

4194

L. S. / ET
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Diag. Chart No. 1222-Z

4194

Form 504
 DEPARTMENT OF COMMERCE
 U. S. COAST AND GEODETIC SURVEY

State: *Virginia*

11-5113

DESCRIPTIVE REPORT.

Hyd. Sheet No. *4194*

LOCALITY:

Approaches to Chesapeake Bay
Smith Island to
Acog Island - off
shore.

1921

CHIEF OF PARTY:

H. A. Suran

1.
 2
 3

✓

DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SHEET NO. 3

ENTRANCE TO CHESAPEAKE BAY
OFF CAPE CHARLES
VIRGINIA

SCALE 1: 40,000

STEAMER BACHE

H. A. SERAN, H. & G. ENGR.
EOLINE R. HAND, H. & G. ENGR.
COMMANDING.

JULY TO OCTOBER

1921.

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET NO. 3.

INSTRUCTIONS.

This work was done under instructions dated February 8, 1921.

LIMITS.

The work on this sheet lies between Latitudes 37-08.5 and 37-20.3 North and extends from the eastern shores of a chain of islands off the Virginia Coast, including Smith, Myrtle, Ship Shoal, Wreck, Cobb and Hog Islands, eastward to the limits of the sheet at Longitude 75-23 West, at the northern boundary of the work and Longitude 75-30 at the southern boundary. In addition to this Great Machipongo Inlet was developed to Latitude 30-22 North on the north and Longitude 75-39 West on the east.

This sheet is joined on the east by Hydrographic Sheet No. 2 and on the south by Hydrographic Sheet No. 1, all of which were made by the Steamer Bache, under the above instructions.

Attention is called to the gap due east of "L" buoy in Latitude 37-16.7. This line was run on Hydrographic Sheet No. 2 and should be transferred to this sheet.

CONTROL.

The control consisted of triangulation, topographic and hydrographic stations. In addition to the signals used and described in the report on Sheet No. 1, stations "Wreck" and "Land" were located by tertiary triangulation. Stations "Cobb" and "Hog" were located from the report of previous triangulation surveys. Station "More" was located by a plane table traverse run from Hog Island Light House ("Hog"). Hydrographic signals were located by sextant cuts from ship and launch.

The following hydrographic signals were used only in launch hydrography: "Square", "Chim", "White", "Shed", "Beacon", "Light", "Tree", "Post", "House", "Cup" and "Tow".

The survey buoys used were of the same type and were located in the same manner as those described in the report on Hydrographic Sheet No. 1.

As the work progressed it was found that some of the buoys had dragged from their original positions. These were re-located and their different positions were designated on the sheet as M₁, M₂, etc.

METHOD.

Sounding inside the three fathom curve was done by the ship's launch, outside the three fathom curve by the ship itself. East and West sounding lines were run to develop the ten fathom curve at quarter mile intervals and then at half mile intervals to the eastern limit of the sheet. Inside the limits of the ten fathom curve, other lines were run, at right angles to the above, in a north and south direction, at intervals of about two miles. All indications of shoals were developed.

Soundings were made with eight to twelve pound leads.

Positions were determined by sextant three point fixes to the outer limits of the sheet which is approximately the line of visibility of the buoy signals. Sheet No. 2 covers the Precise Dead Reckoning which was done to the eastward of this sheet.

CHANGES IN SHORE LINE AND CHANNELS.

Changes in shore line were sketched as noted by the launch hydrographic party and are shown on the smooth sheet in broken black ink lines.

The sea has broken across Smith Island at its narrowest part and formed two separate islands. The channel between these two sections of Smith Island is not navigable.

An inlet has formed at the north end of Myrtle Island just south of signal "Ship" but has not yet cut entirely across the island.

The entire eastern shore of Ship Shoal Island has receded about three tenths of a mile back from the position shown on Coast and Geodetic Survey Chart No. 1222.

Little Inlet, Ship Shoal Inlet and New Inlet were not developed.

Sand Shoal Inlet between Wreck and Cobb Islands was developed and but little change was noted. The northeast channel of this inlet is buoyed as shown and a depth of thirteen feet can be carried through this channel, but vessels drawing more than this may easily navigate the channel at high water. The range marks for this channel are denoted on the Hydrographic Sheet as "Beacon" and "Light". The southeast channel remains practically as shown on Coast and Geodetic Survey Chart No. 1222, with a ten foot channel over the bar just to the south of a seven foot spot.

10 ft available in Hyde
Sheet # 4194
P.S.C.

In the south channel a least depth of eight feet can be carried. Breakers appear on both sides of the southeast channel at low tide. No indications were found of the wreck shown on Chart No. 1222 northeast of Wreck Island between the southeast and south channels.

Boats drawing not more than three feet of water may run inside of Cobb Island between Sand Shoal Inlet and Great Machipongo Inlet at high tide.

Cobb Island is being slowly eaten away by the sea and the shore line is very gradually receding.

The South Channel between Pig Island and Cobb Island is almost completely filled up and is no longer navigable.

The shore line of Pig Island has changed materially, the eastern part of the island being entirely washed away. A new channel with a depth of nine feet found by the launch has formed around the eastern end of this island. This channel connects with Great Machipongo Inlet on the north and may be conveniently used for small boats bound south.

In the east channel of Great Machipongo Inlet a least depth of sixteen feet may be carried over the bar. Attention is called to the change in buoyage of this channel. Breakers appear on both sides of this east channel at low tide. The north channel of Great Machipongo Inlet was not developed.

The southernmost point of Hog Island has receded between two tenths and three tenths of a mile.

DEVELOPMENT OF SHOALS.

38° 17.4 } 4382
75 31.4 } E.P.C.

All probable shoals were developed.

In Latitude 37 -18 North and Longitude 75 -32 West, an area of approximately four square miles was developed and a least depth of forty five feet was found.

In Latitude 37 -18.2 North and Longitude 75 -34.2 West development gave a least depth of thirty eight feet.

In Latitude 37 -10.5 North and Longitude 75 -37.6 West development of an area of about two square miles gave a least depth of thirty seven feet.

In Latitude 37 -10 North and Longitude 75 -38 West development gave a least depth of fifty five feet.

In Latitude 37 -09 North and Longitude 75 -32.5 West development gave a least depth of fifty one feet.

ANCHORAGES.

The Bache was twice taken into Great Machipongo Inlet for shelter. Courses were run between channel buoys and the positions of these were checked up on the boat sheet. Anchorage was had about 300 meters south of the most westernly buoy, in eight to nine fathoms.

No sea makes in here and although the land is low considerable shelter is had from the wind. There is a very strong current and with an East to Southeast sea the entrance is very rough and the small buoys hard to pick up.

Respectfully Submitted:

Lex B. Gore

D.O.

Respectfully Forwarded:

Eoline R. Hand

Eoline R. Hand,
Commanding.

DESCRIPTIVE REPORT TO ACCOMPANY SHEET USED IN
PLANE TABLE LOCATION OF HYDROGRAPHIC
SIGNAL PARRAMORE.

Descriptive report to accompany sheet No.

OBJECT:

The object of this work was the location of the Hydrographic Signal "Parramore."

METHOD:

The signal was located by the plane table and stadia method of surveying.

Hog Island Light House was occupied, the plane table oriented on the triangulation station "Island" and the azimuth line to the signal "Parramore" drawn through the position of Hog Island Light House, as shown on the plane table sheet. A traverse was then run to the Signal "Parramore".

After the traverse was run the stadia rods were tested by reading them at distances of 200, 300 and 400 meters, measured previously by steel tape. This test showed the rods to read 11 meters too little in 1600 meters. The traverse was then corrected by this proportion: The position of the signal thus determined was 33 meters to the westward and normal to the azimuth line, Hog Island Light House to the Signal Parramore.

Obviously the position of Parramore should be on the azimuth line determined by the cut from Hog Island Light House. Accordingly pivoting one point of a beam compass on the position of Hog Island Light House, the distance as determined by stadia was swung to intersect the azimuth line, Hog-Parramore, and the intersection taken as the position of the signal.

This position was checked exactly by sextant angle cuts from the ship.

There is no other check on this work.

Respectfully Submitted:

C. J. Itter Jr.
C. J. Itter, Jr.,
Jr. H & G Engr.,

Forwarded:

Eveline R. Hand
Eveline R. Hand,
Commanding.

✓L.A.9

S T A T I S T I C S S H E E T N O . 3

1921	Letter	Volume	Position	Sound-ings	Miles Statute	Vessel
July 20,	A	1	135	991	37.4	Ship
21	B	1	22	153	6.8	"
21	A	1	20	142	5.5	Launch
26	C	1&2	166	1025	57.0	Ship
28	D	2	166	690	50.5	"
29	E	2	77	379	24.0	"
Aug. 1,	F	2	33	158	8.5	"
3	G	2&3	78	640	26.7	"
9	H	3	15	93	4.0	"
10	J	3	86	337	31.0	"
12	K	3	133	619	44.9	"
15	L	3&4	43	184	12.4	"
16	M	4	162	661	52.0	"
17	N	4	124	656	40.0	"
18	P	4&5	187	1238	59.0	"
19	Q	5	84	338	31.3	"
23	R	5&6	160	933	50.5	"
24	S	6	30	283	10.4	"
25	B	1	29	216	7.7	Launch
30	C	1	125	931	32.8	"
31	D	1&2	209	1567	54.6	"
Sept. 1,	E	2	97	759	26.2	"
2	F	2&3	79	601	20.1	"
5	G	3	105	919	26.3	"
6	H	3&4	155	1091	39.2	"
7	J	4	23	65	3.1	"
13	T	6	80	501	25.6	Ship
14	U	6	20	111	5.2	"
15	V	6	12	79	3.8	"
15	K	4	107	693	25.3	Launch
20	W	6&7	84	379	27.5	Ship
21	L	4	43	313	10.6	Launch
21	X	7	84	394	27.0	Ship
22	Y	7	124	513	34.0	"
23	Z	7&8	89	599	28.5	"

Continued

1921	Letter	Volume	Position	Soundings	Miles Statute	Vessel	
Sept.	27,	A'	8	57	507	13.3	Ship
	30	B'	8	49	235	14.6	"
Oct.	6	C'	8	29	138	11.6	"
	7	D'	8	63	291	21.0	"
	13	E'	8	58	267	15.0	"
T O T A L				3442	21127	1027.9	

Soundings in feet.

Tide Gauge and Staff, Assateague Island Va.

Plane of Reference M.L.W. = 3.0 feet on Staff.

6/16

Verification Report of Hyd. 4194.

The records were well kept and the surveyed area well developed. No "courses" were recorded in the Couch work.

There were too many "no bottom" sds. Taken in Sand Shoal Inlet; these soundings were mostly on the transverse lines of the Inlet at its deepest section. There were also a few "no bottom" soundings obtained in Great Muskegon Inlet.

The drafting work on this sheet was of a poor character. Hydrographic names of signals were extended out into water areas. Positions were not numbered according to regulations. There was apparently a complete disregard of correct spacing throughout and slight attention was given to the best selection of soundings. While the writer plotted approximately 80% of the recorded soundings only about two-thirds of this number had been plotted in pencil.

On K day the section of line from 32 K to 46 K with a series of 11 ft. soundings makes poor crossings with other lines. It is recommended that this section of line be rejected.

Of the numerous crossings on this sheet the great majority do not differ by more than a foot. A few differ by two and three feet and rarely by four. There is a crossing that differs by 6 ft. (S.E. end of sheet) 10-11 F crossing with 99-100 D. On the line 154-155 R (south-central part of sheet) while the crossing is fair

3-10-13
checked
accuracy

2

There is a drop from 50 to 40 ft. on adjacent soundings,
a difference found nowhere else on this work.

Respectfully submitted,

Elois Baer

Royster

February 24, 1922.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
12 volumes of sounding records for

HYDROGRAPHIC SHEET 4194

Locality: Approaches to Chesapeake Bay.

Chief of Party: H. A. Seran in 1921.
Plane of reference is mean low water, reading
3.2 ft. on tide staff at Assateague Island, Va.

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. In several of these sounding volumes on the first page of each day's soundings, the field party refers to a tide staff at Fisherman Island, yet the tides observed at this staff were not used in obtaining tide reducers. Incorrect plane of reference for Assateague used by field party.

ST Riddle
Chief, Division of Tides and Currents.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON
SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4194.

Surveyed in 1921.

Instructions dated Feb. 8 and Apr. 8, 1921.

Chiefs of Party: H. A. Seran and E. R. Hand.

Surveyed by party of Str. Bache.

Protracted and soundings plotted by L. B. Clore.

Verified and inked by A. Baer.

1. The records conform to the requirements of the General Instructions, except that boats' courses were omitted in the sounding records of launch work.
2. The plan and character of development fulfill the requirements of the General Instructions.
3. The plan and extent of development satisfy the specific instructions.
4. The sounding line crossings are adequate except from positions 33 to 44 K day, the discrepancy being probably due to erroneous tidal plane. The distance of the tide gauge from the scene of operations (about 40 miles) is excessive.
5. The information is sufficient for drawing the usual depth curves.
6. The field plotting was completed to the extent prescribed in the General Instructions but it was not satisfactory. Positions were not numbered according to regulations. Slight attention was given to spacing soundings according to time intervals. Too many soundings were omitted and the best judgment was not displayed as to which ones should be retained.
7. Junctions with adjacent work are satisfactory.
8. No further surveying is required within the limits of the area surveyed.
9. The character and scope of the surveying are excellent and the field drafting fair.
10. Reviewed by E. P. Ellis, October, 1922.

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.

U. S. Coast and Geodetic Survey.

Register No. 4194

State VIRGINIA :

General locality APPROACHES TO CHESAPEAKE BAY.

Locality SMITH ISLAND TO HOG ISLAND.

Chief of party H. A. SERAN, H&G ENGR. COLLINS R. HAND, H&G. ENGR.

Surveyed by ^{Part of} STEAMER. BACHE

Date of survey JULY - OCTOBER 1921.

Scale 1:40,000.

Soundings in FMS

Plane of reference MEAN LOW WATER.

Protracted by L. B. Clore Soundings in pencil by L. B. Clore

Inked by A. Baer Verified by A. Baer

Records accompanying sheet (check those forwarded):

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

12 Sounding books, Wire-drag books, Photographs.

Data from other sources affecting sheet 1 Angle Book, Plane table
traverse, Hog to Paramore Islands,

Remarks:

12

Chart 563 J.H.E. 7/24/63