8871

Diag.Cht.Nos. 1001-3 & 1239-2

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

(HYDROGRAPHIC)

Type of Survey ..... Hydrographic

Field No. PE-40-1-65

Office No. H-8871

LOCALITY

State ..... South Carolina

General Locality ... Coast of South Carolina

Locality ..... Off Stono Inlet

19 65

CHIEF OF PARTY

R. M. Buffington

LIBRARY & ARCHIVES

DATE ..... Oct. 27, 1973

☆ U.S. GOV. PRINTING OFFICE: 1976—669-441

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

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

H-8871

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 40-1-65

State South Carolina

General locality Coast of South Carolina

Locality ~~Vicinity of Folly Island and Kiawah Island off shore from Stono Inlet, S. C.~~ off Stono Inlet

Scale 1:40,000 Date of survey 13 March through 30 June 1965

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

Vessel USC & GSS Peirce (CSS-28)

Chief of party LCDR Ronald M. Buffington, USESSA

Surveyed by LCDR R.M. Buffington, LCDR R.L. Newsom, LTJG J.W. Carpenter, LTJG R.K. Brewer, LTJG J.W. Dropp, LTJG E.M. Ward

Soundings taken by echo sounder, ~~hand lead, pole~~ ~~Echo Sounder~~ Raytheon, Type DE-723, #'s 246, 242 & 260

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel - Norfolk Hydrographic Processing Br.

Protracted by Gerber Digital Plotter — Automated plot by Pacific Marine Center

Soundings ~~penciled~~ plotted by Gerber Digital Plotter - Pacific Marine Center

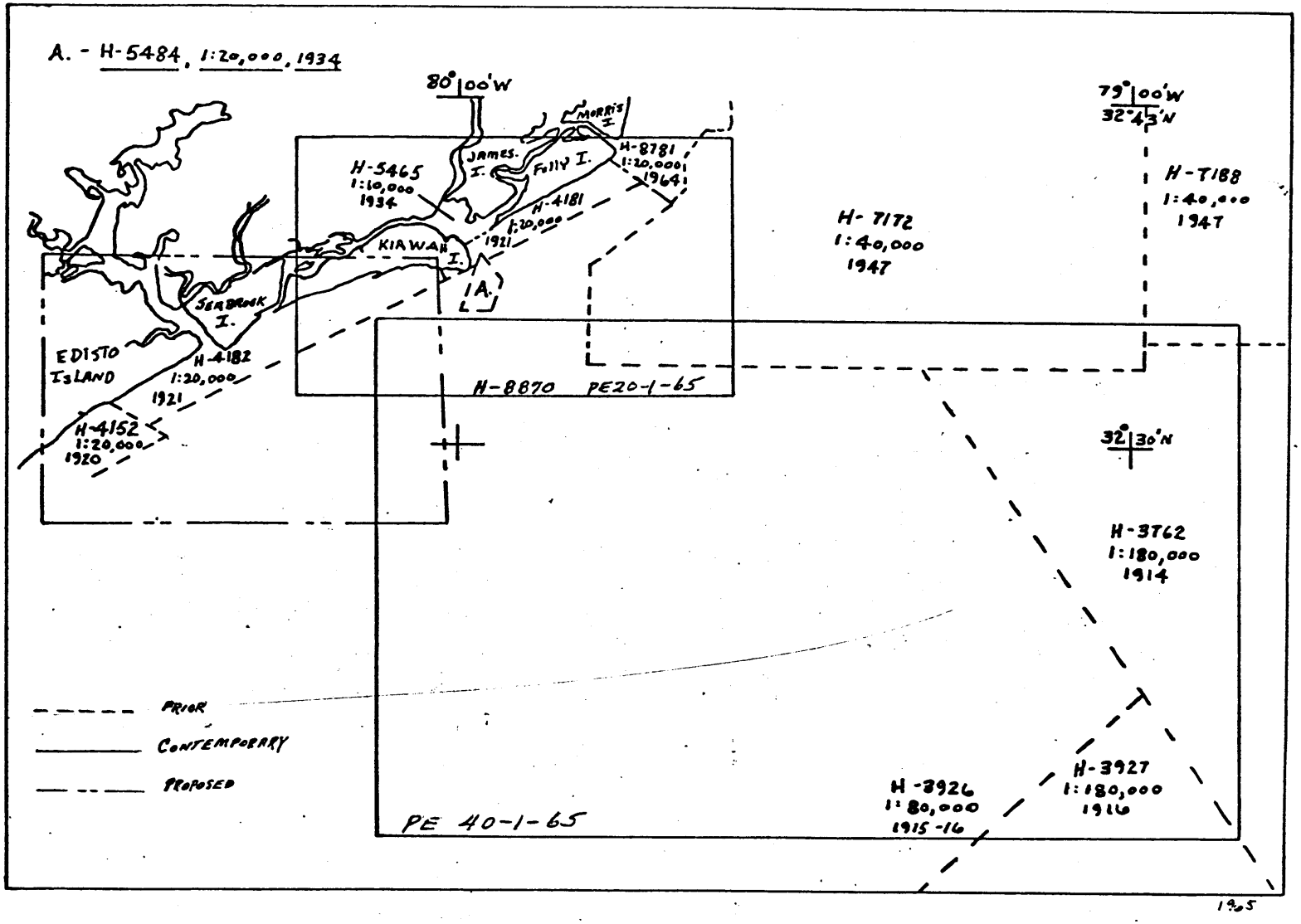
Soundings in ~~fathoms~~ feet at MLW ~~MLLW~~ Feet at MLW

REMARKS:

Applied to stds 12-10-73 CAB

1111
1001
1239

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
A.
H-8870 PE20-1-65
H-7172
1:40,000
1947
H-7188
1:40,000
1947
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
1965

Descriptive Report to Accompany
Hydrographic Survey H-8871 (PE 40-1-65)
1965

Survey Vessel:	USC & GSS Peirce (CSS-28)
Chief of Party:	LCDR Ronald M. Buffington, USESSA
Scale:	1:40,000
Year:	1965

A. PROJECT

Authority for the survey was contained in Instructions dated February 2, 1965, entitled "REVISED INSTRUCTIONS: PROJECT OPR-436 - COAST OF SOUTH CAROLINA AND GEORGIA". Reference 211 S-2-PE.

B. AREA SURVEYED

The area covered by the survey is an area off-shore from ~~Kiawah~~ Stono Inlet ~~and Folly Islands~~. The area is generally defined by the following limits: ~~Φ~~ 32°16.4', ~~λ~~ 80°01.5'; lat. 32°28.0', long. 80°02.0'; lat. 32°28.6', long. 80°00.0'; lat. 32°32.6', long. 80°00.0'; lat. 32°32.5', long. 79°54.2'; ~~Λ Φ~~ 32°34.0', ~~λ~~ ~~80°01.5'~~ 79°54.0'; Φ 32°33.8', λ 79°47.0W; Φ 32°29.0'N, λ 79°28.5'W; Φ 32°28.5'N, λ 79°34.5'W; Lat. 32°19.2', Long. 79°50.2'; Lat. 32°18.0', Long. 79°49.1'; Lat. 32°16.4', Long. 79°37.6'; Lat. 32°16.4', Long. 80°01.5'

The survey was conducted during the period of March 13, 1965 through June 30, 1965.

This survey junctions with prior surveys: ~~H-3762, 1:180,000, 1914~~; ~~H-3926, 1:180,000, 1915-16~~; ~~H-3927, 1:80,000, 1916~~; H-7172, 1:40,000, (1946-1947); H-7188, 1:40,000, (1946 1947); with contemporary survey H-8870, 1:20,000, 1965; H-8932, 1:80,000, 1966; H-9196, 1:20,000, 1971; H-9187, 1:80,000, 1971; H-9198, 1:80,000, 1971-72.

C. SOUNDING VESSEL

Hydrography was performed entirely by the Ship Peirce.

D. SOUNDING EQUIPMENT

The ship's fathometer, Raytheon model 723, serial #246 was used for most of the survey with the bridge fathometer. #260 & #242 The fathometer was used in depths of water that fell within the range of 25 to 80 feet.

Velocity corrections were determined by means of B. T. casts from which velocity correction graphs were constructed and correction values were extrapolated. Settlement and squat correction was determined to be negligible from previous measurements.

Besides the velocity correction a -1.0 foot correction is appliable as specified by a memo dated October 1, 1962 from Chief, Instruments Division so as to compensate for a theoretical instrument error of the Raytheon DE-723 fathometer. This correction was applied to the velocity corrections and is explained on the velocity correction curves. See appendix.C. No simultaneous comparisons were recorded. The -1.0 ft. correction was deleted from the velocity correction during automated processing.

Also a draft correction graph was drawn up to compensate for fuel expenditures.

The initial of the fathometer was set at 9.5 feet during the period of March 10 through May 4 and at 9.0 feet during the period of May 11 through June 30. See appendix for list of initial settings and comparable drafts based on fuel consumption.

Filed separately under Fathometer Velocity Correction Data Report

E. SMOOTH SHEETS

The surveyed area is covered by two boat sheets PE 40-1-65 (A) and (B) H-8871 (1965) both sheets cover the same area. Both sheets were plotted in H&O Rockville. Sheet A is a boat-smooth sheet with an overlay (soundings on overlay boat sheet). This sheet was plotted with an x-y (UTM) coordinate grid system. The fixes were converted from hyperbolic lane values to x-y coordinates by computer. The position was pricked through the overlay to the boat-smooth sheet.

Sheet B is the same projection but with range-range arcs plotted.

This sheet was requested because it was believed that the hyperbolic arcs intersection angle was not great enough over the northern portion of the sheet for acceptable accuracy. Therefore, the northern portion was surveyed in the range-range mode after the hyperbolic portion was finished.

The maximum probable error due to calibration procedure and computation should not exceed 0.1 lane and is probably much less than 0.1 lane.

F. CONTROL LOCATION OF SHORE STATIONS

HI-FIX control was used entirely for position control of this survey. However, two different modes of HI-FIX were used: the hyperbolic mode and the range-range mode.

The hyperbolic mode was used for the largest part of the survey; specifically for the period of March 13 (A day) to June 10 (VA day). With this mode three (3) electronic stations were used. The stations were located at Edisto Island, South Carolina (master station known as "STORE"), Folly Beach, South Carolina (slave station known as "BEACH"), and Fripp's Island, South Carolina (slave station known as "EDISON"). All three stations were located by third order traverse.

The range-range mode was used for the portion of the survey where the hyperbolic mode of control was deemed to be inadequate in geometric form due to the configuration of the HI-FIX stations with respect to the area being surveyed. This range-range mode was used during the period of June 12 (WA day) through June 30 (FB day). With this mode the master station at Edisto Island, South Carolina ("STORE") was deactivated and only slave station "BEACH" and "EDISON" utilized.

Positions were plotted on smooth sheet "B" overlay by means of a HI-FIX odessey protractor using the lane values for the range-range portion of the survey. Positions were plotted on smooth sheet "A" overlay by an odessey protractor using x-y coordinates that were obtained by entering hyperbolic lane values into a computer program which produced the x-y coordinates. The calculation sheets from

(F. CONTROL continued)

the computer are forwarded as part of the field records.

HI-FIX calibration was accomplished through three point sextant fixes. This was done by bringing the ship close enough to the shore so as to be able to obtain a good three point fix. These fixes were taken by sextants and consisted of a three point fix taken by two sextant men and a check angle taken by a third man.

The sextant fixes were applied in two different ways to obtain calibration values. During the first part of the field season, when a computer program was not available, the method consisted of plotting the sextant fixes with a three arm protractor on a calibration sheet which had both the visual signal locations and the hyperbolic lane values (in one case) or the range-range lane values (in the other case) inscribed. Thus on plotting the fix a corresponding lane value could be read from the calibration sheet. Simultaneously with the taking of the visual sextant fix, the HI-FIX operator read the values displayed on the HI-FIX console. The difference between the readings from the console and the corresponding sextant fix value were used as corrector values.

The HI-FIX dials were then corrected to the nearest integral lane and the remainder of the corrector was carried forward as the "corrector" for that particular calibration period. This "corrector" must be applied to the recorded HI-FIX Value in order to give a final and true value.

(F. CONTROL continued) the mean difference between the computed values versus the hand plotted values was 0.03 lane for R_1 and 0.02 lane for R_2. (See HI FIX Cal. Rep)

In the second method the sextant fixes were applied (as indicated in the corrector log) by way of a computer calibration program. This program replaced the three arm protractor and calibration sheet, and solved the three point program mathematically by computing a specific lane value for a specific sextant fix on visual signals. In turn these computed values were compared in the same way as before with the HI-FIX console values taken with the sextant fix.

Due to the variable width between hyperbolic lanes, the sounding lines run under this mode of HI-FIX were not uniform in spacing. The general limitation the ship held in spacing sounding lines was a 150 meter minimum and a 300 meter maximum with larger spacing occurring in the deeper depths of the survey.

G. SHORELINE

No shoreline was involved in the survey.

H. CROSSLINES

Crosslines were at 5.8% of the total mileage on sheet A and 7.1% on sheet B. Crossline were in good agreement. See review Paragraph 3a.

I. JUNCTIONS

Junctions with prior and contemporary surveys were generally in good agreement. See Review paragraph 5

J. COMPARISON WITH PRIOR SURVEYS

φ 32°30.58' λ 79°37.99'

Concerning item #1 on sheet #2 of the presurvey review - the reported 20 foot obstruction, nothing close to a twenty foot sounding could be found in the general vicinity. A system of crosslines were run which with the regular lines run formed a two mile square system of mutually perpendicular and uniformly spaced sounding lines. From this system of sounding lines no indication of the 20 foot reported obstruction could be found. See Review Paragraph 7A 20' disproved - H-9174 (1968) W.D.

The dashed circled soundings on sheet #2 of the presurvey review are compared below with the survey depths.

Presurvey Review Sounding

	Latitude	Longitude	Prior Depth Ft.	Present ~~Shoalest~~ depth (Ft) near old sounding	
1	32°29.71	79°33.31	56	~~57~~ 64 (57 ft. 400 m. NE)	Very
2	32°31.61	79°33.71	57	60 4 (57 ft 800 m. S)	irregular
3	32°29.31	79°34.01	56	56 7	bottom
	32°30.24	79°34.20		54 ft. shoal	this
4	32°29.91	79°34.78	57	~~62~~ 67 (58 ft. 500 m NNE)	area
5	32°27.51	79°38.87	60	~~68~~ 62 (SW 1 mile - shoal - 62 Ft)	
6	32°32.31	79°40.51	46	~~48~~ 50 (49 ft. 150 m E)	
7	32°33.45	79°42.11	42	~~40~~ 41	
8	32°23.54	79°44.56	60	~~63~~ 64 (61 Ft. 1500 m SW)	
9	32°~~28.0~~ 27.9	79°45.21	47	~~57~~ 60 (48 ft. 1½ miles NW)	
10	32°29.31	79°46.51	42	~~53~~ 43 (Shoal ½ mile NNW - 45 ft.)	
11	32°33.78	79°51.31	35	36 7	
12	32°33.81	79°52.39	34	34	
13	32°32.67	79°53.41	42	~~40~~ 41	
14	32°25.71	79°54.11	40	~~43~~ 44 nearby	
15	~~13~~ 32°28.31	79°54.78	40	~~49~~ 42 (0.2 mile south - 43 ft.)	

The soundings of the prior survey (H-3926) 1:80,000, 1915-1916, compare favorably with the soundings obtained in this survey with the noteable exception that 5 foot shallower depths were obtained

J. (COMPARISON continued)

with this survey in two localized areas. Centered about (ϕ=32°-30, λ=79°-40) and ϕ=32°-25, λ=79°-46'). See Review Paragraph 6b

K. COMPARISON WITH THE CHART

The survey was compared with Chart #1239, 6th Edition, July 24, 1964, and the charted depths compared favorably with those obtained during the survey. The most noticeable exception is a sounding of ~~58~~ 47 located at ϕ=32°-28 and λ=79°-45' where from the survey 58 is the ~~deepest~~ shoalest in that area. Disregard 47', apparently in error

The 20 foot reported obstruction located on the chart at approximately ϕ=32°30'N and λ=79°38'W was not found and is discussed more fully in the preceding section (Section J.) Disproved - H-9174 (1969) WLD See Review Paragraph 7A.

At ϕ=32°-19.73'N and λ=79°-50.~~40~~ 37'W an obstruction was located. The fathometer gives a corrected least depth of 61 feet on the obstruction in an area where ~~66~~ 68-69 foot soundings are prevelant. No reliable hand lead sounding could be obtained although several attempts were made. An armed hand lead brought up samples of rust and a black oily substance similar in nature to wet coal. Thus the object is apparently the remains of a wrecked vessel.

Reviewer recommends additional work to obtain LD.

L. ADEQUACY OF THE SURVEY

This survey is complete and adequate to supercede prior surveys with the exception of the 20 foot reported obstruction. See Review Paragraph 7A

Ronald M Buff

M. AIDS TO NAVIGATION

One aid to navigation was located by this survey, Buoy "AKI" (listed as #4320 in the Light List, Volume II, Atlantic and Gulf Coast). It's position as obtained in the survey as compared to the position listed in "the Light List" and located on Chart #1239, 6th Edition, July 24, 1964 is the same in latitude and differs a little in longitude (from the survey 32°28.56' 79°58.6'W from the Light List 32°28.5' 79°58.6'W, and from the chart 32°28.48' 79°-58.5'W). Survey position is 280 meters ~~northwest~~ of its charted location.

N. STATISTICS

Number of positions = 5566

Number of nautical miles of sounding lines = 2391.6
(includes lines on overlays)

Number of square nautical miles of area = 310.2

Number of bottom samples - 156

O. MISCELLANEOUS

General area covered by the survey is a gently sloping uneven bottom which is clearly illustrated by the meandering depth curves drawn on the sheet overlays.

P. RECOMMENDATIONS

To dispose of presurvey item #1 (the reported 20 foot obstruction at ϕ=32°30.6N and λ=79°38.0W) a wire drag investigation should be made to verity the existence or non-existence of the obstruction.

Disproved - H-9174(1964) WSD.

see Paragraph 7A in Review

Q. REFERENCE OF REPORTS

1. Bagged samples of the bottom samples taken during the survey and the recorded data logged. Filed under separate cover.

2. "OCEANOGRAPHIC LOG SHEET M, bottom sediment data, Form C&GS-733M, were forwarded to the Director, Coast & Geodetic Survey, ESSA on February 9, 1966.

3. HI-FIX Report 1965. Copy enclosed. Filed under separate cover (Not filed with field records)

SEPARATES FOLLOWING TEXT

APPENDIX A. -TIDE NOTE ✓

B. -NONE ✓

C. -ABSTRACT OF CORRECTIONS TO ECHO SOUNDINGS ✓
(Part Filed under separate cover)

D. -ABSTRACT OF CORRECTIONS TO DISTANCE MEASUREMENTS
APPROVAL SHEET

E. -NONE

F. -CAL STATION COMPUTATIONS — Filed separately

G. -PROCESSING NOTE ✓

H. -PUNCH TAPE INFORMATION — Filed separately

I. APPROVAL SHEET ✓

APPENDIX A

TIDE 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 the survey area, a time correction of -15 minutes and a height correction of -2.6 feet is applied to the tabulated data of the Charleston Standard Gage. No height ratio is necessary.

The time meridian is 75°W for this survey.

FORM C&GS-712
(3-9-64)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

October 1, 1968

Atlantic
~~Pacific~~ Marine Center

Plane of reference approved as for

HYDROGRAPHIC SHEET 8871

Locality: off coast, South Carolina

Chief of Party: C.O., USC&GSS PIERCE, 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

J. M. Sigsbee
Chief, Tides and Currents Branch

USCOMM-DC 6680-P64

APPENDIX C

No simultaneous comparisons made. see endorsement below from AMC.

Memo dated October 1, 1962, from Chief, Instruments Division states that a -1.0 foot correction shall be applied to all soundings to compensate for theoretical instrument error of the Raytheon DE-723 Fathometer. Velocity correctors filed under separate cover.

Ship's transducer depth was determined to be 10.0 feet at normal fueling capacity. With 12,000 gallons of fuel expended, the draft was 9.5 feet.

Therefore, the following "DRAFT CORRECTION SUMMARY" is a composite of the corrections cited in the above ~~two~~ paragraphs.

ENDORSEMENT-APPENDIX C VERIFICATION BR., AMC 7-11-72

This Branch checked the junctional soundings on this survey with those on H-8870 (PS 20-1-65), 1965 on which the velocity corrections were derived from bar checks. This comparison showed that a much better junction could be obtained by eliminating the -1.0 ft. correction mentioned above, and in various other places in the reports. It will be removed during the computer/plotter process.

There appears to have been some doubt all along about the validity of this correction, and Ship Peirce is believed to have been the only vessel to use it on the East coast. More reliance could have been placed in the sounding comparisons if vertical casts had been made on H-8871. (1965)

Hugh L. Proffitt
Chief, Verification Br., AMC

APPENDIX D

ABSTRACT OF CORRECTIONS TO DISTANCE MEASUREMENTS

Electronic control used on this survey was hyperbolic and range-range HI-FIX of the Decca Navigation Company of England.

The system was adjusted to read to the nearest correct lane and fractional lane corrections were carried along and recorded with the daily records and the corrector log.

SHIP PEIRCE: HI-FIX CALIBRATIONS 1965

DATE	LETTER	Pos No.	COMPUTOR VALUES PATT. I	PATT. II	VALUES FROM HAND PLOTTING I	II
3/13/65	A	1 - 53	+1.25	+0.81	+1.21	+0.79
14	B	54 - 77	-2.45	+1.83	-2.41	+1.82
19	C	78 - 128	+1.35	-0.49	+1.30	-0.47
20	D	129 - 285	+0.38	+0.41	+0.27	+0.42
21	E	286 - 442	+0.38	+0.40	+0.26	+0.42
22	F	443 - 542	-1.61	-1.60	-1.64	-1.59
4/2/65	G	543 - 621	-0.59	+0.46	-0.53	+0.49
3	H	622 - 704	-0.51	+0.39	-0.40	+0.41
4	J	705 - 798	+0.47	+0.38	+0.47	+0.41
5	K	799 - 895	-0.46	+0.41	-0.41	+0.42
6	L	896 - 978	+0.43	+0.46	+0.43	+0.48
7	M	979 - 1087	+0.45	+0.47	+0.42	+0.49
8	N	1088 - 1213	+0.43	+0.43	+0.44	+0.45
9	P	1214 - 1310	+0.46	+0.44	+0.47	+0.46
10	Q	1311 - 1353	+0.45	+0.41	+0.45	+0.43
11	R	1354 - 1404	+0.44	+0.46		
12	S	1405 - 1452	+0.44	+0.46		
22	T	1453 - 1513	+0.50	+0.40	+0.58	+0.45
23	U	1514 - 1612	+0.42	+0.44	+0.43	+0.46
24	V	1613 - 1706	+0.47	+0.42	+0.45	+0.44
25	W	1707 - 1816	+0.44	+0.46		
27	X	1817 - 1917	+0.41	+0.39	+0.45	+0.42
28	Y	1918 - 2035	+0.48	+0.37	+0.43	+0.41

DATE	LETTER	Pos. No.	PATT. I	PATT. II	I	II
29	Z	2036 - 2145	+0.46	+0.42	+0.43	+0.45
5/2/65	AA	2146 - 2230	+0.42	+0.51	+0.43	+0.54
2	BA	2231 - 2279	+0.43	+0.56	+0.35	+0.58
3	CA	2280 - 2372	+0.46	+0.14	+0.50	+0.17
4	DA	2373 - 2380	+0.41	+0.61	+0.38	+0.63
12	EA	2381 - 2442	+0.34	+0.25	+0.42	-0.28
13	FA	2443 - 2564	+0.34	+0.35	+0.38	-0.34
16	GA	2565 - 2672	+0.39	-0.28		
20	HA		+0.30	+0.53		
21	JA	2673 - 2771	+0.37	+0.53		
22	KA	2772 - 2875	+0.42	+0.55		
23	LA	2876 - 3033	+0.42	+0.49		
24	MA	3034 - 3150	+0.41	+0.52		
6/3/65	NA	3151 - 3183	+0.36	+0.51		
4	PA	3184 - 3210	+0.42	+0.54		
5	QA	3211 - 3244	+0.38	+0.53		
6	RA	3245 - 3291	+0.40	+0.50		
7	SA	3292 - 3311	+0.40	+0.50		
7	SA	3311 - 3336	+0.21	+0.50	Use after 1440	
8	TA	3337 - 3413	+0.45	+0.50		
9	UA	3414 - 3492	+0.45	+0.52		
10	VA	3493 - 3553	+0.45	+0.50		
12	WA	4000 - 4093	+0.34	-0.26		
13	XA	4094 - 4222	+0.40	-0.21		
23	ZA	4225 - 4422	+0.40	-0.20		

Range-Range — Hyperbolic

DATE	LETTER	Pos No.	PATT. I	PATT. II	I	II
24	AB	4423-4740	+0.40	-0.20		
26	BB	4741-4948	+0.42	-0.07		
27	CB	4949-5273	+0.42	-0.07		
28	DB	5274-5355	+0.42	-0.07		
29	EB	5356-5587	+0.42	-0.07		
30	FB	5588-5666	+0.47	-0.23		

NOTE: Days A thru F Angles were taken for Calibrations but no calibration sheet was available. Therefore the lane count was set by estimating the Ship's position and the calibrations were made later & Plotted later.

80. G.

H-8871 (1965)
PE-40-1-65

FIG. 18.

DESCRIPTIVE REPORT DATA RECORD			
PART I SMOOTH SHEET PREPARATION		PREPARED BY/OPERATOR	DATE
A. PLOTTER OPERATOR			
B. DISTORTION MARKS PLOTTED		EDAT-PMC	
C. PROJECTION INTERSECTIONS PLOTTED		EDAT-PMC	
D. POINTS OF ELECTRONIC CONTROL ARCS PLOTTED		EDP-AMC	
E. OVERLAYS PREPARED BY			
1. POSITION NUMBER		EDAT-PMC	
2. EXCESS SOUNDINGS		EDAT-PMC	
3. PRELIMINARY SMOOTH PLOT		EDAT-PMC	
4. LIST OTHERS			
A.			
B.			
F. SOUNDING SELECTION BY		EDAT-PMC	
G. PLOTTER INPUT	PREPARED		
H.	CHECKED		
I. DESCRIPTIVE REPORT ADDENDUMS			
PART II SMOOTH SHEET COMPLETION			
		CARTOGRAPHER	DATE
A. DISTORTION SCALE TICKS IDENTIFIED BY NOTE		HRS	9-14-73
B. PROJECTION INTERSECTIONS VERIFIED BY		HRS	6-6-73
C. PROJECTION LINES RULED BY		HRS	6-28-73
D. ELECTRONIC CONTROL ARCS RULED AND LOCATION VERIFIED		EDP-AMC	
E. OVERLAYS COMPLETED BY			
1. POSITION NUMBER LEADERS ADDED		HRS	9-14-73
2. EXCESS SOUNDING OVERLAY COMPARED		HRS	9-14-73
3. PRELIMINARY SMOOTH PLOTS COMPARED		HRS	9-14-73
4. OTHERS UTILIZED			
A.			
B.			
F. DESCRIPTIVE REPORT ADDENDUM			
G. CONTROL STATIONS VERIFIED		CMM	1-15-73
H. POSITIONS MANUALLY PLOTTED		Cmm & HRS	5-15-73
I. MANUAL PLOT VERIFIED		HRS	7-9-73
J. SHORELINE APPLIED			
K. BOTTOM CHARACTERISTICS ADDED		HRS	8-30-73
L. NOTES AND DEPTH CURVES ADDED		HRS	9-18-73

APPENDIX I

APPROVAL SHEET

PE 40-1-65 (8871) 1965

H-8871 (1965)

Field Survey PE 40-1-65 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. Field work on Project OPR-436 was discontinued as of June 30, 1965 and work was begun on Project OPR-458.

Ronald M Bumpington

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-8871

GEOGRAPHIC NAMES

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	
Atlantic Ocean										1
										2
										3
										4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
					Approved by:					18
					Chas. E. Harrington					19
					Dec 13, 1973					20
										21
										22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

☆ U.S. G.P.O. 1972-769-565/516 REG. #6

FIG. 19

FORM C&GS-946 (REV. 11-65) (PRESC. 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-8871~~
PE-40-1-65

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET & PNO	1	BOAT SHEETS	4
DESCRIPTIVE REPORT	1	OVERLAYS	4

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	3					1
VOLUMES	13					
BOXES			4 ~~Raw data~~			2

T-SHEET PRINTS (List) None

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				5566
POSITIONS CHECKED		600 ~~103~~	23	
POSITIONS REVISED			10	
DEPTH SOUNDINGS REVISED		387	75	
DEPTH SOUNDINGS ERRONEOUSLY SPACED			141	
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED			—	
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS			—	
JUNCTIONS		8	32	
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		40	16	
SPECIAL ADJUSTMENTS	250 Vol. Corr. and field records			
ALL OTHER WORK		531	136	
TOTALS	250	579	184	

	BEGINNING DATE	ENDING DATE
~~PRE-VERIFICATION BY~~ INSPECTION BY R. W. Wellman 48 hrs.		9-11-79
VERIFICATION BY Harry R. Smith	6-26-73	9-18-73
REVIEW BY Dennis J. Romesburg	1-14-74	2-22 ~~5-2-74~~

Inspected by R. H. Carstens 13 hrs 10/17/79 App. by J. P. Hyman 3/24/81 6 hrs

ATLANTIC MARINE CENTER
APPROVAL SHEET
FOR
AUTOMATED SURVEY H-8871 (1965)

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

Date: Oct. 3, 1973

Signed: William L Jones

Title: Chief, Verification Branch

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

Date: Oct. 3, 1973

Signed: C. Dale Lark Jr.

Title: Chief, Processing Division

REGISTRY 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 REQUIRED_____ INITIALS_____

REMARKS:

REGISTRY NO. H-8871

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

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

MAGNETIC TAPE CORRECTED

DATE_____ TIME REQUIRED_____ INITIALS_____

REMARKS:

OFFICE OF MARINE SURVEYS AND MAPS

HYDROGRAPHIC SURVEYS DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8871 FIELD NO. PE-40-1-65

South Carolina, Coast of South Carolina, Off Stono Inlet

SURVEYED: March 13 - June 30, 1965

SCALE: 1:40,000 PROJECT NO.: OPR-436

SOUNDINGS: DE-723 Depth Recorders CONTROL: Hi-Fix (Range-Range and Hyperbolic modes)

Chief of Party	R. M. Buffington
Surveyed by	R. M. Buffington
	R. L. Newsom
	J. W. Carpenter
	R. K. Brewer
	J. W. Dropp
	G. M. Ward
Protracted by	Gerber Digital Plotter (PMC)
Soundings Plotted by	Gerber Digital Plotter (PMC)
Verified by	H. R. Smith
Reviewed by	D. J. Romesburg
	Date: February 22, 1974
Inspected by	K. W. Wellman

1. Description of the Area

This survey covers an irregular area of the Atlantic Ocean off Stono Inlet, South Carolina. Centered primarily along the 60-foot curve, depths range from 29 feet on the northwest to 80 feet on the southeastern edge of the survey. The bottom composition is primarily fine sand and broken shells with some pebbles and gravel. There are no major features in this area. The bottom is gently sloping and undulating with numerous sand ridges 1 to 3 feet in height and aligned approximately parallel to the shore.

2. Control and Shoreline

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

This is an offshore survey and no shoreline is shown.

3. Hydrography

a. Soundings at crossings are in good agreement. Because of fathogram readings in an irregular sand ridges area of the present survey, some crossings appear to disagree by 2 to 3 feet.

b. The usual depth curves are adequately delineated. A few features were emphasized by dashed or brown depth curves.

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

4. Condition of Survey

The survey records, automated plotting, and Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual as supplemented by the Instruction Manual - Automated Hydrographic Surveys with the following exceptions:

a. Julian Day 79 had nine positions numbered 240. The reviewer revised the Position and Sounding Printouts and the Position Number Overlay to agree by the addition of A, B, C, etc., to the position numbers.

b. A random check of the brush recorder tapes revealed that the tapes were not appropriately annotated so as to provide reference to sounding line position numbers. The absence of such annotated position numbers renders the tapes essentially useless for the intended purpose, i.e., to provide a means to identify electronic control lane counts vis-a-vis recorded position fixes.

c. Numerous soundings were removed from excess and replotted on the smooth sheet to supplement delineation of bottom configuration.

d. Junctions were not completed as indicated on C&GS form 946A of the Verifier's Report.

e. Some peaks on sand ridges and depths in the associated deeps were not read on the fathogram thereby affecting crossline agreement.

5. Junctions

Adequate junctions have been effected with H-8932 (1966) on the south and southeast, H-9187 (1971) on the east, H-8870 (1965) on the northwest, and H-7172 (1946-47) and H-7188 (1946-47) on the north and northeast. Scattered depth differences of ± 1 to 3 feet in the junctional areas are attributed to slight shifting of bottom sediments and sea conditions.

Considering the nature of the survey area, such differences are not inconsistent with the conditions necessary for designation as adequate junctions since all affected standard depth curves are reconciled.

The present survey joins with H-9198 (1971, 72) on the west and H-9196 on the northwest. The junction between the present survey and H-9198 is discussed in the review of that survey and requires no further consideration. A small area on the present survey is in conflict with H-9196 (1971) and is superseded by the more recent survey.

6. Comparison with Prior Surveys

a.

H-622	(1857)	1:200,000
H-717	(1858)	1:300,000
H-728	(1860)	1:300,000
H-768	(1860)	1:500,000
H-3546	(1913)	1:100,000
H-3549	(1910-13)	1:400,000

These small-scale reconnaissance surveys do not afford an adequate basis for a comparison of any cartographic value. Where soundings do fall within the limits of the present survey, agreement is within 10 feet. The noted differences are attributed to the less accurate positional control and sounding methods used on the older surveys. The present survey is adequate to supersede the prior surveys within the common area.

b.

H-649	(1853-57)	1: 40,000
H-3761	(1914)	1: 80,000
H-3762	(1914)	1:180,000
H-3926	(1915-16)	1: 80,000

These surveys comprise the latest coverage of the present survey area. A comparison shows generally good sounding agreement intermingled with scattered differences ranging to ± 8 feet. Also revealed are minor curve displacements and shifting of sand ridges. One notable exception is the area centered at latitude 32°19', longitude 79°53' where prior depths differ from the present by 5 to 11 feet. Discrepancies between the present and prior depths are attributed to natural causes and to the less accurate methods employed on the prior surveys.

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

c. F.E. 5, 1965 (1964) 1:40,000

This Field Examination covers portions of the present survey. Sounding agreement is very good with minor differences probably caused by the

shifting of bottom sediments. One sounding was carried forward on a feature in latitude 32°30.4', longitude 79°36.9'. With the addition of this sounding, the present survey is adequate to supersede the Field Examination within the common area.

d. H-9174 (1969) W.D. 1:40,000

There are no conflicts between present depths and cleared wire-drag depths.

7. Comparison with Chart 792, 6th Edition, April 1, 1972
Chart 1239, 11th Edition, October 6, 1973
Chart 1111, 17th Edition, November 17, 1973

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys which require no further consideration and with partial application of bromide copies of the boat sheet of the present survey (Bp-68335-Bp-68337-39) and Bp-52293, a bromide copy of an NOS survey performed for the Navy. Several charted soundings along the southeastern edge of the present survey area originate with junctional survey H-8932 (1966).

Presurvey Review Item 1, an obstruction 20 feet reported, previously charted in latitude 32°30.58', longitude 79°37.99' originates with Chart Letter 559 of 1959. Presently charted at this position is a 51-foot cleared depth that originates with Wire-Drag Survey H-9174 (1969) subsequent to the date of the present survey. This cleared depth should be retained on the chart.

With the retention of the above, the present survey is adequate to supersede the charted hydrography within the common area.

b. Aids to Navigation

Stono Inlet Lighted Whistle Buoy 4KI positioned on the present survey in latitude 32°28.56', longitude 79°58.73' differs from its charted position but continues to adequately serve the intended purpose. Buoy "C" charted in the vicinity of latitude 32°31.29', longitude 79°50.55' originates with Notice to Mariners 26 of 1966 subsequent to the date of the present survey and should be retained as charted.

8. Compliance with Instructions

The survey adequately complies with the project instructions, except that the tide station used for the present survey is not among those specified in sections 21 and 22 of the project instructions.

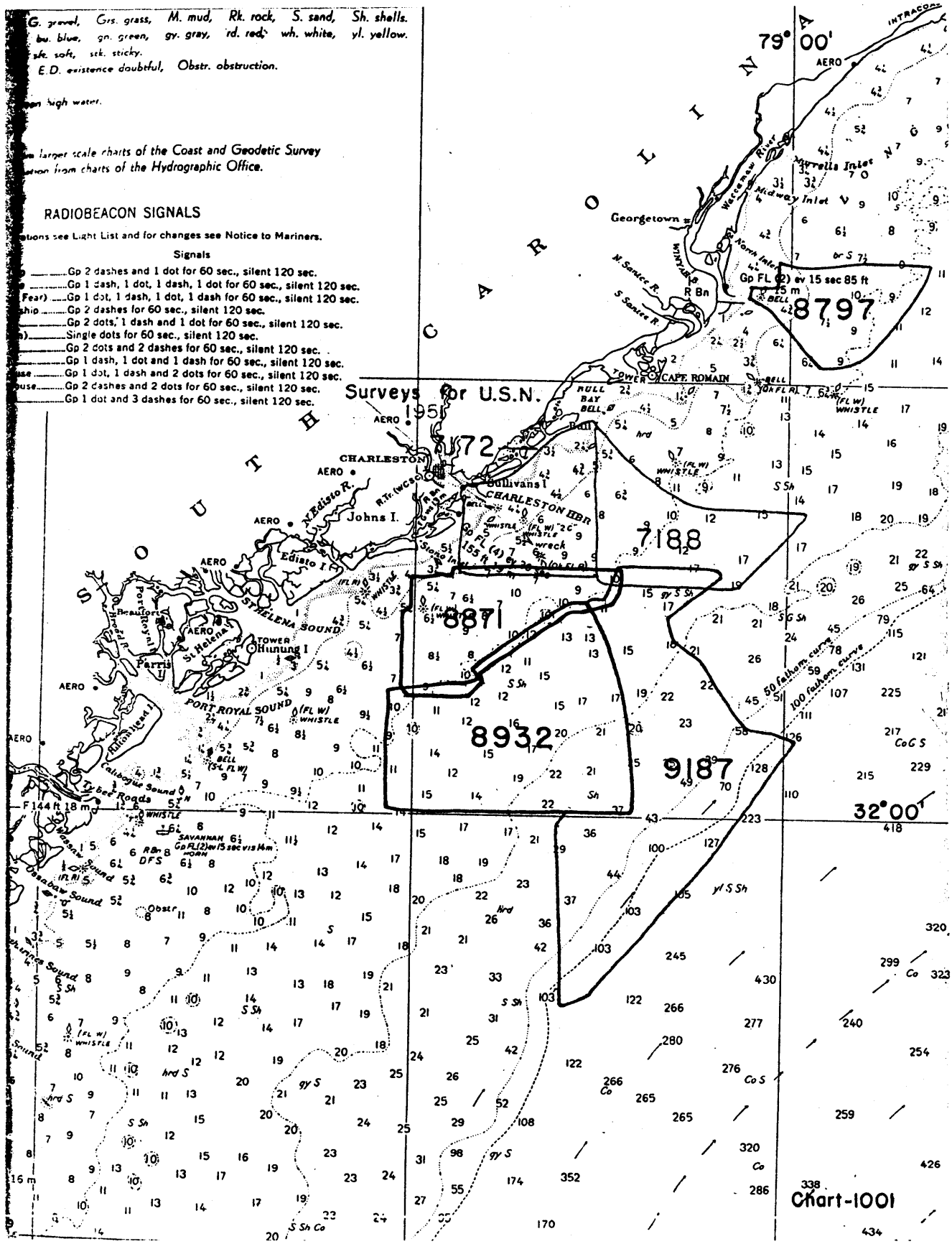
9. Additional Field Work

This survey is considered to be a very good basic survey. However, at an opportune time it would be desirable to determine the least depth on the wreck discussed in paragraph K of the Descriptive Report and indicated on the present survey in latitude 32°19.73', longitude 79°50.37'.

Examined and Approved:

Chief
Hydrographic Surveys Division

F/ Associate Director
Office of Marine Surveys
and Maps


G. gravel, Grs. grass, M. mud, Rk. rock, S. sand, Sh. shells.
bu. blue, gn. green, gy. gray, rd. red, wh. white, yl. yellow.
sft. soft, stk. sticky.
E.D. existence doubtful, Obstr. obstruction.
high water.
larger scale charts of the Coast and Geodetic Survey
from charts of the Hydrographic Office.
RADIOBEACON SIGNALS
stations see Light List and for changes see Notice to Mariners.
Signals
Gp 2 dashes and 1 dot for 60 sec., silent 120 sec.
Gp 1 dash, 1 dot, 1 dash, 1 dot for 60 sec., silent 120 sec.
(Fear) Gp 1 dot, 1 dash, 1 dot, 1 dash for 60 sec., silent 120 sec.
ship Gp 2 dashes for 60 sec., silent 120 sec.
Gp 2 dots, 1 dash and 1 dot for 60 sec., silent 120 sec.
Single dots for 60 sec., silent 120 sec.
Gp 2 dots and 2 dashes for 60 sec., silent 120 sec.
Gp 1 dash, 1 dot and 1 dash for 60 sec., silent 120 sec.
Gp 1 dot, 1 dash and 2 dots for 60 sec., silent 120 sec.
Gp 2 dashes and 2 dots for 60 sec., silent 120 sec.
Gp 1 dot and 3 dashes for 60 sec., silent 120 sec.
SOUTH CAROLINA
79° 00'
32° 00'
Surveys for U.S.N. 1951
8797
8772
7188
8871
8932
9187
Georgetown
CAPE ROMAIN
CHARLESTON
Sullivans I
CHARLESTON HBR
Johns I.
Edisto R.
Edisto I.
ST HELENA SOUND
St Helena
Hunting I
Parris I
PORT royal SOUND
Hilton Head I
Calibogue Sound
Tybee Roads
Wassaw Sound
Ossabaw Sound
Sapelo Sound
Midway Inlet
Murrells Inlet
North Inlet
Waccamaw River
N Santee R.
S Santee R.
INTRACOASTAL
50 fathom curve
100 fathom curve
Chart-1001

(3-25-63) NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8871

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
792	11522 12-12-73	G Moore	~~Full~~ Part Before ~~After Verification~~ Review Inspection Signed Via
~~1239~~	~~12-12-73~~		Drawing No. No Corrs.
1239	11521 80 12-12-73	G Moore	~~Full~~ Part Before ~~After Verification~~ Review Inspection Signed Via
			Drawing No. NO CORRS.
1111	11480 12-13-73	G Moore	~~Full~~ Part Before ~~After Verification~~ Review Inspection Signed Via
			Drawing No. No Corrs.
1001	11009 12-13-73	G Moore	~~Full~~ Part Before ~~After Verification~~ Review Inspection Signed Via
			Drawing No. No Corrs
(792) 11522	3-18-80	Stephen J. Kerry	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No.
11521	4-4-80	Stephen J. Kerry	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 31
11480	8-1-80	Allen Dyer	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 32
11009	6-17-82	B Fowler	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 48 thru 11480
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.

FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975. USCOMM-DC 8558-P63