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<small>Form 504</small>			
DEPARTMENT OF COMMERCE U. S. COAST AND GEODETIC SURVEY			
....., <i>Director</i>			
<i>State:</i> Virginia	<table border="1"><tr><td style="text-align: center;"><small>U. S. COAST AND GEODETIC SURVEY</small></td></tr><tr><td style="text-align: center;"><small>ACC. No.</small></td></tr></table>	<small>U. S. COAST AND GEODETIC SURVEY</small>	<small>ACC. No.</small>
<small>U. S. COAST AND GEODETIC SURVEY</small>			
<small>ACC. No.</small>			
DESCRIPTIVE REPORT			
Topographic Hydrographic	} <i>Sheet No.</i> 4591		
LOCALITY			
West Side of Potomac River			
Gunston Cove			
.....			
1926			
.....			
CHIEF OF PARTY			
F. L. Peacock			

Original

C. & G. SURVEY
L. & A.
JAN 25 1927
Acc. No.

DEPARTMENT OF COMMERCE
U. S. COAST & GEODETIC SURVEY
E. LESTER JONES, DIRECTOR

DESCRIPTIVE REPORT
To Accompany
HYDROGRAPHIC SHEET
GUNSTON COVE
POTOMAC RIVER
Fairfax County, Virginia

U. S. C. & G. S. Launch MIKAWA
Season 1926

FRED L. PEACOCK, H. & G. E., C. & G. S.
Chief of Party

DESCRIPTIVE REPORT
to accompany
HYDROGRAPHIC SHEET
of
GUNSTON COVE
POTOMAC RIVER
FAIRFAX COUNTY, Va.

LOCALITY

The hydrography executed on this sheet covers the entire area of Gunston Cove proper and its approaches. The outer limit is the edge of the main ship channel of the Potomac River. Pohick and Accotink Bays, two small bays at the head of Gunston Cove, were not sounded.

METHODS

The hydrography was all carried on from a 22-foot whaleboat. The first sounding day the whaleboat was propelled by oars. The second sounding day, the whaleboat was towed astern of a 12-foot dinghy propelled by a 2½ H.P. Johnston outboard motor. Thereafter the whaleboat was towed with the dinghy alongside. The latter method proved much superior to the other methods tried. It was not feasible to attach the outboard motor direct to the whaleboat.

All soundings are up and down casts with a handlead with a 8 lb. lead. The hand lead line was of No. 8 mahogany braided tiller cord with phosphor bronze wire center and was graduated to feet. Soundings were estimated to the half foot in all depths less than 2 fathoms.

Sounding lines were spaced about 75 meters apart with additional development of the approaches and numerous cross lines to test the character and adequacy of the leading.

CONTROL

The fundamental control consists of third order triangulation stations distributed with unusual frequency. Hydrographic signals over these triangulation stations were supplemented by an adequate number of intermediate signals located by the planetable.

Three-point fixes were taken at two to two and one half minute intervals and as nearly as possible at all changes of course and speed.

PURPOSE

The purposes of this revision hydrography were to verify a report that greater drafts of small craft could cross the bank and anchor in the Cove than indicated by the soundings on chart No. 560 and to determine the best locality to cross the bank and the limits of the anchorage area inside. A further purpose served was to afford to the junior officers, attached to the party for training, the opportunity to engage in a complete hydrographic survey and to observe all the essential details from ^{the} establishment of necessary additional control to the completion of the field records for submission to the Office.

TIDES

A hand portable automatic tide gauge was maintained in continuous operation at Belvoir Wharf on White Stone Point during the execution of all the hydrography on this sheet.

The tidal planes at this station were determined by simultaneous observations with the station at Marshall Hall, Md. about two miles distant, for a period of two tidal days.

An inspection of sounding line crossings inclines the Chief of Party to believe that there is a possibility that the tidal range is greater at the head of the Cove than at White Stone Point and that it would have been well to have had an auxiliary tide station located there during hydrography in that part of the project.

It was further noted during the progress of the survey that half tide level is frequently displaced ~~thru~~ a range of at least two feet by occasional winds.

CHARACTER OF SOUNDINGS

All the soundings were made by the junior officers attached to the party. ^{These officers} ~~who~~ had had only a small amount of previous experience in this class of work. The crossings however in general agree to one half foot or less. There are however a few one foot crossings and two one and one half foot crossings. As stated above, the Chief of Party believes these are partly due to tidal differences within the area sounded. Other probable factors are no doubt ~~due to~~ the personal equations of three leadmen sounding in soft bottom and their inexperience.

PLOTTING OF SOUNDINGS

The plotting of soundings on the smooth sheet was divided between the four junior officers attached to the party at the time for the purpose of affording each actual practice in this class of work. This plan resulted in a regrettable lack of neatness and uniformity but the purpose served is deemed of sufficient value to compensate.

Soundings were plotted to the half foot to facilitate a study of the relative personal equation of the several leadsmen and to evaluate soundings by personnel of their experience in sounding. Another reason which governed this feature was the fact that the locality is frequented by craft of a draft close to the maximum depths.

RESULTS

The results of the survey indicate that there is about $\frac{1}{2}$ foot more water thruout this area than shown on chart #560 and that the best entrance for vessels of 3 foot draft and over is along the western shore of the Cove, ^{as follows:-} Leave the main river channel at a point about 200 yds. North and West of black spar buoy #45 and about 115 yards off the extremity of the remains of a large wharf and steer 323° true until across the bank. The effective depth of this crossing at mean low water is 5 feet. This ^{crossing} area was fairly free from grass at the time of the survey.

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Another small channel, fairly free from grass and partially marked by impermanent stakes, crosses the bank close to the Northeast shore of the cove with entrance near Belvoir Wharf. This channel is used by shallow draft launches having local knowledge but is not recommended to strangers. The effective depth at mean low water is $3\frac{1}{2}$ feet. Between these two entrances portions of the shoal bank are very grassy.

CAUTIONS

Strangers entering or leaving the Cove should not forget that the water level is frequently depressed more than a foot by Northerly winds.

There are numerous stakes and duck blinds in and adjacent to the Southern crossing and numerous fish stakes and frequently fish nets adjacent to the one fathom curve along the Northwestern edge of the anchorage area inside the Cove.

ANCHORAGE AREA

Inside the bank which separates the River Channel from the interior of Gunston Cove there is a partially protected anchorage area of six to seven and one half feet in depth, soft mud bottom, approximately 0.6 of a square mile in extent, being $1\frac{1}{2}$ statute miles long and of an average width of 0.4 statute miles.

Respectfully Submitted:-

Fred. L. Peacock
Fred. L. Peacock,
H. & G. Engineer,
Chief of Party.

HYDROGRAPHIC SHEET NO.

Area in sqq sta. miles 2.5

Date	Let- ter	Vol.	Posi- tion	NUMBER OF-		Vessel.
				Sound- ings	Statute Miles	
Nov. 19, 1926	a	1	33	253	3.0	Whaleboat.
Nov. 29, 1926	b	1	62	348	5.5	"
Nov. 30, 1926	c	1	77	474	7.3	"
Dec. 1, 1926	d	2	148	887	13.1	"
Dec. 3, 1926	e	2	74	347	6.3	"
Dec. 9, 1926	f	3	137	752	13.8	"
Dec. 10, 1926	g	3	76	373	8.1	"
Dec. 11, 1926	h	3	67	350	8.0	"

TOTAL - - - - - : 674 : 3784 : 65.1 :

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

October 11, 1927.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4591

Gunston Cove, Virginia

Surveyed in 1926

No specific instructions issued

Chief of Party, F. L. Peacock.

Surveyed by F. L. P.

Protracted by H. O. Westby, C. LeFever, L. P. Sowles, J. M. Baker, Jr.

Soundings plotted by H. O. W., C. L., L. P. S., J. M. B.

Verified and inked by Dan M. Watt.

1. The records conform to the requirements of the General Instructions.
2. The plan and character of development conform to the requirements of the General Instructions.
3. The sounding line crossings are adequate. Differences of 1 foot in some of the crossings may be due to the turn of the fraction or to some of the causes mentioned by the Chief of Party in the descriptive report.
4. The usual depth curves could be completely drawn.
5. The field plotting conformed to the requirements of the General Instructions with the exception that bottom characteristics were not shown on the sheet.
6. There are no contemporary surveys adjoining this sheet. A comparison with H. 2699 (surveyed in 1904) shows slight changes, the maximum difference being about 1 foot.
7. No additional surveying is necessary within the limits of this survey.

8. Character and scope of field work - excellent.
Field drafting - excellent.
9. Reviewed by A. L. Shalowitz, September, 1927.

Approved:

Chief, Section of Field Records (Charts)

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

(11)

wwB

January 26, 1927.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
3 volumes of sounding records for

HYDROGRAPHIC SHEET NO. 4591

Locality: VIRGINIA

Chief of Party: P. L. Peacock

Plane of reference is M L W
3.0 ft. on tide staff at Belvoir Wharf, White Stone Pt.

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.

Chief, Division of Tides and Currents.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

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.

4591

U. S. Coast and Geodetic Survey.

Register No. 4591

State Virginia, (Fairfax County)

General locality Potomac river W. Side of Potomac River

Locality Gunston Cove

Chief of party Fred. L. Peacock, H. & G. Eng'r.

Surveyed by Fred. L. Peacock, H. & G. Eng'r.

Date of survey Nov. 2, 1926 to Dec. 11, 1926.

Scale 1:10,000

Soundings in feet and half-feet.

Plane of reference mean low water.

H.O.W.; C.L., H.O.W., C.L.,
Protracted by L.P.S., J.M.B. Soundings in pencil by L.P.S., J.M.B.

Inked by Verified by

Records accompanying sheet (check those forwarded):

Des. report, _____ Tide books, _____ Marigrams, 1 Boat sheets,

3 Sounding books, _____ Wire-drag books, _____ Photographs.

Data from other sources affecting sheet

Remarks: