8870

Diag. Cht. No. 1239-2.

FORM C&GS-504

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

DESCRIPTIVE REPORT

Type of Survey: Hydrographic

Field No. PE-20-1-55 Office No. H-8870

LOCALITY

State: South Carolina

General locality: Coast of South Carolina

Locality: Vicinity of Kiawah Island - Folly Island

1965

CHIEF OF PARTY

R. M. Buffington

LIBRARY & ARCHIVES

DATE: April 15, 1969

USCOMM-DC 37022-P66

8870

FORM C&GS-537
(8-15-59)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET ✓

REGISTER NO.

H-8870

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-20-1-65

State South Carolina

General locality Coast of South Carolina

Locality Vicinity of Kiawah Island--Folly Island

Scale 1:20000 Date of survey March 1965 to May 1965

Instructions dated February 2, 1965 Project No. OPR-436

Vessel USC&GSS PEIRCE Launches PE-1 an PE-2, skiff PE-6

Chief of party LCDR Ronald M. Buffington

Surveyed by LTJG Brewer, LTJG Dropp, LTJG Ward

Soundings taken by echo sounder, hand lead, pole Echo sounder, Handlead and pole

Graphic record scaled by Ship personnel

Graphic record checked by Ship personnel

Protracted by Field Personnel & Dorothy C. Calland Automated plot by

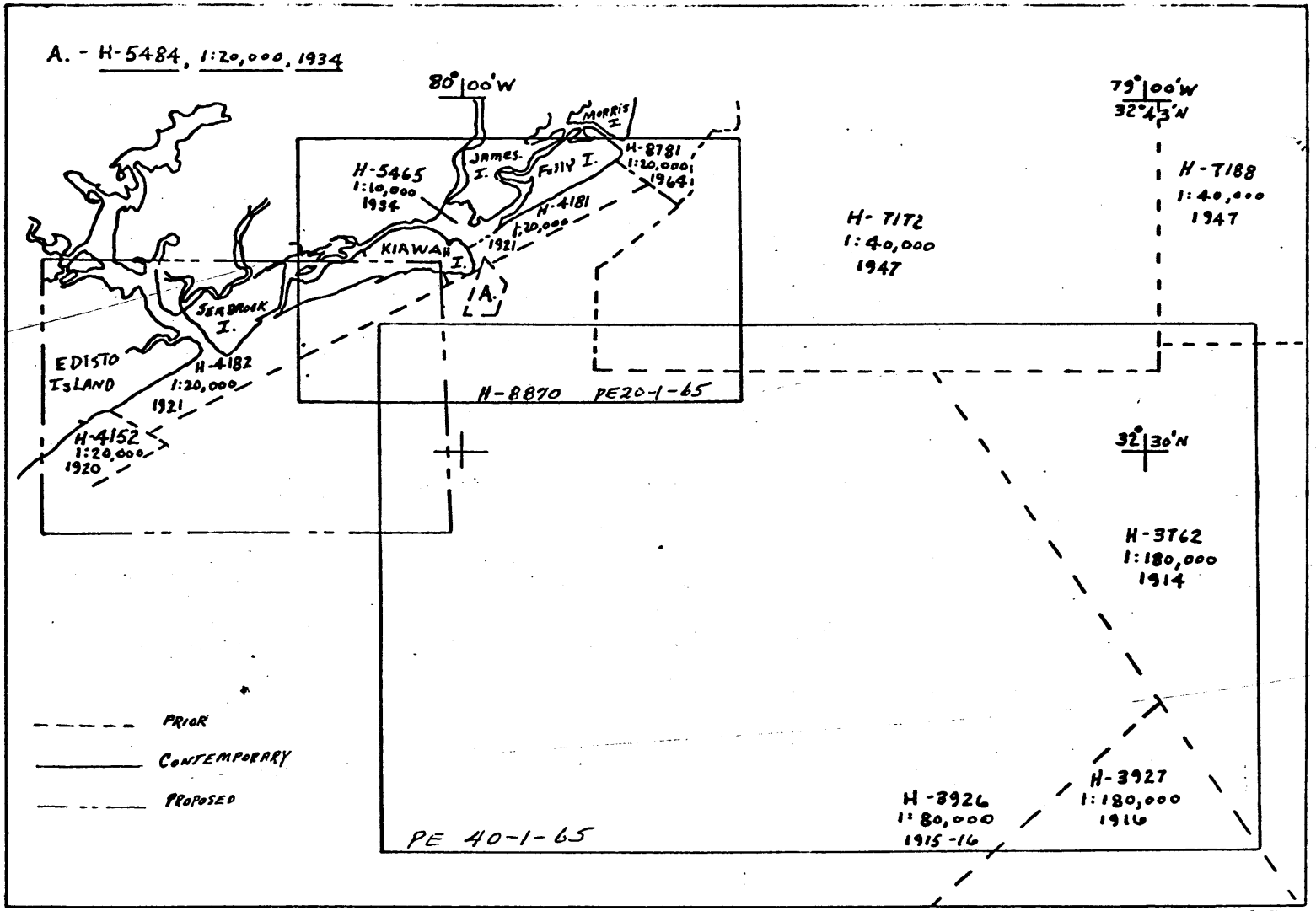
Soundings penciled by Dorothy C. Calland

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

REMARKS: This report covers boat sheet PE-20-1-65(A)
visual control and sheet PE-20-1-65(B)
electronic control smooth-boat sheet overlay

J.J.G.

USCOMM-DC 19086-P65


A. - H-5484, 1:20,000, 1934
80°00'W
79°00'W
32°43'N
32°30'N
MORRIS I.
JAMES I.
FOLLY I.
H-8781
1:20,000
1964
H-5465
1:10,000
1934
H-4181
1:20,000
1921
KIAWAH I.
SEABROOK I.
EDISTO ISLAND
H-4182
1:20,000
1921
H-4152
1:20,000
1920
H-7172
1:40,000
1947
H-7188
1:40,000
1947
H-8870 PE20-1-65
H-3762
1:180,000
1914
H-3926
1:80,000
1915-16
H-3927
1:180,000
1916
PE 40-1-65
PRIOR
CONTEMPORARY
PROPOSED

DESCRIPTIVE REPORT
TO
ACCOMPANY
HYDROGRAPHIC SURVEY
H-8870 (Field No. PE-20-1-65)

SCALE 1:20,000

YEAR 1965

VESSEL USC&GSS PEIRCE

CHIEF OF PARTY LCDR Ronald M. Buffington
Commanding Officer

A. PROJECT

Authority for the survey was contained in Revised Instructions dated February 2, 1965, entitled OPR-436, Coast of South Carolina and Georgia, reference 211, S-2-PE.

B. AREA SURVEYED

The area covered by the survey extends from the north end of Folly Island southwest to cover about 75% of the coast of Kiawah Island. The seaward limit of the survey varies from two and one half miles to seven miles. Thorough coverage was made of Stono Inlet, including the Stono River and Folly River. The limits of the survey are: from Latitude 32°41.0'N, Longitude 79°53.2'W at the north end of Folly Island, southeast to Latitude 32°39.2'N, Longitude 79°50.5'W, south to Latitude 32° 32.5'N, Longitude 79°53.5'W, west to Latitude 32°32.5'N, Longitude 80°05.7'W, and north to Latitude 32°35.8'N, Longitude 80° 06.0'W on the coast of Kiawah Island.

The survey junctions with prior surveys H-8781 (1964 1:20,000) and H-7172 (1947 1:40,000) and with contemporary survey H-8871 (PE-40-1-65).

The original information from Washington indicated a desire to locate the HI-FIX stations, or at least the northerly one, so that sheet H-8870 PE-20-1-65 could be completely covered by Electronic control. There were several reasons that this was not done. The site originally picked had been used the previous year by the PEIRCE had not been completely satisfactory. It was inshore by 3 or 4 miles and there were high tension power lines reasonably close by. Local inhabitants had complained of radio and TV interference by the HI-FIX station. By locating the northerly station on Folly Island, it would be close to the shoreline, which was desireable. The primary reason being that several sheets could be covered by the stations as located without having to move them. Two or three seasons work could have been completed without moving any of the three stations sites. Probably three 1:20,000 sheets, two 1:40,000 sheets and two 1:80,000 sheets had satisfactory coverage. Of course, we did not know the project would be discontinued in mid-season.

Therefore, H-8870 PE-20-1-65 was surveyed by both visual and electronic control.

C. SOUNDING VESSEL

All hydrography was performed by launch and skiff. Launch PE-1 work is denoted by violet color, Launch PE-2 work by red color and Skiff PE-6 work is denoted by green color.

D. SOUNDING EQUIPMENT

Two Raytheon (type 723) fathometers were used in the survey. The fathometers used by Launch PE-1 was number 242 and Launch PE-2 sounded with number 260. Echo soundings were taken in depths up to 43 feet.

A 16 foot sounding pole and a leadline were used in obtaining depths from Skiff PE-6.

Settlement and squat corrections were determined for Launch PE-1 using level and rod measurements. Since both launches are identical, these corrections were also used for Launch PE-2.

Bar checks were taken once or twice a day as wind and sea conditions permitted. Results of bar checks were tabulated and the mean fathometer discrepancies were determined for intervals of five feet. Values which differed more than 0.4 feet from the mean were rejected and a new mean determined. The final mean values were plotted on a graph and the fathometer corrections for various depths were read from the curve in 0.2 feet increments.

The initial on the fathogram was held at 2.0 feet for this survey. Corrections for deviations from this value were made in the sounding volumes.

E. SMOOTH SHEET

Since there are two types of control on this sheet, a new smooth sheet may have to be prepared. This decision should be made by the processing offices. The smooth sheet projection was made in the Washington office. The visual controlled hydrography was plotted on a boat sheet in the usual manner. The HI-FIX controlled portion of the survey was plotted on a mylar over lay with the positions pricked through to the smooth-boat sheet. The smooth-boat sheet should be OK for the smooth sheet for both types of control. This will eliminate making a new sheet and replotting all of the electronically controlled hydrography.

F. CONTROL

HI-FIX hyperbolic control was utilized for approximately 70% of the survey, the remainder being controlled by visual three point sextant fixes on triangulation and photogrammetric control points. Launch PE-1 used HI-FIX and visual control, Launch PE-2 used only HI-FIX control and Skiff PE-6 used visual control.

Photogrammetric signals were located by a photogrammetrist attached to Photo Party 759 in 1965. The following photogrammetric compilations were used:

Incomplete Manuscript T-12608 compiled February 1965
Incomplete Manuscript T-12609 compiled February 1965
Advance Manuscript T-12612 compiled February 1965

A dog ear was affixed to the upper right corner of the boat sheet to allow the use of triangulation station Charleston Lighthouse 1890 (LIG) as a signal.

Signal JAW, located on the north end of Kiawah Island, was located on Manuscript T-12612 and the signal was erected on this point. It was later found necessary to move the signal to a new location 104.3 meters southwest on line with its original position and station BUS. The second position of the station was the only one used as a hydro signal.

HI-FIX stations were located at Edisto Island, South Carolina (Master station known as "STORE"), Folly Beach, South Carolina (Slave 1 station known as "BEACH"), and Fripp's Island, South Carolina (Slave 2 station known as "EDISON"). All three stations were located by third order traverse.

Electronic controlled hydrography completed by launches one and two used HI-FIX in the hyperbolic mode. The launches calibrated each day using the signals listed in Appendix "D". The calibrations were recorded and the values determined after the launch returned to the ship by computer. The HI-FIX equipment was set to the nearest lane aboard the launch using buoys in the area. Then a series of hyperbolic arcs (predetermined) were run by the launches. After the launch returned to the ship, calibration values were determined and applied to each fix by the computer; then the computer determined the x-y values (UTM coordinates).

Therefore, the electronic plotting abstracts, recorded by the Officer in Charge, and sounding volumes show fix values without corrections. The corrected fixes are shown on the computer printouts. All plotting on the boat smooth sheet overlay was done aboard ship.

G. SHORELINE

Shoreline was transferred to the boat sheet from the manuscripts listed in section F by means of the Dry-Rite ink method.

The high water line was verified and revised by the photogrammetrist. The low water line was determined by taking the launch as close to shore as possible during times of calm sea and high water. In addition, the low water line in the area of Stono Inlet was determined by walking the shoreline at times of low water. Changes in the low water line were particularly evident around Stono Inlet.

The walked low water shoreline is shown on the boat sheet by yellow lines connecting fixes.

H. CROSSLINES

Crosslines were run at 8.6% of the total mileage of sounding lines and were generally in very good agreement. If crossline discrepancy was large, another line was run to supersede the original one.

I. JUNCTIONS

Junctions with prior and contemporary surveys were generally very good. Most junctions agreed quite well.

J. COMPARISON WITH PRIOR SURVEYS

There were no numbered presurvey review items involved with this survey. Four presurvey review shoal soundings were investigated with the following results:

	OBJECT	PRESENT SURVEY	PSR DEPTH	POSITION
a.	Shoal Sdg.	Depth 15.4 ft.	8 ft.	32°39.83' 79°52.60'
b.	Shoal Sdg.	Depth 19.2 ft.	18 ft.	32°37.80' 79°54.40'
c.	Shoal Sdg.	Depth 2.8 ft.	2 ft.	32°35.80' 79°58.70'
d.	Shoal Sdg.	Depth 19 ft.	17 ft.	32°34.80' 79°59.25'

K. COMPARISON WITH THE CHART

at 32°36.00' 79°58.60' depth of 1.2 ft. found vs. depth of 7 ft. on Chart 792.

at 32°38.56' 79°54.20' depth of 11.4 ft. found vs. depth of 13 ft. on Chart 792.

There appears to be more water in the general area of Latitude 32°39' to Latitude 32°40' and Longitude 79°52' to Longitude 79°54' than previously charted.

Numerous changes are evident at Stono Inlet. This area must be thoroughly revised.

L. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede prior surveys.

M. AIDS TO NAVIGATION

Four floating aids to naivgation were located in this survey. All were found to be in positions considerably removed from those appearing on Chart 792. See sounding volumes for new locations. Two day beacons were located, one of which was found to have been moved from its charted position (No. "10" at NW corner of Bird Key). No additional aids to navigation are deemed necessary. However, lighted buoy No. "5" would be more useful if it was moved to a position SW of its present position to aid more in navigating around the 1.5 ft. shoal directly south of it.

N. STATISTICS

	NUMBER POSITIONS	NAUT. MI. SDG. LINES	BOTTOM SAMPLES
Launch PE-1	2301	533.6	28
Launch PE-2	1707	469.8	47
Skiff PE-6	157	8.0	1
TOTAL	4165	1001.4	76

AREA SURVEYED

Launch PE-1	16.1 sq. mi.
Launch PE-2	42.6 sq. mi.
Skiff PE-6	1.0 sq. mi.
TOTAL	59.7 sq. mi.

O. MISCELLANEOUS

Stono Inlet and the shoal area between Bird Key and Folly Island appear to be very changeable areas and should be indicated as such. The Stono River entrance channel has changed considerably in configuration causing changes in the locations of floating aids to navigation.

P. RECOMMENDATIONS

Add new hydrography from this survey to the area between Bird Key and Folly Island. This area should be called changeable. ✓

Revise all low water line around Stono Inlet and make necessary changes in the configuration of Stono River entrance channel. ✓

Q. REF. TO REPORTS

See 1965 HI-FIX calibration report by R. M. Buffington submitted January 1966. ✓

APPENDIX A

TIDAL NOTE

Hourly heights for this survey were furnished by the Marine Data Division. The standard gage at Charleston, South Carolina was used. Height datum is 2.6 feet below MLW.

To infer heights for Folly Island apply corrections of -15 minutes and -2.6 feet to times and heights of tides tabulated for Charleston Standard gage. There is no height ratio to be applied.

The time meridian was 75°W for this survey.

A tide station was installed at Edisto Island using a bubbler gage which never operated satisfactorily during the short season. The primary reason was an unsatisfactory operator.

The records that were obtained compared very well in time with the Charleston smooth tides.

APPENDIX B

ABSTRACT OF CORRECTIONS TO ECHO SOUNDINGS

Settlement and squat corrections were determined to be as follows:

Launch PE-1 & PE-2

1200 RPM	+0.2 ft.
1400 RPM	+0.2 ft.
1600 RPM	+0.4 ft.
1800 RPM	+0.4 ft.
2250 (FULL)	+0.2 ft.

Fathometer A scale was used for the entire survey.

The abstract of the daily bar checks follows.. Values for each depth were meaned, and the mean values were plotted graphically. Corrections were taken from the curve in 0.2 foot increments. An abstract of the bar check corrections is included.

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

SETTLEMENT & SQUAT DETERMINATION ON LAUNCH PE-1 SAVANNAH RIVER MAY 10, 1965

SAME FOR, LAUNCH PE-2

RPM	ROD RUN 1	TIDE STAFF RUN 1	ROD RUN 2	TIDE STAFF RUN 2	COMPUTED STOP R.R. RUN 1	COMPUTED STOP RR. RUN 2	AVG. S.& S.	CORR'N.
STOP	12.97	1.10	12.96	1.10	12.97	12.96	0.0	0.0
1200	12.93	1.45	12.91	1.40	12.62	12.66	0.28	+02
1400	13.00	1.37	13.00	1.35	12.70	12.71	0.30	+0.2
1600	13.12	1.30	13.10	1.30	12.77	12.76	0.34	+0.4
1800	13.20	1.25	13.22	1.20	12.82	12.86	0.37	+0.4
(FULL) 2250	13.10	1.15	13.12	1.12	12.92	12.94	0.18	+0.2

CORRECTIONS TO BE APPLIED TO SOUNDINGS:

RPM	CORR'N
1200	+ 0.2 FT.
1400	+0.2 FT.
1600	+0.4 FT.
1800	+0.4 FT.
2000	+0.2 FT
2250	+0.2 FT.

COMP. RKB
✓: jma

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

APPENDIX B ✓
Abstract of Bar Checks, OPR-436
Sheet PE-20-1-65
Launch PE-1
Fathometer No. 262

DAY	DATE	DEPTH 5 Ft.	10 Ft.	15 Ft.	20 Ft.	25 Ft.	30 Ft.	35 Ft.
b	3/14/65	-0.7	-0.1	-0.1	-0.1	0.0	0.0	-
c	3/19	-0.8	-0.5	-0.2	-0.2	0.0	0.0	+0.2
e	4/2	-0.7	-0.2	-0.1	-0.1	+0.1	+0.1	+0.3
f	4/4	-0.8	-0.3	-0.1	-0.1	0.0	-	-
g	4/5	-0.7	-0.4	-0.1	-0.1	0.0	-	-
h	4/6	-0.6	-0.5	-0.1	-0.1	0.0	+0.1	+0.4
j	4/7	-0.5	0.0	-0.1	0.0	+0.2	+0.3	+0.5
k	4/8	-0.6	0.0	0.0	(+0.6)*	(+1.0)*	(+1.0)*	-
m	4/22	-0.6	-0.5	-0.5	-0.3	0.0	0.0	-
n	4/23	-0.6	-0.4	-0.3	-0.1	0.0	+0.2	+0.5
p	4/24	-0.9	-0.6	-0.5	-0.4	-0.2	(-0.1)*	-
r	4/28	-0.6	-0.2	+0.1	+0.3	(+0.7)	+0.8	+1.0
u	5/1	-0.6	-0.2	0.0	0.0	+0.3	+0.6	-
v	5/2	-0.8	-0.3	0.0	0.0	+0.2	+0.4	-
w	5/4	-0.8	-0.4	-0.1	0.0	+0.2	+0.4	+0.9
x	5/12	-0.6	-0.3	-0.1	-0.1	+0.2	+0.4	=
z	5/14	-0.8	-0.4	-0.2	-0.1	+0.2	+0.4	+0.6
aa	5/15	-0.5	-0.2	-0.1	0.0	+0.2	+0.6	+0.7
ba	5/20	-0.7	-0.2	0.0	+0.1	+0.5	+0.8	-
ca	5/21	-0.6	-0.2	+0.2	+0.2	+0.6	(+0.9)*	(+1.1)*
da	5/22	-0.8	-0.2	0.0	0.0	+0.4	+0.6	-
MEAN		-0.7	-0.3	-0.1	0.0	+0.2	+0.4	+0.6

( )* = REJECTED

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

APPENDIX B (cont.) ✓
Abstract of Bar Checks, OPR-436
Sheet PE-20-1-65
Launch PE-2
Fathometer No. 260

DAY	DATE	DEPTH 5 Ft.	10 Ft.	15 Ft.	20 Ft.	25'	30'	35'	40'	45 Ft.
-	3/12/65	-1.1	-1.0	-0.8	-0.6	-0.6	-0.4	-0.1	-	-
a	3/14	-1.0	-0.9	-0.8	-0.6	-0.5	-0.3	0.0	-	-
b	3/19	-1.0	-0.8	-0.7	-0.4	-0.4	-0.4	-0.2	0.0	-
c	3/22	-1.0	-0.9	-0.6	-0.5	-0.3	-	-	-	-
d	4/4	-1.0	-0.8	-0.7	-	-	-	-	-	-
e	4/5	-1.0	-0.8	-0.5	-0.4	-0.1	-	-	-	-
e	4/5	-0.9	-0.7	-0.6	-0.5	-0.3	-0.2	0.0	-	-
f	4/6	-1.0	-0.6	-0.5	-0.3	-0.1	0.0	+0.1	-	-
g	4/7	-0.9	-0.7	-0.5	-0.4	-0.2	0.0	+0.1	-	-
h	4/8	-0.9	-0.7	-0.4	-0.3	-0.2	0.0	-	-	-
k	4/11	-0.9	-0.5	-0.2	-0.2	-0.1	0.0	+0.2	-	-
l	4/22	-1.0	-0.7	-0.5	-0.4	-	-	-	-	-
m	4/23	-0.9	-0.7	-0.4	-0.3	-0.1	0.0	+0.1	-	-
n	4/24	-1.0	-0.8	-0.6	-0.4	-0.3	0.0	0.0	-	-
q	4/28	-1.0	-0.7	-0.4	-0.3	-0.3	-0.1	+0.1	-	-
s	5/1	-1.0	-0.8	-0.6	-0.5	-0.3	-0.2	-0.1	-	-
t	5/2	-1.0	-0.8	-0.5	-0.4	-0.1	-	-	-	-
u	5/4	-1.0	-0.7	-0.5	-0.5	-0.4	-0.2	-0.1	-	-
v	5/12	-1.0	-0.7	-0.5	-0.5	-0.2	-0.3	-0.1	-	-
w	5/13	-1.0	-0.7	-0.5	-0.4	-0.3	-0.1	0.0	0.0	+0.1
x	5/14	-1.0	-0.7	-0.5	-0.3	-0.3	-0.7	+0.1	+0.1	-
aa	5/21	-1.0	-0.6	-0.4	-0.2	0.0	0.0	+0.4	+0.4	-
ba	5/22	-1.1	-0.8	-0.5	-0.0	0.0	+0.1	+0.4	-	-
MEAN		-1.0	-0.7	-0.5	-0.4	-0.2	-0.1	+0.1	+0.2	+0.1

VELOCITY CORRECTIONS

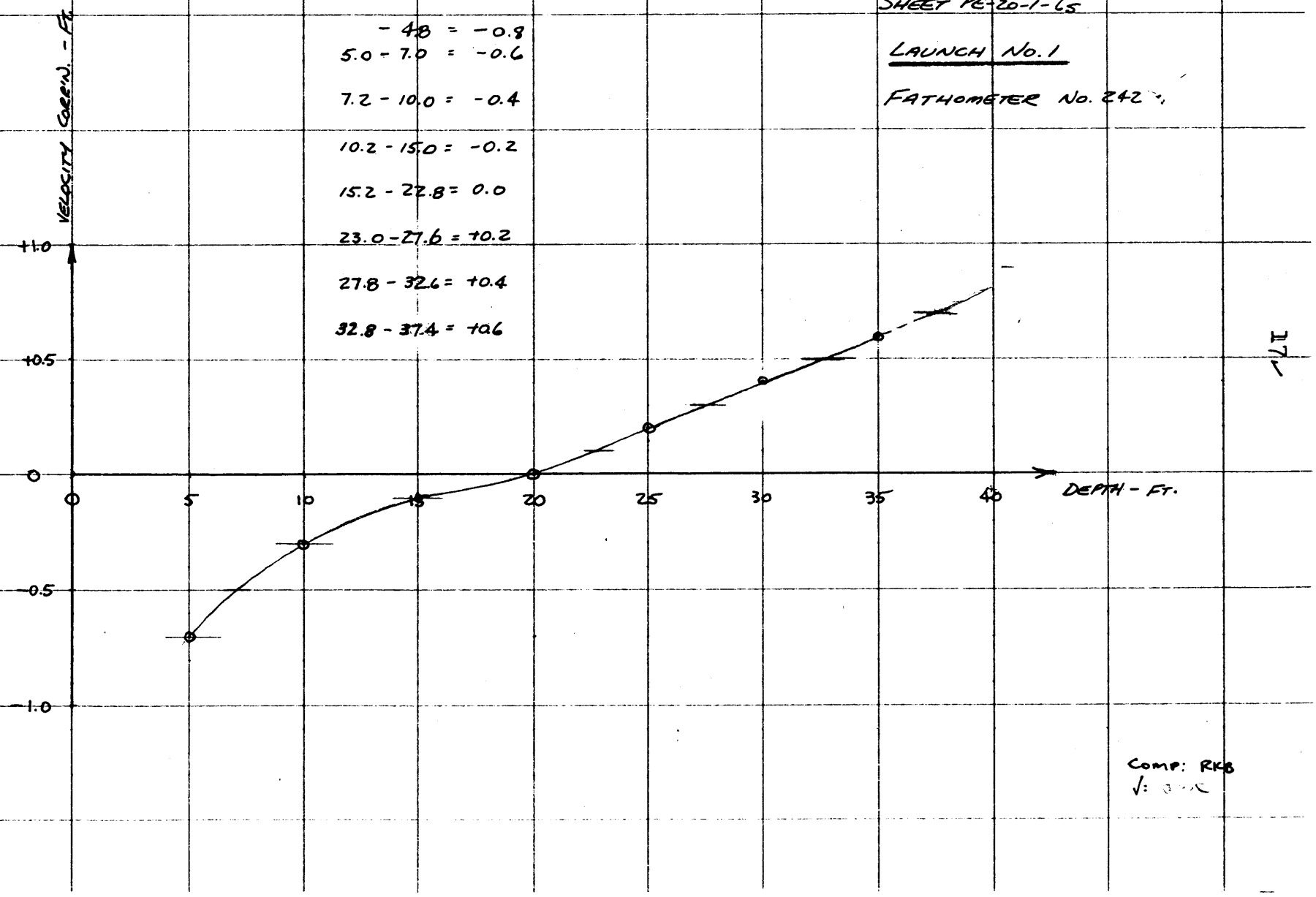
OPR 436

SHEET PE-20-1-65

LAUNCH No. 1

FATHOMETER No. 242

- 4.8 = -0.8
5.0 - 7.0 = -0.6
7.2 - 10.0 = -0.4
10.2 - 15.0 = -0.2
15.2 - 22.8 = 0.0
23.0 - 27.6 = +0.2
27.8 - 32.6 = +0.4
32.8 - 37.4 = +0.6



COMP: RKB

VELOCITY CORRECTIONS

OPR 436

SHEET PE-20-1-65

LAUNCH NO. 2

FATHOMETER No. 260

3.6 - 6.6 = -1.0

6.8 - 10.0 = -0.8

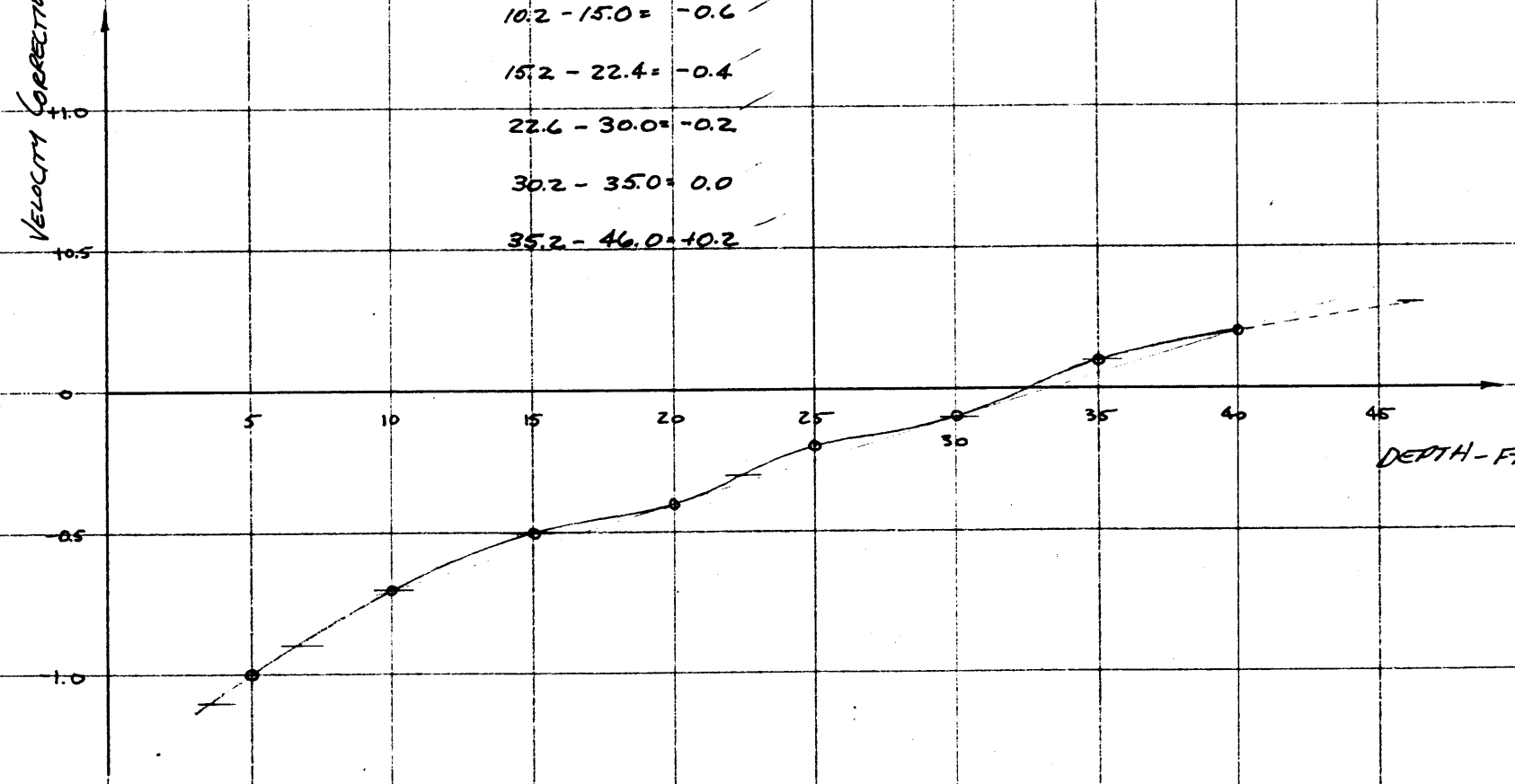
10.2 - 15.0 = -0.6

15.2 - 22.4 = -0.4

22.6 - 30.0 = -0.2

30.2 - 35.0 = 0.0

35.2 - 46.0 = +0.2



COMP.: RKB

V: JA

18

APPENDIX D

LIST OF SIGNALS ✓

Name	Source
ABE	T - 12612
ACE	T - 12609
BAG	T - 12612
BEA ?	- BEACH, 1965
BOA	T - 12612
BUM	T - 12609
BUS ?	- BUST, 1963
CAR COL	T - 12609 — COLE, 1934
CRY	T - 12612
CUR	T - 12608
DIP	T - 12609
DUD	T - 12612
EAT	T - 12609
EGO	T - 12612
FEW	T - 12609
FOL ?	- FOLLY RIVER LIGHT 9, 1963
FOX	T - 12612
GAL	T - 12609
GUY	T - 12612
HAT	T - 12612
HOW	T - 12609
IDA	T - 12612
IRK	T - 12609
JAW	T - 12612
JAY	T - 12609
KED	T - 12609
KID	T - 12612
LAY	T - 12612
LIG	- CHARLESTON LIGHTHOUSE, 1890-1933
LIZ	T - 12609
LOR	- FOLLY BEACH ~~USCH~~ LORAN ~~MAST~~ TOWER, 1956
MAN	T - 12612
MUG	T - 12609
NAT	T - 12608
NEW	T - 12612
NIL	T - 12612
OIL	T - 12608
OWL	T - 12612
PIX	T - 12608
PLY	T - 12612
QUO	T - 12608
RAT	T - 12612
RIV	- FOLLY RIVER LIGHT 11, 1963

Name	Source ✓
ROT	T - 12608
ROY	- ROYAL, 1963
RUC	- BRUCE, 1933
SAB	- SABLE, 1933
SIC	T - 12612
SKY	T - 12608
TAN	- FOLLY BEACH ~~TOWNSHIP~~ WATER ~~TANK~~ TOWER, 1956
TAX	T - 12608
TOY	T - 12612
UNK	T - 12608
USE	T - 12612
VEX	T - 12612
VIM	T - 12608
WEE	T - 12608
WEL	- WELCH, 1963
WIN	T - 12612
YAL YEA T-12608	- ROYAL R.M. NO. 1, 1963
YET	T - 12612
ZOO	T - 12612

List of Signals used for Calibrations

YAL	-	ROYAL 1963
WEL	-	WELCH, 1963
NEW	-	Traverse station by ship personnel
BUS	-	BUST 1963
RUC	-	BRUCE 1933
TANK	-	FOLLY BEACH TOWNSHIP WATER TANK, 1956

APPENDIX E

APPROVAL SHEET ✓

PE 20-1-65 (H-8870)

Field Survey PE 20-1-65 and report is approved. The survey was supervised by myself and the commissioned officers assigned to the Ship PEIRCE. Supervision was daily and continuous. The survey is considered adequate and should supersede previous work. No additional work is required. Field work on this sheet was completed in June, at which time all effort was directed toward completing sheet PE 40-1-65 as soon as possible. Field work on Project OPR-436 was discontinued as of June 30, 1965 and work was begun on Project OPR-458.

Ronald W. Buffington

FORM C&GS-712
(10-67)

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

TIDE NOTE FOR HYDROGRAPHIC SHEET ✓

October 15, 1968

[redacted] Atlantic Marine Center

Plane of reference approved in 22 volumes of sounding records for

HYDROGRAPHIC SHEET 8870

Locality: Coast of South Carolina

Chief of Party: R. M. Buffington (1965)

Plane of reference is mean low water

Tide Station Used (Form C&GS-681): Charleston, South Carolina

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

5.2 feet

Remarks Tide reducers for a day (April 30, 1965) Skiff No. 6 positions 1-104 have been revised in red and verified.

L. C. Wharton

for/ Chief, Tides and Currents Branch

FORM 197
(3-16-55)

GEOGRAPHIC NAMES

Survey No. H-8870 ✓

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
Bird Key										1
Cole Island										2
Coles Creek										3
Folly Beach										4
Folly Island										5
Folly River										6
Kiawah Island										7
Sandy Point										8
Snake Island										9
Stono Inlet										10
Stono River										11
		Names approved								12
		May 14, 1969								13
		Frank W. Hackett								14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

NORFOLK HYDROGRAPHIC PROCESSING BRANCH
ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-8870 (Pe 20-1-65)

GENERAL

This appears to be an excellent basic survey and no unusual problems were encountered during the smooth plot. Most of the electronically controlled positions were plotted by field personnel. The remainder, and those controlled by visual fixes, were plotted in this Branch.

When the smooth sheet was received there were numerous extraneous position prick holes, particularly in the outer approaches to Stoner River. These were closed as neatly as possible and they do not detract from the appearance of the survey, how-ever, they did present some problems during the inking of soundings and depth curves.

Day letters are not always in sequence in the sounding volumes. Lch. 1 "t" day was rejected in the field as the fathogram was lost. See note in volume 15, page 53.

"k" day, Lch. 2, was rejected in the field because of lane jumps. The work was pepeated on "z" day. See notes in volume 4, pages 2 and 15.

SHORELINE

Shoreline in Stoner River, North of the limits of T-12612 where the photo project ended, was compiled by Norfolk Photo Branch on the copy of T-12612 showing the photo-hydro control stations.

Hugh L. Proffitt
Chief, Hydro Processing Br., AMC

Norfolk, Va.
March 27, 1969

Form 946

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-8870.

Records accompanying survey: Smooth sheets one;

boat sheets 2; sounding vols. 22; wire drag vols. .....;

Descriptive Reports 1; 2 Cahiers - Fathograms, Abstracts & graphic recorder envelopes 2;

special reports, etc. 4 Volumes electronic abstracts & conversions Misc. Data

1 Volume, tide data

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

Number of positions on sheet		4165.
Number of positions checked		128.
Number of positions revised		2.
Number of positions revised (refers to depth only)		neg.
Number of soundings erroneously spaced		neg.
Number of signals erroneously plotted or transferred		0.
Topographic details	Time	4 hrs
Junctions	Time	.....
Verification of soundings from graphic record	Time	50 hrs
Special adjustments	Time	none

Verification by Fred Bean Total time 208 hrs Date 3/24/69

Reviewed by George A. Kozemczak Time 286. Date Jan 29-71

32 hrs. July 12, 1977

Cart. Insp. W.A. Myers

Cartos 3 8/16/77

H-8870

Information for Future Presurvey Reviews

Significant differences appear between the prior and present surveys in areas near shore which are attributed to frequent changes due to the effects of current and wave action. There are only minor differences in deeper depths in the offshore areas of the present survey.

Position Index		Bottom Change Index	Use Index	Resurvey Cycle
Lat.	Long.			
323	0800	4	4	25 years
323	0801	4	2	25 years

OFFICE OF MARINE SURVEYS AND MAPS

MARINE SURVEYS DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8870 FIELD NO. PE-20-1-65

South Carolina, Coast of South Carolina, Vicinity of Folly Island and Kiawah Island

SURVEYED: March 14 - May 23, 1965

SCALE: 1:20,000 PROJECT NO.: OPR-436

SOUNDINGS: DE-723 Depth Recorder, Sounding Pole, Lead Line CONTROL: Hi-Fix and Sextant Fixes on Shore Signals

Chief of Party	R. M. Buffington
Surveyed by	R. K. Brewer
	J. W. Dropp
	G. M. Ward
Protracted by	D. C. Calland
Soundings Plotted by	D. C. Calland (AMC)
Verified and Inked by	F. Bean (AMC)
Reviewed by	G. A. Kozemczak
	Date: January 20, 1971
Cursory inspection made--survey processing considered complete	G. K. Myers July 12, 1977

1. Description of the Area

The area covered by this survey lies along the South Carolina coast at Kiawah Island and Folly Island. Stono Inlet is located between these two islands. The channel into the inlet shifts frequently. The irregular bottom near shore is subject to frequent change and apparently shifts due to effects of current and wave action. Offshore areas of the survey are represented by an undulating bottom characterized by sand ridges and troughs which lie approximately parallel to the shoreline.

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

2. Control and Shoreline

The source of control is adequately described in the Descriptive Report. The shoreline originates with final reviewed photogrammetric manuscripts T-12608 (1964-65), T-12609 (1964-65), and T-12612 (1964-65).

A small portion of shoreline in the area of Stono River originates with 1964 photographs.

The position of the low water line in the area of Stono Inlet was determined by sextant fixes at times of low water.

3. Hydrography

a. Depths at crossings are in good agreement.

b. The usual depth curves were adequately delineated. The 36-foot depth curve was added during review to more adequately delineate the bottom configuration.

c. The development of the bottom configuration and the investigation of the least depths are considered adequate.

4. Condition of Survey

The field plotting, sounding records, and the Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual.

Triangulation station, FOLLY BEACH WATER TANK, located at latitude 32°39.64', longitude 79°55.9' was erroneously labeled FOLLY BEACH WATER TOWER on the smooth sheet. Likewise, this feature identified as topographic signal TAN in the sounding volumes was inadvertently revised to TOW during verification. Sounding record revisions pertaining to this signal name should be disregarded and the correct name, TAN, presently shown on the survey used.

5. Junctions

An adequate junction was effected with H-7172 (1947) on the east. Junctions with H-8781 (1964) and H-8871 (1965) will be considered in the review of those surveys. No contemporary surveys exist on the west; however, the present survey depths are in harmony with the charted depths in that area.

6. Comparison with Prior Surveys

a.

H-649	(1853-57)	1:40,000
H-803	(1862)	1:20,000
H-852	(1863-64)	1:20,000
H-853	(1864)	1:10,000
H-1656	(1886)	1:20,000
H-2467	(1900)	1:10,000
H-3216	(1910)	1:40,000
H-3926	(1915-16)	1:80,000

These prior surveys combined cover the area of the present survey in part. Significant inshore changes in the bottom and only minor changes in deeper areas are characteristic of the area. The entrance at Stono Inlet has shifted southwestward about 400 meters since the prior surveys. The shoreline on both sides of Stono Inlet has changed considerably due to natural causes. A detailed comparison is not justified for the purpose of this review.

b.

H-4181	(1921)	1:20,000
H-4182	(1921)	1:20,000
H-5465	(1934)	1:10,000
H-5484	(1934)	1:20,000

These prior surveys combined with the previously mentioned surveys cover the entire area of the present survey. In the immediate vicinity of Stono Inlet the shoreline and the bottom have drastically changed, whereas in the remaining areas of the present survey a comparison with the prior surveys shows only minor differences in depths.

A comparison with the latest prior survey that covers the area of Stono Inlet reveals an unstable bottom. Four small detached shoals in the vicinity of latitude 32°35.8', longitude 79°58.8' covered by depths of 1 to 6 feet have accreted into one large shoal. This shoal with comparable depths presently measures about 3,200 meters long and 600 meters wide. The 6-foot depth curve off Kiawah Island has shifted seaward approximately 200 meters. On the southeastern tip of the island, the shoreline has receded about 200 meters while to the north and south of this area the shoreline has accreted approximately 200 meters.

The present survey is more comprehensive and portrays the irregular inshore bottom in much greater detail. The present survey is adequate to supersede the prior surveys within the common area.

7. Comparison with Chart 491 (4th Edition, May 16, 1970)
Chart 792 (5th Edition, February 17, 1969)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys which require no further consideration, supplemented by a few critical soundings from the present survey prior to its review. The present survey is adequate to supersede the charted hydrography within the common area.

The 25-foot sounding charted at latitude 32°34.4', longitude 79°58.66' was shown in error on the boat sheet of the present survey and should be disregarded.

The 3-foot sounding charted at latitude 32°36.12', longitude 80°00.3' from the boat sheet of the present survey was determined to be 1 foot shoaler during review. A 2 should be charted at this position.

Boat sheet depths, in most cases, are about 1 foot shoaler than depths on the smooth sheet.

b. Aids to Navigation

The aids located on the present survey are in substantial agreement with their charted positions and adequately mark the features intended with the following exceptions:

(1) Whistle Buoy "1 S" charted in latitude 32°34.60', longitude 80°00.27 was relocated subsequent to the date of the present survey and is reported in H.O. Notice to Mariners 14 of 1966.

(2) Bell Buoy "D" charted in latitude 32°33.00', longitude 79°55.60' was established subsequent to the date of the present survey and is reported in Notice to Mariners 26 of 1966.

(3) Can Buoy "A" charted in latitude 32°37.10', longitude 79°53.50' was established subsequent to the date of the present survey and reported in Notice to Mariners 26 of 1966.

(4) Folly River Daybeacon 10 charted in latitude 32°37.88', longitude 79°59.55' was reported to have been located in Notice to Mariners 49 of 1965, subsequent to the date of the present survey.

8. Compliance with Instructions

The survey adequately complies with the project instructions.

9. Additional Field Work

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

Examined and Approved:

R. H. Carstens
for Chief
Marine Surveys Division

J. Austin Yeager
for Associate Director
Office of Marine Surveys
and Maps

STONO INLET
The inlet is subject to continual change.
Entrance buoys are not charted because
they are frequently shifted in position.

Changeable Area (see note)
Hydrography from survey 1965

79° 50'
32° 40'
8870

Chart - 1239

FORM C&GS-8352
(3-25-63)

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8870

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
1239	5/23/69	[signature]	~~Full~~ Part ~~Before~~ After Verification ~~Review~~ Inspection Signed Via Drawing No
1110	5/26/69	[signature]	~~Full~~ Part Before After Verification ~~Review~~ Inspection Signed Via Drawing No. 26 Exam thru 1239
1111	9/24/69	J. H. McMillan	~~Full~~ Part ~~Before~~ ~~After~~ AFTER Verification BEFORE Review Inspection Signed Via Drawing No. 421 - Applied thru cht 1110 Partly
491	3-3-70	Beeler	~~Full~~ Part ~~Before~~ After Verification before Review Inspection Signed Via Drawing No. Exam; No Corr (for critical sdgs only)
1239	8-11-71	Stephens	Full ~~Part Before~~ After Verification Review prior Inspection Signed Via Drawing No.
491	8-11-71	Stephens	Full ~~Part Before~~ After Verification Review prior Inspection Signed Via Drawing No.
[illegible]	[illegible]	[illegible]	Full ~~Part Before~~ After Verification Review prior Inspection Signed Via Drawing No.
~~792~~	~~8-11-71~~	~~Stephens~~	~~Full Part Before After Verification Review prior Inspection Signed Via~~ ~~Drawing No.~~
792	1-3-72	Harold Schaaf	~~Full~~ Part ~~Before~~ After Verification ~~Review~~ Before Inspection Signed Via Drawing No.
491	11/6/77	[signature]	Full ~~Part~~ Before After ~~Verification Review~~ Inspection Signed Via Drawing No.
792	11/8/77	[signature]	Full After Inspection
1239	8/1/78	[signature]	Full After Inspection
11480	6-2-80	Allmond Jr.	Full after Inspection
11520		Mark J. Frese (?)	Fully app'd thru Chart 11480 after Inspection
~~11009~~	~~[illegible]-17-83~~	~~[signature]~~	~~Fully app'd thru Cht 11520~~