

H10863

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Side Scan Sonar

Field No. AHP-05-03-99

Registry No. H10863

LOCALITY

State South Carolina

General Locality Cooper River

Locality Drum Island To Daniel Island Bend

1999

CHIEF OF PARTY
BRIAN LINK, OIC

LIBRARY & ARCHIVES

DATE

September 20, 2001

HYDROGRAPHIC TITLE SHEET

H10863

~~OPR-G301-AHP-05-03-99~~

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.

AHP-5-3-99

~~H-10863-Sheet "I"~~

State South Carolina

General locality Cooper River

Locality Drum Island to Daniel Island Bend

Scale 1:5,000

Date of survey May 24, 1999 to July 15 1999

dated 3-19-97

Project No. OPR-G301-AHP

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 DBE, RWR, PMW **

Graphic record checked by DBE, RWR, PMW **

Protracted by N/A

Automated plot by HP Design Jet 2500CP
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~~

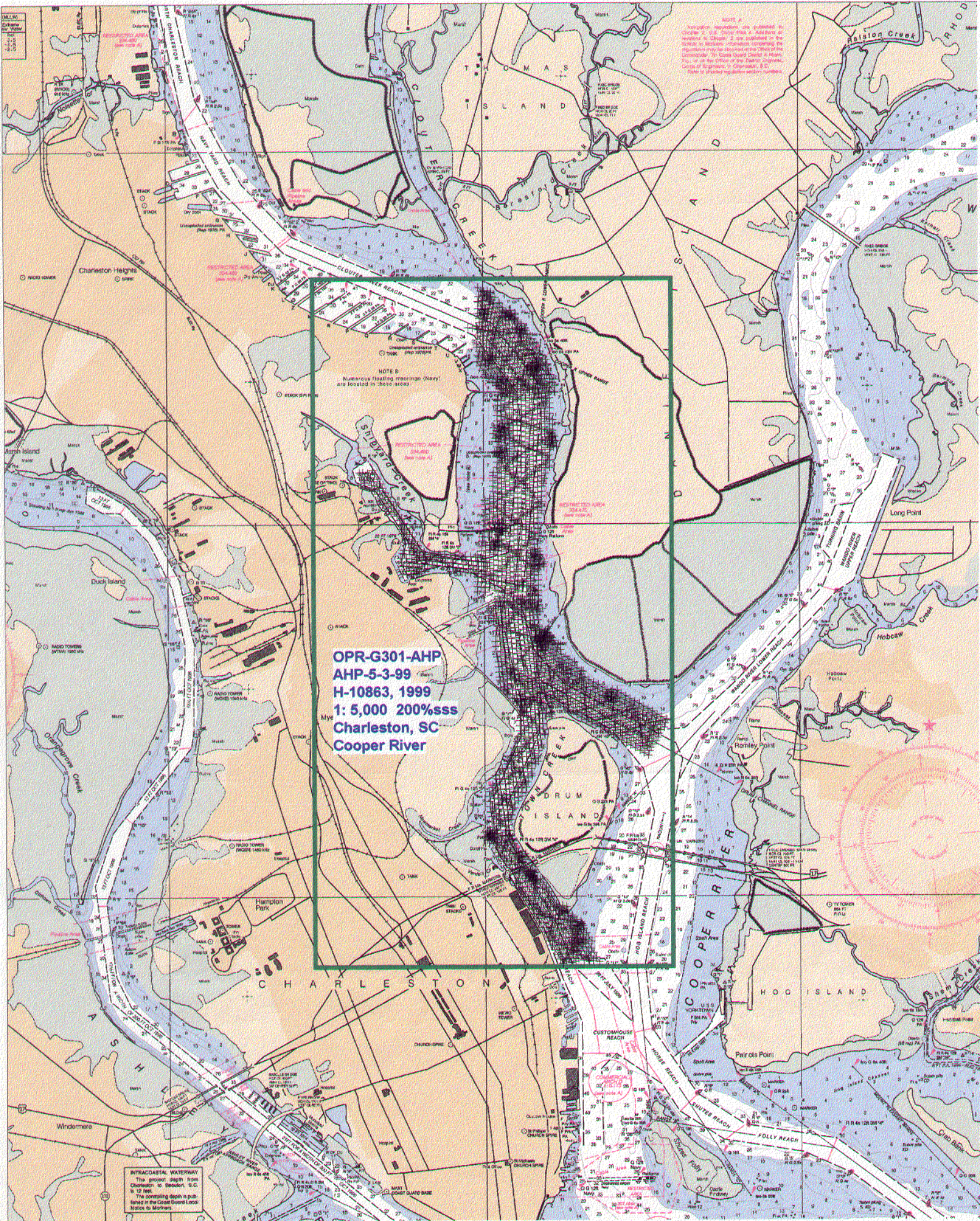
REMARKS

* Change No. 1 dated April 9, 1998 and Change No. 2 dated August 18, 1998

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

Hand written notes in the Descriptive Report were made during office processing

AWOIS ✓ & SURF ✓ 6-22-01 by NRBH



NOTES:
1. Navigation information on published in Chapter 2 of the "Coast Pilot" 4. Addition or
modification of Charted 2. See supplement to the
chart in "Notice to Mariners" for information concerning the
modification of the charted information. The Coast Guard District in Miami,
FL, or at the Office of the District Engineer,
Charleston, S.C., for information on
Charted 2. See supplement to the
chart in "Notice to Mariners" for information concerning the
modification of the charted information.

OPR-G301-AHP
AHP-5-3-99
H-10863, 1999
1: 5,000 200%SSS
Charleston, SC
Cooper River

NOTE B
Numerous floating moorings (Navy)
are located in these areas

INTRACOASTAL WATERWAY
The project depth from
Charleston to Beaufort, S.C.,
is 27 feet.
The controlling depth is published in the Coast Guard Light
House to Mariners.

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-10863
OPR-G301-AHP
FIELD NO. AHP-5-3-99
SCALE: 1: 5,000
1999
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, Change No.1 dated April 9, 1998, and Change No. 2 dated August 18, 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, Daniel Island Bend to Goose 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 "I." The approximate survey limits are:

North - 32°51'18"N
South - 32°47'37"N
East - 079°54'48"W
West - 079°57'07"W

This survey was conducted from May 24, 1999 (DN: 144) through July 15, 1999 (DN: 196).

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 Evaluation Report*

HYPACK version 7.1A was used for on-line data acquisition. The 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 program 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.

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 145 contacts were entered into the contact table. There were 33 contacts addressed by star pattern reduced line spacing development. A total of 112 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 Survey Separates. *

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.

* Data filed with original field records

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	18.8	144	32°48'30"N	079°55'35"W	138
2	2	19.2	154-159	32°51'06"N	079°55'54"W	154
3	3	17.2	rejected	32°56'48"N	079°55'36"W	159
4	4	17.5	160-165	32°49'30"N	079°55'48"W	165
5	5	17.1	187-189	32°49'12"N	079°55'30"W	187
6	6	17.6	194-196	32°48'12"N	079°55'54"W	194

*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 October 23, 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 tides internet site (<http://www.opsd.nos.noaa.gov/ftp/pwldata.html>) for 866-5530, Charleston, SC. Correctors for three tidal zones on this survey were used as designated by the Project Instructions. The zones were exported to HPS by HPS tools and applied by the 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 August 4, 1999. A copy is appended to this report.

* Data filed with original field records

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

Approved tides & zoning were applied during office processing

H. CONTROL STATIONS *See Also Evaluation Report*

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 Survey Separates. *All of the observed differences fell well within the allowable limit.

J. SHORELINE *See Also Evaluation Report*

There was no photogrammetric source data for this project.

K. CROSSLINES

A total of 13.7 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.

** Data filed with original field records*

L. JUNCTIONS *See Also Evaluation Report*

This survey junctions with the following:

<u>Survey No.</u>	<u>Year</u>	<u>Scale</u>	<u>Junction Area</u>
H-10858	1999	1:5,000	Southern edge
H-10784	1997	1:10,000	Northwestern edge

Junction soundings and soundings from this survey are in close agreement with survey H-10863, and H-10784 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-10863".

N. ITEM INVESTIGATION REPORTS

There were three AWOIS items assigned to H-10863.

AWOIS 7614 – Obstruction 32°49'55.83"N 079°55'41.31"W Chart: 11524

see also section "O"

H9731/78--OPR-G302-HFP77 - While investigating charted ruins by wire drag, an unknown obstruction was snagged and a 16-foot least depth acquired by fathometer. On BP144196--USACE 1991 after dredge survey, the compiler removed this obstruction based on the USACE survey. The USACE survey did not provide sufficient coverage for disproval.

This geographic region was covered with 200% side scan sonar. The result of this search was *concur* negative. The hydrographer recommends removing the submerged obstruction from the chart. *w/conditions*
This feature was not shown on subsequent editions of the chart

AWOIS 7615 – Obstruction 32°49'59.38"N 079°55'37.81"W Chart: 11524
see also section "O" of this report

H9731/78--OPR-G302-HFP77 - An obstruction uncovering by 2 foot at MLW is charted at this position but no description was given.

This geographic region was covered with 200% side scan sonar. The result of this search was *Do not* negative. The hydrographer recommends removing the submerged obstruction from the chart. *concur*
Retain as charted - see section "O" of the Evaluation Report

AWOIS 7618 – Obstruction 32°50'27.00"N 079°55'51.00"W Chart: 11524
see also section "O"

BP94768/75—USN - The Charleston Naval shipyard blueprint shows an area where two mark 47 depth bombs were submerged on 11/20/43. The area extends 60 meters either side of an axis running SE-NW from the charted position.

This geographic region was covered with 200% side scan sonar. This search found eleven contacts within and adjacent to the targeted area. Only four of these contacts were deemed significant enough to warrant further investigation. These four contacts were developed with single beam echo soundings. No dives were conducted in these areas. Members of the U.S. Navy and EOD were briefed by AHP on our findings. The U.S. Navy was undecided on whether to conduct further investigations. The point of contact is John A. Cordray Jr., the Facilities Engineer, Caretaker Site Office at (843) 743-9985 ext. 22. The hydrographer recommends charting the "unexploded ordinance PA" note on the chart. The U.S. Navy was advised to contact the NOAA Marine charting branch in the event the ordinance is located and removed.

No change in charting

Concur

O. COMPARISON WITH THE CHART *See Also 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>
11524	43rd ED	03	Nov. 1, 1997

One feature, discussed in this section, was included in a Danger to Navigation letter dated August 6, 1999 and sent to the USCG Seventh District. A copy of the letter is included in the Descriptive Report Appendices.

- Survey soundings are generally 5 feet deeper throughout this survey area than currently charted soundings.
- All depth curves have receded shoreward throughout the survey.
- The charted pile at 32°50'53.7"N, 079°55'40.8"W, does not exist and was disproved by 200 % side scan sonar. The hydrographer recommends it be removed from the chart. *Concur Delete pile*
- The charted unexploded ordinance area at 32°50'26.8"N, 079°55'51.3"W, showed side scan sonar contacts within and adjacent to the area as described in AWOIS 7618. This region *Concur* should remain as charted. *See also section "N"*
- The charted pile at 32°50'02.3"N, 079°55'59.1"W, was verified by side scan sonar as lying flat on the bottom. The side scan contact number was 543.s4. The charted pile symbol should be removed from the chart. The hydrographer does not recommend charting a submerged pile as this feature poses no danger to navigation due to its position. *Concur Delete pile*
- The two charted piles in the vicinity of 32°50'00.4"N, 079°55'55.6"W, do not exist and were disproved by 200 % side scan sonar. The hydrographer recommends removing these piles *Concur* from the chart. *Delete pile*

- The charted pile at 32°49'55.9"N, 079°55'55.2"W, does not exist and was disproved by 200 % side scan sonar. The hydrographer recommends removal from the chart. *Concur*
- The charted sign 32°49'54.7"N, 079°55'57.0"W, does not exist and was disproved by 200 % side scan sonar. The hydrographer recommends removal from the chart. *Concur*
- The charted pile at 32°49'49.1"N, 079°56'08.8"W, does not exist and was disproved by 200 % side scan sonar. The hydrographer recommends removal from the chart. *Concur*
- The degaussing range note at 32°50'00.0"N, 079°55'52.7"W, should be removed from the chart as this range no longer exists. The charted features associated with this degaussing range also no longer exist and should be removed from the chart. *Concur* *Degaussing structure exists as submerged feature*
- The charted Navy Platform and light (AWOIS 7614) at 32°49'55.5"N, 079°55'42.4"W, do not exist and were disproved by 200 % side scan sonar. The hydrographer recommends removal from the chart. *Concur* *9-20-01*
- The charted obstruction (AWOIS 7615) at 32°49'59.4"N, 079°55'38.0"W, does not exist and was disproved by 200 % side scan sonar. The hydrographer recommends removal from the chart. *see also section "N" of this report* *38* *37.81* *Do Not Concur* *see section "O" in the Evaluation Report*
- The charted pile at 32°49'55.1"N, 079°55'37.1"W, does not exist and was disproved by 200 % side scan sonar. The hydrographer recommends removal from the chart. *See section O. of the Evaluation Report* *Do Not Concur*
- The charted dike at 32°49'26.3"N, 079°55'35.2"W, was supposed to have been completely removed by USACOE contractors, but submerged debris was located with 200% side scan sonar of the area. This feature was submitted as a danger to navigation. A copy is appended to this report. The hydrographer recommends charting the dike as submerged for the full length to shore until further information is obtained from the USACOE. There is a forthcoming contract for widening the channel at this position and establishing a new USCG navigational aid. *Concur*
- The charted submerged pile at 32°48'53.7"N, 079°55'36.9"W, does not exist and was disproved by 200 % side scan sonar. The hydrographer recommends removal from the chart. *See section O. of The Evaluation Report.* *Do Not Concur*
- The charted barge ruins at 32°48'24.0"N, 079°55'59.0"W, do not exist and were disproved by 200 % side scan sonar. The hydrographer recommends removal from the chart. This feature appears to be charted at the terminus of an old railroad platform near the shoreline. A barge does exist at 32°48'19.6"N, 079°55'58.4"W, being visible at MLLW. The hydrographer recommends charting a wreck symbol on the chart at the survey position above. *see section O. of the Evaluation Report* *Concur w/ clarification*
- The charted 9-foot sounding at 32°47'45.4"N, 079°55'22.6"W, does not exist and was disproved by 200 % side scan sonar during H-10784. The hydrographer recommends removal from the chart. *Concur w/ conditions*
This depth was not shown on subsequent editions of the chart

The following list of positions are items that have been visually identified by the hydrographer. Most of these objects are outside of the survey limits and this visual identification is to assist the verifier in chart compilation. The investigations, although visual, were conducted at low tide and are quite thorough for charting or removal. The charted position is given on the center of items that are in clusters. These features are also listed on the raster image of the chart. The disposition of a particular item is noted as "exist" or "does not exist" in the table below under chart or remove.

Item	Charted Position	Chart / Remove
Piles (3)	32°51'11.0" N, 079°55'44.4" W	exist
Piles (3)	32°51'07.8" N, 079°55'41.1" W	exist
Piles (3)	32°51'02.5" N, 079°55'38.1" W	exist
Piles (3)	32°50'57.6" N, 079°55'36.4" W	exist
Pile	32°50'54.4" N, 079°55'34.2" W	exist
Pile	32°50'50.9" N, 079°55'33.1" W	exist
Piles (2)	32°50'43.5" N, 079°55'29.1" W	exist
Dol	32°50'45.9" N, 079°56'00.1" W	exist
Pile	32°50'32.6" N, 079°55'29.9" W	exist
Dols (5)	32°49'58.8" N, 079°56'27.2" W	exist
Piles (4)	32°50'01.8" N, 079°56'28.6" W	exist
Visible Wreck	32°50'01.8" N, 079°56'28.6" W	exist - <i>AW015#7616</i>
Visible Wreck	32°50'19.2" N, 079°56'47.8" W	exist - <i>AW015#7617</i>
Dols (8)	32°50'06.7" N, 079°56'39.6" W	exist
Dols (5)	32°49'55.9" N, 079°56'31.0" W	exist
Dols (4)	32°49'43.5" N, 079°56'25.9" W	exist
Dols (2)	32°49'44.1" N, 079°56'12.0" W	exist
Foul Area	32°49'42.8" N, 079°56'26.7" W	exist
Dols (4)	32°49'38.7" N, 079°55'57.9" W	exist
Dols (7)	32°49'31.8" N, 079°55'58.2" W	exist
Dols (3)	32°48'49.6" N, 079°55'49.2" W	exist
Foul Area	32°48'46.0" N, 079°55'49.9" W	exist
Piles (5)	32°48'31.6" N, 079°56'00.0" W	exist
Piles (4)	32°48'23.7" N, 079°56'00.0" W	exist
Foul Area	32°48'19.2" N, 079°55'58.9" W	exist
Foul Area	32°48'12.5" N, 079°55'57.0" W	exist
Foul Area	32°48'12.6" N, 079°55'44.1" W	exist
Foul Area	32°48'08.8" N, 079°55'40.9" W	exist
Dols (10)	32°48'12.8" N, 079°55'56.1" W	exist

P. ADEQUACY OF SURVEY *See Also Evaluation Report*

This is a complete basic hydrographic 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 Evaluation Report*

There are twelve non-floating aids and four floating aids to navigation, 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.

Except for the aid listed below, all non-floating aids agree with the charted positions.

Name	LL No.	Survey Position	Bearing/Distance (from charted location)
Cooper River Upper Range (Front)	2795	32°50'54.77"N, 079°55'39.26"W	113°/ 66 meters

Note:

Dike Lt. "46A" 2745 Has been removed.

- All currently charted ranges serve their intended purpose. *Conic*
- There are no overhead power cables within the limits of H-10863. ✓
- There are two submerged cable areas at 32°50'00.0"N, 079°55'50.0"W, and 32°47'41.0"N, 079°55'18.4"W.
- There are two submerged pipeline areas at 32°49'40.2"N, 079°55'44.7"W, and 32°49'24.9"N, 079°55'59.2"W.

R. STATISTICS

<u>Description</u>	<u>Quantity</u>
Total Number of Positions	3208
Total Linear Nautical Miles of Hydrography	9.2
Total Linear Nautical Miles of Cross Lines	13.6
Total Linear Nautical Miles of (SSS) Hydrography	53.8
Square Nautical Completed	2.0
Days of Production	10
Detached Positions	18
Bottom Samples	13
Velocity Casts	6

S. MISCELLANEOUS *See Also Evaluation Report*

Bottom samples were taken and submitted 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 visually observed at two to three knots within the survey limits.

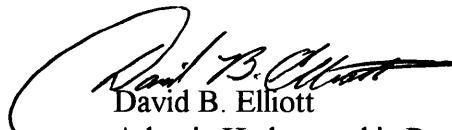
T. RECOMMENDATIONS

No additional fieldwork was identified after field processing was completed. Specific recommendations are made in section N and O 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

APPROVAL SHEET
Basic Hydrographic Survey
OPR-G301-AHP
AHP-5-3-99
H-10863
1999

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.



Brian A. Link
Chief, Atlantic Hydrographic Party



David B. Elliott
Surveying Technician, AHP

32°47'04.84831
079°53'40.49917

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

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

CJ0887

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

CJ0887.

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

CJ0887.

CJ0887

CJ0887. The horizontal coordinates were established by classical geodetic methods

CJ0887 and adjusted by the National Geodetic Survey in July 1986.

CJ0887

CJ0887

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

CJ0887

CJ0887. The geoid height was determined by GEOID96.

CJ0887

CJ0887;

	North	East	Units	Scale
Converg.				
CJ0887; SPC SC	- 347,964.56	2,339,710.82	IFT	0.99991188 +0
36 46.2				
CJ0887; SPC SC	- 106,059.599	713,143.813	MT	0.99991188 +0
36 46.2				
CJ0887; UTM 17	- 3,627,957.724	603,516.213	MT	0.99973213 +0
35 55.0				

CJ0887

CJ0887

CJ0887

CJ0887 NAD 27 - 32 47 04.21567(N) 079 53 41.19421(W)

SUPERSEDED SURVEY CONTROL

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	ORIGINATOR <input type="checkbox"/> PHOTO FIELD PARTY <input type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
POSITIONS DETERMINED AND/OR VERIFIED	FIELD ACTIVITY REPRESENTATIVE ↑
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	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 (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
FIELD I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection 5 - Field identified 6 - Theodolite 7 - Planetable 8 - Sextant A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75	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.
*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.	**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE, Office of Coast Survey
Atlantic Hydrographic Branch
439 W. York Street
Norfolk, VA 23510-1114

August 6, 1999

Commander (oan)
Seventh Coast Guard District
Brickell Plaza Federal Building
909 SE First Avenue
Miami, Florida 33131

Dear Sir:

This letter is a follow-up to a conversation on July 16th between Mr. David Elliott of NOAA Atlantic Hydrographic Party and Chief Fulcher from the U.S. Coast Guard Aids to Navigation (ATON) team, Charleston, SC (telephone 843-720-7709), concerning the danger to navigation created by the partial removal of a charted dike in Latitude 32°49'22.97"N, Longitude 79°55'37.97"W. In addition to removing the dike, charted light "46A" was recently removed after the contractor hired by the U. S. Army Corps of Engineers (USACE) to remove the dike, apparently completed the task.

While conducting hydrographic survey H10863 (1999) for project OPR-G301, Cooper River, SC, from Drum Island to Daniel Island Bend, evidence of the dike was seen on side scan sonar records. Echo sounder development found the following soundings in this area currently charted with depths of 16 to 23 feet:

<u>Depth (ft)</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
6	32°49'23.27"	79°55'37.29"
7	32°49'22.97"	79°55'37.97"
9	32°49'22.23"	79°55'38.33"

Chief Fulcher said the USCG would place a temporary buoy at this site. Mr. Robert Chappel, of the USACE (telephone 843-727-4759) has also be informed of this situation, The positions are based on North American Datum of 1983 (NAD 83) and the depths have been reduced to Mean Lower Low Water (MLLW) using unverified actual tides. These features were located using Differential GPS. It is recommended that this information be included in the Local Notice to Mariners. This information affects the following charts:

CHART
11524

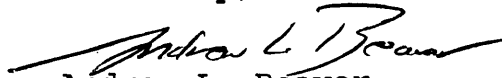
EDITION
42nd

DATE
Nov. 9/96



This is advance information which is subject to office review. A chart section, showing the location of these dangers, is attached. Questions concerning this report should be directed to LCDR Andrew L. Beaver, Chief, Atlantic Hydrographic Branch at (757) 441-6746.

Sincerely,



Andrew L. Beaver
LCDR, NOAA
Chief, Atlantic Hydrographic Branch

Attachment

cc: USACE - Chappel
N/CS26 ✓
N/CS33
NIMA/NMD/STD44 ✓

ADVANCE INFORMATION
SUBJECT TO OFFICER REVIEW

32°49'30"N

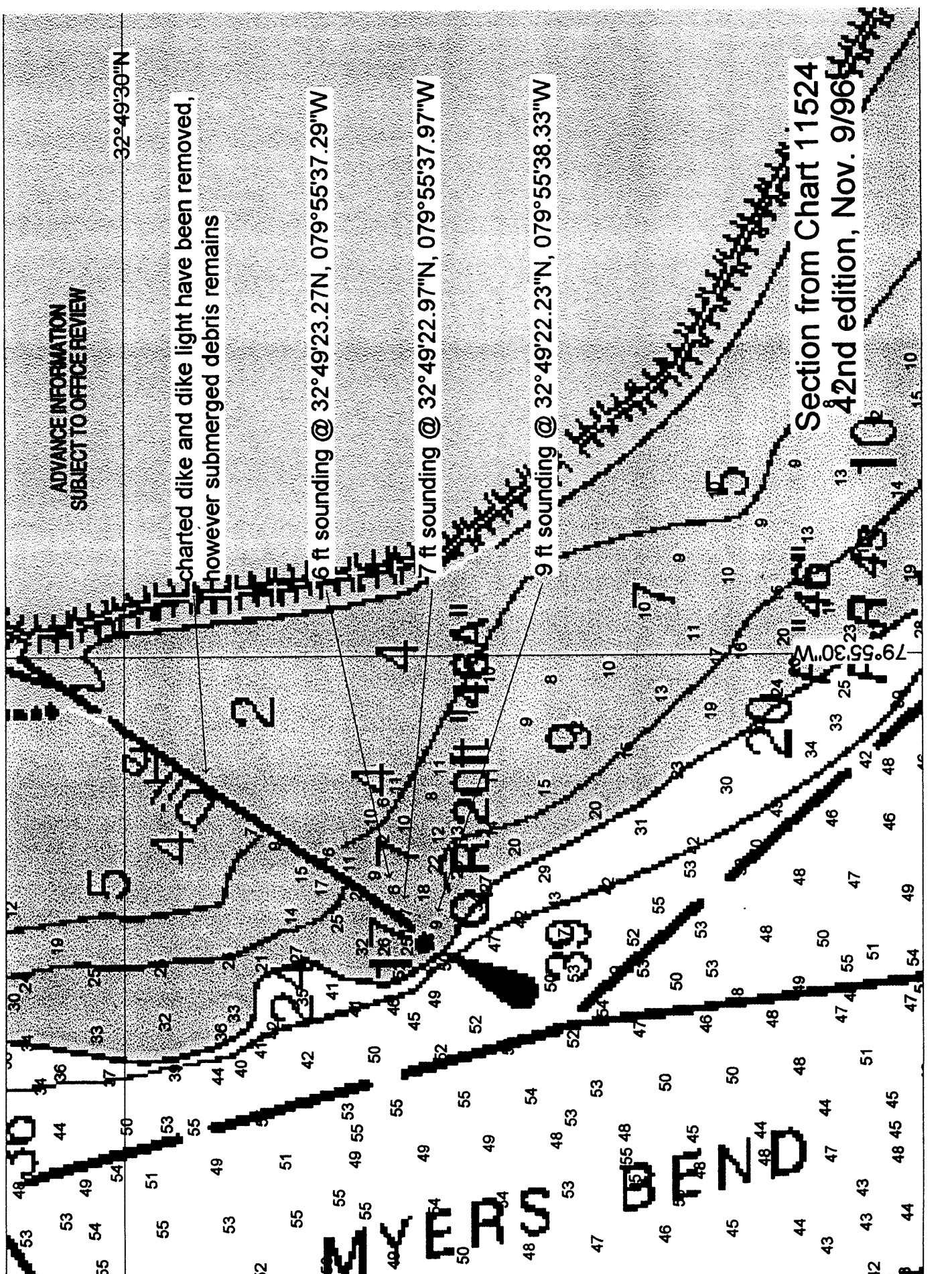
charted dike and dike light have been removed,
however submerged debris remains

6 ft sounding @ 32°49'23.27"N, 079°55'37.29"W

7 ft sounding @ 32°49'22.97"N, 079°55'37.97"W

9 ft sounding @ 32°49'22.23"N, 079°55'38.33"W

Section from Chart 11524
42nd edition, Nov. 9/96



V. TIDES AND WATER LEVELS



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: November 10, 1999

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-G301-AHP
HYDROGRAPHIC SHEET: H-10863

LOCALITY: Charleston, SC - Cooper River
Drum Island to Daniel Island Bend

TIME PERIOD: May 24, 1999 - July 15, 1999

TIDE STATION USED: 866-4662 Army Depot, SC
Lat. 32° 54.6'N Lon. 79° 57.0'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.722 meters

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

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: CH7, CH30 & CH31.

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 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. All zones within a survey sheet may not have the same order of applicable tide stations.

Thomas A. Mero 11/10/90

CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION



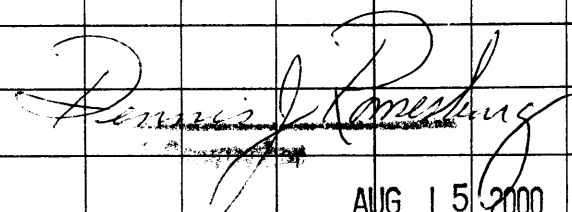
*Batch
3/3/00*

IV. GEOGRAPHIC NAMES

GEOGRAPHIC NAMES

H-10863

Name on Survey	<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">A ON CHART NO. 11524</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>										
	CHARLESTON	X		X							
COOPER RIVER	X		X								2
DANIEL ISLAND	X		X								3
DANIEL ISLAND BEND	X		X								4
DANIEL ISLAND REACH	X										5
DRUM ISLAND	X		X								6
DRUM ISLAND REACH	X		X								7
MYERS BEND	X		X								8
NEWMARKET CREEK	X		X								9
SHIPYARD CREEK	X		X								10
SOUTH CAROLINA (title)	X		X								11
TOWN CREEK	X		X								12
TOWN CREEK UPPER REACH	X		X								13
TOWN CREEK LOWER REACH	X										14
VARDELL CREEK	X										15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25


 AUG 15 2000

LETTER TRANSMITTING DATA

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

- ORDINARY MAIL
- REGISTERED MAIL
- GBL (Give number) _____
- AIR MAIL
- EXPRESS

TO:

[CHIEF, DATA CONTROL GROUP, N/CS3x1]
 NOAA / NATIONAL OCEAN SERVICE
 STATION 6815, SSMC3
 1315 EAST-WEST HIGHWAY
 SILVER SPRING, MARYLAND 20910-3282]

DATE FORWARDED 06/20/2001

NUMBER OF PACKAGES 1

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.

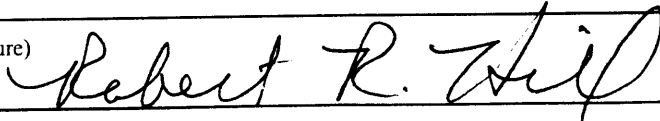
H10863

SOUTH CAROLINA, COOPER RIVER, DRUM ISLAND TO DANIEL ISLAND BEND

ONE TUBE CONTAINING THE FOLLOWING:

- 1 SMOOTH SHEET FOR SURVEY H10863
- 1 ORIGINAL DESCRIPTIVE REPORT
- 1 DRAWING HISTORY FORM (NOAA FORM #76-71) FOR NOS CHART 11524
- 1 RECORD OF APPLICATION TO CHART FORM (NOAA FORM #75-96)
- 1 H-DRAWING ON MYLAR FOR NOS CHART 11524
- 1 COMPOSITE DRAWING (in three parts) ON PAPER

FROM: (Signature)



RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

[NOAA \ NATIONAL OCEAN SERVICE]
 ATLANTIC HYDROGRAPHIC BRANCH N/CS33
 439 WEST YORK STREET
 NORFOLK, VA. 23510-1114]

06/18/2001

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: H10863

NUMBER OF CONTROL STATIONS	2
NUMBER OF POSITIONS	3389
NUMBER OF SOUNDINGS	3389

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	12.0	09/17/1999
VERIFICATION OF FIELD DATA	689.5	10/20/2000
QUALITY CONTROL CHECKS	19.0	
EVALUATION AND ANALYSIS	146.0	
FINAL INSPECTION	6.0	09/18/2000
COMPILATION	209.0	03/08/2001
TOTAL TIME	1081.5	
ATLANTIC HYDROGRAPHIC BRANCH APPROVAL		12/14/2000

**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H10863 (1999)**

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 (HPS)
MicroStation 95, version 5.05
SiteWorks, version 2.01
NADCON, version 2.10
I/RAS B, version 5.01

The smooth sheet was plotted using a Hewlett Packard Design Jet 2500CP plotter.

H. CONTROL

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). 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 0.633 seconds (19.49 meters or 3.90 mm at the scale of the survey) north in latitude, and 0.686 seconds (17.85 meters or 3.57 mm at the scale of the survey) east in longitude.

J. SHORELINE

Brown shoreline originates with National Ocean Service (NOS) chart 11524 43rd Edition, Nov. 1/97 and is for orientation purposes only.

L. JUNCTIONS

H10784 (1997) to the south
H10858 (1999) to the northwest

A standard junction was effected between the present survey and survey H-10858 (1999). A standard junction could not be effected with survey H10784 (1997). The note ADJOINS has been shown on the present survey smooth sheet. Any

adjustments to the depth curves in the junctional area will have to be made on the chart during compilation.

M. COMPARISON WITH PRIOR SURVEYS

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

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

O. COMPARISON WITH CHARTS 11524 (44th Edition, Sept 11/99)

Hydrography

The charted hydrography originates with the prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in sections N. and O. of the Descriptive Report. Attention is directed to the following:

1. Automated Wreck and Obstruction Information System (AWOIS) Item #7615, a charted obstruction, in Latitude 32°49'59.38"N, Longitude 79°55'37.81"W, originates with prior survey H09731 (1978). This feature was not adequately investigated by the present survey. It is recommended that this feature be retained as charted.

2. A charted pile, in Latitude 32°49'55.1"N, Longitude 79°55'37.1"W, originates with an unknown source. This feature was not adequately investigated by the present survey. It is recommended that the charted pile be revised to a submerged pile.

3. A charted submerged pile, in Latitude 32°48'53.7"N, Longitude 79°55'36.9"W, originates with an unknown source. This feature was not adequately investigated by the present survey. It is recommended that this feature be retained as charted.

4. The charted pier ruins, in Latitude 32°48'24"N, Longitude 79°55'59"W, originates with prior survey H09731 (1978) and was identified by the hydrographer incorrectly as barge ruins. No change in charting status is recommended. It is also recommended that the sunken barge, in Latitude

32°48'19.6"N, Longitude 79°55'58.4"W, located by the field unit be charted as shown on the present survey.

5. A charted pile, in Latitude 32°50'56.1"N, Longitude 79°55'41.1"W, originates with an unknown source. A charting recommendation for this feature was not made by the hydrographer. Side scan sonar coverage in the vicinity of the feature is not adequate to disprove the feature. It is recommended that this feature be revised to a submerged pile.

6. A charted non-dangerous submerged rock, in Latitude 32°48'37.75"N, Longitude 79°55'55.95"W, originates with an unknown source and was neither investigated nor addressed by the hydrographer. It is recommended that this feature be retained as charted.

7. An uncharted submerged obstruction with a least depth of 18 feet (5⁵ m), in Latitude 32°51'07.91"N, Longitude 79°56'00.06"W, was located by the field unit. This feature was not addressed in the Descriptive Report by the hydrographer. It is recommended that a this feature be charted as shown on the present survey.

8. The charted note, 43-ft 1995, adjacent to Shipyard Creek Main channel applies to the area adjacent to pier face and originates with Chart Letter 91-07 of 1991 (CL 91-07/91) and the associated U. S. Army Corp of Engineers survey of 1995. This area is not covered by the present survey. No change in charting status is recommended.

The present survey is adequate to supersede the charted hydrography within the common area, except as noted in this report.

Controlling Depths

There are no conflicts between the present survey depths and the controlling depths of Daniel Island Reach, Myers Bend, Town Creek Lower Reach, Town Creek Lower Reach Turning Basin and Shipyard Creek Upper Turning Basin. Attention is directed to the following:

1. Conflicts exist between the charted controlling depths in the vicinity of Daniel Island Bend. In Latitude 32°50'46.78"N, Longitude 79°55'40.70"W present survey depths range from 27 to 30 feet (8² - 9¹ m) along the eastern edge of

the right outside quarter with a controlling depth of 43 feet.

2. A conflict exists between the charted controlling depths in the vicinity of Shipyard Creek Main Channel. In Latitude 32°49'56.30"N, Longitude 79°56'27.75"W the present survey shows a 24 foot depth (7³ m) along the eastern edge of the right outside quarter with a controlling depth of 26.8 feet.

3. Conflicts exist between the charted controlling depths in Shipyard Creek Lower Turning Basin. In the vicinity of Latitude 32°49'45"N, Longitude 79°56'28"W the present survey shows depths of 35 feet (10⁷ m) in the two left quarters with a controlling depth of 38 feet.

4. Conflicts exist between the charted controlling depths in the vicinity of Drum Island Reach. In Latitude 32°48'51.55"N, Longitude 79°55'07.92"W present survey depths range from 37 to 38 feet (11³ - 11⁶ m) along the left outside quarter with a controlling depth of 39.5 feet.

5. A conflict exists with the charted controlling depths in the vicinity of Town Creek Upper Reach. In Latitude 32°48'22.95"N, Longitude 79°55'51.50"W the present survey shows a depth of 30 feet (9¹ m) along the edge of the right outside quarter with a controlling depth of 31 feet.

P. ADEQUACY OF SURVEY

This is an adequate hydrographic survey. No additional work is recommended.

Q. AIDS TO NAVIGATION


Twelve fixed aids and four floating aids were located by the field unit and are presently charted. These aids appear adequate to serve their intended purpose. Attention is directed to the following:

Cooper River North Degaussing Range West Platform Light, Light List number 2790, in Latitude 32°49'54"N, Longitude 79°55'54"W, was not located or addressed by the field unit. Unless subsequent data dictate otherwise, no change in charting status is recommended.

S. MISCELLANEOUS

Chart compilation using the present survey was done by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland. The following National Ocean Survey Chart was compiled using the present survey:

11524 (44th Edition, Sept 11/99)


Reginald L. Keene Sr.
Cartographic Technician
Verification of Field Data
Evaluation and Analysis

APPROVAL SHEET
H10863

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.

Robert R. Hill Date: 12-12-00
Robert R. Hill Jr.
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: 12/14/00
Andrew L. Beaver,
LCDR, NOAA
Chief, Atlantic Hydrographic Branch

Final Approval:

Approved: Samuel P. De Bow Dated: September 20, 2001
Samuel P. De Bow, Jr.
Captain, NOAA
Chief, Hydrographic Surveys Division

