# U.S. Coast and Geodetic Survey

**DESCRIPTIVE REPORT**

<table>
<thead>
<tr>
<th>Type of Survey</th>
<th>Air Photo. Compilation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field No.</td>
<td>83</td>
</tr>
<tr>
<td>Office No.</td>
<td>T-3183</td>
</tr>
</tbody>
</table>

## Locality

- **State**: Virginia
- **General locality**: Outer Coast
- **Locality**: Cape Charles

### 1942

**CHIEF OF PARTY**

- Lieut. Comdr. Kenneth G. Crosby
- Lieut. Comdr. Francis L. Gallen

**LIBRARY & ARCHIVES**

**DATE**: December 21, 1945
DATA RECORD

T-3187

Quadrangle (II): Cape Charles

Field Office: Salisbury, Md.

Compilation Office: Tampa, Fla.

Chief of Party: W. D. Patterson

K. G. Crosby

Project No. (II): GS-278-C

Instructions dated (II III): 3/4/42

Completed survey received in office: Nov. 24, 1942

Reported to Nautical Chart Section: Dec. 2, 1942

Reviewed: Mar. 19, 1943 Applied to chart No. Date:

Redrafting Completed: April 17, 1943

Registered: 12/45 Published: 1943

Compilation Scale: 1:20,000 Published Scale: 1:25,000

Scale Factor (III): 1.00

Geographic Datum (III): N.A. 1927 Datum Plane (III): M.S.L.

Reference Station (III): Quarantine, 1906

Lat.: 37°05'44"400 (1362.7 m.) Long.: 75°58'27"5535 (680.0 m.) Adjusted Unadjusted

State Plane Coordinates (VI):

Virginia System of Plane Coordinates, South Zone.

x = 2,736,554.97 Feet y = 287,903.21 Feet

Military Grid Zone (VI) "A"
PHOTOGRAPHS (III)

<table>
<thead>
<tr>
<th>Number</th>
<th>Date</th>
<th>Time</th>
<th>Scale</th>
<th>Stage of Tide</th>
</tr>
</thead>
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<tr>
<td>9001</td>
<td>4-18-42</td>
<td>3:38</td>
<td></td>
<td>+ 0.1 Ft.</td>
</tr>
<tr>
<td>9002</td>
<td></td>
<td>3:40</td>
<td></td>
<td>+ 0.1 Ft.</td>
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</tbody>
</table>

Tide from (III): Predicted tides, Smith Island, Virginia

Mean Range: 4.0 Ft.  Spring Range: 4.8 Ft.

Camera: (Kind or source) U. S. Coast & Geodetic Survey Mine Lens
        (Focal Length 2½ inches)

Field Inspection by: C. Harrick, C. O. Packer  date: 10-12-42

Field Edit by: Louis Lewis, Photo Aid  date: Dec 19, 1942

Date of Mean High-Water Line Location (III): April 18, 1942

Projection and Grids ruled by (III) Wash. Offc.  date: 9-23-42

" " " " checked by: " " date: 10-9-42

Control checked by: V. F. Simmons, Asst. Photo Aid

Radial Plot by: Tampa Office Personnel  date: 10-15-42

Detailed by: W. E. Snyder, Asst. Photo Aid  date: 10-19-42

Reviewed in compilation office by: A. L. Kidwell, Jr. Topo. Engr.  date: 11-1942
J. A. Giles, Prin. Photo Aid

Elevations on Field Edit Sheet checked by: Louis Lewis, Photo Aid  date: Jan 1943
STATISTICS (III)

Land Area (Sq. Statute Miles): 2.84

Shoreline (More than 200 meters to opposite shore): 22

Shoreline (Less than 200 meters to opposite shore): 22

Number of Recoverable Topographic Stations established: 2

Number of Temporary Hydrographic Stations located by radial plot: 7

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:
CONTROL

All triangulation control that fell on the sheet was held to during the main radial plot. Some trouble was encountered in picking radial points in the indefinite marsh area on Fishermans Island.

RADIAL PLOT

The main radial plot has been discussed in the compilation report for Sheet T-3176.

DETAILLING

The detailing was done from photographs that were clear but of poor scale. The field inspection was adequate, although the field inspector erred in delineating the shoreline in several places on Fishermans Island on the single lens field print. A comparison with the nine lens photos (taken at a later date than the single lens), shows these errors.

SUPPLEMENTAL DATA

No graphic control surveys by this Bureau, or maps and plans of other organizations were used to supplement the photographs.

DETAILS OFFSHORE FROM THE HIGH WATER

The remains of the foundation of Old Cape Charles Lighthouse lie offshore approximately 200 meters. This foundation was located by the radial plot and is shown on the sheet as a topographic station.

LANDMARKS AND AIDS TO NAVIGATION

One non-floating aid to navigation falls on the sheet and its geographic position is listed on Form 567. 

HYDROGRAPHIC CONTROL

Two recoverable and seven temporary topographic stations suitable for the control of hydrographic surveys were located by the radial plot. The geographic positions of these stations are listed on Form 524.

Station "Wise, Tower A" and "Wise, Tower B" could not be clearly shown on the sheet. These geographic positions were obtained by applying measurements taken from picking card to Station "Wise, Tower C".

COMPARISON WITH EXISTING TOPOGRAPHIC QUADRANGLES

A comparison was made with the Cape Charles Quadrangle, published by the Corps of Engineers, U. S. Army on a scale of 1:62,000. Although the quadrangle map has been revised to 1938, great changes were noted in the shoreline...
in general. These changes were undoubtedly caused by storm action.

COMPARISON WITH NAUTICAL CHARTS

In comparing the sheet with U. S. C. & G. S. Chart No. 1222, published August 1942 on a scale of 1:90,000, the shoreline disagrees considerably. It is recommended that the map compilation supersede the charted information.

Respectfully submitted,

William E. Snyder
Photogrammetric Aid

Forwarded by:

Kenneth G. Crosby,
Chief of Party.
All towers shown on the manuscript are shown on the published copies (proof was examined and approved by office of chief of engineers prior to publication). However, the additional towers noted by the field unit apparently were not located and are not shown. 1397 12/1/45
FIELD EDIT REPORT
QUADRANGLE T-8183
Project CS-278-C
F. L. Galler, Chief of Party

1. The land area on this sheet is comprised of the extreme southern tip of the mainland at Cape Charles, Fishermans Island and part of Smith Island. Wooded and marsh areas are about evenly distributed with a small percentage of sand dunes.

11. In view of the fact that Lieut. Col. Edward Dillon, Jr., Commanding Officer at Fort John Custis, has requested that searchlight and observation towers, which are of military importance, be deleted from this sheet, form 587 has not been submitted for these towers as landmarks.

15. The bridge classification was carried out in accordance with the instructions. There are no bridges.

16. The Commanding Officer, Lieut. Col. Edward Dillon, Jr., at Fort John Custis has requested that all towers and structures of military importance, which had been shown by the field inspection party, be deleted. A list of these towers has been noted on the map manuscript. Additional towers and structures have been built and these were not permitted to be shown by the field edit party.

17. Political boundaries were obtained from maps issued by the Virginia State Roads Commission, and were verified in the field party.

18. Geographic names were taken from a special report CS-278-C submitted by A. J. Waight, Photogrammetric Aid.

46. All additions, deletions, and corrections were made on the map manuscript and transferred to a smooth copy after completion of the field edit work.

The inking of the map manuscript was done in accordance with the following scheme:

FEATURES
Additions, bench marks, wye level elevations
Deletions
Drainage features
Political boundaries

COLORS
Black
Green
Blue
Purple

47. The position and amount of detail on this manuscript is complete and accurate.

48. Horizontal accuracy tests were run in quadrangles T-8174 and T-8175.

An additional test traverse was run from D Chesapeake to D Wise; all the points are on T-8181 while D Wise is on T-8183. The test indicates that the radial plot meets requirements of the National Map Std.
There are no contours on this sheet; the maximum elevation, which
was on shifting sand dunes, was found to be 14 feet.

Submitted by

Louis Levin
Photogrammetric Aid

Approved by

F. L. Gallen,
Chief of Party
GEOGRAPHIC NAME LIST FOR T-8182

Adams Island
Atlantic Ocean
Bat Shoals
Blackbeards Creek
Cape Charles
Fishermans Island
Fishermans Inlet
Fort Custis
Inner Middle Ground
Magothy Bay Channel
Middle Ground
North Channel
Nautilus Shoal
National Quarantine
Raccoon Creek
Smith Island
Smith Island Inlet
The Isaacs
Wm. Knights Shoal

Smith Island Beach

NEW GEOGRAPHIC NAME ADDED TO NAME LIST.

Linen Shoals (Lieut. Col. Edward Dillon, Jr. of Fort John Custis is the authority for this new name, who claims that Linen Shoals is known as such by all local fishermen.)
## ROAD CLASSIFICATION FOR MAPS OF ALL SCALES

<table>
<thead>
<tr>
<th>CLASS</th>
<th>LABEL</th>
<th>STRUCTURE</th>
<th>LOADING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dependable hard-surface heavy duty road.</td>
<td>Concrete, asphaltic concrete bituminus Macadam, H-15 type structures.</td>
<td>Will bear heaviest loads with little maintenance.</td>
</tr>
<tr>
<td>2</td>
<td>Secondary, hard-surface all-weather road.</td>
<td>Surface-treated, oiled gravel, waterbound Macadam, structures generally lighter than H-15 but sturdy.</td>
<td>Will bear fairly heavy military loads in all weather if maintained.</td>
</tr>
<tr>
<td>3</td>
<td>Loose-surface graded, dry-weather road.</td>
<td>Gravel or stone surface, stable material, selected sand-clay, etc. Drained and graded.</td>
<td>Will bear light military loads in good weather.</td>
</tr>
<tr>
<td>4</td>
<td>Unimproved road.</td>
<td>Graded and drained earth, with very light structure.</td>
<td>Generally unsuitable for military loads.</td>
</tr>
<tr>
<td>4U</td>
<td>Truck road</td>
<td>Woods roads, farm roads, etc. over which a standard gage vehicle can be driven.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Trail</td>
<td>(Horse trails, foot trails, etc.)</td>
<td></td>
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</tbody>
</table>

Roads with more than two (2) lanes are indicated by note along road, e.g. 3 LANE. Change in lanes shown by tick at point of change. Main roads have two lanes unless otherwise marked.

Private roads are designated by the letter P after the road classification.

### WOODS CONCEALMENT CLASSIFICATION

- **Class A:** Trees over 10' high and thick enough to hide troops.
- **Class B:** Brush thick enough to hide troops but dense enough to impede progress.
- **Class C:** Scattered brush thick enough to hide troops but not thick enough to impede progress.
## ABBREVIATIONS

### ROADS
- **W** — Width (feet bet. shoulders)
- **P** — Private road
- **OP** — Overpass
- **UP** — Underpass
- **X** — Abandoned trail, road, etc.
- **RR** — Railroad tracks; as 2 tracks

### WOODS CLASSIFICATION

#### Density Classification
1. Scattered
2. Thiny wooded
3. Heavily wooded
4. Densely wooded

#### Types of woods
- **D** — Deciduous
- **P** — Evergreen and pine
- **R** — Brush
- **S** — Scrub
- **Y** — Cypress
- **L** — Young trees (LP—young pines, LD—young deciduous trees)

### SHORE LINE
- **HWL** — Mean high water; fast land
- **LWL** — Low water line
- **LL** — Light line; marsh shore line
- **M** — Marsh inshore limits
- **MW** — Marsh grass in water
- **Dk** — Dock
- **Pier** — Pier
- **Se W** — Sea wall
- **Bkhd** — Bulkhead
- **Jet** — Jetty
- **Dol** — Dolphin
- **Pile** — Pile
- **S** — Sand
- **Mud** — Mud
- **Rk** — Rock or rocky
- **Sty** — Stony
- **Conc** — Concrete
- **Wo** — Wood
- **Bif** — Bluff
- **Dune** — Dune

### VEGETATION
- **C** — Cultivation
- **Gr** — Grass

### BUILDINGS
- **Ho** — House
- **Ba** — Barn
- **Sh** — Shed
- **Bldg** — Building
- **Bo Ho** — Boat House
- **Ch** — Church (give name)
- **Ct Ho** — Court House (give name)
- **P O** — Post Office (give name)
- **Sch** — School (give name)
- **Hos** — Hospital (give name)
- **RR Sta** — Railroad station
- **Sto** — Country store or gas sta.
- **P Sta** — Power Station
- **Ck H** — Chicken House
- **D** — Dwelling

### LANDMARKS
- **FT** — Fire tower
- **TT** — Transmission tower
- **RT** — Radio Tower or mast
- **Air Bn** — Airway beacon
- **Bn** — Non-lighted aid to navigation
- **Lt** — Lighted aid to navigation
- **Tk** — Low tank
- **Tk elev** — Tall tank
- **Stk** — Stack

### STREAMS, PONDS & BRIDGES
- **D** — Largest ditches only
- **DX** — Small
- **IS** — Intermittent stream
- **PD** — Probable drainage
- **Cr** — Creek
- **Ca** — Canal
- **Brg** — Bridge, (capacity & clearance)
- **Cv** — Culvert (capacity)
- **Lev** — Levee
- **Dam** — Dam
- **P** — Pond
- **IP** — Intermittent pond
<table>
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<th>Remarks</th>
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<tr>
<td>Fisherman Island</td>
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<tr>
<td>National Quarantine</td>
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<tr>
<td>Smith Island Inlet</td>
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<td>The Issacs</td>
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<tr>
<td>Nautilus Shoal</td>
<td></td>
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<tr>
<td>Middle Ground</td>
<td></td>
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<tr>
<td>Adams Island</td>
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<tr>
<td>Wm. Knight Shoal</td>
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<td>Smith Island</td>
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<td>Smith Island Beach</td>
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<td>Smith Island Coast Guard Station</td>
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<tr>
<td>Cape Charles Lighthouse</td>
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<tr>
<td>Cape Charles</td>
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<tr>
<td>Fisherman Inlet</td>
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<tr>
<td>North Channel</td>
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<tr>
<td>Inner Middle Ground</td>
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<tr>
<td>Blackbeards Creek</td>
<td></td>
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<tr>
<td>Bat Shoals</td>
<td></td>
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<tr>
<td>Raccoon Creek</td>
<td></td>
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<tr>
<td>John Fort Custis</td>
<td></td>
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<tr>
<td>Northampton County</td>
<td></td>
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<tr>
<td>Linen Shoals</td>
<td></td>
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<tr>
<td>Nagothy Bay Channel</td>
<td></td>
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<tr>
<td>Geneville (political district)</td>
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<tr>
<td>Beach Channel</td>
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<td></td>
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</tbody>
</table>
Between January, 1942 and July, 1944, this Bureau completed 323 quadrangles. These maps have been published, or are in the process of being published on scales of 1:31,680 or 1:25,000. This series of quadrangles includes a land area of approximately 15,000 square miles. Incident to this work, a considerable volume of survey records and data has accumulated which will be filed for future reference. This material is filed as follows:

Registered and Filed in the Vault

Cloth-mounted copy of the published quadrangle.

- Published quadrangle at 1:20,000 scale
- Black and white cloth-mounted copy of the map manuscript. This copy is filed to preserve original survey detail shown on the manuscript at 1:20,000 scale which may not have been shown on the published sheet. For political boundaries, woodland, marsh-and-swamp-limits, refer to the published quadrangle for the finally adopted positions.

Descriptive Report.

Filed in the Photogrammetric Section - Surveys Branch

Field inspection photographs.

Contoured photographs (on which planestable contouring work was performed.)

Field edit sheet.

Descriptions of recoverable topographic stations (Form 524), filed in Reviewing Unit.

Supplementary traverse and level records.

Field notes, computations, lists of positions, and tabulations of results of horizontal and vertical accuracy tests.

Reproduction proof.

Correction sheet (copy of quadrangle showing in red changes to be made when next printed.)

Check lists of work performed on each sheet in the Washington Office during review, drafting, edit, and reproduction.

Original celluloid manuscript.
Copies of specifications and all instructions to field parties and field offices.

Filed in Reproduction Branch

Glass negatives of the color separation drawings.

Filed in the Library

Special report on field work by Commander K. T. Adams, 1944.

Special report on office work by B. G. Jones, 1944.

Season's report on field work by Commander F. L. Gallen, 1944.

Season's report on field work by Commander R. L. Schoppe, 1944.

Delivered to the Army Map Service in accordance with the contract

Film negatives and film positives of the color separation drawings.

All color separation drawings.

Original celluloid manuscript.

A correction sheet consisting of a copy of the first edition of the quadrangle with notes in red indicating changes desirable at the next printing.
General Procedure in the Production of Topographic Quadrangles for the War Department

This quadrangle, together with similar adjoining maps produced under Project C.S.275-G was prepared by the Coast and Geodetic Survey for the War Department under "General Specifications for War Department Mapping Program" issued about December 1941, in which is incorporated the "Standard of Accuracy for a National Map Production Program" issued by the Bureau of the Budget under date of June 10, 1941.

The general procedure in the production of this and the adjoining quadrangles was:

FIELD SURVEYS

Aerial photography with the Coast and Geodetic Survey nine-lens camera, with airplane and flight crew furnished by the U.S. Coast Guard. The photographs were taken to the scale of 1:20,000.

Ground inspection of the photographs for identification of control points, and classification and clarification of planimetric details on the photographs.

Contouring by planetable directly on the photographs. Supplementary vertical control was established by means of an extensive subordinate level net, furnishing unmarked elevations at road intersections, driveways, and numerous other points identifiable on the photographs.

COMPILATION OF MANUSCRIPT

Compilation on the map manuscripts by radial plot methods (celluloid hand templets) of all planimetry and contours. These manuscripts were drawn on the scale of 1:20,000 on celluloid sheets on which polyconic projections had been ruled with the Projection Ruling Machine in the Washington Office. Compilation was accomplished in the Baltimore Tampa Photogrammetric Office.

FIELD EDIT

Comparison of a copy of the manuscript with the ground. This included inspection for completeness and accuracy as well as the location by planetable methods of additional details, checking of nautical and aeronautical aids to navigation, etc.
Accuracy Tests - Application of systematic horizontal and vertical accuracy tests to check the maps for conformity with the specifications. These tests consisted of comparison of the map position and elevation of selected random points with the true position and elevation as independently determined by standard survey methods.

PROCESSING IN THE WASHINGTON OFFICE

Review - Examination of the manuscript for accuracy and completeness of compilation and compliance with specifications, correcting where necessary; addition of military and state grids and other special features; and verification of the general adequacy of the manuscript as a basis for the production of a finished map.

Drafting and Reproduction - Preparation of smooth color separation drawings on 1:20,000 scale on metal-mounted "blueline" copies of the manuscript. From these drawings, negatives and printing plates were prepared for reproduction of the finished map on the scale of 1:31,680 or 1:25,000.
DIVISION OF CHARTS
SURVEYS BRANCH
REVIEW OF AIR PHOTOGRAPHIC SURVEY T-8183
CAPE CHARLES QUADRANGLE

This quadrangle manuscript has been examined for completeness, accuracy, and conformity with the specifications. It is adequate for smooth drafting, reproduction and publication. Revisions found to be necessary in this office are discussed on the next page.

Horizontal and Vertical Accuracy

There is no vertical accuracy test in this area. For the nearest horizontal accuracy test see the descriptive report for survey T-8181.

Previous Surveys

This manuscript has been compared with the following previous topographic surveys of this Bureau and other agencies. This map is satisfactory to supersede the previous surveys over the common area.

<table>
<thead>
<tr>
<th>Survey</th>
<th>Scale</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>T-509</td>
<td>1:20,000</td>
<td>1852</td>
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<td>T-1203</td>
<td>1:20,000</td>
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<tr>
<td>T-3835</td>
<td>1:40,000</td>
<td>1921</td>
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</table>

Comparison with Nautical Charts Nos. 1222

The manuscript has not been applied to the charts at the date of this review. The following comments are pertinent to the compilation and correction of nautical charts:

The details of T-8183 are complete and adequate for chart correction.
The following revisions of the map manuscript were found to be necessary and were accomplished as a part of this review:

Only changes of a minor nature were necessary during the review of this map manuscript.

Reviewed March 19, 1943  
by W. W. Bealings

under direction of D. H. Benson

Inspected by E. A. Jones 12/6/45

Examined and approved:

[Signatures and titles]

Chief, Surveys Branch  
Nautical Chart Br.

Chief, Topography Section

Chief, Div. of Charts  
Chief, Div. of Photogrammetry

Chief, Div. of Coastal Surveys