should have blue projection lines with ten (10) millimeter grid ticks in black.

William L. Jonns
William L. Jonns
Chief, Verification Br.

Verifier: B.T. Davis

H-9115 (WH-20-1-70)
OPR-437

The TRA correctors for Lch. 1 and Lch. 2 on this survey should be as follows:

-0.5 initial corrector
+0.7 settlement and squat
full speed or standard speed
+0.3 reduced speed
+0.1 slow speed

Therefore the total TRA correctors applied to the sounding will be +0.2 standard speed, -0.2 reduced speed and -0.4 slow speed.

It is assumed that this survey was done at standard speed as there were no notes to indicate otherwise. Therefore a +0.2 TRA corrector should be used for all launch work.

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			
BALD HEAD											1
BALD HEAD ISLAND											2
CAPE FEAR RIVER											3
LONG BAY											4
MIDDLE GROUND											5
LOCKWOODS FOLLY INLET											6
WESTERN BAR CHANNEL											7
											8
											9
											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25

Approved by:
C. E. Harrington
 Staff Geographer
 27 March 1974

Fish Trap Areas
Boundary lines of fish trap areas
are shown thus

78° 10'

CAUTION
Improved channels shown by broken lines are
subject to shoaling, particularly at the edges.

Intracoastal Waterway
Use Chart No. 833. The depths and channel
markers are not given herein.

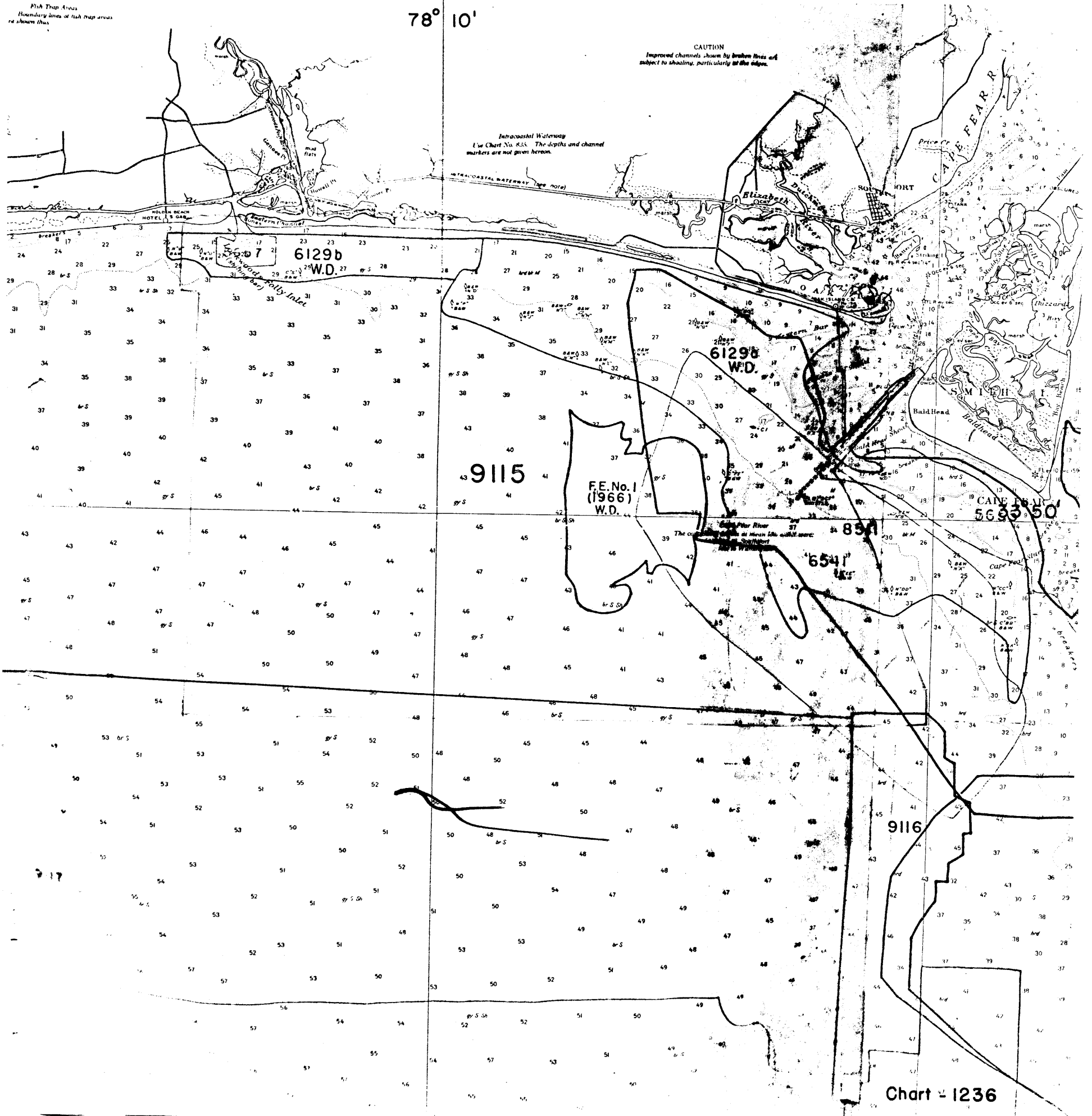


Chart - 1236

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9115

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
426	4-11-74	<i>J. Jensen</i>	^{before} Full Part Before After Verification Review Inspection Signed Via Drawing No.
83550 (A)	4-26-74	<i>V. Banks</i>	^{before} Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>NM issued for shal sdg.</i>
1236	4-26-74	<i>V. Banks</i>	^{before} Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>NM issued for shal sdg.</i>
1110	9-23-74	<i>G. Moe</i>	Full Part Before ^{before} After Verification Review Inspection Signed Via Drawing No.
426	8/17/76	<i>FB Powell</i>	^{adequate before} Full Part Before After Verification Review Inspection Signed Via Drawing No.
835	10-15-76	<i>Li. Bodounae</i>	^{adequate before} Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>Part thru 426 & Port direct</i>
11536 (1236)	10 May 79	<i>Alex. Radichnich</i>	^{ADEQUATELY APPLIED BEFORE} Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>WEST PART DIRECTLY (EAST PART from ch. 11537 and North from ch. 11534)</i>
11520	10/21/82	<i>Manfred</i>	^{adequate} Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>adequately appl thru Chart 11536</i>
11520	7-17-87	<i>R. ...</i>	^{adequate} Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>adequately appl through chart 11520</i>
			Full Part Before After Verification Review Inspection Signed Via Drawing No.