

9117

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-40-1-70 Office No. H-9117

LOCALITY

State North Carolina

General locality Long Bay

Locality West of Frying Pan Shoals

1970

CHIEF OF PARTY

M. J. Umbach

LIBRARY & ARCHIVES

DATE 6-27-72

USCOMM-DC 87022-P66

9117

HYDROGRAPHIC TITLE SHEET

H-9117

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-40-1-70

State North Carolina

General locality Long Bay

Locality West of Frying Pan Shoals

Scale 1:40,000 Date of survey 2/20/70 - 5/13/70

Instructions dated January 16, 1970 Project No. OPR-437

Vessel USC&GS Ship WHITING

Chief of party GDR Melvin J. Umbach, USESSA

*CDR M.J. Umbach, LT G.C. Chappell, LT J.L. Wallace, LT G. L. Boyack,
Surveyed by LTig L.T. Gillman, LTig G.J. Cimpinski, ENS D.W. Nostrant, CST W.A. Hill

Soundings taken by echo sounder, ~~hand lead, etc.~~ Echo Sounder

Graphic record scaled by Same as *

Graphic record checked by Same as *

Protracted by CAL-COMP PLOTTER Automated plot by Atlantic Marine Center

Soundings penciled by CAL-COMP PLOTTER

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

REMARKS: Surveyed at 1:20,000 scale on ^{boat} sheets indexed M-1, M-2, M-3, M-4, M-5 & M-6

Applied to stds 7/10/72

DESCRIPTIVE REPORT

To Accompany

HYDROGRAPHIC SURVEY H-9117

WH-40-1-70

OPR - 437

Long Bay, North Carolina

Scale 1:40,000

USC&GS SHIP WHITING

CDR M. J. Umbach, USESSA, Commanding

A. PROJECT:

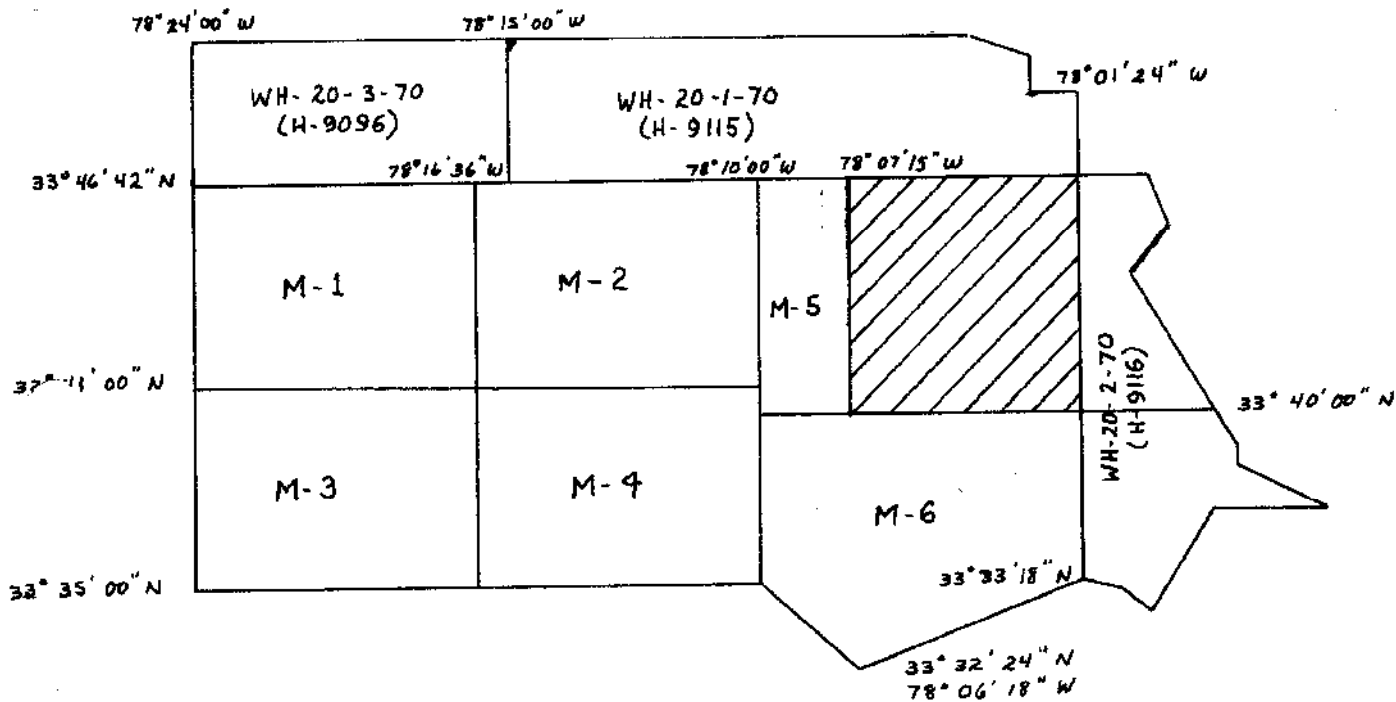
This survey was accomplished in accordance with Project Instructions, Coast of North and South Carolina, dated 16 January 1970, OPR-437, and Supplemental Instructions dated 22 January 1970. ✓

B. AREA SURVEYED:

The survey was conducted between 2/20/70 and 5/13/70 off the coast of North Carolina at 1:20,000 scale; and was separated into 6 plotted sheets, designated M-1 through M-6 inclusive, to accommodate the WHITING's computer-plotter system. Launch 1257 surveyed about two-thirds of sheet M-5 and will submit an addendum to this report covering that portion. *See attached report.* ✓

(Continued on page 2)

The limits of the survey are as follows:



(Shaded area of M-5 surveyed by launch 1257)

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

Junctions were made with the following contemporary surveys:

WH-20-1-70	(H-9115)
WH-20-2-70	(H-9116)
WH-20-3-70	(H-9096)

Agreement was good to excellent on soundings in areas common to more than one sheet.

Junctions were also made with the following prior surveys:

H-4454	1:40,000	1924
H-4488	1:40,000	1925
H-6539	1:80,000	1939-40

See (J) Comparison with Prior Surveys for comments on agreement.

C. SOUNDING VESSEL:

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

D. SOUNDING EQUIPMENT:

The sounding instrument was the Ross Digital Depth Sounder No. 601.

The sounding plot was created on-line by the computer-plotter system. In order to correct for wave motion in a real time sense, soundings were scaled off the Ross graphic record and entered into the system manually.

For the on-line plot, predicted tides for Bald Head, N. C. and Lockwood's Folly Inlet, N. C. were used. For the off-line plots which were submitted as boat sheets, predicted tides were used on M-1, M-3, M-4, and M-6; smooth tides from a tide gage at Long Beach, N. C. were used on M-2 and M-5. Smooth tides have subsequently been obtained for all sheets and will be used for smooth plotting.

Velocity correctors were determined from three (3) Nansen casts and from numerous TDC casts.

E. SMOOTH SHEET:

The smooth sheet will be plotted on the computer plotter system at the Atlantic Marine Center, Norfolk, Virginia.

F. CONTROL:

The hydrography was controlled electronically by the Hi-Fix in the hyperbolic mode. The Hi-Fix was calibrated daily and at any other times that any discrepancies were suspected by comparing visual and electronic positions. The Hi-Fix corrections are listed in the appendix to this report.

The Hi-Fix stations were located by Mr. J. D. Shea and ships personnel using third order methods. Their positions were 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"

*Miss
(see par. 5. Review)
RHS*

G. SHORELINE:

There was no shoreline on this survey.

H. CROSSLINES:

Crossline mileage amounted to 13.1% of the total sounding lines. Crosslines and main system lines agreed within one foot.

I. JUNCTIONS:

This survey junctioned with WH-20-1-70 (H-9115) and WH-20-3-70 (H-9096) on the north and with WH-20-2-70 (H-9116) on the east. All junctions were within 1 foot.

J. COMPARISON 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-4488	6 October 1925	1:40,000
H-4454	1924	1:40,000

In making comparisons and junctions with prior surveys, particularly on sheet M-5, differences of up to 3 feet were noticed. A comparison of predicted tides and smooth tides showed that smooth tides in this area ran consistently 2.2 - 3.0 feet greater than predicted tides. When all sheets are smooth plotted with smooth tides, this difference should be resolved.

K. COMPARISON WITH EXISTING CHARTS:

Comparisons were made with USC&GS Chart 1236, 17 February 1969. No significant discrepancies were noticed.

L. ADEQUACY OF SURVEY:

The survey is complete and adequate and should supersede any prior surveys for charting purposes.

M. AIDS TO NAVIGATION:

There are no aids to navigation in the area surveyed.

N. STATISTICS:

<u>Sheet</u>	<u>Miles of Sounding Lines</u>	<u>Miles of Crosslines (%)</u>	<u>Number of Positions (Numbers)</u>	<u>Sq. Mi. Area</u>
M-1	218.8	34.0	421 (3000-3420)	34.8
M-2	184.5	17.0	193 (5000-5192)	33.0
M-3	192.8	40.0	446 (2000-2445)	35.4
M-4	187.3	27.0	368 (1000-1316) (515-565*)	33.0
M-5	94.0	10.0	173 (9000-9172)	13.5
M-6	316.5	28.0	716 (1-514) (566-691) (712-787)	50.7
	<hr/>	<hr/>	<hr/>	<hr/>
TOTALS	1193.9	156.0 (13.1%)	2317	200.4

TOTAL BOTTOM SAMPLES = 95

* Error made in position numbers on crosslines.

O. MISCELLANEOUS:

None

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

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.

APPROVAL SHEET

Submitted by

Lynn T. Gillman

Lynn T. Gillman
LTjg-USESSA

Approved and forwarded

Melvin J. Umbach

Melvin J. Umbach
CDR-USESSA
Commanding USC&GSS WHITING

(9)

ABSTRACT OF HI-FIX CORRECTORS

USC&GS SHIP WHITING

WH 40-1-70

H-9117

M-1

<u>DAY</u>	<u>TIME</u>	<u>PAT I</u>	<u>PAT II</u>
064	220221	- .45	- .13
	223321	+ .55	- .13
	230359	- .45	- .13
065	000135	- .45	- .13
	194930	- .46	- .13
066	000010	- .46	- .13
	011100	-1.46	- .13
	015330	-2.46	- .13
	021530	-3.46	- .13
	041520	-4.46	- .13
068	191801	- .43	+ .04
071	020401	+10.59	+ .03
	070901	+11.59	+1.03
	070931	+12.59	+3.03
	071331	+13.59	+3.03

(10)

ABSTRACT OF HI-FIX CORRECTORS

USC&GS SHIP WHITING

WH 40-1-70

H-9117

M-2

<u>DAY</u>	<u>TIME</u>	<u>PAT I</u>	<u>PAT II</u>
118	195200	- .43	+ .20
	232451	+ .57	+ .20
	232921	- .43	+ .20
119	000001	- .43	+ .20
	000201	- .43	+1.20
	011851	-1.43	+2.20
120	193230	- .38	+ .23
	202601	+ .62	+ .23
	230401	- .38	+ .23
	232901	-1.38	+2.23
	234130	- .38	+2.23
121	000000	- .38	+2.23
	021100	- .38	+3.23

ABSTRACT OF HI-FIX CORRECTORS

USC&GS SHIP WHITING

WH 40-1-70

H-9117

M-3

<u>DAY</u>	<u>TIME</u>	<u>PAT I</u>	<u>PAT II</u>
055	220700	- .45	- .11
056	000000	- .45	- .11
063	202021	- .45	- .13
	215707	+ .55	- .13
064	000001	+ .55	- .13
	024315	- .45	- .13
070	194720	+1.59	+ .03
	194950	+2.59	+ .03
	205600	+5.59	+ .03
	205800	+6.59	+ .03
	211740	+7.59	+ .03
	214115	+8.59	+ .03
	222230	+10.59	+ .03
071	000000	+10.59	+ .03
093	154731	-.32	+ .14

ABSTRACT OF HI-FIX CORRECTORS

USC&GSS WHITING

<u>DAY</u>	<u>TIME</u>	<u>PAT I</u>	<u>PAT II</u>
054	180900	- .44	- .10
055	000000	- .44	- .10
063	032030	- .45	- .13
	035901	-1.45	-1.13
070	182830	- .41	+ .03
	185620	+ .59	+ .03
	190450	+1.59	+ .03

13

ABSTRACT OF HI-FIX CORRECTORS

USC&GS SHIP WHITING

WH 40-1-70

H-9117

M-5

DAY

TIME

PAT I

PAT II

133

094500

- .42

+ .12

ABSTRACT OF HI-FIX CORRECTORS.

USC&GS SHIP WHITING

WH 40-1-70

H-9117

M-6

<u>DAY</u>	<u>TIME</u>	<u>PAT I</u>	<u>PAT II</u>
051	222708	- .45	- .18
052	001721	- .45	- .18
	211329	- .43	- .12
053	000000	- .43	- .12
	185241	- .44	- .10
054	000029	- .14	- .10
062	202840	- .45	- .13
	205621	-1.45	- .13
	221748	- .45	- .13
063	012730	- .45	- .13
068	214431	- .43	+ .04
069	000000	- .43	+ .04
093	085431	- .32	+ .14
098	162440	- .65	+ .19

ABSTRACT OF TRA CORRECTIONS

USC&GS SHIP WHITING

✓ Apparently
no instrumental
corrs. were
determined.

TRW

<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

Ship WHITING 1970

(16)

OPR 437 North Carolina

VELOCITY USE TABLE

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

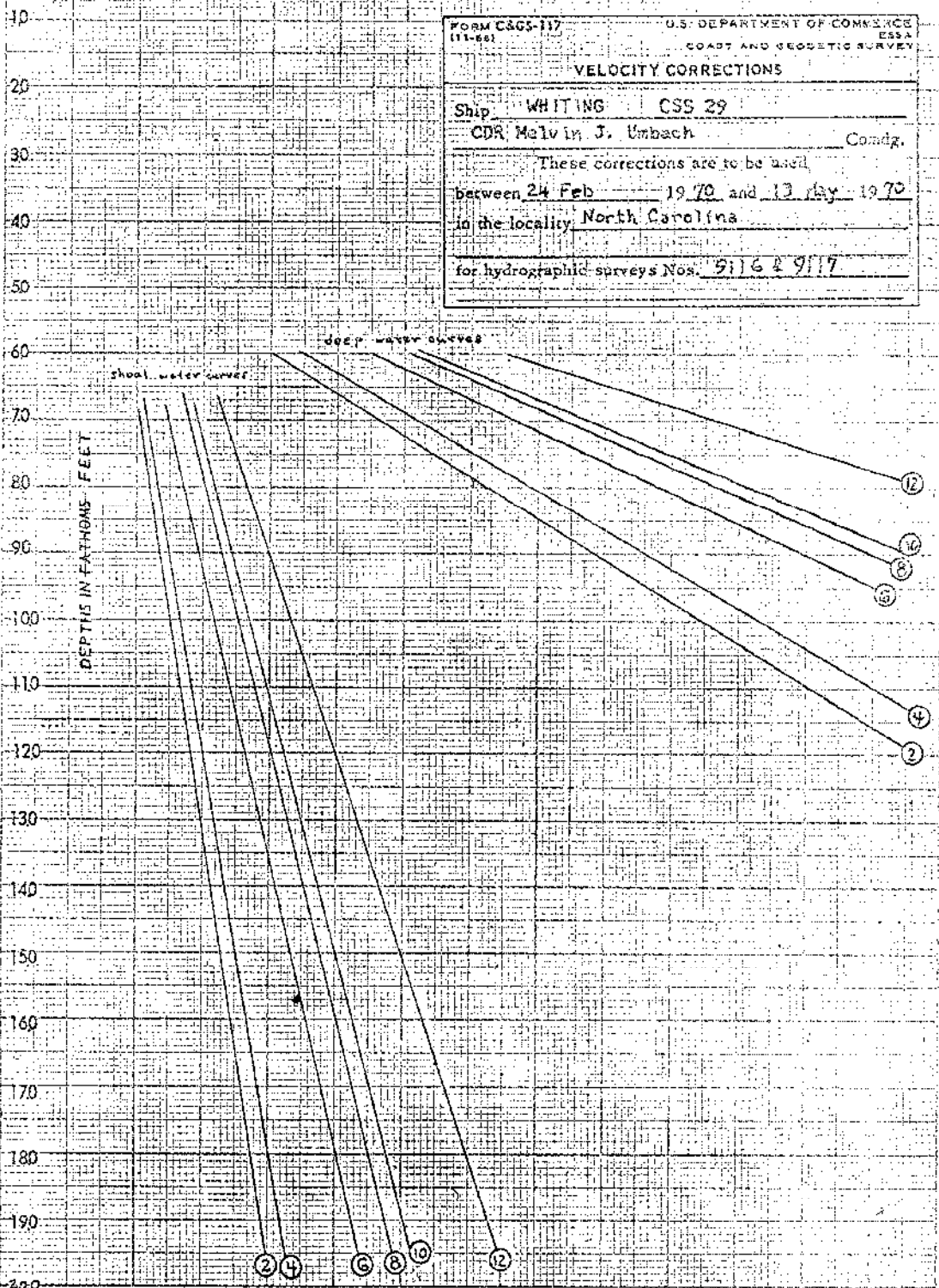
The DE 723 data was used for the launches, including the High-speed Launch. The Ross data was used for the Ship WHITING.

(1 inch equals 20 fathoms for deep water and 1 inch equals 10 fathoms for shoal water)

CORRECTIONS IN FEET, FATHOMS

FORM C&GS-117 (11-66)	U.S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY
VELOCITY CORRECTIONS	
Ship: <u>WHITING CSS 29</u>	Comdg. _____
CDR. Melvin J. Umbach	
These corrections are to be used between <u>24 Feb</u> 19 <u>70</u> and <u>13 May</u> 19 <u>70</u> in the locality <u>North Carolina</u>	
for hydrographic surveys Nos. <u>9116 & 9117</u>	

For deep water, add 0.6 to these figures



20 ft.
30
40
50
60
70
80

11

0000340 00000 0002 000 000000

Ross
Velocity Correction
Tables (18)

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

199999 0 0000

000025 0 0000 0006 000 000000 000000

000070 0 0001

000114 0 0002

000156 0 0003

000201 0 0004

000243 0 0005

000289 0 0006

000332 0 0007

000376 0 0008

000420 0 0009

000463 0 0010

000508 0 0011

000550 0 0012

000594 0 0013

000638 0 0014

000725 0 0015

000770 0 0016

199999 0 0000

000020 0 0000 0008 000 000000 000000

000058 0 0001

000098 0 0002

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

STANDARD FOR SOCIAL CALCULATION

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

2004-2011-20 (11-2011)

000711 0 0017

000733 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

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

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

VESSEL *WHITING* PROJ. NO. *OPR-437* YEAR *70* CHECKED BY _____ DATE *7-1-70*

WH-40-1-70 (M-2 & M-5)

SERIAL NO.	DATE	SAMPLE POSITION		DEPTH (Fathoms)	WEIGHT OF SAM- PLER	AP- PROX. TRAN- TION	LENGTH OF CORE	COLOR OF SEDI- MENT	FIELD DESCRIPTION	REMARKS <small>(Turbid conditions, color, percent silt, etc., method of operation, stops, pliers, disposition, etc.)</small>
		LATITUDE	LONGITUDE							
<i>952</i>	<i>4-21-70</i>	<i>33</i>	<i>78</i>						<i>fine gy s, sh</i>	<i>95.38 567.64</i>
<i>953</i>	<i>"</i>	<i>33</i>	<i>78</i>						<i>" " " "</i>	<i>95.26 536.73</i>
<i>954</i>	<i>"</i>	<i>33</i>	<i>78</i>						<i>" " " "</i>	<i>94.70 499.91</i>
<i>955</i>	<i>"</i>	<i>33</i>	<i>78</i>						<i>fine gy s, sh</i>	<i>95.24 457.37</i>
<i>956</i>	<i>"</i>	<i>33</i>	<i>78</i>						<i>fine gy s, sh, M</i>	<i>95.56 411.71</i>
<i>957</i>	<i>"</i>	<i>33</i>	<i>78</i>						<i>" " " "</i>	<i>74.80 422.65</i>
<i>958</i>	<i>"</i>	<i>33</i>	<i>78</i>						<i>" " " "</i>	<i>76.03 472.79</i>
<i>959</i>	<i>"</i>	<i>33</i>	<i>78</i>						<i>" " " "</i>	<i>72.57 519.19</i>
<i>960</i>	<i>"</i>	<i>33</i>	<i>78</i>						<i>fine br s, sh, m</i>	<i>79.09 562.14</i>
<i>961</i>	<i>"</i>	<i>33</i>	<i>78</i>						<i>fine br s, sh</i>	<i>80.15 593.74</i>
<i>962</i>	<i>"</i>	<i>33</i>	<i>78</i>						<i>fine gy s, sh</i>	<i>68.32 515.32</i>
<i>963</i>	<i>"</i>	<i>33</i>	<i>78</i>						<i>" " " "</i>	<i>66.99 584.26</i>
<i>964</i>	<i>"</i>	<i>33</i>	<i>78</i>						<i>shells</i>	<i>65.15 587.94</i>
<i>965</i>	<i>"</i>	<i>33</i>	<i>78</i>						<i>fine gy s, s, M</i>	<i>62.57 483.29</i>
<i>966</i>	<i>"</i>	<i>33</i>	<i>78</i>						<i>" " " "</i>	<i>59.65 429.68</i>

Use more than one line per sample if necessary.

1 C80S-733M
601

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

VESSEL *USCGC FCGS Whiting*
PROJ. NO. *OPR-437*
YEAR *1970*

M-34

CHECKED BY

DATE CHECKED

SERIAL NO.	DATE	SAMPLE POSITION		DEPTH (Fathoms)	WEIGHT OF SAMPLER	APPROX. PERCENT TRACTION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	PATN #1 <small>(Turbid conditions, cohesionless, detrital cutter, et al., no. type of bottom teller, etc.)</small>	REMARKS PATN #2
		LATITUDE	LONGITUDE								
935		33 39	78 16						fm. gy. s. f. sh.	116.02	383.42
		44.31	05.56								
936		33 39	78 19						fm. gy. s. f. sh.	110.82	339.26
		53.00	09.00								
937		33 39	78 22						fm. gy. s.	113.79	296.43
		51.00	02.00								
938		33 38	78 21						gy. s. f. sh.	129.54	296.22
		18.00	59.00								
939		33 38	78 19						brn. gy. s.	126.00	333.65
		17.00	20.00						W.P. det. Assoc.		
940		33 38	78 16						gy. s. f. sh.	122.89	377.04
		15.00	12.63								
941		33 36	78 19						gy. s.	141.72	334.73
		36.00	03.00						NR. det. Assoc.		
942		33 36	78 22						sh.	147.12	259.00
		37.00	01.00								
943		33 35	78 22						fm. gy. s. f. sh.	164.12	294.31
		06.00	02.00								
944		33 35	78 18						fm. gy. s. f. sh.	156.84	332.54
		02.00	02.00								
945		33 41	78 21						fm. gy. s. f. sh.	097.35	302.44
		29.63	44.00								
946		33 41	78 18						fm. gy. s. f. sh.	095.85	351.19
		31.44	36.13								
947		33 43	78 19						fm. gy. s. f. sh.	082.24	343.39
		07.41	20.25								
948		33 43	78 22						fm. gy. s. f. sh.	082.27	295.46
		06.56	16.91								
949		33 44	78 21						fm. gy. s. f. sh.	067.89	306.74
		45.02	44.25								
950		33 44	78 18						fm. gy. s. f. sh.	067.31	356.89
		45.02	46.38								
951		33 46	78 19						crs. s. f. sh.	057.00	356.35
		23.56	04.38								
952		33 46	78 22						crs. s. f. sh.	054.80	301.91
		19.94	10.44								

USCGM-H-DC 822

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

Coast of North & South Carolina

VESSEL *USCGC 655 Whiting* PROJ. NO. *OPR-437*

YEAR

M-34

CHECKED BY

DATE CHECKED

SERIAL NO.	DATE	SAMPLE POSITION		DEPTH (fathoms)	WEIGHT OF SAMPLER	AP- PROX. PENE- TRATION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	PATN I REMARKS <small>(Unusual conditions, cohesiveness, density, cutter, stat. no., type of bottom relief, log, atope, platin, disposition, etc.)</small>	PATN II
		LATITUDE	LONGITUDE								
918		33° 37'	78° 10'						<i>fm. gy. S & SK</i>	<i>127.16</i>	<i>450.66</i>
		33 35	78 10								
919		31.42	03.75						<i>fm. gy. S, SK, M</i>	<i>138.91</i>	<i>443.48</i>
		33 35	78 06								
920		23.38	52.31						<i>fm. gy. S.</i>	<i>136.68</i>	<i>477.36</i>
		33 35	78 03								
921		22.09	53.13						<i>fm. gy. S, & SK</i>	<i>134.24</i>	<i>506.41</i>
		33 35	78 01								
922		22.96	23.75						<i>fm. gy. S, SK</i>	<i>132.27</i>	<i>528.26</i>
		33 33	78 01								
923		42.54	29.88						<i>fm. gy. S, SK</i>	<i>143.17</i>	<i>516.93</i>
		33 33	78 04								
924		44.94	12.56						<i>fm. gy. S, SK</i>	<i>145.58</i>	<i>493.82</i>
		33 33	78 07								
925		46.28	03.63						<i>fm. gy. S, SK</i>	<i>148.63</i>	<i>466.73</i>
		33 35	78 10								
926		00.50	05.69						<i>fm. gy. S, SK</i>	<i>142.94</i>	<i>440.69</i>
		33 35	78 13								
927		03.25	03.25						<i>fm. gy. S, SK</i>	<i>146.40</i>	<i>406.63</i>
		33 35	78 16								
928		04.11	18.19						<i>fm. gy. S, SK</i>	<i>151.34</i>	<i>367.00</i>
		33 36	78 15								
929		36.78	53.38						<i>fm. gy. S, SK</i>	<i>136.91</i>	<i>376.46</i>
		33 36	78 12								
930		39.64	51.13						<i>fm. gy. S, SK</i>	<i>132.89</i>	<i>415.34</i>
		33 38	78 13								
931		15.53	03.31						<i>fm. gy. S</i>	<i>120.15</i>	<i>419.46</i>
		33 38	78 16								
932		13.41	10.00						<i>fm. gy. S</i>	<i>123.09</i>	<i>377.56</i>
		33 39	78 10								
933		46.44	24.44						<i>fm. gy. S, SK</i>	<i>107.15</i>	<i>461.39</i>
		33 39	78 13								
934		44.61	14.88						<i>fm. gy. S, SK</i>	<i>108.50</i>	<i>423.39</i>

Use more than one line per sample if necessary.

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

SERIAL NO.	DATE	SAMPLE POSITION		DEPTH (Fathoms)	WEIGHT OF SAMPLER	AP. PROX. TRAN. TION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	PATRN#1 REMARKS PATRN#2 (Unusual conditions; color, hardness, density, odor, etc.; nature of bottom; ref. loc., etc.)
		LATITUDE	LONGITUDE							
VESSEL: USCGCSS Whiting										
PROJ. NO.: OPR-137										
YEAR: 1970										
MH-10-1-70										
M-644										
CHECKED BY:										
DATE CHECKED:										
901	2/23/70	33 38	78 01						fn Sh & gy S	112.17 515.65
		36.95	59.00							
902	"	33 38	78 02						fn Sh & gy S	112.16 537.57
		36.81	52.63							
903	"	33 38	78 03						fn gy S & Sh	112.62 527.63
		38.80	56.75							
904	"	33 38	78 04						fn gy S & Sh	112.91 518.79
		39.09	50.06							
905	"	33 38	78 04						fn gy S & Sh	113.50 506.79
		37.57	57.88							
906	"	33 38	78 07						fn Sh & gy S	113.97 495.33
		37.33	00.50							
907	"	33 38	78 07						fn Sh & gy S	113.97 485.69
		40.72	53.31							
908	"	33 38	78 08						fn Sh & gy S	114.55 472.74
		40.09	58.50							
909	"	33 38	78 09						gy S	115.47 461.63
		36.30	52.19							
910	"	33 41	78 16						fn Sh & gy S	099.67 374.50
		00.97	58.81							
911	"	33 41	78 17						fn Sh & gy S	100.04 359.49
		00.94	58.44							
912	"	33 41	78 19						fn Sh & gy S	100.61 343.22
		00.17	02.50							
913	"	33 41	78 19						fn Sh & gy S	100.88 329.41
		01.27	56.75							
914	"	33 41	78 21						fn Sh & gy S	101.52 313.11
		00.98	00.50							
915	"	33 37	78 01						fn gy S & Sh	121.34 538.66
		06.98	32.94							
916	"	33 37	78 04						fn gy S & Sh	123.48 513.93
		00.34	11.94							
917	"	33 36	78 07						fn gy S & Sh	125.52 482.35
		59.67	16.44							

Use more than one line per sample if necessary.

Smooth
Copy -

26

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. <i>WH40-1-70</i>	Office No. <i>H-9117</i>
LOCALITY	
State	<i>NORTH CAROLINA</i>
General locality	<i>LONG BAY</i>
Locality	<i>WEST OF FRYING PAN SHOALS</i>
<u>19..70.</u>	
CHIEF OF PARTY	
<i>CDR Melvin J. Umbach, USESSA, C.O.</i>	
<i>LCDR Ralph J. Land, USESSA, O.I.C.</i>	
LIBRARY & ARCHIVES	
DATE	

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FORM C&GS-537
(8-66)

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

REGISTER NO.

ADDENDUM TO THE
HYDROGRAPHIC TITLE SHEET

H-9117

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.

WH40-1-70

State NORTH CAROLINA

General locality LONG BAY

Locality WEST OF FRYING PAN SHOALS

Scale 1:40,000

Date of survey 5/7/70 - 5/14/70

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, LTC. 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 LTC. DALE NORTH, JR. AND FRANKLIN L. SAUNDERS

Graphic record checked by LCDR RALPH J. LAND & CHARLES L. BROWN

Protracted by N/A Cal-Comp Plotter Automated plot by Atlantic Marine Center COMPLOT

Soundings penciled by _____

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

REMARKS: This report is intended as an Addendum to the Descriptive Report submitted by USC&GS Ship WHITING.

LAUNCH 1257 surveyed approximately two-thirds^{is} of (M-5) one of six plotter sheets that comprises WH40-1-70. Raw data tapes, raw data printouts were turned over to the WHITING and they subsequently plotted the material on (WH40-1-70) their boat sheet turned in after the season. All data was surveyed at 1:20,000 scale.

ADDENDUM
TO THE
DESCRIPTIVE REPORT
HYDROGRAPHIC SURVEY H-9117
WH 40-1-70
OPR-437

LONG BAY, NORTH CAROLINA

SCALE 1:40,000

A. PROJECT

No changes to the original Descriptive Report

B. AREA SURVEYED

This survey was conducted between 5/7/70 and 5/14/70.

C. SOUNDING VESSEL

USC&GS Launch 1257 was the sounding vessel for the portion shaded on p. 2 of original report.

D. SOUNDING EQUIPMENT

A Raytheon DE-723, S/N 1904, was used for the entire survey. Refer to report on corrections to Echo Soundings, submitted separately by Launch 1257 for OPR-437.

Wave motion was corrected from the Fathograms and was recorded on corrector tapes for subsequent plotting.

E. SMOOTH SHEET

No changes

F. CONTROL

Refer to the report submitted by Launch 1257 on corrections to distance measurements, OPR-437.

G. SHORELINE

No changes

H. *CROSSLINES*

Approximately 8% of all lines were run as crosslines. Excellent agreement was attained.

I. *JUNCTIONS*

No changes

J. *COMPARISON WITH PRIOR SURVEYS*

Good agreement with prior surveys H-4488 (1:40,000, 1925) and H-4323 (1:40,000, 1923) was obtained except on the northeast corner of the sheet at 78 02 00 W between 33°44N and 33°46.7N. Differences up to 5 ft. were noted in this area. Additionally, three shoals are more pronounced on this portion of the survey than the prior surveys suggest.

K. *COMPARISON WITH EXISTING CHARTS*

No changes

L. *ADEQUACY OF SURVEY*

No changes

M. *AIDS TO NAVIGATION*

No aids to navigation were in the area surveyed.

N. *STATISTICS*

Plotter sheet M-5 (Launch portion) had 211.2 miles of sounding line, 423 positions, and 33.2 square nautical miles of hydrography.

Bottom samples were taken by Ship WHITING.

O. *MISCELLANEOUS*

On day 13¹, 5/11/70, a loss of one lane on the Hi-Fix was noticed at the end-of-the-day calibration. All data after position number 6248 was replotted on the boatsheet in red ink. Additional hydrography was printed in blue. Examination of the replot and the subsequent hydrography confirmed the accuracy of the hydrography before position number 6248 and indicated the lane loss occurred when the Launch maneuvered to restart a line after the first attempt was aborted because of traffic. A misplaced 35 ft. sounding at 78°02.2W and 33°43'N is most

indicative of the misplacement of soundings from the lane loss.

The plotter sheets are being turned in only for the Processing Office's use. The data was plotted and previously submitted on WH 40-1-70. (H-9117) by the WHITING.

P. RECOMMENDATIONS

None

Q. REFERENCES TO REPORTS AND RECORDS

In addition to the reports listed in the main text of the original Descriptive Report, the reports on Corrections to Echo Soundings and Corrections to Distance Measurements submitted by Launch 1257 are pertinent to the Launch's survey work.

SEPARATES FOLLOWING TEXT

Page

ABSTRACT OF DAILY HI-FIX CORRECTORS

ABSTRACT OF BAR CHECKS

ABSTRACT OF DAILY POSITION NUMBERS

APPROVAL SHEET

OPR - 437

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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	-135	-115	
YAUPON PIER (S) $\frac{1}{2}$ C#	3/25/70	84	-139	+02	REJECT DAYS WORK HI-FIX LANG BEST OF UNKNOWN AMOUNT
YAUPON PIER (SE)	4/3/70	93	-132	+13	
YAUPON PIER (SE)	4/4/70	94	-36	+13	
YAUPON PIER (S)	4/6/70	96	+35 -165	+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	

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ABSTRACT OF Hi-Fix COLLECTORS (cont)

LOCATION	DATE	JULIAN DAY	MEAN PI	MEAN PII	REMARKS
YARROW PIER(S) 2' C 1'	5/8/70	128	-1.40	+1.12	
C 1'	5/10/70	130	-1.42	+1.12	
C 1'	5/11/70	131	-1.39 -1.39	+1.13	Pos # 6284-
.	5/12/70	132	-1.40	+1.12	
.	5/13/70	133	-1.39	+1.12	
OAK ISLAND(NW)	5/14/70	134	-1.42	+1.14	

BAR CHECK
 Launch 1257
 OPP-437
 COAST OF NORTH CAROLINA
 1970

(34)

Date 5' 10' 15' 20' 25' 30' 35'

5/21/70

FATH	5.0	9.5	14.1	18.9	23.5		
DIG	-	-	-	-	-		
DIG	-	-	-	-	-		
FATH	-	-	-	19.0	23.5		

5/25/70

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		

BAR CHECK
 Launch 1257
 OPR 437
 COAST OF NORTH CAROLINA
 1970

Date	5'	10'	15'	20'	25'	30'	35'
4/7/70							
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			
4/8/70							
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	13.6	23.1		
DIG	4.3	9.05	13.5	13.45	22.9		
DIG	4.4	9.0	13.55	13.55	-		
FATH	4.5	9.0	13.6	13.7	-		

BAR CHECK
Lunch 1257
OPR 437
COAST OF NORTH CAROLINA
1970

Date 5' 10' 15' 20' 25' 30' 35'

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


ABSTRACT OF DAILY POSITION NUMBERS USED

H-9117

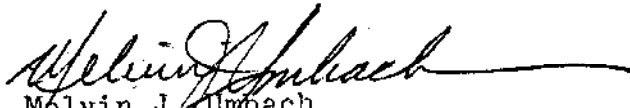
<u>JULIAN DAY</u>	<u>POSITION NUMBERS</u>
127	6001-6084
130	6085-6137
131	6138-6322
132	6323-6375
134	6376-6423

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

PROJECTION PARAMETERS

503

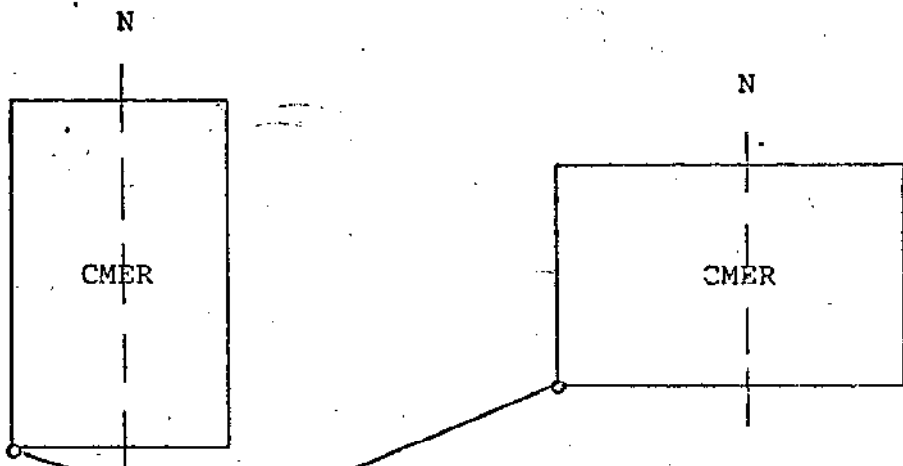
POLYCONIC OR MODIFIED TRANSVERSE MERCATOR

- 1. Project No. 437
- 2. Reg. No. H 9117
- 3. Field No. WH 40-1-70
- 4. Requested By lm
- 5. Ship or Office CFNS
- 6. Date Required —

- 7. Polyconic *Applies only to Boat Sheet*
Modified Transverse Mercator
- 8. Central Meridian of Projection 78 ° 30 ' 00 "
- 9. Survey Scale: 1: 40:000

- 10. Size of Sheet (check one):
 36 x 54 36 x 60 Other Specify _____

- 11. Sheet Orientation (check one):
 NYX = 1 NYX = β



- 12. Plotter Origin: S.W. Corner of Sheet (not necessarily a grid intersection)
 Latitude 33 ° 30 ' 50 "
 Longitude 78 ° 26 ' 05 "

- 13. G.P.'s of triangulation and/or signals attached
- 14. Material Desired: Tracing Paper Mylar
 Smooth Sheet Other Specify _____

15. Remarks: _____

ATLANTIC MARINE CENTER
ELECTRONIC CONTROL PARAMETERS

40

- 1. Project # OPR-437 2. Reg. # H-9117 3. Field # WM 40-1-70
- 4. Type of Control: Hi-Fix (Hi-Fix, Raydist, EPI, etc.)
- 5. Frequency 1799.6 (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 ^{Survey 200 No.}
 Master
 Station I.D. Cabana 1969 ¹⁰⁰
 Slave Two
 Station I.D. Ben ³⁰⁰

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 ' 57.788 "

7. Location of Survey:

50.95

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;

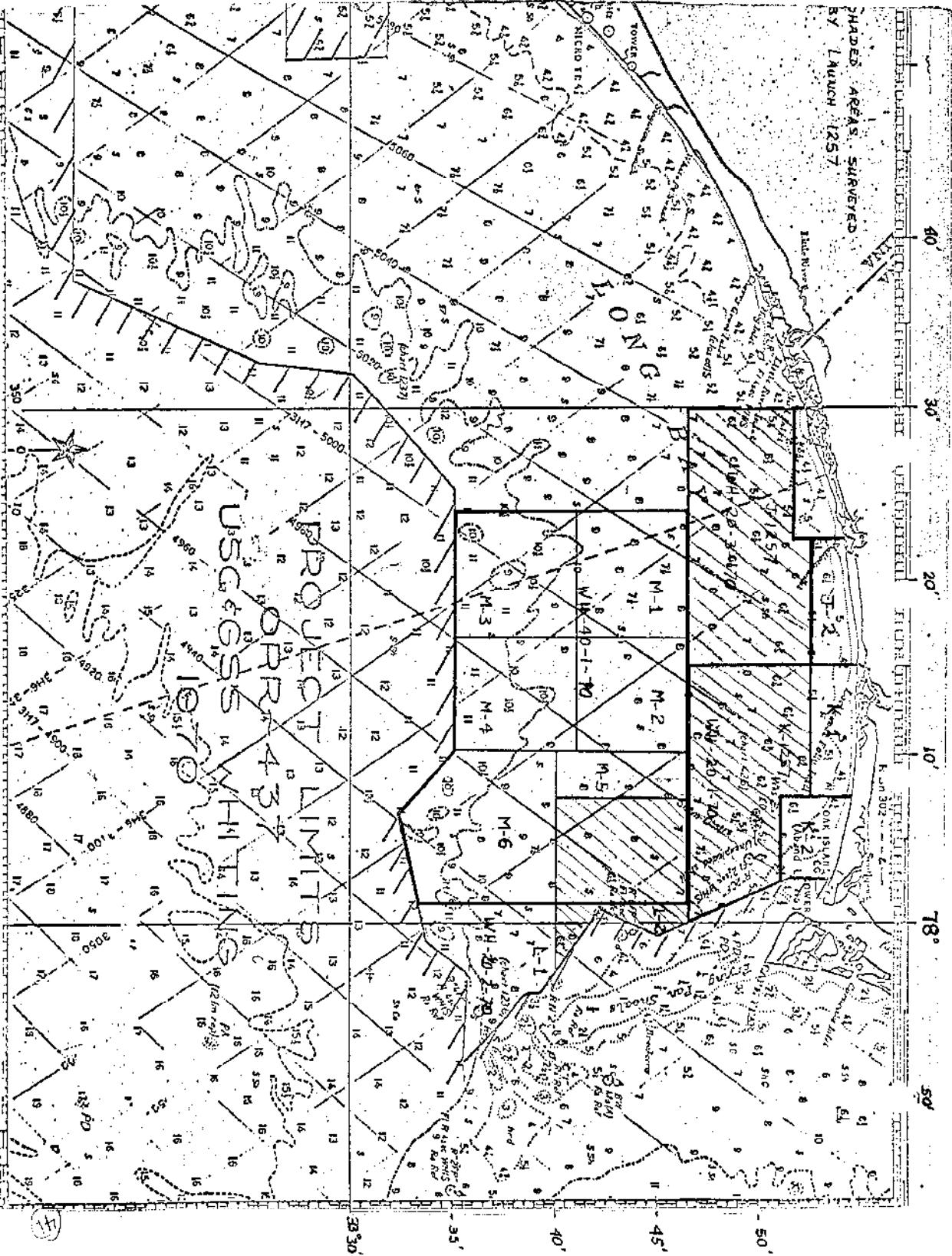
Slave Two must be to observer's Right.

- 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 From To Position Numbers
 EDP # Time Day Time Day (inclusive)

_____ to _____
 _____ to _____
 _____ to _____

9. Remarks: _____



H- 9117

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

Date June 15, 1972

Signed *Alfred J. Puffer*
Title Chief, Verification Br.

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

Date June 15, 1972

Signed *Alfred J. Puffer*
Title Chief, Verification Br.

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 15, 1972

Signed *Alfred J. Puffer*
Title Chief, Verification Br.

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

Date June 16, 1972

VERIFICATION NOTE
H-9117

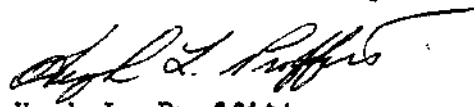
43

GENERAL

This appears to be an excellent basic survey. No unusual problems were experienced during the verification process.

It is the first survey to be completed on the Cal-Comp plotter at AMC. For test purposes the smooth sheet was plotted on both MYLAR and conventional smooth sheet paper. All final overlays were plotted with wet ink and the preliminary overlays were plotted with ball point pens.

All corrections made during verification have been entered in the data bank and are included in the final printouts.



Hugh L. Proffitt
Chief, Verification Br., AMC

Norfolk, Va.
June 16, 1972

GEOGRAPHIC NAMES

Survey No. H-9117

Name on Survey	Source											
	A	B	C	D	E	F	G	H	K			
Atlantic Ocean (omit) RH-												1
Long Bay												2
Frying Pan Shoals ¹²³⁶												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 checked

F. W. Pickett

7-17-72

Names Approved

7-18-72

A. J. Wright

(44)

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~XXXXXXXXXXXXXXXXXXXX~~ Director, Atlantic Marine Center

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

HYDROGRAPHIC SHEET

WALTING 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

ATLANTIC MARINE CENTER
VERIFICATION OF SMOOTH TIDES

46

SURVEY H-9117 Wh 40-1-70

PLANE OF REFERENCE MLW OR MLLW
TIME MERIDIAN 75 W
HEIGHT DATUM ON STAFFS 1. 3.9' 2. _____ 3. _____

TIDE STATIONS	POSITION	TYPE GAGE	TIME CORR.		HEIGHT CORR. *	
			H.W.	L.W.	H.W.	L.W.
1. Ocean Crest Pier, Long Beach N.C.	ϕ 33-54'48" Y78-08'50"	Bub.	None		None	
2.	ϕ Y					
3.	ϕ Y					

HOURLY HRIGHTS FROM ROCKVILLE OFFICE
 FROM FIELD MARIGRAMS VERIFIED BY: _____

TIDE ZONING NOT APPLICABLE
 BY COMPUTER
 FROM TWO OR MORE GAGES

LIMITS AND DESCRIPTION OF ZONING METHODS

TIDE CORRECTIONS COMPILED BY COMPUTER VERIFIED BY: W.L.J.
 MANUALLY VERIFIED BY: _____

HEIGHT OF MHW ABOVE PLANE OF REFERENCE 4.8

TIDE CORRECTIONS VERIFIED ON SOUNDING PRINTOUT BY: W.L.J. & R.G.R.

DATE OF VERIFICATION 4-13-72

*OR RATIO

EXAMINED & APPROVED
Alfred J. Poff

FORM C&GS-946
(REV. 11-65)
PREP. BY
HYDROGRAPHIC
MANUAL 20-2,
6-94, 7-131

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

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HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-9117

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT			
SMOOTH SHEET <i>1 mylar 1 paper</i>	2	BOAT SHEETS <i>Machine Plot Tracing paper</i>	1 (9 parts)			
DESCRIPTIVE REPORT	1 (2 parts)	OVERLAYS <i>3 preliminary 2 final</i>	5			
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PHINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES	3					
CAHIERS	2					
VOLUMES						
BOXES			1			1

T-SHEET PRINTS (List)

NONE

SPECIAL REPORTS (List)

Refer to paragraph Q

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				2835
POSITIONS CHECKED		200		
POSITIONS REVISED		3		
DEPTH SOUNDINGS REVISED		50	10*	*2, because of malfunction of computer
DEPTH SOUNDINGS ERRONEOUSLY SPACED		0		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED				
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		0	-	
JUNCTIONS		2	1	
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		16	30	
SPECIAL ADJUSTMENTS		0	20	
ALL OTHER WORK		130	46	
TOTALS		148	97	
PRE-VERIFICATION BY <i>Inspected by: D.E. Mitchell 5/8/72 17 hrs.</i>	BEGINNING DATE	ENDING DATE		
VERIFICATION BY <i>G.F. Trefethen Carstens 8h</i>	BEGINNING DATE 26 July 1971	ENDING DATE 13 June 1972		
REVIEW BY <i>George Meyers</i>	BEGINNING DATE July 17, 1972	ENDING DATE Aug 28, 1972		

OFFICE OF MARINE SURVEYS AND MAPS

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-9117

FIELD NO. WH-40-1-70

North Carolina - Long Bay - West of Frying Pan Shoals

SURVEYED: February 20, 1970, through May 14, 1970

SCALE: 1:40,000

PROJECT NO.: OPR-437

SOUNDINGS: Ross Digital Depth
Sounder - Raytheon DE-
723 (Digital) #1904

CONTROL: Hi-Fix (Hyperbolic
Mode)

Chief of Party M. J. Umbach
Surveyed by M. J. Umbach
..... R. J. Land
..... D. North, Jr.
..... G. C. Chappell
..... J. L. Wallace
..... G. L. Boyack
..... L. T. Gillman
..... G. J. Cinpinski
..... D. W. Nostrant
Protracted by Cal Comp Plotter (AMC)
Soundings Plotted by Cal Comp Plotter (AMC)
Verified and Inked by G. J. Trefethen (AMC)
Reviewed by G. K. Myers
..... Date: August 22, 1972
Inspected by D. E. Westbrook

1. Description of the Area

This survey covers a portion of Long Bay, off the North Carolina coast, and is centered about 14 miles west of Frying Pan Shoals. Here, the bottom slopes gently seaward from depths of about 40 feet at the northern limit of the survey to 70 feet at the survey's southern limit.

Predominant bottom characteristics in the area are gray sand, mud, and shells.

2. Control and Shoreline

The source of the control is adequately described in the Descriptive Report.

No shoreline has been shown on the smooth sheet since this is an offshore survey.

3. Hydrography

Depths at crossings are in adequate agreement.

The only standard depth curve - 60 foot, appearing on this survey is adequately delineated. In some cases, supplemental brown depth curves were added in accordance with Par. 6-64 of the Hydrographic Manual.

The investigation of least depths and development of bottom configuration is adequate.

4. Condition of the Survey

The Atlantic Marine Center verification, various sounding printouts and Descriptive Report are adequate and conform in general to the requirements of the Hydrographic Manual supplemented by the Instruction Manual - Automated Hydrographic Surveys except that:

A. The Raw Data Printouts of the Ship WHITING should have contained information regarding personnel, weather, and statistics. The records for High Speed Launch 1257 were entirely satisfactory in this respect.

B. There appears to have been no recorded leadline comparison to check for a possible instrumental correction for the Ross depth recorder on the Ship WHITING. Although the accuracy of the present survey appears adequate, this test should be made as a matter of course by all ships.

Important features of the AMC (Norfolk) Cal-Comp Plotter system used for plotting this survey are noted as follows:

A. The Cal-Comp Plotter is capable of accurately plotting soundings using the Hi Fix control system of electronically fixing sounding positions, and is a distinct improvement over the present PMC system.

B. Sounding numbers are automatically drawn (not stamped) on the smooth sheet by the plotter. This method of representing depths is adequate, however, the character of the digits, particularly the 4 and 5, should be improved.

C. The system of sounding lines are indicated on the position overlay of the smooth sheet by sections of lines inked between positions. This additional information aids in the examination of the survey. Because an electronic fix is determined at each sounding, the lines between positions show the actual track of the vessel, and each sounding is plotted at its observed position.

D. Since a number of boat sheets are required for plotting to accommodate the small shipboard plotters, increased handling of additional material for processing is required.

E. For test purposes the smooth sheet was plotted both on mylar and on the conventional smooth sheet paper.

The two different media will be compared to determine if it is feasible and desirable to change to mylar for smooth sheets. At present, soundings are clearer and sharper on the cloth mounted paper.

It is noted, however, that a transparent smooth sheet could be useful for comparing prior and present work at the same scale, would be more distortion-free, and would provide a convenient means of directly transferring photogrammetric survey information to the smooth sheet.

5. Junctions

An adequate junction was made with H-9116 (1970) on the east. The contemporary surveys H-9115 (1970) and H-9096 (1970) on the north were not available in this office. These junctions will be discussed in the review of those surveys. No contemporary surveys junction with the present survey on the south and west. However, present depths are in general harmony with charted depths in these areas.

6. Comparison with Prior Surveys

- A. H-685 (1859), 1:40,000
H-694 (1859-60) 1:300,000

These reconnaissance - type surveys provide only general depths in the area. The sparcity of soundings precludes a detailed comparison with the present survey, though general depths are in good agreement. The present survey is adequate to supersede these prior surveys in the common area.

- B. H-4323 (1923), 1:40,000
- H-4454 (1924), 1:40,000
- H-4488 (1925), 1:40,000
- H-4523 (1925), 1:100,000

These prior surveys, taken together, cover the present survey area. A comparison between prior and present depths reveals variable differences of only 1-2 feet. The present survey is adequate to supersede these prior survey in the common area.

- C. H-6539 (1939-40), 1:80,000

This survey covers a portion of the present survey area. A detailed comparison between prior and present depths reveals that the larger scale and more intensive development of the present survey provides lesser depths on several minor shoals. Otherwise, there is good general agreement. The present survey is adequate to supersede this prior survey within the common area.

7. Comparison with Charts

- Chart 426 (latest print ~~date~~ June 3, 1972)
- Chart 1235 (latest print date April 22, 1972)

A. Hydrography

The charted hydrography originates with the previously discussed surveys which need no further consideration, supplemented by depths from the present survey boat sheets (Bps 79551-56) and the verified smooth sheet.

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

B. Aids to Navigation

There are no aids to navigation on this survey.


8. Compliance with Project Instructions

The present survey adequately complies with the Project Instructions.

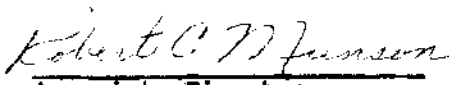
9. Additional Field Work

This survey is considered an excellent basic survey and no additional field work is recommended.

Examined and Approved:



Chief
Marine Chart Division



Associate Director
Office of Marine Surveys
and Maps

Items for Future Presurvey Review

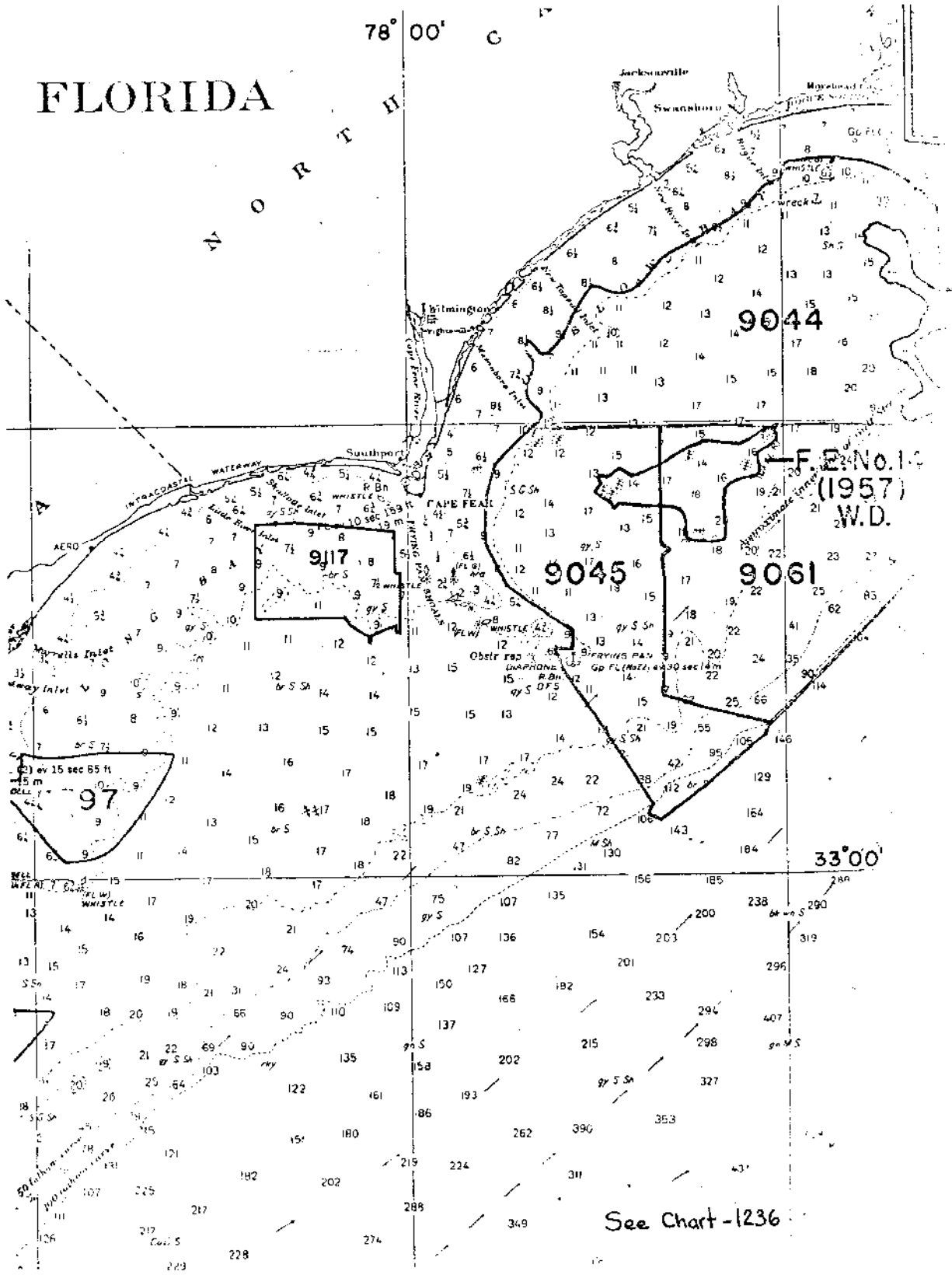
This survey covers the northeast port of Long Bay, some 7½ miles south of the North Carolina coast. Only minor changes in the bottom have occurred in this area as shown by a comparison between the prior and present surveys. Some deposition of sediments is evident, however, predominant bottom characteristics of the area include mud, gray sand, and shells.

Position Index	Bottom Change Index	Use Index	Resurvey Cycle
lat. 333, long. 0781	3	2	50 yrs.
lat. 333, long. 0782	3	2	50 yrs.
lat. 333, long. 0783	3	2	50 yrs.
lat. 334, long. 0781	3	2	50 yrs.
lat. 334, long. 0782	3	2	50 yrs.
lat. 334, long. 0783	3	2	50 yrs.

FLORIDA

78° 00' C

N O R T H



Reg. No. H-9117

The magnetic tape containing the data for this survey has ~~not~~⁷⁶ been corrected to reflect the changes made during evaluation and review.

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

MAGNETIC TAPE CORRECTED

Date: 2/3/75 Time Req'd: UNKNOWN Initials: DLW

Remarks:

This was the first survey on which the TSO editing terminal was used for digital data update. Since most of the work was experimental, no time records were kept.

Remaining data on survey which requires digitization will be taken care of later.

10/15/75 Digitized data added to magnetic tape and check plot made.
Digital survey data approved for data bank use.

Dale E. Nuttall