

# 8840

# 8840

Diag. Cht. No. 1000-3.

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.	HY-80-2-65
Office No.	H-3840
LOCALITY	
State	Florida
General locality	East Coast
Locality	Northeast of Cape Kennedy
1965	
CHIEF OF PARTY	
V. R. Sobieralski	
LIBRARY & ARCHIVES	
DATE	April 12, 1966

HYDROGRAPHIC TITLE SHEET

H-8840

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.

HY-80-2-65

State Florida

General locality East Coast Atlantic Ocean

Locality Northeast of Cape Kennedy  
~~East Coast~~

Scale 1:80,000 Date of survey June 6 to June 30, 1965

Dec. 27, 1963, Chief, Operations Div. memo  
Instructions dated dtd Feb. 17, 1964, Supp. Inst. Project No. OPR-447  
dtd Nov. 18, 1964

Vessel USC&GS Ship HYDROGRAPHER

Chief of party V. Ralph Sobieralski, CDR, USC&GS  
K. E. Taggart, J. H. Allred, G. E. Huss, W.Y.S. Williams, W. R. Klesse,

Surveyed by M. A. Levitan, W. T. McMullen, D. E. Youngdahl

Soundings taken by echo sounder, ~~USC&GS~~ DE-723

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Protracted by to be smooth plotted, by Gerber Plotter, at Seattle Regional Office

Soundings <sup>inked</sup> ~~penciled~~ by same as above

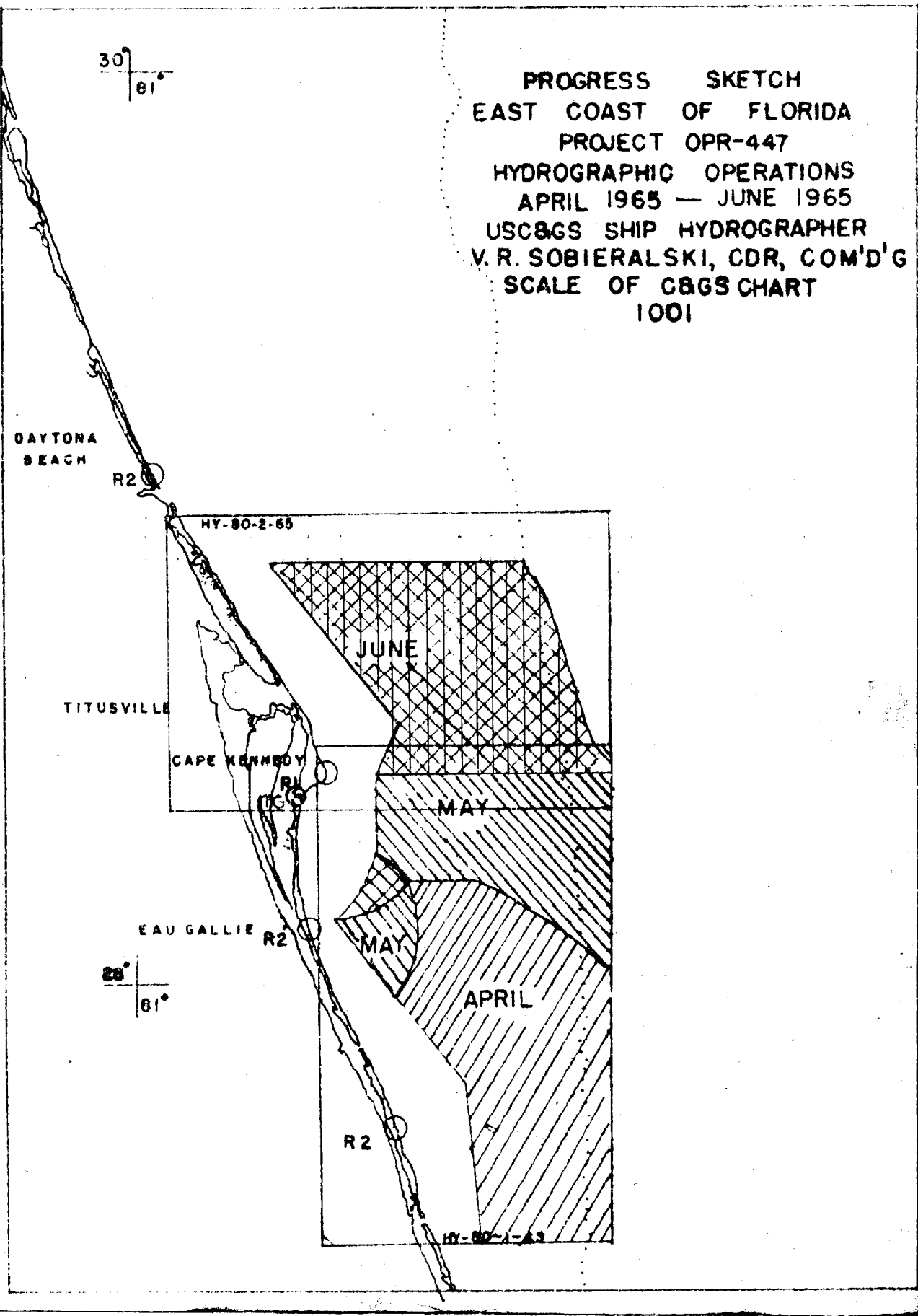
Soundings in fathoms ~~xxx~~ at MLW ~~xxxx~~ are true depths

The ship's procedure for processing and disposition of records is as follows:

The fathogram is scanned and corrected or omitted soundings are entered on

REMARKS: the original printout, by hand. Then Raydist, Draft and Tide corrections are entered and checked on the original printout, by hand. (Tide data: Values for the Canaveral Harbor portable tide gage were obtained from the marigrams prior shipment to Washington. These values were used prior verification by Tides and Currents, Washington to forward confirmed values to Seattle Regional Office for inclusion in final plot. See Chief, Operations Division memorandum dated March 26, 1965 - copy included with this report). Using the corrected original printout, a corrector tape is made with printout. This is proof-read. For velocity correction data see the memorandum listed above. The raw data tape with original printout, corrector tape and printout, unverified velocity and tide values, Raydist Brush Recorder records, fathograms, boatsheet and descriptive report are forwarded to Seattle Regional Office. A copy of the Raydist Report, Report on Corrections to Echo Soundings is forwarded to Washington Office and to Seattle Regional Office. Position Numbers on this survey run consecutively (0001 to 2663).

PROGRESS SKETCH  
EAST COAST OF FLORIDA  
PROJECT OPR-447  
HYDROGRAPHIC OPERATIONS  
APRIL 1965 — JUNE 1965  
USC&GS SHIP HYDROGRAPHER  
V. R. SOBIERALSKI, CDR, COM'D'G  
SCALE OF CBGS CHART  
1001



DESCRIPTIVE REPORT

To Accompany

Hydrographic Survey H-8840 (HY-80-2-65)

1965

USC&GS Ship HYDROGRAPHER

Scale: 1:80,000

V. Ralph Sobieralski, CDR, USC&GS

Chief of Party

A. PROJECT

This survey was accomplished under project instructions, OPR-447, East Coast of Florida, dated December 27, 1963, Chief, Operations Division memorandum dated February 17, 1964, and supplemental instructions dated November 18, 1964.

B. AREA SURVEYED

This survey covers an area of <sup>750</sup>785 square nautical miles off the east coast of Florida. It is bounded on the west by the approximate 10 fathom curve, on the east by the approximate 120 fathom curve, and lies between Latitudes 28°27.5' North and 28°55.0' North.

Hydrography began on June 6 and was completed on June 30, 1965.

This survey junctions with prior surveys H-8714, scale 1:100,000, 1962, on the east; and H-8344, scale 1:20,000, 1956, on the west.

This survey overlaps the following prior surveys:

<u>Registry Number</u>	<u>Scale</u>	<u>Date of Survey</u>
H-4931	1:120,000	1929
H-4932	1:40,000	1929
H-4935	1:40,000	1929
H-4946	1:40,000	1929
H-5138	1:120,000	1931
H-8342	1:20,000	1956
H-8345	1:40,000	1956

C. SOUNDING VESSEL

All hydrography was accomplished by the USC&GS Ship HYDROGRAPHER.

D. SOUNDING EQUIPMENT

The Raytheon Survey Fathometer, Model DE-723, Serial Number 61-29 was used for all hydrography.

Depths ranged from 7 to 133 fathoms.

Corrections to echo soundings were determined as follows:

- (a) Transducer draft corrections were derived from daily draft readings of the ship's internal draft gage.
- (b) Echo sounder instrument corrections were determined by simultaneous comparisons with vertical casts made in areas of smooth bottom during periods of calm weather and sea conditions.
- (c) Settlement and squat corrections were used as determined from tests made on August 20, 1963.
- (d) Echo sounder phase corrections were determined by means of phase comparisons in areas of smooth bottom during periods of calm weather and sea conditions.
- (e) Sound velocity corrections were determined by means of temperature and salinity casts made each month in the area being surveyed.

For methods of applying these corrections, refer to Section "O" of this report.

E. SMOOTH SHEET

The smooth sheet <sup>was</sup> ~~will~~ be plotted automatically, by the Gerber Plotter, in the Seattle Regional Office.

F. CONTROL

All positions on this survey were located with Raydist. Single antenna systems were used on the ship and at each shore station.

The R1 (Violet) station was located on Cape Kennedy, Florida. The Raydist

DESCRIPTIVE REPORT - HYDROGRAPHIC SURVEY H-8840 (HY-80-2-65) - continued  
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mast was erected over CAPE, 1965, Latitude  $28^{\circ}27'09.76''$  North, Longitude  $80^{\circ}31'46.17''$  West. The station, marked with a plain bronze disk stamped CAPE 1965, was located by Geodetic Party 366 using third order triangulation methods.

The R2 (Green) station was located near Daytona Beach, Florida. The Raydist mast was erected over HALIFAX, 1965, Latitude  $29^{\circ}08'54.160''$  North, Longitude  $80^{\circ}58'03.255''$  West. The station, marked with a plain bronze disk stamped HALIFAX 1965, was located by Geodetic Party 366 using third order traverse methods.

Raydist corrections were derived from simultaneous three-point sextant fixes and Raydist readings plotted on a 1:20,000 scale calibration sheet furnished by the Washington Office.

The lane count was checked by circling a special calibration buoy. The position of the buoy was determined by Raydist traverse from the calibration area.

An abstract of Raydist corrections is appended to this report. For more detailed information refer to Raydist Report, 1965 Field Season, OPR-447, East Coast of Florida, USC&GS Ship HYDROGRAPHER.

G. SHORELINE

There is no shoreline within the area of this survey.

H. CROSSLINES

Approximately 6% of the total linear miles of sounding lines were run as crosslines. All crossings were in excellent agreement.

I. JUNCTIONS

Junction was made with prior survey H-8344, 1956, on the <sup>southwest</sup> ~~west~~ <sup>front</sup> ~~west~~. Depths along the junction were in ~~excellent~~ <sup>fair</sup> agreement. 2 to 3 ft. deeper on the present survey. See Review par. 5

Junction was made with prior survey H-8714, 1962, on the east. 80% of the prior soundings compared were found to be too shoal by 4 - 6 fathoms. It is possible that these discrepancies result from different methods of applying velocity and other corrections to the soundings. \* H-8714 not verified at date of this Review

J. COMPARISON WITH PRIOR SURVEYS

Comparison with the following prior surveys indicates <sup>fair</sup> \*excellent agreement

\* See Review Par 5 & 6

DESCRIPTIVE REPORT - HYDROGRAPHIC SURVEY H-8840 (HY-80-2-65) - continued

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with differences seldom exceeding one fathom.

H-4932	H-8342
H-4935	H-8345
H-4946	

Comparison with the following prior surveys indicates good to fair agreement. It is apparent that discrepancies increased as the survey vessel proceeded offshore and control became weaker on the prior surveys.

H-4931	H-5138
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The following pre-survey review soundings were verified by the regular system of sounding lines.

<u>Latitude</u>	<u>Longitude</u>	<u>Sounding (fathoms)</u>	<u>Smooth Sheet Soundings</u>
28° 36.0' N.	80° 20.3' W. <i>Charted 49 not discredited Carried forward as L.D.</i>	8 <sup>2</sup>	9 <sup>5</sup> ✓
28° 44.1' N.	80° 25.1' W.	* 10	10 <sup>5</sup> ✓
28° 44.6' N.	80° 24.5' W.	* 10	10 <sup>5</sup> ✓
28° 50.6' N.	80° 24.8' W.	* 10	9 <sup>9</sup> 10 <sup>5</sup> - Lesser depth to Southwest
28° 51.8' N.	80° 28.3' W. <i>Carried forward</i>	10	10 <sup>5</sup> ✓
28° 52.5' N.	80° 31.8' W.	* 10	11
28° 52.8' N.	80° 26.9' W.	* 10	10 <sup>5</sup> ✓
28° 53.1' N.	80° 28.5' W.	* 10	10 <sup>7</sup> ✓
28° 53.1' N.	80° 31.9' W.	* 10	10 <sup>5</sup> 10 <sup>7</sup>
<del>28° 57.2' N.</del>	<del>80° 28.2' W.</del>	<del>10</del>	} North of Sheet limit
<del>28° 57.4' N.</del>	<del>80° 30.1' W.</del>	<del>10</del>	
<del>28° 57.4' N.</del>	<del>80° 33.4' W.</del>	<del>9</del>	
<del>28° 57.9' N.</del>	<del>80° 33.5' W.</del>	<del>9</del>	

K. COMPARISON WITH CHART

A comparison with C&GS Chart 1245 (3rd Edition, May 11, 1964, corrected

DESCRIPTIVE REPORT - HYDROGRAPHIC SURVEY H-8840 (HY-80-2-65) - continued  
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through Notice to Mariners Number 5 of January 30, 1965) indicates excellent agreement.

A comparison with C&GS Chart 1111 (9th Edition, October 1, 1962, Revised December 21, 1964, corrected through Notice to Mariners Number 5 of January 30, 1965) indicates generally good agreement.

L. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede all prior surveys of the area.

M. AIDS TO NAVIGATION

The only floating aid to navigation in the area of this survey was found to be as described by the U.S. Coast Guard Light List, Volume II, 1965, and shown on C&GS Chart 1245. It adequately serves the purpose for which it was established.

N. STATISTICS

Vessel	Ship HYDROGRAPHER
Number of Positions	2663
Nautical Miles Sounding Line	3129
Area in Square Nautical Miles	785
Number of Bottom Samples	32

O. MISCELLANEOUS

In order to adequately delineate meandering depth curves, shoal areas between the ~~20~~<sup>40</sup> fathom and 50 fathom curves were developed.

Along the ~~30~~<sup>40</sup> fathom depth curve, an unusual feature was noted. This feature resembles a scarp with the steep side to seaward. A special overlay and report on this feature will be forwarded to the Washington Office.

The field records for this survey were recorded automatically by the DATEX (automatic hydrographic recorder) system. The authorized hydrographic record consists of a typewritten printout, and a coded punched paper tape to be used in the computer processing and automatic plotting systems.

During the entire survey the following format was used for recording "raw" data:



232800	01	0208	4620	150	1	140630	129060
Time	Phase	Sounding	Position Number	Day of Year	Ft or Fms	R <sub>1</sub>	R <sub>2</sub>

The corrector tape to supplement the original tape has the following format:

232800	00	0205	4620	150	1	000250	100430	1010	110	016
Time	Indicates if corr. or added sounding	Replaces original sounding	Position Number	Day of Year	Ft or Fms	R <sub>1</sub> Correction	R <sub>2</sub> Correction	Tide Correction	Draft Correction	Velocity Correction

Chief, Operations Division memorandum dated March 26, 1965 (copy included with this report) lists the requirements for logging hydrographic data and the latest information concerning velocity and tide corrections.

All bottom samples are to be forwarded to the Washington Office.

P. RECOMMENDATIONS

None.

Q. REFERENCES TO REPORTS

The reports, listed below, are necessary for a complete evaluation and understanding of this survey have been submitted to the Washington Office with the exception of the Season's Report. A copy of these reports, except the Season's Report has been forwarded to the Seattle Regional Office.

DESCRIPTIVE REPORT - HYDROGRAPHIC SURVEY H-8840 (HY-80-2-65) - continued  
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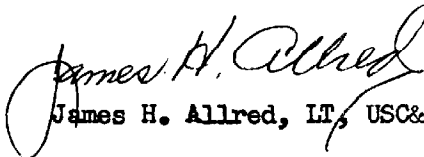
Title of Report

Raydist Report, 1965 Field Season, Project OPR-447, East Coast of Florida,  
USC&GS Ship HYDROGRAPHER (mailed July 12, 1965)


Report on Corrections to Echo Soundings, 1965 Field Season, Project OPR-447,  
East Coast of Florida, USC&GS Ship HYDROGRAPHER (mailed July 3, 1965)

Season's Report, USC&GS Ship HYDROGRAPHER, 1965 Field Season

Submitted:

  
James H. Allred, LT, USC&GS

Approved and Forwarded: JUL 15 1965

  
V. Ralph Sobieralski, CDR, USC&GS  
Commanding Officer  
USC&GS Ship HYDROGRAPHER

APPROVAL SHEET

Field No. HY-80-2-65

Registry No. H-8840

The field work accomplished on this survey was under my immediate supervision. Daily inspections of the boatsheet, DATEX printout records and fathograms were made as the survey progressed.

On the basis of the boatsheet review, the survey is complete and adequate, and no additional field work is recommended.

*V. Ralph Sobieralski*  
V. Ralph Sobieralski, CDR, USC&GS  
Commanding Officer  
USC&GS Ship HYDROGRAPHER

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TIDE NOTE

Field No. HY-80-2-65

Registry No. H-8840

Tide Station: Canaveral Harbor  
Latitude 28° 24.5' North  
Longitude 80° 36.1' West

Plane of Reference: MLW = 3.4 feet on tide staff

Time Meridian: 75° West

Time Correction: None

Height Correction: None

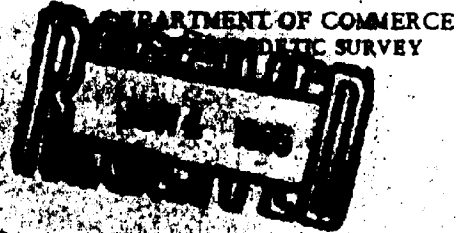
Area Covered: Entire area of boatsheet

\* An abstract of the unverified tide corrections is appended to this report.

For latest instructions concerning tide data, see Chief, Operations Division memorandum dated March 26, 1965 (copy included with this report).

\* See cahier for abstract of tide correctors as approved.

# Memorandum



TO : Commanding Officer  
USC&GS Ship HYDROGRAPHER  
P. O. Box 1259  
St. Petersburg, Florida 33731

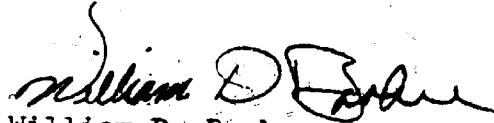
DATE: June 2, 1965

In reply refer to:  
2321-101-CSS 4

FROM : Chief, Marine Data Division

SUBJECT: Reference Plane, Port Canaveral

Preliminary determination of MLW at Port Canaveral is  
3.4 ft. on staff.

  
William D. Barbee

Faint, illegible text at the bottom of the page, possibly bleed-through from the reverse side.



UNITED STATES GOVERNMENT

KET #15  
U.S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY

# Memorandum

TO : Commanding Officer  
USC&GSS HYDROGRAPHER

Date: March 26, 1965

In reply refer to: 210

FROM : Chief, Operations Division

SUBJECT: Logging of Hydrographic Data

- Reference: (a) Revised Instructions for Logging the Corrector Tape, dated 12-7-64.  
(b) Instructions for Logging the Corrector Tape, dated 7-8-64.  
(c) Instructions for Logging Original Data, dated 4-29-64.

During the 1965 field season, while conducting hydrographic surveys on Project OPR-447, in the Straits of Florida, you shall continue to furnish the Seattle Regional Office the following:

1. The original raw data tape.
2. The corresponding hand corrected raw data tape printout, as per example in Reference (b).
3. The corrector tape.
4. The corresponding corrector tape printout, as per example in Reference (a).

Velocity corrections are to be determined and checked by the HYDROGRAPHER and forwarded to the Seattle Regional Officer for use in smooth sheet plotting. On the corrector tape, you shall continue to enter 000 in the 3-digit space provided for the velocity correction. You will no longer be required to make the Velocity Tape, as this tape will be made by the Electronic Data Processing Branch in Seattle after the velocity corrections are received. If more than one set of velocity corrections are used on the same hydrographic sheet, a description of the area covered by each set of corrections shall be included with the data sent to Seattle, and also included in the Descriptive Report and in the Report on Corrections to Echo Soundings.

Tide corrections, determined from hourly heights, shall be submitted to the Rockville, Md. office on Form C&GS 8502 for verification at the earliest possible date. Upon completion



BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

of verification, these tide corrections will be forwarded to the Seattle Regional Officer for use in smooth sheet plotting. The tide corrections determined by the HYDROGRAPHER shall be entered onto the corrector tape in the 4-digit space provided by the method explained on pages 3 and 4 of Reference (b). Any changes in tide corrections that are discovered during the verification will be entered into the computer process by the Electronic Data Processing Branch in Seattle.

An attempt is being made to get the raw data tape, the corresponding hand corrected raw data tape printout, the corrector tape, and the corresponding corrector tape printout into the hands of the Electronic Data Processing Branch as early as possible.

*Horace G. Conerly*  
Horace G. Conerly

cc: Seattle R.O.  
WSC-211  
WSC-35  
WSC-355 (Cdr. Jones)  
C-835

HY-80-2-65

ABSTRACT OF FINAL DRAFT CORRECTIONS

Only times of actual hydrography are listed.

All corrections are in fathoms and tenths of fathoms.

Day No.	Date 1965	Time		Osc. Draft	Phase Corr'n.	Instr. Corr'n.	Initial Corr'n.	S & S Corr'n.	Final Corr'n.
		From	To						
157	6-6	210700	230000	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		230100	235800	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
158	6-7	000000	010900	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		011000	014700	+ 2.0	0.0	0.0	- 0.1	+ 0.1	+ 2.0
		014800	164800	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		172000	231800	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
159	6-8	012500	051400	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		053600	104000	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		125200	152000	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		153600	235800	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
160	6-9	000000	051600	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		054300	062400	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		180600	185000	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		185100	191000	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		211700	215700	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		215800	220200	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		220200	224600	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		224700	235800	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
161	6-10	000000	021800	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		021900	042800	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		042900	073600	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		075300	080500	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		080600	081200	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		081300	084100	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		084200	093300	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		120700	133000	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		133000	135400	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		135400	162000	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		183300	204000	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		204100	205400	+ 2.1	- 0.5	0.0	0.0	+ 0.1	+ 1.7
		205500	235800	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2



ABSTRACT OF FINAL DRAFT CORRECTIONS - HY-80-2-65 - continued

Day No.	Date 1965	Time From	To	Osc. Draft	Phase Corr'n.	Instr. Corr'n.	Initial Corr'n.	S & S Corr'n.	Final Corr'n.
162	6-11	000000	001600	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		005700	010200	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		010300	010800	+ 2.1	- 0.5	0.0	- 0.1	+ 0.1	+ 1.6
		013500	013700	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		013800	014500	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		014600	021500	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		021600	031800	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		050500	071100	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		071200	071700	+ 2.1	- 0.5	0.0	0.0	+ 0.1	+ 1.7
		073900	074000	+ 2.1	- 0.5	0.0	0.0	+ 0.1	+ 1.7
		074100	091000	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		115500	134800	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		134900	153000	+ 2.1	- 0.5	0.0	0.0	+ 0.1	+ 1.7
		201500	201610	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		201611	225000	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		225100	231200	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		231300	233400	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1
233500	235800	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6		
163	6-12	000000	000800	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		000900	022400	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		022500	024700	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		024800	032500	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1
		032600	035300	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		035400	055300	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		055400	061500	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		061600	065600	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1
		065700	072800	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		072900	082700	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		105100	113000	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		113100	115200	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		115300	123000	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1
		123100	130500	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		130600	141400	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		141500	143600	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		143700	151800	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1
		151900	154400	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		154500	161500	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		171900	173300	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1
173400	180500	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6		
180600	190200	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1		
190300	192300	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6		
192400	201000	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1		
201100	204400	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6		

ABSTRACT OF FINAL DRAFT CORRECTIONS - HY-80-2-65 - continued

Day No.	Date 1965	Time		Osc. Draft	Phase Corr'n.	Instr. Corr'n.	Initial Corr'n.	S & S Corr'n.	Final Corr'n.	
		From	To							
163 (cont'd)	6-12	204500	211100	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1	
		211200	213000	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6	
		213100	222200	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1	
		222300	225600	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6	
		225700	225900	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1	
		232800	235200	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6	
		235300	235800	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1	
164	6-13	000000	003000	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.6	
		003100	012100	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6	
		012200	020000	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1	
		020100	021000	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6	
		021100	022000	+ 2.0	- 0.5	0.0	- 0.1	+ 0.1	+ 1.5	
		022100	040300	+ 2.0	- 1.0	0.0	- 0.1	+ 0.1	+ 1.0	
		040400	042000	+ 2.0	- 0.5	0.0	- 0.1	+ 0.1	+ 1.5	
		042100	044700	+ 2.0	0.0	0.0	- 0.1	+ 0.1	+ 2.0	
		044800	061700	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1	
		*121400	121500	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0	
		*125600	125700	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0	
		*132900	133000	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0	
		*140000	140100	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0	
		*143500	143600	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0	
		*150800	150900	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0	
		*154300	154400	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0	
		202600	211000	+ 2.0	0.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		211100	211500	+ 2.0	0.0	0.0	- 0.1	+ 0.1	+ 2.0	
		211600	215500	+ 2.0	0.0	0.0	+ 0.1	+ 0.1	+ 2.2	
		215600	220300	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1	
		220400	222200	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6	
		222300	224200	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1	
		224300	224800	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6	
		*230700	230800	+ 2.0	- 0.5	0.0	0.0	0.0	+ 1.5	
		233600	233700	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6	
		233800	234800	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1	
		165	6-14	000000	001200	+ 2.0	0.0	0.0	0.0	+ 0.1
001300	003400			+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6	
003500	010000			+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1	
*012900	013000			+ 2.0	0.0	0.0	0.0	0.0	+ 2.0	
014600	015600			+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1	
*023800	023900			+ 2.0	- 0.5	0.0	0.0	0.0	+ 1.5	

\* Denotes core bottom sample

ABSTRACT OF FINAL DRAFT CORRECTIONS - HY-80-2-65 - continued

Day No.	Date 1965	Time From	To	Osc. Draft	Phase Corr'n.	Instr. Corr'n.	Initial Corr'n.	S & S Corr'n.	Final Corr'n.
165	6-14 (cont'd)	031100	031200	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1
		031300	033200	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		033300	235800	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
166	6-15	000000	060000	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		060100	100800	+ 1.9	0.0	0.0	0.0	+ 0.1	+ 2.0
		100900	103900	+ 1.9	0.0	0.0	- 0.1	+ 0.1	+ 1.9
		104000	152300	+ 1.9	0.0	0.0	0.0	+ 0.1	+ 2.0
		*170300	170400	+ 1.9	0.0	0.0	0.0	0.0	+ 1.9
		193100	235900	+ 1.9	0.0	0.0	0.0	+ 0.1	+ 2.0
167	6-16	000000	000300	+ 1.9	0.0	0.0	+ 0.2	+ 0.1	+ 2.2
		000400	033800	+ 1.9	0.0	0.0	0.0	+ 0.1	+ 2.0
		033900	035300	+ 1.9	0.0	0.0	- 0.1	+ 0.1	+ 1.9
		035400	081600	+ 1.9	0.0	0.0	0.0	+ 0.1	+ 2.0
		081700	091400	+ 1.9	0.0	0.0	- 0.1	+ 0.1	+ 1.9
		091400	125000	+ 1.9	0.0	0.0	0.0	+ 0.1	+ 2.0
172	6-21	195500	240000	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
173	6-22	000000	021800	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		021900	031900	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		032000	092900	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		093000	095500	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		095600	101700	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		101800	104800	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		104900	235800	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
174	6-23	000000	004100	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		004200	010000	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		010100	034000	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		041100	122000	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		122100	124600	+ 2.1	0.0	0.0	+ 0.1	+ 0.1	+ 2.3
		124700	125100	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		125200	130400	+ 2.1	0.0	0.0	- 0.2	+ 0.1	+ 2.0
		130500	145000	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		145100	150100	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		150200	220000	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
175	6-24	010600	013900	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		014100	021100	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		021200	231600	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		231700	233500	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		233600	234800	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2

\* Denotes core bottom sample

ABSTRACT OF FINAL DRAFT CORRECTIONS - HY-80-2-65- continued

Day No.	Date 1965	Time		Osc. Draft	Phase Corr'n.	Instr. Corr'n.	Initial Corr'n.	S & S Corr'n.	Final Corr'n.
		From	To						
176	6-25	000000	022000	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		022100	043700	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		043800	235800	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
177	6-26	000000	010500	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		010600	011100	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		011200	014700	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		011800	021200	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		021300	024200	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		024300	025200	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		025300	035300	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		035400	041000	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		041100	042600	+ 2.1	- 0.5	0.0	0.0	+ 0.1	+ 1.7
		042700	051200	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		051300	061500	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		061600	091800	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		091900	094500	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		094600	100000	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		100100	105700	+ 2.1	- 0.5	0.0	0.0	+ 0.1	+ 1.7
		105705	111800	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		111900	115700	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		115800	120200	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		120300	122700	+ 2.1	0.0	0.0	- 0.1	+ 0.1	+ 2.1
		122800	123000	+ 2.1	0.0	0.0	0.0	+ 0.1	+ 2.2
		123100	152600	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		152700	165000	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		165100	194950	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		194951	211000	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		211100	212700	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1
		212800	215500	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
215600	235800	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1		
178	6-27	000000	003000	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		003100	013000	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		013100	022600	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1
		022700	025300	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		025400	035000	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		035100	040800	+ 2.0	0.0	0.0	- 0.1	+ 0.1	+ 2.0
		040900	050400	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		050500	060400	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		060500	071600	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1
		071700	074100	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		074200	091800	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		091900	101200	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6

ABSTRACT OF FINAL DRAFT CORRECTIONS - HY-80-2-65 - continued

Day No.	Date 1965	Time From	To	Osc. Draft	Phase Corr'n.	Instr. Corr'n.	Initial Corr'n.	S & S Corr'n.	Final Corr'n.
178 (cont'd)	6-27	101300	112400	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1
		112500	115058	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		115100	125900	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		130000	132400	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		132500	145400	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1
		145500	151500	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		151600	162500	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		162600	171000	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		171100	182900	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1
		183000	184900	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		185000	192800	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		192900	201000	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		201100	212100	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1
		212200	221100	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		221200	223600	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1
		223700	225000	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		225100	232100	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1
232200	235000	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6		
	*235600	235700	+ 2.0	- 0.5	0.0	0.0	0.0	+ 1.5	
179	6-28	001100	001900	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		002000	004500	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		*004800	004900	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0
		005600	014800	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		*020500	020600	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0
		021200	024000	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		*024400	024500	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0
		030700	050000	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		*051300	051400	+ 2.0	- 0.5	0.0	0.0	0.0	+ 1.5
		052500	053700	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		053710	061000	+ 2.0	- 1.0	0.0	0.0	+ 0.1	+ 1.1
		061100	061700	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		*062200	062300	+ 2.0	- 0.5	0.0	0.0	0.0	+ 1.5
		064000	071800	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		071900	075000	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		075100	080000	+ 2.0	0.0	0.0	+ 0.1	+ 0.1	+ 2.2
		080100	083000	+ 2.0	0.0	0.0	+ 0.2	+ 0.1	+ 2.3
083100	090400	+ 2.0	0.0	0.0	+ 0.1	+ 0.1	+ 2.2		
090900	091100	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.7		
091200	104000	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1		
104500	104800	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6		

\* Denotes core bottom sample

ABSTRACT OF FINAL DRAFT CORRECTIONS - HY-80-2-65 - continued

Day No.	Date 1965	Time From	To	Osc. Draft	Phase Corr'n.	Instr. Corr'n.	Initial Corr'n.	S & S Corr'n.	Final Corr'n.
179	6-28	104900	110400	+ 2.0	- 0.0	0.0	0.0	+ 0.1	+ 2.1
(cont'd)		*110900	111000	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0
		111300	113800	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		113900	115400	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		115500	132900	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		133000	134000	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		134100	140800	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		140900	142400	+ 2.0	- 0.5	0.0	0.0	+ 0.1	+ 1.6
		142500	151600	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		*152200	152300	+ 2.0	0.0	0.0	0.0	+ 0.0	+ 2.0
		152700	160000	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		*160500	160600	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0
		*164100	164200	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0
		164800	172600	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		*172900	173000	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0
		173800	180400	+ 2.0	0.0	0.0	+ 0.1	+ 0.1	+ 2.2
		180500	181500	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		*181900	182000	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0
		*185200	185300	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0
		190000	193700	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		*193900	194000	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0
		194600	201300	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		*203800	203900	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0
		204200	210800	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		*211200	211300	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0
		211400	215000	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		*215000	215400	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0
		215700	221800	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		*222300	222400	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0
		222600	224000	+ 2.0	0.0	0.0	- 0.1	+ 0.1	+ 2.0
		224100	230400	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		*230600	230700	+ 2.0	0.0	0.0	0.0	0.0	+ 2.0
		231400	234000	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		234100	234800	+ 2.0	0.0	0.0	- 0.1	+ 0.1	+ 2.0
		*235200	235300	+ 2.0	0.0	0.0	- 0.1	0.0	+ 1.9
180	6-29	*002700	002900	+ 2.0	0.0	0.0	- 0.1	0.0	+ 1.9
		012500	013900	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		014000	020000	+ 2.0	0.0	0.0	- 0.1	+ 0.1	+ 2.0
		020100	051500	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		051600	053000	+ 2.0	0.0	0.0	- 0.1	+ 0.1	+ 2.0
		053100	053600	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		060900	085700	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		085800	092000	+ 2.0	0.0	0.0	- 0.1	+ 0.1	+ 2.0
		092100	113000	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		163600	163700	+ 2.0	0.0	0.0	+ 1.0	+ 0.1	+ 3.1
		163800	170100	+ 2.0	0.0	0.0	- 0.1	+ 0.1	+ 2.0
		170200	181100	+ 2.0	0.0	0.0	0.0	+ 0.1	+ 2.1
		181200	184000	+ 2.0	0.0	0.0	- 0.1	+ 0.1	+ 2.0

\* Denotes core bottom sample

RAYDIST CORRECTIONS

PROJECT OPR-447, EAST COAST OF FLORIDA

1965 FIELD SEASON

BOATSHEET HY-80-2-65 REGISTRY NUMBER H-8840

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Using Raydist Stations - CAPE (R<sub>1</sub>) and HALIFAX (R<sub>2</sub>)

Only times of actual hydrography are listed

Day No.	Date (1965)	Time		Corrections	
		From	To	R <sub>1</sub>	R <sub>2</sub>
157	6-6	2107	2358	+ 0.4	+ 0.3
158	6-7	0000	1648	+ 0.4	+ 0.3
		1720	2213	+ 0.4	+ 0.3
		2214	2318	+ 0.4	+ 2.3
159	6-8	0125	0514	+ 0.4	+ 0.3
		0536	1040	+ 0.4	+ 0.3
		1252	1520	+ 0.4	+ 0.3
		1536	2358	+ 0.4	+ 0.3
160	6-9	0000	0516	+ 0.4	+ 0.3
		0543	0624	+ 0.4	+ 0.3
		1806	1910	+ 0.4	+ 0.3
		2117	2358	+ 0.4	+ 0.3
161	6-10	0000	0736	+ 0.4	+ 0.3
		0753	0848	+ 0.4	+ 0.3
		0849	0933	+ 0.4	- 3.7
		1207	1256	+ 0.4	+ 1.3
		1257	1258	+ 0.4	+ 3.3
		1259	1300	+ 0.4	+ 5.3
		1301	1335	+ 0.4	+13.3
		1336	1620	+ 0.4	+15.3
		1833	2110	+ 0.4	- 0.7
		2111	2116	+ 0.4	- 2.7
		2117	2128	+ 0.4	- 4.7
		2129	2133	+ 0.4	- 6.7
		2134	2358	+ 0.4	-20.7

RAYDIST CORRECTIONS - PROJECT OPR-447, EAST COAST OF FLORIDA

1965 FIELD SEASON - BOATSHEET HY-80-2-65 REGISTRY NUMBER H-8840 - cont'd.

CAPE - HALIFAX

Day No.	Date (1965)	Time		Corrections	
		From	To	R <sub>1</sub>	R <sub>2</sub>
162	6-11	0000	0016	+ 0.4	-20.7
		0057	0108	+ 0.4	-18.7
		0135	0318	+ 0.4	-18.7
		0505	0717	+ 0.4	- 0.7
		0734	0910	+ 0.4	+ 1.3
		1155	1206	+ 0.4	+ 1.3
		1207	1530	+ 0.4	- 0.7
		2016	2358	+ 0.4	+ 1.3
163	6-12	0000	0648	+ 0.4	+ 1.3
		0649	0827	+ 0.4	+ 3.3
		1051	1155	+ 0.4	+ 3.3
		1156	1159	+ 0.4	+ 5.3
		1200	1250	+ 0.4	+ 7.3
		1251	1255	+ 0.4	+ 5.3
		1256	1308	+ 0.4	+ 5.3
		1309	1417	+ 0.4	+ 7.3
		1418	1558	+ 0.4	+ 5.3
		1559	1615	+ 0.4	+ 3.3
		1719	1857	+ 0.4	+15.3
		1858	2254	+ 0.4	+13.3
		2255	2259	+ 0.4	+11.3
		2328	2334	+ 0.4	+11.3
		2335	2358	+ 0.4	+ 9.3
164	6-13	0000	0617	+ 0.4	+ 9.3
		1214	1215	+ 0.4	- 0.7
		1256	1257	+ 0.4	- 0.7
		1329	1330	+ 0.4	- 0.7
		1400	1401	+ 0.4	- 0.7
		1435	1436	+ 0.4	- 0.7
		1508	1509	+ 0.4	+ 1.3
		1543	1544	+ 0.4	+ 1.3
		2026	2348	+ 0.4	- 0.7



RAYDIST CORRECTIONS - PROJECT OPR-447, EAST COAST OF FLORIDA

1965 FIELD SEASON - BOATSHEET HY-80-2-65 REGISTRY NUMBER H-8840 - cont'd.

CAPE - HALIFAX

Day No.	Date (1965)	Time		Corrections	
		From	To	R1	R2
165	6-14	0000	0100	+ 0.4	- 0.7
		0129	0130	+ 0.4	- 0.7
		0146	0156	+ 0.4	- 0.7
		0238	0239	+ 0.4	- 0.7
		0311	2358	+ 0.4	- 0.7
166	6-15	0000	1450	+ 0.4	- 0.7
		1451	1454	+ 0.4	- 8.7
		1455	1500	+ 0.4	-10.7
		1501	1523	+ 0.4	-12.7
		1703	1704	+ 0.4	-12.7
		1931	2359	+ 0.4	+ 1.3
167	6-16	0000	1250	+ 0.4	+ 1.3
172	6-21	1955	2400	+ 0.4	- 0.7
173	6-22	0000	2400	+ 0.4	- 0.7
174	6-23	0000	0340	+ 0.4	- 0.7
		0411	2200	+ 0.4	- 0.7
175	6-24	0106	2348	+ 0.4	+ 0.3
176	6-25	0000	1725	+ 0.4	+ 0.3
		1726	2400	+ 0.4	- 5.7
177	6-26	0000	2400	+ 0.4	- 5.7
178	6-27	0000	2400	+ 0.4	- 5.7
179	6-28	0000	2400	+ 0.4	- 5.7
180	6-29	0000	1130	+ 0.4	- 5.7
		1411	2400	+ 0.4	+ 0.3

VELOCITY CORRECTIONS

Boatsheet HY-80-2-65

The velocity corrections listed below are unverified and were compiled in accordance with Chief, Operations Division memorandum dated March 26, 1965.

Enter the table using the observed sounding.

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Depths (fms)		Correction (fms)	Depths (fms)		Correction (fms)
<u>From</u>	<u>To</u>		<u>From</u>	<u>To</u>	
2.2	4.0	+ 0.1	46.1	48.5	+ 2.3
	5.0	+ 0.2		51.0	+ 2.4
	7.8	+ 0.3		53.5	+ 2.5
	9.5	+ 0.4		56.5	+ 2.6
	11.5	+ 0.5		59.5	+ 2.7
	13.2	+ 0.6		62.5	+ 2.8
	15.2	+ 0.7		65.5	+ 2.9
	17.0	+ 0.8		68.5	+ 3.0
	19.0	+ 0.9		71.5	+ 3.1
	21.0	+ 1.0		75.0	+ 3.2
	22.5	+ 1.1		78.0	+ 3.3
	24.5	+ 1.2		82.0	+ 3.4
	26.5	+ 1.3		85.5	+ 3.5
	28.5	+ 1.4		89.2	+ 3.6
	30.5	+ 1.5		93.0	+ 3.7
	32.5	+ 1.6		97.0	+ 3.8
	34.5	+ 1.7		101.2	+ 3.9
	36.7	+ 1.8		105.5	+ 4.0
	39.0	+ 1.9		109.5	+ 4.1
	41.2	+ 2.0		113.5	+ 4.2
	43.5	+ 2.1		117.0	+ 4.3
	46.0	+ 2.2		123.0	+ 4.4

OPR-447 EAST COAST OF FLORIDA  
U.S.C.&G.S.S. HYDROGRAPHER

Boatsheet HY-80-2-65 Registry No. H-8840

Using 60 pound Phleger corer, 36" coring tube, 15' free fall, 36" plastic inserts

CORE BOTTOM SAMPLES

Ship's Position Number	Day Number Date (1965)	Sample Position		Depth (Fathoms)	Length of Core (Inches)	Field Description of Sample	Remarks	Observers Initials
		Latitude(N)	Longitude(W)					
846	6-13-65	28°27.4'	80°21.3'	11.3	—	fne G brk Sh	in sample bag	TM
847	"	28°32.5'	80°17.3'	16.7	—	fne G brk Sh	no salvageable core	TM
848	"	28°37.7'	80°17.4'	17.7	—	fne G brk Sh	in sample bag	TM
849	"	28°37.3'	80°12.0'	24.3	—	crs gy S Sh	in sample bag	TM
850	"	28°32.3'	80°12.6'	23.1	—	crs gy S Sh	no salvageable core	TM
851	"	28°32.3'	80°07.6'	29.0	—	crs gy S brk Sh	in sample bag	TM
852	"	28°37.5'	80°07.5'	32.6	—	fne gn S brk Sh	in sample bag	TM
874	"	28°37.5'	80°02.5'	49.0	3.5	crs br S fne G brk Sh		JLB
886	6-14-65	28°32.8'	80°02.5'	43.7	—	crs br S brk Sh	in sample bag	TM
889	"	28°32.7'	79°58.3'	94.1	—	gn M brk Sh	in sample bag	TM
1152	6-15-65	28°38.2'	80°22.0'	14.0	—	crs gy S brk Sh	no salvageable core	FTL
2386	6-17-65	28°52.0'	80°03.1'	74.0	14.0	crs gn S brk Sh		JLB
2392	6-28-65	28°47.5'	80°07.5'	37.1	—	crs gn S brk Sh	no salvageable core	JLB
2400	"	28°42.7'	80°12.5'	22.9	—	brk Sh	"	JLB
2405	"	28°42.8'	80°07.5'	35.1	—	brk Sh	"	JLB
2421	"	28°42.5'	80°02.2'	64.4	6.0	crs gn S brk Sh		JLB
24343	"	28°47.6'	80°02.7'	70.0	10.0	crs gn S brk Sh		JLB
2477	"	28°52.6'	80°07.6'	40.0	—	crs br S Sh	no salvageable core	TM
2516	"	28°47.3'	80°12.6'	25.1	—	G Sh	"	TM
2522	"	28°42.1'	80°17.6'	18.7	—	brk Sh brk Sh	"	FTL
2523	"	28°42.6'	80°17.7'	17.0	—	Ca brk Sh	in sample bag	FTL
2530	"	28°47.5'	80°17.5'	17.5	—	fne gn S brk Sh	no salvageable core	FTL
2538	"	28°53.0'	80°12.5'	26.1	—	fne gn S Sh	"	FTL
2539	"	28°52.5'	80°17.8'	19.7	2.0	fne gn S Sh		FTL
2545	"	28°47.2'	80°22.5'	11.4	—	crs br S brk Sh brk Spk	no salvageable core	FTL
2551	"	28°42.9'	80°20.2'	11.0	—	brk Sh	in sample bag	TM
2556	"	28°37.7'	80°27.4'	12.0	—	Sh	no salvageable core	TM
2563	"	28°52.8'	80°22.7'	14.0	—	G Sh	in sample bag	TM
2568	"	28°52.9'	80°27.5'	11.0	—	G Sh	no salvageable core	TM
2575	"	28°47.5'	80°32.6'	11.0	—	G Sh	"	TM
2581	"	28°52.8'	80°37.4'	11.2	—	G Sh	"	TM
2582	"	28°52.9'	80°32.1'	11.2	—	crs br S G	"	TM

Transferred from original 1961 checked JLB

TIDE NOTE FOR HYDROGRAPHIC SHEET

April 15, 1969

~~Historical Chart District~~ R. H. Carstens

Plane of reference approved to  
~~be used for~~ for ~~8840~~ 8840

HYDROGRAPHIC SHEET 8840

Locality: Northeast of Cape Kennedy, Florida

Chief of Party: V. R. Sobieralski, 1965

Plane of reference is mean low water

Tide Station Used (Form C&GS-681):

Cape Canaveral Harbor Entrance

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

3.4 feet

Remarks

  
Chief, Tides and Currents Branch



HYDROGRAPHIC SURVEY STATISTICS  
HYDROGRAPHIC SURVEY NO. 8840

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS		1	
DESCRIPTIVE REPORT		1	OVERLAYS		4	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES	20		2			
CAHIERS			2			
VOLUMES						
BOXES						
T-SHEET PRINTS (List)						
SPECIAL REPORTS (List)						

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				2003
POSITIONS CHECKED			11	
POSITIONS REVISED			-	
DEPTH SOUNDINGS REVISED			-	
DEPTH SOUNDINGS ERRONEOUSLY SPACED			--	
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED			--	
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS			-	
JUNCTIONS			60	
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS			10	
SPECIAL ADJUSTMENTS				
ALL OTHER WORK			155	
TOTALS	37	272	225	
PRE-VERIFICATION BY <i>K.K. R. Lyon &amp; W. Martin</i>	BEGINNING DATE <i>10/6/65</i>	ENDING DATE <i>11/1/65</i>		
VERIFICATION BY <i>A. E. Eichelberger (MC)</i>	BEGINNING DATE <i>11/4/65</i>	ENDING DATE <i>3/11/66</i>		
REVIEW BY <i>Dr. Engle</i>	BEGINNING DATE <i>3-26-69</i>	ENDING DATE <i>6-16-69</i>		

OFFICE OF HYDROGRAPHY AND OCEANOGRAPHY

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8840

FIELD NO. HY-80-2-65

Florida, East Coast, Northeast of Cape Kennedy

SURVEYED: June 6 to June 30, 1965

SCALE: 1:80,000

PROJECT NO.: OPR-447

SOUNDINGS: DE-723 Depth  
Recorder

CONTROL: Raydist

Chief of Party..... V. R. Sobieralski  
Surveyed by..... K. E. Taggart  
..... J. H. Allred  
..... C. E. Huss  
..... W. Y. S. Williams  
..... W. R. Klesse  
..... M. A. Levitan  
..... W. T. McMullen  
..... D. E. Youngdahl  
Machine Plotted by..... Pacific Marine Center  
Sounding Machine Inked by..... Pacific Marine Center  
Verified by..... A. E. Eichelberger  
Reviewed by..... D. R. Engle  
..... Date: June 16, 1969  
Inspected by..... R. H. Carstens

1. Description of the Area

This survey falls northeast of Cape Kennedy and covers an area of approximately 750 square nautical miles. It extends offshore from the 10-fathom curve to the inner edge of the continental slope.

The bottom consists of sand and gravel. It slopes gently from the 10 to 20-fathom curve, moderately from the 20 to the 40-fathom curve and then sharply to the 100 fathom curve. It is relatively smooth in most of the areas with numerous undulations occurring in the shoaler areas and a band of irregularities found in the area between the

2.

40- and 50-fathom depth curves. Features in the shoaler areas are small mounds or ridges rising 1 to 1½ fathoms off the bottom; those in the vicinity of the 40- and 50-fathom curves are more prominent ridges rising sharply 3 to 10 fathoms off the bottom.

## 2. Control and Shoreline

The origin of the control is given in the Descriptive Report.

No shoreline has been applied to this offshore survey.

## 3. Hydrography

A. Depths at crossings are in adequate agreement.

B. The usual depth curves are adequately delineated.

C. The development of the bottom configuration and least depths is satisfactory except on some features in depths of 10 fathoms or less, where a larger scale survey would have been more appropriate.

## 4. Condition of the Survey

The field plotting, records, and reports are adequate and conform to the requirements of the Hydrographic Manual and preliminary memoranda for automated surveys.

## 5. Junctions

Adequate junctions were effected with H-8879 (1966) on the north and H-8839 (1965) on the south.

Butt junctions were effected with H-8342, H-8344, and H-8345 (1956) on the southwest. Unresolved depth differences of 2 to 5 feet exist in areas common to these 1956 surveys and the present work. The cause of such general differences can not be clearly ascertained. Some of the difference appears to be due to scanning too near the top of peak traces of 5 to 6 foot chop on some of the 1956 fathograms which resulted in the prior depths being shoaler. Another contributing factor is believed to be the difficulty of determining accurate velocity correctors in areas affected by the Gulf Stream. Present depths supersede prior depths except on several inadequately developed features where least depths were transferred from the 1956 surveys to the present survey.



3.

The junction with H-8714 (1962) on the east will be discussed in the review of that survey. Present depths on the northwest at the limit of the project are in adequate agreement with charted depths.

6. Comparison With Prior Surveys

A.	H-770	(1866)	1:400,000	(Trackline)
	H-1409	(1878)	1:40,000	
	H-1410	(1878-91)	1:20,000	
	H-3223	(1911)	1:400,000	(Trackline)
	H-4931	(1929)	1:120,000	
	H-4932	(1929)	1:40,000	
	H-4935	(1929)	1:40,000	
	H-4946	(1929)	1:40,000	
	H-5138	(1931)	1:120,000	

These prior surveys cover the area of the present survey. Comparison of the prior and present surveys reveals some differences in depth, generally less than one fathom, in most of the survey area. In other areas, especially on slopes in the deeper water, differences of 2 to 5 fathoms are noted.

Differences on the inshore portion of the survey are attributed to natural changes in the bottom and to differences in survey methods. However, some features appear to be better developed on the larger scale of the 1929 surveys than on the present survey and are not disproved by the present survey. Some least depths on these features, generally in depths of less than 50 feet, have been carried forward where significant for charting.

Differences in deeper water are attributed to methods of surveying which include leadline, wire soundings, and early fathometer soundings versus modern fathometer for depths and dead reckoning, sun sights, and visual fixes on survey buoys versus Raydist for horizontal control.

Together with the soundings carried forward the present survey is considered adequate to supersede the prior surveys in the common area.

4.

B. F.E. No. 3 (1957) W.D.

This wire-drag field examination investigated two wrecks within the area of the present survey. No conflicts exist between present depths and effective wire-drag depths. The least depths obtained at the wreck positions have been carried forward to the present survey.

7. Comparison With Charts 1245 (latest print date 7/3/67)  
1111 (latest print date 12/16/68)

A. Hydrography

1) The charted hydrography originates with the previously discussed surveys supplemented by partial application of the boat sheet data and the present survey prior to review.

2) Much of the hydrography applied to the charts from the boat sheet of the present survey is faulty as explained below:

a. The two 60-foot soundings in lat.  $28^{\circ}41'75''$ , long.  $80^{\circ}26'8''$  and lat.  $28^{\circ}42'55''$ , long.  $80^{\circ}27'15''$ , which are approximate depths shown on the boat sheet for field use only, were erroneously applied to Chart 1245 and should be deleted.

b. Numerous boat sheet soundings shown in integral fathoms (fractions were omitted from the boat sheet) were converted to feet and applied to Chart 1245 thus introducing errors of as much as 4 feet on the chart. These errors had a significant effect on the charted 10-fathom curves, many of which were added or revised on the basis of these incorrect depths.

3) The present survey is adequate to supersede the charted hydrography in the common area.

B. Aids to Navigation

The only charted aid to navigation in this area is Hetzel Shoal Lighted Whistle Buoy #8. The survey position, as scaled from the boat sheet, (boat sheet position from unrecorded data) falls about 600 meters south southwest of the charted position. The charted position adequately marks the feature intended.

5.

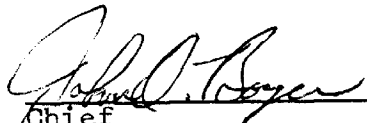
8. Compliance With Instructions


The survey adequately complies with the project instructions.

9. Additional Field Work

This is a good basic survey over most of the area and no additional field work is recommended on this survey. However, in order to verify or disprove prior least depths and provide better delineation of the bottom, areas within the 10-fathom curve and offlying 10-fathom features should be developed when larger scale inshore surveys are accomplished in this area.

Examined and Approved:

  
\_\_\_\_\_  
Chief  
Marine Chart Division

  
\_\_\_\_\_  
Associate Director  
Hydrography and Oceanography

H-8840

INFORMATION FOR FUTURE PRE-SURVEY REVIEWS

In order to verify or disprove prior least depths in the western portion of the survey and to provide adequate delineation of the bottom, it would be desirable to develop depths less than ten fathoms on future larger scale surveys to be accomplished inshore of this survey.

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8840

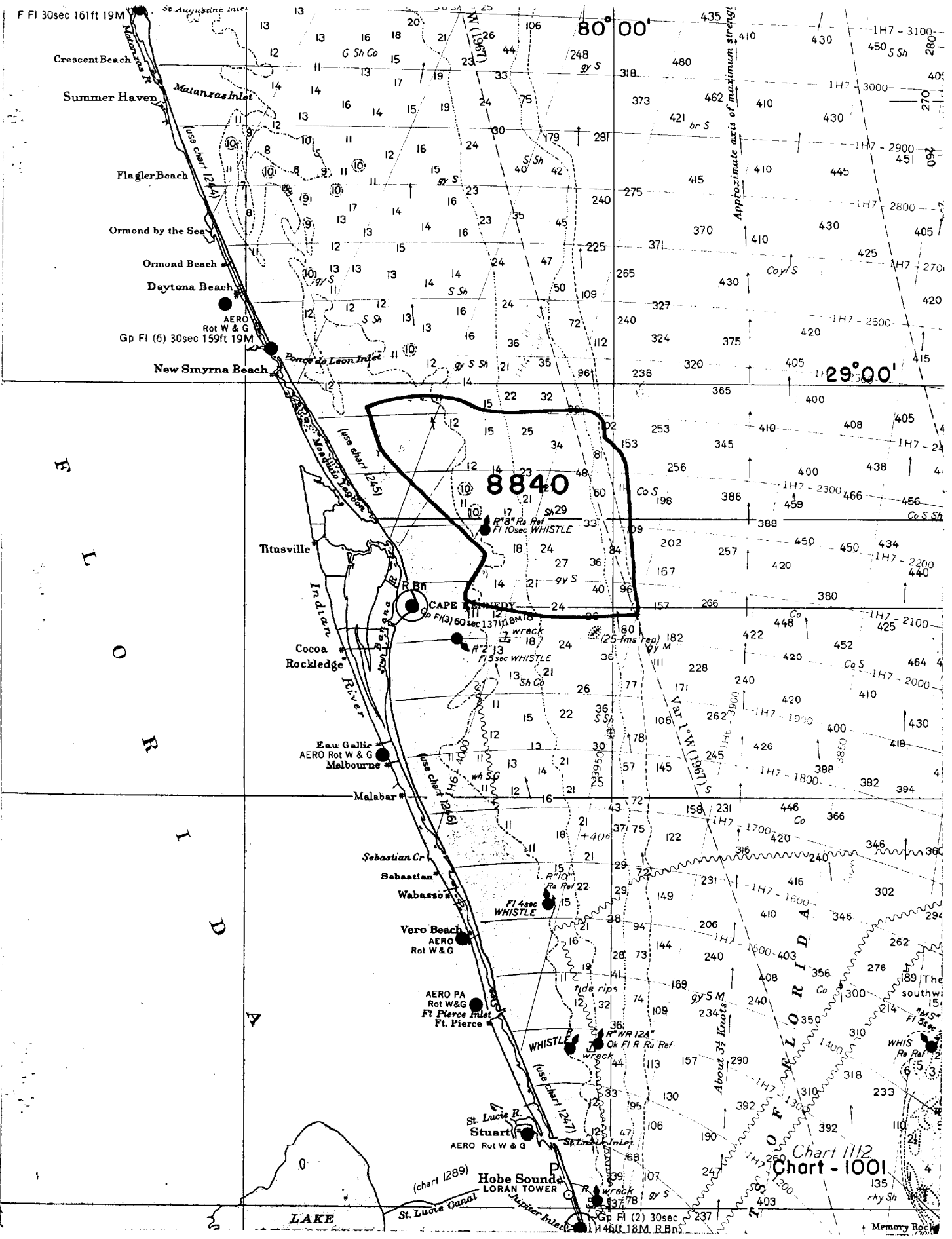
INSTRUCTIONS

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
1245	9/30/66	W. H. Mead	<del>Full Part</del> <sup>Before</sup> <del>Before</del> After Verification Review Inspection Signed Via Drawing No. 22 Partly applied, No correction at this time
1111	9/30/66	W. H. Mead	<del>Full Part</del> <sup>Before</sup> <del>Before</del> After Verification Review Inspection Signed Via Drawing No. 18 Partly applied thru 1245 No correction
1001	9/30/66	W. H. Mead	<del>Full Part</del> <sup>Before</sup> <del>Before</del> After Verification Review Inspection Signed Via Drawing No. <sup>Before</sup> Partly applied (thru 1111) <sup>landy revised - Reviewed direct from source</sup> No correction
1245	12-16-66	H. Radde	<del>Full Part</del> <sup>Before</sup> <del>Before</del> After Verification Review Inspection Signed Via Drawing No. 22 Revised a few soundings & curves
1111	12-16-66	H. Radde	<del>Full Part</del> <sup>Before</sup> <del>Before</del> After Verification Review Inspection Signed Via Drawing No. 18 Appl'd thru chart 1245
1246	11/28/67	D. Svendsen	<del>Full Part</del> <sup>Before</sup> <del>Before</del> After Verification Review Inspection Signed Via Drawing No. 20 Exam. No corr
1111	11-28-69	J. STUART	<del>Full Part</del> <sup>Before</sup> <del>Before</del> After Verification Review Inspection Signed Via Drawing No. Just read Review without going thru 1245
1246	8-7-70	B. Fernanders	<del>Full Part</del> <sup>Before</sup> <del>Before</del> After Verification Review Inspection Signed Via Drawing No. 22 No corr (Report only)
1111	8-25-70	B. Fernanders	<del>Full Part</del> <sup>Before</sup> <del>Before</del> After Verification Review Inspection Signed Via Drawing No. No Critical Corr. find until fully appl'd to charts 1245 & 1246
1001	9/22/70	D. Williams	<del>Full Part</del> <sup>Before</sup> <del>Before</del> After Verification Review Inspection Signed Via Drawing No. No critical corr. find until appl'd to larger scale charts.
1246	1-22-71	J. Moore	FULL APPLICATION AFTER V, R, & Insp.
1245	2-8-71	J. Moore	FULL APPLICATION AFTER V, R, & Insp.
1111	3-12-71	R. A. Lillis	Full application after Verification, Review and Insp. Dwg # 23
1112	9-1-71	C. G. Hammyton	Full appl. after Veri, Review, Insp. thru 1111 overlap area.
457	12-28-71	R. A. Lillis	Full appl'd after Veri, Review, Insp. Dwg # 5





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Chart 1112  
Chart - 1001

Memory Book

Reg. No. 8840

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey, the following shall be completed:

CARDS CORRECTED

DATE 4/29/72 TIME REQ'D 2 hr INITIALS JAC

REMARKS: