

# 9616

Diag. Cht. Nos. 904-2 & 905

NOAA FORM 76-35A

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

## DESCRIPTIVE REPORT (HYDROGRAPHIC)

Type of Survey ..... HYDROGRAPHIC  
Field No. .... WH-10-4-76  
Office No..... H-9616

### LOCALITY

State ..... U.S. VIRGIN ISLANDS  
General Locality ..... VIRGIN PASSAGE  
Locality ..... VICINITY OF SAIL ROCK

1976

CHIEF OF PARTY  
R.A. Trauschke

### LIBRARY & ARCHIVES

DATE ..... September 29, 1977

☆ U.S. GOV. PRINTING OFFICE: 1975-668-353

9616

*Area 3*

*Chart  
25630  
25640*

*N/A checked  
4/2/78  
2005*

HYDROGRAPHIC TITLE SHEET

H-9616

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-10-4-76

State U.S. VIRGIN ISLANDS

General locality VIRGIN PASSAGE

Locality Vicinity of Sail Rock  
~~Southwest of St. Thomas~~

Scale 1:10,000 Date of survey March 29 - April 8, 1976  
JD 089 099

Instructions dated October 16, 1975 Project No. OPR-423-WH-76

Vessel NOAA Ship WHITING (2930) & Launch 1 (2931)

Chief of party CDR. R. A. Trauschke

Surveyed by LCDR. J. DeCoste, Lt. D. Yeager, Lt. P. Chelgren,  
Ens. J. Gofus, Ens. G. Barone, Ens. V. Newell, Ens. Goodrich

Soundings taken by echo sounder, ~~beam transducer~~ RAYTHEON 723 and ROSS FINELINE

Graphic record scaled by Whiting's Personnel

Graphic record checked by Whiting's Personnel VERIFICATION BRANCH BMC

Protracted by \_\_\_\_\_ Automated plot by EALCOMP GIR EDP

Verification by L.G. Cram (AMC)

Soundings in ~~XXXXX~~ feet at MLW MLW

REMARKS: All changes in red made during verification by L.G. Cram

Applied to stds 3/8/78  
[Signature]

A. PROJECT

This survey was conducted under Project Instructions OPR-423-WH-76, Virgin Islands, dated October 16, 1975, with no subsequent amendments. All work accomplished on this survey was done in accordance with the Provisional Hydrographic Manual.

B. AREA SURVEYED

This survey covers that part of the Virgin Passage, which is in the vicinity of Sail Rock, approximately 6 nautical miles Southwest of St. Thomas U.S. Virgin Islands. This survey was conducted between the following limits:

- |                |                           |
|----------------|---------------------------|
| 1. 18°14'30" N | 65°02'30" W               |
| 2. 18°14'30" N | 65°08'30" W               |
| 3. 18°18'30" N | 65°02' <sup>3</sup> 40" W |
| 4. 18°18'30" N | 65°08'30" W               |

The bottom in this area is irregular. Sail Rock is of volcanic origin and shows much erosion.

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This survey was conducted by the NOAA Ship WHITING (2930) during the periods 29 March 1976 (J.D. 089) through 1 April 1976 (J.D. 092), 4 April (J.D.95) through 6 April 1976 (J.D. 097), and 8 April (J.D. 099). The WHITING Launch 1 (2931) accomplished the survey work in the immediate vicinity of Sail Rock on 1 April 1976 (J.D. 092).

C. SOUNDING VESSEL

The NOAA Ship WHITING (2930) and Launch 1 (2931) were used to obtain soundings for this survey. Position numbers were assigned as follows:

<u>Vessel</u>	<u>Position Numbers</u>
2930	001-1807
2931	5000-5100

Launch 1 (2931) was equipped with a digital control unit (DCU) which necessitated reformatting all raw data tapes obtained by this vessel.

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#### D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

The NOAA Ship WHITING (2930) was equipped with a Ross Model Fathometer, serial number 1055. Fathometer operators performed frequent checks of phase and initial setting. The Launch 1 (2931) was equipped with a Raytheon 723 fathometer, serial number 37018, and fathometer operators performed frequent checks of initial settings and stylus arm lengths. Bar checks were performed when conditions permitted.

Velocity corrections were determined with RK 530 using data obtained from three Nansen casts on 8 March, 12 March and 26 March, in various locations throughout the survey. The results from these casts showed excellent agreement with each other. These velocity corrections are tabulated from transducer depth of 10.5 feet. Static draft of 10.5 feet was applied to all soundings obtained by the ship, by corrector tape; in addition historical settlement and squat data from field observations made in 1973 by WHITING personnel were applied.

For data collected by the Launches, a -.5 foot correction has been inserted into the TC/TI tape to apply

to all soundings obtained by the Launch. This is to correct for an erroneous 2.0 feet draft correction applied to corrector tapes. Draft of Launch is actually 1.5 feet as determined by measurement. In addition, a bar check was obtained by this Launch on 26 March Julian Day 086. The results of this Bar check (included in appendix) show there to be negligible instrument error after draft and velocity corrections are applied.

#### E. HYDROGRAPHIC SHEETS

The Field Sheets were prepared by personnel of the NOAA Ship WHITING using the Houston Roll Bed Plotter on board with Hydroplot program RK 201. This survey is plotted on two field sheets joining along Latitude  $18^{\circ} 16' 45''$  N.

Velocity corrections were applied to the soundings on the field sheets. The field records will be sent to the Atlantic Marine Center for verification and smooth plotting. Soundings were not reduced for tides, as tide range was so small.

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#### F. CONTROL STATIONS

All stations used for electronic control for <sup>SURVEY</sup> this ~~station~~ were recovered by personnel of the NOAA ship WHITING. Station Salt Offset was established to third order specs by WHITING personnel using a three point fix with check. All stations were third order or better and were based on Puerto Rican datum. An abstract of stations used each day is included in the <sup>field records</sup> ~~appendix~~ under "Abstract of Positions".

#### G. HYDROGRAPHIC POSITION CONTROL

All sounding line positions were controlled by Del Norte in the Range-Range mode. Calibration of the Del Norte in the field was accompanied by three point sextant fixes with check fixes. Position correctors were obtained according to inverse distances. During each inport period, the Del Norte units were calibrated and readjusted by testing them over a known distances.

Sextant calibrations were obtained almost daily at operating ranges. Abstract of Corrections to Electronic

*Filed with field records*  
Control will be found under appendix. Field Records for Electronic Position Control will be under separate cover.

On the Northwestern half of this survey, a problem was encountered. It was discovered that while running hydrography on a course of 270° true, the foremast of the WHITING interfered with the Del Norte signal. The most efficient method to alleviate this problem was to run the main hydrographic lines on this area on base courses of 000° true and 180° true. Crosslines in this area were run on a base course of 090° true. In all areas where this problem was not encountered, main hydrographic lines were run on base courses of 090° and 270° true with crosslines run on courses 000° and 180° true.

#### H. SHORELINE

The only shoreline on this survey was Sail Rock. This is covered by an inset on Manuscript T-12940. Field edit of this feature required determining Azimuth between one of the 3 offlying rocks and Sail Rock. The most prominent rock that was identifiable both on the photos and in the field was the most <sup>Southerly</sup> ~~Northerly~~ <sup>Point</sup> of the three rocks.



## I. CROSSLINES

In the Northeastern portion of the survey, where an interference problem developed, crosslines were run by the NOAA Ship WHITING on course 090° true. In all remaining areas of this survey, crosslines were run on base courses of 000° and 180° true. Crossline agreement was very good with differences of less than 2 feet with an irregular bottom. Crosslines amounted to 9.3 % of sounding lines.

## J. JUNCTIONS

This survey junctions with three WHITING contemporary surveys and one prior WHITING survey.

Junction on the South was with WH-20-2-76, H-9605. Agreement was excellent to very good. Differences were not over 2 feet and were in the 0-1 foot range for the most part.

Survey WH-10-4-76, H-9616 junctions with WH-10-5-76, H-9617 on the North, again agreement was excellent. Discrepancies of no more than two feet occasionally occur in areas of irregular bottom.

Survey WH-10-2-72, H-9272 to the North ~~East~~, good agreement

Junction on the West was also with a contemporary WHITING survey, WH-20-3-76, H-9618, agreement was also excellent here, discrepancies of not over two feet, when present can be attributed to irregular or steep bottom relief.

Junction of the East was with a prior WHITING survey, WH-20-1-72, H-9273. Discrepancies between the two rarely exceeded one foot. Agreement was excellent.

#### K. COMPARISON WITH PRIOR SURVEYS

The only prior survey available for comparison with this survey was H-4598, a 1924 survey by leadline and/or sounding machine. This survey only covers the Southernmost half mile of the present survey area.

West of Longitude  $65^{\circ} 05' W$ , the present survey appears generally 4-10 feet shoaler than the prior survey. An examination of the fathograms from this area show the bottom to be extremely irregular with many sharp spikes rising sometimes as high as 7-10 feet from the bottom. A slight shift in position of only a very few meters could put a leadline into a "deep" between these spikes.

Fathograms from this survey were scanned for peaks and deeps but where spikes were only a thirty to forty meters apart, the shoal spike was the depth plotted.

Agreement was better to the East where it was generally very good, the bottom in this area was also much more regular, except for the 19 fathom sounding from the prior survey located at Latitude 18° 14' 55" N and Longitude 65° 02' 39" W, which is in error, the present survey shows soundings in the range of 126-130 feet. Examination of the fathogram shows no unusual peaks in the area and the bottom is regular in relief. This sounding is also in an area where there is an excellent junction with a prior WHITING survey from 1972; WH-20-1-72 H-9273. We recommend deletion of this 19 fathom sounding and replacement with depths from this survey.

#### L. COMPARISON WITH THE CHART

This survey was compared with NOS Chart 25650, (formerly C & G S 904) 20th edition. Comparison was made <sup>Aug 9, 1975</sup> by converting soundings from the chart in fathoms to feet. This method could cause some discrepancies, as soundings

of 118-124 feet are rounded to 20 fathoms when plotted.

Agreement was generally very good, discrepancies for the most part were in the realm of 1-2 feet. There were 2 major discrepancies noted between charted soundings and this survey:

No.	Charted Sounding	Sounding from Survey	Latitude	Longitude
1	<sup>89</sup> 90 (15 fms)	107 <sup>9</sup>	18°17'48" N	65°04'51" W
2	<sup>103</sup> 102 (17 fms)	118	18°16'58" N	65°05'25" W

*\* This sounding appears to have come from W.D. Survey H-4651b effective depth value indicator. \* No such sounding appear on chart used at time of verification.*

All these soundings are in areas of somewhat irregular bottom; in the case of sounding number 1 we recommend retention of the charted soundings, since it is shoaler than this survey; although it must be noted that no evidence of this depth was found in the vicinity during this survey. In the case of sounding No. 2, several 102 feet soundings are found <sup>1000</sup>~~500~~ meters to the West and Southwest of the charted 102.

*\* See Verifier's Report para 6.b.*

We recommend that this sounding is charted erroneously and should actually be <sup>2</sup>300 meters <sup>east</sup>~~West~~ of its charted location. There were three dashed-circled pre-survey review items on this sheet; their depths and locations as follows:

*Sounding was improperly charted from prior survey H-4651a. It should be revised to long. 65°05'16". return.*

1. The 12 fathom sounding charted at Latitude 18°15.75' N,

Longitude 65°06.3' W., was searched for by splitting <sup>See Verifiers Report</sup>  
lines in the area to 100 meters, least depth found was  
a 79' sounding, 50 meters West of charted <sup>75</sup> 72 feet. <sup>Pos # 146-147</sup>  
<sup>Day 090</sup>

- (44 44)
2. The 12 fathom sounding charted at Latitude 18°15.7' N, <sup>See Ver. Rep.</sup>  
Longitude 65°05.76' W., was found on a main scheme line.  
A 71 feet sounding was obtained by the WHITING <sup>100 meters west</sup> at the  
~~location~~ <sup>12 fathom sounding</sup> of the charted ~~72 feet sounding~~. <sup>Pos # 150-151 Day 090</sup>
3. The 12 fathom sounding charted at Latitude 18°16.05' N,  
Longitude 65°05.5' W, was searched for but not found as  
charted. Lines in this area were split to 100 meters  
but the least depth found was 75 feet sounding 280  
meters Southeast of the charted location. <sup>Pos # 118 day 090</sup>  
<sup>The 12 fm (71 ft) sounding, not disproved; carried forward.</sup>  
<sup>wire drag 509</sup>

These items appear to exist and should be retained on the  
chart ~~with the exception of item No. 1 above. A 13 fathom~~  
~~sounding should replace the 12 fathom sounding at the~~  
~~charted location.~~

#### M. ADEQUACY OF SURVEY

This survey is sufficiently complete and adequate  
to supercede all prior surveys for charting.

## N. AIDS TO NAVIGATION

The only aid to navigation on this survey was a "Lighted Black Can Buoy 1" with characteristic flashing, 6 seconds.

Detached positions taken by Launch 1 (2931) determined this Buoy to be located at 18°17'08.8" N, 65°06'29.3" W. This position is in good agreement with the position on the 20th edition of chart 25650 (formerly 904) and also the 1976 edition of the light list. <sup>pos<sup>#</sup> 5070</sup>

## O. STATISTICS

Vessel Number .....	2930	.....	2931
Number of Positions .....	1875	.....	100
Nautical Miles Sndg. Line ....	295	.....	12.2
Sq. Nautical Miles of Hydro...	21.2	.....	0.6
Bottom Samples .....	36	.....	00
Nansen Casts .....	3	.....	00
Tide Stations .....	3	.....	00

P. MISCELLANEOUS

As part of the field edit of this project, we were requested by Coastal Mapping Division, Atlantic Marine Center, to determine the Azimuth between Sail Rock and one of the three offlying rocks in order that the photographs could be properly oriented in this area.

WHITING Launch 1 obtained a Geographic position of the ~~Northerly~~<sup>Southerly *Dung*</sup> of the three rocks, (most readily identifiable rock both on photograph and in the field) by putting the Launch as close as possible over the rock and obtaining the Del Norte rates; this was done several times and the most commonly occurring rates were taken to convert to a G.P.

An inverse was then computed between the G.P. published for the top of Sail Rock and the G.P. obtained for the offlying rock using RK 407. The Azimuth from Sail Rock to the offlying rock was  $76^{\circ}23'25.258''$  as obtained in this manner.

This information will be forwarded to Atlantic Marine Center, Coastal Mapping Division in a separate letter.

Q. RECOMMENDATIONS

It is recommended that this survey replace all prior surveys of this area for charting. ✓

R. AUTOMATED DATA PROCESSING

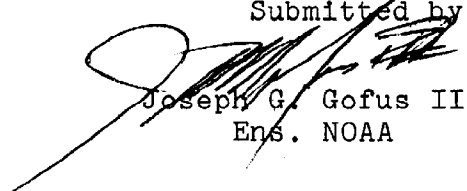
In acquiring and processing the data for this survey, the following hydroplot-hydrolog programs were used by personnel of the NOAA Ship WHITING:

<u>Prog. No.</u>	<u>Program Title</u>	<u>Version Date</u>
RK 111	Range-Range Real Time Hydroplot	1/30/1976
RK 201	Grid, Signal and Lattice Plot	4/18/1975
RK 211	Range-Range Non-Real Time Plot	1/15/1976
RK 300	Utility Computations	2/10/1976
RK 330	Reformat and Data Check	3/12/1976
RK 337	Unscrambler	8/08/1974
RK 407	Geodetic Direct and Inverse Computations	10/23/1975
RK 561	H/R Geodetic Calibration by 3 point Fix	2/19/1975
AM 602	Line Oriented Editor (ELINORE)	5/21/1976



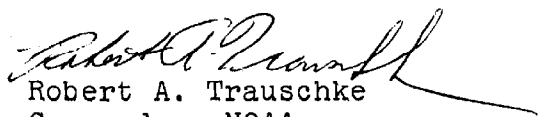
Approval Sheet

Submitted by :



Joseph G. Gofus III  
Ens. NOAA

Supervision of field and office work on this hydrographic survey was continuous on a day to day basis to ensure completeness of the survey and that all work was done in accordance with the Project Instructions and the Provisional Hydrographic Manual.



Robert A. Trauschke  
Commander, NOAA  
Commanding, NOAA Ship WHITING

List of Stations

100	6	18	08	00643	065	19	03653	139	0137	000000	MATIAS
102	6	18	19	31166	065	17	26931	139	0198	000000	RESACA
104	6	18	17	06800	065	06	04150	243	0038	000000	SAIL ROCK ✓
106	6	18	18	56478	065	13	40143	139	0092	000000	CULEBRITA LT.
108	6	18	20	21780	065	05	00170	139	0082	000000	SAVANA LT.
110	6	18	21	58232	065	03	06773	139	0000	000000	SALT
112	6	18	22	54180	065	03	44572	139	0084	000000	DUTCH
114	6	18	24	21287	065	03	38744	139	0046	000000	ROACH
116	6	18	24	37760	065	02	59352	139	0017	000000	CRICKET
118	6	18	21	43478	065	02	02519	139	0000	000000	POINT
120	6	18	21	50082	065	01	26642	139	0000	000000	BAD
122	6	18	22	12395	065	00	25273	139	0000	000000	STUMP
124	6	18	22	28585	064	59	30713	139	0000	000000	PROM
126	6	18	23	17494	064	58	35000	139	0000	000000	IN
128	6	18	24	12623	064	58	32012	139	0000	000000	OUT
130	6	18	21	16383	065	00	20020	139	0274	000000	T-95
132	6	18	22	28920	064	58	28520	139	0000	000000	GOOD
134	6	18	18	23117	065	00	07842	139	0061	000000	SABA
136	6	18	22	34096	064	55	43099	250	0100	000000	MICRO
138	6	18	21	28008	065	01	29778	250	0212	000000	VOR
140	6	18	21	51843	065	03	14300	254	0063	000000	SALT OFFSET
142	6	18	21	18009	064	55	38923	250	0244	000000	DRAKES SEAT
144	6	18	21	17132	064	55	38875	250	0244	000000	T-35 CADASTRAL
146	6	18	21	22973	064	56	42805	254	0466	000000	T-41 OFF-SET
148	6	18	19	31266	065	17	26979	250	0198	000000	EL VIGIA
150	6	18	20	36910	065	01	35220	254	0049	000000	OLD LADY
152	6	18	16	48190	065	17	14627	254	0020	000000	SOLDADO 2
154	6	18	18	05451	065	15	09525	254	0000	000000	BATTLE CAY
156	6	18	17	39045	065	17	01227	254	0019	000000	MARK, 1966 RMI
158	6	18	08	11263	065	16	21014	250	0050	000000	EAST END 1900
160	6	18	21	17110	065	02	31080	139	0000	000000	BLUFF, 1918

Sail Rock only Signal on S.S.

VELOCITY TAPE LISTING ✓

000140 0 0005 0002 000 293000 009616  
000235 0 0010  
000325 0 0015  
000420 0 0020  
000510 0 0025  
000605 0 0030  
000700 0 0035  
000790 0 0040  
000885 0 0045  
000975 0 0050  
001070 0 0055  
001160 0 0060  
001255 0 0065  
001350 0 0070  
001440 0 0075  
001535 0 0080  
001625 0 0085  
001720 0 0090  
001815 0 0095  
001910 0 0100  
002000 0 0105  
002100 0 0110  
002300 0 0120  
002470 0 0130  
002670 0 0140  
002850 0 0150  
003050 0 0160  
003250 0 0170  
003420 0 0180  
003620 0 0190  
003800 0 0200  
004000 0 0210  
004180 0 0220  
004370 0 0230  
004550 0 0240  
004750 0 0250  
004950 0 0260  
005150 0 0270  
005360 0 0280  
005630 0 0290  
005800 0 0300  
006000 0 0310  
006200 0 0320  
006450 0 0330  
006650 0 0340  
006850 0 0350  
007100 0 0360

8/30/76

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 Form 362

Tide Station Used (NOAA Form 77-12): Fortuna Bay, St. Thomas

Period: March 29 - April 8, 1976

HYDROGRAPHIC SHEET: H-9616

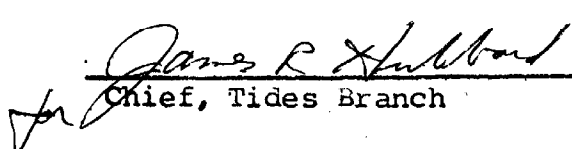
OPR: 423

Locality: Virgin Passage, southwest of St. Thomas

Plane of reference (mean <sup>diurnal</sup> ~~lower~~ low water): 0.0 ft.

Height of Mean High Water above Plane of Reference is  
1.0 ft.

Remarks: Zone direct.

  
Chief, Tides Branch

GEOGRAPHIC NAMES

H-9616

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											
SAIL ROCK												1
VIRGIN PASSAGE												2
												3
												4
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												25

APPROVED

*Chas. E. Harrington*

STAFF GEOGRAPHER - C512

18 Oct. 1977

APPROVAL SHEET  
FOR  
SURVEY H- 9616

- 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.
- B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Provisional Hydrographic Manual. Exceptions are listed in the Verifier's Report.

Date:

Sept. 14, 1977

Signed:

William D. Jones

Title: Chief, Verification Branch

HYDROGRAPHIC SURVEY STATISTICS

H-9616

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS		2 & 4	
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS. ARC, EXCESS		3	
DESCRIP-TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES	7		smooth			1
CAHIERS	1		1-with dept			
VOLUMES	2					
BOXES						

T-SHEET PRINTS (List) TP-12940 not received 9/29/77 mCR

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	TOTALS
POSITIONS ON SHEET			1875
POSITIONS CHECKED		187	4
POSITIONS REVISED		50	
SOUNDINGS REVISED		75	
SOUNDINGS ERRONEOUSLY SPACED		0	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		0	
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS		53	
VERIFICATION OF SOUNDINGS	52	146	
COMPILATION OF SMOOTH SHEET		48	
APPLICATION OF TOPOGRAPHY		2	
APPLICATION OF PHOTOBATHYMETRY		0	
JUNCTIONS		6	
COMPARISON WITH PRIOR SURVEYS & CHARTS		15	
VERIFIER'S REPORT		16	
OTHER		0	
TOTALS	52	286	

Pre-Verification by F. Lamison, R. Roberson, D. Mason

Beginning Date 07/20/76

Ending Date 06/13/77

Verification by L. G. Cram

Beginning Date 08/22/77

Ending Date 09/01/77

Verification Check by W. L. Jonns

Time (Hours) 107

Date 09/20/77

Marine Center Inspection by Hydrographic Inspection Team, AMC

Time (Hours) 12

Date

Quality Control Inspection by R. W. Derkuzarian

Time (Hours) 37

Date 10/14/77

Requirements Evaluation by D. J. Hill

Time (Hours) 3

Date 2/14/78

Carstens 13 hr 1/16/78

Reg. No. 9616

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey the following shall be completed:

CARDS CORRECTED

DATE \_\_\_\_\_ TIME REQ'D \_\_\_\_\_ INITIALS \_\_\_\_\_

REMARKS:

pos. 5079

Reg. No. 9616

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 6-30-82 ~~5-27-82~~ TIME REQ'D. 24 Hrs INITIALS JAC ~~JAC~~

REMARKS:



H-9616 (1976)

Information for Future Presurvey Reviews

Future surveys should include determination of least depths by lead line on the four rocks in the vicinity of lat.  $18^{\circ}17.1'$ , long.  $65^{\circ}06.19'$ . The present survey area is relatively stable. Future surveys should find little change in the irregular bottom.

<u>Position Index</u>		<u>Bottom Change</u>	<u>Use</u>	<u>Resurvey</u>
<u>Lat.</u>	<u>Long.</u>	<u>Index</u>	<u>Index</u>	<u>Cycle</u>
181	651	1	2	50 years

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ATLANTIC MARINE CENTER  
VERIFIER'S REPORT

REGISTRY NO. H-9616

FIELD NO. WH-10-4-76

U.S. Virgin Islands, Virgin Passage, Sail Rock

SURVEYED: March 29, 1976 through April 8, 1976

SCALE: 1:10,000

PROJECT NO.: OPR-423

SOUNDINGS: Ross Fineline and  
Raytheon 723

CONTROL: Del-Norte  
(Range-Range)

Chief of Party ..... CDR R. Trauschke  
Surveyed by ..... LCDR J. DeCoste  
..... LT D. Yeager  
..... LT P. Chelgren  
..... ENS J. Gofus  
..... ENS G. Barone  
..... ENS V. Newell  
..... ENS D. Goodrich  
Automated Plot by ..... Calcomp Plotter #618 (AMC)  
Verified and Inked by ..... L. G. Cram *L. G. Cram*  
September 16, 1977

1. Introduction

a. This survey had two problem areas as listed below:

(1) Extensive rescanning was done at the time of verification. There were over 650 inserts and changes made because of the jagged profile of the coral bottom.

(2) There were about 50 positional errors that resulted from records being put on time and course by the field on this automated on-line survey. About one-third of the survey's soundings were time and coursed as a result of the problem discussed under Section G of the Descriptive Report.

b. The projection parameters were revised during verification. There were minor wording changes made in red ink in the Descriptive Report by the verifier. Two bottom sample descriptions were changed. The field unit had help on bottom samples. After consultation with various people at AMC it was believed these bottom sample descriptions should be grass, and were so revised on the Smooth Sheet.

2. Control and Shoreline

a. The control is adequately described in the Descriptive Report, Sections F and G.

b. The shoreline for this survey originates with final reviewed shoreline manuscript TP-12940 of 1971-75. There were four submerged rocks on this T-sheet. The field located two rocks and made no notes on the other two. The Photogrammetric Branch at AMC was consulted about this problem. After examining photographs, these submerged rocks do exist as shadows on the photographs and are probably sharp coral formations. The two rocks not located by the field are plotted from the T-sheet on the Smooth Sheet.

3. Hydrography See Q.C. Report, para. 4.

a. Depths at crossings are in good agreement.

b. The standard depth curves were adequately delineated. The 90-foot brown curve was added to define the bottom configuration more distinctly.

c. The development of bottom configuration and the investigation of least depths is considered adequate with the following exception:

It would have been desirable to have run additional lines of hydrography in the areas of wire drag depths and some of the shoaler depths.

4. Condition of Survey See Q.C. Report, para. 1.

The field plotting, survey records, and the Descriptive Report are adequate and conform to the requirements of the Provisional Hydrographic Manual, except as follows:

a. The sounding volumes were incomplete; the indexes were not filled out for detached positions.

b. The scanning of peaks and deeps was not to the accuracy as proscribed by Provisional Hydrographic Manual, Section 1.5.3. Over 650 deeps and peaks had to be added at the time of verification.

5. Junctions

Adequate junctions were effected with the following surveys:

H-9273 (1972) 1:20,000 to the east ✓  
H-9272 (1972) 1:10,000 to the northeast ✓  
H-9617 (1976) 1:10,000 to the north ✓  
H-9618 (1976) 1:20,000 to the west ✓  
H-9605 (1976) 1:20,000 to the south ✓

All junctions were complete to the extent that no further consideration is necessary.

6. Comparison With Prior Surveys. See Q.C. Report, para. 5.

- a. H-4598 (1924) 1:40,000  
H-4651a (1923-26) 1:20,000

The prior surveys, taken together, cover the present survey area. A comparison between present and prior depths reveals a general shoaling of about two to three feet. Some differences of as much as five to seven feet occur in areas of jagged coral bottom. These differences are attributable to the less accurate sounding methods employed by these surveys completed in the early 1900's.

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

- b. H-4651b WD (1923-26) 1:20,000

This wire drag survey covers the present survey within the common area, with the exception of the extreme southern limits. There is general agreement between the effective drag depths and the depths on the present survey, with the following exceptions:

(1) The wire drag detached position with a depth of 75 feet (12 fathoms), approximate latitude  $18^{\circ} 15' 41.52''$  and longitude  $65^{\circ} 06' 25.10''$  - The present survey obtained a 79 foot depth 45 meters to the southwest, position numbers 146-147 on day 090. Recommend retaining the 75 feet as charted and as shown on the Smooth Sheet.

(2) The wire drag detached position with a depth of 74 feet (12 fathoms), approximate latitude  $18^{\circ} 15' 41.10''$  and longitude  $65^{\circ} 05' 35.94''$  - The present survey has a 71 foot depth 120 meters to the west northwest on day 090, position numbers 150-151. Recommend replacing the 12 fathoms charted wire drag sounding with the 71 foot sounding on the present survey. The difference in position may be attributed to positional inaccuracies between present and prior survey methods.   
*The 74 foot sdg. was verified on the prior wire drag survey and carried forward.*

(3) The 71 foot (12 fathoms) wire drag hang at approximate latitude  $18^{\circ} 18' 59.55''$ , longitude  $65^{\circ} 05' 29.88''$  - A 75 foot least depth was located 240 meters to the southeast of position number 118, day 090, on the present survey. Recommend retaining as charted.

(4) Charted wire drag depth of 89 feet (15 fathoms), approximate latitude 18° 17' 54.12" and longitude 65° 04' 53.15" - After researching all information available at AMC this depth is ~~believed to be~~ the effective depth of the wire drag for that strip. Recommend this item be deleted from the chart at the discretion of Quality Control. *Concur*

These wire drag detached and hang soundings have been brought forward from H-4651b, with the exception of numbers ~~(7) and (4)~~, to supplement the present survey.

7. Comparison With Chart <sup>(904)</sup> 25650 (20th Edition, August 9, 1975)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys and wire drag survey, and requires no further consideration.

b. Aids to Navigation

The one floating aid to navigation located on the present survey is in substantial agreement with the chart and adequately marks the feature intended.

With the exceptions noted, the present survey is adequate to supersede the charted depths within the common area.

8. Compliance With Instructions

This survey adequately complies with the Project Instructions dated October 16, 1975.

9. Additional Field Work

This survey is an excellent basic survey. No additional work is recommended.



**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL OCEAN SURVEY  
Atlantic Marine Center  
439 West York Street  
Norfolk, Virginia 23510

File No: D6-5  
Ser. No: 77-127

September 16, 1977

CAM3/RAT

TO: RADM Robert C. Munson *RCM*  
Director, Atlantic Marine Center

FROM: *Robert A. Trauschke*  
CDR Robert A. Trauschke  
Chief, Processing Division

SUBJECT: Hydrographic Inspection Team Report, H-9616 (1976)

This is a basic survey in the vicinity of Sail Rock, southwest of St. Thomas. The NOAA Ship WHITING accomplished the work in 1976 in compliance with Project Instructions OPR-423-WH-76, dated October 16, 1975.

#### FIELD WORK

The poor and erratic operation of the Del-Norte is obvious by the crooked lines of hydrography. It would have been desirable if more details of the Del-Norte operation were included in the Descriptive Report, as was done on other 1976 OPR-423 surveys.

#### VERIFICATION

After much discussion in HIT, a 74 foot sounding from a wire drag survey was not brought forward. See Ver. Report, para. 6.b.(2).


Some detached soundings from H-4651b WD (1924-27) are apparently not wire drag depths (i.e. temporary hangs or groundings), but soundings obtained by conventional survey methods (i.e. lead line) during wire-drag operations. These soundings were brought forward or not, depending on the findings of the present survey.

The Hydrographic Inspection Team devoted approximately 12 hours to this survey.




Approval Sheet for H-9616

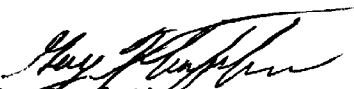
Examined and Approved:  
Hydrographic Inspection Team  
Date: Sept.14,1977

  
CDR Robert A. Trauschke, NOAA  
Chief, Processing Division

CDR Charles H. Nixon, NOAA\*  
Chief, Operations Division

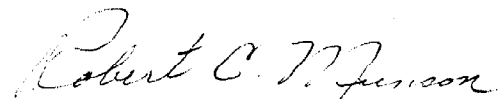
  
C. Douglas Mason, LT, NOAA  
Chief, EDP Branch

  
R. D. Sanocki  
Technical Assistant  
Processing Division

  
Guy F. Prefethen  
Verification Branch

\* Absent

Approved/Forwarded



Robert C. Munson  
RADM, NOAA  
Director, Atlantic Marine Center



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL OCEAN SURVEY  
Rockville, Md. 20852

C352

October 14, 1977

TO: *A. J. Patrick*  
A. J. Patrick  
Chief, Marine Surveys Division

THRU: Chief, Quality Control Branch

FROM: R. W. Derkazarian *R. W. Derkazarian*  
Quality Evaluator

SUBJECT: Quality Control Report for H-9616 (1976) Vicinity  
of Sail Rock, Virgin Passage, U.S. Virgin Islands

Survey H-9616 was inspected to evaluate the accuracy and adequacy of the survey with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, shoreline transfer, smooth plotting, decisions and actions taken by the verifier, and the cartographic presentation of data. It would be desirable to use a triangulation station such as SAIL 1900 falling within the limits of the smooth sheet for the reference station in Stamp 42. In general, the survey was found to conform to the National Ocean Survey's standards and requirements except as follows:

1. The event marks on the fathograms were for the most part .2" wide, with the intermediate events .1" wide. These unjustifiably wide markings in many cases obliterated the bottom trace and in some instances could conceivably conceal a shoaler feature.
2. The elevation of Sail Rock was added to the smooth sheet during the quality control inspection.
3. The triangulation names were added to the position-arc overlay sheet during the quality control inspection.





4. It would have been desirable to have taken lead line depths to determine the least depths over the four sunken rocks in the vicinity of lat.  $18^{\circ}17.1'$ , long.  $65^{\circ}06.19'$ . See paragraph 5 below.

5. This additional information should be noted under "Comparison with Prior Surveys," in the Verifier's Report.

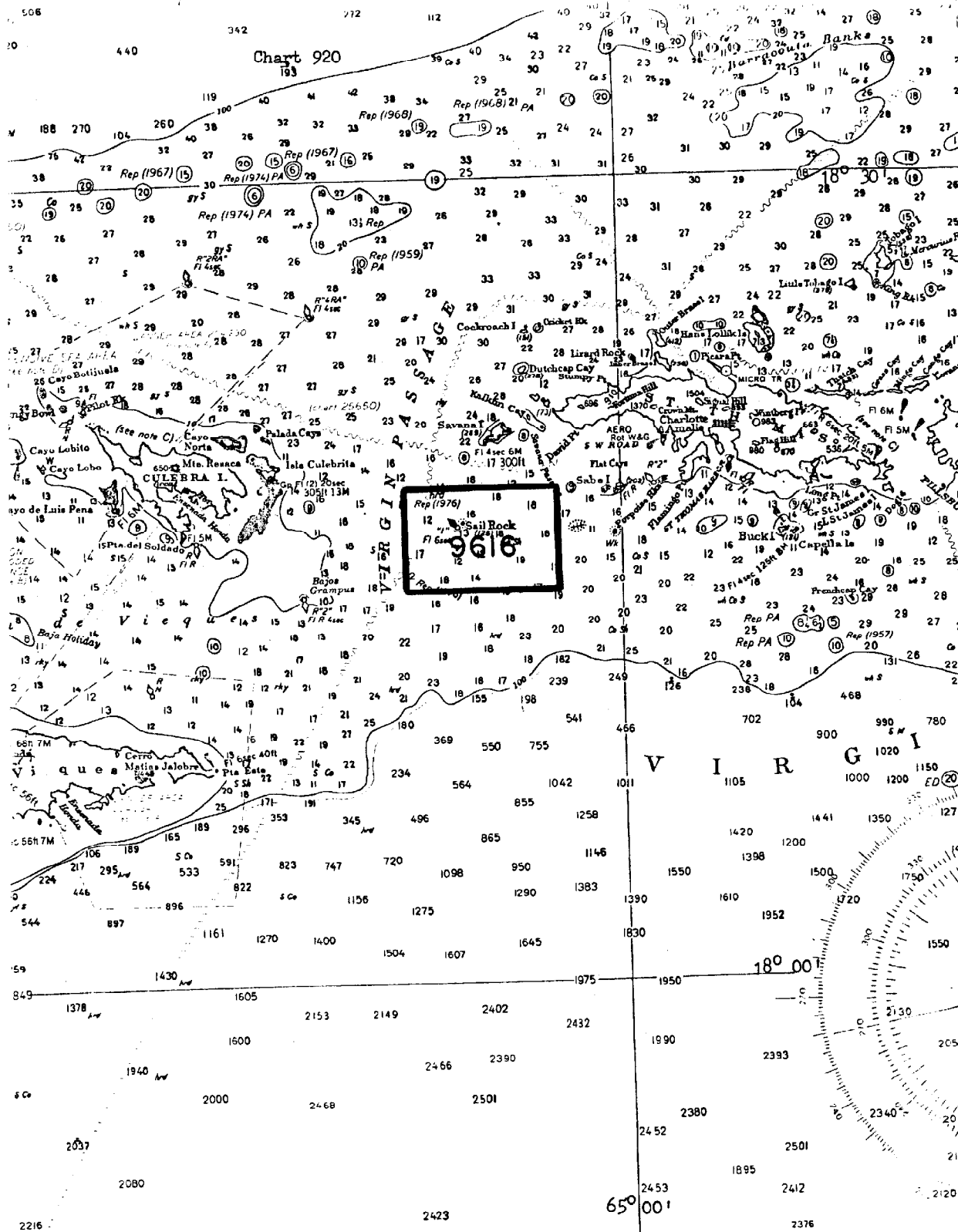
a. H-4651a (1923-26) 1:20,000

Rocks plotted in the vicinity of Sail Rock on H-4651a as awash at mean low water apparently were not observed as awash on the present survey. Inasmuch as the range of tide is only one foot and sounding lines were run near the rocks without observing them they are considered to be submerged at the present time.

Several bottom characteristics and one sounding have been carried forward. With these additions the present survey is adequate to supersede the prior survey in the common area.

b. H-46516 WD (1923-26) 1:20,000

One conflict with this prior wire-drag survey was noted and resolved during the quality control inspection. A present depth of 56 feet fell in a prior cleared depth of 65 feet in lat.  $18^{\circ}17.12'$ , long.  $65^{\circ}06.23'$ . A slight reverse bight at the beginning of a strip was assumed in reconciling the conflict.



RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 9616

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
25650	2-28-83	E. Bedonko	Full <del>Part Before</del> After Verification Review Inspection Signed Via
			Drawing No. 31 QC
25640	8/18/83	B. Fernandez	Full <del>Part Before</del> After Verification Review Inspection Signed Via
			Drawing No. 34 QC
			Full Part Before After Verification Review Inspection Signed Via
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