

9116

ORIGINAL

Lch. 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 20-2-70 Office No. H-9116

LOCALITY

State North Carolina

General locality Long Bay

Locality Cape Fear River Channel to Frying

Pan Shoals

1970

CHIEF OF PARTY

CDR M. J. Umbach, USESSA

LIBRARY & ARCHIVES

DATE JUL - 6 1972

USCOMM-DC 37022-P66

Chts
426
1001 (11009)
1007
1110 (11520)
1236

9116

HYDROGRAPHIC TITLE SHEET

H-9116

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.

WH20-2-70
(I-1 South Half)

State North Carolina

General locality Long Bay

Locality South East of Frying Pan Shoals

Scale 1:20,000

Date of survey 10 March - 21 April 1970

Instructions dated 16 January 1970

Project No. OPR-437

Vessel USC&GS Ship WHITING

Chief of party CDR M. J. Umbach

Surveyed by CDR M. J. Umbach, LT C.G. Chappell; LT J. L. Wallace; LT G. L. Boyack; LTJG L. T. Gillman; ENS D. W. Nostrant, CST W. Hill

Soundings taken by echo sounder, ~~hand-lead, pole-~~

Graphic record scaled by same as "Surveyed by"

Graphic record checked by " " " "

Protracted by ~~NA~~ CAL-COMP PLOTTER

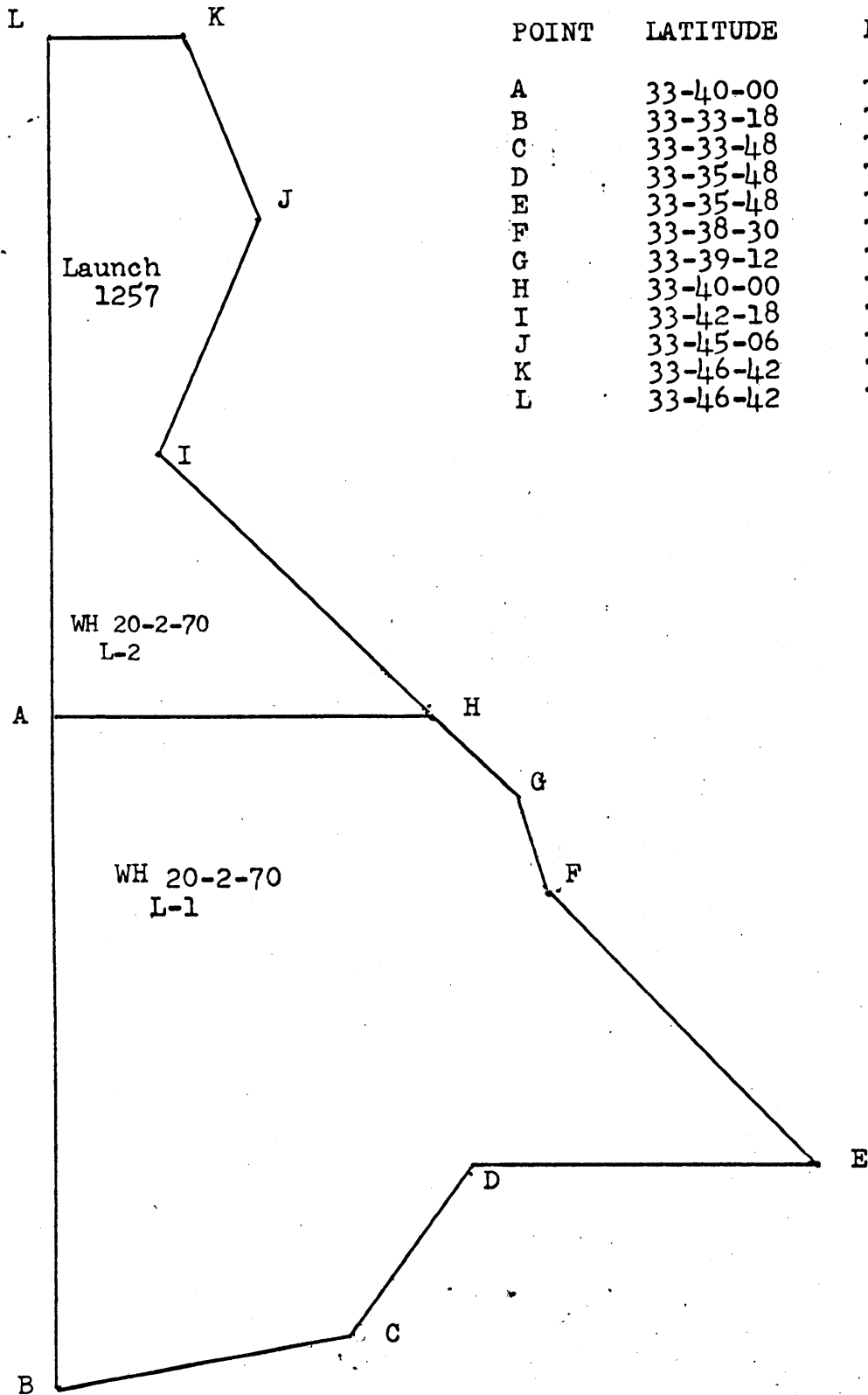
Automated plot by A.M.C.

Soundings penciled by ~~NA~~ CAL-COMP PLOTTER

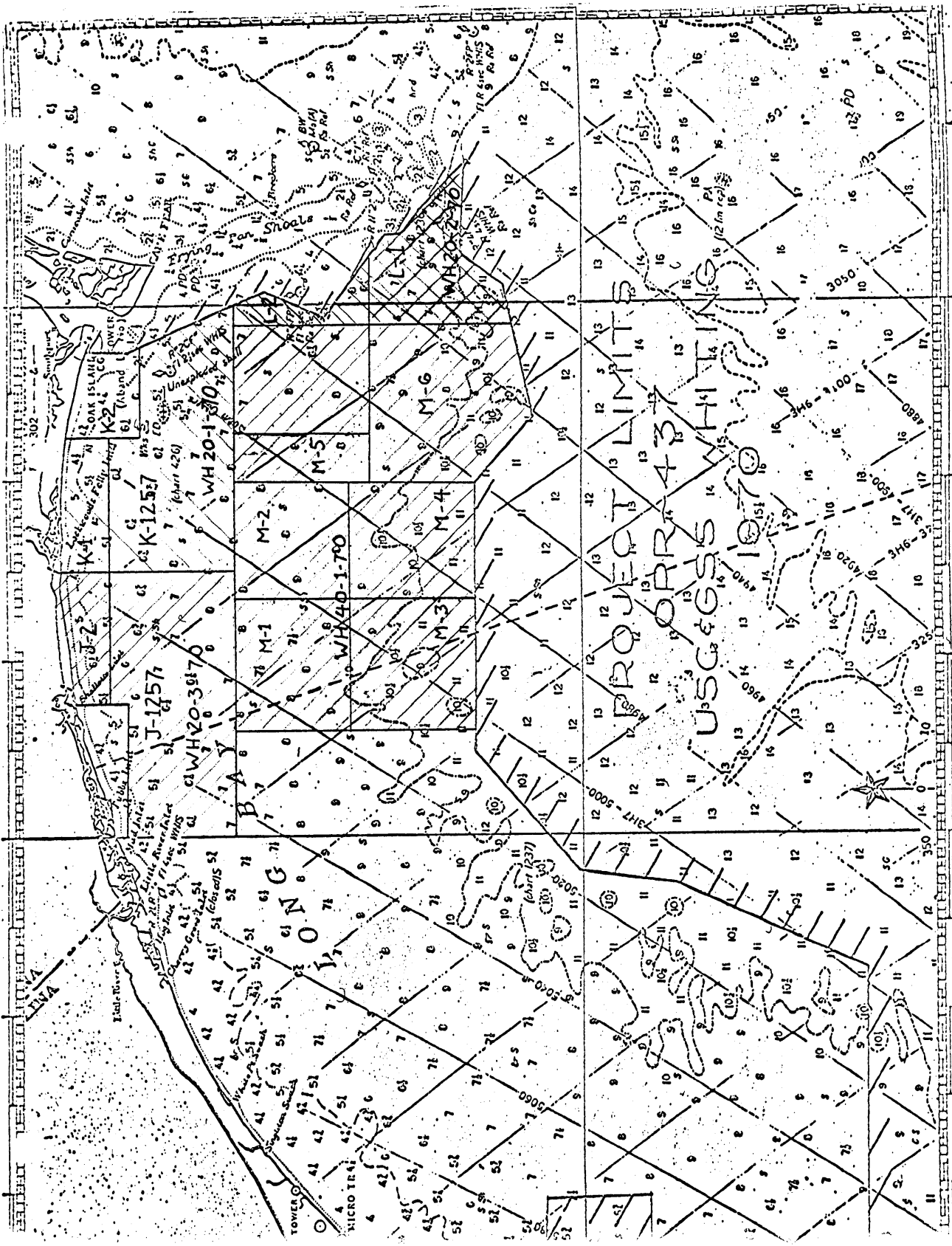
Soundings in ~~fathoms~~ feet at MLW ~~XXXXX~~

REMARKS: The high speed launch (Launch 1257) will attach an addendum concerning their portion of WH 20-2-70.

*Applied to stads 7/17/72
cas*



POINT	LATITUDE	LONGITUDE
A	33-40-00	78-01-24
B	33-33-18	78-01-24
C	33-33-48	77-59-00
D	33-35-48	77-57-12
E	33-35-48	77-52-06
F	33-38-30	77-56-00
G	33-39-12	77-56-12
H	33-40-00	77-56-43
I	33-42-18	78-00-42
J	33-45-06	77-59-12
K	33-46-42	78-00-00
L	33-46-42	78-01-24



50' 30' 20' 10' 0' 10' 20' 30' 40' 50'

DESCRIPTIVE REPORT

To Accompany

HYDROGRAPHIC SURVEY PLOTTER SHEET L-1

H-9116

WH-20-2-70

OPR - 437

10 March to 21 April 1970

South Coast of North Carolina

Scale 1:20,000

USCGS Ship WHITING

CDR M. J. Umbach, USESSA, Commanding

A. PROJECT:

This survey was accomplished in accordance with Project Instructions OPR-437, Coast of North Carolina and South Carolina dated 16 January 1970 and supplemental instructions dated 22 January 1970.

B. AREA SURVEYED:

The survey was conducted between 10 March and 21 April 1970 on the coast of North Carolina. Work was commenced off the Cape Fear River Channel entrance south along the west side of Frying Pan Shoals. The northern limit of this survey junctioned with contemporary plotter sheets WH-20-2-70 (L-2) which was the part surveyed by the High Speed Launch; the western edge with WH-40-1-70 (M-1).
H-9116 H-9117

(Continued on page 2)

Junctions were made with the following prior surveys:

H-8511	1:20,000	1936
H-8512	1:20,000	1956
H-6540	1:40,000	1939
H-4323	1:40,000	1923
H-6539	1:80,000	1939-40

The main system of lines was run with 400 meter spacing and splits were run at 200 meter and 100 meter spacing depending on the coverage needed to determine the depth curves adequately.

~~The limit of the charts are as follows:~~

C. SOUNDING VESSEL:

The USC&GSS WHITING was the sounding vessel for this survey.

D. SOUNDING EQUIPMENT:

The sounding instrument was the Ross Digital Depth Sounder, serial number 601.

The ship's position plot was created by the computer plotter system; soundings in feet were entered manually on the logger console of the computer because the computer does not mean wave action at this time.

Tide corrections were predicted tides for Bald Head, North Carolina referenced to Charleston, South Carolina.

E. SMOOTH SHEET:

The smooth sheet will be plotted on the computer plotter system at A.M.C. Norfolk, Virginia.

F. CONTROL:

The hydrography was controlled by Hi-Fix in the hyperbolic mode. The Hi-Fix was calibrated daily and at any other times there were suspected discrepancies by comparing the electronic position to the visual position on the computer calibration program.

The Hi-Fix stations were located as follows:

<u>STATION</u>	<u>NAME</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
Master	CABANA, 1969	33°49'33.004"	78°38'57.788"
Slave 1	PAWLEY, 1969	33°25'57.764"	79°07'09.929"
Slave 2	BEN	33°53'26.79"	78°01'50.95"

The Hi-Fix stations were located by Mr. J. D. Shea and ships personnel according to third order methods.

G. SHORELINE:

There was no shoreline on this survey.

H. CROSSLINES:

Of the total length of sounding lines, 10.65% consists of crosslines. The agreement between crosslines and the main system of lines was good.

I. JUNCTIONS:

The soundings in the area common to more than one survey showed excellent agreement in all cases. *Smooth sheet junction affected with H-9117 only -*

J. COMPARISONS WITH PRIOR SURVEYS:

Comparisons were made with the following prior surveys:

<u>Registry Number</u>	<u>Date Completed</u>	<u>Scale</u>
H-6539	10 April 1940	1:80,000
H-6540	18 December 1939	1:40,000

The agreement was good to excellent.

No new shoaling exists.

The presurvey review showed an existing 56 foot sounding at approximately 33°36'N and 77°58'W but was found to be nonexistent. *Correct as charted -*

It is recommended that this depth ^{Not} be removed from the chart.

K. COMPARISONS WITH THE CHART:

Comparisons were made with USC&GS Chart 1236, 17 February 1969 and the findings were excellent. *There appears to be smz shoaling and shifting of shoals around the scattered 36' curves -*

L. ADEQUACY OF THE SURVEY:

The survey is complete and adequate and should be considered to supersede any prior surveys for charting.

M. AIDS TO NAVIGATION:

There exists an aid to navigation on this survey which is a red lighted bouy marked "4FP", at: *Hi-fix positions for this and the station bouy were not found - The G.P. were given pos. Nos. 9000 & 9001 and entered in data bank -*

LAT: 33°36'35.44"

LONG: 77°54'51.38"

A comparison of the surveyed position and that which is on USC&GS Chart 1236 and in Light List Volume #1, Atlantic 1969 was good. The light list position was:

LAT: 33°36.5'

LONG: 77°55.0'

There also exists a red nun station bouy for the above mentioned bouy which is set relatively 30° True azimuth and is at the following position:

LAT: $33^{\circ}36'40.22''$

LAT: $77^{\circ}54'46.75$ Pos. # 9001

but it should be noted that when serviced, the relative distance between these bouys may slightly vary.

N. STATISTICS:

Miles of sounding line = 192.4 nautical miles.
Area = 27.54 sq. nautical miles
Number of positions = 802
Percentage of crosslines 10.65%
Number of bottom samples 24

O. MISCELLANEOUS:

An additional development was performed on a sand ridge in the northwest corner of this sheet between latitudes $33^{\circ}40'.5$ and $33^{\circ}38'.5$ and longitudes $77^{\circ}57'.0$ and $77^{\circ}59'.0$ (positions ~~#5704~~ through ~~#5794~~ due to a suspected lane discrepancy, improbable depth curves and questionable cross-line agreement. The development, surveyed with 100 meter line spacing, yielded a set of well defined depth curves and confirmed the suspected lane error. The previous work was replotted with the proper correction and formed excellent agreement with the additional development. Due to the density of soundings in the vicinity of the sand ridge the development was plotted on the accompanying overlay.

As shown in article "B" of this report, the vessel, Launch 1257, accomplished hydrography on the northern section of WH-20-2-70. The personnel of that boat will submit an addendum to this report which will discuss their portion of the sheet.

P. RECOMMENDATIONS:

None

Q. REFERENCES TO REPORTS AND RECORDS:

1. 1970 Computer-Plotter Report
2. OPR-437 Fathometer Report
3. OPR-437 Hi-Fix Report
4. Fathograms, listings and brush recordings
5. Velocity tables
6. Hi-Fix Correctors
7. Smooth tide listings
8. Addendum WH-20-2-70 accomplished by the Launch 1257
9. Report of total Corrections to echo sounder
10. Descriptive Report WH40-1-70

APPROVAL SHEET

Submitted by

Gary L. Boyack

Gary L. Boyack
LT USESSA

Approved and Forwarded by

Melvin J. Umbach

Melvin J. Umbach
CDR USESSA

Commanding USC&GS Ship WHITING

TIDE NOTE

CH-8116
also WH-20-2-70

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.

GEOGRAPHICAL NAMES

There were no geographical names on WH 20-2-70.

ATLANTIC MARINE CENTER
ELECTRONIC CONTROL PARAMETERS

1. Project # OPR-437 2. Reg. # H-9116 3. Field # WH-20-270
 4. Type of Control: HI-FIX (Hi-Fix, Raydist, EPI, etc.)
 5. Frequency 17 99.6 (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, 1969 ^(RED)
Master
Station I.D. CABANA, 1969
Slave Two
Station I.D. BEN ^(GRN)

Lat. 33 ° 25 ' 57.764"
Long. 79 ° 07 ' 09.929"
Lat. 33 ° 49 ' 33.004"
Long. 78 ° 38 ' 57.788"
Lat. 33 ° 53 ' 26.79"
Long. 78 ° 01 ' 50.95"

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=0

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

PROJECTION PARAMETERS

POLYCONIC OR MODIFIED TRANSVERSE MERCATOR

1. Project No. OPR 437 4. Requested By A. Colland
2. Reg. No. H-9116 5. Ship or Office CAM 3
3. Field No. WH-20-2-70 6. Date Required _____

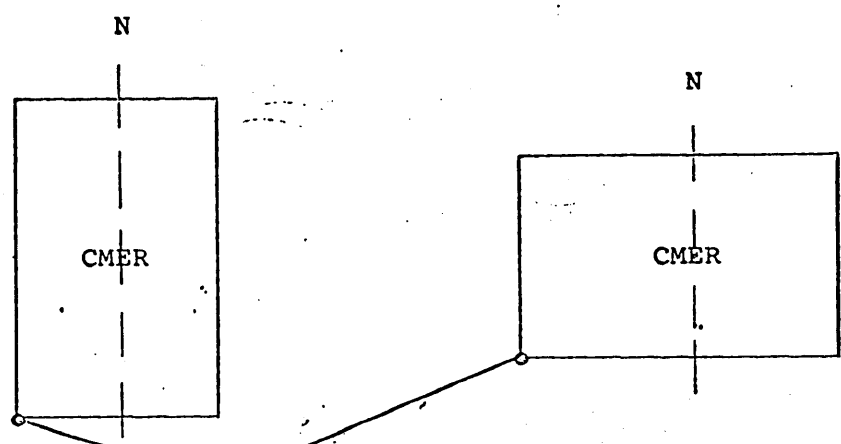
7. Polyconic Modified Transverse Mercator

8. Central Meridian of Projection 77° 57' 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



12. Plotter Origin: S.W. Corner of Sheet (not necessarily a grid intersection)
Latitude 33° 32' 30"
Longitude 78° 02' 30"

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

14. Material Desired: Tracing Paper Mylar
Smooth Sheet Other Specify _____

15. Remarks: _____

TCTI TAPE WHITING H 9116

183111 0 0000 0002 069 293000 009116
013431 0 0000 0004 091 293000 009116
195510 0 0000 0006 096 293000 009116

78896

OCEANOGRAPHIC LOG SHEET - M
 BOTTOM SEDIMENT DATA

1 of North & South Carolina

CGS WHITTING

PROJ. NO. OPR 437

YEAR 1970

L-1

WH-20-2-10

CHECKED BY

DATE CHECKED

STATION NO.	DATE	SAMPLE POSITION LATITUDE	LONGITUDE	DEPTH (Fathoms)	WEIGHT OF SAMPLE	AP- PROX- FIRE TRAM TION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, dented cutter, slug, no.; type of bottom relief, etc.)	OBS. INIT.
0000	Mar 17, 1970	33-36-00.5	77-52-50.19						fine q1 s, fine sh	124.09	591.04
0010	"	33-35-52.09	77-52-08.25						fine q1 s, sh	125.87	570.60
0020	"	33-35-57.47	77-52-09.06						fine q1 s	127.63	549.90
0030	"	33-37-36.81	77-52-00.25						fine q1 s	117.61	563.55
0040	"	33-37-35.88	77-52-48.29						dk q1 s, M	116.59	583.75
0050	"	33-39-2.27	77-52-05.00						fine q1 s	106.82	545.00
0060	"	33-39-17.45	77-52-12.69						fine q1 s	107.65	573.73
0070	"	33-34-29.11	77-52-12.38						fine q1 s	136.72	539.77

11-20-70 (6-1)

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

20/3

SHEL **OHAMA** PROJ. NO. **OPR-437** YEAR **70** CHECKED BY **Coast of North Carolina** DATE CHECKED

SIAL NO.	DATE	SAMPLE POSITION		DEPTH (Fathoms)	WEIGHT OF SAM- PLER	AP- PROX. TRAN- SITION	LENGTH OF CORE	COLOR OF SEDI- MENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, coloration, density, cutler, etc.; no. type of bottom relief, etc., stop, plating, disposition, etc.)	OBS. INIT.
		LATITUDE	LONGITUDE								
7008	4-21-70	33-39-32.84	78-00-40.19	50.0					FINE GRAY SAND	PART 1 106.62	PART 2 563.68
7009	4-21-70	33-38-21.11	77-59-56.69	54.0					FINE GRAY SAND	112.76	561.42
7010	4-21-70	33-38-24.34	77-58-15.06	52.5					FINE GRAY SAND	112.74	573.37
7011	4-21-70	33-39-10.25	77-57-37.81	49.0					FINE GRAY SAND	108.23	583.58
7012	4-21-70	33-38-25.13	77-56-22.88	51.5					FINE GRAY SAND	112.21	585.23
7013	4-21-70	33-37-37.42	77-57-15.10	56.0					FINE GRAY SAND	116.94	574.45
7014	4-21-70	33-36-49.28	77-58-13.56	61.0					FINE GRAY SAND	122.58	561.44
7015	4-21-70	33-36-46.59	77-56-32.00	59.0					FINE GRAY SAND	121.49	573.17
7016	4-21-70	33-36-47.23	77-54-43.35	59.5					FINE GRAY SAND	120.73	584.07
7017	4-21-70	33-35-55.67	77-53-58.44	55.0					FINE GRAY SAND	125.18	582.47
7018	4-21-70	33-35-52.88	77-57-31.59	64.0					FINE GRAY SAND	127.21	560.49
7019	4-21-70	33-34-44.17	77-58-02.44	57.5					COARSE GR SAND	134.36	549.37
7020	4-21-70	33-33-24.75	77-59-45.31	60.0					FINE GRAY SAND	143.90	528.57
7021	4-21-70	33-34-57.31	78-00-08.50	77.0					FINE GRAY SAND	135.01	534.80
7022	4-21-70	33-36-22.80	78-00-11.00	57.5					FINE GRAY SAND	126.53	544.63
7023	4-21-70	33-37-37.88	78-00-31.87	57.0					FINE GRAY SAND	118.53	550.84

* more than one per sample if necessary.

Sheet *L-11257*

VESSEL *Whiting* PROJ. NO. *OPR-437* YEAR *70* CHECKED BY _____ DATE CHECK _____

Coast of North Carolina

SERIAL NO.	DATE	SAMPLE POSITION		DEPTH (Fathoms)	WEIGHT OF SAMPLE	APPROXIMATE POSITION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, collection, density, cutter, size, no., type of bottom noted, etc.)
		LATITUDE	LONGITUDE							
7024	4-21-70	33° 40-07.02	78° 01-49.25		80 lbs				fine gy s	102.98 566.22 <i>part I</i>
7025	"	33° 40-08.97	78° 00-09.50		"				cms s, sh	102.59 580.40
7026	"	33° 40-12.31	78° 58-59.25		"				fine gy s, silt	102.17 589.64
7027	"	33° 41-26.78	78° 00-58.19		"				fine gy s, M	95.17 585.91
7028	"	33° 41-24.33	78° 01-58.44		"				fine gy s, sh	95.37 576.79
7029	"	33° 42-44.48	78° 02-16.06		"				"	87.67 587.47
7030	"	33° 43-53.81	78° 01-31.56		"				" " M	81.45 606.95
7031	"	33° 43-50.81	78° 02-26.63		"				fine gy s,	81.46 597.87
7032	"	33° 45-06.19	78° 02-47.00		"				" " "	74.55 609.74
7033	"	33° 44-58.61	78° 01-16.38		"				fine brs, M	75.82 622.29
7034	"	33° 46-12.23	78° 02-23.44		"				fine brs	69.02 629.35
7035	"	33° 46-07.98	78° 03-08.69		"				fine gy s, M	68.99 620.22

Use more than one line per sample if necessary.

ABSTRACT OF TRA CORRECTIONS

USC&GS SHIP WHITING

<u>FROM</u> <u>(Day and Time)</u>	<u>TO</u> <u>(Day and Time)</u>	<u>DRAFT</u>	<u>SETTLEMENT</u> <u>AND SQUAT</u>	<u>TRA</u>
051 - 0000	056 - 0800	10.0	1.0	11.0
062 - 0000	064 - 1159	10.6	1.0	11.6
064 - 1200	066 - 0800	10.4	1.0	11.4
068 - 1200	070 - 1159	10.2	1.0	11.2
070 - 1200	071 - 0800	10.0	1.0	11.0
076 - 1200	077 - 0800	11.0	1.0	12.0
077 - 1200	078 - 2200	10.8	1.0	11.8
080 - 1200	080 - 1800	10.6	1.0	11.6
084 - 1700	085 - 0800	10.2	1.0	11.2
091 - 0000	093 - 1800	10.0	1.0	11.0
096 - 1800	098 - 2350	9.8	1.0	10.8
118 - 1800	119 - 0800	10.2	1.0	11.2
120 - 1800	121 - 0800	10.0	1.0	11.0
127 - 0800	133 - 2300	9.8	1.0	10.8

VELOCITY TABLES

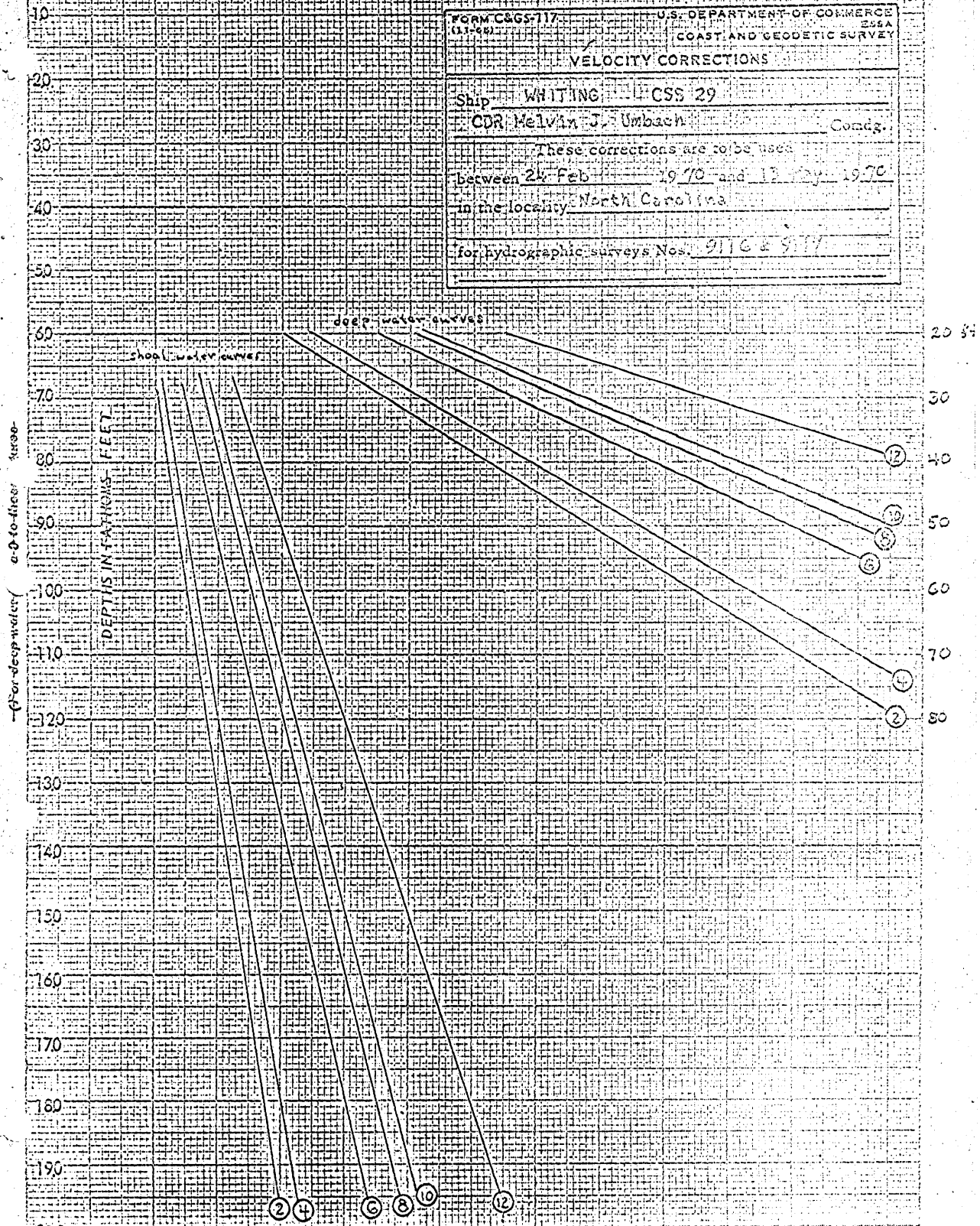
Ship WHITING 1970
OPR 437 North Carolina
VELOCITY USE TABLE

<u>TABLE NUMBER</u>	<u>INSTRUMENT</u>	<u>DAYS (JULIAN)</u>
1	DE 723	055-089
2	Ross	055-089
3	DE 723	090-094
4	Ross	090-094
5	DE 723	095-107
6	Ross	095-107
7	DE 723	108
8	Ross	108
9	DE 723	109-114
10	Ross	109-114
11	DE 723	115-133
12	Ross	115-133

The DE 723 data was used for the launches, including the High-speed Launch. The Ross data was used for the Ship WHITING.

CORRECTIONS IN FEET-FATHOMS

FORM C&GS-117 (11-69)	U.S. DEPARTMENT OF COMMERCE ESEA COAST AND GEODETIC SURVEY
VELOCITY CORRECTIONS	
Ship <u>WHITING</u> <u>CSS 29</u>	Comdg.
CDR. Melvin J. Umbach	
These corrections are to be used	
between <u>24 Feb 1970</u> and <u>13 May 1970</u>	
in the locality <u>North Carolina</u>	
for hydrographic surveys Nos. <u>9116 & 9117</u>	



- (For deep water) 0-0 to fathoms

DEPTH IN FEET

DEPTH IN FATHOMS

20 30 40 50 60 70 80

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

Vel. Corr.

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

000230 0 0005

IV

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

000034 0 0000 0002 000 000000 000000

000100 0 0001

000163 0 0002

000230 0 0003

000292 0 0004

000354 0 0005

000417 0 0006

000480 0 0007

000540 0 0008

000604 0 0009

000667 0 0010

000729 0 0011

000790 0 0012

199999 0 0000

000030 0 0000 0004 000 000000 000000

000091 0 0001

000150 0 0002

000203 0 0003

000261 0 0004

000319 0 0005

000375 0 0006

000434 0 0007

000492 0 0008

000553 0 0009

000614 0 0010

000669 0 0011

000729 0 0012

000790 0 0013

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000156 0 0003

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000289 0 0006

000332 0 0007

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000420 0 0009

000463 0 0010

000508 0 0011

000550 0 0012

000594 0 0013

000638 0 0014

000725 0 0015

000770 0 0016

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000125 0 0003

000161 0 0004

000220 0 0005

000261 0 0006

000302 0 0007

000343 0 0008

000384 0 0009

000425 0 0010

000465 0 0011

000506 0 0012

000547 0 0013

000588 0 0014

000629 0 0015

000670 0 0016

OF NORTH AND SOUTH CAROLINA

TABLE # 2, 4, 6, 8, 10 & 12

WM 40-1-70 (11-9117)



000711 0 0017

000753 0 0018

199999 9 9999

000020 0 0000 0010 000 000000 000000

000055 0 0001

000091 0 0002

000127 0 0003

000167 0 0004

000208 0 0005

000246 0 0006

000285 0 0007

000323 0 0008

000361 0 0009

000400 0 0010

000439 0 0011

000477 0 0012

000516 0 0013 0000 000 000000 000000

000554 0 0014

000594 0 0015

000631 0 0016

000670 0 0017

000708 0 0018

000747 0 0019

000786 0 0020

199999 0 0000

000016 0 0000 0012 000 000000 000000

000044 0 0001

000075 0 0002

000104 0 0003

000134 0 0004

000165 0 0005

000197 0 0006 0000 000 000000 000000

000228 0 0007

000259 0 0008

000288 0 0009

000320 0 0010

000350 0 0011

000378 0 0012

000409 0 0013

000439 0 0014

000469 0 0015

000500 0 0016

000530 0 0017

000560 0 0018

000590 0 0019

000620 0 0020

000651 0 0021

000682 0 0022

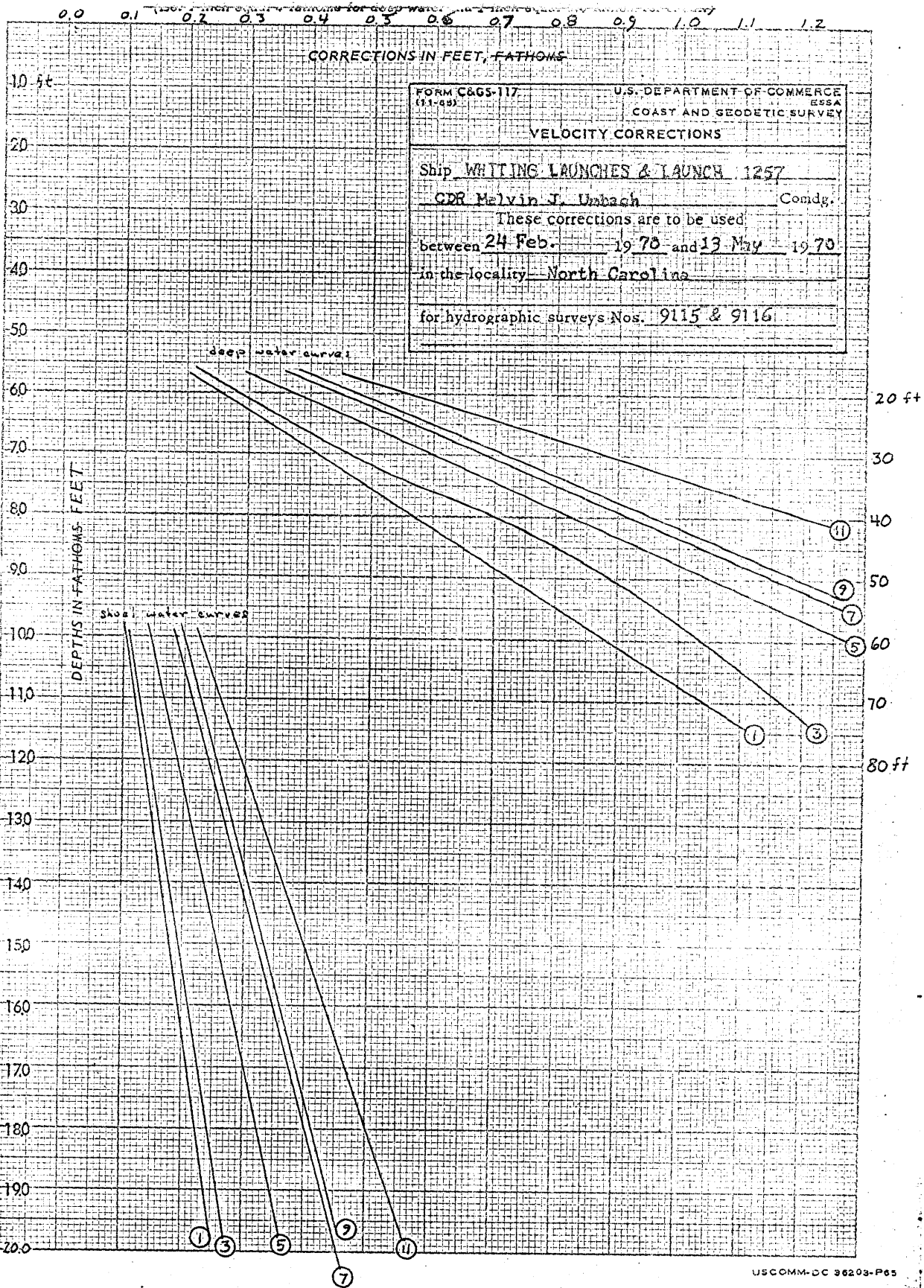
000713 0 0023

000744 0 0024

199999 0 0000

20 X 20 TO THE INCH 4G 1240
 MADE IN U.S.A.
 KEUFFEL & ESSER

(For deep water add 0 to these figures)



ABSTRACT OF HI-FIX CORRECTORS

USC&GS SHIP WHITING

WH 20-2-70

H-9116

Southern Half (L-1)

<u>DAY</u>	<u>TIME</u>	<u>PAT I</u>	<u>PAT II</u>
069	183111	- .43	+ .04
	203146	-1.43	+ .04
	220611	-2.43	+ .04
	220941	-1.43	+ .04
	224701	-3.43	+ .04
	230431	-4.43	+ .04
	233301	-8.43	+ .04
	233631	-7.43	+ .04
	234831	-8.43	+ .04
	235640	-7.43	+ .04
070	000010	-7.43	+ .04
	001506	-5.43	+ .04
	002021	-6.43	- .96
	004701	-7.43	- .96
	011101	-8.43	- .96
	011231	-7.43	- .96
	011631	-5.43	- .96
	020930	-4.43	+ .04
	021100	-3.43	+ .04
	023400	-2.43	+ .04
	024450	-1.43	+ .04
	024950	-2.43	+ .04
	025550	-2.43	+1.04
	025620	-3.43	+1.04
	033000	-2.43	+1.04
	040430	-1.43	+1.04
	050301	- .43	+1.04
076	192701	- .39	- .16
077	000401	- .39	- .16
078	153801	- .35	- .11
080	173201	- .35	- .11
084	173901	- .40	+ .03
	200800	-1.40	+ .03
	201530	-2.40	+ .03
	202330	-1.40	+ .03
085	021401	- .40	+ .03
	022631	+ .60	+ .03
	030630	+1.60	+ .03
	044830	+2.60	+1.03
091	013431	- .32	+ .14
096	195510	- .65	+ .14
	213316	+ .35	+ .14
	224115	- .65	+ .14
098	180301	- .65	+ .19

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~XXXXXXXXXXXXXXXXXXXX~~ Director, Atlantic Marine Center

Plane of reference approved ~~for~~ 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

~~XXXXXXXXXXXX~~ 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	051 1000 & 1100	5/7/70	1300
3/26/70	085 0300		
4/4/70	094 0900 - 1900		
4/29/70	119 0900		
	113 1200		

Robert A. Cummings
Robert A. Cummings


Chief, Tides and Currents Branch

APPROVAL SHEET ²
FIELD NUMBER WH 20-4-70

Submitted by

Donald W. Nostrant
ENSIGN USESSA

APPROVED/FORWARDED


Melvin J. Umbach

LCDR USESSA
Commanding Officer, USC&GSS WHITING

GEOGRAPHIC NAMES

Survey No. H-9116

Name on Survey	Source										
	A	B	C	D	E	F	G	H	K		
Atlantic Ocean											1
Frying Pan Shoals											2
											3
											4
											5
											6
											7
											8
											9
											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

Names prepared:
F.W. Pickett 8-1-72

Names approved
A.J. Wraight 8-1-72

FORM C&GS-946
(REV. 11-65)
(PRESC. BY
HYDROGRAPHIC
MANUAL 20-2.
6-94, 7-13)

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

32
21/502
25
35

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-9116

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS <i>paper tracing</i>		2	
DESCRIPTIVE REPORT		1 (2 parts)	OVERLAYS <i>Preliminary Final</i>		3 2	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS / SOURCE DOCUMENTS
ENVELOPES	20		2 Prelim 2 Final			
CAHIERS	1					
VOLUMES						
BOXES			1			

T-SHEET PRINTS (LIST) *None*

SPECIAL REPORTS (LIST)
see par. Q of the Descriptive Report

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				1564
POSITIONS CHECKED		25		
POSITIONS REVISED		3		
DEPTH SOUNDINGS REVISED		40		
DEPTH SOUNDINGS ERRONEOUSLY SPACED				
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED				
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		0		
JUNCTIONS		2		
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		20		
SPECIAL ADJUSTMENTS				
ALL OTHER WORK		122		
TOTALS		148		

PRE-VERIFICATION BY	BEGINNING DATE	ENDING DATE
VERIFICATION BY <i>H.R. Smith, W.W. Feazel, G.E. Trefethen</i>	BEGINNING DATE <i>1-6-72</i>	ENDING DATE <i>6-20-72</i>
REVIEW BY	BEGINNING DATE	ENDING DATE

FORM C&GS-946A
(REV. 11-63)
(PRES. BY HYDROGRAPHIC
MANUAL, 8-94)

U.S. DEPARTMENT OF COMMERCE
ESSA
COAST AND GEODETIC SURVEY

VERIFIER'S REPORT
HYDROGRAPHIC SURVEY, H. H-916

INSTRUCTIONS - This form serves to identify items of a check list 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.

CL - Check List Items: should be checked as having been completed during the verification processes.

R - Report Item: This column refers to those items reported to the reviewer and is used to indicate the items discussed.

Part I - DESCRIPTIVE REPORT	CL	R	Part III - JUNCTIONS (Continued)	CL	R
<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>Part II - SHORELINE AND SIGNALS</p> <p>4. Source of shoreline signals Remarks Required: -- List all surveys</p> <p>a. Give earliest and latest dates of photographs</p> <p>b. Field inspection date</p> <p>c. Field Edit date</p> <p>d. Reviewed-Unreviewed</p>	✓				
<p>5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences</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:</p> <p>(a) rocks</p> <p>(b) line turns</p> <p>(c) position values of beginning and ending of lines</p> <p>(d) bar check or velocity correctors</p> <p>(e) time recording</p> <p>(f) notes or markings on fathograms</p> <p>(g) was reduction of soundings accurately done?</p> <p>(h) was scanning accurate?</p> <p>(i) were peaks at uneven intervals missed?</p> <p>(j) were stamps completed?</p> <p>(k) references to adjacent features</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>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 under way</p>	✓				
<p>Part III - JUNCTIONS</p> <p>Note: Make a cursory comparison preliminary to linking 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>	✓		<p>Part V - PROTRACTING</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>14. The protracting and plotting of all unsatisfactory crossings were verified. 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>	✓	

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		CARTOGRAPHER	DATE
A. DISTORTION SCALE TICKS IDENTIFIED BY NOTE		NA	NA
B. PROJECTION INTERSECTIONS VERIFIED BY		W W Feazel	12 JUNE 72
C. PROJECTION LINES RULED BY		EDP - AMC	
D. ELECTRONIC CONTROL ARCS RULED AND LOCATION VERIFIED		EDP - AMC	
E. OVERLAYS COMPLETED BY			
1. POSITION NUMBER LEADERS ADDED		E J Fields	15 JUNE 72
2. EXCESS SOUNDING OVERLAY COMPARED		W W Feazel	12 JUNE 72
3. PRELIMINARY SMOOTH PLOTS COMPARED		W W Feazel	13 JUNE 72
4. OTHERS UTILIZED			
A.			
B.			
F. DESCRIPTIVE REPORT ADDENDUM		G. F. Trefethen	20 JUNE 72
G. CONTROL STATIONS VERIFIED		EDP - AMC	
H. POSITIONS MANUALLY PLOTTED		NA	
I. MANUAL PLOT VERIFIED		NA	
J. SHORELINE APPLIED		NA	
K. BOTTOM CHARACTERISTICS ADDED		W W Feazel	13 JUNE 72
L. NOTES AND DEPTH CURVES ADDED		G. F. Trefethen	19 JUNE 72

Fig. 20 (cont'd.)
Form 946 A (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			Part IX - BOATSHEET		
18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None	✓		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.	✓	
20. The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None	✓		Part X - GENERAL		
21. The scanning, reduction, spacing, plotting of questionable soundings have been verified. Remarks Required: -- None	✓		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	✓	
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.	✓		31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None	✓	
Part VII - CURVES			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	✓	
23. The depth curves have been inspected before inking. Remarks Required: -- By whom was the penciled curves inspected. <i>GFT</i>	✓		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		
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.	✓		34. Unresolved discrepancies and questionable soundings.	✓	
			35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.	✓	
			36. Supplemental information.		
Verified by <i>Q. F. Trethewey</i>			Date <i>6-20-72</i>		

H- 9116

- A. Additions and corrections have been furnished the plotter center by the verification unit.

Date June 27, 1972

Signed *Hugh J. Ruffin*
Title Chief, Verification Br., AMC

- B. Additions and corrections have been added to the survey records and the final smooth sheet forwarded to the ~~XXXXXX~~ ^{Review} ~~XXXXXX~~ unit.

Date June 27, 1972

Signed *Hugh J. Ruffin*
Title Chief, Verification Br., AMC

- C. The smooth sheet has been inspected, is complete, and meets the requirements of the General Instructions for automated surveys and the Hydrographic Manual. (Note: All exceptions are listed in the verifier's report).

Date June 27, 1972

Signed *Hugh J. Ruffin*
Title Chief, Verification Br., AMC

- D. Smooth sheet and records forwarded to Rockville, Maryland Office.

Date June 28, 1972

Smooth Copy

FORM C&GS-504

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

ADDENDUM TO THE
DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. WH20-2-70 Office No. H-9116

LOCALITY

State NORTH CAROLINA

General locality LONG BAY

Locality CAPE FEAR RIVER CHANNEL TO FRYING

PAN SHOALS

19 70

CHIEF OF PARTY

CDR MELVIN J. UMBACH, USESSA, CMDG.

LCDR RALPH J. LAND, USESSA, OIC, LAUNCH

1257

LIBRARY & ARCHIVES

DATE

**ADDENDUM TO THE
HYDROGRAPHIC TITLE SHEET**

H-9116

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 20-2-70
(12 - North Half)

State North Carolina

General locality Long Bay

Locality East of Frying Pan Shoals

Scale 1:20,000 Date of survey 3/21/70 - 5/8/70

Instructions dated 16 January 1970 Project No. OPR-437

Vessel USC&GS LAUNCH 1257

Chief of party CDR M. J. Umbach

Surveyed by LCDR Ralph J. Land, LT. C. Dale North, Jr., Franklin L. Saunders & Charles L. Brown

Soundings taken by echo sounder, ~~and tide gauge~~ Raytheon DE-723 (Digital)

Graphic record scaled by LT. C. Dale North, Franklin L. Saunders

Graphic record checked by LCDR Ralph J. Land, Charles L. Brown

Protracted by N/A Automated plot by A. M. C.

Soundings penciled by N/A

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

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-WH-20-2-70. LAUNCH 1257 performed this survey in cooperation with and under the supervised of the WHITING.
All time is EST (75th Meridian).

AN ADDENDUM
DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPH SURVEY PLOTTER SHEET L2
WH 20-2-70
OPR-437
21 MARCH TO 8 MAY 1970
SOUTH COAST OF NORTH CAROLINA
SCALE 1:20,000

USC&GS LAUNCH 1257
LCDR RALPH J. LAND, USESSA, OFFICER-IN-CHARGE
CDR M. J. UMBACH, USESSA, CHIEF OF PARTY

A. PROJECT

No change from the original Descriptive Report

B. AREA SURVEYED

The survey was conducted between 21 March and 8 May. The southern limit of this survey junctioned with contemporary plotter sheets WH 20-2-70 (L-1) which was the part surveyed by the Ship WHITING; the western edge junctioned with WH 40-1-70 (M-2); the northern edge on plotter sheet WH 20-1-70 (K-3) and the eastern edge on H-8512 (1:20,000, 1956). The main system of lines were run with 200 meter spacing and splits were run at 100 meter spacing.

C. SOUNDING VESSEL

Launch 1257 was the sole sounding vessel on the upper portion of L sheet (WH 20-2-70) or L-2.

D. SOUNDING EQUIPMENT

The Launch's position plot was created by the computer plotter system; soundings were plotted automatically and corrector tides were created.

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

E. SMOOTH SHEET

No change.

F. CONTROL

No change

G. SHORELINE

No change

H. CROSSLINES

Approximately four percent of all sounding lines were run as crosslines. Very good agreement between crosslines and regular sounding lines was attained.

I. JUNCTIONS

This survey junctions with contemporary surveys and shows excellent agreement. Very good agreement exists between L-2 and H-8512 (1956). However, three small holidays are present on the southeastern leg of L-2 because the project limits were too strictly adhered to without attention to proper junction.

J. COMPARISONS WITH PRIOR SURVEYS

Comparison with H-4323 (1:40,000, 1923) reveals from 1 - 2 ft. difference in soundings.

Presurvey review item #3 dealing with unsupported single soundings encompasses two soundings within the limits of this survey. Both were confirmed. The 29 ft. sounding from H-8512 was recorded as a 30 ft. sounding; and the 38 ft. sounding was recorded as a 35 ft. sounding. Predicted tides were used on both plotted soundings.

K. COMPARISON WITH THE CHART

Comparison with chart 1236, 6th Ed., Feb. 17/69 and chart 426, 8th Ed., July 26/69 shows excellent to good agreement. One to two foot differences exist.

L. ADEQUACY OF THE SURVEY

No change

M. AIDS TO NAVIGATION

There were no aids in the survey area of L-2.

N. STATISTICS

Miles of sounding line = 199.6
Square nautical miles of hydrography = 11.4
Number of positions = 762

All bottom samples were taken by Ship WHITING.

O. MISCELLANEOUS

On day 84, 3/25/70, position numbers 139 - 293, an apparent discrepancy resulted between the Hi-Fix receiver, which read correctly, and the Digital Control Unit (D.C.U.) which fed incorrect lane values to the computer. The whole day was rejected and the hydro was re-run on day 126, because the discrepancy could not be resolved satisfactorily. The control bust was first noticed because the crosslines were incompatible with the basic lines. Part of L-2 was replotted on Launch 1257 using smooth tides in an attempt to resolve the control problem (smaller numbers).

P. RECOMMENDATIONS

None

Q. REFERENCES TO REPORTS AND RECORDS

Additions to the reports and records listed by the WHITING in the main Descriptive Report included the report on corrections to echo soundings, OPR-437, 1970, and report on corrections to distance measurements submitted separately for the Launch's operations.

Other pertinent information pertaining to Launch 1257's operations is included.

SEPARATES FOLLOWING TEXT

Page

ABSTRACT OF DAILY HI-FIX CORRECTORS

ABSTRACT OF BAR CHECKS

ABSTRACT OF DAILY POSITION NUMBERS

APPROVAL SHEET

TCTI TAPE LISTING

HSL 1257 H 9116

133441 0 0000 0001 080 125700 009116
000000 0 0000 0003 094 125700 009116
000000 0 0000 0011 125 125700 009116

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	- .35	- .15	
YAUPON PIER (S) 1/2 C#	3/25/70	84	- .39	+ .02	REJECT DAYS WORK HI-FIX LONG DIST OF UNKNOWN AMOUNT
YAUPON PIER (SE)	4/3/70	93	- .32	+ .13	
YAUPON PIER (SE)	4/4/70	94	- .36	+ .13	
YAUPON PIER (S)	4/6/70	96	+ .35 - .65	+ .10 + .10	FOR POS # 5489 - 5713 FOR POS # 5424 - 5488
YAUPON PIER (S)	4/7/70	97	+ .35	+ .12	
YAUPON PIER (S)	4/8/70	98	+ .34	+ .12	
YAUPON PIER (SW of)	4/15/70	105	- .42	+ .11	
YAUPON PIER (SW)	4/16/70	106	- .44	+ .15	
YAUPON PIER (SW)	4/17/70	107	- .43	+ .13	
Signal 132 (south of)	4/18/70	108	- .41	+ .14	
Signal 168 (south of)	4/19/70	109	- .40	+ .16	
Signal 168 (S)	4/22/70	112	- .43	+ .10	
Signal 168 (S)	4/23/70	113	- .39	+ .13	
Signal 168 (S)	4/29/70	119	- .43	+ .12	
Signal 168 (S)	4/30/70	120	- .42	+ .14	
Signal 168 (S)	5/1/70	121	- .43	+ .13	
Signal 168 (S)	5/5/70	125	- .43	+ .12	
Signal 113 (SE)	5/6/70	126	- .42	+ .10	
YAUPON PIER (S)	5/7/70	127	- .42	+ .14	

ABSTRACT OF Hi-Fix CORRECTORS (cont)

LOCATION	DATE	JULIAN DAY	MEAN PI	MEAN PII	REMARKS
YARDON VILLO(S) C.V.	5/5/70	128	-1.40	+1.12	
C.V.	5/10/70	130	-1.42	+1.12	
C.V.	5/11/70	131	-1.39	+1.13	Pos # 6284-
	5/12/70	132	-1.40	+1.12	
	5/13/70	133	-1.39	+1.12	
OAK ISLAND(RW)	5/14/70	134	-1.42	+1.14	

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					

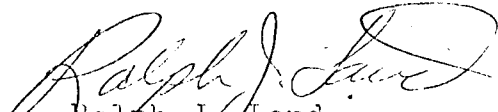
comp. ALS 1/22/20

ABSTRACT OF DAILY POSITION NUMBERS USED

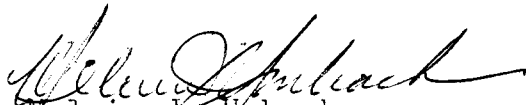
<u>JULIAN DAY</u>	<u>POSITION NUMBERS</u>
80	001 - 138
84	139 - 293 (<i>rejected</i>)
94	294 - 481
125	482 - 507
126	508 - 667
128	668 - 797

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

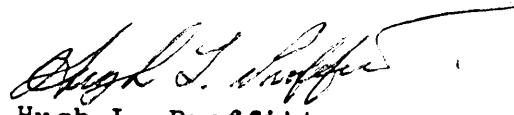
VERIFIER: W.L. Jonns

Norfolk, Va.
July 9, 1971

VERIFICATION BRANCH
PLOTTER NOTE TO EDP(AMC)

SURVEY ~~MX~~ H-9116 (Wh 20-2-70)

Prior to plotting, this Branch has check~~d~~ scanned the fathograms.
Needed changes are marked on the corrector tape printout in BLUE.
Also, a list of sounding changes is attached.


Hugh L. Proffitt
Chief, Verification Br., AMC

VERIFIER: Harry R. Smith

Norfolk, Va.
Jan. 6, 1972

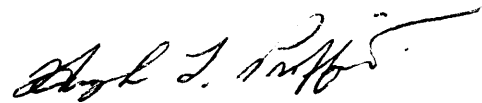
VERIFICATION BRANCH
PLOTTER NOTE TO
EDP(AMC)

H-9116 ~~XXXXXXXXXX~~
WH 20-2-70

This Branch has completed the verification of the position overlay for this survey. A total of 30 corrections are marked in orange or blue on the printout.

Positions 7000 thru 7035, which are detached positions for bottom samples, were not plotted on the overlay or included on the position printout.

Verification time was 28 hours for a total of 1564 positions.



Hugh L. Proffitt
Chief, Verification Br., AMC

Verifier:G.F.Trefethen

Norfolk, Va.
March 29, 1972

Plotter Note To EDP.(AMC)
H-9116 (WH-20-2-69)

This Branch has completed the verification of the second position overlay for this survey.

It was found that no detached positions have been plotted on the position overlay.

There were (10) errors found; record numbers, 473, 474, 475, 1261, 1262, 3466, 3594, 5550, 3467, 3718.

WLJ

Hugh L. Proffitt
Chief, Verification Br. AMC

Verifier: H.R.Smith

Norfolk, Va.
May 23, 1972

Plotter Note to EDP (AMC)
H-9116 (WH-20-2-70)

This office has completed the verification of the preliminary sounding overlay for this survey.


We are returning the sounding record printout with all needed changes shown in red or brown pencil.

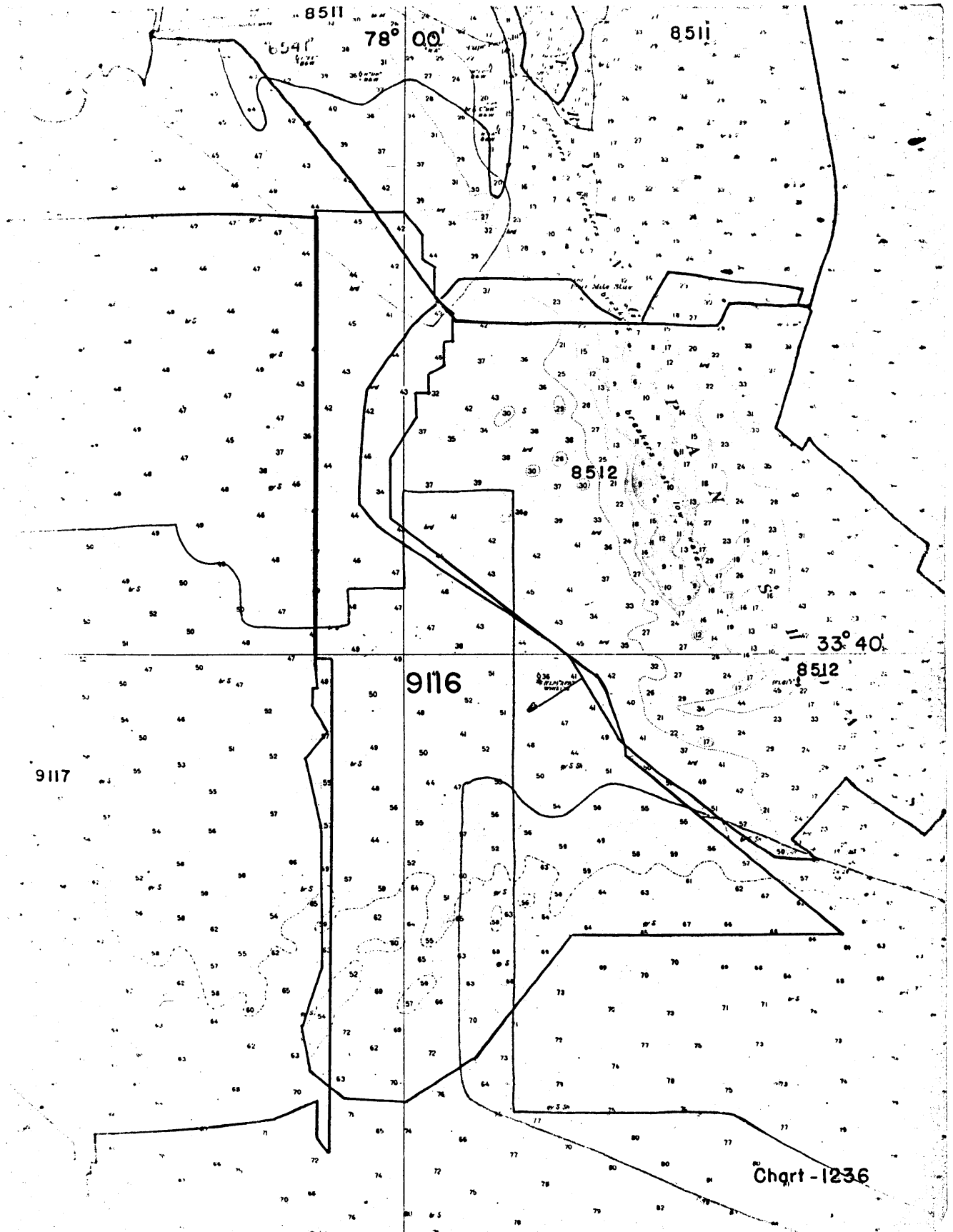
Change the day number on the detached positions, 7001 thru 7035 (records 6853 thru 6888) to day 076 and apply the following Hi-Fix correctors, PAT 1, -.39, PAT 2, -.16. *dmz -*

The position dots for the bottom sample detached positions 7001 thru 7035 were not plotted on the position overlay, but are listed on the position printout. Please plot them on the smooth sheet and on the smooth position overlay. *dmz -*

After the above corrections have been made this survey will be ready for a smooth plot, however no smooth plot is to be made until you are advised as to the smooth sheet material to be used. *paper -*

WLJ


Hugh L. Proffitt
Chief, Verification Br. AMC



RECORD OF APPLICATION TO CHARTS
 FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9116

covers L-1 and L-2
 on smooth sheet -
H-9116

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 <i>before</i>
426	7-19-72	B. Fernandez	Full Part Before After Verification, Review Inspection Signed Via Drawing No. # 24
100.1	8-3-72	N. BANKS	Full Part Before After Verification, Review Inspection Signed Via Drawing No. <i>before</i>
1110	8-3-72	N. BANKS	Full Part Before After Verification, Review Inspection Signed Via Drawing No. <i>before</i>
1236	8-3-72	N. BANKS	Full Part Before After Verification, Review Inspection Signed Via Drawing No. <i>before</i>
11007	8-8-72	C. I. Beal	Full Part Before After Verification, Review Inspection Signed Via Drawing No. thru chart 1110 Mar 25, 1972 <i>before</i>
1236	11/9/73	J. Sheehan	Full Part Before After Verification, Review Inspection Signed Via Drawing No. <i>before</i>
(426)	7/29/76	J. B. Poirer	Full Part Before After Verification, Review Inspection Signed Via Drawing No. <i>before</i>
11537			
11536	10 May 79	Max Radtchenich	Full Part Before After Verification, Review Inspection Signed Via Drawing No. 3 ADEQUATELY APPLIED thru d. 11537 JUL 1983 <i>BEFORE</i>
(1236)			MOSTLY and DIRECTLY from H-9116 sheet. (South)
11520	10/21/82	Max J. Poirer	Full Part Before After Verification, Review Inspection Signed Via Drawing No. 41 Adequately applied thru chart 11536 <i>APPROPRIATE</i>
11009	2-17-83	B. Fernandez	Adequate before Review Inspection Signed Via Drwg. No 49 - Adequately applied through chrt. 11520
411	4-8-92	Ken Foster	Adequately Applied - Cat I.