4544a

4544a

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. ..... Office No. 4544 A B

LOCALITY

State Virgin Island

General locality St Thomas I

Locality St. Thomas Harbor,
South Coast

1925

CHIEF OF PARTY

G. G. Mattison

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DEPARTMENT OF COMMERCE

COAST AND GEODETIC SURVEY.

E. LESTER JONES, DIRECTOR.

A DESCRIPTIVE REPORT

to Accompany

HYDROGRAPHIC SHEET OF ST. THOMAS HARBOR, 4544a

VIRGIN ISLANDS.

S.S. RANGER.

G.C. MATTISON,
Commanding.

1923--1925.

DESCRIPTIVE REPORT FOR SHEET # 1.

Hydrography of St. Thomas Harbor and Approaches, including Gregerie Channel.

Sheet number one includes the hydrography of St. Thomas Harbor, Gregerie Channel, Great Krum Bay, Mosquito Bay and the inshore areas of Water Island and is approximately limited by the area from 64° 55' W - 64° 59' W by 18° 18' N - 18° 21' N.

St. Thomas Harbor was closely developed in order to give as close an approximation of the contour of the bottom as possible. No dangers other than those already known to exist were discovered. The general depth of the harbor was found to be nearly as charted on U.S.C. & G.S. # 933, except on shoals where a much greater depth was found. A considerable difference is noted in the three fathom curve, Dredging operations have been carried on some years ago and it may be possible that the contour of the bottom has been materially changed. The limits of dredged areas seem to agree well with the ranges, some of which are still in position. The anchorage areas in Long Bay and south of the town are quite favorable for boats drawing less than 18 feet. The bottom adjacent to Hassel Island is somewhat more irregular than the rest of the harbor, but no sounding in the usual path of ships seems to exist which is not governed by entering depths. Soundings were taken at the face of all wharfs and docks. In the case of the Navy dock in Careening Cove, large ships do not lay at the face of the wharf but are held some distance off. The slope of the bottom is very steep at this point and a close development was made in order to establish this fact. Since the date of original survey, the Navy dock in Careening Cove was extended, 24 feet to the northwest enabling deep draft vessels to lay alongside the dock itself. The face of the West India dock is bulkheaded and at no point is the depth less than 29 feet/ In general the slip of the West India Company is dredged to considerably more than 30 feet and ships drawing 31 feet have been docked at this dock. Vessels drawing 31½ feet have been brought into St. Thomas Harbor and placed alongside of the Navy Dock in Careening Cove. This feat had been thought too dangerous for twenty thousand ton vessels by the captains of the same and is not attempted at the present time.

The depths in the entrance between Rupert Rock and Hassel Island and the area between East Point and Hassel Island seem to be sufficient for vessels of not over 31 feet. The harbor range is well located to carry in the best water and a slight deviation from the same would not encounter any dangers. Scorpion Rock was carefully examined and under very favorable conditions a least depth of 23-8/10 feet established. It was a well known fact that a greater depth existed on this rock than that charted. The local pilots were confident that 21 feet and more existed and the U.S.Lighthouse Service has estimated 20 feet as the least depth. This rock is of very small extent being a small ledge extending about 150 feet in a north and south direction and surrounded by depths of five fathoms or more. This area of between 30 and 36 feet depth is somewhat extensive and should be avoided by maximum draft vessels. The harbor range passes close to the eastern edge of this area. and the width of the channel is somewhat restricted at this point by a shoal area to the eastward. The bank noted as Rohde Bank was developed by a regular system of lines. The 12 feet spot shown on chart #933 as Rohde Shoal was not discovered altho search was made for same at favorable opprotunities. Subsequent examination by wire drag established 17¾ feet on this shoal.

Mühlenfels Point

A shoal area shown as Point Knoll off East Point Light was also examined under favorable conditions. A considerably greater depth was found than indicated. This area is close to the point and in no wise affects shipping and apparently is a small knoll as its name indicates and of very small extent and of not much less depth than the surrounding area.

Gregerie Channel comprises East and West Gregerie Channel and does not seem to have much commercial importance at the present time. Crown Bay and Little Krum Bay are used as anchorage areas when St. Thomas Harbor becomes over crowded or in case of vessels out of commission. East Gregerie Channel is clear of all dangers and can be used by vessels going to Crown Bay. Revenge Beach is boulder strewn and also has a shoal area two hundred yards off shore roughly parallel to shore. To pass into West Gregerie from East Gregerie several, shoals are encountered off Sandy Point. These shoals are well known and well located on the chart. Sandy Point Rock is plainly visible and nearly awash. Gregerie Bank was developed and examined under most favorable conditions and a least depth reduced of 15 feet was found whereas the chart shows 13 feet. No doubt exists about the least depth obtained in this case and it strengthens the viewpoint that all shoal soundings shown on chart #933 are too less by several feet. Sandy Point Rock has a least depth of three feet instead of one foot as charted. To come into Little Krum Bay it is recommended that West Gregerie Channel be entered from the westward. Little Krum Bay is an exceptionally well protected bay and is a better harbor of refuge than St. Thomas. A heavy swell and strong wind comes into St.Thomas Harbor at times when Little Krum Bay is smooth and nearly calm. Great Krum Bay is nearly as well protected as Little Krum Bay. The West Indies and Panama Telegraph Company have a cable station in Great Krum Bay on the western side. Their cable ship and other ships bringing supplies use this harbor which has ample depth but requires local knowledge as to the method of handling amvessel when making a landing. Private ranges have been established for this purpose. This station has been in use for forty years or more. On the eastern side of Great Krum Bay a yard for the breaking up of vessels is marked by an assemblage of spars and masts, and a vast amount of iron tanks, boilers and fittings strewn about the beach. On the beach at the head of the bay is a wooden bulk which has been striped recently. This bulk is grounded and moored and does not constitute a menace. Little use is made of this bay outside of as noted. Mosquito Bay is not used except by motor boats and small sloops.

Water Island is virtually uninhabited as far as has been observed and only one habitation has been observed on the island, that being in Druif Bay. The eastern and southern side of the island is rugged. The depths are deep close to shore and vessels making St.Thomas need not fear any danger if a reasonable distance off shore. Limestone and Sprat Bays are not used even by sailing craft as it is a lee shore and usually a heavy sea is beating upon the rocks. A small boat can find refuge behind the reef at the western end of Limestone Bay and also in Sprat Bay. The reef off Carol Point is shoal nearly half way across the entrance and gives ample protection in the northern end of the bay. Druif Bay and Flamingo Bay on the western side of Water Island have no importance.

In St. Thomas Harbor care was taken to have the hydrography agree with the topography. In this respect use was made of a topographic sheet for a boat sheet and in many cases the nearest topographic feature was described instead of depending upon a three point position. A good portion of the work was done using ranges. This was necessary for the control of the boat as considerable sea and wind was encountered at times when the work was in progress. It may be possible that a certain amount of discrepancy may be noted in the soundings where checklines cross, due to choppy sea. It is believed however that a close enough development was made to compensate errors of judgement in reading the leadline. The same leadsman was used throughout most of the work and showed experience and judgement in handling the lead.

The docks along the water front of St.Thomas are short wooden structures and used for landing cargo from lighters. The public or Tortola wharf is used extensively by vessels plying between St.Thomas and Tortola with fruit, vegetables and livestock. The public landing wharf for small boats is designated as Kings Wharf and shown on topographic sheet. The anchorage for schooners and small sailing craft is close to the water front of the town. Other ships are regulated by the harbormaster and pilots, The Sticks is a narrow channel connecting St. Thomas Harbor with Gregerie Channel and is used by small motor boats and the French fishermen. There is three or four feet depth, sufficient for the use made of it. Considerable current is noted thru this channel at flood tide and forms a useful agent in keeping St. Thomas Harbor in good sanitary condition.

A list pf signals used in the survey of the harbor portion is attached. Many of these points were used merely to fix thebeginning and ending of lines, which while definite on the topographic sheet would be hard to describe in the record. It is not believed necessary to add a great number of landmarks to those on the chart. The church on Gallows Hill in Cha-Cha village is most conspicuous and four oil tanks on the hill above the Navy dock might be located for that purpose. As pilots handle most of the vessels entering the harbor greater detail in the chart is hardly necessary. Practically all information that can be given concerning St. Thomas and vicinity is covered thoroughly in the Coast Pilot for West Indies and is correct in every respect.

Numerous rock points have reefs and boulders adjacent. Very few of these dangers appear outside of the five fathom curve which is usually quite close to the shore line. The exceptions are Scorpion Rock at the entrance to St. Thomas Harbor and a 16 foot spot south of the Triangle to the eastward of Muhlenfels Point. This latter spot is marked by a bell buoy and Scorpion Rock by a lighted buoy. The shoal area off Sandy Point in Gregerie Channel is marked by a buoy. This is the extent of navigational aids with the exception of Muhlenfels Point Lighthouse and range lights on Berg Hill for entering the harbor.

After the completion of the leadline survey, a wire drag examination was made of the area covered by this sheet. The least water on Rohde Shoal was found to be 17½ feet. The non-existance of a shoal of 16 feet off Muhlenfels Point known as Point Knoll was proven. Some boulders were discovered which were not found by leadline. No dangers in the navigable parts of the area were discovered.

A slight discrepancy is to be noted in the check lines run in St. Thomas Harbor. The lesser depths shown by the checklines may be accounted for by the fact that the sounding boat was running broadside to the swell and sea. The tendency would be for the leadsman to read his leadline in the trough of the wave thus giving a slightly less sounding than the average depth. Every precaution was exercised to have the plotted position as determined by sextant angles show the exact location of the sounding. Also the positions of intermediate soundings between plotted positions were reliably located by keeping the boat exactly on a predetermined range.

For entering St. Thomas Harbor, maximum size and deeply loaded vessels are recommended to use the course established by the range lights. This range requires no change in course and carries at least 34 feet of water. For vessels leaving St. Thomas it is easier to pass to the northward of Scorpion Rock as the channel is broader and fully as good water as the established range. As the range lights are rather close to-gether, there is difficulty in holding the exact line especially when using it astern. The above preceedure seems to be that now followed by the pilots of St. Thomas Harbor.

Instructions dated June 8, 1923

Reppectfully submitted

R. J. Auld

R.J. AULD, H. & G. Engineer,
U.S. Coast & Geodetic Survey.

Forwarded
Aug. 4, 1924,
G O Mattison
Cdg. U.S.S. Ranger.

ADDITIONAL INFORMATION FOR
DESCRIPTIVE REOPRT SHEET NO. 1.
ST. THOMAS HARBOR.

May 1925.

Some additional development and changes took place in and around St.Thomas Harbor after the completion of the original survey.

The shoal area one quarter mile south of Red Point on the west side of Mosquito Bay was examined carefully and the least depth was found to be two feet instead of four feet as now charted.

A rock having a least depth of three feet lies about 75 meters south of the point where ther radio towers stand in St.Thomas Harbor. This rock is of no menace to shipping but is of danger to motor boats rounding this point from King's Wharf.

While engaged in docking a vessel in May 1924, the dry-dock anchored off Hassel Island was damaged and partially sunk. Subsequently the whole dock sunk until it now rests on bottom with about five feet exposed above water. From the off shore corners of the dock fixed white lights are now displayed at night. These are maintained by the dock company. The dock is no longer the property of an English firm but was purchased by local interests previous to its damage.

Fixed white lights are also displayed on the dolphins identified as signals Last and Dol on the hydrographic sheet. These lights are maintained by the West Indian Co.

An inner harvor range is maintained by the municipality on King's Wharf. These lights consist of electric lights with reflectors and are designated on the topographic sheet. The outer light is green and the inner is red. These lights are of little importance to navigation and tend to cause confusion by being mistaken for ship's running lights when entering the harbor.

During the visit of a large number of haval vessels to St.Thomas in 1924, a flashing red light was established by the Lighthouse Service on Rupert Rock Beacon and at present date is so maintained by that Bureau.

A correction to the Coast Pilot is noted in the location of the Harbormaster's office. The office there designated is now used by the Post-Office department, while thenharbor master's office is now located about one half block westward on the main street, The harbor master's office and the Custom House occupy a large building extending to the water front. The harbor master's wharf is noted in the previous description. Large cisterns are located adjacent and rain water is piped to the wharf. However this supply is limited compared with the supply obtainable from the West Indian Co. at their wharf.

Coaling facilities are excellent and a large number of foreign vessels bunker at the West Indian Co.'s wharf. Loading is rapid and fully loaded vessels are easily handled to and from the dock. Limited quanities of provisions can be obtained from local sources. Fuel oil and Deisel oil can also be obtained either from U.S. Shipping Board or West Indian Co.

In the examination of the harbor proper of St. Thomas, it was found that practically all portions of the same inside of Rupert Rocks was of soft mud bottom. Soundings as a result of grounding of the wire drag showed that it was possible for the lead to sink thru this mud for three or four feet. While it is possible for a vessel to drag thru this mud all soundings in the harbor were intended to show actual depth of water only.

During the hurricane of August 1924, a three masted bark anchored in Little Krum Bay broke from it's moorings and was stranded off Druif Point as noted on the hudrographic sheet.

Respectfully submitted.

R. J. Auld

R. J. AULD,
H. & G. Engineer.

STATISTICS
To accompany hydrographic sheet No. 1

Date	letter	Vol.	Pos.	Sdgs.	Miles	Vessel
Aug.16,1923	a	1	57	167	2.5	Motor dinghy
" 17,	b	1	83	546	5.0	" "
" 20	c	1	62	313	5.0	" "
" 21	d	1	77	274	6.3	" "
" 21	d	2	9	57	0.7	" "
" 22	e	2	45	391	3.0	" "
" 23	f	2	69	505	9.5	" "
" 24	g	2	88	543	10.5	" "
" 27	h	2	45	227	5.0	" "
" 27	h	3	17	70	1.5	" "
" 28	j	3	92	569	8.0	" "
" 29	k	3	28	177	2.5	" "
" 30	l	3	56	275	5.5	" "
" 31	m	3	35	165	3.5	" "
Oct. 8	N	3	54	280	17.0	" "
" 9	o	4	96	394	9.0	" "
" 10	p	4	102	491	9.0	" "
" 11	q	4	104	375	7.0	" "
" 12	r	4	52	232	2.5	" "
" 17	s	4	20	103	1.5	" "
" 17	s	5	37	179	2.5	" "
v. 2	t	5	73	249	5.0	" "
" 19	u	5	81	343	9.0	" "
" 20	v	5	71	400	7.5	" "
Sept.29	w	5	106	359	15.00	Marindin
Dec. 11-24	x	6	94	367	10.5	Tender

Date	letter	Vol.	Pos.	Sdgs.	Miles	Vessel.
May.13ml925	y	6	66	243	2.0	Tender.
June 8,1925	z	6	123	371	5.1	Tender
.22 1925	aa	6	102	324	6.2	"
" 26	bb	6	103	322	7.1	"
" 28	cc	7	37	106	3.2	"
" 29	dd	7	71	154	3.0	""
Totals			1875	9601	191.6	

Water area surveyed---6.6 sq. stat. miles.

Soundings in feet.

Plane of reference== M.T.L.---0.5 feet.

Tide gauge in St. Thomas Harbor.

Plane of reference, reading on gauge= 5.25 feet.

Lowest tide observed, reading on gauge=4.9 feet

Highest tide observed, reading on gauge=6.8 feet.

HYDROGRAPHIC SIGNALS SHEET # 1.

Name	Location and Description	Method.
Rap	W.W. base of cliff w. of Green	S.C.
Hole	W.W. Frenchmans Bay	S.C.
Sold	W.W. E. end Soldier Bay	S.C.
Long2	W.W. Long Point	See foot note "A"
Tic	W.W. on point W of Sprat Water Is.	S.C.
Tar	W.W. Sprat Bay Water Island	SC. S.T.
Was	W.W. Sprat Bay Water Island.	S.C. S.T.
Sag	W.W. head of Sprat Bay	S.T.
Ret	W.W. Carol Point Water Island	S.C. S.T.
Fre	W.W. Carol Point Water Island	S.C. S.T.
Oat	W.W. Limestone Bay Water Island	S.C. S.T.
Ent	W.W. Limestone Bay Water Island	S.C. S.T.
Beach	Banner on beach,Limestone Bay	S.T. O.
Cop	Pinnacle rock off pt. W.side W.I/	S.C. S.T.
Flay	W.W. RK. S.side Flamingo B. W.I.	S.C. S.T.
Say	Tip of point, head of Flamingo Bay	S.T.
Bro	Offlying rk. N.side Flamingo Bay	S.C. S.T.
Cor	Offlying rock Drift Pt.	S.C. S.T.
Sap	W.W. rk. 85 m. ENE Drift	S.C. S.T.
Fit	W.W. rk. S shore Drift B. W.I.	S.C. S.T.
Cap	Top of roof of house,N.side of Drift B	S.C. S.T.
Tol	W.W. rk. N.side of Drift Bay	S.C. S.T.
Tol2	Offlying rk. pt. N.side Drift Bay	O
Greg	W.W. on pt. S. of Little Krum Bay	S.C. O
Aro	Offlying rk. Carpline Pt. W.I.	S.C.
Hem	W.W. rk. entrance to Krum Bay	S.C. S.T.
Bay	Offlying rk, entrance to Krum Bay	S.T.

Name	Location and Description	Method
Cable	Unknown pos. narrow part Krum Bay(W.side)	B.S.
Cable2	E. support for water pipe,Cable Sta. K.B.	S.T.
Great	Unknown pos. narrow part Krum Bay(E.side)	B.S.
Great2	High diving platform,Monsantos Place K.B.	S.T.
Bow	Bow of hulk, head of Krum Bay	S.T.
Stern	Stern of hulk head of Krum Bay	S.T.
Krum	F.R. Bn. head of Krum Bay	S.T.
Tel	Telephone pole, head of Krum Bay	B.S.
Rob	W.W. Tk. Id. W. side of Mosquito Bay	S.C.
Ske	W.W. E. side Mosquito Bay	S.C.
To	Red House head of Mosquito Bay	S.T.
Pam	Palm tree N.W. cor. Mosquito Bay	S.T.
Nap	Rock on point E. side Mosquito Bay	O.
Bat	Bathhouse Mosquito Bay (dest)	B.S.
Land	W.W. S.W. pt. of Water Island	See foot note "B"
Tip	Tangent 70 M. WxS of Top	
Rub	Tangent 170 M.WNW of Mos	

Notes:

"A" Position 56 w, using Long2, was plotted on boat sheet #3 and transfered to smooth sheet #1. Long2 is beyond the limits of sheet #1.

"B" Land was plotted from sextant cuts (S.C) on sheet #3 and transfered to sheet #1.

Signals Bay, Cable and Great2 were used as auxilliary signals for location of other signals in Krum Bay. They were not used in hydrography,

Key: S.C.= Sextant cuts from boat position
S.T.= Sextant triangulation.
B.S.= Transfered from boat sheet.
O. = Located by occupation (3 point fix)

RECOVERABLE OBJECTS

Name	Remarks.
Cha	Church steeple Cha-Cha Town
Gate	Old Captain of Yard Office N.Y.
Hed	N.E. cor. Creque's wharf Hassel Id.
Gas	Chimney, Gas Plant.
Brit	Flagpole, British consulate
Clock	Clock Tower, Fort Christisn
Nee	E. End of dock Manecke Est.
Strut	E. end of dock Cha-Cha boat repair yard.
Hole	E. end of dock Cha-Cha Town
French	N.E, cor. French Wharf Hassel Id.
Last	Last dolphin west end of W.I. Dock
Large	NE cor. wh. Hassel Id.(Large wh.near N.Y.)
Sub	N. corner boat house N.Y.
Way	Corner of bulkhead W. of N.Y.
Small	S.E. cor. wh. Hassel Id. (Small wh. near N.Y)
Pyle	N.E. cor. N.Y. dock
Corner	S.W.(inner) corner wh. Hassel Id.(Large wh. near N.Y.)
Barge	N.W. cor. N.Y. dock
Well	Well at shoreline W. of N.Y.
End	Next to last dolphin W.end W.I. dock
India	N.W. cor.W.I. warehouse (dest)
Public	S.E. corner commercial (Tortola) Wh.
Harbor	S.E. cor. Custom-house (Harbor Dept) Wh.
Kreck	N. end of wreck,SE of NY.
Boat	N.W. cor, boathouse,Kings Wh.
Dol.	Western most dolphin off W I. dock
Eck	Stack of beached dredge,Long Bay

Name	Remarks.
Sou	W. cor. of quay. W.I. Dock
Tric	S.cor. power house W.I. Dock
Rat	4th, dolphin E. end off W.I. dock (dest)
Laub	N.E. cor. W.I. warehouse (dest)
Lef	3rd dolphin E. end off W.I. Dock
Gram	2nd dolphin E. end off W.I. Dock
Gil	Dolphin at E. end off WI.I . Dock
Sharp	S.E. cor, Creque's wharf, St. Thomas
Mid	S. end of wharf, Lockhart's Lbr. Yard.
Cup	Cupola, Moravian Church.
Asia	S.E. cor. of quay. French wh. Hassel Id.
Dock	W. end of dock, Quarantine Station.
Rav	E. end of dock, Moravian Mission
Rum	E. end of dock, Little Krum Bay.
Beef	"Barrel of Beef" Rock shows 2 feet
French	Top of roof main house Frenchman Bay.
Por	Highest rk. E. group, Porpoise Rock.
Pier	Front range light, King's Wharf.

PLANE TABLE POSITIONS SHEET No. 1

Name	Remarks.
Rup.	Topographic signal (Bn)
S. Rad	Radio Tower. south
Ice	Topographic signal.
Dred	Dredge Range #1. Bn. Front.
Guy	Dredge Range #2. Bn. Front.
Ham	Topographic signal.
Back	Dredge Range #3. Bn. Front.
N. Rad	Radio Tower, North
Kit	Topographic signal.
Tri	Topographic signal
El	Topographic signal
Pro	Topographic signal
Car	Topographic signal
Cow	Topographic signaal
Sand	Topographic signal
Pack	Topographic signal
Mos	Topographic signal
Anc.	Topographic signal
Lime	Topographic signal
Wave	Topographic signal
Wat	Topographic signal
Flam	Topographic signal
Mid	Topographic signal
Mar.	Flagpole, Mar. Bar. Mosquito Bay
N. Range	Harbor Range, Rear Light

Location and names of wharfs West of Kings Wharf
Saint Thomas Harbor.

Name	Latitude	Meters	Longitude	Meters
Pendleton	18 20	1035	64 55	1590
Custom Or Harbor ter	18 20	1035	64 55	1610
Riise	18 20	1030	64 55	1620
Beverhaut	18 20	1035	64 55	1640
Paiewonsky (St.Thos.Bay Rum Mfg.Co)	18 20	1033	64 55	1650
King	18 20	1030	64 55	1660
Public or Tortola (S.E.Corner)	18 20	1015	64 55	1665
Lockhart	18 20	1020	64 55	1692
Burnet	18 20	1011	64 56	0.0
Miller	18 20	1000	64 56	35
St.Thomas Lbr. & Trading Co.	18 20	936	64 56	114
Lockhart	18 20	930	64 56	132
(Italian American) Hotel	18 20	930	64 56	158
Lugo	18 20	920	64 56	200
(Brown) Bornn	18 20	920	64 m56	228
Manecke	18 20	920	64 56	254
French Trans. Atlantic co.	18 20	925	64 56	290
U.S.Marine Corp.	18 20	918	64 56	315
Danish West India Co.	18 20	910	64 56	350
ne Berne (from Vol.I)	18 20	916	64 56	373
St.Thomas (Dk.&Eng. Cl.Co.	18 20	904	64 56	405

List of Signals used in hydrographic Survey of Saint Thomas Harbor.

Name of Signal.	Latitude		Meters	Longitude		Meters	Remarks.
Chu	18	20	742	64	56	1070	Church Steeple
Gas	18	20	950	64	56	765	Chimney
Dred	18	20	965	64	56	642	Range beacon
Brit	18	20	930	64	56	405	Flag pole
Ice	18	20	881	64	56	275	Smoke stack
Hole	18	20	780	64	56	820	End of dock
Strut	18	20	608	64	56	771	End of dock
Nec	18	20	452	64	56	760	End of dock
Chim	18	20	390	64	56	555	Tall brick chimney
Hed	18	20	550	64	56	380	Marine Railway Corner of wharf
French	18	20	372	64	56	191	Corner of wharf
Asia	18	20	275	64	56	170	Corner of bulkhead
Large	18	20	00.0	64	56	126	Corner of dock
Small	18	19	1760	64	56	165	Corner of dock
Well	18	19	1638	64	56	230	Circular brick well
Way	18	19	1630	64	56	128	Marine wayd N.Y.
Barge	18	19	1733	64	56	82	Barge
Gate	18	19	1724	64	56	70	Old office.
Pyle	18	19	1754	64	56	34	Corner of dock
Ham	18	19	1690	64	55	1736	Flag pole Later-Bn.
Kreck	18	19	1604	64	55	1612	Wreck
Sig	18	19	Triangulation	64	55	Triangulation	
Rock	18	19	Triangulation	64	56	Triangulation	
Sprat	18	19	Triangulation	64	56	Triangulation	
Green	18	18	Triangulation	64	54	Triangulation	
Tri	18	19	192	64	54	1440	W.W.

Name of signal	Latitude	Meters	xLongitude	Meters	Remarks
East	18 19	Triangulation	64 55	Triangulation	
Kit	18 19	1060	64 55	496	Chimney abandon house
Rup.	18 19	1491	64 55	1098	Rupert Rock Bn.
Dock	18 19	860	64 55	565	Quarantine Dock
Front	18 19	1700	64 55	843	Old dredge range.
Last	18 19	1770	64 55	1028	Dolphin
End	18 19	1794	64 55	990	End of wooden stage
Dol	18 20	175	64 55	905	Dolphin
Rat	18 20	285	64 55	690	Dolphin
India	18 20	200	64 55	577	Old warehouse
Laub.	18 20	270	64 55	465	Old warehouse
Tric	18 20	431	64 55	238	Electric plant.
Eck.	18 20	618	64 55	388	Wreck
Back	18 20	33	64 55	314	Dredge range.
Blue(Blueheard)	18 20	Triangulation	64 55	Triangulation	Castle.
Mid	18 20	982	64 55	1238	End of wharf
Cup.	18 20	1122	64 55	1181	Cupola Luthern Ch.
Clock	18 20	1050	64 55	1441	Fort Christian clock
South Radio	18 20	929	64 55	1440	Radio tower
Pier	18 20	916	64 55	1533	Inner range light
Pier	*18 20*	*Triangulation*	*64 55*	*Triangulation*	*Not used on sheet. Note above.*
King	18 20	Triangulation	64 55	Triangulation	Tower Navy Bl'dg.
Harbor	18 20	1035	64 55	1610	Dock.
Public	18 20	1030	64 55	1660	Dock
Sharp	18 20	1012	64 55	1717	Corner of bulkhead
Black(Blkbrd)	18 20	Triangulation	64 55	Triangulation	Castle.
Boat	18 20	964	64 55	1505	Boatshed
South Range (Fr. Range)	18 20	1343	64 56	33	Range light

Name of Signal	Latitude		Meters	Longitude		Meters	Remarks.
Gil	18	20	416	64	55	492	Dolphin
Gram	18	20	372	64	55	560	Dolphin
Lef	18	20	328	64	55	623	Dolphin
Wreck	18	20	135	64	56	168	Wreck
Sou	18	20	0.0	64	55	912	Corner of bulkhead
Corner	18	19	1830	64	56	175	Corner of bulkhead
Awl	18	20	272	64	55	775	Dolphin
Sub.	18	19	1686	64	56	130	Dock
Beef	18	18	1695	64 65	54	1600	Outlaying rock
Hole	18	18	1807	64 65	54	950	W.W.
Sold	18	19	470	64 65	55 54	150	W.W.
Rap.	18	18	1358	64 65	54	230	W.W.
French	18	19	13	64 65	54	532	Peak of red roof.
Cow	18	19	1357	64 65	56	370	W.W.
Car	18	20	268	64 65	56	1068	W.W.
Pack	18	20	651	64 65	56	1279	Garbage plant.
Rav	18	20	368	64 65	57	372	Banner End of dock
Rum	18	20	187	64 65	57	748	Banner. End of dock
Greg	18	19	1663	64 65	57	556	W.W.
Top	18	19	1394	64 65	57	760	
Tip	18	19	1377	64 65	57	833	W.W.
Bay	18	19	1594	64 65	57	1125	W.W.
Great	18	19	1720	64 65	57	1170	Wrecking yard.
Great2	18	19	1730	64 65	57	1180	Wrecking yard
Tel	18	20	155	64 65	57	1001	Telephone Pole
Krum	18	20	156	64 65	57	1230	Range.
Bow	18	20	115	64 65	57	1252	Bow of hull

Name of signal	Latitude	Meters	Longitude	Meters	Remarks
Stern	18 20	108	64 65 57	1307	Stern of hull
Cable	18 19	1734	64 65 57	1275	Cable station
Cable 2	18 19	1703	64 65 57	1277	Cable station
Hom	18 19	1557	64 65 57	1500 ?	W.W.
Mos	18 19	1086	64 65 57	1480	W.W.
Rub	18 19	1150	64 65 57	1640	W.W.
Nap	18 19	1393	64 65 57	1690	W.W.
Ske	18 20	53	64 65 57	1551	W.W.
To	18 20	534	64 65 58	75	Bath-house
Bat	18 20	448	64 65 58	303	House
Mar.	18 20	588	64 65 58	422	-----
Pam.	18 20	450	64 65 58	370	-----
Rob	18 20	53	64 65 58	348	Outlaying rock
Red	18 19	1506	64 65 58	679	Outlaying rock
Mid(Brewers Bay)	18 20	889	64 65 58	1212	Tripod signal
Mid(Rear Range)	18 20	1471	64 65 56	55.	
Mid(End of Dock)	18 20	982	64 65 55	1238	
Sand	18 19	1109	64 65 56	955	W.W.
Ban	18 19	1680	64 65 56	1221	W.W.
Anc.	18 19	1616	64 65 56	1477	Old anchor.
Aro	18 19	1300	64 65 57	43	W.W.
El.	18 19	1060	64 65 57	232	W.W.
Pro	18 19	648	64 65 57	870	W.W.
Tol	18 19	375	64 65 57	967	W.W.
Tol2	18 19	392	64 65 57	975	W.W.
Cap	18 19	438	64 65 57	770	----

Name of signal	Latitude	Meters	Longitude	Meters	Remarks
Fit	18 19	135	64 65 57	860	W.W.
Sap	18 19	77	64 65 57	1102	W.W.
Cor	18 19	1690	64 65 57	1226	W.W.
Grp	18 18	1585	64 65 57	1110	W.W.
Say	18 18	1625	64 65 57	910	W.W.
Flay	18 18	1338	64 65 57	1118	W.W.
Cop	18 18	1277	64 65 57	1163	W.W.
Land.	18 18	1075	64 65 57	1101	W.W.
Flam	18 18	891.0	64 65 57	834	W.W. Offlying Rk.
Wat	18 18	1060.0	64 65 57	430	W.W.
Wave	18 18	1243	64 65 57	351	W.W.
Beach	18 19	257	64 65 57	180	Tripod rough
Cat	18 19	536	64 65 57	76	W.W.
Oat	18 19	700	64 65 56	1610	W.W.
Fre	18 19	490	64 65 56	1448	W.W.
Ret	18 19	490	64 65 56	1360	W.W.
Lime	18 19	342	64 65 56	1466	Outlaying rock
Sag.	18 19	708	64 65 56	1358	W.W.
Was	18 19	685	64 65 56	1208	W.W.
Tar	18 19	620	64 65 56	1154	W.W.
Tic	18 19	369	64 65 56	1050	W.W.
Por	18 18	1230	64 65 58	507	Outlaying rock Porpoise Rocks.
Flat	18 19	150	64 65 59	725	W.W.
Guy	18 20	755	64 65 55	1005	Range pole.
N. Radio	18 20	996	64 65 55	1468	Radio tower.
Drift+	18 19	Trigng.	64 57	Trigng.	

Report on Hyd. Sheet 4544 a
Surveyed in 1923 to 1925.

The character + completeness of the records accompanying this sheet were found to be satisfactory with only a few exceptions to several notes on rocks and buoys which notes failed to locate them specifically. Examples { Buoy abeam / Buoy nearby }

The protracting was good but the prick points in a large number of cases were entirely too large. In the thickly covered areas these points or "holes" made the inking of the sounding figures a very difficult matter to contend with, - that is, to avoid blurring or spreading of the ink, and also to hold to the shapes of the figures so as not to lose their identity.

The plotting of the soundings was satisfactory. The soundings shown in Flamingo Bay, 62 v to 63 v (H + S sdgs) were plotted by the Field Party on the boat and smooth sheets with no control. In view of the fact that this bays is of no importance (see descriptive report) and on the strength of the quality of the field work in general, it was decided to accept the pencilled soundings as plotted. The lines as plotted, however, agree satisfactorily with the headings of the boat and accord with the soundings of the cross line which ends are fixed by control.

In a number of cases the spacing of the soundings near the shore at end or beginning of lines and where the time interval between positions was changed, say from 20 seconds to 30 seconds, or vice versa, no allowance was made to show these conditions, but the soundings were spaced evenly. This resulted in some very bad crossings. After respacing, allowing for the time interval changes, the bad crossings in most cases were practically eliminated and the others much improved.

Hyd. Sheet 4544 a

Soundings between positions 528 and 558 as plotted by the given fixes are evidently misplaced evidenced by the cross lines. After all attempts to conciliate them had failed and on the strength that the area affected was sufficiently covered by other soundings the decision was made to reject them.

(follow arrow)
← attention might be called at this point regarding the thickly sounded areas. On account of the closeness (particularly about Scorpion Rock) of the soundings in these areas, it was necessary to omit a large number of soundings which could have been in most all cases retained had a larger scale been used for the entire sheet or of these particular areas.

A large amount of the labor and time involved in the plotting and inking of the present sheet should have been lessened to a marked degree.

There are a number of cross lines which may appear questionable due to ~~inaccurate soundings~~ and their existence may be due as referred to in the Descriptive Report, page 4.

The work as a whole is commendable as shown by the records and as executed on the smooth sheet.

The sheet was retained in field ~~and~~ for an extended length of time and in all probability answers for its unclean condition.

Respectfully submitted,

Nov. 1926

(11)

September 13, 1926.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
7 volumes of sounding records for

HYDROGRAPHIC SHEET NO. 4544A

Locality: Virgin Islands of U.S.A.

Chief of Party: F.B.T.Siems in 1923; G.C.Mattison in 1924-5.

Plane of reference is 0.5 feet below M T L.
5.4 ft. on tide staff at St. Thomas.

For reduction of soundings, condition of records satisfactory
except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A. M. or P. M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

G Rude

Chief, Division of Tides and Currents.

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. 11-DRM

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

July 28, 1927.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4544[a]
St. Thomas Harbor, V. I.
Surveyed in 1923, 1925

Instructions dated June 24, 1923 (RANGER)

Chief of Party, F. B.T. Siems; G. C. Mattison.

Surveyed by R. J. Auld, M. Leff, A. Ogram, H. E. Finnegan.

Protracted by C. K. Green, R. C. Rowse.

Soundings plotted by R. C. R.

Verified and inked by G. Risegari.

1. The records conform to the requirements of the General Instructions.

2. The character of development conforms to the requirements of the General Instructions.

3. The plan and extent of the survey satisfy the requirements of the Specific instructions.

4. The information is generally sufficient for drawing the usual depth curves.

5. There are numerous discrepancies in cross lines particularly in St. Thomas Harbor where these differences are as much as 4 feet. No changes could be made and the work was accepted as turned in. (See possible explanation, paragraph 1, page 4, descriptive report.)

   There is a discrepancy between the sounding lines 14-15 W and 74-75 X about 1/3 mile northeast of Flamingo Point. No correction could be made and the work was accepted as shown.

   Other apparent discrepancies have been investigated as far as could be done in the office. Many of these may be due to irregularities in the bottom.

6. The usual field plotting was done by the field party. The prick points for positions were made much too large which made it very difficult to properly sink the soundings. Also no allowance was made in plotting the soundings, for a changed time interval near shore or for the slowing down of the launch in approaching or leaving the shore. This defect caused shoal soundings to be plotted in deep water and introduced unnatural looking depth curves. (Verifier's report).

7. The junctions with the adjacent surveys will be taken up when those sheets are reviewed.

8. No additional work is necessary, but the 13 foot sounding in the harbor in lat. 18° 20' 753 m., long. 64° 56' 296 m. should have been verified.

9. Character and scope of surveying - very good.
Field drafting - very good.

10. Reviewed by A. L. Shalowitz, July, 1927.

Approved:

Chief, Section of Field Records (Charts)

R. O. Rolhut.

Chief, Section of Field Work (H. & T.)

Form 537
11-5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET FIELD SHEET #1.

4544a

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 4544a

State . VIRGIN.ISLANDS.of U.S.A. . . . . .

General locality . .ST..THOMAS ISLAND.~.S.Coast . . . . . .

Locality . . . . . .ST..THOMAS HARBOR. . . . . .

Chief of party . . .G.C. MATTISON--F.B.T..SIEMS. . . . . .

Surveyed by R.J..AULD,M..LEFF,.A. OGRAM,.H.E. FINNEGAN. . .

Date of survey .AUGUST .16,1923--OCTOBER 29,1925 . . . . . .

Scale . . . . .1-10,000 . . . . . .

Soundings in . .FEET . . . . . .

Plane of reference MEAN .TIDE LEVEL LESS ½ .FOOT . . . . . .

Protracted by C.K.GREEN R.C. .ROWSE. Soundings in pencil by R.C. .ROWSE

Inked by . . . . . Verified by . . . . . .

Records accompanying sheet (check those forwarded):

* Des. report, ... Tide books, ... Marigrams, ..3.... Boat sheets,

...7... Sounding books, ... Wire-drag books, ... Photographs.

Data from other sources affecting sheet WIRE DRAG.SHEET.#1. . .

Remarks: No Des. Rep. recd July 9 1926 CAB

4544b

Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

State: Virgin Is., No.

11—5613

DESCRIPTIVE REPORT.

Sheet No. 4544b

LOCALITY:

St. Thomas I. S. Coast

St. Thomas Harbor

1926

CHIEF OF PARTY:

G. C. Mattison

4544b

DEPARTMENT OF COMMERCE

COAST AND GEODETIC SURVEY.

E. LESTER JONES, DIRECTOR.

4544b

A DESCRIPTIVE REPORT

to Accompany

WIRE DRAG SHEET OF ST. THOMAS HARBOR,

VIRGIN ISLANDS.

S.S. RANGER

G.C. MATTISON,
COMMANDING.

1923-1926

D E S C R I P T I V E--R E P O R T
to accompany
WIRE DRAG SHEET #1

Wire drag sheet #1 includes the survey of St.Thomas Harbor and Gregerie Channel, joining the work of sheet #3 outside the entrance to the harbor and at the western entrance of Gregerie Channel.

Two wire drag launches and a tender of the type shown in special publication No. 118 were used in this work. These launches were very hard to manoeuver in close places with a short drag, since their turning circle is large and they do not answer to the rudder in going astern.

The survey was made in accordance with specifications in "Special Publications" nos. 56 and 118. No new shoals were found, and, with one exception, more water was found on all existing shoals than is shown on chart #933. This difference in depth amounts on the average to from 4 to 6 feet. The findings are developed in the following paragraphs.

On Scorpion Rock the least water obtained was 23 feet, while 18 feet is shown on the chart. The shoal is of about 200 meters extent in a northwest-southeast direction and about 100 meters wide.

On Rhode Bank, on the east side of the channel, the least water obtained was 17½ feet, which is nearly six feet more than is shown on the chart (12 feet). The hydrographic party found nothing less than 23 feet on this shoal. The shoal is of about 200 meters extent in a north and south direction and about 100 meters wide.

The non-existence of the small shoal off Frederik pt. on Hassel Island was proven by dragging over the place indicated with 19 feet and grounding approximately at the 3 fathom curve along shore.

On the small shoal off Revenge Beach on Water Island the least water obtained was 12¾ feet, which is a little over 5 feet less than is shown on the chart. The position of the shoal as determined is slightly south of the charted position.

In the harbor a number of soundings were obtained showing a depth of 3 or 4 feet less than the surrounding area. These differences are explained in foot note "A" in the tabulation of soundings attached to the report.

The Red Nun Buoy #2 in Gregerie Channel has been moved by the Lighthouse Service from its old position at Sandy Point Rock to Gregerie Bank, about 200 meters in a northwesterly direction. The least soundings obtained by the hydrographic party was 15 feet, as against 13 feet shown on the chart, and the drag party went over the spot with a 13 foot drag before the buoy was placed there.

During the hurricane of August 28,1924, the fourth dolphin from the east end of the West India Dock was struck by a steamer which had broken adrift in the harbor. The dolphin was completely destroyed, the piles being broken off, leaving about 16 feet of water over them. One of the sunken piles was evidently in a slanting position, since the drag caught on it going in one direction and cleared in the other direction. This wreckage subsequently removed by the West India Co., and the spot redragged at 16 feet. The dolphin was used as a signal by the hydrographic party and called "Rat".

In dragging between the two westernmost dolphins off the West India Dock--signals Awl and Dol--the drag grounded half way between them and a $16\frac{3}{4}$ foot sounding was obtained. This spot was later cleared at 15 feet. Evidently this is the wreckage of an old dolphin shown on the chart as the center one of three off the West end of the West India Dock and was probably destroyed in the same manner as that mentioned in the previous paragraph.

Upon inspection of the smooth sheet it will be noticed that on "C" day the drag, with effective depth of 33 feet, went over a spot at which a sounding of 28 feet was later obtained (at Scorpion Rk.Shoal). Since this spot is very near the edge of the drag strip the most plausible explanation is that the angles taken on the drag launch are in error. The sounding is known to be correct, since it checks soundings at the same spot obtained by the hydrographic party.

In general no allowance was made for lift, since the dragging was mainly done in protected places and at sufficiently slow speed to make such corrections unnecessary. During the latter part of the work drag tests were made at various times, which showed a lift of not more than 0.5 feet, usually less. Since the tide correction was never more than 0.6 feet, the maximum total correction was 1.1 feet, which is considered as a 1.0 foot correction in plotting. The corrections for lift were entered in the records by Lieut. C.K.Green who made extensive tests in this line while in charge of the drag party at St. Thomas.

Attached to this report are the following; a table of statistics; a list of signals used; a descriptive list of planetable positions; recoverable objects, and hydrographyc signals used in the survey; and a tabulation of the soundings obtained by the wire drag party.

Respectfully submitted.

Roger C. Rowse

Jr. H.+G.E.

SHOALS AND SOUNDINGS

Wire drag sheet No. 1

16¾ feet at former position of dolphin which was carried away in the hurricane of August 28,1924. The cable ship Henry Holmes collided with it and destroyed it. The wreckage of this dolphin was subsequently removed by the West India Co. and the area dragged to an effective depth of 15 feet. The position of the dolphin is pn the topographic sheet of St. Thomas Harbor #3771 and is shown as the fourth dolphin from the east end of the West India Dock.

16¾ feet 540 metters, 187° true from Bluebeards Castle. This is the position of some wreckage composed chiefly of a flat galvanized iron roof, probably blown away in the hurricane of August 28,1924. This sounding is the same as the general depth in that vicinity.

28½ feet 1300 m. 250° true from Bluebeards Castle.
27½ feet 1240 m. 245° true from Bluebeards Castle.

These soundings are in the immediate vicinity of the Royal Mail Dock at the north end of Hassel Island and are in an area of a general depth of from 30 to 34 feet. (See foot note "A").

28½ feet 1060 m 242° true from Bluebeards Castle.
28½ feet 1030 m 229° true from Bluebeards Castle.
28½ feet 1050 m 227° true from Bluebeards Castle.

These soundings are in the vicinity of the line of mooring buoys on the west side of the harbor. The general depth is from 32 to 35 feet. (See foot note "A").

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48 feet 760m 227° true from East Point Lighthouse. In this case the drag grounded before the tender finished changing the depth ofthe drag, The sounding is in an area of gradually sloping bottom, the depth decreasing toward shore.

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35 feet 620m. 165° true from East Point Lighthouse.
42 feet 595m. 180° true from East Point Lighthouse.

These soundings were taken at the end of a drag line and indicates only the general trend of the bottom, the depth gradually decreasing towrad shore.

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35 feet 90m. 105° true from extremity of Sprat Point. This sounding was taken at the end of a drag line and indicates a shoaler depth than that found by the hydrographic party. The general depth found by the hydrographic party is 45 to 50 feet.

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41 feet 140 m. 67° true from extremity of Sprat Point.
45 feet 190 m. 51 " " " " " "

These soundings were taken at the end of a drag line and verify the general depth obtained by the hydrographic party.

26½ feet 590 m. 287° true from East Point Lighthouse.
28 feet 740 m. 288 " " " " "

These soundings are on Scoppion Rk. shoal and indicate respectfully the southeast and northwest extremity of the shoal.

23' 640 m 285° true from East Point lighthouse. This is the least sounding obtainable on Scorpion Rock Shoal and is 10 m. northwest of Scorpion Rock Buoy.

23⅛', 980 m, 328 ° true from East Point Lighthouse. This is the result of grounded outside the line of the drag. It is on the edge of Rupert Rock Shoal.

33⅛', 475m, 309° from East Point Lighthouse. This spunding was taken at Red Nun Buoy #4 at the entrance to the harbor

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22⅛', 470m, 318° true from East Point Lighthouse.
17½', 415m, 310° true from East Point Lighthouse.
17¾', 425m, 305° true from East Point Lighthouse.
26 ', 390m, 298° true from East Point Lighthouse.
These soundings ~~indicate the extent~~ of Rhode Bank, on the east side of the channel at the entrance, near R. N. #4.

17¾', 1010m, 309° true from East Point Lighthouse.
23¾', 1000m, 308° true from Lighthouse, East Point.
16¾', 1120m, 313° true from East Point Lighthouse.
These soundings are on the slope off Frederik Point, and being at the end of a drag line indicate the non existence of a small shoal pff this point shown on chart #933.

19', 780m, 189° true from Bluebeards Castle.
23', 745m, 197° true from Bluebeards Castle.
22', 645m, 201° true from Bluebeards Castle.
These soundings are atbthe end of a drag line and check the soundings at these points, previously obtained by the hydrographic party

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12¾', 960m, 240° true from Cowells Battery (Signal mast)
13⅛', 880m, 236° true from Cowells Battery (Signal mast)
12⅜', 940m, 231° true from Cowells Battery (Signal mast)
These soundings indicate the extent of a small shoal on the west side of Gregerie Channel 0.2 mile north of Sprat Point.

"A". Soundings 3,4,5,6, and 7 were obtained very carefully by letting the lead sink very slowly and reading the line at the moment when the lead touched the top of the mud on the bottom. In the hydrograhpic survey this precaution was not taken and lead was allowed to sink into the mud, giving soundingd three or four feet deeper.

List of Signals, Wire Drag Sheet #1, St. Thomas, Hbr.

Name	Lat.	Meters	Long.	Meters	Remarks.
East	18-19	T	64-55	T	E. Pt. Lighthouse.
Rock	18-19	T	64-56	T	Offlying rock.
Sprat	18-19	T	64-56	T	W.W.
Flam	18-18	891	64-57	834	Offlying rock.
Green	18-18	T	64-54	T	Tripod.
Sand	18-19	1109	64-56	955	W.W.
Car	18-20	268	64-56	1068	W.W.
Cow	18-19	1357	64-56	370	W.W.
Ban	18-19	T	64-56	T	W.W.
Greg	18-19	1663	64-57	556	W.W.
Top	18-19	T	64-57	T	W.W.
Pack	18-20	651	64-56	1279	Garbage Plant.
El	18-19	1060	64-57	232	W.W.
Pro	18-19	648	64-57	870	W.W.
Mos	18-19	1086	64-57	1480	W.W.
Drift	18-19	T	64-57	T	Tripod.
Red	18-19	T	64-58	T	Outlying rock.
Rup	18-19	1491	64-55	1098	Rupert Rcok Bn
Last	18-19	1770	64-55	1028	Dolphin
Dol	18-20	175	64-55	905	Dolphin
King	18-20	T	64-55	T	F.P. Navy Bldg.
Blue	18-20	T	64-55	T	Castle.
Large	18020	00.0	64-56	126	Corner of dock.
Small	18-19	1760	64-56	165	Corner of dock.
Gate	18-19	1724	64-56	70	Old office.

Ham	18-19	1690	64-55	1736	F.P. Later Bn.
Sig.	18-19	T	64-55	T	Signal mast.
Guy	18-20	755	64-55	1005	Dredge range.
S. Rad.	18-20	929	64-55	1440	Radio tower.
Front	18-19	1700	64-55	843	Old dredge rge.
Pier	18-20	916	64-55	1533	Inner range lt.
Awl	18-20	272	64-55	775	Dolphin.
Gil	18-20	416	64-55	492	Dolphin.
India	18-20	200	64-55	577	Old warehouse.
Ice	18-20	881	64-56	275	Smoke stack
S. Range	18-20	T	64-56	T	Front range light.
Chim	18-20	T	64-56	T	Tall brick chim. Marine Rwy.
Black	18-20	T	64-55	T	Castle
Lef	18-20	328	64-55	623	Dolphin
Rat	18-20	285	64-55	690	Dolphin
Gram	18-20	372	64-55	560	Dolphin
Back	18-20	33	64-55	314	Dredge range.
Ret	18-19	490	64-56	1360	W.W.
Ent	18-19	536	64-57	76	W.W.
Oat	18-19	700	64-56	1610	W.W.
Lime	18-19	342	64-56	1466	Outlying rock
Tri	18-19	192	64- 54	1440	W.W.
Kit	18-19	1060	64-55	496	Chim. abandon house
French	18-20	372	64-56	191	Corner of wharf.
ld	18-19	470	64-55	150	W.W.

T= Triangulation.

PLANETABLE POSITIONS SHEET # 1

Name	Remarks
Cha	Church steeple, Cha-Cha Town
Rup	Topo. signal.
S. Rad.	South Radio Tower.
Ice	Topo. signal.
Gate	Old Captain of yard office N.Y.
Hed	Corner of wharf (NE)
Gas	Stack, gas works.
Brit	Flagpole, Royal Mail Dock.
Clock	Clock tower on fort.
Dred	Dredge, Rge. Bn#1 (front)
Nec	N.E. cor. Manecke's Wharf.
Strut	N.E. cor. Wharf, Cha-Cha Town
Hole	E. end of dock Cha-Cha- Town
French	N. corner of wharf.
Guy	Dredge range Bn. #2 (Front)
Last	Last dolphin, W.I. Co. Dock.
Large	N.E. Corner of wharf.
Sub	N. corner of boat house N.Y.
Way	Corner of bulkhead W. of N.Y.
Small	S.E. corner of wharf.
Pyle	N.E. corner of N.Y. dock.
Corner	S.W.(inner) corner wh. Hassel Id.(Large wh. near N.Y.)
Barge	N.W. Corner N.Y. dock.
Well	Well at shoreline W. of N.Y.

PLANE TABLE POSITIONS

Wire Drag Sheet #1.

Name	Description
Flam	Topographic signal
Sand	" "
Car	" "
Cow	" "
Pack	" "
El	" "
Pro	" "
Mos	" "
Rup	" "
Ice	" "
Lime	" "
Tri	" "
Kit	" "
Ham	" "
Guy	Dredge Range #2 Bn. Front.
Front	" " #4 " "
Back	" " #3 " "
S. Rad.	Radio Tower, south.

WIRE DRAG SHEET # 1

RECOVERABLE OBJECTS.

Name	Description
Gil	First dolphin from E. end of W.I. dock.
Gram	Second " " " " " " " "
Lef	Third " " " " " " " "
Rat	Fourth " " " " " " " "
Awl	Fifth " " " " " " " "
Dol	Sixth " " " " " " " "
Last	Last dolphin west end of W.I. Dock
Large	N.E. cor. wh. Hassel I. (Large wharf near Navy Yard.
Small	S.E. cor. wh. Hassel I. { Small wharf near N.Y.
Gate	Old Captain of Yard office N.Y.
India	N.W. corner W.I. warehouse (dest)
French	N.E. cor. Franch wharf. Hassel Id.

HYDROGRAPHIC SIGNALS.

Name	Location and description	Method
Greg	W.W. on pt. S. of Little Krum Bay	S.C., O
Ret	W.W. Coral Point, Water Island	S.C.,S.T.
Ent	W.W. Limestone Bay, Water Island	S.C., S.T.
Oat	W.W. Limestone Bay, Water Island	S.C., S.T.
Sold	W.W. E. end of Soldier Bay	S.C.

Key=

S.C.= Sextant cuts from boat position.

S.T.= Sextant triangulation.

O. = Located by occupation (Three point fix).

TABLE of STATISTICS

Wire drag sheet #1.

Date	Letter	Vol.	Drag length	Pos.	Stat. Mi.	Sdgs.
12-24-23	A	1	1200 ft.	25	2.0	0
12-27-23	B	1	1200 ft.	62	4.0	0
12-28-23	C	1	800 ft.	34	1.5	0
1--2-24	D	1	800 ft.	37	1.0	0
1--3-24	E	1	600 ft.	57	1.0	0
1-14-24	F	1	1000 ft.	15	0.5	0
5-14-25	G	1	500 ft.	13	0.2	3
5-15-25	G	1&2	900 ft.	21	1.5	1
5-15-25	H	2	600 ft.	7	0.2	4
5-15-25	H	2	800 ft.	8	0.3	0
5-25-25	J	2	2400 ft.	25	2.3	3
5-26-25	K	2	2400 ft.	11	1.0	3
5-26-25	K	2	1500 ft.	14	0.6	3
5-26-25	K	2	900 ft.	15	1.3	1
5-28-25	L	2	1200 ft.	27	1.2	6
5-28-25	L	2	900 ft.	8	0.3	0
11- 2-25	M	2	700 ft.	5	0.1	3
11- 2-25	M	2	500 ft.	3	0.2	1
11- 2-25	M	2	800 ft.	9	0.5	3
11- 2-25	M	2	600 ft.	5	0.2	1
11- 3-25	N	2	1000 ft.	25	1.4	3
11- 3-25	N	2	300 ft.	7	0.1	0
11- 4-25	P	2	300 ft.	10	0.5	0
3-26-26	Q	2	400 ft.	13	0.2	1
		Totals----------		446	22.0	36

Area dragged---- 2.42 statute miles.

(11)

September 21,1926.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
3 volumes of sounding records for

HYDROGRAPHIC SHEET NO. 4544B

Locality: VIRGIN ISLANDS OF U. S. A.

Chief of Party: G. C. Mattison in 1923-4-5-6.

Plane of reference is M L W
5.2 ft. on tide staff at St. Thomas.

For reduction of soundings, condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted
3. Time meridian not given at beginning of day's work.
4. Time (whether A. M. or P. M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

G Rude

Chief, Division of Tides and Currents.

Report on Verification of H 4544 b. Wire Drag.

The records were well kept and the descriptive report is quite complete. The protracting and inking were excellent. ✓

The area is well covered. With the exception of splits at buoys or dolphins there is only one split. It is near Providence Pt. This split was caused by stopping of the guide launch. Covered by additional boat ✓

The 1/40th rule for drag strip was not followed, but instead a graded change in depth was made from deep to shoal strips. As this seems a reasonable method, no changes were made. ✓

Lines {P day & 26-32 N} not plotted. This area is covered on Q day after piling had been removed. ✓

Line 28-35 L. Note of towline = 30 m. but not noted in E.L. record. Field plotting uses 70 m. As this is safe the plotting is accepted. ✓

The position of sounding in rough copy of tender record at 2:41 S day is crossed out. It has not been plotted. As this is very near another sounding of the same depth on 4544a, it may be safely omitted. The position at 9:15 K day is likewise crossed out, but as it plots where there is less water on 4544a it may be omitted. ✓

At 31 B the drag grounds and no buoy number is given. Probably aground at N on 14 ft. shown on 4544a. Probably aground between 1 & 2 on 21 foot shoal found on R day (5 R.) ✓

At 7G note says aground at F but probably should be N. As there is a sounding of 16 ft. there no further sounding is necessary. ✓

F.M. albert, Cartographer

Dec. 4, 1926 (cont'd)

The drag grounded at 18L but according to 4544a this is in known shoal water.

The drag grounded at 25J on known shoal.

The drag grounded at 24B on known shoal.

The drag grounded at 32B. No buoy number given. May be on 13 ft. spot of 4544a near N. or on 21 ft. spot found between N & K bay (5R).

The drag grounded at F pos. 62B on known shoal.

The drag grounded at 57E (on Bannmore anchor). No buoy number given.
Vessel anchored in Harbor.

The drag grounded (dragging on bottom) at 35L. A 29 ft. sounding is to be charted here.

The drag grounded at buoy 2 pos. 10E. As this is close to soundings of same depth as upright no sounding is needed.

The drag grounded at N pos. 20C on known shoal.

The drag grounded at F pos 23D. The upright length was 25 feet though a hookup of 34 feet is noted and crossed out at 2:31:30. The general depth here is 35 feet and over. This area cleared by 29 ft.

The 29 ft. sndg. pos. 7K was cleared by 33 ft. Sheet 4544a shows even less water here being cleared also. The descriptive report says the position angles may be wrong. Perhaps the drag was pulling through the mud. It has been noted in this area the lead could sink several feet into the mud bottom.

The drag grounded at 7C on a known obstruction.

Dec. 4, 1926.

F. M. Albert

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO NO. 11-DRM

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON July 28, 1927.

SECTION OF FIELD RECORDS

Report on Wire Drag Sheet No. 4544[b]
(including additional work done in 1927)

St. Thomas Harbor, Virgin Islands

Surveyed in 1923, 1927

Instructions dated February 24, 1923
February 28, 1927 (RANGER)

Chief of Party, G. C. Mattison.

Surveyed by A. P. Ratti, C . K. Green, H. E. Finnegan.

Plotted and inked by C. K. G., V. A. Powell, R. C. Rowse, H. E. F.

Verified and Area and Depth Sheet by F. M. Albert, R. L. Johnston.

1. The records conform to the requirements of the General Instructions.

2. The depth and extent of dragging satisfy the specific instructions. (Area and Depth sheet was examined by Chief of Field Work and approved the extent of the work done.)

3. The least water was found on all the important shoals discovered.

4. There are one or two instances where a drag passed over soundings 1 to 2 feet shoaler than the effective depth of the drag. There was no way of reconciling this unless the wire was dragging through the mud. *Near Scorpion Rock a 33 foot drag passed over a ~~29~~ foot ~~drag~~ sounding with no indication of grounding. * Path of drag plotted around this shoal. C.

27 C

5. The overlaps are sufficient. The junctions with the adjacent sheets will be considered when those sheets are reviewed.

6. The field plotting was completed to the extent prescribed in the General Instructions and was excellently done.

7. All the doubtful points mentioned in the verifier's report have been considered and disposed of with the exception of the grounding at F at position 23 D. The effective depth at F was 24 feet, but the hookup diagram shows that 2 1/2 minutes prior to the grounding the F upright was lowered to 34 feet. This, however,

was for some reason crossed out and if the usual practice is followed a 24 foot sounding would be plotted here in depths of 35 feet. Subsequently, on K day a 29 foot drag cleared this spot. Owing to the importance of the locality (the 24 plots about 50 meters off the range line for entering St. Thomas Harbor) and the doubt as to the depth of grounding, the matter should be further considered before final disposition is made. *

8. The variations in depth in the harbor between the soundings obtained by the drag party and those obtained by the hydrographic party is explained in note "A" of the descriptive report (page 2 of shoals and soundings).

9. The treatment of drag groundings in West Gregerie Channel (additional work) has been considered by the Chief of Field Records in the light of paragraph 8, page 2, Descriptive Report, Additional Work.

10. No additional work is necessary. (Concurred in by Chief of Field Work.)

11. Character and scope of surveying - very good.
Field drafting - excellent.

12. Reviewed by A. L. Shalowitz, July, 1927.

* It would appear that the weight bumped on bottom when lowered at F and was raised again before tender left the buoy. Consequently the change of depth was crossed out. A sounding of 33 ft (depth of drag when lowered) has been plotted. L.O.P.

Approved:

Chief, Section of Field Records (Charts)

L.O. Colbert

Chief, Section of Field Work (H. & T.)

4544 Add'l Work

W. D.

Add'l Work

4544

W. D.

Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

....., *Director*

State: Virgin Islands

DESCRIPTIVE REPORT

~~*Topographic*~~ / *Hydrographic* } *Sheet No.* 4544b

Additional Work on original Sheet

WIRE DRAG

LOCALITY

St. Thomas I. ~ S. Coast

Gregerie Channel

1927

CHIEF OF PARTY

G. C. Mattison

GOVERNMENT PRINTING OFFICE

DEPARTMENT OF COMMERCE

COAST AND GEODETIC SURVEY,

E. LESTER JONES, DIRECTOR.

VIRGIN ISLANDS

A DESCRIPTIVE REPORT

to accompany

WIRE DRAG SHEET

#4544- b

1927

S.S. RANGER

G.C.MATTISON,
CHIEF OF PARTY.

DESCRIPTIVE REPORT
to accompany
WIRE DRAH SHEET #4544-b

This report refers only to the additional work required by the Director's orders dated February 28,1927.

LIMITS:

The additional work to be done was all in Gregerie Channel, and required dragging certain areas deeper and covering one split. The written instructions did not state the specific areas to be dragged; but on a tracing of the A. & D. sheet of the original work, the required areas with the desired effective depths were indicated in pencil.

SURVEY METHODS:

All the dragging was done by dual control, using the MARINDIN and MITCHELL as guide and end launches respectively, and the Launch EDNA M. as a tender. Short drags of six and seven hundred feet were used. At all times the drag was towed as slowly as the launches would permit.

EFFECTIVE DEPTHS OBTAINED:

An effective depth of 34 to 36 feet was carried from the westward into the channel about to the limits of the six fathom curve as charted.

Thru the channel at the turn just north of Gregerie Bank an effective depth of 26 feet was obtained. An effective depth of 29 feet had been desired, but in attempting this a shoal of 28.5 feet was found in Mid channel, the position of which is given under List of Shoals.

LIST OF SHOALS:

A depth of 28.5 feet was found (in mid channel) 625 meters 310° true from Banana Point, in Lat. 18 20' - 235 meters, Long. 64 56' - 1694 meters.

A depth of 21.5 feet was found 198 meters 263° true from Elephant Point, in Lat. 18 19' -1037 meters, Long. 64 57' - 434 meters. This shoal lies in the area of the split which was to be covered, and verifies a charted shoal of 22 feet. This area is now covered at 19 feet effective depth.

A depth of 25.5 feet was found 527 meters 18° true from Elephant Point in Lat. 18 19' - 1560 meters, Long. 64 57' - 76 meters.

A depth of 30.5 feet was found 708 meters 280° true from Elephant Point in Lat. 18 19' - 1178 meters, Long. 64 57' - 936 meters. The shoal bank of which this sounding marks the S.E. point drops away shear to southward.

A depth of 33.5 feet was found 636 meters, 338° true from Elephant Point in Lat. 18 19' - 1650 meters, Long. 64 57' - 481 meters. The position of this sounding checks the dpths of the hydrographic sheet.

A depth of 34.5 feet was found 812 meters 352° true from Elephant Point in Lat. 18 20' - 11 meters, Long 64 57' - 357 meters.

A depth of 35.5 feet was found 862 meters 3° true from Elephant Point in Lat. 18-20' - 68 meters, Long. 64 57' - 197 meters.

A depth of 19.5 feet was found 971 meters 20° true from Elephant Point, in Lat. 18 20' - 122 meters, Long. 64 56' - 1684 meters. This sounding is about 10 meters N.E. of a shoal of 15 feet on the hydrographic sheet.

A sounding of 26.5 feet was found 942 meters 12° true from Elephant Point, in Lat. 18 20' - 130 meters, Long. 64 57' - 49 meters. This soundings checks the general depth on the hydrographic sheet.

GROUNDINGS:

In a number of places, especially at the near and far weights, the drag grounded but did not hang up. Some of these groundings were in charted shoal waters, others were in charted depths slightly greater than the drag depth. All of these groundings are noted in the wire drag records and on the wire drag smooth sheet in pencil.

The most important of these groundings occured in a charted 38 foot area at position 21.7 R and 22.3 R; the effective depth of "N" as plotted, being 34 feet. This discrepancy may be explained in part as follows:- The length of upright at "N" was 36 feet. A drag test sometimes previous to these groundings showed a lift of 1/2 foot in section one and 1.5 feet in another section. In reducing the records it has been customary to subtract the greatest lift in any section from the length of upright throughout the drag. Hence a correction of 1.5 feet was applied to the length of the upright at "N" instead of 1/2 foot. It is also probable that there was no lift at "N" at the time of these groundings. Furthermore, due to the method of hooking up the drag, the large weights of both "N and F" buoys always hang from a foot to a foot and one half below the length of upright. Therefore it is quite possible that the large weight of "N" buoy was dragging at a depth of 37 feet or more at this time.

Attention is here called to an advantage, due to the fact that the large weights do hang below the drag depth. In dragging very near bottom and at the same time trying to follow as close to a certain curve as possible, there is always chance of grounding inside of the curve. The large weight will touch bottom before the ground wire, which

fact quite often allows time to change course and avoid grounding unnecessarily outside the limits being dargged.

COAST PILOT NOTES:

Referring to the heading "DEPTHS" page 128 of the Coast Pilot for the Virgin Islands, a depth of 28.5 feet was found in the middle of the channel, on the bar, at the junction of East Gregerie Channel and West Gregerie Channel northward of Water Island. This channel has now been dragged to a width of about 500 feet and at an effective depth of 26 feet.

Respectfully submitted.

Henry E. Finnegan

Henry E. Finnegan,
Jr. H&G. Engineer.

Forwarded
G.O. Matteson
Cdg. Off. S.S. Ranger.

STATISTICS
WIRE DRAG SHEET
#4544-b

Date	Letter	Volume	Positions	Miles Stat.	Soundings
Mar.18,'27	R	3	76	4.5	8
Mar.22,'27	S	3	22	1.0	1
Total			98	5.5	9

New area dragged = 0.02 sq. mi. stat.
Total area dragged = 0.28 " " "

Tide gauge in St. Thomas Harbor.
Plane of reference, MTL -0.5 ft = 2.2 on staff.
Lowest tide observed 1.9 on staff.
Highest tide observed 3.0 on staff.

H. D. 4544 b

The additional drag work done in Gregerie Channel gives the desired information and has been well executed.

The protracting and plotting of the drag work has been well done.

The records are satisfactory.

R. L. Johnston

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. 11-DBM

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON July 28, 1927.

SECTION OF FIELD RECORDS

Report on Wire Drag Sheet No. 4544[b]
(including additional work done in 1927)

St. Thomas Harbor, Virgin Islands

Surveyed in 1923, 1927

Instructions dated February 24, 1923
February 28, 1927 (RANGER)

Chief of Party, G. C. Mattison.

Surveyed by A. P. Ratti, C . K. Green, H. E. Finnegan.

Plotted and inked by C. K. G., V. A. Powell, R. C. Rowse, H. E. F.

Verified and Area and Depth Sheet by F. M. Albert, R. L. Johnston.

1. The records conform to the requirements of the General Instructions.

2. The depth and extent of dragging satisfy the specific instructions. (Area and Depth sheet was examined by Chief of Field Work and approved the extent of the work done.)

3. The least water was found on all the important shoals discovered.

4. There are one or two instances where a drag passed over soundings 1 to 2 feet shoaler than the effective depth of the drag. There was no way of reconciling this unless the wire was dragging through the mud. Near Scorpion Rock a 33 foot drag passed over a 29 foot drag sounding with no indication of grounding.

5. The overlaps are sufficient. The junctions with the adjacent sheets will be considered when those sheets are reviewed.

6. The field plotting was completed to the extent prescribed in the General Instructions and was excellently done.

7. All the doubtful points mentioned in the verifier's report have been considered and disposed of with the exception of the grounding at F at position 23 D. The effective depth at F was 24 feet, but the hookup diagram shows that 2 1/2 minutes prior to the grounding the F upright was lowered to 34 feet. This, however,

was for some reason crossed out and if the usual practice is followed a 24 foot sounding would be plotted here in depths of 35 feet. Subsequently, on K day a 29 foot drag cleared this spot. Owing to the importance of the locality (the 24 plots about 50 meters off the range line for entering St. Thomas Harbor) and the doubt as to the depth of grounding, the matter should be further considered before final disposition is made.

8. The variations in depth in the harbor between the soundings obtained by the drag party and those obtained by the hydrographic party is explained in note "A" of the descriptive report (page 2 of shoals and soundings).

9. The treatment of drag groundings in West Gregerie Channel (additional work) has been considered by the Chief of Field Records in the light of paragraph 8, page 2, Descriptive Report, Additional Work.

10. No additional work is necessary. (Concurred in by Chief of Field Work.)

11. Character and scope of surveying - very good.
Field drafting - excellent.

12. Reviewed by A. L. Shalowitz, July, 1927.

Approved:

See Review in 4544b

Chief, Section of Field Records (Charts)

Chief, Section of Field Work (H. & T.)

Copy for Records Section.

T.811.

June 10, 1927.

(11)

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 4544

Locality: VIRGIN ISLANDS, ST. THOMAS.

Chief of Party: G. C. Mattison
Plane of reference is *
ft. on tide staff at

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

G Rude

Chief, Division of Tides and Currents.

*No tides are available for checking these reducers, but owing to the small range of tide (about 0.6 foot) in this vicinity the field reducers may be accepted as correct.