

10078

Diagram No. 920

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. MI-20-1-83
Office No. H-10078

LOCALITY

State Puerto Rico
General Locality ... Atlantic Ocean
Locality Offshore--Punta Salinas
..... to Punta Maldonado

19 83

CHIEF OF PARTY
CDR J.A. Yeager

LIBRARY & ARCHIVES

DATE April 26, 1985

☆U.S. GOV. PRINTING OFFICE: 1980-766-230

82001
10078

ACPG

CNTS:

25668 } to sign off ree
25640 } Record of Application

NOAA FORM 77-28
(11-72)

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

REGISTER NO.

HYDROGRAPHIC TITLE SHEET

H-10078

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 20-1-83

State PUERTO RICO

General locality ATLANTIC OCEAN

Locality OFFSHORE -- PUNTA SALINAS TO PUNTA MALDONADO
APPROACHES TO SAN JUAN, PUERTO RICO

Scale 1:20,000 Date of survey 15-24 MARCH 1983

Instructions dated 1 DECEMBER 1982 Project No. OPR I 149-MI-83

Vessel NOAA SHIP MT MITCHELL S-222 VESNO 2220

Chief of party CAPTAIN J. AUSTIN YEAGER

Surveyed by SEE REMARKS

Soundings taken by ~~echo sounder, XXXXXX~~ UNIVERSAL GRAPHIC RECORDER MODEL 196C
AND ROSS MODEL 5000 ECHO SOUNDERS

Graphic record scaled by EM, MS, BEM, BC, VLG, RW

Graphic record checked by EM, MS, BEM, BC, VLG, RW

Protracted by N/A Automated plot by XYNETICS 1201 PLOTTER (AMC)

Verification by M. HOLLOWAY

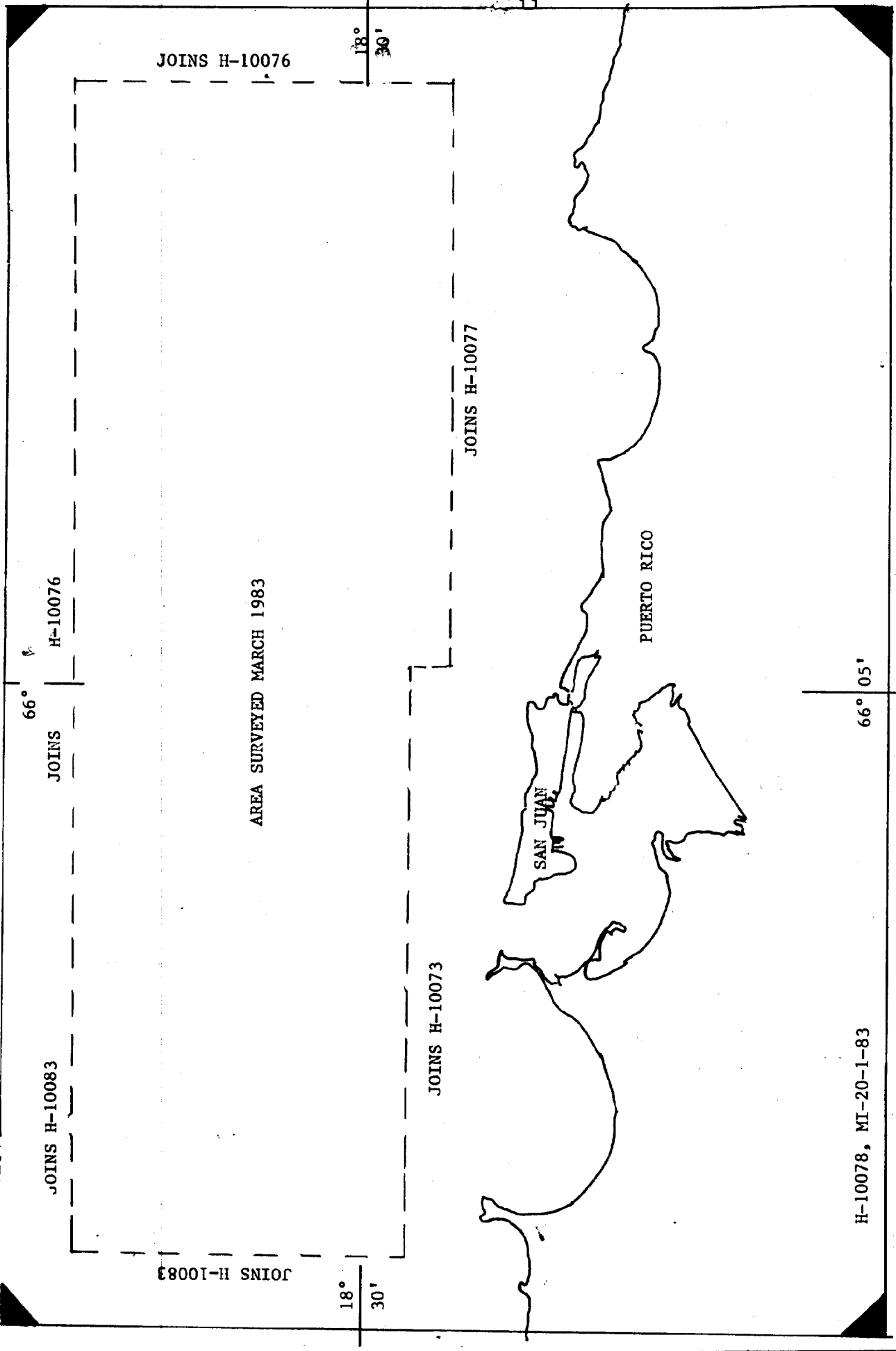
Soundings in fathoms ~~feet~~ at MLW ~~MLLW~~

REMARKS: CAPT J.A. YEAGER, LCDR L.A. LAPINE, LT R.L. PARSONS,
LT D.R. RICE, LTJG G.R. YATES JR., LTJG R.D. HENEGAR, ENS B.L. COAKLEY,
ENS D.I. CREWS, ENS C.N. MCLEAN, ENS J.A. MILLER, ENS J.L. HENDRIX,
ENS W.E. SITES

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

SH-2497

ANCOIS & SURF - 5/2/85 - AAA



SCALE OF CHART 25668

H-10078, MI-20-1-83
 PROGRESS SKETCH HYDROGRAPHIC OPERATIONS OPR-I149-MI-83
 NOAA SHIP MT. MITCHELL S-222, J. AUSTIN YEAGER, CAPT., NOAA

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** MATERIAL REMOVED FROM DESCRIPTIVE REPORT.*

DESCRIPTIVE REPORT
TO ACCOMPANY
SURVEY H-10078
(FIELD No. MI 20-1-83)
SCALE 1:20,000, YEAR 1983

CAPT J. AUSTIN YEAGER, NOAA
COMMANDING
NOAA SHIP MT MITCHELL

A. PROJECT

THIS SURVEY WAS CONDUCTED IN ACCORDANCE WITH PROJECT INSTRUCTIONS OPR I 149-MI-83, NORTH COAST OF PUERTO RICO, DATED 1 DECEMBER 1982 AND AMENDED BY CHANGES 1 AND 2 DATED 3 FEBRUARY 1983 AND ~~10 JANUARY~~ 1983 RESPECTIVELY.
4 FEBRUARY

B. AREA SURVEYED

THIS SURVEY WAS CONDUCTED IN THE ATLANTIC OCEAN OFF THE NORTHERN COAST OF PUERTO RICO, COVERING THE APPROACHES TO SAN JUAN.

THE AREA SURVEYED IS BOUNDED ON THE NORTH BY LATITUDE $18^{\circ}33.9'N$, ON THE WEST BY LONGITUDE $66^{\circ}12.5'W$, ON THE EAST BY LONGITUDE $65^{\circ}12.5'W$ AND ON THE SOUTH BY LATITUDE $18^{\circ}21.1'N$.
28.6

THIS SURVEY WAS CONDUCTED BETWEEN 15 MARCH 1983 (JD 074) AND 24 MARCH 1983 (JD 083) ON JULIAN DAYS 074, 075, 076, 077 AND 083.

C. SOUNDING VESSEL

SOUNDINGS FOR THIS SURVEY WERE OBTAINED BY THE NOAA SHIP MT MITCHELL S-222 (VESNO 2220).

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

ALL SOUNDINGS ARE MADE IN FATHOMS USING THE NUMBER TWO SOUNDING ROOM TRANSDUCER LOCATED 6 METERS AFT OF THE ANTENNA. THIS ANTENNA DISTANCE IS CORRECTED FOR BY THE PARAMETER TAPE THAT WAS USED IN THE ONLINE AND OFFLINE PLOT.

THE FOLLOWING SOUNDING EQUIPMENT WAS UTILIZED DURING THIS SURVEY:

<u>EQUIPMENT</u>	<u>SERIAL No.</u>
UNIVERSAL GRAPHIC RECORDER MODEL 196C	184
DIGITAL MODEL 261C	227
RAYTHEON PTR	008
ROSS MODEL 5000 FINELINE DEPTH RECORDER	1050
ROSS MODEL 6000 DIGITIZER	1104
ROSS MODEL 4000 TRANSCEIVER	1104

ALL SURVEY RECORDS WERE SCANNED BY TRAINED SURVEY DEPARTMENT PERSONNEL AND CHECKED BY THE OFFICER-IN-CHARGE. SIGNIFICANT PEAKS AND DEEPS THAT OCCURRED BETWEEN SOUNDINGS WERE INSERTED AND DIGITIZING ERRORS WERE CORRECTED ON THE ELECTRONIC CORRECTOR TAPE.

THE ROSS MODEL 5000 FATHOMETER WAS USED IN CONJUNCTION WITH THE UNIVERSAL GRAPHIC RECORDER (UGR) AT DEPTHS OF LESS THAN 200 FATHOMS. THE DEPTHS SOUNDED BY THE UGR WERE DIGITIZED, SCANNED AND COMPARED WITH THE ROSS. IN AREAS WHERE THE UGR AND ROSS DEPTHS WERE SIGNIFICANTLY DIFFERENT, ROSS DEPTHS WERE INSERTED IN LIEU OF THE UGR DEPTHS.

PHASE CHECKS WERE MADE AT FREQUENT INTERVALS. NECESSARY ADJUSTMENTS WERE MADE AND NOTED IN THE SOUNDING VOLUME, FATHOGRAM AND COMPUTER PRINTOUT. DEPARTURES OF THE TRACE FROM THE CALIBRATIONS DUE TO PHASE DIFFERENCES WERE CORRECTED DURING THE SCANNING PROCESS. SCALE CHECKS WERE MADE AT FREQUENT INTERVALS ON THE UGR.

VELOCITY CORRECTIONS WERE OBTAINED FROM A NANSEN CAST TAKEN ON 26 FEBRUARY 1983 (JD 57) AT LATITUDE 18°58'25"N, LONGITUDE 065°10'00"W. A PRINTOUT OF VELOCITY TABLE I AND ITS ASSOCIATED SPEED CURVE ARE INCLUDED IN APPENDIX D. *VELOCITY TABLE WAS REVISED DURING OFFICE VERIFICATION.*

A TRANSDUCER DRAFT DETERMINATION WAS MADE ON 15 FEBRUARY 1983 IN SAN JUAN HARBOR, PUERTO RICO. A TRANSDUCER DRAFT OF 2.25 FATHOMS FOR SOUND ROOM TWO WAS DETERMINED BY MEASURING THE DISTANCE FROM THE SHIP'S RAIL TO THE WATERLINE AND SUBTRACTING THAT DISTANCE FROM THE KNOWN DISTANCE TO THE TRANSDUCER. THE TRA CORRECTION OF 2.3 FATHOMS WAS APPLIED TO ALL SOUNDINGS COLLECTED. SETTLEMENT AND SQUAT CORRECTORS FOR THE SHIP WERE DETERMINED ON 26 JULY 1981 (JD 207), EIGHT MILES OFF CAPE CHARLES, VIRGINIA. A COPY OF THE FIELD DATA AND SETTLEMENT AND SQUAT CORRECTORS OBTAINED IS INCLUDED IN THE SURVEY SUPPORT DATA. THE SETTLEMENT AND SQUAT CORRECTORS WILL BE APPLIED DURING FINAL PROCESSING PHASE BY THE PROCESSING DIVISION, ATLANTIC MARINE CENTER. A TC/TI TAPE BASED ON THESE CORRECTORS IS INCLUDED WITH THE SURVEY RECORDS.

THIS SURVEY WAS CONDUCTED USING PROGRAM RK 112 WITH PREDICTED TIDES BASED ON DAILY PREDICTIONS AT SAN JUAN, PUERTO RICO (TIDE STATION 975-5371), WITH TIDAL ZONING TO BE APPLIED AS PROVIDED IN THE PROJECT INSTRUCTIONS OPR I 149-MI-83. SMOOTH TIDES WERE REQUESTED ON 9 APRIL 1983 FROM THE CHIEF OF TIDES AND WATER LEVELS BRANCH, ROCKVILLE, N/OMS12.

E. HYDROGRAPHIC SHEETS

THIS SURVEY WAS PLOTTED ON ONE MYLAR FIELD SHEET BY THE HYDRO PLOT SYSTEM ONBOARD THE MT MITCHELL AS FOLLOWS:

<u>NO. OF SHEETS</u>	<u>DATA</u>	<u>SKEW</u>
1	MAIN SCHEME, X LINES	0,21,54

THIS SURVEY WAS PLOTTED OFFLINE UTILIZING RK 210, USING ELECTRONIC CORRECTOR TAPES AND A VELOCITY TAPE. SOUNDINGS ON THE FIELD SHEET HAVE BEEN CORRECTED FOR DRAFT, PREDICTED TIDES, INITIALIZATION AND DIGITIZATION ERRORS, AND SOUND VELOCITY. THE SOUNDINGS HAVE NOT BEEN CORRECTED FOR SETTLEMENT AND SQUAT OR SMOOTH TIDES. THOSE CORRECTORS WILL BE APPLIED BY THE PROCESSING DIVISION, ATLANTIC MARINE CENTER.

ALL FIELD RECORDS AND THE FOLLOWING TAPES HAVE BEEN FORWARDED TO THE ATLANTIC MARINE CENTER FOR VERIFICATION AND SMOOTH PLOTTING:

- MASTER RANGE/RANGE DATA TAPES (RAW AND EDITED)
- ELECTRONIC CORRECTOR TAPES
- VELOCITY TAPE
- PARAMETER TAPE
- SIGNAL TAPE
- TC/TI TAPE

F. ELECTRONIC CONTROL STATIONS

THE ELECTRONIC HORIZONTAL CONTROL STATIONS USED FOR THIS SURVEY WERE:

<u>SIGNAL NO.</u>	<u>NAME</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
020	LIGHT HOUSE RM 3 1983	18°23'01.332"N	065°37'07.586"W
302	HELECHO ECC	18°14'52.669"N	066°48'43.064"W
100	ACADEMY (HYDROTRAC) 1983	18°28'37.096"N	066°08'24.408"W

STATION LIGHT HOUSE RM3 1983 WAS ESTABLISHED BY PERSONNEL FROM OPERATIONS DIVISION, ATLANTIC MARINE CENTER, AND IS MONUMENTED. STATIONS HELECHO ECC AND ACADEMY (HYDROTRAC) 1983 WERE ESTABLISHED BY PERSONNEL FROM MT MITCHELL AND ARE NOT MONUMENTED. *SEE SECTION 2.2 OF THE EVALUATION REPORT.*

A LISTING OF ALL STATIONS USED DURING THIS SURVEY, NAMES AND GEOGRAPHIC POSITIONS, IS INCLUDED IN APPENDIX F.

G. HYDROGRAPHIC POSITION CONTROL

AN ODOM OFFSHORE HYDROTRAC SYSTEM, OPERATING AT A FREQUENCY OF 1718.59 K HZ IN THE RANGE/RANGE MODE, WAS USED TO PROVIDE POSITIONING CONTROL FOR ALL HYDROGRAPHY. HYDROTRAC STATIONS WERE ERECTED AND MAINTAINED BY SHIPS PERSONNEL. THE EQUIPMENT USED AND SERIAL NUMBERS ARE AS FOLLOWS:

<u>LOCATION</u>	<u>EQUIPMENT</u>	<u>MODEL</u>	<u>SERIAL No.</u>
LIGHT HOUSE RM3 1983 (S1)	COUPLER		131
	SLAVE DRIVE UNIT	257	226
	LINEAR AMPLIFIER	74-87	540
	POWER SUPPLY		620
HELECHO ECC, 1983 (S2)	COUPLER		722
	SLAVE DRIVE UNIT	257	215
	LINEAR AMPLIFIER	74-87	536
	POWER SUPPLY		751
ACADEMY (HYDROTRAC) 1983 (S2)	COUPLER		722
	SLAVE DRIVE UNIT		215
	LINEAR AMPLIFIER		537
	POWER SUPPLY		754
MT MITCHELL	RECEIVER	700	326
	MASTER DRIVE	702	122
	POWER AMPLIFIER	74-87	538

CALIBRATIONS WERE DONE BY USING THREE POINT SEXTANT FIXES WITH CHECK ANGLES, UTILIZING RK 561, AND BY CROSSING A RANGE AND ONE SEXTANT ANGLE UTILIZING RK 300, FUNCTION 7.

WHILE USING HYDROTRAC POSITIONING, THE LANE COUNT WAS CONSTANTLY MONITORED BY COMPARING THE DIGITAL READOUT WITH THE RUNNING COUNT ON THE SAWTOOTH RECORDER. LANE JUMPS WERE DETECTED BY THIS CONSTANT COMPARISON AND THEN CONFIRMED WHEN RECHECKING THE SAWTOOTH RECORD. AN ABSTRACT OF THE CALIBRATION DATA IS INCLUDED IN APPENDIX E.

AFTER CALIBRATING THE HYDROTRAC SYSTEM ON JD 075, LANE DISCREPANCIES WERE DISCOVERED IN BOTH PATTERN ONE AND PATTERN TWO, WHICH COULD NOT BE EXPLAINED BY SUBSEQUENT REVIEW OF THE SAWTOOTH RECORD. A CAREFUL REVIEW OF THE CALIBRATION ON JD 074 SHOWED THAT AFTER CALIBRATING, LANE CORRECTORS WERE IMPROPERLY APPLIED TO BOTH PATTERNS RESULTING IN AN INCORRECT LANE COUNT. CORRECTORS SHOULD HAVE BEEN SUBTRACTED FROM

PATTERN ONE AND ADDED TO PATTERN TWO. THIS ERROR WAS CORRECTED BY COMPENSATING WITH APPROPRIATE CORRECTORS ON THE ELECTRONIC CORRECTOR TAPE.

EQUIPMENT AND ATMOSPHERIC PROBLEMS AT STATION HELECHO ECC NECESSITATED THE MOVEMENT OF THE RIGHT STATION FROM HELECHO ECC TO ACADEMY (HYDROTRAC). LIGHT HOUSE RM3 AND HELECHO ECC WERE UTILIZED FROM JD 074 - JD 077. LIGHT HOUSE RM3 AND ACADEMY (HYDROTRAC) WERE UTILIZED ON JD 083.

H. SHORELINE

THERE WAS NO SHORELINE WITHIN THE SURVEY LIMITS.

I. CROSSLINES *SEE ALSO SECTION 3.0 OF THE EVALUATION REPORT.*

CROSSLINES WERE RUN AT 45 DEGREE TO 90 DEGREE ANGLES TO THE MAINSCHEME. THE 21.2 MILES OF CROSSLINES AMOUNTED TO 7% OF THE MAINSCHEME SOUNDING LINES. THE CROSSLINES AGREED WELL WITH THE MAINSCHEME CONTOUR LINES.

J. JUNCTIONS *SEE SECTION 5 OF THE EVALUATION REPORT*

THIS SURVEY JUNCTIONS WITH THE FOLLOWING SURVEYS:

<u>AREA OF JUNCTION</u>	<u>FIELD No.</u>	<u>REG. No.</u>	<u>SCALE</u>	<u>DATE</u>	<u>VESSEL</u>
NORTH AND EAST	MI 80-2-83	H-10076	1:80,000	1983	2220
SOUTH	MI 10-1-83	H-10073	1:10,000	1983	2224 *
SOUTH	MI 10-2-83	H-10077	1:10,000	1983	2223 *
NORTH AND WEST	MI 80-3-83	H-10083	1:80,000	1983	2220

THE JUNCTIONS WITH H-10076, ~~H-10073~~, ~~H-10077~~ AND H-10083 WERE EXCELLENT. THERE WAS NO SHIFT IN THE CONTOURS.

** THESE SURVEYS ARE CONSIDERED INCOMPLETE.*

K. COMPARISON WITH PRIOR SURVEYS

PRIOR SURVEYS AVAILABLE FOR COMPARISON WERE AS FOLLOWS:

<u>SURVEY</u>	<u>SCALE</u>	<u>DATE</u>
H-2677	1:20,000	190 ⁴ X
H-2883	1:20,000	1907
H-2874	1:80,000	1907

SURVEY H-2677 SOUNDINGS AGREED WITH THE CONTOURS EXCEPT FOR A CHARTED DEPTH OF 870 FEET AT LATITUDE 18°30.6'N, LONGITUDE 066°09.28'W WHICH IS IN AN AREA OF DEPTHS OF GREATER THAN 900 FEET.

SURVEY H-2883 SOUNDINGS AGREED WITH THE CONTOURS EXCEPT FOR A CHARTED DEPTH OF 288 FEET AT LATITUDE 18°27.7'N, LONGITUDE 066°00.4'W, WHICH IS NOW AN AREA OF DEPTHS GREATER THAN 600 FEET.

L. COMPARISON WITH THE CHARTS

THE SURVEY AREA WAS COVERED BY THE FOLLOWING CHARTS:

<u>CHART NUMBER</u>	<u>EDITION</u>	<u>DATE</u>	<u>SCALE</u>
25668	11TH	AUG 82	1:100,000
25640	29TH	AUG 81	1:326,856

THE COMPARISON OF H-10078 WITH BOTH CHART 25668 AND CHART 25640 SHOWED EXCELLENT SOUNDING AND CONTOUR AGREEMENT.

M. ADEQUACY OF THE SURVEY *SEE SECTION 6. OF THE EVALUATION REPORT*

THIS SURVEY IS CONSIDERED COMPLETE AND ADEQUATE TO SUPERSEDE PRIOR SURVEYS.

N. AIDS TO NAVIGATION *SEE SECTION 4 OF THE EVALUATION REPORT.*

THERE WERE NO AIDS TO NAVIGATION IN THE SURVEY AREA.

O. STATISTICS

LINEAR NAUTICAL MILES OF MAINSCHEME HYDROGRAPHY	297.65
LINEAR NAUTICAL MILES OF CROSSLINES	21.20
LINEAR NAUTICAL MILES OF DEVELOPMENT	0.00
TOTAL MILES OF HYDROGRAPHY	318.85
TOTAL MISCELLANEOUS MILES	135.30
TOTAL MILES RUN	457.15
TOTAL NUMBER OF POSITIONS	1034
NANSEN CASTS	1
BOTTOM SAMPLES	0
SQUARE MILES OF HYDROGRAPHY	46.55

P. MISCELLANEOUS *SEE SECTION 4.2 AND SECTION 6 OF THE EVALUATION REPORT.*

BOTTOM SAMPLES WERE NOT OBTAINED IN THE AREA OF THIS SURVEY DUE TO THE DEPTH AND SLOPE OF THE BOTTOM.

Q. RECOMMENDATIONS

IT IS RECOMMENDED THAT THIS SURVEY SUPERSEDE ALL PRIOR SURVEYS OF THE AREA.

R. AUTOMATED DATA PROCESSING

THE FOLLOWING HYDROPLOT PROGRAMS WERE USED TO ACQUIRE AND PROCESS THE SURVEY DATA:

<u>PROGRAM NUMBER</u>	<u>PROGRAM NAME</u>	<u>VERSION</u>
RK 112	HYPERBOLIC R/R REAL-TIME PLOT	08/04/81
RK 201	GRID, SIGNAL AND LATTICE PLOT	04/18/75
RK 561	GEODETIC CALIBRATION	02/19/75
RK 330	DATA REFORMAT AND CHECK	05/04/76
RK 530	VELOCITY CORRECTIONS COMPUTATIONS	05/10/76
AM 602	EXTENDED LINE ORIENTED EDITOR	05/21/75
PM 360	ELECTRONIC CORRECTOR ABSTRACT	02/02/76
RK 211	RANGE/RANGE NON-REAL TIME PLOT	02/02/81
RK 300	UTILITY COMPUTATIONS	10/21/80
AM 500	PREDICTED TIDE GENERATOR	11/10/72

S. REFERENCE TO REPORTS

COAST PILOT REPORT
HORIZONTAL CONTROL REPORT
HUMPBACK WHALE SURVEY REPORT

RESPECTFULLY SUBMITTED,


GARNER R. YATES, LTJG, NOAA

APPENDIX F
LIST OF STATIONS

MASTER SIGNAL LIST

020 LIGHTHOUSE RM3
053 CAPITOL DOME
060 ST. AUGUSTINE CHURCH SPIRE
070 MORRO LIGHTHOUSE 1900
080 CATANO FRONT RANGE
090 CATANO REAR RANGE
100 ACADEMY (HYDRO TRAC)
102 ISLA DE CABRAS LT
140 LEVITTOWN MUN. TANK
302 HELECHO ECC

MASTER SIGNAL GP'S

020	4	18	23	01332	065	37	07586	250	0000	171859
053	4	18	28	07500	066	06	22750	253	0000	000000
060	4	18	28	02903	066	05	57971	139	0000	000000
070	4	18	28	22774	066	07	26371	139	0000	000000
080	4	18	27	24242	066	07	49410	139	0000	000000
090	4	18	26	44315	066	07	55044	139	0000	000000
100	4	18	28	37096	066	08	24408	250	0000	171859
102	4	18	28	37242	066	08	24527	139	0000	000000
140	4	18	27	02164	066	10	50239	139	0000	000000
302	4	18	14	52669	066	48	43064	250	0702	171859

APPENDIX I
LANDMARKS FOR CHARTS
(There were no landmarks in this survey area)

APPENDIX J
APPROVAL SHEET

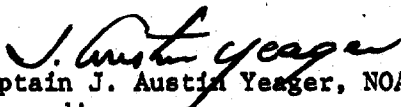
Approval Sheet

Date April 25, 1983

Survey MT 20-1-83

Field No H-10078

The field work for this survey was conducted under my daily review and supervision. I have reviewed this report with the final field sheet and approve them and the accompanying records. Together they represent a complete survey adequate to supercede all prior surveys for charting purposes, with exceptions noted in the body of this report.


Captain J. Austin Yeager, NOAA
Commanding,
NOAA SHIP MT MITCHEL

DATE: October 4, 1983

ORIG IN H10073 files

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): 975-5371 San Juan, PR

Period: March 15 - 24, 1983

HYDROGRAPHIC SHEET: H-10078

OPR: 1149

Locality: North Coast, Island of Puerto Rico

Plane of reference (mean ~~Lower~~ low water): 2.05 feet

Height of Mean High Water above Plane of Reference is 1.1 feet

REMARKS: Recommended Zoning:

Zone Direct


Chief, Tidal Datums Section, Tides & Water
Levels Branch

H-10078

GEOGRAPHIC NAMES

Name on Survey

A ON CHART NO. 25668
B ON PREVIOUS SURVEY NO. 25640
C ON U.S. QUADRANGLE MAPS
D FROM LOCAL INFORMATION
E ON LOCAL MAPS
F P.O. GUIDE OR MAP
G RAND McNALLY ATLAS
H U.S. LIGHT LIST
K

✓ ATLANTIC OCEAN (title)																					1	
✓ PUERTO RICO (title)																						2
✓ PUNTA SALINAS (title)																						3
✓ PUNTA MALDONADO (title)																						4
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Approved

Charles E. Hamilton
Chief Geographer - N/C&GS

25 FEB. 1985

MOA23-48-85 RAW

LETTER TRANSMITTING DATA

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

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

TO:

CHIEF, DATA CONTROL SECTION
HYDROGRAPHIC SURVEYS BRANCH, N/CG243
NATIONAL OCEAN SERVICE, NOAA
ROCKVILLE, MD 20852

DATE FORWARDED

17 APRIL 1985

NUMBER OF PACKAGES

1 TUBE, 1 BOX

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.

H-10078 OPR-I 149-MI-83 (MI-20-1-83)
PUERTO RICO, ATLANTIC OCEAN
OFFSHORE - PUNTA SALINAS TO PUNTA MALDONADO

PKG NO. 1, 1 TUBE CONTAINING:

- 01 SMOOTH SHEET
- 01 SMOOTH POSITION OVERLAY
- 02 SMOOTH EXCESS OVERLAYS
- 01 ORIGINAL DESCRIPTIVE REPORT
- 01 FINAL FIELD SHEET
- 03 PRELIMINARY FIELD SHEETS

PKG NO. 2, 1 BOX CONTAINING:

- 05 ENVELOPES CONTAINING UGR ECHOGRAMS FOR VESNO 2220: ID 074, 075, 076, 077 AND 083.
- 01 ACCORDIAN FILE CONTAINING ECHOGRAMS AND FIELD DATA PRINTOUTS FOR VESNO 2220: ID 074, 075, 076, 077 AND 083.
- 01 SOUNDING VOLUME
- 01 BUNDLE OF SAWTOOTH POSITION CHARTS.

FROM: (Signature)

David B. MacFarland

FOR DAVID B. MACFARLAND LCDR NOAA

Return receipted copy to:

HYDROGRAPHIC SURVEYS BRANCH, N/MOA232
ATLANTIC MARINE CENTER
NOAA - NATIONAL OCEAN SERVICE
439 WEST YORK STREET
NORFOLK, VA 23510

RECEIVED THE ABOVE
(Name, Division, Date)

Wayne S. Clark
April 26, 1985
NICG243

MOA23-48-85 RAW

LETTER TRANSMITTING DATA

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

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

TO:

CHIEF, DATA CONTROL SECTION
HYDROGRAPHIC SURVEYS BRANCH, N/CG243
NATIONAL OCEAN SERVICE, NOAA
ROCKVILLE, MD 20852

DATE FORWARDED

APRIL 17 1985

NUMBER OF PACKAGES

1 TUBE, 1 BOX

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H-10078 (CONT'D)

PKG NO 2 CONTINUED.

- 4 ENVELOPE CONTAINING POSITION CALIBRATION RECORDS*
- 1 ENVELOPE CONTAINING DATA REMOVED FROM DESCRIPTIVE REPORT*
- 1 ENVELOPE CONTAINING SUPPLEMENTAL DATA REMOVED FROM PRINTOUTS.*
- 1 CARRIER CONTAINING THE FINAL CONTROL PRINTOUT AND FINAL POSITION PRINTOUT*
- 1 CARRIER CONTAINING THE FINAL SOUNDING PRINTOUT AND L-FILE (Z-RECORD) PRINTOUT*

FROM: (Signature)

[Signature]

FOR DAVID B. McFARLAND LCDR NOAA

Return receipted copy to:

ATLANTIC MARINE CENTER
HYDROGRAPHIC SURVEYS BRANCH, NIMQAZ3
NOAA, NATIONAL OCEAN SERVICE
439 W. YORK STREET
NORFOLK, VA 23510

RECEIVED THE ABOVE
(Name, Division, Date)

DR 2012
Dwayne S. Clark
April 26, 1985
N/CG243

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NO.: H-10078

Number of positions	<u>1021</u>
Number of soundings	<u>6036</u>
Number of control stations	<u>11</u>

	<u>TIME-HOURS</u>	<u>DATE COMPLETED</u>
Preprocessing Examination	<u>13</u>	<u>5/23/83</u>
Verification of Field Data	<u>195</u>	<u>1/30/85</u>
Quality Control Checks	<u>45</u>	
Evaluation and Analysis	<u>33</u>	<u>3/06/85</u>
Final Inspection	<u>3</u>	<u>3/14/85</u>
TOTAL TIME	<u>289</u>	
Marine Center Approval		<u>3/19/85</u>

Transmittal letter of survey and survey records will be included in the Descriptive Report to identify the records accompanying the survey.

ATLANTIC MARINE CENTER
EVALUATION REPORT

SURVEY NO.: H-10078

FIELD NO.: MI-20-1-83

Puerto Rico, Atlantic Ocean, Offshore--Punta Salinas to Punta Maldonado

SURVEYED: 15 March through 24 March 1983

SCALE: 1:20,000

PROJECT NO.: OPR-149-MI-83

SOUNDINGS: Raytheon Universal
Graphics Recorder (UGR)
Ross Digital Echosounder

CONTROL: Odom Offshore
Hydrotrac
(Range/Range)

Chief of Party.....J. A. Yeager

Surveyed by.....L. A. Lapine
.....R. L. Parsons
.....D. R. Rice
.....G. R. Yates
.....R. D. Henegar
.....B. L. Coakley
.....D. I. Crews
.....C. N. McLean
.....J. A. Miller
.....J. L. Hendrix
.....W. E. Sites

Automated Plot by.....Xynetics 1201 Plotter (AMC)

1. INTRODUCTION

- a. No unusual problems were encountered during office processing.
- b. Notes in red were made in the Descriptive Report during office processing.

2. CONTROL AND SHORELINE

- a. The control is adequately discussed in sections F, G and S of the Descriptive Report. Third order methods were not used to locate control stations ACADEMY (HYDROTRAC), 1983, and HELECHO ECC, 1983. However, it was decided by the hydrographer that minimal error was induced in the geographic position. These positions will be retained at AMC and will not be entered into the NGS System.
- b. There is no shoreline within the area surveyed.

3. HYDROGRAPHY

a. Soundings at crossings agree within the criteria stated in sections 4.6.1 and 6.3.4.3 of the Hydrographic Manual and sections 6.6 of the Project Instructions.

b. Except in the junctional area where only segments of the 40, 50 and 100 fathom curves could be drawn, the standard curves were drawn in their entirety.

c. Development of the bottom configuration and determination of least depths is considered adequate with the following exceptions:

1) Lines of hydrography run normal to the depth curve should have been extended closer to the southern limits of hydrography in order to provide a better delineation of the depth curves. The existing parallel lines of hydrography along the southern limits of hydrography do not provide sufficient data for the accurate drawing of the depth curves

2) For the purpose of bathymetric mapping, additional development and reduced line spacing would have been desirable for ridges and troughs.

4. CONDITION OF SURVEY

The smooth sheet and accompanying overlays, hydrographic records and reports are adequate and conform to the requirements of the Hydrographic Manual with the following exceptions:

a. No bottom samples were taken as required by sections 1.6.3 and 4.7.1 of the Hydrographic Manual and section 8.1 of the Project Instructions. However, see section P of the hydrographer's Descriptive Report and section 6 of this report.

b. New velocity graphs were drawn and velocity correctors were revised during office processing. Data presentation was inadequate for determining accuracy of values plotted and scaled.

c. A negative report on Dangers to Navigation was not included in the Descriptive Report as required by section 6.12 of the Project Instructions. No dangers to navigation were discovered during the course of this survey.

d. Sections 6.5.1 of the Project Instructions and 4.3.5 of the Hydrographic Manual were not complied with in that sounding lines were run parallel to the steep slope in depths between 40 and 150 fathoms not normal to them. At least three of these parallel lines were not crossed by crosslines.

e. An investigation of landmarks, NOAA Form 76-40 (Nonfloating Aids or Landmarks for Charts) was not submitted. There were no fixed aids or landmarks within the survey area but the southern limits of the present

survey were one mile offshore. An evaluation of charted landmarks suitable for small scale charting purposes would have been desirable.

f. The 300-fathom curve was not drawn on the hydrographer's field sheet.

g. Table 3 of velocity correctors was not submitted with the data. This was corrected during office processing.

h. The hydrographer failed to make a comparison with prior survey H-2874 (1907).

5. JUNCTIONS

H-10076 (1983) to the north and east
H-10083 (1983) to the north and west

An excellent junction was made between the present survey and survey H-10083 (1983).

An excellent junction was made between the present survey and survey H-10076 (1983). However, additional sounding information on the present survey shows than the 400 foot curve in the vicinity of Latitude $18^{\circ}32'30''N$, Longitude $66^{\circ}05'30''W$ and Latitude $18^{\circ}32'30''N$, Longitude $66^{\circ}03'10''W$ is in error on H-10076 (1983) and should be changed to agree with the present survey.

There are two contemporary surveys to the south of the present survey, surveys H-10073 and H-10077 of 1983. However, these surveys are considered incomplete at this time and junctions were not effected. The charted depths and present survey depths are in harmony to the south.

6. COMPARISON WITH PRIOR SURVEYS

H-2677 (1904) 1:20,000
H-2883 (1907) 1:20,000
H-2874 (1907) 1:80,000

H-2677 (1904) covers a small portion south western limits of the present survey. Present survey soundings agree well with the prior survey with scattered soundings three (3) to twelve (12) fathoms deeper than the prior survey.

H-2874 (1907) agrees very well with the present survey with a few scattered soundings seventeen (17) fathoms shoaler to one hundred (100) fathoms deeper.

H-2883 (1907) agrees well with the present survey with scattered soundings of five (5) fathoms to sixty-four (64) fathoms shoaler in the vicinity of Latitude $18^{\circ}29'30''N$, Longitude $66^{\circ}00'24''W$. These differences in depth do not indicate natural bottom changes but are probably positional errors on the prior survey caused by vessel drift due to wind and currents and by taking sextant fixes on distant shore signals.

Bottom characteristics were carried forward from these prior surveys to supplement present survey data. With this addition, the present survey is considered adequate to supersede the above prior surveys in the common area.

7. COMPARISON WITH CHARTS

No. 25640 (29th Edition, Aug. 22/81)

No. 25668 (11th Edition, Aug. 28/82)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys and needs no further discussion. Attention is directed to the following:

Charted soundings in the dump site located in the vicinity of Latitude 18°30'36"N, Longitude 66°09'00"W should be revised to reflect the present survey.

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

b. AIDS TO NAVIGATION

There are no fixed or floating aids to navigation within the limits of the present survey. See also section 4.e. of this report.

8. COMPLIANCE WITH INSTRUCTIONS

Except as listed elsewhere in this report, this survey adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

This is an adequate basic survey and no additional field work is recommended. However, for the purpose of bathymetric mapping, additional development and reduced line spacing would have been desirable for defining ridges and troughs.

Maurice W. Holloway
Maurice W. Holloway
Cartographic Technician
Verification of Field Data

Richard H. Whitfield
Richard H. Whitfield
Cartographic Technician
Evaluation and Analysis

Robert R. Hill
Robert R. Hill
Senior Cartographic Technician
Verification Check

Inspection Report
H-10078


The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproof 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 magnetic tape record for this survey. Final control, position, and sounding printouts of the survey have been made. The survey complies with National Ocean Service requirements except as noted in the Evaluation Report. The survey records comply with NOS requirements except where noted in the Evaluation Report.

Inspected



R. D. Sanocki
Acting Chief, Hydrographic Surveys
Branch

Approved March 19, 1985



Wesley V. Hull, RADM, NOAA
Director, Atlantic Marine Center

PUERTO RICO AND VIRGIN ISLANDS



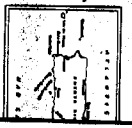
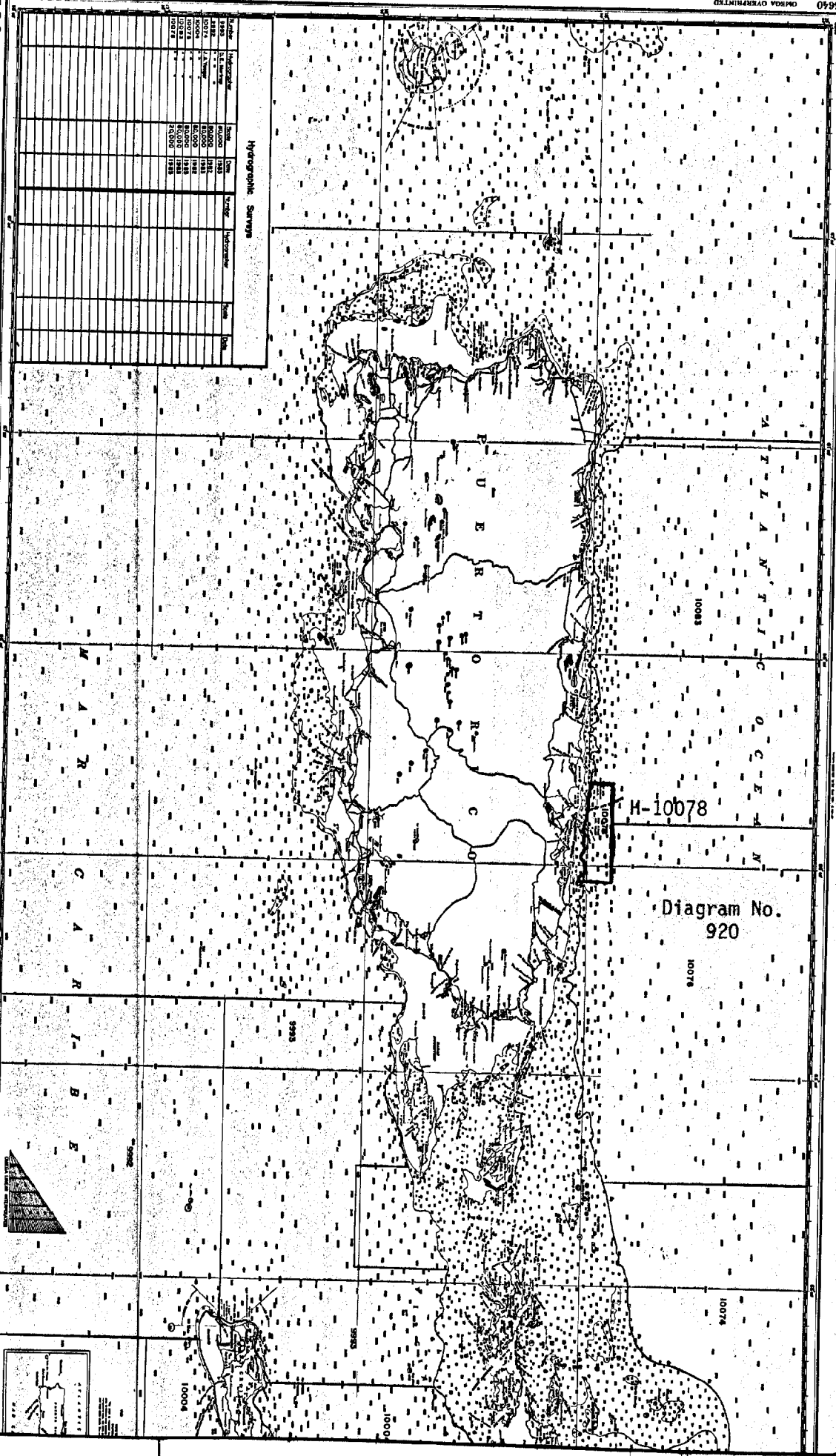
Vertical text on the right side of the page, likely containing technical specifications or survey details.

Diagram No. 920

H-10078

HYDROGRAPHIC SURVEYS

Date	Hydrographic	Scale	Chart	Remarks
1882	U.S. Fish Com.	60000	1881	
1883	U.S. Fish Com.	60000	1881	
1884	U.S. Fish Com.	60000	1881	
1885	U.S. Fish Com.	60000	1881	
1886	U.S. Fish Com.	60000	1881	
1887	U.S. Fish Com.	60000	1881	
1888	U.S. Fish Com.	60000	1881	
1889	U.S. Fish Com.	60000	1881	
1890	U.S. Fish Com.	60000	1881	
1891	U.S. Fish Com.	60000	1881	
1892	U.S. Fish Com.	60000	1881	
1893	U.S. Fish Com.	60000	1881	
1894	U.S. Fish Com.	60000	1881	
1895	U.S. Fish Com.	60000	1881	
1896	U.S. Fish Com.	60000	1881	
1897	U.S. Fish Com.	60000	1881	
1898	U.S. Fish Com.	60000	1881	
1899	U.S. Fish Com.	60000	1881	
1900	U.S. Fish Com.	60000	1881	



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