

8068

Diag. Cht. No. 78-4

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Air Photographic Shoreline

Field No. _____ Office No. T-8068

LOCALITY

State Virginia

General locality James River

Locality Burwell Bay Upper Pagan River

1941-'42

CHIEF OF PARTY

E. B. Jewey Chief of Party

8068

DATA RECORD

T- 8068

Quadrangle (II):
Yorktown (U.S.G.S.)

Project No. (II):
CS 283

Field Office:

Chief of Party:

E. B. Lewey

Compilation Office:

Chief of Party:

Air Photo Survey Party No. 2
Baltimore, Maryland

Fred. L. Peacock Div. of Photogrammetry
Office Files

Instructions dated (II III):
March 26, July 15)
Sept. 30, Nov. 14) 1942

Copy filed in Descriptive
Report No. T- (VI)

Completed survey received in office:

1/12/43

Reported to Nautical Chart Section:

1/15/43

Reviewed: 11-17-48

Applied to chart No. 527 Date: 8-11-44

Redrafting Completed: 10-25-49

Registered: 12-7-49

Published:

Compilation Scale: 1:10,215

Published Scale:

Scale Factor (III):
0.97895

Scale 1:10,215

Geographic Datum (III):
N.A. 1927

Datum Plane (III): MHW
~~Mean Sea Level~~

Reference Station (III):
No. 506 (V.C.F.) 1938 - recovered 1942

Lat.: 37 02 39.887
1229.6 meters

Long.: 76 39 43.518
1075.4 meters

Adjusted
~~Unadjusted~~

State Plane Coordinates (VI): Virginia (South Zone)

X = 2, 536, 375.91

Y = 264, 110.68

Military Grid Zone (VI)

PHOTOGRAPHS (III)

<u>Number</u>	<u>Date</u>	<u>Time</u>	<u>Scale</u>	<u>Stage of Tide</u>
* 7702	11/26/41	10:00 AM	1:10,000	0.2 above M.L.W.
* 7703	11/26/41	10:00 AM	1:10,000	0.2 above M.L.W.
* 7704	11/26/41	10:00 AM	1:10,000	0.2 above M.L.W.
* 7705	11/26/41	10:00 AM	1:10,000	0.2 above M.L.W.

Tide from (III): Hampton Roads (Naval Base) with time correction to Newport News, Virginia

Mean Range: 2.6 ft.

Spring Range: 3.0 ft.

Camera: (Kind or source) U.S. Coast and Geodetic Survey nine lens (focal length 8.25 in.) All negatives are on file in the Washington Office

Field Inspection by: Lieut. E. B. Lewey

date: Summer & Fall
of 1942

Field Edit by: None

date:

Date of Mean High-Water Line Location (III): November 26, 1941

Projection and Grids ruled by (III) C.H.R. - W.O. date: 12/8/42

" " " checked by: H.R.B. - W.O. date: 12/8/42

Control plotted by: R. Stoy date: 12/11/42

Control checked by: W. E. Schmidt date: 12/11/42

Radial Plot by: W. E. Schmidt date: 12/13/42

Detailed by: William O. Norris (Shoreline) date: 12/15/42 to
1/4/43

Reviewed in compilation office by: date: 1/6/43

James E. Sunderland

Elevations on ^{Manuscript} Field Edit Sheet
checked by: None

date:

Summary to Accompany T 8068

T 8068, scale 1:10,000, is one of 40 shoreline surveys in Project CS-283 along the James River, Virginia.

Project CS-283 was originally planned as a planimetric mapping project but was limited to shoreline surveys only after War Mapping Project CS-289, covering practically all the James River, was undertaken.

Topographic Quadrangle T 8311 (Project CS-289) completely covers T 8068. The former was compiled in 1944 from 1:20,000 scale photographs taken in 1942 in contrast with T 8068, compiled in 1942-3 from 1:10,000 scale photographs taken in 1941.

Field Inspection

Field inspection data for the area of T 8068 are contained in the "Report on Field Inspection of Air Photographs, James River, Newport News to Hopewell, Virginia" by Ernest B. Lewey, dated October 12, 1942. Filed in Division of Photogrammetry, General Files.

COMPILATION REPORT

26. CONTROL:

The control plotted on this map drawing consists of 5 U.S.C.&G.S. triangulation stations and 1 V.C.F. triangulation station. This control was supplemented by 2 field inspection stations. The basic control has been indicated on this map drawing with the usual triangulation symbol. The field inspection stations have been indicated with a small square outlined in purple ink on the glossy side of the celluloid.

The following list of control stations are within the detailed limits of this map drawing:

1. U.S.C. & G.S. triangulation station
Smithfield, 1932, r1942
1. V.C.F. triangulation station
No. 506 (V.F.C.) 1938, r1942 (supplemented by
F.I.S. "Pat")

The following list of control stations fall without the detail limits of this map drawing:

4. U.S.C. & G.S. triangulation stations:
Jones F, old station, 1910, r1932, r1942
Jones F, ecc., 1932, r1942 (supplemented by
F.I.S. "Flow")
Point of Shoals, 1938; r1942 (Landmark)
"The Rocks", barn, north gable, 1938, r1942

For a general discussion of the above control and its relation to the plot of this map drawing see the following paragraph.

27. RADIAL PLOT:

An individual plot was laid for this map drawing by the usual radial line method in conjunction with the principal point traverse method.

Principal points (Mech. centers) were transferred from one photograph to another and flight lines were established between conjugate centers. These flight lines were thoroughly checked before laying the plot because a great deal of reliance was placed upon them in using the principal point traverse method. Basic and secondary control was pricked and checked on all the office photographs pertaining to map drawings Nos. T-8068 and T-8061.

This plot (similar to a scale plot) was laid by placing the photographs, one at a time, under a blank sheet of celluloid and radial lines were then drawn. Good intersections were obtained

27. RADIAL PLOT (Continued)

for all the basic and secondary control. These were pricked and circled. Base lines were drawn between the basic control stations. Base lines were also drawn between basic control stations previously plotted on this map drawing. The angles included between the two sets of base lines were compared and no appreciable error was found. Scale factors were computed for the two sets of base lines and agreed within .002

The positions of the secondary control and principal points (Mech. centers) were transferred graphically to this map drawing, pricked and indicated by a double purple ink circle. The photographs were then relaid under this map drawing.

The final result was not entirely satisfactory to this office. It is believed that the location of the secondary points may be in error as much as 0.5 mm. Location of minor detail points will, of course, vary accordingly. Further discussion of this error will be found in other paragraphs of this report. See report "Additional Work 1944. Part of this descriptive report.

Common points were transferred to adjoining map drawings.

Principal and secondary points, transferred to map drawing No. T-8061 from map drawings No. T-8062 and No. T-8068 were sufficient to proceed with the establishment of minor detail points on map drawing No. T-8061. No exceptional difficulties were encountered.

Proper adjustment for error of closure was made after giving full consideration to all possible errors that usually occur in aerial photography.

The field inspection, ^{station} "Pat" which supplemented station "No. 506 (V.F.C.) would not hold within three to four meters in the plot on photographs Nos. 7703 and 7704.

A question may arise as to why a combined radial plot was not laid by joining a number of map drawings together within a reasonable area. The following reasons are given:

- Differences in scale of the map drawings.
- Insufficient lateral overlap of the photographs.
- Inadequate control density.
- Distribution of control inadequate
- Number of photographs inadequate

The plots for map drawings No. T-8061, 8062, 8068, and 8069 would have been more satisfactory if 1:20,000 photo-

27. RADIAL PLOT: (cont'd)

graphs had been available for use in establishing secondary control. It is also possible that the slotted template method could have been used in obtaining more satisfactory conditions.

28. DETAILING:

The shoreline and immediate adjacent culture has been detailed on this map drawing in accordance with the Director's letters dated 3/26/42; 7/15/42; 9/30/42; and 11/14/42; pertaining to this project No. CS-283.
Filed in Div. of Photogrammetry- Office Files

The scales of the photographs and this map drawing were in fair agreement. However, the projector was used to detail most of the shoreline.

All purple, red or green ink is on the glossy side of this map drawing. Red and purple ink circles indicate strong positions of points. Green ink circles indicate weak positions of points. Red circles indicate points established by this compiler that were common to adjacent map drawings.

Positions of minor detail points, hydrographic stations and landmarks for charts were determined by the usual radial line method. The shoreline was transferred from the field inspection photographs to the office photograph No. 7703, checked and then detailed in its entirety on this map drawing.

The following hydrographic stations indicated on the field inspection photographs could not be pricked accurately on more than one office photograph: *Removed from map manuscript during review*

No. 219 - Post in fence at grass line.

No. 222 - Blaze on offshore side of spruce at
water line - about 150m E. of a marsh.
A large pine just N. W.

The stereoscope was used to help locate the above stations on the photographs but the results were unsatisfactory. These stations were located on this map drawing by the use of the projector and their positions cannot be considered accurate. (Refer to a report on field inspection for James River by Lieut. E. B. Lewey). Necessary notations have been shown on this map drawing.

Examination of this map drawing and those adjacent will clearly indicate the weak conditions which are present. It is assumed by this compiler that a lengthy discussion of difficulties encountered is unnecessary except where mentioned in the paragraphs of this report.

30. MEAN HIGH WATER LINE:

The mean high water line (firm ground) is indicated by a heavy solid black acid ink line, the center of which should be taken as the true position. Tide curve data for this map drawing was obtained from information contained in the report of map drawing No. T-8062.

32. DETAILS OFFSHORE FROM HIGH WATER LINE:

Fish traps have been shown on this map drawing with a thin solid black acid ink line and labeled.

33. WHARVES AND SHORELINE STRUCTURES:

All piers, wharves, landings and other shoreline structures were shown and were labeled wherever it was thought desirable.

34. LANDMARKS AND AIDS TO NAVIGATION:

See Chart Letter 917 (49). Copy enclosed

The two following landmarks have been shown on this map drawing with a $2\frac{1}{2}$ mm. black acid ink circle:

Frame for abandoned light
Tank, water

Positions are being submitted on form No.567.

35. HYDROGRAPHIC CONTROL:

Eight temporary and four recoverable hydrographic stations have been shown on this map drawing. The temporary stations have been indicated with a $1\frac{1}{2}$ mm. black acid ink circle. The recoverable stations have been indicated with a $2\frac{1}{2}$ mm. black acid ink circle. The descriptions of both classes of hydrographic stations have been noted on this map drawing.

The recoverable stations are as follows:

~~Tree, spruce, blaze on~~ Removed from map manuscript. See review report.
~~Tank, water, showing above trees (landmark), 1942~~
~~Cupola, on main house on the southerly of two wharves, 1942~~
~~at Burwell Bay~~
~~Frame for abandoned light, about 45' high. A black, 1942~~
~~circle about halfway up the structure (landmark)~~

Positions and descriptions of the recoverable stations are also submitted on form No.524.

37. JUNCTIONS:

Map Drawing No. T-8069 - North side in agreement
Map Drawing No. T-8061 - East side in agreement
Map Drawing No. T-8067 - South side - No junction *junction at.*
possible at this date 1/5/43

38. RECOMMENDATIONS FOR FUTURE SURVEYS:

This map drawing is believed to be complete in all details of importance for charting, within the accuracy mentioned below.

The probable error of radial points and well defined objects along the shoreline is not greater than 1.0 mm. This amount of probable error on this map drawing is due to the fact that the photographs covering this area were taken along the shoreline (one flight). This furnished slim intersections only for points located by the radial line method.

45. COMPARISON WITH NAUTICAL CHARTS:

Chart No. 529, published September 1940, issued March 25, 1942. Scale 1:40,000,000.

Due to scale difference between this map drawing and chart No. 529, planimetric details could not be satisfactorily compared. However, three wharves have been detailed on this map drawing which are not shown on chart No. 529.

A railroad siding is indicated on chart No. 529 at approximately Lat. 37° 03' 25" and Long. 76° 40' 10". This siding is now non-existent.

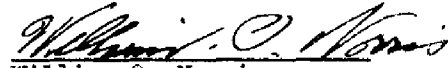
~~46.~~ GEOGRAPHIC NAMES:

GEOGRAPHIC NAMES 814

Approved list filed in
Geog. Names Section.

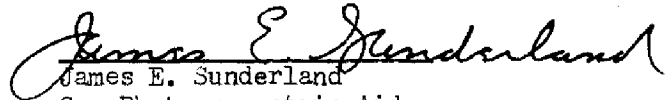
Systematic investigation of geographic names was made by the field inspection party, except in the following case, i.e. Burwell Bay, the name of which was verified from Chart No. 529 and U.S. G S Yorktown Quadrangle. The name James River was obvious.

Respectfully submitted,



William O. Norris
Assistant Engineering Draftsman

Reviewed by,



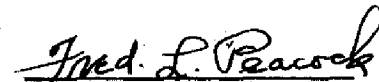
James E. Sunderland
Sr. Photogrammetric Aid

Compilation and preparation of
descriptive report supervised by,



Walter E. Schmidt
Assistant Photogrammetric Engineer

Approved & Forwarded,



Fred. L. Peacock
Officer in Charge
Baltimore Field Office

Date of this report

January 5, 1943

ADDITIONAL WORK

1944

ADDITIONAL

Form T-1

DATA RECORD

T- 8068

Quadrangle (II): Yorktown (U.S.G.S.)

Project No. (II): C.S. 283

Field Office:

Air Photographic Survey Party No. 2
Baltimore, Maryland

Chief of Party: ~~Fred. L. Peacock~~ D.E. Stummer

Compilation Office:

Air Photographic Survey Party No. 2
Baltimore, Maryland

Chief of Party: Fred. L. Peacock

Instructions dated (II III):

March 16, July 15, Sept. 30, and
Nov. 14, 1942

Copy filed in Descriptive
Report No. T- (VI)

Completed survey received in office:

Reported to Nautical Chart Section:

Reviewed:

Applied to chart No.

Date:

Redrafting Completed:

Registered:

Published:

Compilation Scale:

Published Scale:

Scale Factor (III): 0.97895

Geographic Datum (III): N. A. 1927

Datum Plane (III): ^{M H W} ~~Mean Sea Level~~

Reference Station (III): NO. 506 (V.C.F.) 1938, recovered 1942

Lat.: 37° 02' 39.887" 1229.6m Long.: 76° 39' 43.518" 1075.4m ^{Adjusted}
~~Unadjusted~~

State Plane Coordinates (VI):

X =

Y =

Military Grid Zone (VI)

PHOTOGRAPHS (III)

<u>Number</u>	<u>Date</u>	<u>Time</u>	<u>Scale</u>	<u>Stage of Tide</u>
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Same as original data sheet Form T-1

Tide from (III): Same as original data sheet

Mean Range:

Spring Range:

Camera: (Kind or source)

Additional

Field Inspection by: Lt. Dale E. Sturmer

date: March 1944

Field Edit by:

date:

Date of Mean High-Water Line Location (III): Nov. 26, 1941

Projection and Grids ruled by (III)

date:

" " " checked by:

date:

Control plotted by:

date:

Control checked by:

date:

Additional

Radial Plot by: Joseph Steinberg & J. E. Deal, Jr.

date: June 1944

Additional

Detailed by: Raymond Glaser

date: June 27 to June 30,
1944

Additional

Reviewed in compilation office by: J. E. Deal, Jr.

date: June 29, 1944

Elevations on Field Edit Sheet
checked by:

date:

STATISTICS (III)

Land Area (Sq. Statute Miles);

Shoreline (More than 200 meters to opposite shore);

Shoreline (Less than 200 meters to opposite shore);

additional
Number of/Recoverable Topographic Stations established; 1

additional
Number of/Temporary Hydrographic Stations located by radial plot: 24

Leveling (to control contours) - miles;

Roman numerals indicate whether the item is to be entered by,

(II) Field Party, (III) Compilation Party, or, (VI) the Washington Office.

When entering names of personnel on this record give the surname
and initials (not initials only).

Remarks;

Additional Work -- 1944

In accordance with the original instructions for Project C.S. 283 and various supplemental instructions, the field inspection at the lower part of the James River did not at first include complete field inspection of tributary streams. The field inspection of the main river and the mouths of all tributary streams was first completed to Richmond, Va. The completion of the field inspection of tributaries was then carried on from the upper river toward the lower river. The field inspection of tributary streams was completed in the spring of 1944.

In order to assure shoreline and hydrographic information in advance of the needs of operating hydrographic parties working in the main river, Map Drawings for the areas of 10 surveys were submitted in advance of completion with respect to tributary streams. Survey No. T-8068 is one of these.

The High-Water Line and Marsh Line (limit of navigation line) and adjacent planimetry of the portion of James River proper, falling within the limits of this Map Drawing, was originally compiled between December 1942 and January 1943.

Since that time the Compilation Office has been furnished the identification of additional triangulation stations established in 1944, and the geographic positions and descriptions of Horizontal Accuracy Test Traverse No. 7, Project C.S. 289, for use as additional horizontal control. None of the new 1944 triangulation stations fell within the area of this Map Drawing. However, Traverse Test Points T-1 to T-10, inclusive, fell within the area of this Map Drawing. These points were plotted on the Map Drawing and pricked on the 1:10,000 nine lens photographs by office inspection. The photographs were then oriented under the Map Drawing and it was found that it would be necessary to make some minor adjustments in the

original radial plot in order to include these traverse test points. All of the photographs were oriented, holding to the best points in the test traverse, namely: T road intersections and X road intersections, along with the previously furnished horizontal control. It was found that the Y road intersections were of very little value as horizontal control as their locations were very indefinite on the photographs. This was also true regarding the centers of houses. With very slight re-orientation of the photographs it was found that the good points in the Horizontal Test Traverse No. 7 could be tied into the existing horizontal control. As an additional verification numerous secondary control points were transferred from the ozalid of Map Manuscript for Survey No. T-8311 to the Map Drawing, Survey No. T-8068. These were radially plotted during the running of this additional radial plot and it was found that the radial plot for the War Mapping Map Manuscript, Survey No. T-8311 was in close agreement with that now established for Map Drawing Survey No. T-8068. None of the original compilation work was affected by the new radial plot. It is believed that a strong location of points for the additional work in the Pagan River will be obtained as a result of this new radial plot.

The Compilation Office has also been furnished the identification of one additional recoverable topographic station and twenty-four additional temporary hydrographic stations. These were identified on the 1:10,000 field photographs by numbers and their descriptions were listed in sketch book Form #274 (Vol. 1), by corresponding numbers. These stations were transferred to the 1:10,000 office photographs and radially plotted on the Map Drawing. The descriptions of both classes of hydrographic stations have been noted directly on the Map Drawing.

Form 524 is being submitted for the one additional recoverable topographic station, namely:

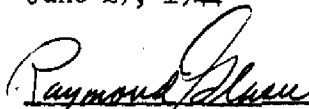
N.W. GABLE, ~~3-story Brick house~~, 1944

Additional field inspection data has been furnished

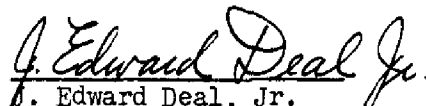
the Compilation Office for the High-Water Line and marsh line (limit of navigation line) and adjacent planimetry in the Pagan River. The shoreline of the Pagan River to the limits of navigation has been detailed on this Map Drawing in accordance with this data. The data included shore line fixes, (Sextant fix locations) which were furnished the Compilation Office in a sketch book Form 50171. These sextant fix locations were very helpful in establishing the High-Water Line in areas where it could not be seen on the photographs.

This Map Drawing is now believed to be complete in all details of importance for charting, and no other surveys are considered necessary.


Respectfully submitted:
June 29, 1944


Raymond Glaser
Sr. Engineering Draftsman

Additional work reviewed
and supervised by:


J. Edward Deal, Jr.
Asst. Photogrammetric Engineer

Approved and Forwarded:
June 30, 1944


Fred. L. Peacock
Chief, Air Photographic Party No. 2

Descriptions of Photo-Hydro Stations T-8068

No.

- 76 Southwest tip of grass.
- 77 Northeast tip of grass.
- 78 Southeast tip of grass.
- 79 Northwest tip of grass
- 80 West tip of grass.
- 81 Southeast corner of old log cribbing
- 82 Southwest tip of grass.
- 84 Northeast corner of old log cribbing
- 85 Southwest tip of grass.
- 86 Prominent tip of grass on south side, 75 meters east of fence to water's edge.
- 87 Northeast tip of grass
- 88 Prominent tip on northeast side of bight.
- 89 Southeast tip of grass.
- 90 West tip of grass
- 91 Southeast tip of grass
- 92 West tip at outer end of piling
- 93 North tip of grass island
- 94 Center of grass patch.
- 95 Northeast tip of grass at fence.
- 96 East tip of grass on prominent point on west side of stream.
- 97 North tip of grass.
- 98 North tip of grass on turn
- 99 South tip of rounded point.
- 100 South tip of grass at forks.
- 201 Chimney on north end low house on beach to south of southerly of two wharfs.

No.

- 202 Outer gable of large, white house, directly in front of the northerly of two wharfs at Burwell's Bay.
- 204 Cedar at southerly edge of clearing on bank.
- 220 Blaze on a low, bushy cedar just west of a small stream emptying from east end of marsh.
- 221 Blaze on cedar tree just west of a fence coming to waterline in front of marsh
- 223 Large bushy pine on top of bluff just north of a slide in bluff. Largest tree here.
- 231 Prominent, large, bushy, deciduous tree on top of bluff.

Washington Office

Nov. 8 1949

TO BE CHARTED
TO BE DELETED

The positions given have been checked after listing by **C. Meurer** on *(deleted from)* the charts indicated.

S. V Griffith

Chief of Party.

[illegible]

DIVISION OF PHOTOGRAMMETRY
Review Report of
Shoreline Map Manuscript T-8068

Subject numbers not used in this report have been adequately covered in other parts of the descriptive report.

34 Landmarks and Aids to Navigation

See Chart Letter 917 (49). Copy enclosed

The original Form 567 was forwarded to the Nautical Chart Section to be filed. A copy was prepared and made a part of the descriptive report.

37 Topographic and Photo-Hydro Stations

The topographic station, Blaze on Spruce Tree, 1942, was removed from the map manuscript and the 524 card destroyed. The ~~map manuscript~~ ^{Position} had been transferred from a 1:20,000 manuscript of this area by the vertical projector.

Names of topographic stations were changed to a short, descriptive term on the map manuscript and the Form 524 cards.

A list of descriptions of photo-hydro stations was prepared and made a part of the descriptive report.

38 State Grids

The state grid, Virginia, South Zone, was plotted on the map manuscript at a 5,000 foot interval.

44 Comparison with Existing Surveys

* T 8311	1:20,000	1944
U.S.G.S. Smithfield Quadrangle,	1:62,500,	1907 Repr. 1944
T-1266	1:20,000	1871-73
T-3045	1:20,000	1910

Common features on all previous surveys are superseded by the map manuscript in common area ~~for nautical charting purposes~~.

* T 8311 is a more recent survey. Corrections were not brought forward to T 8068

45 Comparison with Nautical Charts

Chart No. 529 1:40,000 1944 Corr. 1947

The small pier shown on the map manuscript of Lat. $37^{\circ}03.5'$, Long. $76^{\circ}40.2'$ is not shown on the chart.

The pier shown on the chart at Lat. $37^{\circ}02.4'$, Long. $76^{\circ}39.4'$ does not appear on the photographs.

51 Application to Nautical Charts

The map manuscript has been applied to the nautical chart.

Reviewed by:

Under the direction of:

Charles Theurer
C. Theurer 11-17-48

R. V. Griffith
Chief, Review Section R.V.M.
Div. of Photogrammetry

Approved by:

B.G. Jones 12/49
Tech. Assl. to the Chief,
Division of Photogrammetry

O.S. Reading
Chief, Div. of Photogrammetry

H. Edmonston
Chief, Nautical Chart Branch,
Division of Charts

Wm. Scaife
Chief, Div. of Coastal Surveys