7175

Diag'd. on diag. ch. No. 1222-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. CO-5147 *Office No.* H-7175

LOCALITY

State VIRGINIA

General locality Mobjack Bay

Locality Browns Bay and ~~Entrance~~ Vicinity

1947

CHIEF OF PARTY

Ronald R. Moore

LIBRARY & ARCHIVES

DATE AUG 13 1947

B-1870-1 (1)

7175

Form 537
(Ed. Nov. 1941)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

REG. NO.

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. H-7175

Field No. CO-5147

State VIRGINIA

General locality Mobjack Bay

Locality Browns Bay and ~~entrance~~ vicinity

Scale 1:5000 Date of survey 8-22 May 1947

Instructions dated 22 April 1947

Vessel COWIE

Chief of party Ronald R.Moore

Surveyed by R.R.M. R.C.R. C.A.S.

Soundings taken by fathometer, graphic recorder, hand lead, wire pole

Protracted by W.W. Williamson

Soundings penciled by W.W. Williamson

Soundings in fathoms feet at MLW MLLW

REMARKS: This survey was processed in the Hydrogrphic Section of the S.[illegible]
District, Norfolk, Va.

U. S. GOVERNMENT PRINTING OFFICE 428975

DESCRIPTIVE REPORT

to accompany

Hydrographic Sheet H-7175 (Field No. CO 5145) Office No.

Scale 1:5000 Ship COWIE Ronald R. Moore, Comdg.

A. This survey was done under Supplemental Instructions for Project CS-330, (a) dated 22 April 1947, at the request of the Army Engineers.

B. The area surveyed is designated as Area (a), Browns Bay and Vicinity; from Latitude 37°-17.0′ north to Latitude 37°-18.5′ and from Longitude 76°-20.5′ west to the low-water line.

This survey joins sheets H-3288 (1911) and H-2870 (1906-07).

C. This survey was made by the Ship COWIE, Launch 82, and the 25 ft. skiff. The sounding by the COWIE and Launch 82 was done by an 808 Type Recording Fathometer. The sounding by the skiff was done by a Bludworth Recording Fathometer, Type ES-104.

D. A portable tide gage was established in Browns Bay and operated during the entire period of sounding. A value for the datum of Mean Low Water was furnished by the Washington Office, based on 13 days record. Mean Low Water on the tide staff was 4.4 ft. Predicted tides were used in reducing soundings plotted on the boat sheet, except that actual tides were used for the last three days of sounding.

E. The smooth sheet was plotted by the Norfolk Processing Office.

F. The control for this sheet is based on two Triangulation Stations: SEVERN 1905 and NEW PT. COMFORT L.H. 1871. An inverse was computed between these two stations. Theodolite angles were observed at station SEVERN and at two new stations, DIM and GIN. The geographic positions of GIN and DIM were computed. The positions of these stations were used to compute the positions of ONE and AIR.

The remainder of the hydrographic signals were located by a combination of theodolite angles and sextant angles. Air-photo locations of the following stations: ONE, TRI, FOUR, BAD are available, but were not used on this survey because of the distortion of the prints furnished by the Washington Office.

Following is a list of signals showing the method of location.

TRIANGULATION STATIONS:	SEVERN
TOPOGRAPHIC STATIONS:	ONE, GIN, DIM, AIR (Located by theodolite angles)
HYDROGRAPHIC STATIONS:	(Located by theodolite angles and sextant angles)
	# BAD, TRI, FOUR, RAG, #FIP, DOG, RET, NIG, RAT, GUM. #:Topo

The triangulation computations are transmitted with this report. The sextant angles are listed in Sounding Volume 2, pages 54 and 55.

Triangulation Observations filed in Library (S-2499, 1947)

filed in Geodesy 4/14/47

G. No topographic surveys were made in this area since it has been adequately covered by recent air photographic surveys. T-8327 & T-8328 applied in Wash. office.

H. Soundings were obtained with 808 type recording fathometer, and Bludworth recording fathometer, supplemented by pole soundings in depths under 10 feet. Leadline soundings were not used except to supplement the bar checks and to obtain bottom specimens. ✓

Bar checks were taken at the beginning and end of the day and curves drawn to obtain the fathometer corrections. ✓

I. Soundings were controlled by three-point fixes taken on hydrographic signals at intervals averaging 1½ minutes. In the reaches of Browns Bay when three point fixes were not available, positions were spotted by topography, and noted "See Boat Sheet" in the sounding volume.

J. This survey is complete and adequate to supersede all prior surveys in this area for charting. ✓ {See Par. 9 of Review.

There are no holidays or excessive differences. ✓

The general spacing of sounding lines is approximately 50 meters. On mud flats in depths less than 6 feet the spacing is 100 meters. Lines were run parallel to the channel in Browns Bay with a spacing of approximately 30 meters.

K. Approximately 8% crosslines were run on this survey. The crossings generally agreed within one foot or less except in a few cases where the difference was 2 feet. Most of the differences are due to the use of predicted tides. (2 ft. differences eliminated in smooth plotting.)

L. Hydrographic Survey H-3288, Scale 1:20000, dated 1911, covers most of the area of this survey. In general the agreement between the two surveys is good. The three shoal soundings found at Latitude 37°-18.0' and Longitude 76°-21.8' were not found. This shoal was covered in two directions with a close spacing of lines but no shoal soundings obtained. Recommend that this shoal be deleted from the charts. {See Par. 5 of Review.

The detached 12 ft. sounding in latitude 37°-17.7' and longitude 76°-21.3' was not verified. This sounding falls about on the 12 foot curve of present survey. ✓

Hydrographic Survey H-2870, scale 1:20000, date 1906-07; covers only a very small part of the area surveyed by this sheet. The agreement between the two surveys in this area is satisfactory. ✓

M. This survey has been compared with chart No. 494 and found to be in close agreement with the exception of the shoal soundings mentioned in paragraph L. ✓

N. No new dangers or shoals were found in this survey. ✓

P. The fixed aids to navigation on this sheet are:

Browns Bay 1
Browns Bay 3 } Lights
Browns Bay 4

The floating aids to navigation on this sheet are:

Entrance Buoy 2 (Browns Bay) Red Nun.
Latitude 37°-18.20' Pos. 136 a 8 May 1947
Longitude 76°-22.99' in 9 ft.

Q. It is recommended that three landmarks in this area be charted:

Hydrographic Stations "RET", AND "GUM", and a radar tower in the village of Severn. All of these objects were located by sextant cuts. The position of the radar tower is off the limits of the hydrographic sheet. An approximate position of it was determined by plotting the cuts on chart 494. See L.391 (1947)

Due to the difficulty of plotting in the launch, the portion of the survey east of Longitude 76°-22 was plotted on a separate sheet on a scale of 1:10000. It is recommended that this entire survey be smooth plotted on a scale of 1:5000.

Boat sheets combined and smooth-plotted as H-7175.

The fathogram for work done by the skiff on "f" day, 16 May 1947, has not been found, although a thorough search has been made. This fathogram was scanned by the ships' personnel. This fathogram was later found and included in the records.

During this survey, Mr. Roy E. Elkins and Mr. Charles Barker, Cartographers from the Washington Office, were attached to this vessel for field training, as also was Lieut. Antonio Bustamante, of the Peruvian Navy.

Respectfully Submitted,

Ronald R. Moore

Ronald R, Moore
Lieut. Comdr. USC&GS
Comdg Ship COWIE

TIDAL NOTE

A portable automatic tide gage was installed at the state dock in Browns Bay which operated continuously during the course of the survey. Mean low water corresponded with a height of 4.4 feet on the tide staff, this figure being furnished by the Washington Office. No time or height correction was introduced.

STATISTICS

Vol. No.	Date	No. Pos.	Stat. Miles	Day Letter	Boat
1	8 May 1947	176	15.8	a	Skiff
	9 May	116	12.3	b	"
2	12 May	86	16.9	A	Cowie
1-3	13 May	255	22.3	c	Skiff
4	13 May	127	21.8	a	Lch.82
4	14 May	148	24.6	b	"
3-5	14 May	221	19.9	d	Skiff
5	15 May	152	11.2	e	"
5-6	16 May	134	14.5	f	"
7	16 May	119	18.1	c	Lch.82
6	20 May	235	14.7	g	Skiff
2	21 May	126	24.1	B	Cowie
7	22 May	115	12.5	d	Lch.82
	Totals	2010	228.7		

Area Approximately 4.4 Square miles

LIST OF SIGNALS

Triangulation: SEVERN (1905)

Topographic located by theodolite angles:

ONE, GIN, DIM, AIR

Hydrographic located by theodolite and sextant angles:

BAD, TRI, FOUR, RAG, # FIP, DOG, RET, NIG, RAT, GUM

= Topo Signal

Note: Sextant angles are listed in Sounding Volume No.2, pages 54 and 55

ADDENDUM

to accompany

HYDROGRAPHIC SURVEY H-7175 (Field No. Co.-5147)

86 - 88 b (green), latitude 37°18.08' and longitude 76°23.45'

Attention is directed to the apparent discrepancy of 1 foot between the soundings on this line and the adjacent hydrography. Pole soundings which were taken simultaneously with these obtained by the 808 fathometer are one foot deeper than those recorded on the fathogram.

sdgs. rejected, ample hydro. coverage in this area. Examination of records failed to disclose source of error.

a (blue) day. No initial corrections were applied to the soundings which are penciled on the smooth sheet for a (blue) day, due to the fact that better agreement of adjacent hydrography was obtained if these corrections were not applied. Notes made by the field party in the sounding record (volume #4) state that the initial correction is to be applied if found necessary.

Bar check corrections reading sdgs. in agreement.

Holiday, latitude 37°17.05' and longitude 76°21.80'

A holiday exists in this area. Not critical.

Respectfully submitted,

Isadore M. Zeskind
Cartographic Engineer

Norfolk, Va.
August 6, 1947

Approved and Forwarded

George L. Anderson
Supervisor, S.E. District

GEOGRAPHIC NAMES

Survey No.

H7175

Name on Survey

Name on Survey	A: On Chart No.	B: On previous survey No.	C: On U. S. quadrangle Maps	D: From local information	E: On local Maps	F: P. O. Guide or Map	G: Rand McNally Atlas	H: U. S. Light List	K	
Virginia			(for title)						USGB	1
Mobjack Bay			"	"					"	2
Browns Bay			"	"	(location of tide staff)				"	3
										4
Little Monday Creek										5
John West Creek										6
Blevins Creek										7
Bush Pt.										8
Monday Creek				Names underlined in red are approved. 3/12/48 L.Heck						9
										10
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M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 7175

Records accompenying survey:

Boat sheets ...2..; sounding vols. .7...; wire drag vols. .0...;

bomb vols. 0...; graphic recorder rolls ..13..;

special reports, etc. ..0.....

.....

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet		2010
Number of positions checked		64
Number of positions revised		11
Number of soundings revised (refers to depth only)		250
Number of soundings erroneously spaced		—
Number of signals erroneously plotted or transferred		—
Topographic details	Time	4
Junctions	Time	—
Verification of soundings from graphic record	Time	12

Verification by I. M. Z. Roy E. Elkins Total time 125 4 Date 2-10-48

Reviewed by I. M. Zeskind Time 27 27 Date 12-15-48

M-2232-1

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY — REGISTRY NO. H-7175

FIELD NO. CO-5147

Virginia, Mobjack Bay, Browns Bay & Vicinity
Surveyed in May, 1947 — Scale 1:5,000
Project No. CS-330

Soundings:

808 Fathometer
Bludworth Fathometer
Sounding Pole

Control:

Three-point fixes on shore signals

Chief of Party - Ronald R. Moore
Surveyed by - R. R. Moore, R. C. Rowse and C. A. Schoene
Protracted by - W. W. Williamson
Soundings plotted by - W. W. Williamson
Verified and inked by - R. E. Elkins
Reviewed by - I. M. Zeskind, December 15, 1948
Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline originates with air photographic compilations T-8327 (1945) and T-8328 (1945).

The source of the signals is given in paragraph F of the Descriptive Report.

2. Sounding Line Crossings

Depths at crossings are in adequate agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves were adequately delineated. The 3-ft. curve in its entirety and the 15-ft. curve in part were added to emphasize bottom configuration.

Except for the irregular channels leading into Browns Bay and Monday Creek, the bottom is smooth. The channel leading into Browns Bay carries 6 ft. to lat. 37° 18.1', long. 76° 23.9'.

4. Junctions with Contemporary Surveys

No contemporary surveys join the present survey. Depths at the limits of the present survey on the north, northeast, and south are in harmony with depths on H-3288 (1911) and on the southeast with depths on H-287 (1906-07).

5. Comparison with Prior Surveys

H-446 (1854), Scale 1:40,000
H-2870 (1906-07), Scale 1:20,000
H-3288 (1911), Scale 1:20,000

Comparisons between prior and present surveys show only minor changes in bottom configuration.

The following discrepancies in depths are specifically noted:

a. The 3-ft. sounding (charted) in lat. 37° 17.03', long. 76° 22.29', on H-3288, falls in present depths of 7-8 feet. A thorough search of the sounding records failed to reveal the source of this sounding. The 3-ft. sounding was probably plotted in error and should be disregarded.

b. The 9-ft. sounding (charted) in lat. 37° 17.97', long. 76° 21.59', on H-3288, falls in present depths of 16-17 ft. The vicinity of the 9-ft. sounding was closely developed on the present survey and no shoal indications were revealed. The 9-ft. sounding was probably recorded 1 fm. too shoal and should be disregarded.

With the addition of supplementary bottom characteristics, the present survey is adequate to supersede these prior surveys within the common area.

6. Comparison with Chart 494 (Latest print date 5/31/48)

A. Hydrography

Charted hydrography within the limits of the present survey, originates principally with the previously discussed surveys which need no further consideration.

The piles charted in lat. 37° 18.18', long. 76° 22.69', from Chart Letter 3 (1947) are not shown on the present survey. Inasmuch as these piles were not specifically investigated or disproved on the present survey, the piles should be retained on the chart. To conform with the information contained in the chart letter, the piles should be charted as submerged piles.

Ltr. L 3(1947) does not show piles as submerged
JPW 4/14/49

Piles pierched for and not found H.7955 J.M.A. 5-4-54

B. Aids to Navigation

Buoy N-2 in lat. 37° 18.20', long. 76° 22.98' on the present survey falls approximately 375 meters west of the charted position. The buoy should be moved to the charted position to properly mark the features intended.

The present survey positions of other aids to navigation are in substantial agreement with the charted positions and adequately mark the features intended.

7. Condition of Survey

a. The protracting and plotting were accurately accomlished and are in compliance with the requirements of the Hydrographic Manual.

b. The sounding records and Descriptive Report are complete and comprehensive.

c. The piles mentioned in 6A above were not investigated by the field party.

8. Compliance with Instructions for the Project

The survey adequately complies with the Project Instructions, except as noted under paragraph 7c.

9. Additional Field Work Recommended

It is recommended that the charted piles mentioned in par. 6A be verified or disproved.

Except for the foregoing additional work, this is a very good basic survey.

Examined and approved:

H. R. Edmonston
Chief, Nautical Chart Branch

Casper M. Durgin
Chief, Division of Charts

K. G. Crosby
Chief, Section of Hydrography

C. K. Green
Chief, Division of Coastal Surveys

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. June 1937

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~ 20 August 1947

Division of Charts: H. W. MURRAY

Plane of reference approved in
7 volumes of sounding records for

HYDROGRAPHIC SHEET 7175

Locality - Browns Bay, Mobjack Bay, Virginia

Chief of Party: R. R. Moore in 1947
Plane of reference is mean low water, reading
4.4 ft. on tide staff at Browns Bay.
5.6 ft. below B. M. 1 (1947) at Browns Bay

Height of mean high water above plane of reference is 2.4 feet.

Condition of records satisfactory except as noted below:

E.C. McKay
Chief, ~~Division~~ Section of Tides ~~and Currents.~~

U. S. GOVERNMENT PRINTING OFFICE 154327

NAUTICAL CHARTS BRANCH

SURVEY NO. ~~H7175~~

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
10/7/47	1222	J F Walker	Before ~~Applied~~ Verification and Review
			Examined - not applied
3/30/49	494	Richardson	~~Before~~ After Verification and Review
			applied
3/31/49	1222	Richardson	~~Before~~ After Verification and Review
			applied
26 Jan '54	494	MacEwen	~~Before~~ After Verification and Review applied to reconstruction.
10-1-85	12281	J Graham	~~Before~~ After Verification and Review
	Prototype		
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.