

8958

Diag. Cht. No. 1247.

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. PE-20-4-67 Office No. H-8958

LOCALITY

State Florida

General locality East Coast of Florida

Locality Vicinity Fort Pierce Inlet

1967

CHIEF OF PARTY

C. K. Townsend

LIBRARY & ARCHIVES

DATE May 19, 1969

8958

HYDROGRAPHIC TITLE SHEET

H-8958

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.

PE-20-4-67

State Florida

General locality East Coast of Florida

Locality ^{VICINITY}
~~Coastline About~~ Fort Pierce Inlet

Scale 1:20,000 Date of survey Sept, 1967 - Oct, 1967

Instructions dated March 8, 1967 Project No. OPR-447

Vessel USC&GS Ship PEIRCE

Chief of party LCDR Charles K. Townsend

Surveyed by L. ^{L.} Grave, ^{R. ^{R.} Olack, ^{N. D.} ENS Smith, ^{K. W.} ENS Sigley}

Soundings taken by echo sounder, hand lead, pole Echo Sounder, Pole, and Hand Lead

Graphic record scaled by Ship Personnel

Graphic record checked by Ship Personnel

Protracted by Gerber Digital Plotter

Soundings penciled by Gerber Digital Plotter

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

REMARKS: Revised Project Instructions dated March 8, 1967, supersede all previous instructions.

This survey is incomplete.

J. J. G.

DESCRIPTIVE REPORT

To Accompany

Hydrographic Survey PE-20-4-67

1967 Field Season

USC&GS Ship PEIRCE

Scale 1:20,000

Charles K. Townsend; LCDR, USESSA

Chief of Party

A. PROJECT

This survey was accomplished under Project OPR-447, East Coast of Florida; Revised Instructions dated March 8, 1967, supersede all previous instructions. ✓

B. AREA SURVEYED

The area covered by this survey is an open coastal section along the East Coast of Florida. It extends ~~south along the~~ ~~between coast to~~ Latitude 27°25.90' N, ~~north along the coast to~~ and Latitude 27°28.77' N, and seaward from the coast to Longitude 80°05.15' W. These are the limits of the area over which hydrography was actually run - the survey is approximately 40% complete. The survey was performed on two boat sheets. Sheet A was used by the Ship PEIRCE for offshore work, and Sheet B was used for inshore launch work. ✓

Hydrography extends south to junction with Contemporary Survey PE-20-3-67 (H-8957); east to junction with ~~Prior~~ Survey H-8839⁽¹⁹⁶⁵⁾ and ~~Prior Survey H-5057~~; and about Fort Pierce Inlet to junction with Contemporary Survey PE-05-1-67 (H-8959).
→ Also East to H-8783 (1964) (H-5057 [1930] is prior survey over the area, (not a pt.)

Hydrography was begun in this area on September 26, 1967, and completed on October 10, 1967.

C. SOUNDING VESSEL

Hydrography in this area was performed by ship and launch. Ship PEIRCE work was denoted by violet color. Launch PE-2 work was denoted by red color. ✓

D. SOUNDING EQUIPMENT

Two Raytheon (type 723) fathometers were used in this survey. The Ship PEIRCE used number 246. Launch PE-2 used number 242. ✓

Echo soundings were taken in depths up to 45 feet with fathometer number 242 and in depths up to 80 feet with fathometer number 246. ✓

USC&GS Ship PEIRCE - The velocity corrections for the ship were obtained by taking Nansen cast oceanographic stations. Depth and temperature data were recorded in the field and all salinity data was obtained from an analysis of the samples by the Land and Sea Interaction Laboratory in Norfolk, Virginia. Results of the oceanographic stations were graphed and velocity corrector values were picked off in 0.5 foot increments. The initial on the ship's fathograms was held at 9.0 feet in accordance with a memorandum from the Chief, Instrument Division dated October 1, 1962, and a draft corrector of 0.2 feet was calculated for the ship (see Appendix D). Careful maintenance of the fathometers eliminated instrumental error and phase correction, and settlement and squat for the ship were found to be negligible. ✓

Launch PE-2 - Bar checks were taken once or twice a day as wind and sea conditions permitted. Bar check results were then tabulated and the mean fathometer error at each depth was determined. Values which differed greatly from the mean were rejected and a new mean value derived. These values were then placed on a graph and the fathometer error at given depths was taken from the graph in 0.5 foot increments. ✓

Settlement and squat correctors were determined for launch work by using a level and rod. ✓

The initial on the fathograms was held at 2.0 feet for this survey. Since the launches were refueled every other day, any draft correction due to fuel consumption was found to be negligible; thus, no draft corrector was required other than that incorporated in the initial. Also included in the initial is a reduction of one foot from the draft of the vessel as per a memorandum from the Chief, Instrument Division dated October 1, 1962. ✓

There is no phase correction necessary as the fathometers were carefully maintained as per instructions of a correspondence from the Chief, Engineering Division dated December 22, 1966. ✓

E. SMOOTH SHEET

The smooth sheet will be plotted automatically at the Pacific Marine Center, Seattle, Washington by the Gerber Plotter. Field records were encoded on punched tapes designed for computer use. Two tapes were made for launch work, a "position" tape providing position information obtained from three-point visual fixes, and a "sounding" tape. ✓

providing depths and all data required to reduce these depths to final, correct values. Two tapes were also made for ship work, a "raw data" tape providing position information obtained from HI-FIX recording and depths, and a "corrector" tape providing corrections to HI-FIX readings as well as all data necessary to reduce the depths to final, correct values. The tapes will be integrated by the computer to obtain data for the Gerber Plotter.

F. CONTROL

Visual control was used for launch work. Three-point sextant fixes were utilized on triangulation and photogrammetric points, and the fixes were plotted by three-arm protractor. ✓

Photogrammetric signals were located from compilations furnished in accordance with instructions (Job PH-6710, Shoreline Mapping) contained in letters from the Chief, Photogrammetry Division to the Project Planning Staff Officer, Hydrography and Oceanography on October 28, 1966; and to the Chief, Photogrammetric Branch on April 6, 1967. The following photogrammetric compilations were used: ✓

Incomplete Manuscript T-13108 compiled July, 1967

Incomplete Manuscript T-13116 compiled July, 1967

Reviewer had access to Advance Manuscripts ✓

HI-FIX was used for positioning control of the ship hydrography from its junction with launch work to the outer limits of the survey. HI-FIX stations "EMO" and "FAT" were used from October 5 until October 10. These stations were located in accordance with the project instructions by the photogrammetric field party. Distances from the stations were taken to determine the ship's position. ✓

HI-FIX calibration was accomplished through three-point sextant fixes. Prior to operations the ship was brought close enough to shore so as to be able to obtain a good three-point fix. There a series of fixes were taken by sextants (a fix consisted of a three-point fix taken by sextant men and a check angle taken by a third sextant man). The fixes were then plotted by a three-arm protractor on a 1:10,000 HI-FIX calibration sheet of the area and checked with the check angle. With the sextant fixes plotted on the calibration sheet, corresponding HI-FIX values were read from the sheet. Simultaneously with the fixes, HI-FIX values were read from the HI-FIX console. The difference between the values corresponding to the sextant fixes and the values from the HI-FIX console for the fixes were meaned, and this mean value was recorded as the error for the HI-FIX system for the particular day's calibration. ✓

For final, smooth positions, these mean errors between the two stations were meaned again with regard to natural

features along the shoreline which were found to influence the HI-FIX system. These final mean values were the correctors used for smooth processing. A discussion of these corrector compilations is found in Appendix C. ✓

G. SHORELINE

Shoreline was transferred to the boat sheet (sheet B) from blue line manuscripts of the photogrammetric compilations listed in section F. ✓

The high water line was inspected and verified by the hydrographer. The low water line was determined by taking the survey vessels as close to shore as possible during times of calm sea and high water. ✓

H. CROSSLINES

Crosslines were run at 10.0% on sheet A and at 11.4% on sheet B. Crossings were in good agreement. ✓

I. JUNCTIONS

Junction with Contemporary Surveys PE-20-3-67 (H-8957) and PE-05-1-67 (H-8959) was good; however, there was disagreement in the junctional soundings with Prior Surveys H-8839 and H-5057. Even when smooth soundings were compared, there still were junctional discrepancies. In accordance with a memorandum from the Acting Associate Director, Hydrography and Oceanography, dated June 8, 1967, hand lead soundings were taken in an attempt to resolve these discrepancies. A summary of the hand lead versus fathometer soundings is included in Appendix B. Comparison of the soundings in Appendix B indicates a reasonably good agreement and supports the validity of the echo soundings recorded by the Ship PEIRCE. Also, considerable checks on the HI-FIX control aboard the Ship PEIRCE were made, and crosslines checked very well with the normal system of lines. ✓

J. COMPARISON WITH PRIOR SURVEYS

No developments were run over Pre-Survey Review Item 8 (two sunken wrecks) and Pre-Survey Review Item 9 (a fish haven) as they were on the portion of the survey that was not completed. However, four hours were spent running shoreline development in the vicinity (see sheet B) of Pre-Survey Review Item 8 and no indication of either wreck was noted. *Retain wrecks* ✓

The questionable soundings on the survey were not developed as the sheet was left incomplete due to the end of the 1967 field season. ✓

K. COMPARISON WITH THE CHART

Comparison was made with C&GS 1247, corrected thru Notice to Mariners 16, April 22, 1967, for both sheet A and sheet B. *Reviewer's comparison with 4th Ed, Feb. 17, 1969*

On sheet B the comparison indicated that the survey was in good agreement with the chart, with little change in the shape and position of the depth contours. The survey position of the Capron Shoal agreed well with the charted position and Launch PE-2 recorded a 19 foot uncorrected least depth as compared with a charted least depth of 18 feet. *Reduces to 18 feet. (See "PEIRCE", 279 day, pos. 5296-5297)*

On sheet A the survey agrees well with the chart. The position of Capron Shoal is as shown on the chart and the Ship PEIRCE recorded an 18 foot uncorrected least depth as compared with a charted least depth of 18 feet.

L. ADEQUACY OF SURVEY

This survey is incomplete, but may be considered adequate to supersede prior surveys south of Latitude 27°28'00" N.

M. AIDS TO NAVIGATION

A single floating aid to navigation was located on this survey. It was Red Nun Buoy "10A" marking ~~the~~ Capron Shoal. It was located by both the Ship PEIRCE and Launch PE-2. Its position is at Latitude 27°26.60' N, Longitude 80°13.48' W. No new aids to navigation are deemed necessary. *(pos. 1, Launch 2, 269 day; - pos. 6015, "PEIRCE", 283 day)*

N. STATISTICS

	<u>No. Positions</u>	<u>Nautical Miles Sounding Line</u>	<u>Bottom Samples</u>
Ship PEIRCE	1038	332.3	23
Launch PE-2	378	80.4	8
Totals	1416	412.7	31

Area Surveyed

Ship PEIRCE	23.20 sq. mi.
Launch PE-2	4.30 sq. mi.
Total	27.50 sq. mi.

O. MISCELLANEOUS

A current station was proposed at Latitude 27°31' N, Longitude 80°16' W, but the geodyne current meter necessary for the study was unavailable from the Atlantic Marine Center.

P. RECOMMENDATIONS

This survey is complete as far as Latitude 27°28'00" N except for development of the questionable soundings from the Pre-Survey Review. If this survey is completed in the future these questionable soundings should be developed. ✓

Q. REFERENCES TO REPORTS

Report on Landmarks for Charts and Fixed Aids to Navigation, USC&GS Ship PEIRCE

Coast Pilot Report, USC&GS Ship PEIRCE
1967 Field Season

Season's Report, USC&GS Ship PEIRCE
1967 Field Season

Respectfully submitted,

Roger T. Olack

Roger T. Olack
LTJG, USESSA
March, 1968

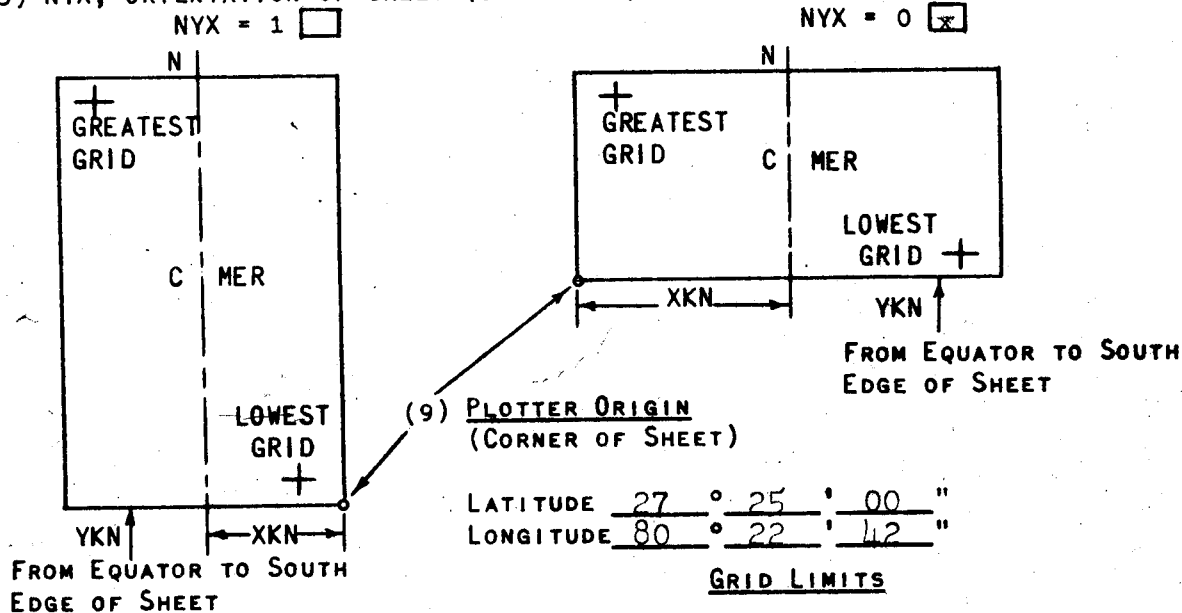
Approved and Forwarded

Charles K. Townsend
Charles K. Townsend; LCDR, USESSA
Commanding Ship PEIRCE

Date: *6 March 1968*

**PARAMETERS FOR DIGITAL COMPUTING
POLYCONIC PROJECTION**

- (1) PROJECT No. OPR 447 (4) REQUESTED BY Pacific Marine Center
 (2) H No. H-8958 (5) SHIP OR OFFICE FEIRCE
 (3) FIELD No. PE-20-4-67 (6) DATE REQUIRED ASAP
 (7) VISUAL (8) ELECTRONIC (FILL OUT FORM #3)
 (10) XKN (SP 5) DISTANCE FROM CMER TO EAST EDGE (NYX = 1)
 OR WEST EDGE (NYX = 0). 15,986 METERS
 (11) YKN (SP 241) DISTANCE FROM EQUATOR TO SOUTH EDGE
 OF SHEET. 3,033,630.6 METERS
 (12) CENTRAL MERIDIAN 80 ° 13 ' 00 "
 (13) SURVEY SCALE 1: 20,000
 (14) SIZE OF SHEET (CHECK ONE) 36x54 42x60 OTHER 36x60
 (15) NYX, ORIENTATION OF SHEET (CHECK ONE)
 NYX = 1 NYX = 0



LIST G.P. OF ALL STATIONS TO BE PLOTTED ON THIS PROJECTION ON THE BACK OF THIS FORM. (DEG., MIN., METERS)

- (16) GREATEST LATITUDE 27 ° 34 ' 00 " (PROJECTION LINE
 (17) LOWEST LATITUDE 27 ° 25 ' 00 " INTERVAL, PAGE 4
 (18) DIFFERENCE 0 ° 9 ' 00 " HYDRO MANUAL)
 (19) 1 ° 00 "
 (20) 9 YSN
 (21) GREATEST LONGITUDE 80 ° 22 ' 00 "
 (22) LOWEST LONGITUDE 80 ° 05 ' 00 "
 (23) DIFFERENCE 0 ° 17 ' 00 "
 (24) 1 ° 00 "
 (25) 17 XSN

G. P.'s of all signals is listed in degrees, minutes, and meters on signal list printouts

FORM # 3

FIG. 7

COMPUTER PARAMETERS FOR ELECTRONICALLY CONTROLLED SURVEYS

(RANGE - RANGE)

(1) PROJECT No. OPR 447 (2) H- No. 8958 (3) FIELD No. PE-20-4-67
 (4) TYPE OF CONTROL: SHORAN, RAYDIST, XXX HI-FIX, RADAR
 FREQUENCY (FOR CONVERSION OF RAYDIST OR HI-FIX LANES TO METERS) 1718.59 KC

(5) RANGE ONE (R1) LATITUDE 27 ° ³³ ~~34~~ ' ^{39.560} ~~38.629~~
 STATION NAME FAT 2 LONGITUDE 80 ° 19 ' ^{23.504} ~~38.080~~
 (6) RANGE TWO (R2) LATITUDE 27 ° 26 ' ^{49.452} ~~49.452~~
 STATION NAME EMO 2 LONGITUDE 80 ° 16 ' ^{59.258} ~~59.258~~
 (7) AZIMUTH FROM R1 TO R2 ~~343~~ ° ³⁴ ~~36.135~~ "
 (8) BASELINE LENGTH IN METERS ~~15086.6~~ 13229.31 M.

*Corr. in red
by Norfolk Br.
H.P.*

(9) LOCATION OF SURVEY WITH RESPECT TO ELECTRONIC BASELINE: CHECK ONE
 (TO DETERMINE: IMAGINE AN OBSERVER STANDING AT R1 AND LOOKING DIRECTLY
 AT R2 --- IF THE SURVEY AREA IS TO THE OBSERVER'S LEFT THEN A IS
NEGATIVE; IF THE SURVEY AREA IS TO THE OBSERVER'S RIGHT THEN A IS
POSITIVE.)

XXXX -A (MINUS) XXXX +A (PLUS)

(10) IF SHORAN CORRECTIONS ARE APPLIED BY THE EQUATION, $K(X) + C = D$,
 WHERE X IS SHORAN DISTANCE AND D IS TRUE DISTANCE, ENTER THE CONSTANT
 COEFFICIENTS OF THE EQUATIONS HERE:

K(R1) _____, C(R1) _____, K(R2) _____, C(R2) _____

(11) NUMBER OF VELOCITY TABLES TO BE USED:
 _____ NONE, XX ONE, _____ MORE THAN ONE.

(12) _____ THIS FORM IS SUBMITTED ONLY AS AN AID IN PREPARING A BOAT
 SHEET PROJECTION.

_____ THIS FORM APPLIES TO ALL DATA ON THIS SURVEY.

XXXX THIS FORM APPLIES TO PART OF THE DATA ON THIS SURVEY -

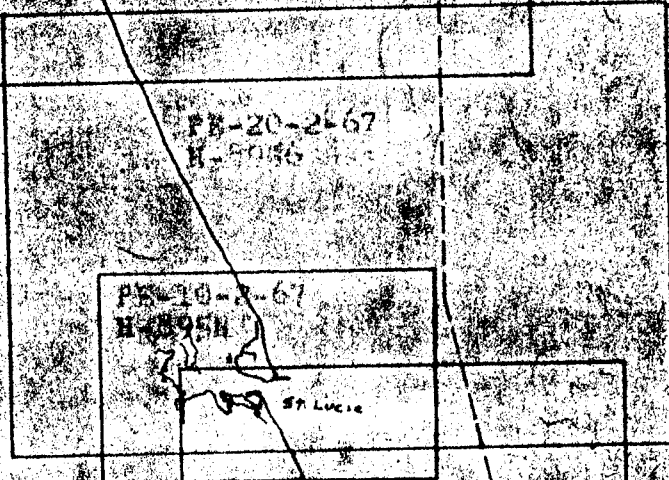
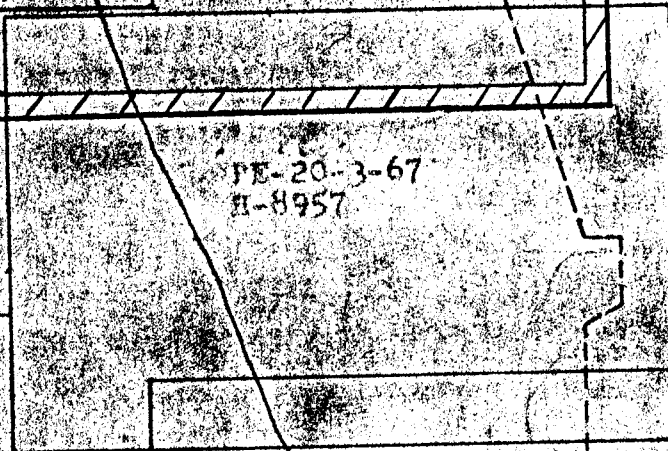
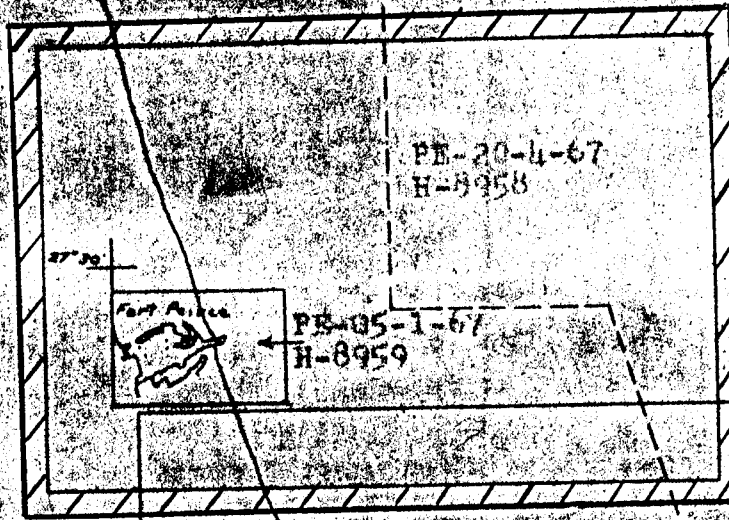
TIME AND DATE LIMITATIONS: FROM 5 Oct. TO 10 October

POSITION NUMBER LIMITATIONS: FROM 5000 TO 6038

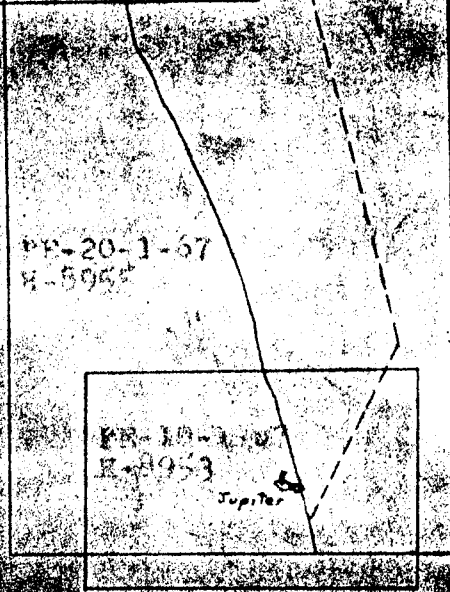
THIS IS FORM #3 SHEET # 1 OF 1 SHEETS FOR THIS SURVEY.

(13) OTHER REMARKS:

All ship work was electronic. Launch was visual.
 Only one velocity table was used for electronic
 work, but more than one was used for the boat
 sheet as a whole.

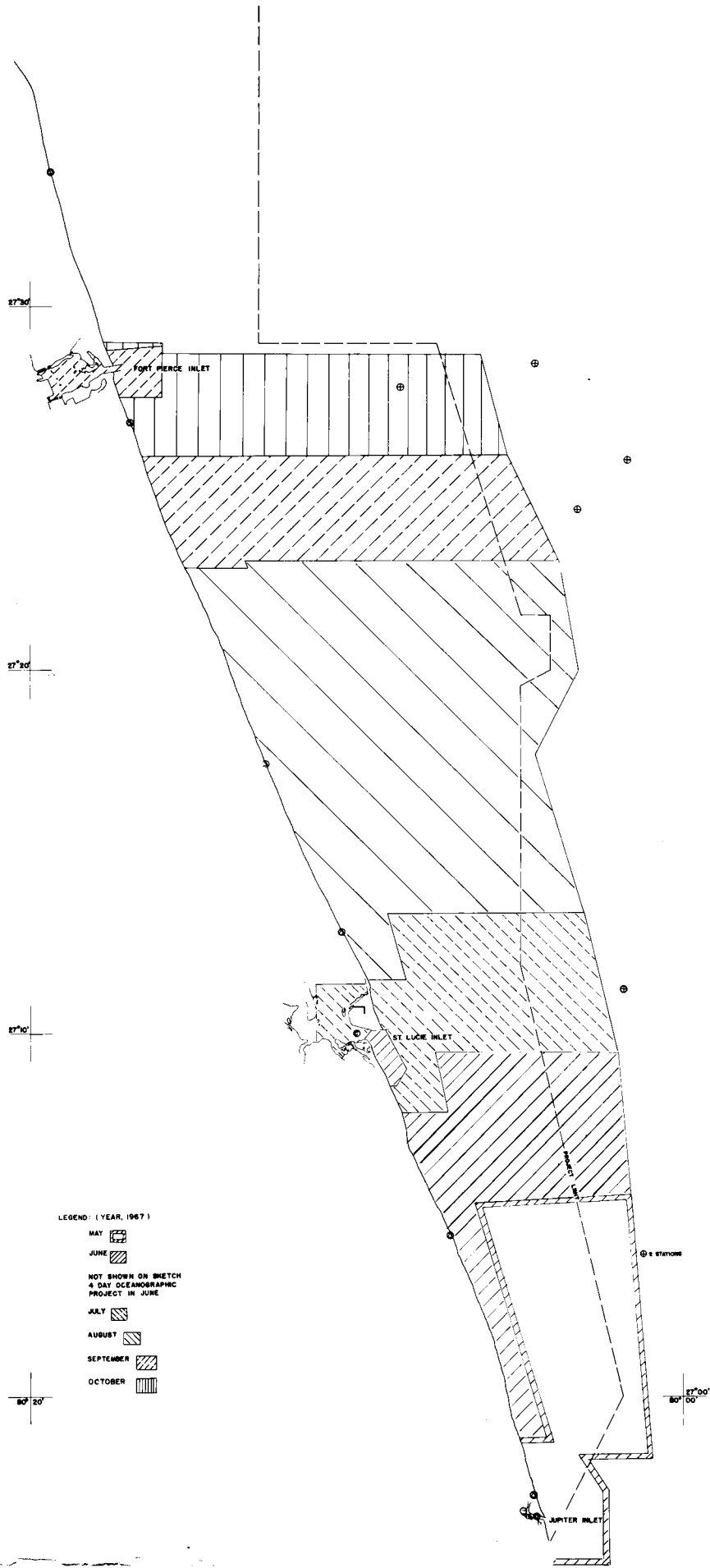


--- Project Limits



27° 20'
84' 30'

50' 00"



ON ORIGINAL
DOCUMENT

80°20' →

LEGEND (YEAR, 1967)

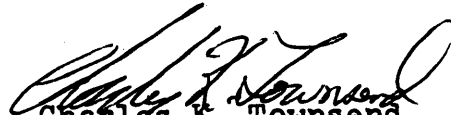
- MAY
- JUNE
- NOT SHOWN ON SKETCH
& DAY OCEANOGRAPHIC
PROJECT IN JUNE.
- JULY
- AUGUST
- SEPTEMBER
- OCTOBER

6 March 1968

APPROVAL SHEET

Field Number PE-20-4-67

The field work and processing of data from this hydrographic survey was under my immediate, daily supervision. The boat sheet and all records have been reviewed and are approved by me. This survey was not completed due to emergency ship repairs and the ending of the field season, however, no additional field work is recommended other than that stated in section "P" of this report.


Charles K. Townsend
LCDR USESSA
Commanding Officer
USC&GS Ship PEIRCE

SEPARATES FOLLOWING TEXT:

- APPENDIX A. TIDAL NOTE
- B. ABSTRACT OF CORRECTIONS TO ECHO SOUNDINGS
- C. ABSTRACT OF CORRECTIONS TO DISTANCE MEASUREMENTS
- D. ABSTRACT OF TRA CORRECTORS
- E. ABSTRACT OF DAILY CONSECUTIVE POSITION NUMBERS BY VESSEL
- F. LIST OF SIGNALS
- G. ABSTRACT OF STANDARD FORMAT COLUMN HEADINGS
- H. ABSTRACT OF HYDROGRAPHIC DATA LOCATED ON THE SURVEY

APPENDIX A

TIDAL NOTE

Tidal heights for this survey were obtained by one corrector zone based upon the Miami Beach, Florida tide station. This corrector zone and the hourly heights from the Miami Beach tide station were supplied by the Tides and Currents Branch.

This corrector zone is described as follows:

Zone one	Zone 1 includes all coastal water in this survey.
----------	---

All times used in this entire survey are on the 60° West time meridian. This was so done because of national observance of daylight savings time. Miami Beach, Florida tide station did not use daylight savings time and thus remained on 75° West time meridian. In order for all times to be in the same zone, we applied +1 h 00 m correction to all times given us for Miami Beach tide station. It should be noted that the time correctors for the above-mentioned corrector zone (zone one) are in addition to the time meridian difference.

Two types of tapes were prepared that were to have tide height information on them. One is "Electronic Control - Corrector Tape" for the USC&GSS PEIRCE and the other type of tape is "Visual - Sounding Tape" for Launch PE-2. Since more than one vessel uses the same tide heights, zeroes were placed in the two above-mentioned types of tapes and the special "Tide Tape" was prepared.

TIDE NOTE FOR HYDROGRAPHIC SHEET

8/1/68

~~XXXXXXXXXXXX~~ Atlantic Marine Center

Plane of reference approved ~~by~~
~~various of sounding records~~ for

HYDROGRAPHIC SHEETS 8953-59 inclusive

Locality: East coast of Florida

Chief of Party: C. K. Townsend, 1967

Plane of reference is mean low water

Tide Station Used (Form C&GS-681): Miami Beach, Florida

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

Zone 1	=	2.5 ft.	← Applicable to this survey
Zone 2	=	2.2	"
Zone 3	=	1.8	"
Zone 4	=	2.0	"
Zone 5	=	1.2	"
Zone 6	=	0.8	"
Zone 7	=	1.8	"

Remarks Tide reducers for Day No. 282, H.S. 8959 have been revised in red and verified.
(Fort Pierce Inlet, Scale 1:5,000, is H-8959)

J. M. Simmons
Chief, Tides and Currents Branch

ABSTRACT OF TIDE CORRECTIONS
(See instructions on reverse side)

1. HYDRO. SUI NO:		2. FIELD NO.		3. SURVEY LOCAT		4. TIDE REDUCERS		5. MACHINE ENTRY		6. TIDE STATION USED		7. CORRECTION USED	
a. MO. DAY YR. OR DAY NO. (Date)	b. POSITION NUMBER	c. TIME		4. TIDE REDUCERS FT.	5. MACHINE ENTRY FMS.	6. TIDE STATION USED (As Form 681)	7. CORRECTION USED ZONE DESIGNATION	8. SURVEY LOCAT		9. MACHINE ENTRY		10. TIDE STATION USED	
		FROM	TO					11. TIME MERID	12. CORRECTION USED ZONE DESIGNATION	13. TIDE STATION USED (As Form 681)	14. CORRECTION USED ZONE DESIGNATION		
H- 8958		PE-20-4-67		East Coast of Florida		60° W		ZONE ONE		Correction applied to Miami Beach tide gage is as follows: Time difference -0 h 20 m Range ratio 1.0 (supplied by the Datum Planes Section, Oceanography Division)			
9-26-67 (269)			0958	-1.0	✓	Tides based on gage at Miami Beach, Florida	ZONE ONE						
10-5-67 (278)			1100	-3.5	✓								
			1152	-3.0	✓								
			1224	-2.5	✓								
			1300	-2.0	✓								
			1336	-1.5	✓								
			1410	-1.0	✓								
			1459	-0.5	✓								
			1628	0.0	✓								
10-6-67 (279)			0916	-3.0	✓								
			1208	-3.5	✓								
			1252	-3.0	✓								
			1324	-2.5	✓								
			1359	-2.0	✓								
			1437	-1.5	✓								
			1531	-1.0	✓								
			1750	-0.5	✓								
10-7-67 (280)			0803	-1.5	✓								
			0843	-2.0	✓								
			0925	-2.5	✓								
			1036	-3.0	✓								
			1150	-3.5	✓								
			1310	-3.0	✓								
			1354	-2.5	✓								
			1438	-2.0	✓								
			1523	-1.5	✓								
			1620	-1.0	✓								
			1700	-0.5	✓								

Plane of Reference Approved
Datum Planes Section
Date 7-29-68

APPROVED

5. CHECKED

INSTRUCTIONS FOR PREPARATION AND SUBMITTAL

The information entered on this form shall be derived from associated tide records and together with those records be forwarded to the Washington Office for administrative approval by Tides and Currents Branch, Marine Data Division, Office of Oceanography.

Instructions by item number.

1. Enter the survey number
2. Enter the field number.
3. Enter the survey locality.
4. Enter the time meridian used.
5. Checked: Enter field approval
Approved: Indicate Washington Office approval.

Instructions by columns (letters):

- a. Enter the day of the year. A coded entry must be identifiable in the Washington Office.
- b. Enter the position number of the sounding line where the reducer is to first apply.
- c. Enter the time in hours and minutes that the reducer listed in "d" is used.
- d. Enter the tide reducer necessary to correct the sounding to the plane of the reference.

The value entered by the field personnel shall be certified by the Washington Office, or corrected and returned to the originator. Only approved information can be entered into the smooth (edited) tape.

- e. Enter the tide value from the previous column (Tide reducer) applied to a tide base of +60.0.

Example:

$$\begin{array}{r} +60.0 \\ - 3.1 \text{ (from column d.)} \\ \hline +56.9 \text{ (into column e.)} \end{array}$$

This summed value shall be punched into the paper tape.

- f. Enter the origin of the tidal record from which the reducers in column "d" were derived. The entry must be identical with the terminology expressed in form 681.
- g. Enter the additional information used to determine the corrections: Ratio of Range, \pm time necessary to correct for the gage position, and zone designation.

ABSTRACT OF TIDE CORRECTIONS
(See instructions on reverse side)

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

1. HYDRO. SUF NO:		2. FIELD NO.		3. SURVEY LOCAT		4. TIME MERID	
H. 8958		PE-20-4-67		East Coast of Florida		60° W	
a. MO. DAY YR. OR DAY NO. (Date)	b. POSITION NUMBER	c. TIME		d. TIDE REDUCERS FT.	e. MACHINE ENTRY FT.	f. TIDE STATION USED (As Form 681)	g. CORRECTION USED ZONE DESIGNATION
		FROM	TO				
10-8-67 (281)			0745	-0.5			ZONE ONE (cont.)
			0824	-1.0			
			0900	-1.5			
			0948	-2.0			
			1045	-2.5			
			1409	-3.0			
			1501	-2.5			
10-9-67 (282)			1547	-2.0			
			1632	-1.5			
			0850	-1.0			
			0946	-1.5			
10-10-67 (283)			1040	-2.0			
			1138	-2.5			
			1507	-3.0			
			1612	-2.5			
			1718	-2.0			
			1025	-1.0			
			1118	-1.5			
			1212	-2.0			
			1500	-2.5			

Plane of Reference Approved
Datum Planes Section
Date 7-29-68

INSTRUCTIONS FOR PREPARATION AND SUBMITTAL

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Instructions by item number.

1. Enter the survey number
2. Enter the field number.
3. Enter the survey locality.
4. Enter the time meridian used.
5. Checked: Enter field approval
Approved: Indicate Washington Office approval.

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- a. Enter the day of the year. A coded entry must be identifiable in the Washington Office.
- b. Enter the position number of the sounding line where the reducer is to first apply.
- c. Enter the time in hours and minutes that the reducer listed in "d" is used.
- d. Enter the tide reducer necessary to correct the sounding to the plane of the reference.

The value entered by the field personnel shall be certified by the Washington Office, or corrected and returned to the originator. Only approved information can be entered into the smooth (edited) tape.

- e. Enter the tide value from the previous column (Tide reducer) applied to a tide base of +60.0.

Example:

$$\begin{array}{r} +60.0 \\ - 3.1 \text{ (from column d.)} \\ \hline +56.9 \text{ (into column e.)} \end{array}$$

This summed value shall be punched into the paper tape.

- f. Enter the origin of the tidal record from which the reducers in column "d" were derived. The entry must be identical with the terminology expressed in form 681.
- g. Enter the additional information used to determine the corrections: Ratio of Range, ± time necessary to correct for the gage position, and zone designation.

APPENDIX B

ABSTRACT OF CORRECTIONS
TO ECHO SOUNDINGS

Velocity corrections for this survey were obtained by two different methods, depending upon whether the vessel used was the ship or the launch.

USC&GSS PEIRCE The velocity corrections for the ship were obtained by taking Nansen cast oceanographic stations. Temperature and depth data was obtained in the field and salinity data obtained by having the casts analyzed by the Land and Sea Interaction Laboratory. There were a total of seven Nansen cast oceanographic stations taken. Results were obtained on six of the seven stations (Locations of the oceanographic stations are shown on the monthly progress sketch placed just before the start of Appendix A by circles with a plus sign in the center). Results were never sent back to us on oceanographic station number 3. However this is not too important as the results of the other six oceanographic stations agreed quite closely and in most cases graphed (see enclosed table and graph) on top of one another. Results to the nearest 0.5 of a foot were picked off. Enclosure of these values appear in both velocity tables and velocity tapes.

Data used for making the velocity correction tables and tapes for the USC&GSS PEIRCE is as follows:

Velocity Corrections from Oceanographic Stations						
mid- depth	# 1	# 2	# 4	# 5	# 6	# 7
12.5					0.25	0.25
15.0	0.49	0.49	0.48	0.52		
20.0					0.74	0.74
25.0	0.99	0.98	0.96	1.04		
30.0					1.25	1.23
35.0	1.48	1.46	1.44	1.56		
40.0					1.75	1.72
45.0	1.96	1.93	1.92	2.08		
55.0	2.45	2.38	2.34	2.60		
65.0	2.90	2.82		3.13		

VELOCITY CORRECTIONS

Ship PEIRCE, fathometer # 246

LCDR. Charles K. Townsend Comdg.

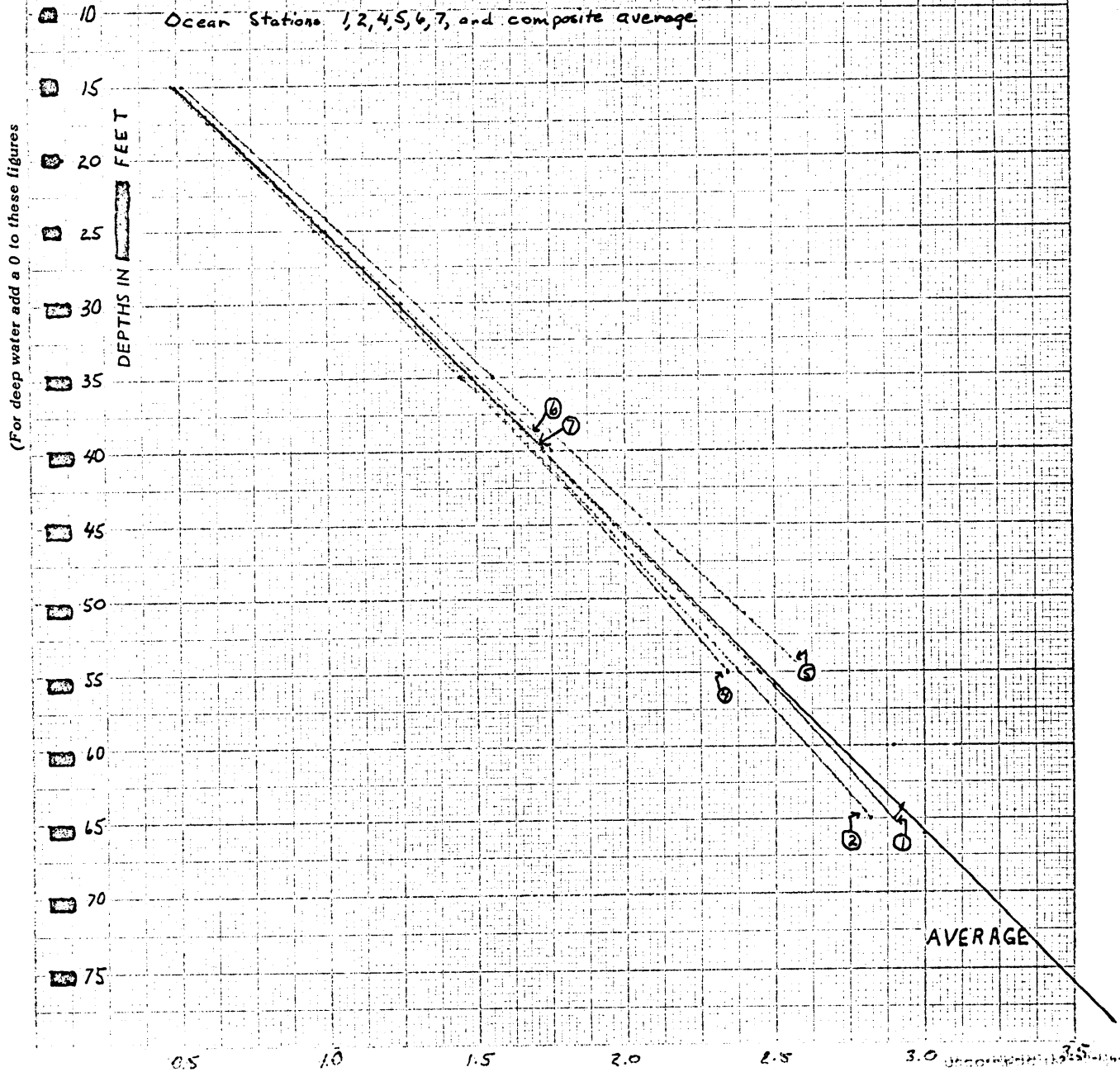
These corrections are to be used

between May 1967 and October 1967

in the locality East Coast of Florida

for hydrographic surveys Nos. PE-20-1-67

PE-20-2-67, PE-20-3-67, PE-20-4-67



(For deep water add a 0 to these figures)

Latitude and longitude of the seven Nansen cast oceanographic stations are as follows (stations one and two were at the same location):

Oceanographic station	latitude	longitude
number one	27° 04' 05"	80° 01' 13"
number two	27° 04' 05"	80° 01' 13"
number three	27° 11' 14"	80° 01' 52"
number four	27° 25' 48"	80° 01' 38"
number five	27° 24' 26"	80° 03' 12"
number six	27° 28' 28"	80° 04' 27"
number seven	27° 27' 49"	80° 08' 40"

LAUNCH PE-2 Velocity corrections for launch PE-2 in this survey were obtained through bar checks taken once or twice daily as weather permitted. The results were averaged throwing out values of great variance from the mean, and then tabulated in 0.5 of a foot increments for enclosure in the velocity tables and tapes. These increments were picked off of the graph labeled "Table 0002" which is enclosed.

(Let 1 inch equal 4 fathoms)

equal 0.4 fathom for speed.)

CORRECTIONS IN FEET

FORM C&GS-117
(4-64)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

VELOCITY CORRECTIONS

fathometer # 242

Comdg.

These corrections are to be used

between 19__ and 19__

in the locality EAST COAST OF FLORIDA

for hydrographic surveys Nos. PE-20-3-67

PE-20-4-67

PE-05-1-67

(For deep water add a 0 to these figures)

DEPTHS IN FEET

0
5
10
15
20
25
30
35
40
45
50
55
60
65

-1.0 -0.8 -0.6 -0.4 -0.2 0.0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8

USCGC FORM 16439-P62

K&E 20 X 20 TO THE INCH
7 X 10 INCHES
KEUFFEL & ESSER CO.

16 1240
MADE IN U.S.A.

Two Raytheon (type 723) fathometers were used in this survey. USC&GSS PEIRCE used fathometer number 246. Launch PE-2 used fathometer number 242. Echo soundings were taken up to 45 feet in launch PE-2 and up to 80 feet with the ship.

Two velocity correction tables are included in this report. They are table 0005 (for fathometer number 242 in launch PE-2) and table 0006 (for fathometer number 246 in the USC&GSS PEIRCE). The velocity correction tables were numbered for the entire field season and only those which apply to this survey were included with this report.

Negative values for velocity corrections appear in the graph for table 0005. In keeping with instructions found in section 5-10, page 29, of Instruction Manual - Automated Hydrographic Surveys, of October, 1967, we have added a positive one (1) to every corrector in this table. Thus all velocity correctors are now positive. This information also appears on the velocity tape print-out. It should also be noted that the depth given on the tape and print-out is the deepest depth to which the accompanying correction is applied.

VELOCITY CORRECTION TABLES

Table 0005 ←

From	To	Correction used	From	To	Correction used
0.0	10.8	0.5	35.8	41.8	2.5
10.9	20.7	1.0	41.9	48.2	3.0
20.8	29.0	1.5	48.3		3.5
29.1	35.7	2.0			

omitted in reduction of sdgs.

Table 0006

0.0	20.2	0.5	50.8	60.8	2.5
20.3	30.3	1.0	60.9	71.2	3.0
30.4	40.5	1.5	71.3	80.8	3.5
40.6	50.7	2.0	80.9		4.0

Verification of USC&GSS PEIRCE fathometer readings was made by comparing 114 lead line depths with their corresponding fathometer readings. This information is included below. As can be seen, all lead lines agree within 3 feet with the corrected fathometer readings. 90.4% of all corrected soundings agree within 2 feet and 64.9% of the soundings agree within 1 foot. Considering the difficultness of keeping the lead line straight in the locale we were operating in (because of currents) these soundings are an extremely good indication of the reliability of the USC&GSS PEIRCE fathometer.

There were nine lead line comparisons which were rejected which are not included in the enclosed data. All except one had the fathometer depth greater than the lead line depth which was obviously caused by incorrectly reading the lead line. Rather than try to guess what should have been read on the lead line, we thought it better to reject those comparisons.

Lead Line Comparisons
by boat sheet

PE-20-1-67

Day	Pos- ition number	Fath- ometer depth	Velocity cor- rection	Cor- rected fath. depth	Lead line depth
177	2055	74.0	3.5	77.5	79.0
	2056	67.0	3.0	70.0	75.0
	2057	56.0	2.5	58.5	60.0
	2058	45.0	2.0	47.0	49.0
	2059	40.0	1.5	41.5	44.0
	2060	38.0	1.5	39.5	41.0
	2061	44.0	2.0	46.0	48.0
	2062	59.0	2.5	61.5	64.0
	2063	70.0	3.0	73.0	74.0
	2064	53.0	2.5	55.5	58.0
	2065	44.0	2.0	46.0	46.0
	2066	43.0	2.0	45.0	48.0
	2067	43.0	2.0	45.0	46.0
	2068	39.0	1.5	40.5	42.0
	2069	53.0	2.5	55.5	56.0
	2070	58.0	2.5	60.5	62.0

Lead Line Comparisons
by boat sheet

PE-20-2-67

Day	Pos- ition number	Fath- ometer depth	Velocity cor- rection	Cor- rected fath. depth	Lead line depth
211	0649	46.0	2.0	48.0	50.0
	0650	50.0	2.0	52.0	53.0
	0651	54.0	2.5	56.5	57.0
213	0872	44.0	2.0	46.0	47.0
	0913	68.0	3.0	71.0	72.0
	0914	60.0	2.5	62.5	63.0
	0915	43.0	2.0	45.0	45.0
	0916	56.0	2.5	58.5	59.0
	0917	64.0	3.0	67.0	68.0
	0918	61.0	3.0	64.0	64.0
	0919	54.0	2.5	56.5	57.0
	0920	44.0	2.0	46.0	46.0
	226	1989	60.0	2.5	62.5
1991		56.0	2.5	58.5	59.0
1992		55.0	2.5	57.5	59.0
1993		58.0	2.5	60.5	61.0
1994		55.0	2.5	57.5	60.0
1995		55.0	2.5	57.5	58.0
1996		59.0	2.5	61.5	62.0
1997		67.0	3.0	70.0	70.0
1998		55.0	2.5	57.5	59.0
1999		61.0	3.0	64.0	65.0
2000		56.0	2.5	58.5	59.0
2001		59.0	2.5	61.5	63.0
2002		60.0	2.5	62.5	63.0
2003		64.0	3.0	67.0	68.0
2004	69.0	3.0	72.0	73.0	
2005	66.0	3.0	69.0	72.0	
2006	71.0	3.0	74.0	75.0	
2007	63.0	3.0	66.0	67.0	
2008	63.0	3.0	66.0	67.0	
2009	57.0	2.5	59.5	60.0	
2010	62.0	3.0	65.0	67.0	
2011	61.0	3.0	64.0	66.0	
2012	58.0	2.5	60.5	62.0	

PE-20-3-67

266	2916	57.0	2.5	59.5	62.0
	2917	56.0	2.5	58.5	59.0
	2918	55.0	2.5	57.5	58.0
	2919	62.0	3.0	65.0	66.0

Lead Line Comparisons
by boat sheet

PE-20-3-67
continued

Day	Pos- ition number	Fath- ometer depth	Velocity cor- rection	Cor- rected fath. depth	Lead line depth
266	2920	57.0	2.5	59.5	60.0
	2921	55.0	2.5	57.5	59.0
	2922	60.0	2.5	62.5	64.0
	2923	49.0	2.0	51.0	51.0
	2924	53.0	2.5	55.5	56.0
	2926	59.0	2.5	61.5	62.0
	2927	59.0	2.5	61.5	63.0
	2928	62.0	3.0	65.0	66.0
	2929	50.0	2.0	52.0	54.0
	2930	28.0	1.0	29.0	30.0
	2931	40.0	1.5	41.5	42.0
	2932	46.0	2.0	48.0	50.0
	2933	45.0	2.0	47.0	48.0
	2934	36.0	1.5	37.5	39.0
	2935	40.0	1.5	41.5	44.0
	2936	40.0	1.5	41.5	43.0
267	2937	39.0	1.5	40.5	43.0
	2938	33.0	1.5	34.5	35.0
	2939	44.0	2.0	46.0	47.0
	2940	46.0	2.0	48.0	50.0
	2941	44.0	2.0	46.0	47.0
	2942	49.0	2.0	51.0	51.0
	2943	40.0	1.5	41.5	43.0
	2945	42.0	2.0	44.0	46.0
	2946	56.0	2.5	58.5	59.0
	2947	54.0	2.5	56.5	58.0
	2948	54.0	2.5	56.5	57.0
	2949	29.0	1.0	30.0	30.0
	2957	67.0	3.0	70.0	70.0
	2958	65.0	3.0	68.0	68.0
	2959	69.0	3.0	72.0	72.0
	2960	67.0	3.0	70.0	72.0
	2961	70.0	3.0	73.0	73.0
	2962	64.0	3.0	67.0	67.0
	2963	66.0	3.0	69.0	70.0
	2964	54.0	2.5	56.5	57.0
	2965	67.0	3.0	70.0	70.0
	2966	54.0	2.5	56.5	57.0
	2967	48.0	2.0	50.0	51.0
	2968	37.0	1.5	38.5	39.0
	2969	41.0	2.0	43.0	44.0
	2970	36.0	1.5	37.5	38.0

Lead Line Comparisons
by boat sheet

PE-20-4-67

Day	Pos- ition number	Fath- ometer depth	Velocity cor- rection	Cor- rected fath. depth	Lead line depth
283	6017	41.0	2.0	43.0	44.0
	6018	44.0	2.0	46.0	47.0
	6019	52.0	2.5	54.5	56.0
	6020	52.0	2.5	54.5	56.0
	6021	66.0	3.0	69.0	70.0
	6022	61.0	3.0	64.0	64.0
	6024	57.0	2.5	59.5	60.0
	6025	59.0	2.5	61.5	62.0
	6026	66.0	3.0	69.0	70.0
	6030	37.0	1.5	38.5	39.0
	6031	43.0	2.0	45.0	47.0
	6032	53.0	2.5	55.5	57.0
	6033	54.0	2.5	56.5	57.0
	6034	54.0	2.5	56.5	57.0
	6035	49.0	2.0	51.0	54.0
	6036	56.0	2.5	58.5	59.0
	6037	64.0	3.0	67.0	68.0
	6038	60.0	2.5	62.5	65.0

APPENDIX C

ABSTRACT OF CORRECTIONS
TO DISTANCE MEASUREMENTS

HI-FIX was used for position control of the ship hydrography from its junction with launch work to the outer limits of the survey.

HI-FIX stations "EMO" (Pattern 2) and "FAT" (Pattern 1) were used from October 5 until October 10. At station "FAT" shoal water prevented the Ship PEIRCE from maneuvering close enough to shore to obtain good three-point sextant fixes. Also, hydrography on this survey was only run on the southern portion of the sheet - in the vicinity of station "EMO". For these reasons only those HI-FIX errors (for both patterns) recorded when the ship was calibrating directly off station "EMO" were meant to determine the HI-FIX correction for smooth processing. The following corrections were used:

<u>Dates</u>	<u>Correction to Pattern 1</u>	<u>Correction to Pattern 2</u>
Oct 5 - Oct 10	+ .38	+ .42

APPENDIX D

ABSTRACT OF TRA CORRECTORS

The TRA corrector is a combination of various correctors to be applied only to those soundings taken by electronic equipment. It should be noted, then, that all skiff work has a zero TRA value.

TRA corrections for this survey are placed on T/VTI tapes for both electronic and visual control. The TRA corrections also appear at the end of this appendix. The reason for the TRA corrections appearing on T/VTI tapes instead of on "corrector" tapes and "sounding" tapes (for electronic and visual control respectively) is that there are negative TRA correction values.

TRA=Transducer draft+Instrumental error+Phase correction+Initial corrector+Settlement and squat+Fathometer speed corrector.

The components of the TRA corrector are as follows:

Transducer Draft

USC&GSS PEIRCE The transducer draft used for the USC&GSS PEIRCE during field operations was 10.0 feet. This 10.0 foot transducer draft was eliminated by setting the initial at 9.0 feet in accordance with the memorandum dated October 1, 1962, from the Chief, Instrument Division. 10.0 feet is the actual transducer draft of the ship after expending approximately 12,000 gallons of fuel. It has been found and verified that after taking on board 12,000 gallons of fuel the draft then became 10' 4" to 10' 6". Thus the ship rises out of the water at 0.4 of an inch per thousand gallons of fuel expended. The average cruise found the ship using 10,000 gallons of fuel. The chief engineer reported that 1600 - 2000 gallons of fuel were required for the ship to go one way on the trip to the working grounds. Thus variance of the draft during the actual hydrography done by the ship is 2 inches (a change from 10' 4" to 10' 2"). The mid-point of most cruises where the ship was involved with hydrography found 4,000 - 5,000 gallons of fuel consumed. 0.4 times 4 or 5 equals 2 inches (rounded off to the nearest inch). The average draft of the ship, then, is 10' 3" which would require a transducer draft correction of 3 inches added to every depth. We can use an average since at no time will the actual transducer draft be more than 1/12 of a foot from this mean transducer depth. Three inches equals 0.25 of a foot. Rounding

this figure off for the shoaler depth, we obtain a corrector in tenths of 0.2.

Launch PE-2 Actual transducer draft of launch PE-2 is three feet. This draft has been eliminated by setting the initial on the fathometer at two feet in accordance with the memorandum dated October 1, 1962, from the Chief, Instrument Division. There is no appreciable draft change on the launch due to fuel consumption since the launch is refueled every other day. The loss of weight due to two day's fuel consumption was found to be not enough to affect the draft.

Instrumental Error

USC&GSS PEIRCE Careful maintenance of the fathometer kept instrumental error negligible. ?

Launch PE-2 Velocity corrections for the fathometer were obtained by bar checks, thus instrumental error is non-existent.

Phase Correction

There is no phase correction necessary as all fathometers were carefully maintained as per instructions given in a memorandum from the Chief, Engineering Division dated December 22, 1966.

Initial Correction

USC&GSS PEIRCE Initial correction for all days is 0.0 through careful maintenance with the following exceptions:

Day	Times	Correction
283	101100 - 101600	-0.5

Launch PE-2 Initial correction for all days is 0.0 through careful maintenance with the following exceptions:

Day	Times	Correction
269	114600 - 121800	-0.2
281	091900 - 105730	+0.2
	134000 - 160230	-0.2
282	084900 - 093300	+0.2

Settlement and Squat

USC&GSS PEIRCE Settlement and squat was determined for the ship and found to be negligible.

Launch PE-2 Settlement and squat was obtained for launch PE-2 by rod and level. This data is supplied below. The actual corrections for settlement and squat were obtained by noting the speed changes in the sounding volumes. Occasional rpm speeds were used which were not checked by rod and level. In such cases the larger of the two surrounding corrections was used to give the more conservative depth.

Settlement and Squat obtained by rod and level

RPM	Corrector in tenths of feet	Corrector in inches
0000	0.0	0.0
0500	0.0	0.0
1000	-0.1	-1.0
1200	-0.1	-1.0
1500	-0.2	-2.0
1800	-0.2	-2.0
2300	-0.1	-1.0

SETTLEMENT AND SQUAT CORRECTORS by vessel

USC&GSS PEIRCE

All days have a corrector of 0.0.

Launch PE-2

Day	Time from	Cor- rector	Day	Time from	Cor- rector
268	091300	0.0	280	083500	-0.2
	092330	-0.2			
	120200	-0.1	281	084000	-0.2
278	100900	-0.2	282	084430	-0.2
				153600	0.0

Fathometer Speed Corrector

The fathometers were maintained so that there is no speed corrector necessary.

TRA CORRECTION
by vessel

USC&GSS PEIRCE

Day	Time from	Cor- rection	Day	Time from	Cor- rection
278	123200	+0.2	281	081600	+0.2
279	083730	+0.2	282	082730	+0.2
280	081000	+0.2	283	101100	-0.3
				102500	+0.2

Launch PE-2

269	091300	0.0	281	084000	-0.2
	092330	-0.2		091900	0.0
	114600	-0.4		110300	-0.2
	120200	-0.3		134000	-0.4
278	100900	-0.2	282	084430	-0.2
				084900	0.0
280	083500	-0.2		093330	-0.2
				153600	0.0

APPENDIX E

ABSTRACT OF DAILY CONSECUTIVE
POSITION NUMBERS BY VESSEL

Ship PEIRCE

<u>Date</u>	<u>Day #</u>	<u>Position #'s</u>
10/ 5/67	278	5000-5099
10/ 6/67	279	5100-5301
10/ 7/67	280	5302-5583
10/ 8/67	281	5584-5779
10/ 9/67	282	5780-6014
10/10/67	283	6015-6038

Launch PE-2

<u>Date</u>	<u>Day #</u>	<u>Position #'s</u>
9/26/67	269	0001-0080
10/ 5/67	278	0081-0169
10/ 7/67	280	0170-0219
10/ 8/67	281	0220-0330
10/ 9/67	282	0331-0378

✓

4/22/68

HYDRO - SIGNAL CARDS

H-8938

PE-804-67

EDP NO.	NO.	LATITUDE	LONGITUDE	NAME	
8958	434	27251105	080162079	RUB	
8958	435	27251998	080162505	SUE	
8958	436	27253041	080162894	TOY	
8958	437	27254120	080163284	USE	
8958	438	27255338	080163714	WIG	
8958	439	27260689	080164191	NED	
8958	440	27262164	080164781	WED	
8958	441	27263159	080165068	JOY	
8958	502	27285081	080174360	CRY	
8958	504	27284295	080173945	EAT	
8958	518	27281105	080172848	JAR	
8958	525	27273418	080171825	RAG	
8958	528	27271033	080171329	TAN	
8958	600	27284945	080165925	EMO-2 ✓	
8958	601	27270338	080170579	ACE	
8958	602	27291949	080175260	BAG	
8958	603	27293941	080175774	CUT	
8958	604	27294649	080175935	DOT	
8958	605	27295442	080180313	EVA	
12 11 10 9 8 7 6 5	8958	606	27300484	080180696	FLY
	8958	607	27301491	080181082	GAL
	8958	608	27302359	080181468	ICE
	8958	609	27303765	080182102	JOE

8958	610	27304844	080182642	KEY
8958	611	27310474	080183345	LEG
8958	612	27311209	080183706	MAN
8958	613	27312417	080184205	NUT
8958	614	27313733	080184694	OLD
8958	615	27314792	080184996	PRO
8958	616	27316004	080185372	RIO
8958	617	27321069	080185616	SAM
8958	618	27322131	080185970	WHO
8958	619	27323402	080190288	YES
8958	620	27324711	080190641	ALP
8958	621	27325851	080190973	BRA
8958	622	27330916	080191356	CAT
8958	623	27331927	080191695	DAY
8958	624	27332992	080191994	EGG
8958	632	27343883	080193810	OAK MP
43	8958	700	27333956	080192350 FAT-2

⊙ COMPUTER CARD

⊙ PHOTO CARD (NO NAME, BUT
YES X & Y
ADD TO COMPUTER AND TO PHOTO ⊙
ON SHEET

12
11
10
9
8
7
6
5
4
3
2

APPENDIX FLIST OF SIGNALSPE-20-4-67 (H-8958)

<u>NAME</u>	<u>SOURCE</u>	<u>CODE NUMBER</u>
ACE	T-13108	601
ALP	T-13108	620
BAG	T-13108	602
BRA	Geographic Position	621
CAT	T-13108	622
CRY	T-13116	502
CUT	T-13108	603
DAY	T-13108	623
DOT	T-13108	604
EAT	T-13116	504
EGG	T-13108	624
EMO	Geographic Position	600
EVA	T-13108	605
FLY	T-13108	606
FAT 2	Geographic Position	700
GAL	T-13108	607
ICE	T-13108	608
JAR	T-13116	518
JOE	T-13108	609
JOY	Geographic Position	441
KEY	T-13108	610
LEG	T-13108	611
MAN	T-13108	612
NED	Geographic Position	439
NUT	T-13108	613
OAK	Geographic Position	632
OLD	T-13108	614
PRO	T-13108	615

APPENDIX F (CONT'D)

<u>NAME</u>	<u>SOURCE</u>	<u>CODE NUMBER</u>
RAG	T-13116	525
RIO	T-13108	616
RUB	T-13108	434
SAM	T-13108	617
SUE	T-13108	435
TAN	Geographic Position	528
TOY	T-13108	436
USE	T-13108	437
WED	T-13108	440
WHO	T-13108	618
WIG	T-13108	438
YES	T-13108	619

Geographic Positions were accomplished by Photogrammetric Field Party 62, and all data concerning them was forwarded by the party.

APPENDIX G

ABSTRACT OF STANDARD
FORMAT COLUMN HEADINGS

Raw Data Tape

						Ft			
Time	Ind	Sndg	Pos#	Day	Fm	R1	R2		
140200	01	1250	0001	129	0	551830	235640		

Corrector Tape

						Ft					
Time	Ind	Sndg	Pos#	Day	Fm	R1C	R2C	Tide	TRA		
140200	00	1250	0001	129	0	100050	000150	1012	005	000	

Position Tape

						Ft					
Time	Ind	Sndg	Pos#	Day	Fm	LA	RA	LO	CO	RO	
135100	00	0000	5000	187	0	016200	022570	0256	100	103	

Sounding Tape

												Spec
Time	Ind	Sndg	Tab.	Day	Fm	R1	R2	Tide	TRA	Ind		
135100	01	0420	0001	187	0	000000	000000	0000	000	000		000

Transducer/Velocity Indicator (T/VTI) Tape

Time	TRA	Ind.	Day								
105200	00	1002	0000	193	0	000000	000000				

Tide Tape

Time	Tide	Day				
080000	00	0010	0000	124	0	000000

Signal Control Tape

100 27 08 1777 080 09 0338 ANT

Columns

1-3
7-8
10-11
13-16
19-21
23-24
26-29
32-34
4-6, 12, 17-18, 22, 25, 30-31
35


Description

Position Number
Degrees of Latitude
Minutes of Latitude
Seconds of Latitude in Meters
Degrees of Longitude
Minutes of Longitude
Seconds of Longitude in Meters
Name of Station
Left Blank
Carriage Return

APPENDIX H

ABSTRACT OF HYDROGRAPHIC
DATA LOCATED ON THE SURVEY

<u>Position Number</u>	<u>Data Located</u>
0001	Red Nun Buoy "10A" - Shoal
0371	fne brk Sh
0372	fne brk Sh
0373	brk Sh
0374	brk Sh
0375	brk Sh
0376	brk Sh
0377	brk Sh
0378	Sh
6015	Red Nun Buoy "10A" - Shoal
6016	brk Sh
6017	brk Sh
6018	brk Sh
6019	brk Sh
6020	fne brk Sh and S
6021	brk Sh
6022	fne gy S and brk Sh
6023	brk Sh
6024	fne brk Sh
6025	fne brk Sh
6026	fne brk Sh
6027	fne brk Sh
6028	fne brk Sh
6029	fne brk Sh
6030	fne brk Sh
6031	fne brk Sh and fne gy S
6032	fne brk Sh
6033	brk Sh
6034	fne brk Sh
6035	fne brk Sh
6036	fne brk Sh
6037	fne brk Sh
6038	fne brk Sh



UNITED STATES GOVERNMENT

Memorandum

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

VOS

TO : Chief, Processing Division
Atlantic Marine Center

DATE: APR 29 1968

In reply refer to: C324


FROM : Chief, Marine Chart Division

SUBJECT: Plotting of Hydrographic Survey H-8958 (PE 20-4-67), OPR-447

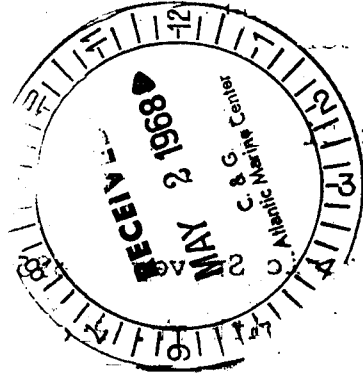
Refer : Telephone conversation with Mr Profitt, April 15, 1968.

It is considered improbable that surveying the area of Proj. OPR-447, along the Florida East Coast, will be continued in the near future.

Incomplete survey H-8958 has been "squared off" reasonably well, and a machineplot of the survey data should, therefore, be made.


John O. Boyer





Reg. No. _____

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 _____ TIME REQ'D _____ INITIALS _____

REMARKS:

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

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

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-8958

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		/	BOAT SHEETS		2	
DESCRIPTIVE REPORT		/	OVERLAYS		6	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						1 (EPI-Recordings)
CAHIERS	1		1			
VOLUMES	2 + 1 calibration volume					
BOXES			1			

T-SHEET PRINTS (List) T-13108 & T-13116

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				1447
POSITIONS CHECKED	142		3	
POSITIONS REVISED	22	4	0	
DEPTH SOUNDINGS REVISED	114	1	0	
DEPTH SOUNDINGS ERRONEOUSLY SPACED			0	
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED			0	

PROCESSING ACTIVITY	TIME (MANHOURS)		
	PRE-VERIFICATION	VERIFICATION	REVIEW
TOPOGRAPHIC DETAILS	8	2	1 hr.
JUNCTIONS	2	5	3 hrs.
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS	16	2	3 hrs.
SPECIAL ADJUSTMENTS			0
ALL OTHER WORK	73	51	49 hrs.
TOTALS	99	60	56 hrs.

PRE-VERIFICATION BY <u>W.L. JONNS - D.R. MUNFORD</u>	BEGINNING DATE <u>8 Jan 1969</u>	ENDING DATE <u>3 Feb 1969</u>
VERIFICATION BY <u>W.L. JONNS</u>	BEGINNING DATE <u>16 APRIL 69</u>	ENDING DATE <u>28 APRIL 69</u>
REVIEW BY <u>S. Rose</u>	BEGINNING DATE <u>Oct. 10, 1969</u>	ENDING DATE <u>Oct. 22, 1969</u>

H-8958

A. Additions and corrections have been furnished the plotter
Except for those shown in red on
center by the verification unit. the final printouts.
Signed *Alfred L. Puffer*
Date May 1, 1969 Title Chief, Hydro Processing Br.
AMC

B. Additions and corrections have been added to the survey
records and the final smooth sheet forwarded to the verifica-
tion unit.

Date _____ Signed _____
Title _____

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

Date May 1, 1969 Signed *Alfred L. Puffer*
Title Chief, Hydro Processing Br.
AMC

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

Date May 1, 1969.

OFFICE OF HYDROGRAPHY AND OCEANOGRAPHY

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8958

FIELD NO. PE-20-4-67

Florida East Coast -- Vicinity Fort Pierce Inlet

SURVEYED: September 26, 1967, through October 10, 1967

SCALE: 1:20,000

PROJECT NO.: OPR-447

SOUNDINGS: In feet with
Raytheon DE-723
Depth Recorders

CONTROL: Sextant Fixes on
Shore Signals for Inshore
Hydrography; HI-FIX arcs
for Offshore Hydrography

Chief of Party.....	C. K. Townsend
Surveyed by.....	L. Greve
.....	R. T. Olack
.....	N. D. Smith
.....	K. W. Sigley
Protracted by (Automated).....	Gerber Digital Plotter
Soundings Plotted by (Automated).....	Gerber Digital Plotter
Verified and Inked by.....	W. L. Jonns
Reviewed by.....	S. Rose
.....	Date: October 22, 1969
Inspected by.....	R. H. Carstens

1. Description of the Area

This survey extends along the East Coast of Florida, south of Fort Pierce Inlet. The survey of the project area is incomplete, the launch having run only two lines north of the Inlet. Seaward the survey extends to longitude 80°06', and includes the northern half of Capron Shoal.

The bottom is mostly sand and shell, and slopes from shore to a depth of about 70 feet in approximately ten miles.

2. Control and Shoreline

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

The shoreline originates with advance manuscripts T-13107 and T-13108 based upon 1966 and 1967 photography, and field edited in 1968.

3. Hydrography

- A. Depths at crossings are in adequate agreement.
- B. Standard depth curves are adequately delineated.
- C. The development of the bottom configuration and least depths is satisfactory.

4. Condition of the Survey

The sounding records, automated plotting, the Descriptive Report, and the Atlantic Marine Center verification are adequate and conform to the requirements of the Hydrographic Manual and the Automated Hydrographic Survey Instruction Manual, except that stylus arm corrections of as much as 0.8 ft. were not applied to ship PEIRCE soundings and bar check corrections were not applied to soundings obtained by Launch 2 in a strip extending to two miles offshore. Soundings on this survey may be as much as 1 to 2 foot shoal depending on the fathometer and scale in use. Inasmuch as these errors do not make the dangers to navigation in this area less hazardous, and although the survey is not considered to be of standard quality, it will be accepted for charting.

5. Junctions

Junctions were effected with the following surveys:

- H-8783 (1964) on the east
- H-8839 (1965) on the north
- H-8957 (1967) on the south
- H-8959 (1967) on the west at Ft. Pierce Inlet

There is a holiday between the present survey and the southwestern portion of H-8839 (1965) which should be surveyed when work is resumed in this area.

Present depths are as much as 1 to 2 ft. shoaler than inshore soundings obtained by the launch on H-8957 on the south and overlapping soundings of H-8783 on the east, H-8839 on the north and H-8959 on the west. These differences

result principally because of unapplied bar check corrections for the launch soundings and unapplied stylus arm corrections for the ship soundings. Differences in scale and control of soundings of H-8783 may account for some of the disagreement with that survey.

6. Comparison with Prior Surveys

H-1523"a"	(1882)	1:40,000
H-5027	(1930)	1:20,000
H-5040	(1930)	1:20,000
<u>H-5057</u>	<u>(1930)</u>	<u>1:40,000</u>

Portions of these surveys comprise the prior coverage of the area of the present survey. Only minor changes in the bottom have occurred except to the south of Fort Pierce Inlet where the 9- to 12-foot shoal in lat. $27^{\circ}26.1'$, long. $80^{\circ}16.3'$ on H-5040 (1930) has shifted westerly about 120 meters and has deepened to 14 ft. On H-1523a (1882) Indian River Inlet is shown in lat. $27^{\circ}30.7'$. This inlet is charted as "closed" in 1916. Fort Pierce Inlet was first charted in 1923 about two miles to the southward.

In a few instances soundings on H-5057 (1930) are 4 to 5 feet shoaler than present depths probably as a result of erratic operation of the early fathometers as for example the 51 charted in lat. $27^{\circ}27.5'$, long. $80^{\circ}08.72'$. This sounding falls in present general depths of 56 to 58 feet and is probably erroneous. A conflicting crossline indicates discrepancies of 4 ft. in this section of the line on the prior survey.

A few bottom characteristics and supplementary soundings have been carried forward from the 1930 surveys. With these additions, the present survey is adequate to supersede the prior surveys in the common area.

7. Comparison with Chart 1247, Fourth Ed., February 17, 1969 and with Chart 845-SC, 8th Ed., September 1969

A. Hydrography

The charted hydrography within the area of the present survey is from the previously discussed prior surveys, and from the boatsheet of the present survey. Application

of the present survey to the chart will improve the bottom delineation in this area and provide for the change in the bottom south of Ft. Pierce Inlet.

The present survey supersedes the charted hydrography in the common area.

B. Aids to Navigation

The only floating aid to navigation charted within the limits of this survey adequately marks the feature intended.

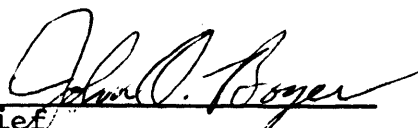
8. Compliance with Instructions

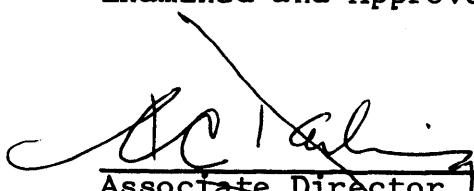
The completed portion of the present survey adequately complies with the Project Instructions except as discussed in item 4.

9. Additional Field Work

The present survey is adequate for charting. Extension of the survey to the northward to complete the junction with survey H-8839 and to cover the project area is recommended.

Examined and Approved:


Chief
Marine Chart Division


Associate Director
Office of Hydrography
and Oceanography

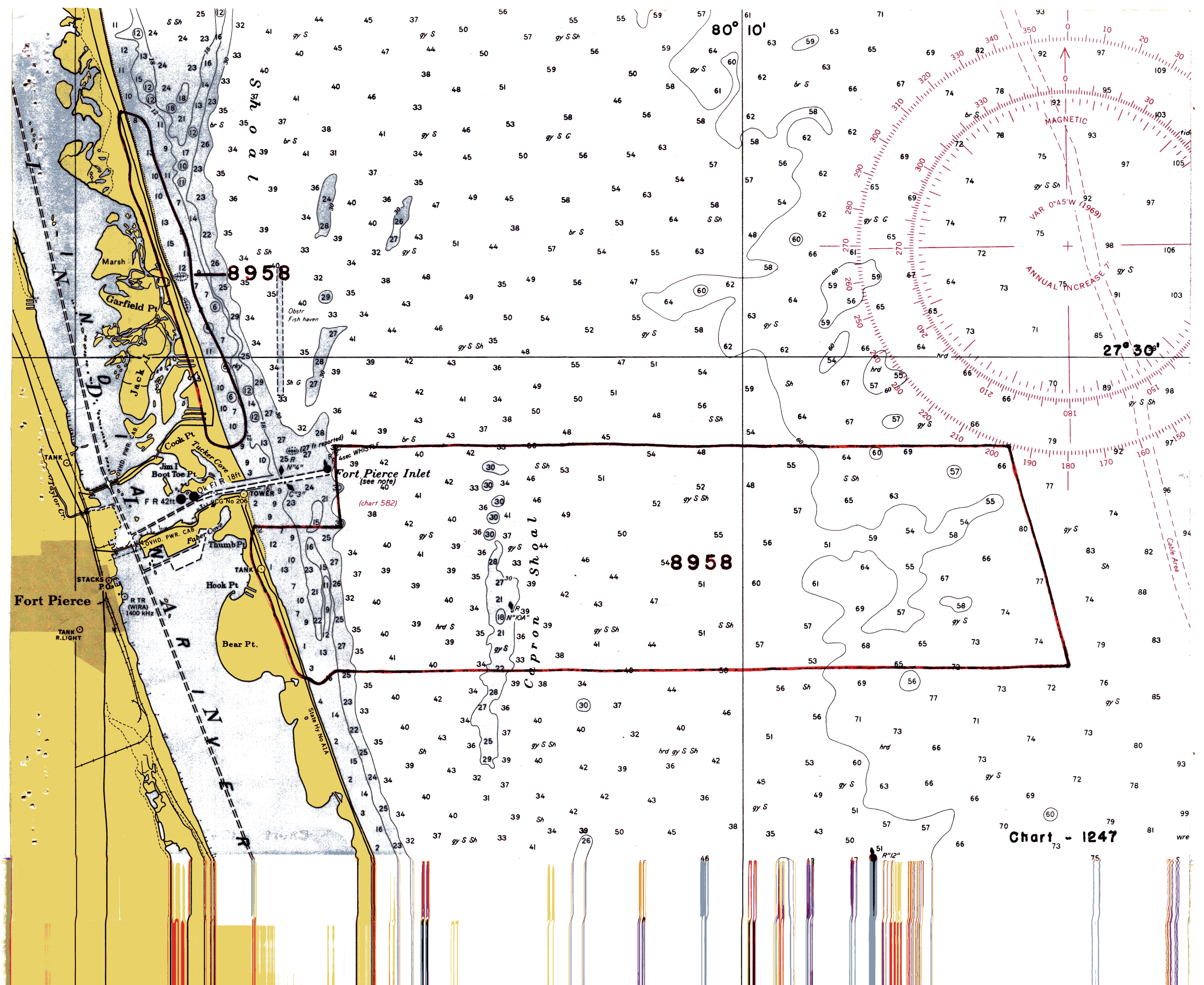


Chart - 1247

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8958

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
582	8-13-69	Cynthia Keromiti	Full Part Before After Verification ^{Before} Review Inspection Signed Via
1112	9/15/69	Fernandez	Drawing No. 15
1001	9-24-69	J.T. Gallahan	Full Part Before After Verification Review Inspection Signed Via
			Drawing No. 35 examined as correct - only a small segment of 10 fm. curve fell within limits of this chart.
1002	10/13/69	Fernandez	Full Part Before After Verification Review Inspection Signed Via
			Drawing No. 30 Exam No Corr - Forward with!
582	7-21-70	J. Graham	Full Part Before ^{Before} After Verification Review Inspection Signed Via
			Drawing No. Fully applied pending final inspection
845-SC	7-21-70	J. Graham	Full Part ^{Before} Before After Verification Review Inspection Signed Via
			Drawing No. Consider fully, partly applied thru 582
1002	11/3/70	O. Williams	Full Part Before After Verification Review ^{Before} Inspection Signed Via
			Drawing No. Fwd. until applied to chart #1247
582	5-10-71	R.B. Ross	(Full) Part Before After Verification Review Inspection Signed Via
			Drawing No. Fully applied
845sc	5-19-71	R.B. Ross	(Full) Part Before After Verification Review Inspection Signed Via
			Drawing No. Fully applied
1112	8-30-71	C.C. Hamington	Full Part Before After Verification Review Inspection Signed Via
			Drawing No. ONLY CRITICAL CORE EXAMINED IN THE REVIEW - NO CORE - APPLY HYDRO THRU LARGE SCALES WHEN COMPLETE
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No. Exam. Review items only - No Corr.
1247	1-21-72	G. Moore	
1247	5-30-75	M. Moore	Fully applied After Ver, Rev, Insp.
1112	7-25-75	E. Bodovinos	Adequate application after veri Rev, Insp. Consider fully applied