10009

Diagram No. 905-2

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. MI-10-6-82

Registery No. H-10009

LOCALITY

State U.S. Virgin Islands

General Locality St. Croix

Sublocality Vicinity of Long Point

1982

CHIEF OF PARTY
CAPT. J.A. Yeager

LIBRARY & ARCHIVES

DATE October 16, 1986

☆U.S. GOV. PRINTING OFFICE: 1985—566-054

10009

ACPG
CHTS
25632
25644
25641
25640

TO SIGN OFF SEE "RECORD OF APPLICATION"

FORM C&GS-537 (5-66)

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

REGISTER NO.

H-10009

HYDROGRAPHIC TITLE SHEET

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-10-6-82

State ~~St. Croix,~~ U.S. Virgin Islands

General locality ~~Southshore~~ St. Croix

Locality Vicinity of Long Point

Scale 1:10,000 Date of survey 8 April - 23 April 1982

Instructions dated 27 November 1981 Project No. OPR-I149-MI/PE-82

Vessel NOAA SHIP MT. MITCHELL's launches (VESNO 2224, 2225 & 2226)

Chief of party Captain J. Austin Yeager, NOAA

Surveyed by Ship's Officers (See Remarks)

Soundings taken by echo sounder, ~~hand lead, pole~~ Ross Model 5000 Fineline Echo Sounder, lead line

Graphic record scaled by RW, EM, UG, RC, FS, BM, CS

Graphic record checked by RW, EM, UG, RC, FS, BM, CS

Protracted by ____ Automated plot by Xynetics 1201 Plotter (AMC) ~~Ship's HYDROPLOT~~

~~Soundings penciled by~~ Verification by F.L. Saunders, AMC Verification Branch

Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW Fathoms and tenths at MLLW

REMARKS: LCDR L. A. Lapine, LT K.W. Perrin, LT E.S. Varney, LTJG J. Zabitchuck, ENS K. P. Peters, ENS F. W. Rossmann, ENS R. D. Henegar, ENS B. L. COAKLEY, ENS A. E. Orris, ENS C. McLean, ENS D. I. Crews

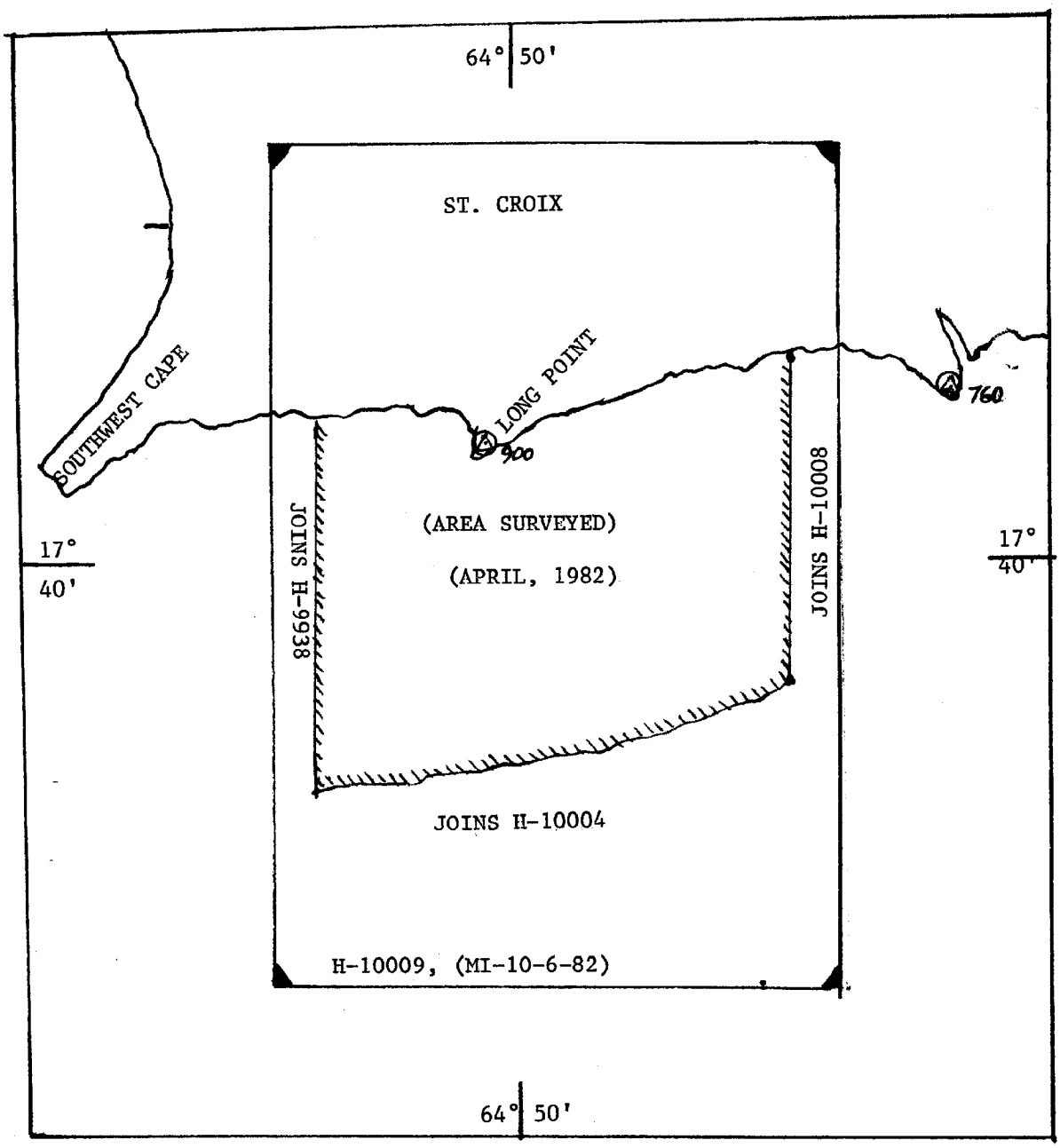
Notes in red in the Descriptive Report were made during office processing.

Miscellaneous pages have been removed and filed with the survey records.

STANDARDS CK'D 10-17-86

AWOIS / SURF MSM 10/24/86 . CLW

USCOMM-DC 27009-P66



SCALE OF CHART 25641

PROGRESS SKETCH
HYDROGRAPHIC OPERATIONS
NOAA SHIP MT. MITCHELL S-222
J. AUSTIN YEAGER, CAPT: NOAA

H-10009, MI-10-6-82

STATISTICS

435.2 LNM HYDRO
12.8 SNM HYDRO
18 BOTTOM SAMPLES
2 BARCHECKS
2 NANSEN CAST

A. PROJECT

This survey was conducted in accordance with Project Instructions OPR-I-149-MI/PE-82, St. Croix, U. S. Virgins Islands dated 27 November 1981. Amended by changes 1 through 4 dated 21 December 1981, 11 January 82, 25 January 1982 and 2 March 1982, with one Supplementary Instruction Dated 18 November 1981.

B. AREA SURVEYED

The area surveyed is the southern side of St. Croix approximately 1.3 N. M. west of Krause Lagoon Channel to 1.8 N. M. east of Southwest Cape. Soundings were conducted from approximately the 150 fathom curve, running inshore to junction with the photobathymetry. The survey includes the Southwest Anchorage and Southwest Shoal. The eastern portion of the survey has several coral reefs, two of which are exposed at periods of low water. The general trend of the bottom runs 2 to 3 fathoms from the shoreline to about 1.8 nautical mile offshore. At this point the bottom gradually slopes to 20 fathoms. A rapid drop in the bottom occurs after the 20 fathom curve to 150 fathoms. The survey area is enclosed by the following points.

Latitude (N)	Longitude (W)
17°38'00"N	64°47'30"W
17°36'50"N	64°52'00"W
17°41'15"N	64°52'00"W
17°41'45"N	64°47'30"W

This survey was conducted from Julian day 098 through Julian Day 113, (8 April through 23 April 1982).

C. SOUNDING VESSELS

The following launches were used to conduct this survey:

VESNO	LAUNCH
2224	1017
2225	1002
2226	1008

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

The following sounding equipment was utilized during the survey:

VESNO 2224	Serial Number
Ross Model 5000 Fineline Depth Recorder	1087
Ross Model 4000 Transceiver	1079
Ross Digitizer	1079
Inverter	1078

VESNO 2225	Serial Number
Ross Model 5000 Fineline Depth Recorder	3780
Ross Model 4000 Transceiver	1053
Ross Digitizer	1039
Inverter	1050

VESNO 2226	Serial Number
Ross Model 5000 Fineline Depth Recorder	1083
Ross Model 4000 Transceiver	1055
Ross Digitizer	1055
Inverter	1055

All survey records were scanned by survey department personnel and checked by the officer-in-charge. Peaks or deeps considered significant that occurred between soundings were inserted on the electronic corrector tape. Digitizing errors greater than $\pm$0.2 fathoms were corrected to agree with the graphic record via the electronic corrector tape.

Phase calibration checks were made at frequent intervals. Necessary adjustments were made and noted in the sounding volume and on the fathogram. Any departures of the trace from the calibration due to phase differences were corrected during the scanning process.

Velocity correctors were obtained from two Nansen casts at the following locations:

Cast Number	Julian Date	Latitude	Longitude
1	051 (20 Feb 1982)	17°52'12"N	64°49'24"W
2	084 (25 March 1982)	17°53'54"N	64°41'18"W

Results of the second cast were in very good agreement with the first cast, resulting in the continuing use of the velocity correctors from the first cast.

Several barchecks were made during the field season. Due to the excellent agreement between the barchecks and nansen cast data. The nansen cast data because of its greater accuracy and overall range, was used for all velocity corrections. Velocity correctors were applied to the soundings during off-line processing. Sound velocity tables and printouts of the velocity tape are included in Appendix D.

Transducer draft of 0.3 fathoms was applied during the survey operations by all launches. Settlement and squat correctors for the launches were determined at San Juan Harbor, Puerto Rico from pier 10. A copy of the field data and settlement and squat corrections versus launch RPMs is included in Appendix D.

Comparisons of the nansen cast and barcheck data revealed an instrument error of +0.1 for LAUNCH 2224. The two other launches had zero instrument error.

This survey was conducted using predicted tides based on daily predictions at Galveston Texas (#3277) corrected to Charlotte Amalie, St. Thomas, U.S. V.I. (975-1639). Tide corrections were applied during launch hydrographic Operations with the following exceptions:

VESNO	Julian Date	Positions
2224	111	4001-4154
2226	111	1289-1555

Tidal corrections for these exceptions were applied during off-line processing. Smooth tides were requested from the Chief, Tides and Water Levels Branch (OA/C23) dated 26 April 1982 for the period of hydrography.

E. HYDROGRAPHIC SHEETS

This survey was plotted on six Mylar Field Sheets prepared on the MT MITCHELL's Hydroplot system.

Number of Sheets	Type	Skew
3	Mainscheme	90, 21, 54
1	Crosslines, Development, Bottom Samples, Detached Positions	90, 21, 54
1	Bottom Samples and Detached Positions	90, 21, 54
1	Crosslines and Developments	90, 21, 54

Soundings on the field sheets are corrected for draft, predicted tides, digitizing errors and sound velocity. Sheets are not corrected for smooth tides, settlement and squat or instrument error; these corrections will be applied on the final smooth sheet prepared by the Atlantic Marine Center (OA/CAM3) Processing Division, Norfolk, Virginia.

All field records and the following tapes have been forwarded to the Atlantic Marine Center, Processing Division.

Range-Range Master Tape
Range-Azimuth Master Tape
Electronic Corrector Tape
Velocity Corrector Tape
Parameter Tapes
Signal Tape
TC/TI Tapes

F. ELECTRONIC CONTROL STATIONS

The following control stations were used for this survey:

	Station Number	Station Name	Year Established	Latitude(N)	Longitude(W)
outside limits of smooth sheet	730	Nugent 1919	1919	17°43'02".905"	64°40'01.363"
	740	Nelthropp	1982	17°42'04".635"	64°43'07.639"
	750	Hess	1982	17°41'24".789"	64°44'27.256"
	760	Martin Marietta	1982	17°41'25".024"	64°45'57.436"
	900	Long Point RMI	1982	17°40'54".556"	64°50'21.967"

All stations were established using Third-Order, Class I survey methods.

Stations 740, 750, 760 and 900 were establish this year (1982) by personnel from Operations Division, Atlantic Marine Center. All stations were recovered by MT. MITCHELL Personnel. A complete list of stations used for the project and their geographic positions are included in Appendix F of this report.

G. HYDROGRAPHIC POSITION CONTROL

Del Norte line of sight microwave systems were used to conduct this survey. Two Del Norte units were used in the Range-Range mode. A single Del Norte unit in conjuction with a Wild T-2 Theodlite was used in the Range-Azimuth mode.

The following is a list of the equipment used in this survey.

VESNO	Equipment	Serial Number
2224	DMU	180
	Master	620
	Buffer	119

VESNO	Equipment	Serial Number
2225	DMU	172
	Master	1068
	Buffer	126

VESNO	Equipment	Serial Number
2226	DMU	190
	Master	162
	Buffer	121

The following Del Norte remote units were used during this survey:

VESNO	Julian Date	Station	Remote
2224	111	900	Code 78-#264
	112	900	Code 78 #264
		740	Code 74 #1137
	113	900	Code 78 #264
		740	Code 74 #1137
2225	098	900	Code 74 #1137
		740	Code 76 #1062
	099	900	Code 74 #1137
		740	Code 76 #1062
	104	900	Code 74 #1137
		740	Code 78 #264
	105	900	Code 78 #264
		740	Code 74 #1137
	108	900	Code 78 #264
		740	Code 74 #1137
	109	900	Code 78 #264
		740	Code 74 #1137
	110	760	Code 72 #1065
		900	Code 78 #264
	111	760	Code 72 #1065
	112	900	Code 78 #264
		740	Code 74 #1137
	113	740	Code 74 #1137
		900	Code 78 #264

VESNO	Julian Date	Station	Remote
2226	110	900	Code 78 #264
		740	Code 74 #1137
	111	900	Code 78 #264
		740	Code 74 #1137
	112	900	Code 78 #264
		740	Code 74 #1137

Calibrations were performed daily by the launches. Two methods were used for these daily calibrations. A static point for calibration was established on J.D. 104. A spur traverse was taken from Nelthropp to Limetree Channel Light # 3 in the Hess Channel, Latitude 17°40'46.87"N and Longitude 64°44'19.73"W. The geographic position of this day marker was computed and inverse distances in meters from the remote sites were determined. Several Del Norte ranges were taken, averaged and compared against the computed rates. The other method of calibration used the Hewlett Packard 3810B and multi-prism mirror board (provided by NGS) to traverse from a known station to the launch. The angle and range were recorded along with the observed Del Norte rates. These angles and ranges were later reduced to distances in meters from the remote stations on the Hewlett Packard 9815 by a program written by LT. (j.g.) John Zabitchuck of the NOAA Ship MT MITCHELL. The differences between the computed and observed distances were meaned to determine corrector values for the day. The Range-Azimuth calibration method proved to be very expedient and yielded consistent results. Correctors of zero were applied during launch survey operations.

Baseline calibrations were conducted on the following Julian Dates: 88, 102, and 105, (29 March, 12 and 15 April 1982). A close-out calibration was conducted on J.D. 114, (24 April 1982). A baseline was measured from Frederiksted Pier to a point on South Beach using the HP 3810. A comparison was made between the Del Norte Range and the measured distance. Any deviation of the Del Norte Range

from the measured range was recorded and then corrected by adjusting the DMU. Measurements were made and also recorded using a 30db attenuator on the Master Unit Antenna. A noted difference in the measurement distance occurred using the attenuator. No attenuation was used while conducting survey operations. It should be noted that the attenuation of the signal did not meet the manufactor's specification for the change in distance between a normal and attenuated distance measurement. Abstracts of corrections to electronic position control are contained in Appendix E.

Antenna distance for all launches is zero and is applied on the parameter tape.

H. SHORELINE

Shoreline details were provided from TP-00006 and TP-00007 shoreline manuscripts. The photography for the manuscripts was flown in November 1977. Final review of the manuscripts was done in November of 1981. No field edit was done during or before compilation and final review. The shoreline manuscripts are Lambert Conformal Conic projections at a scale of 1:10,000. The manuscripts are based on the Puerto Rico Horizontal Datum.

No actual field edit was conducted during hydrographic survey operations. The shoreline was transferred to the boat sheet in blue and a visual inspection was made to verify the shoreline characteristics while conducting launch hydrographic operations. No noticable differences were observed during launch operations.

I. CROSSLINES

Crosslines were run at angles nearly perpendicular to the mainscheme sounding lines. Crosslines amount to 8 percent of the total mainscheme. The percentage of crosslines run by the launches are:

VESNO	Crosslines/Mainscheme
2224	7%
2225	6%
2226	33%

A total of 436 soundings were compared at various depth ranges. The results of these comparisons are:

Depths	Agreement
0-5 fathoms	83% Agreement to ±0.2 fathoms (216 soundings) 100% Agreement to ±0.5 fathoms
5-11 fathoms	90% Agreement to ±0.5 fathoms (185 soundings) 100% Agreement to ± 1.0 fathoms
11-150 fathoms	91% Agreement to ±1.5 fathoms (35 soundings)

Overall the agreement from 0-11 fathoms between crosslines and mainscheme is excellent. Except in areas where there is a rapid change in bottom contour (50-100 fms), the comparison from 11 to 150 fathoms displays good agreement.

J. JUNCTION

The survey junctions with the following three surveys:

Area of Junction	Reg. #	Scale	Date
East	H-10008	1:10,000	1982
West	H-9938	1:10,000	1981
South	H-10004	1:80,000	1982

The eastern junctions with H-10008 displays excellent agreement. The comparison was within ±0.1 fathom to the 10 fathom curve, ± 0.5 fathoms from 10 to 50 fathoms and to within ± 1 fathom for all greater depths. The junction agreement at the deeper depths is excellent considering the steep bottom slope below 50 fathoms.

The southern junction was made with H-10004 showing excellent agreement at the 150 fathom curve. Depths greater than 150 fathoms displayed agreement

to within 2 fathoms out to the 200 fathom limit of the launch's echo sounder. Soundings less than 150 fathoms displayed 100 % agreement utilizing the 1½ mm allowable horizontal displacement at the scale of the survey. These sounding differences at shallower depths are probably due to the differences in the ship's and launches' echo sounding system and the stability of the sounding platform. It should be noted that the 150 fathom curve should be utilized for the cut-off point for launch soundings with the ships soundings being used beyond 150 fathoms.

The western junction, H-9938, was made utilizing boat sheets without sound velocity correctors applied. The sounding show excellent agreement. Agreement should remain good after sound velocity correctors are applied.

K. COMPARISON WITH PRIOR SURVEYS

The following prior surveys were within the survey area:

Registry No.	Scale	Date
H-4653a	1:20,000	1924-1925
H-4653c	1:10,000	1924-1925

Agreement with H-4653a is good, the majority of the sounding agree to within ±0.5 fathoms. Slight northern shifts in the 1, 2, and 3 fathom contours is displayed by the current survey. Probably due to the positioning control utilized or the difference in soundings systems between the two surveys, the slight shift is also noted beyond the 20 fathom curve. Most likely due to the rapid depth change in this area. (It should be noted that a direct comparison was made of these soundings utilizing a photo enlargement of the prior survey. A slight possible error may have been created in the enlargement process).

H-4653a
The following depths have shoaled: Do not concur. Comparisons not justified, depths are isolated deeps on prior survey that fall between 100 meter spaced lines on present survey.

Prior Survey Depth	H-10009	Latitude	Longitude
3 1/6	2.5	17°40'48"N	64°51'43"W
4 4/6	2.9	17°40'57"N	64°49'21"W

A shoal sounding of 2.5 fathoms was found on the ~~current survey~~ field sheet at Latitude 17°40'03"N, Longitude 64°51'02"W. Disregard - scanned incorrectly on echograms. Corrected present survey depth = 3.3 fm.

Two 1 5/6 fathoms soundings from the prior survey were not disproven by the current survey. The positions for these soundings are:
Do not concur. Soundings are superseded by present survey.

Latitude	Longitude
17°40'52"N	64°50'54"W
17°40'52"N	64°50'44"W

~~H-4653c~~
The shoalest depth in these areas found on the current survey is 2.8 fathoms.

H-4653c
The comparison with H-4653c shows good agreement to ±0.5 fathoms for the majority of the soundings. The prior survey located numerous coral heads that were not disproven by the current survey and should be carried forward. The positions of these coral heads are:
I concur, with the exception of the first coral head listed.

Depth	Latitude	Longitdue	
2 1/2 fm	17°39'37"N	64°50'14"W	Superseded by present survey
(1.1) 1 1/6 fm	17°40'03"N	64°49'18"W	

Depth	Latitude	Longitude
(1.5) 1 1/2 fm	17°40'03"N	64°49'16"W
(1.3) 1 2/6 fm	17°40'04"N	64°49'12"W
(1.8) 1 5/6 fm	17°40'03"N	64°49'09"W
(1.6) 1 4/6 fm	17°39'58"N	64°49'06"W
(1.5) 1 1/2 fm	17°39'59"N	64°49'03"W
(1.3) 1 2/6 fm	17°40'31"N	64°48'38"W
(1.3) 1 2/6 fm	17°40'24"N	64°48'34"W
1 fm	17°40'22"N	64°48'35"W
1 fm	17°40'27"N	64°48'28"W
(1.1) 1 1/6 fm	17°40'28"N	64°48'26"W
(1.3) 1 2/6 fm	17°40'24"N	64°48'29"W
(1.1) 1 1/6 fm	17°40'38"N	64°48'23"W
(1.8) 1 5/6 fm	17°40'36"N	64°48'19"W
(1.8) 1 5/6 fm	17°40'35"N	64°48'19"W
(1.1) 1 1/6 fm	17°40'33"N	64°48'18"W
(1.4) 1 4/6 fm	17°40'33"N	64°48'15"W
(1.1) 1 1/6 fm	17°40'34"N	64°48'09"W

The following depths from the prior survey have shoaled:

Prior Survey	H-10009	Longitude	Longitude
5 1/6 fm	4.5-5.1 4.7 fm	17°40'03"N	64°51'39"W
4½ to 5 fm	4.4-4.9 ~~3.8~~ fm	17°39'58"N	64°51'53"W
5½ fm	4.6-5.1 ~~4.4~~ fm	17°39'54"N	64°50'02"W

The following shallow depths were not disproven by this survey:

Prior Survey	Latitude	Longitude	
✓(1.5) 1 1/2 fm	17°40'03"N	64°49'33"W	
✓(1.8) 1 5/6 fm	17°39'58"N	64°49'31"W	
(2.8) 2 5/6 fm	17°39'38"N	64°50'14"W	superseded by present survey
(2.8) 2 5/6 fm	17°39'38"N	64°50'10"W	
(2.6) 2 4/6 fm	17°39'43"N	64°50'04"W	
✓(2.6) 2 4/6 fm	17°39'28"N	64°51'08"W	
✓(2.8) 2 5/6 fm	17°40'39"N	64°51'57"W	

It is recommended that these soundings be carried forward, except as noted above, to the present survey ~~new chart~~. These positions have been ~~should also~~ be reviewed on the photobathmmetry for possible disapproval.

The 3 fathom shoal at 17°40'41"N, 64°48'09"W on the prior survey has been found to have a least depth of 1.5 fathoms. Three coral heads were located by ship's divers while conducting the development of this area:

Position #	Leadline Depth	Latitude	Longitude	
✓7103-7104	1.5 fms	17°40'40.6"N	64°48'09.7"W	
7105	1.5 fms	17°40'40.9"N	64°48'10.0"W	not plotted
7106	1.6 fms	17°40'40.7"N	64°48'10.7"W	

The reef centered at Latitude 17°40'19"N, Longitude 64°48'50"W shows several submerged rocks. During launch operations, this area was observed with breakers. The area appears to shoal rapidly enough to creat these breakers without the presents of rocks. It is recommend that the submerged rocks symbols be maintained and the term "BREAKERS" be added. ✓Breakers added to present survey - Do not concur with submerged rock recommendation - Chart present survey info

L. CHART COMPARISON

The survey area is covered by the 18th edition of chart number 25641 dated 28 November 1981. The scale of the charts is 1:10,000.

The agreement of the charted soundings to those of this survey is good with most soundings being within ±0.5 fms. Soundings beyond the ten fathom curve require some shift for agreement but it is within the 1 1/2 mm allowable horizontal displacement.

Observed differences are:

1. Shifting of the three fathom curve at Latitude 17°40'36"N, Longitude 64°51'54"W has moved shoreward. The 2 3/4 fathom charted sounding from H-4653c is 3.2 fathoms. Do not concur See present survey and chart 25644.

2. The 5 3/4 fathom sounding originating with H-4653a at Latitude 17°39'.50"N, Longitude 64°49'51"W is 6.5 fathoms. Do not concur. Prior depth of 5.8fm. carried forward to present survey.

3. The 6 1/4 fathom sounding originating with H-4653a at Latitude 17°39'52"N, Longitude 64°49'24"W is ~~6.0 fathom~~. in agreement with present survey depths.

4. These charted shoals originating with H-4653c were not disproven; except as noted and were carried forward to the present survey and should remain charted.

Charted Depth (fm)	Prior Survey Depth (fm)	Latitude	Longitude
2 1/2 (Superseded by present survey)	3	17°39'42"N	64°50'06"W
2 3/4 (Superseded by present survey)	3.9	17°39'33"N	64°50'28"W
2 1/4	~~4.7~~ 2.3	17°39'41"N	64°50'36"W

Charted Depth (fm)	Prior Survey Depth	Latitude	Longitude
2 3/4	~~3.4~~ 2.8	17°39'29"N	64°50'50"W
2 3/4	~~3.2~~ 2.6	17°39'26"N	64°51'08"W
1 1/4	~~2.5~~ 1.3	17°40'.00"N (17°40.00')	64°49'~~05~~ 32"W (64°49.5')
1 1/2	~~2.1~~ 1.5	17°~~40~~ 39'.00"N	64°49'~~32~~ 02"W

5. The rock awash (from H-4653a) at Latitude 17°41'~~23~~ 17"N, Longitude 64°49'~~35~~ 20"W was observed while conducting survey operations. No attempt was made to position the rock due to the limited visibility of the water in this area. It appears to be charted correctly. concur

6. The shoal centered at Latitude 17°40'20"N, Longitude 64°48'46"W has two submerged rock symbols. These symbols should be carried forward and "BREAKERS" should be added. Breakers added to present survey. Do not concur with subm rock recommendation. Chart present survey info.

Presurvey Review Item Number 2, dangerous sunken wreck, (PA) charted at Latitude 17°40'30"N, Longitude 64°49'24"W was searched for and not found. It is recommended that the wreck be charted as (ED) existance doubtful. concur. Source: LNM 40/1975 and LNM 35/1980. Echo sounders search conducted by cartwheel system of sounding lines radiating about 180 meters from charted position as shown on field sheet.

A partial submerged wreck was located at Latitude 17°41'30.6"N, Longitude 64°48'12.8"W. The wreck is a large landing craft with its bow doors open in 1.~~2~~ 6 fathoms of water. The hull is rusted and no identification numbers were visible to correlate this wreck with PSR Item number two. It is recommended that this wreck be charted at the located position, as shown on the present survey.

Buoys mark a channel to the Texaco Antilles Mooring Buoys. (See Aids to Navigation) The charted positions compare favorably with those of the survey. The controlling depth of this channel is ~~three~~ 2.8 fathoms.

The Texaco Mooring buoys offer a three point mooring for the off loading of fuel to Texaco's tank farm. The mooring buoys are 12' cylinderical buoys (diameter 6 ft) laying on their longitude axis. The buoys are painted white and have a blue strip running around the buoy above the waterline.

The position of the buoys are:

Buoy	Latitude	Longitude
Western	17°40'52.023"N	64°49'10.673"W
Southern	17°40'46.602"N	64°49'08.891"W
Eastern	17°40'50.057"N	64°49'00.212"W

Inside the triangle formed by the mooring buoys are two additional buoys. A red and white vertically stripped can marking the end of the pipe at Latitude 17°40'51.780" Longitude 64°49'05.785"W. The other buoy is a small white buoy about the size of a 5 gallon can, it appears to be the lifting point for a flexible hose for the pipeline. The small buoy's position is Latitude 17°40'50.068"N, Longitude 64°49'05.893"W.

M. ADEQUACY OF THE SURVEY

This survey is considered complete and adequate to supersede prior surveys for charting purpose except for the note soundings from the prior survey and photobathymetry that should be carried forward.

N. AIDS TO NAVIGATION

Include within the limits of this survey are ~~eight~~ six floating aids to navigation. These aids are privately maintained by Texaco Antillies. The positions of the buoys are:

Navigation Aid	Characteristics	Latitude	Longitude
Buoy #1 } See H-9938	Black Can Radar Reflector	17°39'35.55"N	64°52'10.14"W
Buoy #2 } See H-9938	Red Nun Radar Reflector	17°39'31.20"N	64°52'03.50"W
Buoy #3	Black Can Radar Reflector	17°39'45.92"N	64°51'19.33"W
*Buoy #4	Red Nun Radar Reflector	17°39'37.85"N	64°50'51.21"W
Buoy #5	Black Can Radar Reflector	17°40'01.13"N	64°50'03.88"W
Buoy #6	Red Nun Radar Reflector	17°39'57.66"N	64°49'48.65"W
Buoy #7	Black Can Radar Reflector	17°40'19.85"N	64°49'36.15"W
Buoy #8	Red Nun Radar Reflector	17°40'09.78"N	64°49'17.51"W

* Buoy #4 on chart 25644, 8th ed. 5/6/78, does not appear on 9th Edition dated 5/4/85

The 1981 Light List has buoy #1 at Latitude 17°39.5"N, Longitude 64°52.9"W. The positions from the survey compare favorably with the chart 25641, 18th edition dated 28 November 1981. ~~Buoys should be charted from the positions obtained on this survey~~.

There are no fixed aids to navigation on this survey.

O. STATISTICS

	2224	2225	2226	Total
Positions:	339	2127	664	~~3190~~ 3130
Linear Nautical Miles of Hydrography	15.7	217.4	122.5	355.6 ✓
Linear Nautical Miles of Crossline	5.2	16.2	7.3	28.7 ✓
Linear Nautical Miles of Development	28.6	22.3	0.0	50.9 ✓
Total Linear Miles of Hydrography	49.5	255.9	129.8	435.2 ✓
Square Miles of Hydrography	---	---	---	12.8
Barchecks	0	2	0	2
Nansen Cast				2
Bottom Samples	9	9	0	18
Detached Positions	5	11	0	16

P. MISCELLANEOUS

Photobathymetric comparison was done out to the three fathom curve. Soundings tend to run from exact agreement to 1 fathom difference with the photobathymetric soundings being deeper. The two fathom curve ~~has good~~ is in fair agreement. The three fathom curve shifts shoreward on the photobathymetry and the agreement between soundings begins to increase by 1 fathom.

Several shallow soundings appear in the offshore area. These shoal soundings are:

Depth	Latitude	Longitude
2.2 fm	17°39'42"N	64°50'32"W
2.2 fm	17°39'50"N	64°50'04"W
2.2 fm	17°39'48"N	64°50'15"W
1.7 fm	17°39'40"N	64°50'21"W
1.3 fm	17°39'37"N	64°50'12"W
1.8 fm	17°39'37"N	64°50'13"W
~~2.2 fm~~	~~17°39'37.5"N~~	~~64°50'09"W~~
1.7 fm	17°39'38"N	64°50'04"W
2.2 fm	17°39'35"N	64°50'18"W
1.8 fm	17°39'34"N	64°50'22"W
2.8 fm	17°39'33.5"N	64°50'24"W
2.5 fm	17°39'33"N	64°50'23"W
~~1 fm~~	~~17°39'51"N~~	~~64°49'42"W~~
2.5 fm	17°39.33"N	64°49'58"W
2.2 fm	17°39'43"N	64°49'56"W
2.8 fm	17°39'43"N	64°49'53"W
2.8 fm	17°39'45"N	64°49'54"W

It is recommended that these soundings from the photobathymetry be compared against the shoal soundings from the prior survey and the shallowest depth be charted. These soundings also verify the shoal soundings noted on the current chart. these and other shoal photobathymetric sdgs have been carried forward to the present survey.

Q. RECOMMENDATION:

It is recommended that the shoal depths from the prior survey and photobathymetry be incorporated into the new chart.

R. AUTOMATED DATA PROCESSING

The following Hydroplot programs were used to acquire and process the survey data:

Program Number	Program Name	Version
RK 111	Range-Range Real Time Hydroplot	01/30/76
RK 112	Hyperbolic Range-Range Real Time Hydroplot	08/04/81
RK 116	Range-Azimuth Real Time Hydroplot	08/24/81
RK 201	Grid, Signal & Lattice Plot	04/18/75
RK 211	Range-Range Non-Real Time Plot	01/15/76
RK 212	Visual Station Table Load and Plot	02/27/81
RK 216	Range-Azimuth Non-Real Time Plot	02/09/81
RK 300	Utility Computations	10/21/80
RK 330	Data, Reformat and Check	05/04/76
PM 360	Electronic Corrector Tape Abstract	02/02/76
AM 500	Predicted Tide Generator	11/10/72
RK 530	Velocity Correction Computation	05/10/76
AM 602	Extended Line Oriented Editor	05/21/75
RK 612	High Speed Print-out	03/23/78

S. REFERENCES TO REPORTS

Coast Pilot Report - NOAA Ship MT MITCHELL St. Croix, U. S. Virgin Islands OPR-I-149-MI/PE-82.

Horizontal Control Report, NOAA Ship MT MITCHELL, St. Croix, U. S.V.I. 1982, OPR-1149-MI/PE-82.

Range-Azimuth program documentation for the HP9815 A/S.

Respectively submitted,

Kenneth W. Perrin, LT. NOAA

For Frederick W. Rossmann
Ens. NOAA

SIGNAL TAPE LIST

6

MI-10- -82

H-1000 9

730 4 17 43 02905 064 40 01363 139 0000 000000 NUGENT, 1919

740 4 17 42 04635 064 43 07639 250 0019 000000 NELTHROPP, 1982

750 4 17 41 24789 064 44 27256 252 0004 000000 HESS, 1982

760 4 17 41 25024 064 45 57436 250 0003 000000 MARTIN MARIETTA, 1982

900 4 17 40 54556 064 50 21967 250 0000 000000 LONG POINT RM 1, 1982

APPENDIX "F"

SIGNAL NAMES/NUMBERS LISTING SOURCE AMC OPS OA/CAM 101 OPR-I149-MI/PE-82

STA NO.	NAME	FIELD COMP. 1982	SOURCE QUAD #	SOURCE STA #	RECOVERED
730	NUGENT 1919	"	170644	1096	MI82
740	NELTHROPP	"			MI82
750	HESS	"			MI82
760	MARTIN MARIETTA	"			MI82
900	LONG POINT RM1	"			MI82

NOAA FORM 76-40 (8-74)
Replaces C&GS Form 567.

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

~~NONFLOATING AIDS~~ OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [x] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [ ] TO BE CHARTED
- [x] TO BE REVISED
- [ ] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office): NOAA ship MT Mitchell
STATE: ST Croix, USVI
LOCALITY: Southwest end of ST Croix
DATE: 23 APR-8 2

The following objects HAVE [x] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.: OPR-I149-MI/PI-82
JOB NUMBER: H-10009
SURVEY NUMBER: MI-10-6-82
DATUM: Puerto Rico Datum

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° ′	LATITUDE ″ D.M. Meters	POSITION LONGITUDE ° ′	LONGITUDE ″ D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
RADAR TOWER	ST George Hill Radar Tower	17°43	13.60	64 51	28.20		F-5-Vis-V 20 Apr 82	25641
		"						
TANK (Tallest of 6	Tallest of 6	17°42	23.60	64°53	01.60		F-5-Vis-V 20 Apr 82	25641 25644
SPIRE	Fredericksted Spire	17°42	53.277	64°52	48.942		"	" "
CHY	(Prosperity Chimney 1919)	17°43	40.584	64°53	01.946	772 (C) 9153 11/14/77	"	" "
CHY	(La Grange 1919)	17°43	16.148	64°52	42.526	772 (C) 9153 11/14/77	"	" "
Radio Tow WRRA		17°43	2783	64°53	03.28		"	25641
TANK (Tallest of 8)	Texaco Co. Tank	17°41	43.74	64°49	25.13		"	"
CHY	(Grove Place Chimney 1919)	17°43	38.608	64°49	31.235	772 (C) 9157 11/14/77	"	"
CHY	WYN Chimney	17°42	05.437	64°51	41.506		"	"

APPENDIX "I"

Outside Survey limits

All of the above were visually verified only. Source of G.P.s uncertain.

85

RESPONSIBLE PERSONNEL		
TYPE OF ACTION	NAME	ORIGINATOR
OBJECTS INSPECTED FROM SEAWARD	ENS. AMY ORRIS	☐ PHOTO FIELD PARTY ☒ HYDROGRAPHIC PARTY ☐ GEODETIC PARTY ☐ OTHER (Specify)
POSITIONS DETERMINED AND/OR VERIFIED	ENS. AMY ORRIS	FIELD ACTIVITY REPRESENTATIVE
		OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'

(Consult Photogrammetric Instructions No. 64,

OFFICE

I. OFFICE IDENTIFIED AND LOCATED OBJECTS

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

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

FIELD

I. NEW POSITION DETERMINED OR VERIFIED

Enter the applicable data by symbols as follows:

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

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

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

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

FIELD (Cont'd)

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

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

II. TRIANGULATION STATION RECOVERED

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

EXAMPLE: Triang. Rec.
8-12-75

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH

Enter 'V-Vis.' and date.

EXAMPLE: V-Vis.
8-12-75

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

NOAA FORM 76-40 (8-74)

SUPERSEDES NOAA FORM 76-40 (2-71) WHICH IS OBSOLETE, AND EXISTING STOCK SHOULD BE DESTROYED UPON RECEIPT OF REVISION.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1974-665-073/1030 Region 6

NOAA FORM 76-40 (8-74)
Replaces C&GS Form 567.

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [x] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [ ] TO BE CHARTED
- [x] TO BE REVISED
- [ ] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office): NOAA ship MT Mitchell
STATE: ST Croix, USVI
LOCALITY: Southwest end of ST Croix
DATE: 23 APR 82

The following objects HAVE [x] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.: OPR-I149-MI/PE-82
JOB NUMBER: H-10009
SURVEY NUMBER: MI-10-6-82
DATUM: PUERTO RICO DATUM

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° ′	LATITUDE ″ D.M. Meters	POSITION LONGITUDE ° ′	LONGITUDE ″ D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
Outside survey limits	(Southwest Cape LIGHT) FL 6 sec 50ft 7M	17°40	46.8247	64°54	01.0258?	AMC OPS 1 11/80	F-5-Vis-V 20 APR 82	25641 25644
AERO Rot W•G	(Alexander Hamilton Airport Beacon 1965)	17°42	31.6?71	64°47	48.8861	77Z(C)9342 11/14/77	F-5-Vis-V 20 APR 82	25641

The above were visually verified only. Source of G.P.s uncertain.
ltr L-306(82) L-460(82)

APPENDIX "I"

RESPONSIBLE PERSONNEL		
TYPE OF ACTION	NAME	ORIGINATOR
OBJECTS INSPECTED FROM SEAWARD	ENS. AMY ORRIS	☐ PHOTO FIELD PARTY ☒ HYDROGRAPHIC PARTY ☐ GEODETIC PARTY ☐ OTHER (Specify)
POSITIONS DETERMINED AND/OR VERIFIED	ENS. AMY ORRIS	FIELD ACTIVITY REPRESENTATIVE
		OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'

(Consult Photogrammetric Instructions No. 64)

OFFICE

I. OFFICE IDENTIFIED AND LOCATED OBJECTS

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

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

FIELD

I. NEW POSITION DETERMINED OR VERIFIED

Enter the applicable data by symbols as follows:

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

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

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

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

FIELD (Cont'd)

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

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

II. TRIANGULATION STATION RECOVERED

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

EXAMPLE: Triang. Rec.
8-12-75

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH

Enter 'V-Vis.' and date.

EXAMPLE: V-Vis.
8-12-75

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

NOAA FORM 76-40 (8-74)

SUPERSEDES NOAA FORM 76-40 (2-71) WHICH IS OBSOLETE, AND EXISTING STOCK SHOULD BE DESTROYED UPON RECEIPT OF REVISION.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1974-665-073/1030 Region 6

NOAA FORM 76-40 (8-74)

Replaces C&GS Form 567.

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [x] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [ ] TO BE CHARTED
- [x] TO BE REVISED
- [x] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office)	STATE	LOCALITY	DATE
NOAA ship MT Mitchell	ST Croix, US VI	Southwest end of ST Croix	23 APR 82

The following objects HAVE [x] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-I-149-MI/HT 82	H-10009	MI-10-6-82	Puerto Rico Datum

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° ′	LATITUDE ″ D.M. Meters	LONGITUDE ° ′	LONGITUDE ″ D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
	The following items appear destroyed Furnished Charted Positions shown							
CHY	Betty Hope	17 41	37.450	64°48	59.566	—	F-V 26 APR 82	25641
STack	ST George Stack	17°43	05 81	64°49	49.39	—	"	"
CHY	Plessen Chimney	17°43	13 510	64°49	16.050	—	"	"
Tower	Copper Mill Tower	17°41	54.65	64°48	35.55	—	"	"
	The following items show Poor Visibility from Seaward view. Believed No longer of value as a landmark							"
CHY	Hogensborg Chimney	17°42	38.453	64°50	46.995		F-S-Vis-V 20 APR 82	25611 25644
	The follow item not in position as shown on chart. Furnished Charted Position shown							
TV TOWER		17°45	19.99	64°47	55.38		F-V 20 APR 82	25641

Outside survey limits

Recommendations based on visual verification only.

M L-306 (82) L-660 (82)

APPENDIX "I"

87

RESPONSIBLE PERSONNEL		
TYPE OF ACTION	**NAME**	**ORIGINATOR**
OBJECTS INSPECTED FROM SEAWARD	ENS. AMY ORRIS	☐ PHOTO FIELD PARTY ☒ HYDROGRAPHIC PARTY ☐ GEODETIC PARTY ☐ OTHER *(Specify)*
POSITIONS DETERMINED AND/OR VERIFIED	ENS. AMY ORRIS	FIELD ACTIVITY REPRESENTATIVE
		OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'

(Consult Photogrammetric Instructions No. 64,

OFFICE

I. OFFICE IDENTIFIED AND LOCATED OBJECTS

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

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

FIELD

I. NEW POSITION DETERMINED OR VERIFIED

Enter the applicable data by symbols as follows:

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

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

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

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

FIELD (Cont'd)

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

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

II. TRIANGULATION STATION RECOVERED

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

EXAMPLE: Triang. Rec.
8-12-75

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH

Enter 'V-Vis.' and date.

EXAMPLE: V-Vis.
8-12-75

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

★ U.S. GOVERNMENT PRINTING OFFICE: 1974-665-073/1030 Region 6

APPROVAL SHEET

The field work on this Hydrographic Survey was under my daily supervision. The boat sheet and records have been reviewed and approved by me.

Kenneth W. Perri, LT. NOAA

for J. AUSTIN YEAGER, CAPTAIN, NOAA
Commanding Officer

APPENDIX "J"

NOAA FORM 61-29
(12-71)

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

REFERENCE NO.

MOA23-116-86

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 Branch, N/CG243
Room 151, WSC-1
Hydrographic Surveys Branch
Rockville, MD 20852

DATE FORWARDED

9 October 1986

NUMBER OF PACKAGES

two (2)

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-10009 (MI-10-6-82)
OPR-I149-MI/PE--U. S. Virgin Islands

Pkg 1: (tube)
1 Smooth Sheet
1 Position Overlay
2 Excess Overlays (Levels 1/3 and 2&3/3)
1 Original Descriptive Report

Pkg 2: (box)
1 Cahier-Position Printout/Control Listing
1 Cahier-Sounding Printout/L-File Listing
1 Package of material removed from Original Descriptive Report (to be filed with original survey records)

FROM: *(Signature)*

Robert G. Roberson

RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

Chief, Hydrographic Surveys Branch,
N/MOA23
Atlantic Marine Center
439 W. York Street
Norfolk, VA 23510-1114

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NO.: H-10009

Number of positions	3051
Number of soundings	18884
Number of control stations	4

	TIME-HOURS	DATE COMPLETED
Preprocessing Examination	35	9 JUL 82
Verification of Field Data	603	7 APR 86
Quality Control Checks	135	
Evaluation and Analysis	77	1 JUL 86
Final Inspection	20	25 JUL 86
TOTAL TIME	870	
Marine Center Approval		11 AUG 86

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

Sheet in H#9935 folder

JULY 9, 1982

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): 975-1401 LIMETREE BAY, V.I.

Period: APRIL 8-23, 1982

HYDROGRAPHIC SHEET: H-10009

OPR: I-149

Locality: SOUTH COAST OF ST. CROIX, V.I.

Plane of reference (mean lower low water): 2.27 FT

Height of Mean High Water above Plane of Reference is 0.72 FT

REMARKS: ZONE DIRECT

Chief, Datums and Information Branch

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10009

Name on Survey	A ON CHART NO.	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
CARIBBEAN SEA										1
LONG POINT										2
LONG POINT BAY										3
SAINT CROIX										4
SOUTHWEST SHOAL										5
U.S. VIRGIN ISLANDS (title)										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
						Approved:				18
										19
						Charles E. Harrington				20
						Chief Geographer				21
						JUL 8 1986				22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

ATLANTIC MARINE CENTER
EVALUATION REPORT

REGISTRY NO.: H-10009 FIELD NO.: MI-10-6-82

U.S. Virgin Islands, St. Croix, Vicinity of Long Point

SURVEYED: April 8 through April 23, 1982

SCALE: 1:10,000 PROJECT NO.: OPR-I149-MI-82

SOUNDINGS: Ross Model 5000
Fineline Echo Sounder
Leadline

CONTROL: Range/Range--Del Norte
Range/Azimuth--Del Norte/Theodolite

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

Surveyed by ..... L. A. Lapine
..... K. W. Perrin
..... E. S. Varney
..... J. Zabitchuck
..... K. P. Peters
..... F. W. Rossmann
..... R. D. Henegar
..... B. L. Coakley
..... A. E. Orris
..... C. N. McLean
..... D. I. Crews

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

1. INTRODUCTION

a. No unusual problems were encountered during the evaluation of this survey.

b. Changes in the Descriptive Report were made in red during office processing.

2. CONTROL AND SHORELINE

a. Control is adequately addressed in sections F and G of the Descriptive Report.

b. Shoreline originates with Class III registered shoreline maps TP-00006 and TP-00007 of 1977. The maps consist of two parts, the shoreline map and a photobathymetric overlay. Depths on the smooth sheet in red were determined by photobathymetric methods using photographs of 1977. These depths were transferred from the overlay and provide supplemental information.

3. HYDROGRAPHY

a. Depths at crossings are generally in good agreement, except in some areas where hydrographic and photobathymetric depths differ by as much as 1 fathom.

b. The standard depth curves were adequately delineated, except for the 0-fathom curve and portions of the 1-fathom curve. These could not be drawn because of their proximity to shore and a lack of soundings. Some 6-fathom supplemental depth curves, brown curves, and dashed curves were added to emphasize shoal features.

c. The development of the bottom configuration and the determination of least depths are considered adequate, except for an inshore area located in the vicinity of latitude 17°41'15"N, longitude 64°50'45"W which was not sounded.

4. CONDITION OF SURVEY

The smooth sheet and accompanying overlays, hydrographic records, and reports comply with the requirements of the Hydrographic Manual with the exceptions listed below:

a. In section K of the Descriptive Report, prior shoal soundings and depths on coral heads are listed which, without justification, were neither verified nor disproved.

In section P, shoal photobathymetric depths are listed which were not investigated.

The lack of investigation resulted with most of the above being transferred to the smooth sheet even though some were not in agreement with the surrounding hydrography. These features should have been resolved in the field instead of deferring their resolution to the evaluator and chart compiler.

b. The hydrographer's discussion of Presurvey Review item number 2, a dangerous submerged wreck PA, charted at latitude 17°40'30"N, longitude 64°49'24"W was incomplete. The method of search employed and the area covered were not mentioned in the Descriptive Report. (See section L, item 6, of the Descriptive Report.)

c. Presurvey Review item number 23, an obstruction originating with TP-00007 at latitude 17°40'37"N, longitude 64°47'41"W, was not mentioned in the Descriptive Report.

d. No comparison was made with chart 25644, dated May 6, 1978, as required by section 6.10.2 of the project instructions.

e. No elevation was obtained on the wreck located in latitude 17°41'31"N, longitude 64°48'13"W.

f. The investigation of charted landmarks was incomplete and not conducted in accordance with section 4.2.2 of the project instructions.

g. Numerous items, such as rocks and landmarks, assigned to be investigated on the Notes to Hydrographer print, were not accomplished.

h. A negative Dangers to Navigation Report was not included in the Descriptive Report as required in section 6.12 of the project instructions.

i. During office verification it was determined that only two bar checks were taken during the survey. Section 4.9.5.1.1 of the Hydrographic Manual requires that bar checks be taken twice daily.

5. JUNCTIONS

The junctions with H-10008 (1982) on the east, H-10004 (1982 on the south, and H-9938 (1981) on the west were effected during the verification and evaluation of those surveys.

6. COMPARISON WITH PRIOR SURVEYS

a. H-4653a (1924-25) 1:20,000
H-4653c (1924-25) 1:10,000

These surveys cover the area common to the present survey. A detailed comparison between prior and present depths reveals general agreement in depths up to 20 fathoms. In deeper depths, the scarcity of prior soundings precludes a detailed comparison with the present survey; however, the bottom configuration has essentially remained the same.

With the addition of numerous soundings, coral heads, and rocks, carried forward from the prior surveys, the present survey is adequate to supersede the prior surveys within the common area.

b. H-4653b ((1925) WD 1:20,000

This wire-drag survey covers a portion of the present survey. No conflicts between present depths and effective wire-drag depths were found.

A detached sounding and a grounding have been carried forward to supplement the present survey.

7. COMPARISON WITH CHART 25641 (18th Edition, November 28, 1981)
25644 (8th Edition, May 6, 1978)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys which require no further consideration, supplemented by depths from miscellaneous sources.

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

b. Aids to Navigation

The privately maintained aids to navigation located on the present survey are in substantial agreement with their charted positions and adequately mark the features intended. Red nun buoy "4" does not appear on subsequent editions of chart 25644.

8. COMPLIANCE WITH INSTRUCTIONS

This survey adequately complies with the project instructions, except as noted in section 4 of this report.

9. ADDITIONAL FIELD WORK

This is an adequate basic survey and no additional field work is recommended.

for Leroy G. Glass
P. L. Saunders
Cartographic Technician
Verification of Field Data

Stephen R Baumgardner
Stephen R. Baumgardner
Cartographer
Standards Section (N/CG242)
Evaluation and Analysis

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

Inspection Report
H-10009

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The survey complies with National Ocean Service (NOS) requirements except as noted in the Evaluation Report. The survey records comply with NOS requirements except where noted in the Evaluation Report.

Inspected

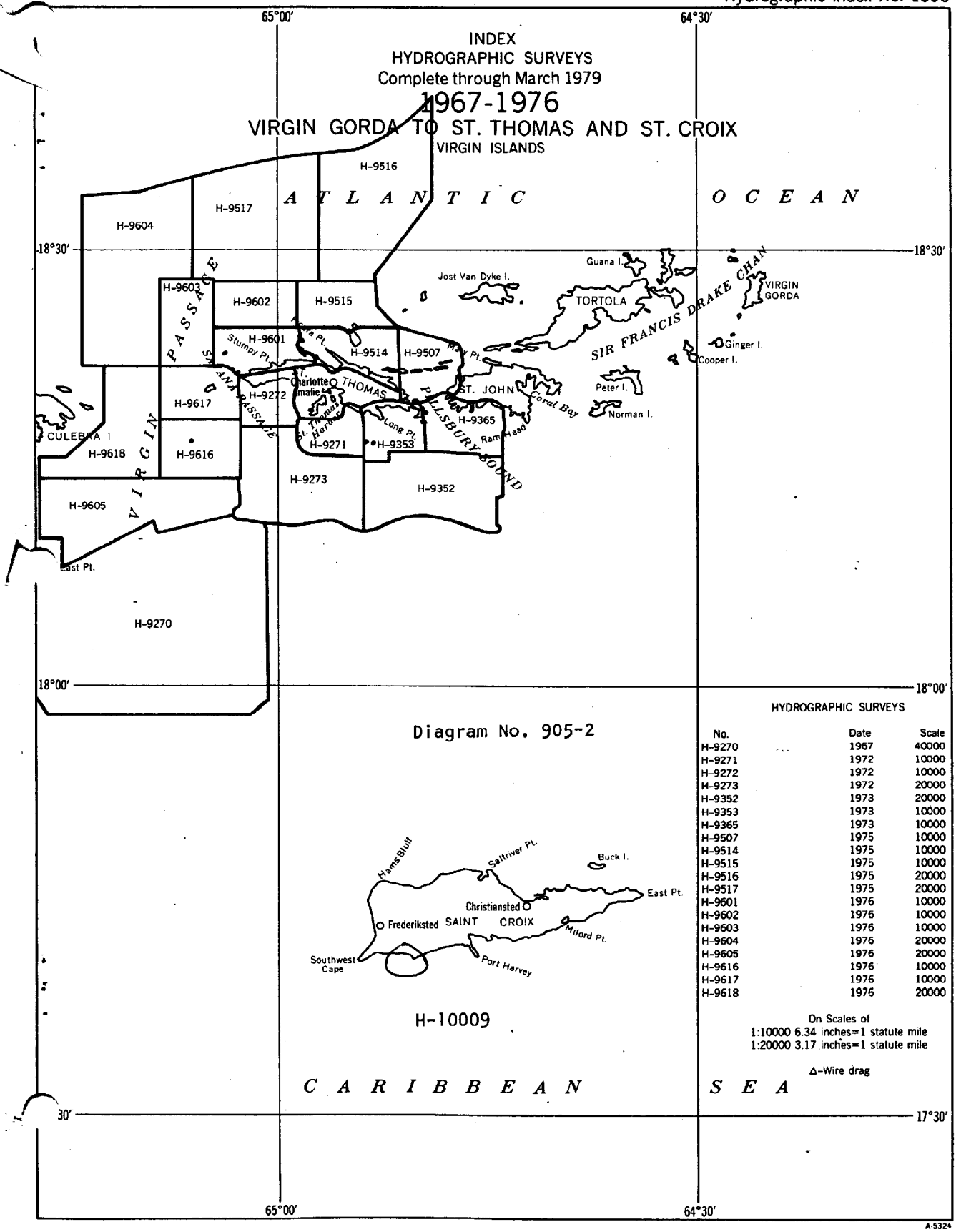
Dale E. Neilbrook for
George K. Myers
Chief, Standards Section (N/CG242)
Hydrographic Surveys Branch

Approved

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

DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Survey
Washington, D.C.

Hydrographic Index No. 180C



HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-9270	1967	40000
H-9271	1972	10000
H-9272	1972	10000
H-9273	1972	20000
H-9352	1973	20000
H-9353	1973	10000
H-9365	1973	10000
H-9507	1975	10000
H-9514	1975	10000
H-9515	1975	10000
H-9516	1975	20000
H-9517	1975	20000
H-9601	1976	10000
H-9602	1976	10000
H-9603	1976	10000
H-9604	1976	20000
H-9605	1976	20000
H-9616	1976	10000
H-9617	1976	10000
H-9618	1976	20000

On Scales of
1:10000 6.34 inches=1 statute mile
1:20000 3.17 inches=1 statute mile

Δ-Wire drag

A-5324

NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10009

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
25632	6-5-87	L.P. LaBossiere	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 1
25644	6-5-87	L.P. LaBossiere	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 13
~~25641~~	~~6-5-87~~	~~L.P. LaBossiere~~	~~Full Part Before After Marine Center Approval Signed Via~~
			Drawing No. 31
~~25640~~	~~6-5-87~~	~~L.P. LaBossiere~~	~~Full Part Before After Marine Center Approval Signed Via~~
			~~Drawing No.~~ 35
25641	5-15-90	Ed Martin	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 31 in part thru 25644
25640	6-29-90	Ed Martin	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 35 thru 25641 drg 31
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.