

H10856

NOAA FORM 76-35A

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

## DESCRIPTIVE REPORT

*Type of Survey* Hydrographic/Side Scan Sonar

*Field No.* AHP-5-4-98

*Registry No.* H10856

### LOCALITY

*State*

South Carolina

*General Locality* Cooper River

*Locality* Red Bank Landing to Grove Creek

1998

CHIEF OF PARTY  
Brian A. Link

### LIBRARY & ARCHIVES

DATE MAY 7 1999

**HYDROGRAPHIC TITLE SHEET**

OPR-G301 AHP05-04-98

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.

H-10856 Sheet "D"

State South Carolina

General locality Cooper River

Locality Red Bank Landing to Grove Crk

Scale 1:5,000

Date of survey 27 Oct 1998 - 10 December 1998

dated 3-19-97

Project No. OPR-G301-AHP & Change No.1 4-9-98

Vessel 1210

Chief of party Mr. Brian Link

Surveyed by \*DBE, \*RWR, \*PMW

Soundings taken by echo sounder, hand lead, pole Innerspace MN# 448 SN#188

by \*

Graphic record checked by \*DBE, \*RWR, \*PMW

Protracted by N/A

Automated plot by HEWLETT PACKARD DESIGN JET 2500 CP  
HPS & MAPINFO HP PLOTTER

Verification by ATLANTIC HYDROGRAPHIC SECTION, NORFOLK VA.  
*BRANCH PERSONNEL*

Soundings in meters feet at MLW MLLW w/ unverified actual water levels applied

REMARKS

\*David B. Elliott, Robert W. Ramsey Jr., Philip M. Wolf

*NOTES IN THE DESCRIPTIVE REPORT WERE MADE IN RED  
DURING OFFICE PROCESSING.*

*AWOIS ✓ & SURF ✓ by MBH 5/3/99*

DESCRIPTIVE REPORT TO ACCOMPANY  
HYDROGRAPHIC SURVEY H-10856  
OPR-G301-AHP  
FIELD NO. AHP-5-4-98  
SCALE: 1: 5,000  
1998  
ATLANTIC HYDROGRAPHIC PARTY TWO  
CHIEF OF PARTY: Brian A. Link

A. PROJECT

This survey was conducted according to Hydrographic Project Instructions OPR-G301-AHP, Charleston Harbor, South Carolina and adjoining waterways, dated March 19, 1997 and Change No.1 dated April 9, 1998.

The purpose of project OPR-G301-AHP is to provide a navigable area survey with 200-percent side scan sonar coverage within the assigned area of the Cooper River, Red Bank Landing to Grove Creek, South Carolina, to the 12-foot contour, except as modified by the Project Instructions.

The survey is being conducted in response to a request from the Charleston Branch Pilots Association.

B. AREA SURVEYED

The area surveyed as specified by the Project Instructions is defined as Sheet "D". The approximate survey limits are:

North - 32°59'04"N  
South - 32°56'36"N  
East - 079°54'13"W  
West - 079°56'55"W

This survey was conducted from October 27, 1998 (DN: 300) to December 10, 1998 (DN: 344).

C. SURVEY VESSEL

NOAA launch 1210, a 27-foot SeaArk, was used to collect all survey data. There were no unusual vessel configurations or problems encountered with the vessel.

#### D. AUTOMATED DATA ACQUISITION AND PROCESSING *SEE ALSO THE EVALUATION REPORT*

HYPACK version 7.1A was used for on-line data acquisition. HPS programs version 8.2, updated through May 29, 1998 and HP Tools version 1.72 were used for data processing. MapInfo Professional Version 5.0 and Vertical Mapper Version 1.5, were used to support processing and for plotting all survey data.. The NOS programs VELOCITY (Ver. 3.0) was also used during this survey.

#### E. SONAR EQUIPMENT

An Edge Tech model 260-TH image correcting side scan sonar recorder (S/N 020417) with a model 272-TD towfish (S/N 020892), was used throughout this survey. The side scan sonar equipment was used to conduct dual beam surveying and investigate AWOIS items using NOAA launch 1210. The system frequency used was 100 kHz. The recorder was set on one of either 50/75/100/150-meter range scales. There were no water depths greater than 25 meters. The confidence checks were performed daily on existing buoys in the Charleston, SC channels at 100kHz.

A coverage of 200% was obtained in all the required survey areas ~~and AWOIS items~~ where water depth and/or hazards permitted. Side scan sonar coverage was conducted to the 12-foot depth curve and single beam reduced line spacing was performed in other areas where warranted. The towfish was deployed off the starboard quarter of the vessel, which proved very stable. Distorted images caused by strong tidal currents were seen periodically. All contacts and shadows were manually scaled and entered into a DPS contact table to determine the height off the bottom. The significant contacts were then compared by position, as well as common depth and relationship to channels to determine if diver investigations were needed. A total of 4 contacts were addressed by star pattern reduced line spacing development. A total of 21 contacts were deemed insignificant to warrant further investigation. All areas surveyed were track line/swath line plotted to insure complete coverage. Additional information can be found in the <sup>\*</sup>Survey Separates.

*\* DATA FILED WITH ORIGINAL FIELD RECORDS*

#### F. SOUNDING EQUIPMENT

An Innerspace model 448 depth sounder, S/N 188, was used to collect all echo soundings on this survey. A standard lead line calibrated in meters, S/N 1210, was used during this survey for comparison with the echo sounder. No problems were encountered with any of the sounding equipment.

G. CORRECTIONS TO ECHO SOUNDINGS

Correctors for the velocity of sound through water were determined from the casts listed in the following table:

<u>Cast No.</u>	<u>Table No.</u>	<u>Deepest * Depth(m)</u>	<u>Applicable DN(s)</u>	<u>Cast Position</u>	<u>Day Taken</u>
1	1	15.0	300-302	32°58'30"N 079°54'30"W	301
2	2	15.1	335-344	32°57'18"N 079°55'07"W	335

\*extended depth after processing

The instrument used for determining corrections for the speed of sound through the water column was a Seabird-Seacat velocity profiler, model 19-03, S/N 198671-1477. The manufacturer calibrated this unit on January 6, 1998. Data quality assurance tests were performed after each cast. Program VELOCITY was used for computing the correctors. Corrections were applied to the sounding plot using the HPS REAPPLY program. Copies of the velocity tables and support documentation are in the Survey Separates.

The lead line for launch 1210 was calibrated using a steel tape on January 6, 1997. No corrections were necessary. A copy of the calibration form is in the Survey Separates. A static draft of 0.5 meter was applied to the final sounding plot by the HPS REAPPLY program. The draft was measured by subtracting the difference from a punch mark on the side of launch 1210, 0.6 meter above the transducer, to the water surface.

Settlement and squat measurements for launch 1210 were taken on September 23, 1997 (DN: 266). These measurements were conducted in the Cooper River, Charleston, SC using the level method. The data from this test is included in the Survey Separates. Settlement and squat correctors were applied to the final sounding plot using the HPS REAPPLY program.

Field tide reduction of soundings is based on unverified actual heights from the internet (<http://www.opsd.nos.noaa.gov/ftp/pwldata.html>) from 866-5530, Charleston, SC. Correctors for three tidal zones were used on this survey as designated by the Project Instructions. The zones were exported to HPS by HPS tools and applied by DPAS tides utilities

All elevations and soundings on this survey are based on MLLW unless otherwise specified.

Approved tide levels were requested from the Chief, Requirements and Engineering Branch, N/CS41, in a letter dated December 23, 1998. A copy is appended to this report. *APPROVED TIDES AND ZONING HAVE BEEN APPLIED DURING OFFICE PROCESSING.*

All tides gauges required for this survey were NGWLMS gauges installed by Atlantic Hydrographic Party and Atlantic Operations Section personnel.

*\* DATA FILED WITH ORIGINAL FIELD RECORDS*

H. CONTROL STATIONS

The horizontal control datum for this project is the North American Datum (NAD) of 1983. The control reference station used for this survey was the USCG DGPS Charleston beacon (Station ID #808), located at 32°45.45357'N, 079°50.57225'W.

I. HYDROGRAPHIC POSITION CONTROL

Differential GPS (DGPS) was used for all hydrographic data acquired on this survey. A Starlink DGPS Beacon Receiver (S/N 795) and antenna (S/N 4132) were used as the remote station on launch 1210.

DGPS performance checks were conducted in accordance with FPM 3.4.4 by comparing the DGPS position of the vessel to the position of the following calibration point:

Opening / Closing: Mt. Pleasant Rear Range Lt. 32°45.45357'N 079°50.57225'W

To obtain a performance check, the launch was brought alongside the checkpoint and the easting, northing, number of SVs, HDOP, and time of observation were noted on the echogram. These values were then entered into an Excel spreadsheet which computes the acceptable error margin (based on the HDOP) and also the observed difference between the known and observed position. The table of these comparisons is included in the <sup>\*</sup>Survey Separates. All of the observed differences fell well within the allowable limit.

J. SHORELINE *SEE ALSO THE EVALUATION REPORT*

There was no photogrammetric source data for this project.

K. CROSSLINES

A total of 3.6 linear nautical miles of crosslines were run. Crossline soundings agree with the main scheme soundings within 0.2 meter. The only exceptions were some 0.3 meter differences caused by weather influence on the tides. The application of smooth tides will create a closer agreement in sounding comparison.

L. JUNCTIONS *SEE ALSO THE EVALUATION REPORT*

This survey junctions with the following:

<u>Survey No.</u>	<u>Year</u>	<u>Scale</u>	<u>Junction Area</u>
H-10842	1998	1:5,000	<del>Southern edge</del> NORTH

*\* DATA FILED WITH ORIGINAL FIELD RECORDS*

Junction soundings and soundings from this survey are in close agreement, with differences of 0.2 meters or less, except where noted in Section "O" of this report.

M. COMPARISON WITH PRIOR SURVEYS

See the Atlantic Hydrographic Branch's "Evaluation Report for H-10856".

N. ITEM INVESTIGATION REPORTS

There were no AWOIS items assigned to H-10856.

O. COMPARISON WITH THE CHART *SEE ALSO THE EVALUATION REPORT*

Comparison was made with the following charts:

<u>Chart No.</u>	<u>Source Edition</u>	<u>Raster Edition</u>	<u>Edition Date</u>
11521	24 <sup>th</sup> ED	04	Dec. 13, 1997
115237	15 18 <sup>th</sup> ED	03	<del>Sept. 20, 1997</del> <i>AUGUST 9, 1997</i>
11524	43rd ED	03	Nov. 1, 1997

There were no Dangers to Navigation found within the confines of H-10856.

In general the soundings from this survey do not agree with the charted soundings. The majority of survey soundings are five to ten feet deeper. Survey soundings were acquired at twenty-meter line spacing. All survey soundings from H-10856 should supersede those currently charted in the common area.

- The pipe charted at 32°58'13" N, 079°55'29" W, does not exist. It was disproved by 200% SSS and should be deleted from the chart. *CONCUR*
- The charted 18-foot shoal at 32°57'41" N, 079°55'02" W, has receded and is now located at 32°57'47.6" N, 079°55'03.9" W. The chart should be updated in this area. *CONCUR*  
*48.1                      04.1*
- The charted 18-foot sounding at 32°57'38" N, 079°55'02" W, does not exist; disproved by reduced line spacing development. The soundings in this area are now 41 foot. This area should be updated with soundings from this survey. *CONCUR*
- The charted 29-foot sounding at 32°56'58" N, 079°55'45" W, does not exist; disproved by reduced line spacing development. The soundings in this region are now 38 foot. This area should be updated with soundings from this survey. *CONCUR*

P. ADEQUACY OF SURVEY    *SEE ALSO THE EVALUATION REPORT*

This is a complete field examination survey of the area required by the Project Instructions and is adequate to supersede all prior surveys within the common area.

Q. AIDS TO NAVIGATION    *SEE ALSO THE EVALUATION REPORT*

There are 17 non-floating aids, and one floating aid to navigation that are maintained by the U.S. Coast Guard that lie within the survey area. Positions of these aids were determined by DGPS during hydrographic operations and are included in the hydrographic records.

During a comparison of the surveyed and charted positions of the non-floating aids, two of the seventeen were found off their currently charted position. They are:

Name	Survey Position	Bearing/Distance
Cooper River Light 88 (LL # 3140)	32°58'05.25"N, 079°55'33.20"W	262° /62 meters
Cooper River Light 93 (LL # 3160)	32°58'26.64"N, 079°55'10.37"W	53° /53 meters

There were three non-floating aids to navigation positioned during this survey that are not charted. They are:

Cooper River Light 92 (No LL number)	32°58'21.36"N, 079°55'26.14"W
Cooper River Daybeacon 90 (LL# 3153)	32°58'15.36"N, 079°55'35.22"W
Cooper River Daybeacon 88A (No LL number)	32°58'08.70"N, 079°55'35.19"W

These aids are also listed on the included NOAA Form 76-40 in the appendix of this report. There are no overhead power cables or submerged pipelines within the survey area. *CONCUR*

All currently charted ranges serve their intended purpose.

*LIGHTS, DAYBEACONS AND BUOY*



R. STATISTICS

<u>Description</u>	<u>Quantity</u>
Total Number of Positions	1718
Total Linear Nautical Miles of Hydrography	5.0
Total Linear Nautical Miles of Cross Lines	4.0
Total Linear Nautical Miles of (SSS) Hydrography	27
Square Nautical Completed	2
Days of Production	7
Detached Positions	32
Bottom Samples	10
Velocity Casts	2

S. MISCELLANEOUS *SEE ALSO THE EVALUATION REPORT*

Bottom samples were taken and submitted to the Smithsonian Institution as directed in Section 6.7 of the Project Instructions.

Secchi disk observations were not acquired on this survey due to the continually poor water clarity.

The flood and ebb tidal currents were observed at two to three knots within the survey limits.

There are no submerged cable areas, or overhead power cables within the limits of this survey.


T. RECOMMENDATIONS ~~*SEE ALSO THE EVALUATION REPORT*~~

No additional fieldwork was identified after field processing was completed. Specific recommendations are made in section O and P of this report.

U. REFERRAL TO REPORTS

There are no reports referred to that are not submitted with this report.

Submitted by:

  
David B. Elliott  
Atlantic Hydrographic Party



RESPONSIBLE PERSONNEL		
TYPE OF ACTION	NAME	ORIGINATOR
OBJECTS INSPECTED FROM SEAWARD	<i>Paul B. Cluett NOAA-AHP</i>	<input type="checkbox"/> PHOTO FIELD PARTY
POSITIONS DETERMINED AND/OR VERIFIED		<input checked="" type="checkbox"/> HYDROGRAPHIC PARTY
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		<input type="checkbox"/> GEODETTIC PARTY <input type="checkbox"/> OTHER (Specify)
		FIELD ACTIVITY REPRESENTATIVE
		OFFICE ACTIVITY REPRESENTATIVE
		<input type="checkbox"/> REVIEWER
		<input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'

(Consult Photogrammetric Instructions No. 64,

OFFICE

I. OFFICE IDENTIFIED AND LOCATED OBJECTS

Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object.

EXAMPLE: 75E(C)6042  
8-12-75

FIELD

I. NEW POSITION DETERMINED OR VERIFIED

Enter the applicable data by symbols as follows:

F - Field	P - Photogrammetric
L - Located	Vis - Visually
V - Verified	
1 - Triangulation	5 - Field identified
2 - Traverse	6 - Theodolite
3 - Intersection	7 - Planetable
4 - Resection	8 - Sextant

A. Field positions\* require entry of method of location and date of field work.

EXAMPLE: F-2-6-L  
8-12-75

\*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

FIELD (Cont'd)

B. Photogrammetric field positions\*\* require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.

EXAMPLE: P-8-V  
8-12-75  
74L(C)2982

II. TRIANGULATION STATION RECOVERED

When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery.

EXAMPLE: Triang. Rec.  
8-12-75

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH

Enter 'V-Vis.' and date.

EXAMPLE: V-Vis.  
8-12-75

\*\*PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

32°47'04.84831  
079°53'40.49917

CJ0887 DESIGNATION - MT PLEASANT RANGE REAR LT  
 CJ0887 PID - CJ0887  
 CJ0887 STATE/COUNTY- SC/CHARLESTON  
 CJ0887 USGS QUAD - CHARLESTON (1979)  
 CJ0887  
 CJ0887  
 CJ0887 \*CURRENT SURVEY

E. 15507.442  
N. 14935.660

CJ0887\* NAD 83 (1986) - 32 47 04.84831(N) 079 53 40.49917(W)  
 ADJUSTED  
 CJ0887\* NAVD 88 -  
 CJ0887

CJ0887 LAPLACE CORR- -2.87 (seconds)  
 DEFLEC96  
 CJ0887 GEOID HEIGHT- -33.19 (meters)  
 GEOID96  
 CJ0887  
 CJ0887 HORZ ORDER - THIRD



ILLEGIBLE ON ORIGINAL

CJ0887. The North Carolina/South Carolina HARNs have been completed but, due to contractual restrictions, coordinates for these stations will NOT be published in the near future. In the interim, the published coordinates in North and South Carolina will not be consistent with the Continuously Operating Reference Stations (CORS). The HARN coordinates for these stations are available upon request. Contact Gary Thompson (919-333-3836), or Sid Miller (803-896-7700)

CJ0887. In addition, the published North and South Carolina positions (NAD 83 (1986)) are NOT consistent with those determined in adjacent state readjustments. The discontinuity between stations located in North or South Carolina and those in adjacent states which have been adjusted to the HARN may be as much as 5 decimeters. This will result in a significant loss of accuracy over lines crossing such state borders.

CJ0887. The horizontal coordinates were established by classical geodetic methods and adjusted by the National Geodetic Survey in July 1986.

CJ0887. The Laplace correction was computed from DEFLEC96 derived reflections.

CJ0887. The geoid height was determined by GEOID96.

LIGHT ON ORIGINAL

	North	East	Units	Scale
CJ0887; SPC SC	347,964.56	2,339,710.82	FT	0.99991188 +0
CJ0887; SPC SC	106,059.599	713,143.858	MT	0.99991188 +0
CJ0887; UTM 17	3,627,957.724	603,516.213	MT	0.99973213 +0



SUPERSEDED SURVEY CONTROL

CJ0887 NAD 27 - 32 47 04.21567(N) 079 53 41.18431(W)

**APPROVAL SHEET**  
**Basic Hydrographic Survey**  
**OPR-G301-AHP**  
**AHP-5-4-98**  
**H-10856**  
**1998**

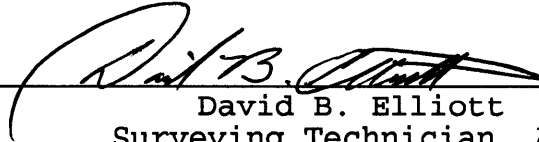
This basic hydrographic survey was completed in accordance with the Project Instructions for OPR-G301-AHP, the Hydrographic Manual, the Hydrographic Survey Guidelines, and the Field Procedures Manual. All reports, records, and survey plots were reviewed by Mr. David B. Elliott, Launch-hydrographer-in-charge of this project. The Descriptive Report was also reviewed by the Chief, AHP. The chief of party did not directly supervise any part of this survey.

This survey is a complete basic hydrographic survey for the area described in Section B of this report.



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Brian A. Link  
Chief, Atlantic Hydrographic Party



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David B. Elliott  
Surveying Technician, AHP



**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL OCEAN SERVICE

**TIDE NOTE FOR HYDROGRAPHIC SURVEY**

**DATE:** February 4, 1999

**HYDROGRAPHIC BRANCH:** Atlantic

**HYDROGRAPHIC PROJECT:** OPR-G301-AHP

**HYDROGRAPHIC SHEET:** H-10856

**LOCALITY:** Charleston, SC - Copper River  
Red Bank Landing to Cote Bas

**TIME PERIOD:** October 27, 1998 - December 10, 1998

**TIDE STATION USED:** 866-5530 Charleston, SC  
Lat. 32° 46.9'N Lon. 79° 55.5'W

**PLANE OF REFERENCE (MEAN LOWER LOW WATER):** 0.000 meters

**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 1.664 meters

**TIDE STATION USED:** 866-4022 General Dynamics, SC  
Lat. 33° 00.5'N Lon. 79° 55.3'W

**PLANE OF REFERENCE (MEAN LOWER LOW WATER):** 0.000 meters

**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 1.396 meters

**REMARKS:** RECOMMENDED ZONING

Use zone(s) identified as: CH11, CH13, CH14 & CH16

Refer to attachments for zoning information.

**Note 1:** Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time.

**Note 2:** Use tide data from the appropriate station with applicable zoning correctors for each zone according to the order in which they are listed in the Tidezone corrector files. For example, tide station one (TS1) would be the first choice for an applicable zone followed by TS2, etc. when data are not available.

*Thomas V. Mero* 2/5/99  
-----  
CHIEF, REQUIREMENTS AND ENGINEERING BRANCH



Final tide zone node point locations for OPR-G301-AHP-98,  
Sheet H-10856.

Format: Longitude in decimal degrees (negative value denotes  
Longitude West),  
Latitude in decimal degrees  
Tide Station (in recommended order of use)  
Average Time Correction (in minutes)  
Range Correction

	Tide Station Order	AVG Time Correction	Range Correction
Zone CH11			
-79.944015 32.933803	866-5530	+54	1.02
-79.93085 32.943067			
-79.933375 32.951191			
-79.922434 32.951191			
-79.909974 32.962648			
-79.899881 32.954863			
-79.887418 32.945869			
-79.925591 32.901413			
-79.935743 32.917608			
-79.944015 32.933803			
Zone CH13			
-79.933375 32.951191	866-4022	-36	1.18
-79.93863 32.965186	866-5530	+54	0.98
-79.911073 32.971677			
-79.910458 32.966827			
-79.909974 32.962648			
-79.922434 32.951191			
-79.933375 32.951191			
Zone CH14			
-79.93863 32.965186	866-4022	-30	1.13
-79.93632 32.970618	866-5530	+66	0.94
-79.927484 32.978741			
-79.90842 32.977234			
-79.911073 32.971677			
-79.93863 32.965186			
Zone CH16			
-79.927484 32.978741	866-4022	-18	1.09
-79.93085 32.990044	866-5530	+78	0.90
-79.921617 32.98969			
-79.903373 32.984364			
-79.90842 32.977234			
-79.927484 32.978741			

GEOGRAPHIC NAMES

H-10856

Name on Survey	<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">A ON CHART NO. 11527</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">B ON PREVIOUS SURVEY NO.</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">C ON U.S. QUADRANGLE MAPS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">D FROM LOCAL INFORMATION</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">E ON LOCAL MAPS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">F P.O. GUIDE OR MAP</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">G RAND McNALLY ATLAS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">H U.S. LIGHT LIST</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">K</div> </div>											
	BIG ISLAND	X		X								
COOPER RIVER	X		X									2
GROVE CREEK	X		X									3
RED BANK LANDING	X		X									4
SOUTH CAROLINA (title)	X		X									5
												6
												7
												8
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~~Report~~

*Dennis J. Rosenberg*  
Chief Geographer  
MAR 9 1999



N/CS 33-35-99

LETTER TRANSMITTING DATA

DATA AS LISTED BELOW WERE FORWARDED TO YOU BY  
(Check):

- ORDINARY MAIL
- AIR MAIL
- REGISTERED MAIL
- EXPRESS
- GBL (Give number) \_\_\_\_\_

TO:

NOAA / National Ocean Service  
 Chief, Data Control Group, N/CS3x1  
 SSMC3, Station 6815  
 1315 East-West Hwy.  
 Silver Spring, MD 20910-3282

DATE FORWARDED

4-30-99

NUMBER OF PACKAGES

ONE TUBE

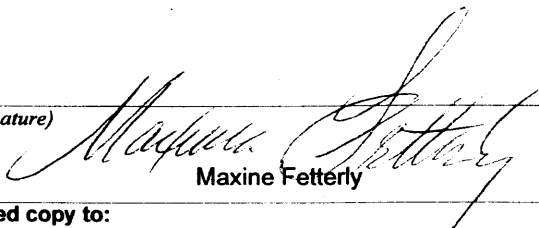
**NOTE:** A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

H10856 OPR-G301-AHP

South Carolina  
Cooper River

- Descriptive Report
- 1 Drawing History form 76-71 for NOS Charts 11527
- 1 Smooth Sheet
- 1 Mylar H-Drawing for NOS Chart 11527
- 1 Paper Composite Plot for NOS Chart 11527

FROM: (Signature)

  
 Maxine Fetterly

RECEIVED THE ABOVE  
(Name, Division, Date)

Return receipted copy to:

Maxine Fetterly  
 Atlantic Hydrographic Branch  
 439 W. York St.  
 Norfolk, VA 23510

04/30/99

HYDROGRAPHIC SURVEY STATISTICS  
REGISTRY NUMBER: H10856

NUMBER OF CONTROL STATIONS		2
NUMBER OF POSITIONS		1718
NUMBER OF SOUNDINGS		1718
	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	3	02/26/99
VERIFICATION OF FIELD DATA	56.50	04/30/99
EVALUATION AND ANALYSIS	6.50	
FINAL INSPECTION	6.50	04/14/99
COMPILATION	34.50	04/30/99
TOTAL TIME	118	
ATLANTIC HYDROGRAPHIC BRANCH APPROVAL		04/16/99

**ATLANTIC HYDROGRAPHIC BRANCH  
EVALUATION REPORT FOR H10856 (1998)**

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

**D. AUTOMATED DATA ACQUISITION AND PROCESSING**

The following software was used to process data at the Atlantic Hydrographic Branch:

Hydrographic Processing System  
NADCON, version 2.10  
MicroStation 95, version 5.05  
SiteWorks, version 2.01  
I/RAS B, version 5.01

The smooth sheet was plotted using an Hewlett Packard DesignJet 2500CP plotter.

**H. CONTROL STATIONS**

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). Office processing of this survey is based on these values. The smooth sheet has been annotated with ticks showing the computed mean shift between the NAD 83 and the North American Datum of 1927 (NAD 27).

To place this survey on the NAD 27, move the projection lines 0.622 seconds (38.348 meters or 3.83 mm at the scale of the survey) north in latitude, and 0.698 seconds (36.274 meters or 3.63 mm at the scale of the survey) east in longitude.

**J. SHORELINE**

Brown shoreline originates with National Ocean Service (NOS) chart 11527, (15<sup>th</sup> Edition, Aug. 9/97), and is for orientation purposes only.

**L. JUNCTIONS****H10842 (1998) to the North**

Standard junctions were effected between the present survey and survey H10842 (1998). There are no junctional surveys to the south. Present survey depths are in harmony with the charted hydrography to the south.

**M. COMPARISON WITH PRIOR SURVEYS**

A comparison with prior surveys was not done during office processing in accordance with section 4. of the memorandum titled "Changes to Hydrographic Survey Processing", dated May 24, 1995.

**O. COMPARISON WITH CHART 11527 (15<sup>th</sup> EDITION, Aug. 9/97)****Hydrography**

The charted hydrography originates with the prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in section O. of the Descriptive Report.

The present survey is adequate to supersede the charted hydrography within the common area.

**P. ADEQUACY OF SURVEY**

This is an adequate hydrographic/side scan sonar survey. No additional work is recommended.

**Q. AIDS TO NAVIGATION**

Seventeen fixed aids, one floating aid, and four private maintained aids were located by the field unit and are shown on the present survey. These aids appear adequate to serve their intended purpose.

**S. MISCELLANEOUS**

Chart compilation was done by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data will be forwarded to the Marine Chart Division, Silver Spring, Maryland.

The following NOS Chart was used for compilation of the present survey: 11527 (15<sup>th</sup> Edition, Aug. 9/97).

H10856

*Robert Snow*

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**Robert Snow**

Cartographic Technician  
Verification of Field Data  
Evaluation and Analysis

APPROVAL SHEET

H10784

H-10856 *WJA*

**Initial Approvals:**

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disapproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

*Maxine Fetterly* Date: 4/14/99  
Maxine Fetterly  
Cartographer  
Atlantic Hydrographic Branch

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

*Andrew L. Beaver* Date: 4/16/99  
Andrew L. Beaver  
Lieutenant Commander  
Chief, Atlantic Hydrographic Branch

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**Final Approval:**

Approved: *Samuel P. DeBow, Jr.* Date: May 7, 1999  
Samuel P. DeBow, Jr.  
Commander, NOAA  
Chief, Hydrographic Surveys Division







