

# 9260

Diagram Nos. 1236-2 & 1237

NOAA FORM 76-35A

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

## DESCRIPTIVE REPORT

Type of Survey ... Hydrographic .....  
Field No. .... WH-40-2E-71 .....  
Office No. .... H-9260 .....

### LOCALITY

State ..... South Carolina .....  
General Locality Long Bay .....  
Locality ..... Off Murrells Inlet .....

1971-72

CHIEF OF PARTY  
CDR C.H. Nixon

### LIBRARY & ARCHIVES

DATE ..... March 5, 1974 .....

HYDROGRAPHIC TITLE SHEET

~~N/A~~  
H-9260

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.

WH-40-2E-71

State South Carolina  
~~North Carolina~~

General locality Long Bay  
~~Coast of North Carolina~~

Locality Off Murrells Inlet  
~~Coast of North Carolina~~

Scale 1:40,000 Date of survey 27 April to 4 May 1971

Instructions dated 8 January 1971 Project No. OPR-137-WH-71

Vessel NOAA Ship WHITING

Chief of party CDR. Charles H. Nixon

\* CDR C.H. Nixon, LCDR J.W. Carpenter, LT P.L. Campbell, Ltjg D.W. Nos-  
Surveyed by trant, Ltjg J.D. Busman, ENS D.W. Yeager, CST W.A. Hill

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

Graphic record scaled by \* As above

Graphic record checked by \* As above

Protracted by N/A Automated plot by AMC

Soundings penciled by \* As above

Soundings in fathoms feet at MLW MHW Feet at MLW

REMARKS: The survey of WH 40-2E-71 is accurate and adequate in itself. No  
register number is assigned since WH 40-2W-71 was not surveyed to complete  
boat sheet WH 40-2-71.

All times in GMT

Bp 84634-35

notes in red added during Review.

Chart

miscellaneous pages have been removed and filed with the survey records

1237 # 8  
1116

Applied to stels 3-11-74

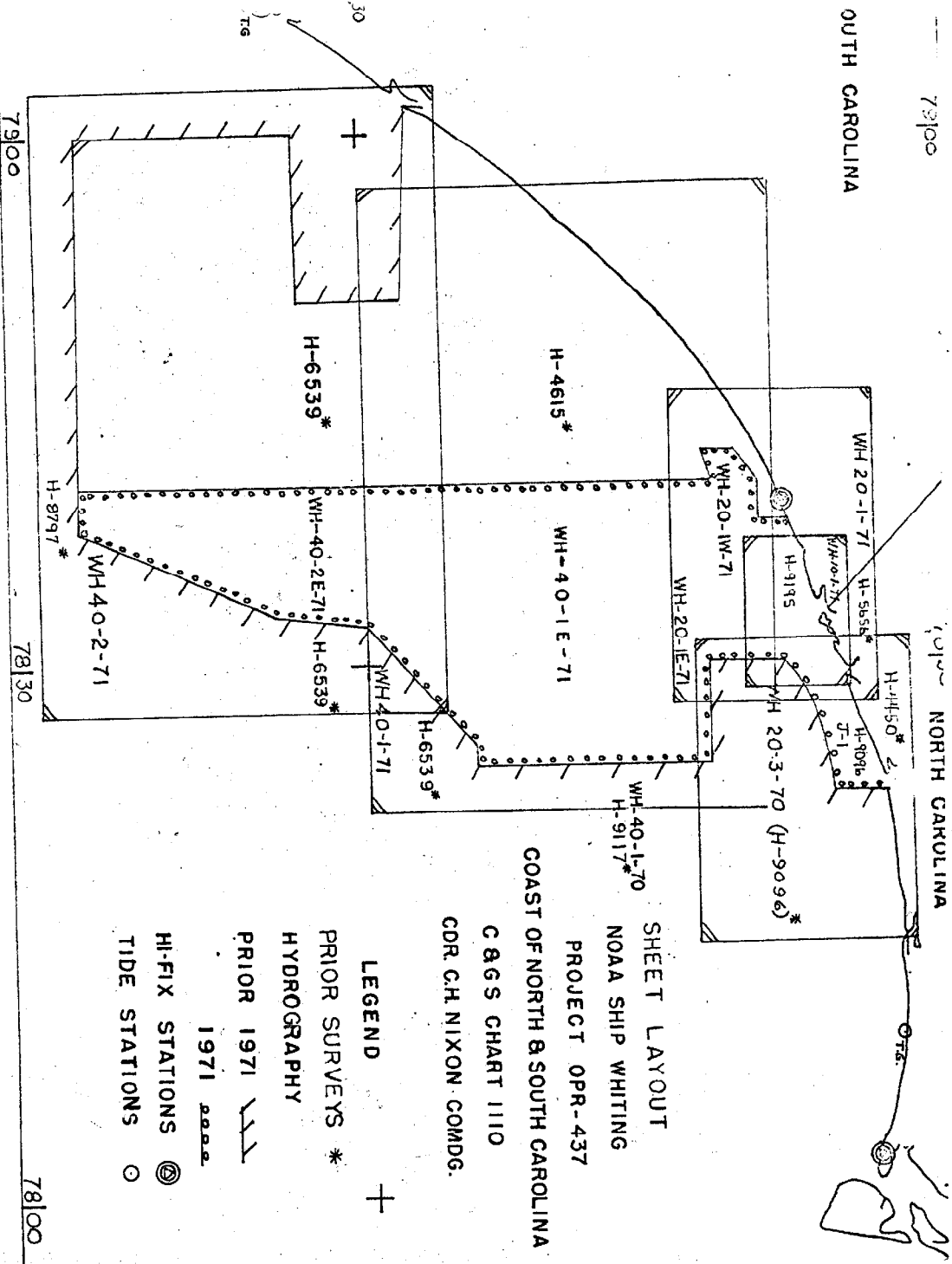
COB

ANNIS/SURE AAA 12/1/75

78100

SOUTH CAROLINA

78130 NORTH CAROLINA



SHEET LAYOUT  
 NOAA SHIP WHITING  
 PROJECT OPR-437  
 C & GS CHART 1110  
 CDR. CH. NIXON. COMDG.

LEGEND +  
 PRIORITY SURVEYS \*  
 HYDROGRAPHY  
 PRIORITY 1971  
 HI-FIX STATIONS  
 TIDE STATIONS

79100

78130

78100

A. PROJECT:

This survey was completed in accordance with Project Instructions for ✓  
OPR-437-WH-71, Coast of North Carolina and South Carolina dated 8 Jan-  
uary, 1971, amended 5 February, 1971, 9 February, 1971 and 8 March,  
1971.

B. AREA SURVEYED:

The survey was conducted from 27 April to 4 May, 1971, off the South ✓  
Carolina coast. The area surveyed is approximately 22 miles south-  
east of Myrtle Beach, South Carolina, and 26 miles south of the North  
Carolina-South Carolina borderline. The survey extends from latitude  
33°16'N. to 33°32'N., and from longitude 78°26'W. to 78°40'W. The  
survey extends seaward in a non-uniform manner in order to insure cov-  
erage of the 10 fathom curve.

The sheet junctions on the north with contemporary survey WH 40-1E-71; ✓  
on the south with ~~prior~~ survey H-8797, 1964, 1:40,000; and on the east  
and west with prior survey H-6539, 1940, 1:80,000.

*This is not a junctional survey*

The main system of lines was run with 400 meter spacing. Where needed ✓  
to define the bottom, splits were run at 200 meter spacing.

C. SOUNDING VESSEL:

The NOAA Ship WHITING was the sounding vessel for this survey. ✓

D. SOUNDING EQUIPMENT:

The sounding instrument used was the Ross Digital Depth Sounder, serial ✓  
number 601.

All soundings were plotted using predicted tides for Shallotte Inlet, ✓  
North Carolina. Neither velocity nor settlement and squat correctors  
were applied on the boat sheet plot. These corrections should be app-  
plied when plotting the smooth sheet. The hydrography, however, was  
only done at standard speed.

A table of velocity corrections is in the appendix of this report. ✓  
Settlement and squat is reported in the fathometer report.

E. SMOOTH SHEET:

The smooth sheet will be plotted on the computer plotter system at the ✓  
Atlantic Marine Center.

F. CONTROL:

The hydrography was controlled by Hi-Fix in the hyperbolic mode. The Hi-Fix was calibrated daily, or at any time discrepancies were found by comparison of visual and electronic positions. The Hi-fix corrections have been applied to the boat sheet. A copy of these corrections is included in the appendix to this report.

The Hi-Fix stations were located using third order methods, by Mr. J. D. Shea and ship's personnel. The positions of the stations and their frequency follow:

<u>STATION</u>	<u>NAME</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
Master	Cabana, 1969	33°49'33.004"N.	78°38'57.788"W. ✓ pxc ✓
Slave I	Pawley, 1969	33°25'57.764"N.	79°07'09.929"W.
Slave 2	Ben, 1970	33°53'26.794"N.	78°01'50.951"W.

Frequency = 1779.6 cps.

G. SHORELINE:

There was no shoreline in this survey. ✓

H. CROSSLINES:

Of the total length of sounding lines, 9.6% consists of crosslines. Crosslines and the systematic sounding lines agree within 2 feet. ✓

I. JUNCTIONS:

This survey junctioned with contemporary survey WH 40-1E-71 on the north; on the south with prior survey H-8797, 1964, 1:40,000; and on the east and west with prior survey H-6539, 1948, 1:80,000. ✓

*not a junctional survey* ✓  
All junctions are within 2 feet, except along the northern limits where some 3 foot differences were encountered. These differences occur at high and low tide times of hydrography. ✓

A line run at high tide (predicted) does not compare favorably with one run at low tide (predicted). Suspicion of possible error is directed toward tide range in offshore areas. These soundings should junction properly when smooth tide corrections are applied to the smooth sheet. More details concerning this are included in the Sounding Line Comparison Report. ✓

The area near 33°26.5'N., 78°30.0'W. was developed in a non-uniform ✓

manner to insure coverage of the 60 foot curve.

The area at latitude 33°21.8'N., longitude 78°34.9'W. shows a 5 foot discrepancy between H-6539 73' and WH 40-2E-71 68'. Predicted tides indicate the 68' could be 2 feet too shall which would make the comparison within 3 feet.

J. COMPARISON WITH PRIOR SURVEYS:

Comparisons were made with the following prior surveys:

H-6539	April, 1940	1:80,000
H-8797	June, 1964	1:40,000 JUNCTION

Comparison of these two prior surveys show a consistant shoaling of 1 to 4 feet throughout the survey.

K. COMPARISON WITH EXISTING CHARTS:

Comparison was made with C&GS charts #1236, 6th edition, Feb. 17, 1969, and #1237, 4th edition, Sept. 16, 1968. There were no discrepancies noted with chart 1236. However, there exists 3-4 feet of shoaling in most areas when compared to chart 1237.

L. ADEQUACY OF THE SURVEY:

This survey is adequate and accurate. The entire boat sheet was not completed due to shortness of field season. This WHITING plotter sheet is complete in itself. No register number is assigned for this reason.

M. AIDS TO NAVIGATION:

There were no aids to navigation in the area surveyed.

N. STATISTICS:

Nautical miles of sounding lines	509.9
Number of positions	980
Number of bottom samples	49
Percentage of cross lines	9.6%

O. MISCELLANEOUS:

None

P. RECOMMENDATIONS:

None

Q. REFERENCES TO REPORTS:

1. Corrections to Echo Soundings, NOAA Ship WHITING, Coast of North and South Carolina, 1971 field season.
2. Electronic Control Report, NOAA Ship WHITING, Coast of North and South Carolina, 1971 field season.
3. Season's Report, NOAA Ship WHITING, 1971 field season.
4. Sounding Line Comparison Report, NOAA Ship WHITING, Coast of North and South Carolina, 1971 field season.

APPROVAL SHEET

Submitted by

*Robert Hoge*

Robert Hoge  
ENS, NOAA

Supervision of field and office work on this hydrographic survey was continuous on a day to day basis to insure completeness of the survey and to insure that the work was in accordance with instructions.

Hydrography completed on this boat sheet during the 1971 field season is complete and adequate to supersede prior surveys for charting.

Approved/Forwarded

*Charles H. Nixon*

Charles H. Nixon  
CDR, NOAA

Commanding Officer, NOAA Ship WHITING



TIDE NOTE

A bubbler tide gage was installed and maintained by ship's personnel to be used for WH 40-2E-71. This gage was installed on Pawley's Island Fishing Pier at latitude  $33^{\circ}25'36''\text{N.}$ , longitude  $79^{\circ}07'00''\text{W.}$  The gage was installed on 7 April 1971, and removed on 6 May 1971. This gage malfunctioned and no reference datum was available.

NOAA Tides Section studied the problem and Pawley's Island tides were referenced to the Charleston, South Carolina standard gage. MLW on the Charleston gage is 2.59 feet. The gage is at latitude  $32^{\circ}46.9'\text{N.}$ , longitude  $79^{\circ}55.6'\text{W.}$  The tide ratio of 0.9 was employed and the time difference used was  $0^{\text{h}}30^{\text{m}}$ .

Project Instructions direct use of the Pawley's Island gage for WH 40-2-71 smooth sheet.

The boat sheet plot uses predicted tides from Shallotte Inlet, North Carolina.

All tides are in Greenwich Mean Time.

HYDROGRAPHIC TITLE SHEET

<sup>60</sup>  
H-9291

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.

MI-40-1-72

State South Carolina

General locality Offshore (connect the following points)  
Lat. 33°16'00"N. Long. 78°39'54"W. Lat. 33°27'15"N. Long. 78°51'36"W.

Locality Lat. 33°32'03"N. Long. 78°39'54"W. Lat. 33°27'15"N. Long. 79°01'12"W.  
Lat. 33°32'03"N. Long. 78°51'36"W. Lat. 33°16'00"N. Long. 79°01'12"W.

Scale 1:40,000 Date of survey Aug. 27, 1972-Sep. 22, 1972

Instructions dated May 2, 1972 Project No. OPR-437-MI-72

Vessel NOAA Ship MT MITCHELL (MSS-22)

Chief of party Edwin K. McCaffrey, CAPT, NOAA, Commanding Officer

Surveyed by Ship's Personnel (LTJG J.L. Warner, LT, NOAA, Officer-in-Charge)

Soundings taken by echo sounder, ~~XXXXXXXXXX~~

Graphic record scaled by Ship's Personnel

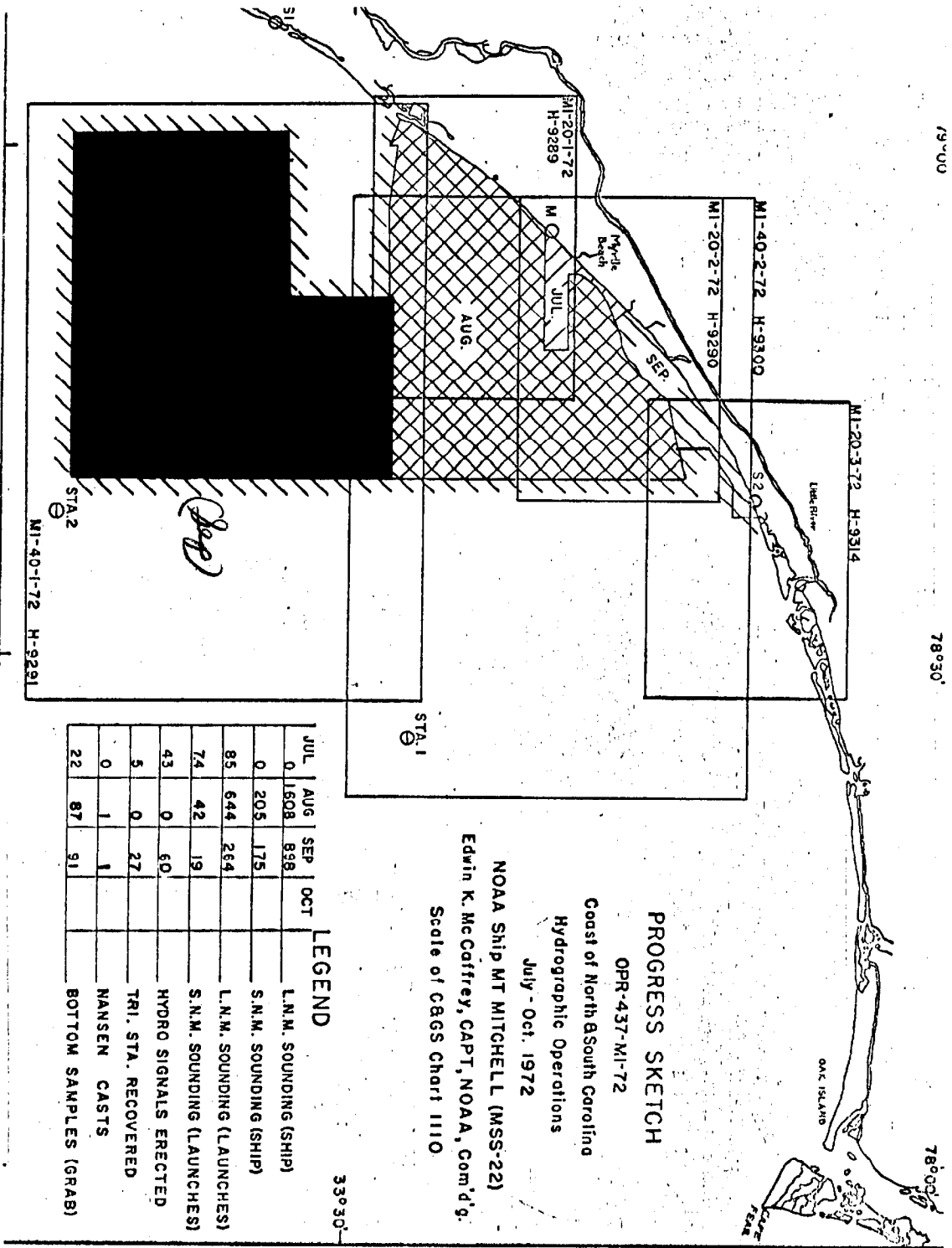
Graphic record checked by \_\_\_\_\_

Protracted by \_\_\_\_\_ Automated plot by \_\_\_\_\_

Soundings penciled by \_\_\_\_\_

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

REMARKS: The boatsheet comprises two COMLOT Plotter sheets referred to as A of A, B and B of A, B.



**PROGRESS SKETCH**

OPR-437-MI-72

Coast of North & South Carolina

Hydrographic Operations

July - Oct. 1972

NOAA Ship MT MITCHELL (MSS-22)

Edwin K. McCaffrey, CAPT, NOAA, Com'd'g.

Scale of CGCS Chart 1110

**LEGEND**

	JUL	AUG	SEP	OCT	
L.N.M. SOUNDING (SHIP)	0	1608	898		
S.N.M. SOUNDING (SHIP)	0	205	175		
L.N.M. SOUNDING (LAUNCHES)	85	644	264		
S.N.M. SOUNDING (LAUNCHES)	74	42	19		
HYDRO SIGNALS ERECTED	43	0	60		
TRI. STA. RECOVERED	5	0	27		
NANSEN CASTS	0	1	1		
BOTTOM SAMPLES (GRAB)	22	87	91		

Descriptive Report

To Accompany

Hydrographic Survey MI-40-1-72

Registry Number H-929160

OPR-437-MI-72

Coast of North and South Carolina

1972 Field Season

NOAA Ship MT MITCHELL (MSS-22)

Edwin K. McCaffrey  
CAPT, NOAA  
Commanding Officer

A. Project

This survey was accomplished as a part of Project OPR-437-MI-72, Coast of North and South Carolina, in accordance with project instructions dated May 2, 1972. ✓

B. Area Surveyed

The survey was conducted off the coast of South Carolina, east of Murrells Inlet. Work began on August 27, 1972 and was completed on September 22, 1972. ✓

The limits of the survey are enclosed by lines connecting the following points starting from the southeast corner and proceeding counter-clockwise: ✓

Latitude 33°16'00"N. Longitude 78°39'54"W.  
Latitude 33°32'03"N. Longitude 78°39'54"W.  
Latitude 33°32'03"N. Longitude 78°51'36"W.  
Latitude 33°27'15"N. Longitude 78°51'36"W.  
Latitude 33°27'15"N. Longitude 79°01'12"W.  
Latitude 33°16'00"N. Longitude 79°01'12"W.  
Latitude 33°16'00"N. Longitude 78°39'54"W.

Soundings were junctioned with ~~prior~~ surveys WH-40-2E-71 on the east, H-8797 on the south, H-8838 on the west, and (WH-20-H-9102 1-65) in the northwest corner. The survey junctions with contemporary surveys H-9289 and H-~~9300~~ <sup>230</sup> on the north. ~~H-9230 + H-9102~~

#### C. Sounding Vessel

NOAA Ship MT MITCHELL was used to obtain all data for the survey. The HYDROPLOT system on board, consisting of a Digital Equipment Corporation PDP-8E Computer, HYDROPLOT Controller, and COMLOT DP-3 Roll Plotter, was used to record and plot all positions and soundings. ✓

#### D. Sounding Equipment

All soundings were recorded to the nearest tenth of a foot and plotted to the nearest foot. The echo sounder was a Ross Fineline Depth Recorder, Model 5000, Serial Number 1052. The transducer used is on the ship's skeg. ✓

Velocity corrections were determined from measurements obtained with serial temperature casts taken on August 17, 1972 at: ✓

Latitude 33°55'00"N. Longitude 78°25'12"W.

and on September 9, 1972 at:

Latitude 33°16'01"N. Longitude 78°38'15"W.

Settlement and squat correctors were obtained from data gathered on October 8, 1969 for Standard Speed (175 R.P.M., 10 feet Pitch) for the skeg transducer. ✓

A 14.0 foot draft corrector was applied to the soundings plotted on-line and appears in the corrector word of the Hyperbolic Master Tape. Several observations of the draft were taken during the survey and corrections to the draft for each

day were determined by linear interpolation. These final corrections were included with settlement and squat correctors in the TRA corrector of the Hyperbolic Corrector Tape.

A vertical cast comparison with the Ross Fineline Depth Recorder was made, in calm water, in the project area on September 19, 1972. The information from this comparison, taking into account velocity correction, resulted in the determination of a -0.47 foot instrument error. This correction is applied to all soundings obtained using the Ross and is applied by means of the TC/TI Tape.

Tide corrections to be applied to all soundings will be obtained from data recorded using a pressure recording tide gage in Myrtle Beach, South Carolina (see Descriptive Tide Note included in this report). Predicted tide correctors have been applied to the boatsheet soundings.

The Ross Depth Digitizer was used to enter the soundings into the HYDRO PLOT Controller. The initial on the echo sounder was set at zero and any drift was corrected for in the scanning process.

The graphic records were scanned by trained personnel in accordance with the requirements specified in the Hydrographic Manual (Publication 20-2), and spot checked by the Officer-in-Charge. Insert soundings were added and erroneous soundings were corrected by entering them on the Electronic Corrector Tape. The graphic record scanning is deemed adequate for this survey.

Abstracts of corrections for velocity, draft and settlement and squat are included in this report.

#### E. Smooth Sheet

The smooth sheet for this survey will be produced at the Atlantic Marine Center, Norfolk, Virginia. The following tapes, with respective printouts, were furnished to them for this purpose:

Hyperbolic Master Tape: Produced on-line by the HYDRO PLOT system. Data on these tapes consist of time, raw sounding, position number, Julian day, raw Hi-Fix lane readings for each sounding, Hi-Fix lane correctors

(used only for the on-line plot), ship's draft (14') and predicted tide corrector.

Electronic Corrector Tape: Prepared on board. Data ✓ on these tapes include indicators defining the rotation of the plotted soundings, TRA correctors consisting of settlement and squat and corrections to the applied draft, final Hi-Fix correctors to be used in the off-line plot, corrections to misread soundings and soundings to be inserted or omitted.

Velocity Corrector Tape: Prepared on board from serial ✓ temperature cast data.

TRA Corrector/Table Indicator (TC/TI) Tape: Prepared ✓ on board. This tape contains the instrument correction for the Ross Fineline Depth Recorder.

Parameter Tape: Prepared on board. This tape pro- ✓ vides all of the basic information: (Using the on-board plotter) Plotter origin, central meridian, Hi-Fix station locations, etc. The tape is used in plotting the basic la/lo grid for the project area and is a basic input to all off-line plotting programs.

ASCII Signal Tape: Prepared on board. Data consists ✓ of the signals used to calibrate Hi-Fix.

#### F. Control

Hi-Fix, operating at a frequency of 1618.650 KHz was used, in ✓ the hyperbolic mode, for all position control during this survey. The Hi-Fix station locations were:

Master	BOURBON R.M. 5, 1972	Latitude 33°39'33.20"N. Longitude 78°55'00.95"W.
Slave 1	OKEEFE, 1972	Latitude 33°24'28.72"N. Longitude 79°08'03.35"W.
Slave 2	CABANA, 1969	Latitude 33°49'33.00"N. Longitude 78°38'57.79"W.

These stations were located by traverse and are third-order stations.

Hi-Fix was calibrated before commencing operations and after ✓  
concluding operations (daily), except for the last day (Jul-  
ian Day 266) when it was discovered that the calibrations,  
taken before and during the running of hydrographic opera-  
tions, were taken at the forward antenna (foremast) instead  
of the after antenna (mainmast). The error was corrected by  
calibrating at the correct antenna at the end of operations  
and the correction obtained applied all day. The Hi-Fix  
correctors were averaged from these calibrations to give  
final correctors which appear on the Electronic Corrector  
Tape for each day of operations.

All calibrations were made by three-point sextant fixes, with ✓  
check angle. The Hi-Fix dials were read and the values re-  
corded at the instant the mark for the visual fix was observ-  
ed. Hi-Fix values were then computed from the visual fix  
using the H/R Calibration Program (AM 560). Comparing the  
observed Hi-Fix values with the mean of the two computed  
values yielded the appropriate correctors with the proper  
sign. These correctors were then dialed into the HYDROPLOT  
controller.

Two calibration buoys were deployed by the ship in order to ✓  
establish or check whole lane count. For further information  
concerning the location, description and buoy calibration  
method used by the ship refer to "Report on Calibration of  
Hi-Fix" for this project.

The following abstracts are included in this report:

Abstract of Hi-Fix Lane Correctors

Abstract of Signals used for Hi-Fix Calibration

On August 30, 1972, the Hi-Fix receiver antenna in use was ✓  
shifted from the after antenna (mainmast) to the forward  
antenna (foremast) due to Pattern 2 becoming weak. The dis-  
tance between the two antennas is 110.8 feet. Due to the  
scale of the survey, this distance will not adversely affect  
the location of the soundings. The last day of operations  
(Julian Day 266) was run using the mainmast antenna.



G. Shoreline

There is no shoreline within the limits of this survey. ✓

H. Crosslines

Crosslines were run amounting to 7.5% of the regular system ✓  
of sounding lines. Agreement between crosslines and the  
regular system of sounding lines is good.

I. Junctions with Prior Surveys

~~Prior~~ survey H-8797 (Scale 1:40,000, 1964) junctions with ✓  
the southern boundary of the sheet. The soundings obtained  
during this survey compare within 3 feet of H-8797.

~~Prior~~ survey WH-40-2E-71 (Scale 1:40,000, 1971) junctions ✓  
with the eastern boundary of the sheet. The soundings ob-  
tained during this survey compare within 3 feet of WH-40-2E-  
71.

~~Prior~~ survey, <sup>N-5102</sup> WH-20-1-65 (Scale 1:20,000, 1965) junctions with ✓  
the northwest corner of the sheet. The soundings obtained  
during this survey compare within 3 feet of WH-20-1-65.

~~Prior~~ survey H-8838 (Scale 1:20,000, 1964-1965) junctions ✓  
on the western boundary of the sheet. The soundings obtained  
during this survey compare within 2 feet of H-8838.

J. Comparison with Prior Surveys

The least depths found on this survey have been reduced for ✓  
predicted tides and velocity corrections.

The accompanying mylar sheet displays the junction soundings ✓  
mentioned above and the presurvey review items as well as  
representative soundings from prior surveys covering the area.  
This mylar can be laid over the plotter sheets for comparison  
purposes.

The soundings from this survey compare well with the repre- ✓  
sentative soundings from prior surveys H-4615 (1925-1926),  
H-4616 (1926), and H-6539 (1939-1940).

Developments were run using an east-west line pattern split- ✓

ting the regular sounding lines in the areas of question. This gave a system of 200 meter spaced lines over most pre-survey review items. ~~DUE TO A GENERAL LEVELING AND SHIFTING~~  
~~SOME DEVICES TO SOUNDINGS FOUND DURING THE FOLLOWING INVESTIGATIONS ARE CONSIDERED~~

Development #1 (Presurvey Review Item #3) was a charted 26 foot shoal sounding at Latitude 33°25'24"N. Longitude 78°58'06"W. on C&GS Chart 1237. The least depth found was a 287 foot sounding, 7600 meters south-southwest of the charted 26 foot sounding. The development gave no evidence of the 26 foot shoal sounding. concur

Development #2 (Presurvey Review Item #3) was a charted 30 foot shoal sounding at Latitude 33°24'54"N. Longitude 79°00'42"W. on C&GS Chart 1237. The least depth found was a 340 foot sounding, 5100 meters southwest of the charted 30 foot sounding. ~~No evidence was found indicating a 30 foot sounding.~~ concur

Development #3 (Presurvey Review Item) was a charted 37 foot shoal sounding at Latitude 33°27'48"N. Longitude 78°50'54"W. on C&GS Chart 1237. The least depth found was several 398 foot soundings in the immediate area. However, 150 meters southwest of the charted 37 foot sounding is a 386 foot sounding. At this same position on prior survey (WH-20-1-65) H-9102 is a 37 foot sounding. The presurvey review item may have originated with the WH-20-1-65 sounding. concur

Development #4 (Presurvey Review Item). A reported 38 foot sounding at Latitude 33°25'36"N. Longitude 78°49'10"W. on C&GS Chart 1237. No 38 foot sounding was indicated in this area by the regular system of sounding lines since the bottom is regular with general depths of 420 to 44 feet. Therefore, no development was run. However, one mile to the northwest of this reported sounding is a 376 foot sounding and Development #4 was run in that area. The least depth found was a 376 foot sounding. The 37 foot sounding indicated by this survey should be charted. concur

#### K. Comparison with Charts

C&GS Charts 1110 and 1237 cover the area surveyed. The charted soundings are in general agreement with this survey except where noted in Section "J", above.

L. Adequacy of the Survey

This survey is complete and adequate to supersede prior surveys of the area. ✓

M. Aids to Navigation

No aids to navigation are within the limits of this survey. ✓

N. Statistics

Linear Nautical Miles, Sounding Line -----	1249
Linear Nautical Miles, Crosslines -----	93
Linear Nautical Miles, Development -----	35
Total Linear Nautical Miles, Sounding Line -----	1377
Total Square Nautical Miles (Area Covered) -----	275
Position Numbers Used (0001 to 1151) -----	1151
Position Numbers Rejected (1123) -----	1
Position Numbers Duplicated (0017-0020, 0211, 0264-0274) -----	16
Bottom Samples (obtained with snapper type sampler)-	25
Serial Temperature Cast -----	1

O. Miscellaneous

All times used during this survey are Greenwich Mean Time. ✓  
(GMT).

A Sounding volume "Hydrographic Operations Log" was used to ✓  
record remarks and supplementary data appropriate to the  
survey.

Using the HYDROPLOT system, all soundings except insert ✓  
soundings are fixed positions. Insert soundings are plotted  
on time and course between two (fixed position) soundings.

The boatsheet supplied to the Atlantic Marine Center is not ✓  
corrected for smooth tides. All soundings do reflect Hi-Fix,  
draft, settlement and squat, velocity and predicted tide cor-  
rections.

Bottom samples were recorded in accordance with the Hydrographic Manual. The samples obtained were logged and forwarded to: Dr. J. W. Pierce, Department of Sedimentology, Smithsonian Institute, Washington, D.C. in accordance with standing instructions. C&GS Form 733M "Log Sheet M" was completed and a copy forwarded with the samples. A completed form is included in ~~this report.~~  
*the survey records.*

The boatsheet comprises two COMLOT Plotter sheets. These plotter sheets are referred to as A of A,B and B of A,B. The records are annotated accordingly.

P. Recommendations

None.

Q. Reference to Reports

The 1972 Field Season reports, listed below, should be referred to for a complete evaluation of this survey.

Report on Calibration of Hi-Fix

Report on Corrections to Echo Soundings

Respectfully Submitted:

*James L. Warner*  
James L. Warner  
LTJG, NOAA

Approved and Forwarded:

*Edwin K. McCaffrey*  
Edwin K. McCaffrey  
CAPT, NOAA  
Commanding Officer

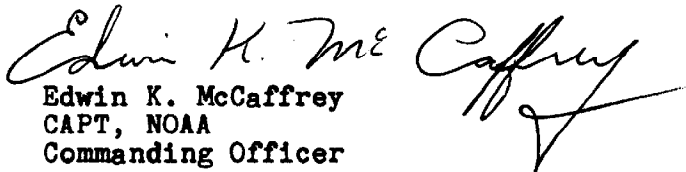
Approval Sheet

Field Number MI-40-1-72

Registry Number H-9291

The field work and processing of data from this hydrographic survey was under my immediate daily supervision. The boat sheet and all records have been reviewed and are approved by me.

This survey is complete, within the limits of the hydrography, and adequate to supersede all prior surveys of the area.

  
Edwin K. McCaffrey  
CAPT, NOAA  
Commanding Officer

South Carolina 1972

<u>Signal Number</u>	<u>N-Latitude Deg-Min-Sec</u>	<u>W-Longitude Deg-Min-Sec</u>	<u>Method of Location</u>	<u>Temporary or Recoverable</u>	<u>Additional Designation (Official or Unofficial)</u>
100	33 31 4132	079 02 1974	Traverse	Temp.	
108	33 32 0963	079 01 3874	"	"	
132	33 33 1602	079 00 5924	"	"	
160	33 34 3253	078 59 4916	"	"	
200	33 36 1268	078 58 1262	"	"	
252	33 38 1844	078 56 2390	"	"	
268	33 38 4904	078 55 3814	"	"	
802	33 41 3189	078 52 5811	Intersection	Recv.	Space Needle(umoff)
904	33 39 2571	078 56 4250	3rd Ord.Tri.	"	Myrtle Beach AFB Water Tank No.1160 (off.)
906	33 40 0725	078 56 2038	"	"	Air port Beacon Myrtle Beach AFB (off)
(N)					Myrtle Beach South
910	33 40 4268	078 54 0964	"	"	Municipal Water Tank(off)
916	33 42 3238	078 51 5956	"	"	Myrtle Beach North
920	33 43 0156	078 52 3754	"	"	Municipal Water Tank (off)
922	33 43 3594	078 50 3159	"	"	Myrtle Beach T.V. Cable Co. Mast (off)
924	33 43 4387	078 50 0627	"	"	Myrtle Beach Hotel Water Tank (off)
926	33 46 1253	078 47 1951	Intersection	"	Ocean Forest Hotel Beacon (off)
932	33 36 4852	078 58 4219	Intersection	"	Singleton Swash Tank (umoff)
					Surfside Beach Tank (umoff)

VELOCITY CORRECTOR TABLES  
OPR--437

0000082 0 0000 0001 000 000000 000000  
000181 0 0002  
000277 0 0004  
000375 0 0006  
000474 0 0008  
000572 0 0010  
000669 0 0012  
000770 0 0014  
000860 0 0000 0002 000 000000 000000  
000119 0 0002  
000175 0 0004  
000235 0 0006  
000292 0 0008  
000358 0 0010  
000422 0 0012  
000487 0 0014  
000552 0 0016  
000616 0 0018  
000680 0 0020  
000745 0 0022  
000850 0 0000 0003 000 000000 000000  
000148 0 0002  
000246 0 0004  
000343 0 0006  
000439 0 0008  
000535 0 0010  
000631 0 0012  
000729 0 0014  
000831 0 0000 0004 000 000000 000000  
000990 0 0002  
000146 0 0004  
000206 0 0006  
000269 0 0008  
000335 0 0010  
000400 0 0012  
000465 0 0014  
000526 0 0016  
000591 0 0018  
000656 0 0020  
000720 0 0022

Settlement and Squat Abstract

NOAA Ship MT MITCHELL (MSS-22)

Excerpt from Commanding Officer, MT MITCHELL memorandum dated October 29, 1969, "Skeg Transducer Performance".

Another item of interest was the settlement and squat determination. This was run in 52 feet of water, calm with only a slight swell and the data is well within the limits of  $\frac{1}{2}$  foot accuracy. We had a full load of fuel and the draft was 13.8 feet stern, 14.0 feet midships at dockside just before the determination.

Results were:

	<u>Standard Speed</u> <u>175 RPM</u>	<u>Half Speed</u> <u>105 RPM</u>
Skeg Transducer	0.8 feet	0.1 feet
Mid-ships Transducer	1.4 feet	0.6 feet

This bears out the past eyeball observations that the MT MITCHELL goes down by the bow considerably when underway. Fuel is always used from the forward tanks first to combat this situation.

Linear Interpolation Graph Abstract

<u>Mid-ships Transducer</u>					
<u>RPM</u>	<u>Correction</u>	<u>RPM</u>	<u>Correction</u>	<u>RPM</u>	<u>Correction</u>
105	----- +0.6	130	----- +0.9	155	----- +1.2
110	----- +0.6	135	----- +0.9	160	----- +1.2
115	----- +0.7	140	----- +1.0	165	----- +1.3
120	----- +0.8	145	----- +1.1	170	----- +1.3
125	----- +0.8	150	----- +1.1	175	----- +1.4

Skeg Transducer

105	----- +0.1	130	----- +0.3	155	----- +0.6
110	----- +0.1	135	----- +0.4	160	----- +0.6
115	----- +0.2	140	----- +0.4	165	----- +0.7
120	----- +0.2	145	----- +0.5	170	----- +0.7
125	----- +0.3	150	----- +0.5	175	----- +0.8



Descriptive Tide Note

OPR-437-MI-72

Coast of North and South Carolina

The tide gage used for this project was a pressure recording tide gage (supervised by the Tides Section, Atlantic Marine Center, Norfolk, Virginia) at Myrtle Beach, South Carolina Latitude  $33^{\circ}41.0'N$ . Longitude  $78^{\circ}53.1'W$ .)

This gage operated using +5 ( $75^{\circ}W$ .) Zone Time. The tide gage was not inspected by the ship. However, in accordance with Project Instructions the tide observer was contacted regularly and reported continuous gage operation for the duration of the project.

Hourly heights for the project are to be furnished by Tides Section, National Ocean Survey, Rockville, Maryland.

7/17/73

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center

Hourly heights are approved for Long Beach, N.C.

Tide Station Used (NOAA form 77-12): Myrtle Beach, S.C.  
Year 1972

Period: March 28-May 4, 1971

HYDROGRAPHIC SHEET: H-9229 H-9230 H-9260 H-9289 H-9290

OPR: 437

Locality: Coast of South Carolina

Plane of reference (mean ~~lower~~ low water): Long Beach 4.0 ft.  
Myrtle Beach ~~4.6~~ ft.

Height of Mean High Water above Plane of Reference is  
Long Beach 4.8 ft.  
Myrtle Beach 5.1 ft.

Remarks: Zoning

For year 1972 apply Myrtle Beach direct.

Recommend use of multiple gage zoning between Long Beach and Myrtle Beach during the period March 28-May 4, 1971.

*Myrtle Beach  
subtract from hourly heights  
1970 4.6  
1971 8.4  
1972 7.6*

*Per instructions with Hubbard 8/10/73. A memo  
will follow. WFT*

*R. K. C. Cummings*  
Chief, Tides Branch

GEOGRAPHIC NAMES

Name on Survey	Source of Name											
	A	B	C	D	E	F	G	H	K			
	ON CHART NO.	ON PREVIOUS SURVEY NO.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	GRAND McNALLY ATLAS	U.S. LIGHT LIST				
ATLANTIC OCEAN <sup>SRP</sup>												1
LONG BAY												2
Murrells Inlet (fittk)												3
												4
												5
												6
												7
												8
												9
												10
												11
												12
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												23
												24
												25

Approved by:  
 Chas. E. Harrington  
 Staff Geographer  
 27 MARCH 1974

ATLANTIC MARINE CENTER  
APPROVAL SHEET  
FOR  
AUTOMATED SURVEY H- 9260

- 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: February 25, 1974

Signed: *William L. Jonns*  
William L. Jonns  
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: February 25, 1974

Signed: *C. Dale North Jr.*  
C. Dale North Jr. LCDR, NOAA  
Title: Chief, Processing Division

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

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

HYDROGRAPHIC SURVEY STATISTICS  
HYDROGRAPHIC SURVEY NO. H-9260

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET & PNO		1	BOAT SHEETS (3 parts)		1	
DESCRIPTIVE REPORT		2	OVERLAYS		25	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS / SOURCE DOCUMENTS
ENVELOPES			2			
CAHIERS	2		2			1
VOLUMES						
BOXES			1 & Sawtooth Records			
T-SHEET PRINTS (List) <u>None</u>						
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				2176
POSITIONS CHECKED		200		
POSITIONS REVISED		25		
DEPTH SOUNDINGS REVISED		300		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		0		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		0		
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		0		
JUNCTIONS		16	20	
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		64	20	
SPECIAL ADJUSTMENTS				
ALL OTHER WORK		56	49	
TOTALS		136	89	
PRE-VERIFICATION BY		BEGINNING DATE	ENDING DATE	
VERIFICATION BY		BEGINNING DATE	ENDING DATE	
	B.T. Davis, R. G. Roberson	10-April-73	05-February-74	
REVIEW BY		BEGINNING DATE	ENDING DATE	
	<i>L. G. ...</i>	10 Mar 81	15 Apr 81	

Inspected by S.R. Baumgarner 12-6-83 40hrs D. Meyer 5/10/85

REGISTRY NO. H-9260

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:

NAUTICAL CHARTING DIVISION  
HYDROGRAPHIC SURVEYS BRANCH  
MODIFIED HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-9260

FIELD NO. WH-40-2E-71

South Carolina, Long Bay, Off Murrells Inlet

SURVEYED: April 27 to May 4, 1971, August 27 to September 22, 1972

SCALE: 1:40,000

PROJECT NO.: OPR-437

SOUNDINGS: Ross 5000 Digital Depth Recorder

CONTROL: Hi-Fix  
(Hyperbolic Mode)

Chief of Party .....	C. H. Nixon, E. K. McCaffrey
Surveyed by .....	J. W. Carpenter
.....	P. L. Campbell
.....	D. W. Nostrant
.....	J. D. Busman
.....	D. W. Yeager
.....	J. L. Warner
Automated Plot by .....	Calcomp Plotter 618 (AMC)
Verified by .....	R. G. Roberson
Reviewed by .....	L. Quinlan
.....	Date: April 15, 1981
Inspected by .....	S. Baumgardner
.....	Date: December 6, 1983
Examined by .....	G. K. Myers
.....	Date: May 10, 1985

1. Control and Shoreline

The source of the control is adequately discussed in part F of the Descriptive Report.

There is no shoreline within the limits of this survey.

2. Hydrography

- a. Sounding line crossings are in good agreement.
- b. The depth curves are adequately delineated.
- c. Bottom configuration and least depths are adequately developed.

### 3. Condition of Survey

The field work, survey records, automated plotting, Descriptive Report, cartographic presentation of data, and decisions and actions taken by the verifier conform to National Ocean Service standards and requirements.

### 4. Junctions

Adequate junctions were effected with H-9289 (1972) and H-9230 (1971-72) on the north and H-8838 (1964-65) on the west. The junction with H-9102 (1965) on the northwest is discussed in the review of that survey. No contemporary survey junctions with the present survey on the east. However, present depths in this area are in general harmony with charted depths. The junction with H-8797 (1964) on the south, an unverified survey, will be completed during the processing of that survey.

### 5. Comparison with Prior Surveys

- a. H-1419 (1878-79) 1:40,000  
H-3545 (1852-1886) 1:80,000

These surveys fall in the area of the present survey but were fully superseded within the common area by the surveys listed below. No discussion is considered necessary.

- b. H-4615 (1925-26) 1:40,000  
H-4616 (1926) 1:40,000  
H-6539 (1939-40) 1:80,000

These surveys, taken together, cover the area of the present survey. A comparison between the prior and present depths reveals differences of  $\pm 1$  to 3 feet. These are attributed to differences in survey methods and natural causes.

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

6. Comparison with Chart 11535 (1237) (latest print date July 14, 1979)  
11536 (1236) (latest print date December 1, 1978)

#### a. Hydrography

The charted hydrography originates with the previously discussed prior surveys which need no further consideration, supplemented by depths from the verified smooth sheet of the present survey.



Attention is directed to the following fish havens which are charted from sources subsequent to the present survey. These should be retained as charted.

<u>Latitude (N)</u>	<u>Longitude (W)</u>	<u>Source</u>
33°26'50"	78°59'40"	Chart Letters 1827 and 2002 of 1974
33°26'05"	78°52'30"	Chart Letter 339 of 1979

Except as noted above, the present survey is adequate to supersede the charted hydrography within the common area.

b. Aids to Navigation

The privately maintained floating aids presently charted originate with sources subsequent to the present survey and should be retained as charted.

7. Compliance with Instructions

This survey adequately complies with the project instructions.

8. Additional Field Work

This survey is considered to be a very good basic survey and no additional field work is recommended.

Examined and Approved:

Roy F. Mataushige  
Chief  
Hydrographic Surveys Branch

J. Curtis Yeager  
Chief  
Nautical Charting Division



