

9462

1241-2

Diag. Cht. No. 1241-2.

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT
(HYDROGRAPHIC)

Type of Survey **HYDROGRAPHIC**
Field No. **WH-20-3-74**
Office No. **H-9462**

LOCALITY

State **GEORGIA**
General Locality **COAST OF GEORGIA**
Locality **ST. CATHERINES SOUND**

1974

CHIEF OF PARTY
CDR. ROBERT A. TRAUSSNIKE

LIBRARY & ARCHIVES

DATE **7-31-75**

9462

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8395c
1241
1111

DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SURVEY
H-9462 (WH-20-3-7)

ST. CATHERINES SOUND, GEORGIA

Scale 1:20,000

Year 1974

NOAA SHIP WHITING
CDR ROBERT A. TRAUSCHKE, COMMANDING

HYDROGRAPHIC TITLE SHEET

H-9462

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-20-3-74

State GEORGIA

General locality COAST OF GEORGIA

Locality ST. CATHERINES SOUND

Scale 1:20,000 Date of survey 7/26/74 thru 8/13/74

Instructions dated 29 Oct. 1973 (see remarks) Project No. OPR-436-WH-74

Vessel NOAA SHIP WHITING

Chief of party CDR ROBERT A. TRAUSCHKE

Surveyed by CDR R. A. TRAUSCHKE, LCDR DANIELS, LT THEBERGE, LT MEYERS, LTJG GASTALDO, ENS PERRIN, ENS GULLEKSON, ENS BENNETT

Soundings taken by echo sounder, ~~hand lead, pole~~ Echo Sounder

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Protracted by EDP-AMC Automated plot by ~~WHITING System~~ Calcom Plotter AMC

Soundings penciled by ~~WHITING Shipboard System~~ CALCOM PLOTTER, AMC

Soundings in ~~XXXX~~ feet at MLW ~~MLW~~

REMARKS: Time meridan of this survey was 0°. Project Instructions dated 29 October 1973 are supplemented by Change no. 1 to Project Instructions dated 10 December 1973, Change no. 2 to Project Instructions dated 8 February 1974, and Change no. 3 to Project Instructions dated 28 June 1974.

Applied to stob 4/21/77

ESB

Chart
124/
8395c
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A. Project:

This hydrographic survey was conducted by the NOAA Ship WHITING in accordance with Project Instructions for OPR-436 dated October 29, 1973 and supplemented by Changes to Project Instructions dated December 10, 1973; February 8, 1974; and June 28, 1974.

B. Area Surveyed:

Hydrographic operations for this survey commenced on July 26, 1974 (Julian Day 207) and ended on August 13, 1974 (Julian Day 225).

The general locality of the survey is the Georgia coast near St. Catherines and Ossabaw Islands. The survey covers St. Catherines Sound and approaches. The survey limits are shown on the following page on a sketch made from C&GS Chart 1111. The survey limits are as follows:

<u>Number</u>	<u>Latitude (North)</u>	<u>Longitude (West)</u>
1	31° 43' .3"	81° 08' .4"
2	31° 44' .0"	80° 57' .8"
3	31° 36' .2"	80° 57' .8"
4	31° 36' .2"	81° 00' .5"
5	31° 35' .5"	81° 00' .5"
6	31° 35' .5"	81° 03' .3"
7	31° 40' .5"	81° 04' .7"
8	31° 42' .0"	81° 08' .5"

The survey junctions with the following contemporary surveys:

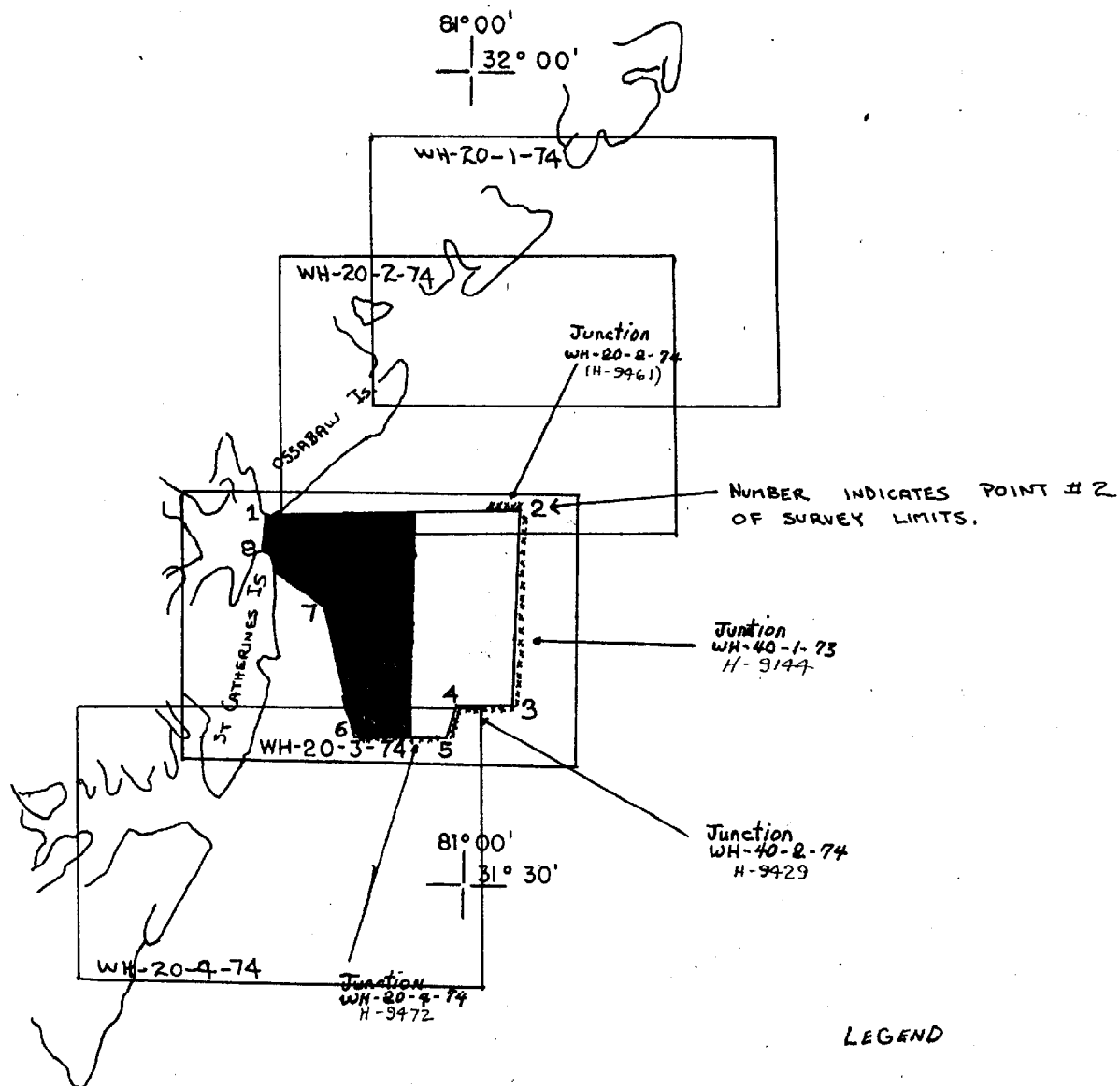
H-9461 (WH-20-2-74) on the north.

H-9144 (WH-40-1-74) on the east.

H-9429 (WH-40-2-74) at the south eastern corner.

(H-9472)

WH-20-4-74 on the south.



LEGEND

Boatsheet Layout
 St. Catherines Sound
 Scale of Chart
 C&GS chart 1111

- JUNCTION SURVEYS XXXXX
- LAUNCH ONE ■
- LAUNCH TWO □

The area of junctions is also shown on the sketch of the survey area. The junctions with WH-20-2-74 and WH-20-4-74 are with the same vessel in the same year, hence no junction soundings are plotted on the boat sheet. There are no contemporary surveys junctioning at the western and north western boundaries of the survey.

Sounding lines were done at 200 meter spacing except in the channel where the line spacing was reduced to 100 meters.

C. Sounding Vessels:

All hydrography was done by the WHITING's Pacific Plastics Launches WH-I (2931: Hull #1206) and WH-II (2932: Hull #1208).

<u>Vessel</u>	<u>Position Numbers Used</u>
WH-I	5001 - 6732
WH-II	1 - 1419

D. Sounding Equipment:

WH-I used a Raytheon DE-723D Survey Fathometer, serial number 37018; WH-II used a Ross, Model 5000 Depth Recorder, serial number 1055. The launches sounded in depths ranging from five to sixty feet. Velocity corrections to echo-soundings were determined from TDC data. Bar checks and leadlines were taken to verify the computed velocity corrections. For a more detailed explanation, see Appendix II, Echo-Sounder and Velocity Correction Report.

E. Smooth Sheet:

The smooth sheet will be plotted on the computer plotting system at the Atlantic Marine Center, Norfolk, Virginia. The boat sheet discussed in this report consists of two plotter sheets, one being an overlay of the survey area on which crosslines and bottom samples are plotted. The soundings on the boat sheet have been plotted with TRA corrections and predicted tides. Electronic control correctors have not been applied; however, correctors are on the corrector tapes and should be applied when the survey is smooth plotted. The electronic control correctors are small and will not significantly change the position of the soundings.

F. Control:

Three positions were used as sites for Del Norte stations and are listed below from left to right as seen from the survey area.

<u>Name</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
22Z	31° 41' 58"841 Red	81° 08' 32"052
St. Catherines Sound Light 114	31° 43' 00"232 Blue	81° 09' 03"655
MIDD 1974	31° 46' 17"330 Brown	81° 03' 59"269

Geographic positions for St. Catherines Sound Light 114 and MIDD 1974 were determined by Photo Party 62, utilizing third order traverse and triangulation methods. 22Z was located by ship's personnel from traverse point HS-22 on the north end of St. Catherines Island which had been located by Photo Party 62. An azimuth and distance to 22Z from HS-22 were measured and computations made using a DEC PDP-8E computer and the Geodetic Utility Package RK-409. Listed below is the position of HS-22 and the azimuth and distance measured.

Position HS-22	Latitude	31° 41' 58"101
	Longitude	081° 08' 30"324
Azimuth		116° 35' 35"749
Distance		50.902 meters

The position of 22Z is plotted on the boat sheet.

G. Shoreline:

Shoreline for the boat sheet WH-20-3-74 was taken from shoreline manuscripts TP-00492 and TP-00493. The only shoreline included in the survey area is the shoreline at the sound limits on the southern end of Ossabaw Island and the northern end of St. Catherines Island. Since the survey objective was to delineate St. Catherines Sound and approaches, the topographic details were not verified except near the entrance to the sound.

Hydrography on the shoreline at the sound entrance was run on Julian Day 210. The negative, two foot curve was delineated on the south end of Ossabaw Island and found to be offshore of the shoreline shown on the manuscript, indicating that the shoreline extends further south than shown on the manuscript. The low water line was delineated on the northern tip of St. Catherines Island and was found to be in agreement with the manuscript. Trees were found in the water near the low water line near station 22Z on St. Catherines Island. Shoal areas near the sound entrance were delineated on the sound entrance side and found to be in agreement with the manuscript.

H. Crosslines:

WH-I ran 41 miles of crossline, which is approximately 15% of its total main scheme hydrography. Crossings differed by only zero to three feet. Considering the irregular bottom in the channel, where WH-I worked, the crossings are good. WH-II also ran 41 miles of crossline which is approximately 10% of its total main scheme hydrography. All crossings were good, differing by only zero to two feet.

I. Junctions:

(WH 40-1-73) (WH 40-2-73)
The junctions with H-9144 and H-9429 were good, differing by zero to two feet.

J. Comparison with Prior Surveys:

There are two overlapping prior surveys in the area. They are as follows: H-3983, 1916-1917, 1:80,000; H-4472, 1925, 1:20,000.

Pre-survey review items from these surveys are compared below. Pre-survey review items for this survey were taken from the Pre-Survey Review for OPR-436, C&GS Chart 1241. Only one item was given a label; the remaining items were indicated by dashed circles. The positions of all items are plotted as signals on the overlay sheet. Items are numbered one thru ten on the overlay sheet, corresponding to the numbers assigned in the report.

Soundings from the Pre Survey Review are compared with the soundings on the boat sheet. All corrections except velocity corrections have been applied to the boat sheet soundings. Hence, the soundings on the smooth sheet will be slightly deeper.

- Number 1: The item, labeled "H" on the Pre-Survey Review, is a shoal extending in an east-west direction, and centered at approximately $31^{\circ} 43.'1N$, $081^{\circ} 07.'9 W$. The shoal was found as described and delineated on the channel side. Pos # 5134-5135
- Number 2: The item is a five foot sounding from H-4472 at $31^{\circ} 43.'2N$, $081^{\circ} 05.'3 W$. A five foot sounding was found 200 meters west of the above position. Pos # 6050-6051
- Number 3: The item is "Shoaling" indicated on C&GS 1241 at $31^{\circ} 42.'7 N$, $081^{\circ} 05.'0 W$. The shoaling was found as described on the north side of the channel. Pos # 5360-5361
- Number 4: The item is a thirteen foot sounding shown on C&GS 1241 at $31^{\circ} 42.'9 N$, $081^{\circ} 01.'7 W$. Twelve to fourteen foot soundings were found one half mile west of the above position. Pos # 5919-5920
- Number 5: The item is a twenty-eight foot sounding shown on C&GS 1241 at $31^{\circ} 42.'9 N$, $080^{\circ} 57.'9W$. A twenty-seven foot sounding was found at this location. Pos # 42-43 29ft
- Number 6: The item is a thirty foot sounding shown on C&GS 1241 at $31^{\circ} 41.'9 N$, $080^{\circ} 58.'0 W$. A ~~twenty-eight~~ ^{thirty} foot sounding was found at this location. Pos # 813-814 31ft
- Number 7: The item is a twenty-nine foot sounding shown on C&GS 1241 at $31^{\circ} 41.'2 N$, $080^{\circ} 59.'1 W$. A ~~twenty-eight~~ ^{thirty} foot sounding was found at this location. Pos # 261-262 29ft
- Number 8: The item is a thirty-two foot sounding from H-3983 at $31^{\circ} 39.'5 N$, $081^{\circ} 00.'2 W$. A ~~nineteen~~ ^{thirty-two} foot sounding was found at this location. Pos # 475 30ft
- Number 9: The item is an eighteen foot sounding shown on C&GS 1241 at $31^{\circ} 37.'6 N$, $081^{\circ} 03.'1 W$. A ~~twenty~~ ^{eighteen} foot sounding was found at this location. Pos # 5488-5489 20ft
- Number 10: The item is an eighteen foot sounding shown on C&GS 1241 at $31^{\circ} 36.'7N$, $081^{\circ} 03.'3 W$. An ~~eighteen~~ ^{thirteen} foot sounding was found at this location. Pos # 6541-6542 19ft

K. Comparison with the Chart:

Comparison was made with C&GS 573, sixth edition, April 1973 (scale 1:40,000). Detached soundings from the chart are plotted on the boat sheet.

Soundings from the chart were in good agreement with the survey, except in the region of the channel where large discrepancies are observed. At 31° 42' 40 N, 081° 03' .3 W the chart indicates "Shoaling Reported 1963". The survey shows that shoaling has occurred. Moreover, the buoys in that area have been moved east of the positions shown on the chart so that the navigable channel does not run through this shoal area.

L. Adequacy of Survey:

The survey is complete and adequate and should supersede all prior surveys.

M. Aids to Navigation:

Comparison was made with the Light List, 1974 edition, and C&GS Chart 573. The Light List description of the buoys was in agreement with observation. However, the locations have been changed in order to better mark a safe navigable channel (see Part K). A sketch from C&GS Chart 1241 showing the charted buoy positions and the determined positions is on the following page.

N. Statistics:

	WH-I	WH-II	Total
Number of Positions	1732	1422	3154
LNM SDG Line	317	432	749
SNM Survey Area	19	30	49
Number of Bottom Samples	10	12	22

O. Miscellaneous:

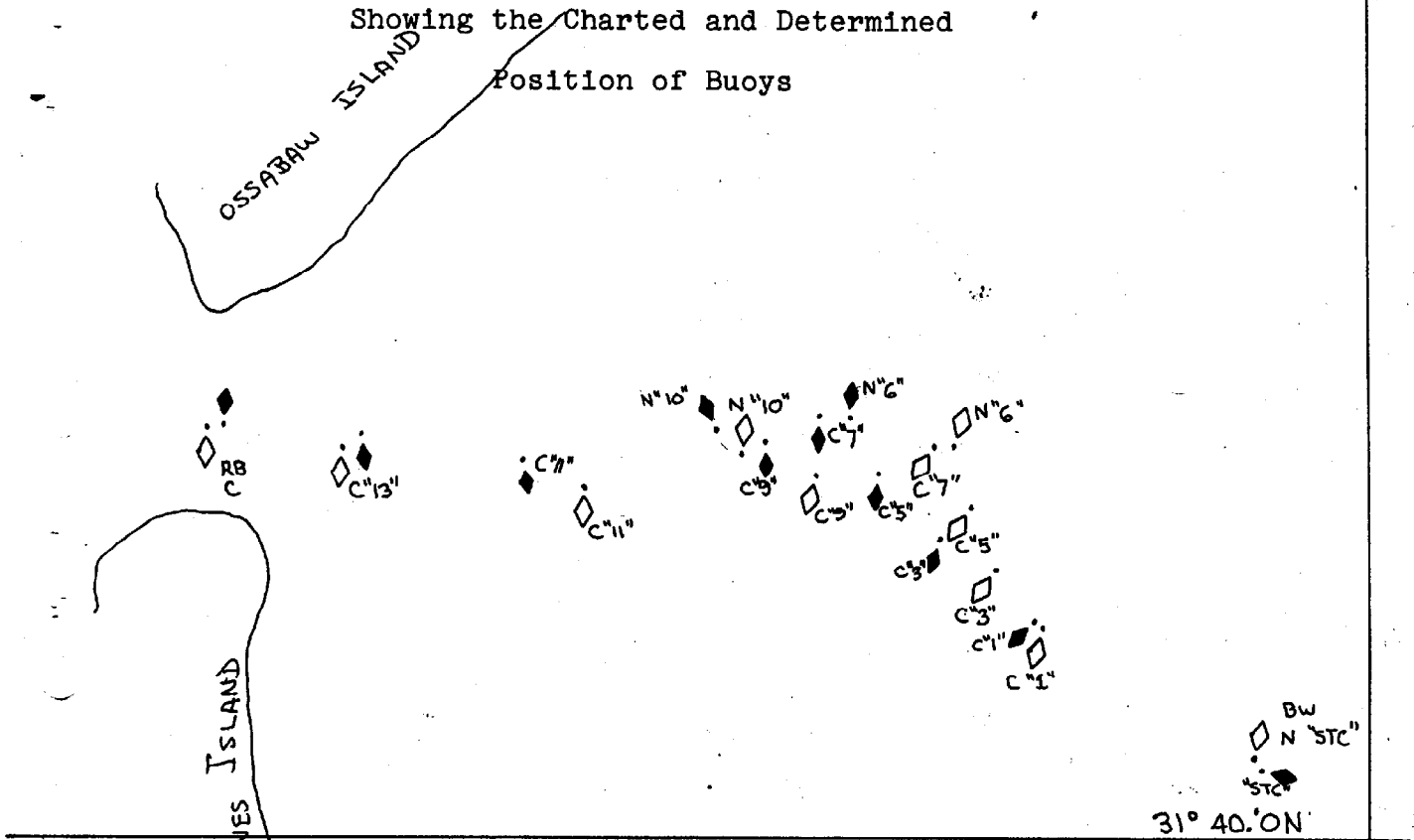
None.

P. Recommendations:

The survey shows that the channel is very changeable in the area of channel produced by the outflow from St. Catherines Sound. As mentioned in Part K, the shoaling in the channel has required that buoys be moved east in order to mark a safe navigable channel. However, shoaling exists near the channel on the north side near C "9". It is recommended that the navigable channel be moved to the south, corresponding to a line starting at 31° 39' .4 N, 081° 03' .0 W (azimuth 319° T) and turning at about 31° 41' .1 N, 081° 04' .9 W to an azimuth of 333° T and junctioning with the existing navigable channel at about 31° 42' .1 N, 081° 05' .4 W.

Sketch from C & GS 1241

Showing the Charted and Determined
Position of Buoys



Buoy Label	Pos. #
C "RB"	5238
C "13"	5233
C "11"	5661
C "10"	5660
C "9"	5659
C "7"	5658
N "6"	5654
C "5"	5657
C "3"	5656
C "1"	5655
BW "STC"	564

- ◆ Solid color indicates the charted position
- ◇ Unshaded indicates the position determined by survey

Q. References to Reports:

Fathometer and Velocity Corrections Report, Project OPR-436-WH-73: Forwarded to Atlantic Marine Center on November 13, 1973.

Descriptive Report, Operation 436-74, WH-40-3-74: Forwarded to Atlantic Marine Center on July 1, 1974.

12/19/74

Need Copy

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center:

Hourly heights are approved for Form 362

Tide Station Used (NOAA Form 77-12): Savannah Beach

Period: July 26 - August 13, 1974

HYDROGRAPHIC SHEET: H9462

OPR: 436

Locality: Outer Coast of Georgia

Plane of reference (mean ~~lower~~ low water): 3.7 ft. (Savannah Beach)

Height of Mean High Water above Plane of Reference is 6.6 ft.

Remarks: Zone direct on Savannah Beach.

James R. Hulbert

for Chief, Tides Branch

ATLANTIC MARINE CENTER
VERIFICATION OF SMOOTH TIDES

SURVEY H- 9462

PLANE OF REFERENCE: MLW OR ~~MLLW~~
TIME MERIDIAN: 0
HEIGHT DATUM ON STAFFS: 1. 3.7 2. _____ 3. _____ 4. _____

TIDE STATIONS	POSITION	TYPE GAGE standard	TIME CORR.		HEIGHT CORR.*	
			H.W.	L.W.	H.W.	L.W.
1. Savannah Beach, Georgia	ϕ 32° 00.3'N λ 080° 50.5'W					
2.	ϕ λ					
3.	ϕ λ					
4.	ϕ λ					

HOURLY HEIGHTS: FROM ROCKVILLE OFFICE
 FROM FIELD MARIGRAMS VERIFIED BY: JRH

TIDE ZONING: NOT APPLICABLE
 BY COMPUTER
 FROM TWO OR MORE GAGES

LIMITS AND DESCRIPTION OF ZONING METHODS:

Zoned direct on Savannah Beach

TIDE CORRECTIONS COMPLETED: BY COMPUTER VERIFIED BY: R. Cram
 MANUALLY VERIFIED BY: _____

HEIGHT OF MLW ABOVE PLANE OF REFERENCE: 6.6

TIDE CORRECTIONS VERIFIED ON SOUNDING PRINTOUT BY: R. Cram

DATE OF VERIFICATION: Dec. 31, 1974

*OR RATIO

EXAMINED AND APPROVED

R. Cram

GEOGRAPHIC NAME LIST

Beach Hammock

Black Hammock

Fish Creek

McQueen Hammock

McQueen Inlet

Middle Beach

North Beach

St. Catherines Sound

The above names were obtained from the TP Manuscripts; no attempt was made to verify them.

ABSTRACT OF CORRECTIONS TO ECHO-SOUNDINGS

Velocity corrections are abstracted and listed in Appendix II, "Echo-Sounder and Velocity Corrections Report: WH-20-3-74".

TRA corrections are abstracted on the following pages.

CAM3-12
2-22-74

OPR 436-74

TRA CORRECTION ABSTRACT

VESSEL WH-I (2931)

SHEET WH-20-3-74

REGISTRY NO. H-9462

Vol. Day	Jul. Day	GMT From Time	GMT To Time	Velocity Table ft/fms	Draft	Instru- ment Error Corr.	Initial Corr.	S&S Corr.	TRA Corr. ft/fms	Remarks
	207	121720	125940		1.7	0.0	0.0	.7	2.4	
		130200	130240		1.7	0.0	0.0	.3	2.0	
		130300	131200		1.7	0.0	0.0	.7	2.4	
		131220	131240		1.7	0.0	0.0	.3	2.0	
		131600	132520		1.7	0.0	0.0	.7	2.4	
		132540	132540		1.7	0.0	0.0	.3	2.0	
		132820	133540		1.7	0.0	0.0	.7	2.4	
		133600	133700		1.7	0.0	0.0	.3	2.0	
		134120	134840		1.7	0.0	0.0	.7	2.4	
		134900	134900		1.7	0.0	0.0	.3	2.0	
		135100	135740		1.7	0.0	0.0	.7	2.4	
		135800	135820		1.7	0.0	0.0	.3	2.0	
		140040	140720		1.7	0.0	0.0	.7	2.4	
		140740	140840		1.7	0.0	0.0	.3	2.0	
		141040	141800		1.7	0.0	0.0	.7	2.4	
		141820	141900		1.7	0.0	0.0	.3	2.0	
	142	142400	143200		1.7	0.0	0.0	.7	2.4	

17 V.A.T., JB

CAM3-12
2-22-74

OPR 436-74

TRA CORRECTION ABSTRACT

VESSEL WH-I (2931)

SHEET WH-20-3-74

REGISTRY NO. H- 9462

Vol. No.	Jul. Day	GMT From Time	GMT To Time	Velocity Table ft/fms	Draft	Instru- ment Error Corr.	Initial Corr.	S&S Corr.	TRA Corr. ft/fms	Remarks
	207	143220	143420		1.7	0.0	0.0	.3	2.0	
		143740	144545		1.7	0.0	0.0	.7	2.4	
		144600	144800		1.7	0.0	0.0	.3	2.0	
		145020	145920		1.7	0.0	0.0	.7	2.4	
		145940	150500		1.7	0.0	0.0	.3	2.0	
		160900	161840		1.7	0.0	0.0	.7	2.4	
	209	173140	174600		1.7	0.0	0.0	.7	2.4	
		174620	174740		1.7	0.0	0.0	.3	2.0	
		180300	182140		1.7	0.0	0.0	.7	2.4	
		182200	182340		1.7	0.0	0.0	.3	2.0	
		182540	182620		1.7	0.0	0.0	.7	2.4	
		182640	182720		1.7	0.0	0.0	.3	2.0	
		182740	183740		1.7	0.0	0.0	.7	2.4	
		183800	183820		1.7	0.0	0.0	.3	2.0	
		184200	185320		1.7	0.0	0.0	.7	2.4	
		185340	190320		1.7	0.0	0.0	.3	2.0	

VAT, JB

CAM3-12
2-22-74

OPR 436-74

TRA CORRECTION ABSTRACT

VESSEL WH-I (2931)

SHEET WH-20-3-74

REGISTRY NO. H- 9462

Vol. Day	Jul. Day	GMT From Time	GMT To Time	Velocity Table ft/fms	Draft	Instru- ment Error Corr.	Initial Corr.	S&S Corr.	TRA Corr. ft/fms	Remarks
	209	190340	191200		1.7	0.0	0.0	.7	2.4	
		191220	191320		1.7	0.0	0.0	.3	2.0	
		191900	192940		1.7	0.0	0.0	.7	2.4	
		193000	194200		1.7	0.0	0.0	.3	2.0	
		194220	194940		1.7	0.0	0.0	.7	2.4	
		195000	200540		1.7	0.0	0.0	.3	2.0	
		200800	200920		1.7	0.0	0.0	.7	2.4	
		201220	201440		1.7	0.0	0.0	.3	2.0	
		202240	203100		1.7	0.0	0.0	.7	2.4	
		203120	203420		1.7	0.0	0.0	.3	2.0	
		203720	204700		1.7	0.0	0.0	.7	2.4	
		204720	204840		1.7	0.0	0.0	.3	2.0	
		205520	212140		1.7	0.0	0.0	.7	2.4	
		212200	212220		1.7	0.0	0.0	.3	2.0	
		212400	221700		1.7	0.0	0.0	.7	2.4	

VAT, JB
19

CAM3-12
2-22-74

OPR 436-74

TRA CORRECTION ABSTRACT

VESSEL WH-I (2931)

SHEET WH-20-3-74

REGISTRY NO. H- 9464

Vol.	Jul. Day	GMT From Time	GMT To Time	Velocity Table ft/fms	Draft	Instru- ment Error Corr.	Initial Corr.	S&S Corr.	TRA Corr. ft/fms	Remarks
	212	112433	164840		1.7	0.0	0.0	.7	2.4	
		164900	165040		1.7	0.0	0.0	.3	2.0	
		165800	232300		1.7	0.0	0.0	.7	2.4	
	219	134400	182120		1.7	0.0	0.0	.7	2.4	
	221	114400	191600		1.7	0.0	0.0	.7	2.4	
	222	113040	191320		1.7	0.0	0.0	.7	2.4	
	223	112920	174540		1.7	0.0	0.0	.7	2.4	
	224	115000	191916		1.7	0.0	0.0	.7	2.4	
	225	115026	134400		1.7	0.0	0.0	.7	2.4	
	NOTE 1: All hydrography, with the exception of bottom samples and buoy D.P.S., was done at standard speed. Hence, the S&S corrector is always .7 feet as bottom samples and buoy D.P.S. are miss depths and though the launch was dead in the water while taking bottom samples and buoy D.P.S., the TRA Corrector is not applicable in the computer processing									
	NOTE 2: Initial correctors are all 0.0 feet as the analog record was adjusted to the digital while scanning the fathograms.									
	NOTE 3: All correctors are in units of feet.									

ABSTRACT OF CORRECTIONS TO DISTANCE
MEASUREMENTS

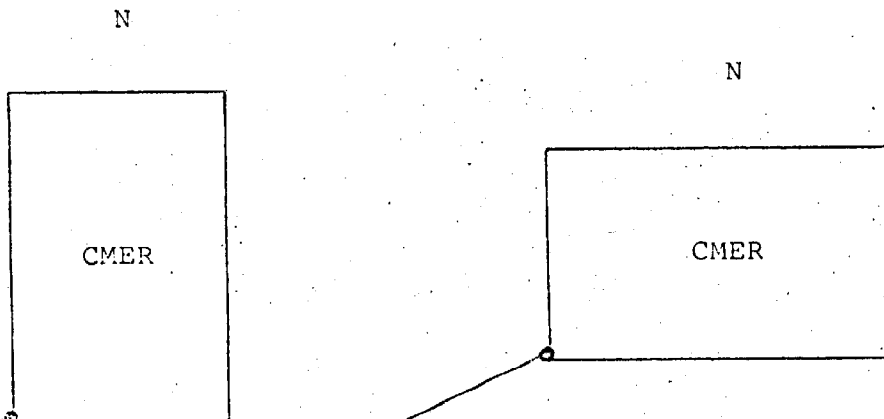
A Del Norte Station Use Abstract and Electronic
Corrector Abstract By Time is in Appendix I
"Electronic Control Report: WH-20-3-74".

Electronic Control Parameters and Station Use
Abstract by Position Number are listed on the
following pages.

CAM3-1
1/31/74

ATLANTIC MARINE CENTER
PROJECTION PARAMETERS
POLYCONIC OR MODIFIED TRANSVERSE MERCATOR

1. Project No. OPR-436-WH-74 4. Requested By Verification Branch
2. Reg. No. H-9462 5. Ship or Office AMC
3. Field No. WH-20-3-74 6. Date Required ASAP
7. Polyconic Modified Transverse Mercator
8. Central Meridian of Projection 81 ° 02 ' 00 "
9. Survey Scale: 1: 20,000
10. Size of Sheet (check one):
36 x 54 36 x 60 Other Specify 36" x 50"
11. Sheet Orientation (check one):
NYX = 1 NYX = 0



12. Plotter Origin: S.W. Corner of Sheet (not necessarily a grid intersection)
Latitude 31 ° 35 ' 00 "
Longitude 81 ° 11 ' 00 "
13. G.P.'s of triangulation and/or signals attached
14. Material Desired: Tracing Paper Mylar
Smooth Sheet Other Specify _____
15. Remarks: _____

0113-2
2-22-71

ATLANTIC MARINE CENTER
ELECTRONIC CONTROL PARAMETERS

- 1. Project # OPR-436 2. Reg. # H-9462 3. Field # WH-20-3-74
- 4. Type of Control: DEL NORTE (Hi-Fix, Raydist, EPI, etc.)
- 5. Frequency: UNITS-METERS (for conversion of electronic lanes to meters)
- 6. Mode of Operation (check one):

Range-Range

Range-Visual

Range One (R₁)
 Station I.D. 22Z
 Range Two (R₂) ST. CATHERINES
 Station I.D. SOUND LIGHT 114

Lat. 31° 41' 58.841"
 Long. 081° 08' 32.052"
 Lat. 31° 43' 00.232"
 Long. 081° 09' 03.665"

Hyperbolic (3-station)

Hyper-Visual

Slave One
 Station I.D. _____
 Master
 Station I.D. _____
 Slave Two
 Station I.D. _____

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

7. Location of Survey:

Range-Range

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

Survey area is to observer's Right A=β

Survey area is to observer's Left A=λ

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)
<u>2931</u>	<u>121720</u> <u>207</u>	<u>143420</u> <u>207</u>	<u>5001</u> to <u>5073</u>
<u>2931</u>	<u>173140</u> <u>209</u>	<u>221700</u> <u>209</u>	<u>5096</u> to <u>5241</u>
<u>2931</u>	<u>221840</u> <u>210</u>	<u>224420</u> <u>210</u>	<u>5409</u> to <u>5419</u>

9. Remarks: _____

2-22-74

ATLANTIC MARINE CENTER
ELECTRONIC CONTROL PARAMETERS

- 1. Project # OPR- 436 2. Reg. # H-9462 3. Field # WH-20-3-74
- 4. Type of Control: DEL NORTE (Hi-Fix, Raydist, EPI, etc.)
- 5. Frequency UNITS-METERS (for conversion of electronic lanes to meters)
- 6. Mode of Operation (check one):

Range-Range Range-Visual

Range One (R ₁)	<u>ST. CATHERINES</u>	Lat.	<u>31 °</u>	<u>43</u>	<u>00.232 "</u>
Station I.D.	<u>SOUND LIGHT 114</u>	Long.	<u>081 °</u>	<u>09</u>	<u>03.665 "</u>
Range Two (R ₂)	<u>MIDD 1974</u>	Lat.	<u>31 °</u>	<u>46</u>	<u>17.330 "</u>
Station I.D.	<u>MIDD 1974</u>	Long.	<u>081 °</u>	<u>03</u>	<u>59.269 "</u>

Hyperbolic (3-station) Hyper-Visual

Slave One	_____	Lat.	_____ °	_____	_____ "
Station I.D.	_____	Long.	_____ °	_____	_____ "
Master	_____	Lat.	_____ °	_____	_____ "
Station I.D.	_____	Long.	_____ °	_____	_____ "
Slave Two	_____	Lat.	_____ °	_____	_____ "
Station I.D.	_____	Long.	_____ °	_____	_____ "

- 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=2
- 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)
<u>2931</u>	<u>143740</u>	<u>207</u>	<u>161900</u>	<u>207</u>	<u>5074</u> to <u>5095</u>
<u>2931</u>	<u>162720</u>	<u>210</u>	<u>215800</u>	<u>210</u>	<u>5250</u> to <u>5408</u>
<u>2931</u>	<u>121600</u>	<u>211</u>	<u>134400</u>	<u>225</u>	<u>5420</u> to <u>6732</u>

Remarks: _____ 26

ATLANTIC MARINE CENTER

ELECTRONIC CONTROL PARAMETERS

- 1. Project # OPR-436 2. Reg. # H- 9462 3. Field # WH-20-3-74
- 4. Type of Control: DEL NORTE (Hi-Fix, Raydist, EPI, etc.)
- 5. Frequency UNITS-METERS (for conversion of electronic lanes to meters)
- 6. Mode of Operation (check one):

Range-Range

Range-Visual

Range One (R₁)
 Station I.D. 22Z
 Range Two (R₂)
 Station I.D. MIDD 1974

Lat. 31° 41' 58.841"
 Long. 081° 08' 32.052"
 Lat. 31° 46' 17.330"
 Long. 081° 03' 59.269"

Hyperbolic (3-station)

Hyper-Visual

Slave One
 Station I.D. _____
 Master
 Station I.D. _____
 Slave Two
 Station I.D. _____

Lat. _____"
 Long. _____"
 Lat. _____"
 Long. _____"
 Lat. _____"
 Long. _____"

7. Location of Survey:

Range-Range

Imagine an observer is standing at 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)
<u>2931</u>	<u>233219</u> <u>209</u>	<u>235845</u> <u>209</u>	<u>5242</u> to <u>5249</u>
<u>2932</u>	<u>132955</u> <u>209</u>	<u>170133</u> <u>209</u>	<u>245</u> to <u>308</u>
			to _____

9. Remarks: _____

ATLANTIC MARINE CENTER
ELECTRONIC CONTROL PARAMETERS

- 1. Project # OPR-436 2. Reg. # H-9462 3. Field # WH-20-3-74
- 4. Type of Control: DEL NORTE (Hi-Fix, Raydist, EPI, etc.)
- 5. Frequency UNITS-METERS (for conversion of electronic lanes to meters)
- 6. Mode of Operation (check one):

Range-Range

Range-Visual

Range One (R₁) ST. CATHERINES
 Station I.D. SOUND LIGHT 114
 Range Two (R₂)
 Station I.D. MIDD 1974

Lat. 31° 43' 00.232"
 Long. 081° 09' 03.665"
 Lat. 31° 46' 17.330"
 Long. 081° 03' 59.269"

Hyperbolic (3-station)

Hyper-Visual

Slave One
 Station I.D. _____
 Master
 Station I.D. _____
 Slave Two
 Station I.D. _____

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

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)
<u>2932</u>	<u>141502</u> <u>207</u>	<u>191958</u> <u>208</u>	<u>1</u> to <u>244</u>
<u>2932</u>	<u>171246</u> <u>209</u>	<u>124925</u> <u>225</u>	<u>309</u> to <u>1419</u>
			to

9. Remarks: _____

LIST OF SIGNALS ON H-9462 (WH-20-3-74)

Name Used in
Hydrographic
Survey

Origin of Station

MIDD 1974

Photo Party 62

ST. CATHERINES
SOUND LIGHT 114

Photo Party 62

22Z

WHITING Personnel

POSITION DATA SHEET

LAUNCH 2931 (WHITING #1) SHEET WH-20-3-74

REGISTRY NO. H-9462

Jul. Day	First Pos. No.	Last Pos. No.	Time (GMT)	Time (GMT)	Development Positions	Detached Positions	Rejected Positions	Duplicate Positions	Omitted Positions	Bottom Sample
207	5001	5095	121720	161840	0	0	0	0	0	0
209	5096	5249	173140	235845	0	5233, 5238 5242-5249	5242-5249 5194	0	0	0
210	5250	5419	162720	224420	0	0	5294-5299 5344	0	0	0
211	5420	5654	121620	212658	0	5654	0	0	0	0
212	5655	5735	102433	171900	0	5655-5661	5668-5669	0	0	0
212	5736	5837	201340	232300	0	0	0	0	0	0
219	5838	5958	134400	182100	0	0	0	0	0	0
221	5959	6147	114400	191600	0	0	0	0	0	0
222	6148	6337	113040	191320	0	0	0	0	0	0
223	6338	6515	112920	174540	0	0	0	0	0	0
224	6516	6698	115000	191916	0	0	0	0	0	6646, 6686 6661, 6697 6677, 6698
225	6699	6732	115026	134400	0	0	0	0	0	6699, 6719 6700, 6720
										TOTAL = 10

OPR 436

POSITION DATA SHEET

CH 2932 (WHITING #II)

SHEET WH-20-3-74

REGISTRY NO. H-9462

Jul. Day	First Pos. No.	Time (GMT)	Last Pos. No.	Time (GMT)	Development Positions	Detached Positions	Rejected Positions	Duplicate Positions	Omitted Positions	Bottom Sample
207	1	141502	132	212222	0	0	110	0	0	0
208	133	113651	244	191958	0	0	175-176 201-203 212-215	0	0	0
209	245	132955	427	232951	0	0	333-334 412-413	0	0	0
210	428	115659	658	232243	0	564	507	0	0	0
211	658	113722	854	213154	0	0	725,784 - 785,819 -	658	0	0
212	855	114125	1054	233825	0	0	821,830 - 831,974	974,1003	0	0
219	1055	160819	1090	180145	0	1062	1091,1092	0	0	0
221	1093	122020	1210	190540	0	0	1204	0	0	0
222	1211	131719	1267	190655	0	0	0	0	0	0
223	1268	120558	1349	174801	0	0	1327	0	0	0
224	1350	115259	1415	190225	0	0	1404	0	0	1402-1415
225	1416	115606	1419	124925	0	0	0	0	0	1416-1419
										TOTAL = 12

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

FORM C&GS-733M
(6-66)

VESSEL	PROJ. NO.	YEAR	BOAT SHEET	CHECKED BY	DATE CHECKED	SAMPLE POSITION		DEPTH (Fathoms) Feet	WEIGHT OF SAMPLER FLER	AP. PROX. PENE- TRA- TION	LENGTH OF CORE	COLOR OF SED- IMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, dented cutter, stat. no., type of bottom relief i.e., slope, plain, disposition, etc.)	OBS. INIT.
						LATITUDE	LONGITUDE								
WH-2 (2932)	OPR-436	74	WH-20-3-74 (H-9462)	EG	8 Sept 74										
1402	Aug 12	31° 36.10	81° 01.18	33								fn gy S			
1403	"	31° 37.13	81° 01.18	31								fn gy S			
1405	"	31° 38.16	81° 01.18	30								fn gy S, brk Sh			
1406	"	31° 40.11	81° 01.18	26								fn gy S			
1407	"	31° 41.14	81° 01.18	19								fn gy S			
1408	"	31° 42.18	81° 01.18	20								fn gy S			
1409	"	31° 43.11	81° 00.13	25								fn gy S			130
1410	"	31° 41.18	81° 00.12	26								fn gy S, brk Sh			
1411	"	31° 40.14	81° 00.12	35								fn gy S			
1412	"	31° 39.15	80° 58.17	42								cr gy S, brk Sh			
1413	"	31° 40.18	80° 58.16	34								cr gy S, brk Sh			
1414	"	31° 42.13	80° 58.16	32								fn gy S			
1415	"	31° 43.16	80° 58.16	32								fn gy S			
1416	Aug 13	31° 39.11	81° 00.12	28								fn gy S, brk Sh			
1417	"	31° 37.13	81° 00.12	36								fn gy S under layer of fn br S			
1418	"	31° 36.16	80° 58.17	34								fn gy S			
1419	"	31° 38.10	80° 58.16	37								fn gy S, brk Sh			

Use more than one line per sample if necessary.

* APPROVAL SHEET *

Submitted by:

Edward Gastaldo

Edward Gastaldo
LTJG, NOAA

Supervision of field and office work on this hydrographic survey was continuous on a day to day basis to insure completeness of the survey and that all work was in accordance with the instructions.

Approved/Forwarded:

Robert A. Trauschke

Robert A. Trauschke
CDR, NOAA
Commanding Officer, NOAA Ship WHITING

APPENDIX I

ELECTRONIC CONTROL REPORT WH-20-3-74

NOAA SHIP WHITING

ELECTRONIC CONTROL REPORT WH-20-3-74

Del Norte electronic positioning equipment was used as control for this survey. The system known as "Del Norte's Trisponder" is a microwave positioning system which provides line of sight information from a master station to one or more remotes. The distance is an average of 100 valid range measurements for the round trip of RF signals transmitted between the master and remote stations. Each measurement requires only one micro second and is up-dated every second. By using a 100 measurement average, statistical error is reduced and consequently the system accuracy and stability is increased. The remote stations were set up at known shore stations and the master was placed on the survey launch. Signals to and from each station are coded to prevent outside interference and to provide station selection. Range/range data was then recorded during the survey to provide geographic positioning.

The basic "Trisponder" system includes a control-display unit, a master, and two or more remote transmitter-receiver stations. The master uses an omni-directional antenna and each remote uses a directional antenna. Also included in the system is a time share feature which permits two or more master units to operate simultaneously. The remote transmitter-receiver remains in a standby mode until interrogated by a master. The standby mode has a reduced power requirement.

The Del Norte Trisponder is advertised to have an accuracy of ± 3 meters within a range of 50 miles. As position accuracy depends upon the angle of the range intercepts, the intersection angle was between 30 and 150 degrees. With a maximum range error of ± 3 meters, the maximum fix error at 30 degrees or 150 degrees would be $3 \text{ meters} / \sin 15 \text{ degrees} = \pm 12 \text{ meters}$. At 90 degrees, the maximum position error reduces to $3 \text{ meters} / \sin 45 \text{ degrees} = \pm 4 \text{ meters}$.

Correctors to launch Del Norte readings were obtained by calibrating each Distance Measuring Unit (DMU) with each remote unit over a baseline of known distance. The baseline distance was determined by computing the inverse between known geographic positions or measuring a 305 meter (1000 ft.) base line over a level surface with a 300 foot steel tape.

Calibrations were conducted in accordance with methods described in the Del Norte manual.

As no attenuators were used during calibrations, the final corrector applied is a combination of the observed error (i.e., calibration range minus DMU reading) and the intrinsic error generated by calibrating at a range differing from the working distance.

For instance, after calibrating at 305 meters, 10006 meters would be read at 10,000 meters necessitating a -6 meter corrector. The accompanying figure taken from the Del Norte manual illustrates the logarithmic progression of error generated by the afore mentioned problem.

The accompanying table illustrates the error generated by calibrating over a short baseline with no attenuator.

CALIBRATION RANGE	WORKING DIST	CORRECTOR
305 meters	2000	-2
305 meters	10000	-6
2000 meters	10000	-4
10000 meters	2000	+4

Final corrector values were applied such that range readings would be correct within 5 meters (.25 mm at the scale of the survey).

The corrector for a given day was obtained by a linear interpolation between the day of initialing the Del Norte and the day of calibration. For example, if the DMU error observed was -12 meters after a 12 day span between calibrations and one wished to determine the corrector on the 10th day out, it would be -10 meters.

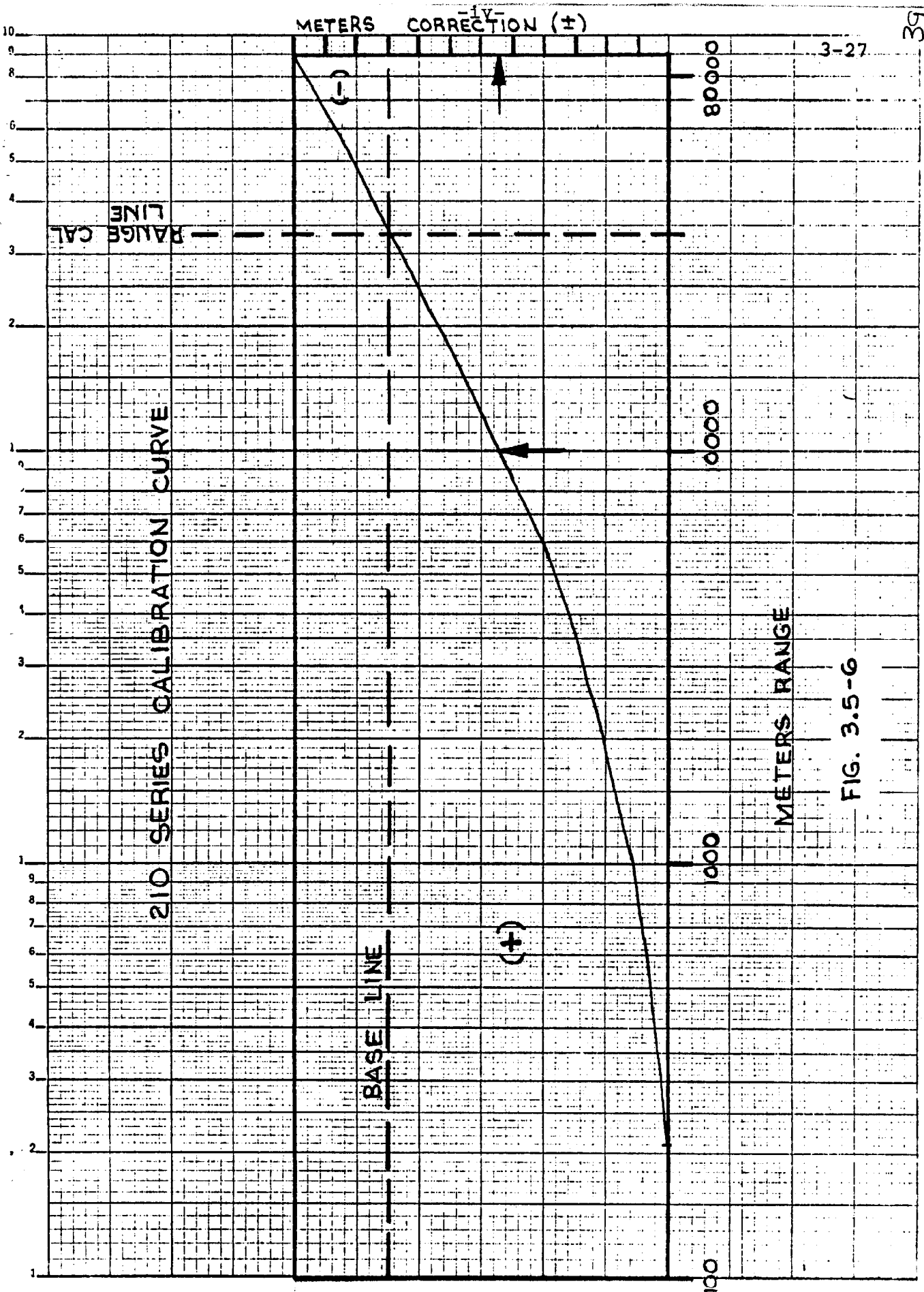


FIG. 3.5-6

However, Because of our 5 meter leeway, if an error of -6 meters was found, the corrector for the total period would be considered to be -3 meters (-3 being the average corrector for the time span). The error in positioning thus introduced, is considered negligible and under field conditions, 5 meters is a realistic value for ranging accuracy.

GEOGRAPHIC POSITIONS
of DEL NORTE SITES

Remote A: MIDD 1974, middle of Ossabaw Island

Latitude 31° 46' 17.330" N
Longitude 81° 03' 59.269" W

Remote C: St. Catherines Sound Light 114, in
St. Catherines Sound.

Latitude 31° 43' 00.232" N
Longitude 81° 09' 03.665" W

Remote D: Location 22Z (see section F, Control),
north tip of St. Catherines Island.

Latitude 31° 41' 58.841" N
Longitude 81° 08' 32.052" W

The arrangement of stations was with no view towards
maintaining an alphabetical order but was a function of
operational requirements..

STOCK NO. 37
(4-30-57)
COMM-DC 28424

ST. CATHERINES SOUND

ELECTRONIC CORRECTOR ABSTRACT

LAUNCH WH-I

WH-20-3-74

Day	DMU	Master	Left Remote	Right Remote	From Time	To Time	Corr. Left	Corr. Right	Julian Day
209	190	278	22Z D	DB 114 C	173140	221700	-4	-6	209
			22Z D	Midd A	233219	235845	-4	-8	
210	181	199	DB 114 C	Midd A	162720	215800	-6	0	210
			22Z D	DB 114 C	221840	224420	0	-6	
211	181	199	DB 114 C	Midd A	121600	212658	-6	0	211
212	181	199	DB 114 C	Midd A	112433	232300	-6	0	212
219	181	199	DB 114 C	Midd A	134400	182120	-6	0	219
221	181	199	DB 114 C	Midd A	114400	191600	-6	0	221
222	181	199	DB 114 C	Midd A	113040	191320	-6	0	222
223	181	199	DB 114 C	Midd A	112920	174540	-6	0	223
224	181	199	DB 114 C	Midd A	115000	191916	-6	0	224
225	181	199	DB 114 C	Midd A	115026	134400	-6	0	225
207	190	278	22Z D	DB 114 C	121720	143420	-4	-6	207
	190	278	DB 114 C	Midd A	143740	161900	-6	-8	

APPROVAL SHEET

Submitted by:

Albert E. Theberge Sr.

Albert E. Theberge
LT, NOAA

Approved/Forwarded

Robert A. Trauschke

Robert A. Trauschke
CDR, NOAA
Commanding Officer, NOAA Ship WHITING

APPENDIX II

ECHO-SOUNDER AND VELOCITY CORRECTIONS REPORT

H-9462

WH-20-3-74

OPR 436-74

NOAA SHIP WHITING

ROBERT A. TRAUSCHKE, CDR, NOAA

COMMANDING

A. GENERAL DISCUSSION:

Hydrography for St. Catherine's Sound, boat sheet WH-20-3-74, was accomplished with the WHITING's Survey Launches WH-I (Hull #1206) and WH-II (Hull #1208). Launch WH-I, using a Raytheon DE-723 Echo-sounder (ser. #37018), worked Julian Days 207-225. Launch WH-II, using a Ross, Model 5000 (ser. #1055) Echo-sounder, worked Julian Days 207-225.

Echo-sounder operators made frequent checks for proper initial settings, used A-F checks on the DE-723, and used the internal phase check on the Ross 5000. Both echo-sounders were initialed at zero feet.

B. VELOCITY CORRECTIONS:

Velocity corrections to depth soundings were determined from TDC cast data. Bar checks were taken to validate the use of TDC velocity corrections.

Computer program AM530 was used to calculate velocity of sound and corrections to soundings from TDC data. The program corrects for the vessel's draft on one meter and assumes an initial of one meter. Since we were using zero feet initial, one meter was subtracted from the applicable depths to plot the velocity correction curve (see Graph #1). For information on calibration of TDC equipment, see "Descriptive Report Operation 436-74 WH-40-3-74".

Two TDC casts were made on Julian Day 211. One cast was made near the eastern limits of the sheet, and the second was made near the western limits in the deepest part of the channel. Values from these casts differed by less than .3% of the depth, so they were averaged. The maximum difference allowed by the Hydrographic Manual is .5% of the depth. After averaging the correction values (see Table #1), at each depth, these values were subtracted from the corresponding depth to obtain the echo-sounder depth versus the correction plot. This is the necessary plot used to generate the velocity table tape which is listed in the Appendix.

Bar check data (see Table #2) was used to verify the TDC data. The plot of TDC data and bar check data (see Graph #2) shows good correlation at depth and some discrepancy near the surface. This discrepancy may be due to current, seas, or improper handling of the bar so that the per cent of discrepancy of depth is higher at shoaler depths.

TDC DATA

TABLE 1

Day	Applicable Depth	Correction
211	0.0	0.00
	6.5	.36
	13.1	.73
	19.7	1.09
	26.2	1.46

211	0.0	0.00
	6.5	.35
	13.1	.69
	19.7	1.04
	26.2	1.39
	32.8	1.74

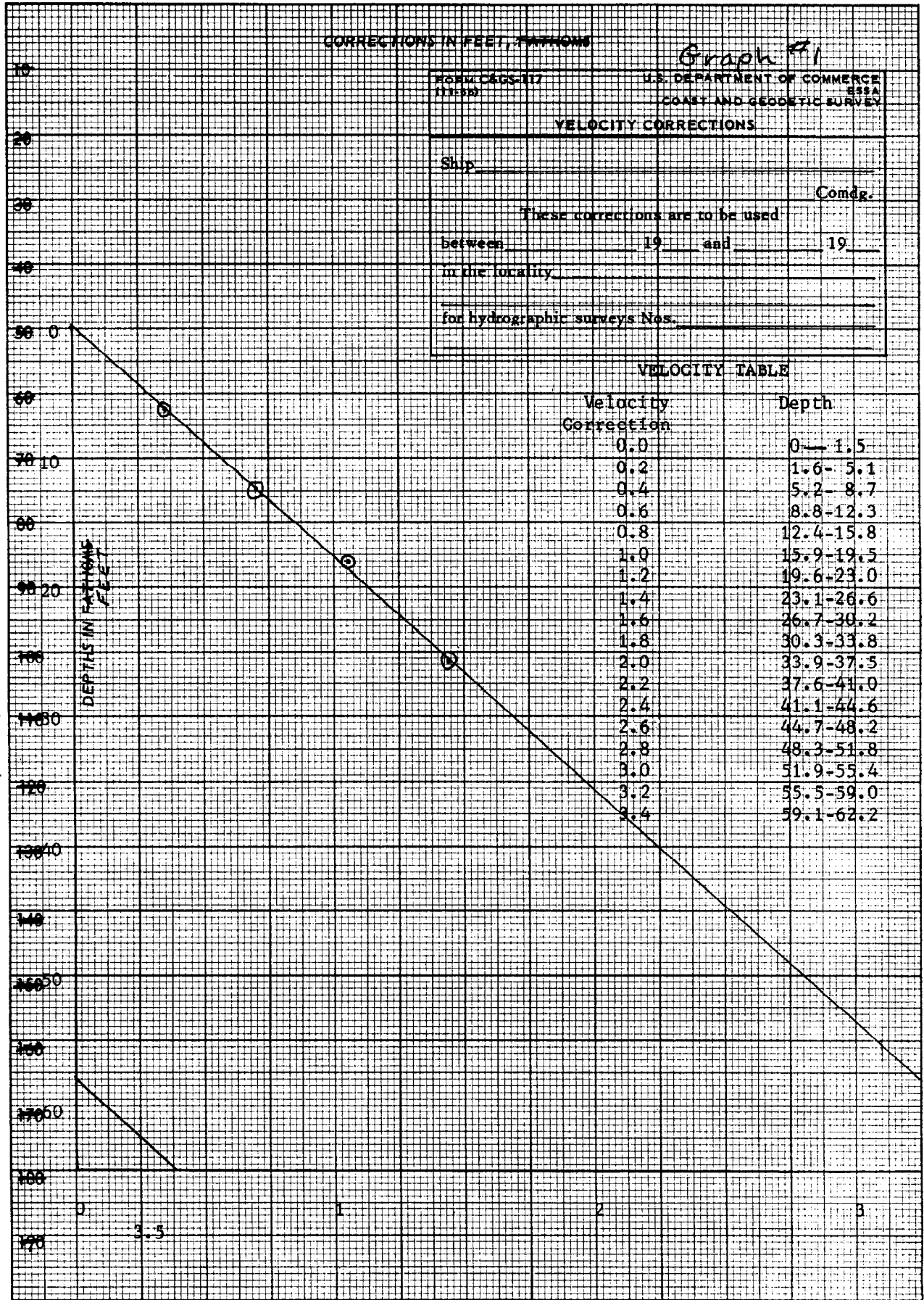
	Sounder Depth	Correction
Average	0.0	0.00
	6.1	.36
	12.4	.71
	18.0	1.06
	25.8	1.42

BD-DD VALUES FROM BAR CHECKS

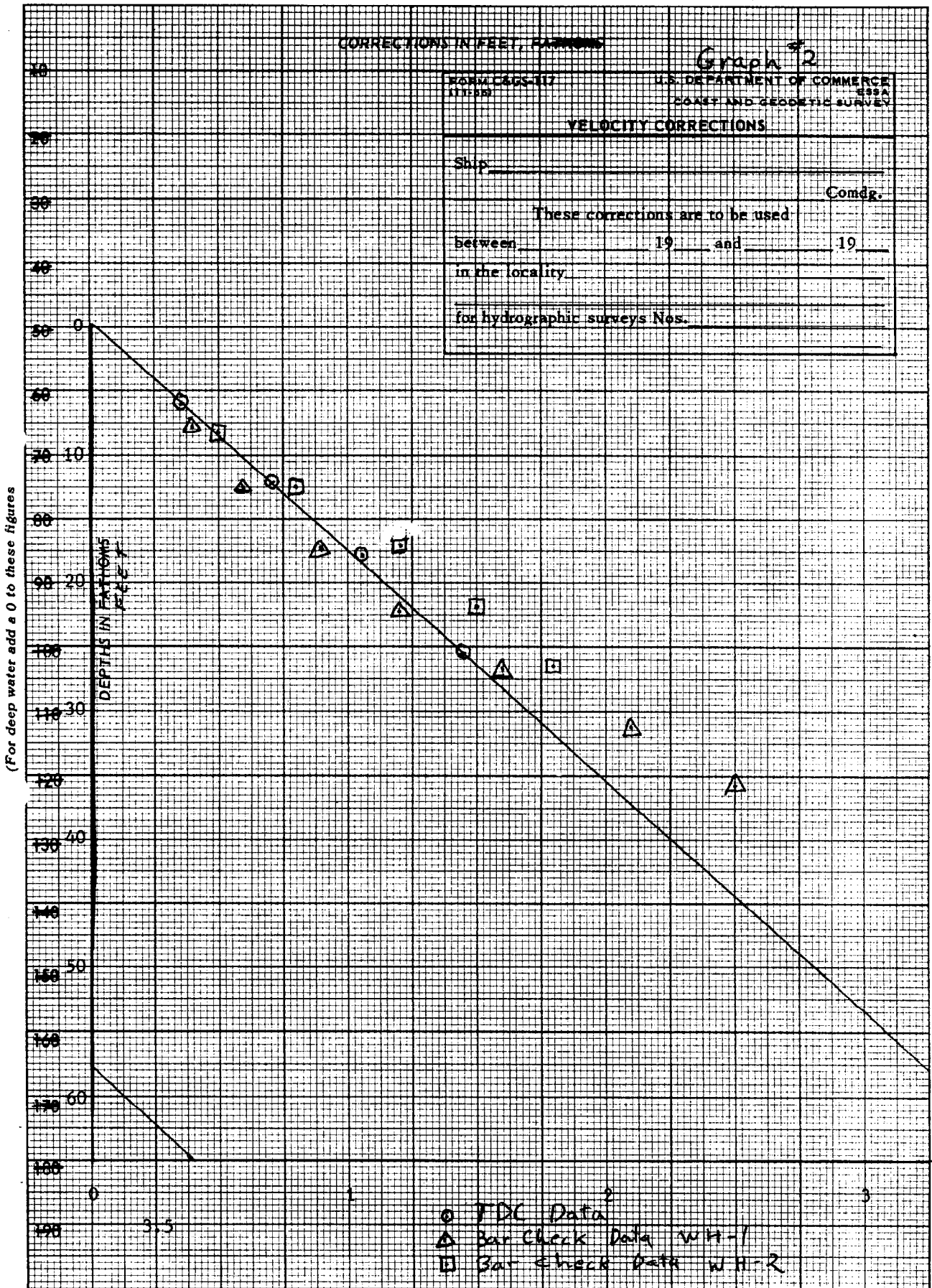
TABLE 2

WH-1		BAR DEPTHS							
Julian Day	10ft.	15ft.	20ft.	25ft.	30ft.	35ft.	40ft.		
207 ↓	1.8	2.2	2.5	2.7	3.1				
207 ↑	2.0	2.4	2.6	2.9	3.0				
210 ↓	2.0	2.3	2.7	3.0	3.4				
210 ↑	1.9	2.3	2.7	3.1	3.3				
221 ↓	2.2	2.4	2.7	2.9	3.4	3.9	4.6		
221 ↑	2.0	2.3	2.7	2.9	3.7	4.0	4.2		
222 ↓	1.9	2.2	2.6	2.9	3.2	3.5			
222 ↑	1.8	2.2	2.6	2.9	3.2	3.5			
223 ↓	1.9 *	2.4 *	2.6 *	3.0 *	3.4 *				
223 ↑	2.2 *	- *	3.0 *	- *	3.3 *				
224 ↓	1.9	2.3	2.7						
224 ↑	1.8	2.3	2.5						
225 ↓	1.8	2.2	2.6	3.0	3.7 *	4.2	4.0		
225 ↑	1.8	2.1	2.5	2.9	3.1 *	3.7	4.0		
Ave.	2.1	2.3	2.6	2.9	3.3	3.8	4.2		
+ Corr.	.4	.6	.9	1.2	1.6	2.1	2.5		
Applicable Depth	7.9	12.2	17.4	22.1	26.7	31.2	35.8		
WH-2									
219 ↓	2.1	2.3	2.7						
219 ↑	2.0	2.5	2.7						
221 ↓	2.2	2.5	3.0	2.9 *	3.5				
221 ↑	2.3	2.5	2.9	3.0 *	3.5				
222 ↓	2.5	2.7	3.0	3.2					
222 ↑	2.4	2.6	3.0	3.3					
Ave.	2.2	2.5	2.9	3.2	3.5				
+ Corr.	.5	.8	1.2	1.5	1.8				
Applicable Depth	7.8	12.5	17.1	21.8	26.5				
↓	Values as bar goes down								
↑	Values as bar goes up								
*	Rejected because erratic, discontinuous, or no corresponding up value								
+ Corr.	= (BD-DD) - (Draft of Boat)								

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



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



C. TRA CORRECTIONS:

Settlement and squat observations were made in July 1973 for both WHITING Launches (see "Fathometer and Velocity Corr. Report, Project OPR 436-WH-73, Coast of South Carolina and Georgia"). The results were:

Standard Speed	2.4 feet
Reduced Speed	2.0 feet

The draft of both launches was known to be 1.7 feet. All hydrography was done with an initial of zero feet and the TRA was added on either the master or corrector tapes. An abstract is included in the Descriptive Report.

Since all TRA corrections appear on the master or corrector tapes, zero correction appears on both TC/TI tapes (see listing in Appendix).

APPROVAL SHEET

Submitted by:



Edward D. Gullekson
ENS, NOAA

Approved/Forwarded:



Robert A. Trauschke
CDR, NOAA
Commanding Officer, NOAA Ship WHITING

GEOGRAPHIC NAMES

H-9462

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
	ON CHART NO.										
	ON PREVIOUS SURVEY NO.										
	ON U.S. QUADRANGLE MAPS										
	FROM LOCAL INFORMATION										
	ON LOCAL MAPS										
	P.O. GUIDE OR MAP										
	GRAND MCNALLY ATLAS										
	U.S. LIGHT LIST										
ATLANTIC OCEAN											1
OSSABAW ISLAND											2
ST. CATHERINES ISLAND											3
ST. CATHERINES SOUND											4
											5
											6
											7
											8
											9
											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25

APPROVED
 Chas. E. Nannington
 STAFF GEOGRAPHER-LSIX2
 16 OCT. 1975

HYDROGRAPHIC SURVEY STATISTICS

HYDROGRAPHIC SURVEY NO. H-9462

(WH-20-3-74)

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET & 2-Overlays		1	BOAT SHEETS	originals mailed to Rockville	1 (2-parts)	
DESCRIPTIVE REPORT		1	OVERLAYS	10-22-74	* 2	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ACCORDION ENVELOPES	1		2			
CAHIERS	1		1			
VOLUMES						
BOXES			1			

T-SHEET PRINTS (List)
TP-00492, 00493

SPECIAL REPORTS (List)
NONE

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				3154
POSITIONS CHECKED		315		
POSITIONS REVISED		25		
DEPTH SOUNDINGS REVISED		500		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		---		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		---		
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		8		
JUNCTIONS		4		
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		10		
SPECIAL ADJUSTMENTS				
ALL OTHER WORK		138		
TOTALS		160		
PRE-VERIFICATION BY J.T. Murphy, R. Hill	BEGINNING DATE 10-15-74	ENDING DATE 3-3-75		
VERIFICATION BY B.J. Stephenson	BEGINNING DATE 6-2-75	ENDING DATE 6-10-75		
REVIEW BY	BEGINNING DATE	ENDING DATE		

VERIFICATION NOTES

Survey H-9462

General

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

Norfolk, Virginia

William L. Jonns

William L. Jonns
Chief, Verification Branch
AMC.

ATLANTIC MARINE CENTER
APPROVAL SHEET
FOR
AUTOMATED SURVEY H-9462

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

Date: July 25, 1975

Signed: *William L. Jonns*
William L. Jonns

Title: Chief, Verification Branch

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

Date: July 25, 1975

Signed: *Jeffrey G. Carlen*
Jeffrey G. Carlen, CDR. NOAA

Title: Chief, Processing Division

VERIFIER'S REPORT
HYDROGRAPHIC SURVEY, H 9462

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>	X		<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>	X	
<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>	X		<p>Part IV - VOLUMES 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>	NA	
<p>3. All reference to survey sheets mentioned in the Descriptive Report should include registry number and year. Remarks Required: -- None</p>	X		<p>12. Condition of sounding records was satisfactory except as follows: Remarks Required: -- Mention deficiencies in completeness of notes or actions for the following: (a) rocks (b) line turns (c) position values of beginning and ending of lines (d) bar check or velocity correctors (e) time recording (f) notes or markings on fathograms (g) was reduction of soundings accurately done? (h) was scanning accurate? (i) were peaks at uneven intervals missed? (j) were stamps completed? (k) references to adjacent features</p>	X	
<p>Part II - SHORELINE AND SIGNALS 4. Source of shoreline signals Remarks Required: -- List all surveys TP-00492 a. Give earliest and latest dates of photographs Nov. 1971-Apr. 1974 b. Field inspection date NONE c. Field Edit date May, August 1974 d. Reviewed-Unreviewed -----</p>	X				
<p>5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences.</p>	X				
<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>	X				
<p>7. Objects on which signals are located and which fall outside of the high-water line have been described on the sheet. Remarks Required: -- List those signals still unidentified.</p>	X		<p>Part V - MACHINE PLOTTING 13. All positions verified instrumentally were check marked in color in the sounding records, and verifier initialed the processing stamp. Remarks Required: -- None</p>	X	
<p>Part III - JUNCTIONS Note: Make a cursory comparison preliminary to inking soundings in area of overlap.</p> <p>8. All junctions of contemporary or overlapping sheets were compared and overlapping curves were made identical. Remarks Required: -- None</p>	X		<p>14. The plotting of all unsatisfactory crossings was verified. Remarks Required: -- None</p>	X	
<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>	X		<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>	X	

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.	X		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.	X	
17. The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number. 4-15-75	X		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	X	
Part VI - SOUNDINGS 18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None	X		Part IX - BOATSHEET 28. The boat sheet was constantly compared with the smooth sheet with reference to notes, position of sounding lines and supplemental information. Remarks Required: -- None	X	
19. Sounding line crossings were satisfactory except as follows: Remarks Required: -- Discuss adjustments.	X		29. Heights of rocks awash were correctly reduced and compared with topographic information. Remarks Required: -- Note excessive conflicts with topographic information.	X	
20. The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None	X		Part X - GENERAL 30. All information on the sheet is shown in accordance with figures 82 and 83 in the Hydrographic Manual (Pub. 20-2). Remarks Required: -- None	X	
21. The scanning, reduction, spacing, plotting of questionable soundings have been verified. Remarks Required: -- None	X		31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None	X	
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.	X		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	X	
Part VII - CURVES 23. The depth curves have been inspected before inking. Remarks Required: -- By whom was the penciled curves inspected. W.L.J.	X		33. The bottom characteristics are adequately shown. Remarks Required: -- None	X	
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	X		Part XI - NOTES TO THE REVIEWER 34. Unresolved discrepancies and questionable soundings.	X	
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.	X		35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.	NA	
			36. Supplemental information.	NA	
Verified by B.J. Stephenson			Date 6-10-75 57		

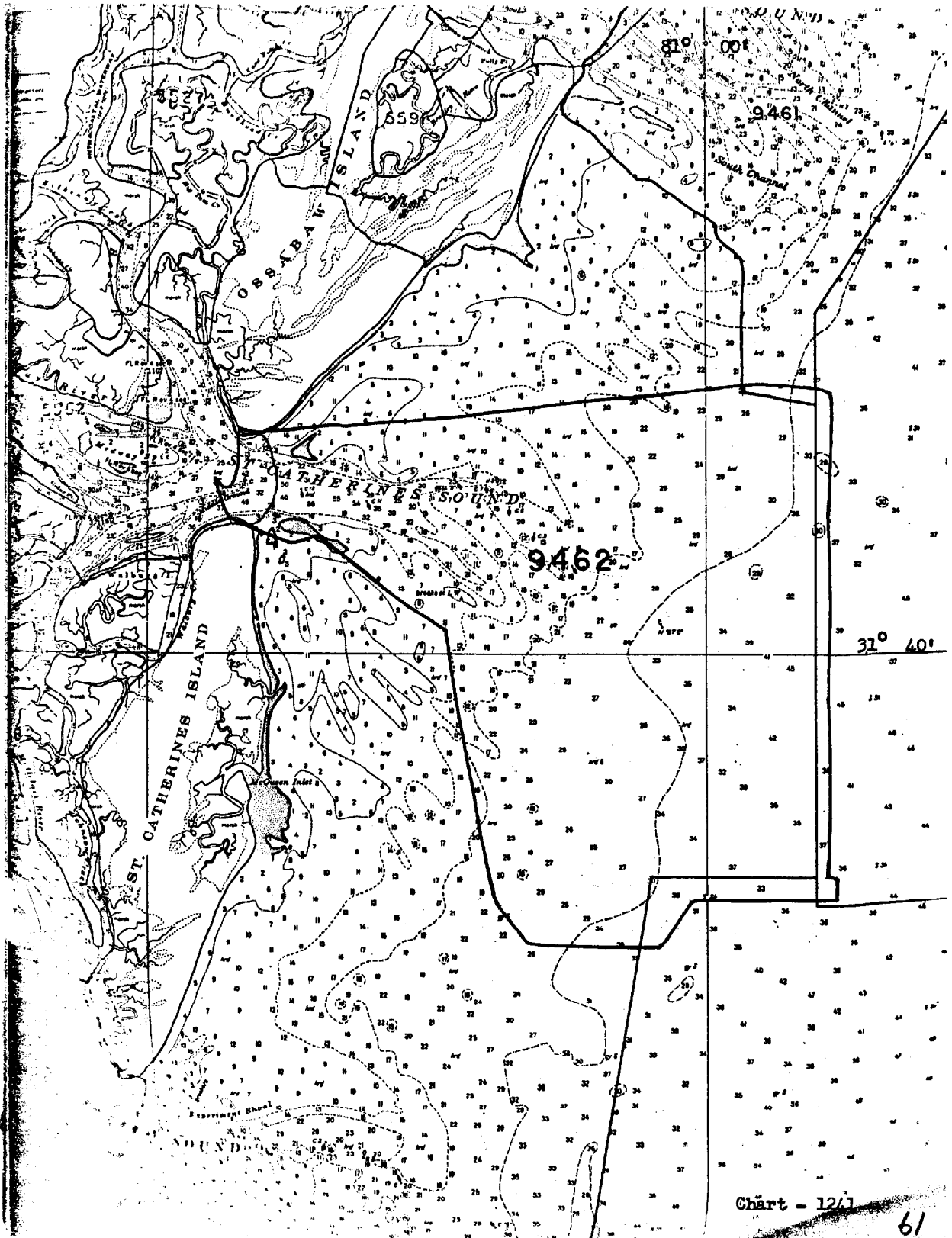


Chart - 12/1

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO.

H-9462

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
573	8-14-75	KIRBY GEAR	Full Part Before After Verification Review Inspection Signed Via Drawing No. 14 & 14M
1241	9-30-75	KIRBY GEAR	Full Part Before After Verification Review Inspection Signed Via Drawing No. 25
573	8 Apr 76	NEDALD KOEHL	Full Part Before After Verification Review Inspection Signed Via Drawing No. (CATEGORY 1)
834	5-3-77	M. M. M. M.	Full Part Before After Verification Review Inspection Signed Via Drawing No. CATEGORY 1 SCOPE
574	26 May 77	Alex. Radichevich	Full Part Before After Verification Review Inspection Signed Via Drawing No. Cat. 1 SCOPE
1241	11/14/77	JAY STERMAN	Full Part Before After Verification Review Inspection Signed Via Drawing No.
11480	6-10-80	Allan D. ...	Full Part Before After Verification Review Inspection Signed Via Drawing No. 32
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.