

5681

5681

Form 504 Rev. Dec. 1933	
DEPARTMENT OF COMMERCE U.S. COAST AND GEODETIC SURVEY R. S. PATTON, DIRECTOR	
DESCRIPTIVE REPORT	
Topographic Hydrographic	Sheet No. T-5681
State Maryland	
LOCALITY	
Chesapeake Bay	
Gunpowder Neck	
(Southern Part)	
Photographs taken 1937	
1939	
CHIEF OF PARTY	
L. W. Swanson	

Applied (in part) to ed. 572. aprie 1940 - N. G. S.

Applied to drawing of Ch 549 - 12/19/40 - JTW

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

AIR PHOTO
TOPOGRAPHIC TITLE SHEET

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

Field No. _____

REGISTER NO. T-5681

T5681

State Maryland

General locality Chesapeake Bay

Locality Gunpowder Neck (Southern Part) Apr 30

Photographs to May 1, 1937

Scale 1:10000x.965 Date of survey Field Inspection, 1/6 to December 1939

~~Yes~~ Air Photo. Party No. 2

Chief of party L. W. Swanson

Surveyed by Air Photographs

Inked by J. N. Jones

Heights in feet above none to ground to tops of trees

~~Contour~~ ~~Approximate contour~~ ~~Foot line interval~~ ~~feet~~

Instructions dated March 4 and May 13, 1939

Remarks: _____

DATA RECORDT-5681PHOTOGRAPHS:

<u>*NOS.</u>	<u>DATE</u>	<u>TIME</u>	<u>SCALE</u>	<u>ALTITUDE</u>	<u>STAGE OF TIDE *</u>
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1493 & 1495	May 1, 1937	2:55-2:56	1:10,000	6,900'	0.7' above MLW
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1260 - 1266	Apr. 30, 1937	2:21-2:26	"	"	0.7' " "
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+ AJO 1-139 & 140	Apr. 5 1938	(of 1st use in this survey. the special information - gotten from them)			
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* Tide from predicted tables, Pooles I. Mean Range 1.2'

Spring " 1.4'

CAMERA: U. S. Coast & Geodetic Survey nine lens, Focal Length $8\frac{1}{2}$ inches.

† NOT KNOWN

SUPPLEMENTAL SURVEYS

Graphic Control Surveys: None

Hydrographic Surveys:

Field Inspection: A.A. Wardwell and Don A. Jones, May 1939 & Dec. 1939

GENERAL INFORMATION:

Chief of Party: L. W. Swanson

Projection By: Ruling Machine

date unknown

Checked: Washington Office

Radial Points Pricked By: R. A. Gilmore

April 1939

Additional Radial Points By: J. N. Jones

July 1939

Control Plotted By: R. A. Gilmore

April 1939

Control Checked By: J. N. Jones

" "

Radial Plot By: R. A. Gilmore and A. L. Wardwell

" "

Shoreline Inked By: J. N. Jones

July 1939

Detail Inked By: J. N. Jones

Sept. 1939

Preliminary Review: L. W. Swanson

" "

Smooth Draft By:

STATISTICS:

Area (land) 7.1 sq. statute miles

Shoreline (more than 200m. from opposite shore) 20.7 " "

Shoreline (creeks) 6.2 " "

Roads and trails 10.5 " "

REFERENCE STATION:

Ricketts 1934; N. A. Datum 1927; Adjusted.

Latitude: 39 18' 06.426" (198.2 meters)

Longitude: 76 17' 59.676" (1429.9 meters)

Maryland System of Plane Coordinates: $x = 998,121.05$ Ft. $y = 535,548.82$ Ft.

Details on T-5681 are of the date of the photographs, April 1937, except for work getting and fixing taken from the 1938 hydrographic surveys.

Note: Details on T-5681 are of the date of the numerous photographs after 30 and May 1, 1937, except for part of the work on the west coast of Jones Island which dated by the (date given)

DESCRIPTIVE REPORT
to accompany
AIR PHOTOGRAPHIC SURVEY SHEET NO. T5681
State of Maryland
Gunpowder Neck.
Scale: 1:10,000 x 0.965.

INSTRUCTIONS:

The topography on this sheet is a part of Project HT-215, the instructions for which are dated March 4, 1939 and May 13, 1939.

CONTROL:

The radial plot for this sheet was controlled by the following triangulation stations, which were pricked directly on the photos. or tied in to an adjacent well defined object: Ricketts 1934, Days 1934, Poole 1927, Pooles I. L. H. 1939, Robins Pt. 2, 1933, and Carroll 1934.

The following G. S. Primary Traverse Stations were used in a like manner: Nos. 72, 103, and 123.

The following triangulation stations were later plotted on the sheet and used for control in detailing: Battery 1934, Pooles I. Rear Range Light 1919, and Pooles I. Front Range light 1919.

All stations used are plotted on the adjusted N. A. Datum 1927.

Sufficient control was available for all parts of the sheet. Several G. S. Primary Traverse Stations which were not used by this party have been plotted on the sheet. These were recovered and used on the previous photo. compilation sheet in this area, T-5431.

T-5430

RADIAL PLOT:

The radial plot for this sheet was run in conjunction with that for Sheets 5678, 5679, and 5680. Celluloid templates and dummy sheets were used.

Uniformly good intersections were obtained and no adjustments were later found necessary.

With the exception of Pooles Island, where a few more pictures would have been desirable the intersections were strong as could be desired.

DETAIL:

This sheet is submitted as a rough draft. No unusual abbreviations were used and when possible everything has been written out on the sheet.

No difficulty was experienced in detailing, with the possible exception of being unable to get very good stereopsis ^{stereoscopic effect} which may have been due to the centers being too far apart.

The scale factor was determined largely from adjoining sheets and some of the photos. are considerably of the scale of this sheet. Much of the detailing was done using a projector.

Adequate notes were a hand to interpret the physical features and these have been followed with a few minor exceptions, which seemed necessary to give a uniform interpretation.

All detail comes from the photos. with the exception of part of the road down the west side of Gunpowder Neck which was

located from field notes. Part of this road shows in the photos. as incomplete.

~~T-5430~~ T-5431 An attempt was made to retrace the detail from Sheet T-5431 on this sheet, but the agreement was not exact and it was thought to be expedient to redraft this sheet completely.

There are only a few buildings within the limits of this sheet. Most of these have apparently been abandoned and are falling into ruins. Some of them could not be clearly identified and are not shown on the sheet.

The old fences have been destroyed and there is little evidence of their former location on the ground although some of them show clearly on the photos.

The formerly cultivated fields are fast growing up in brush.

Numerous trails and wheel tracks can be identified on the photos. are not shown on the sheet due to their unimportance.

✓ COMPARISON WITH PREVIOUS SURVEYS:

This sheet has been compared with the following:

Air Photo. Comp. T-5431, 1935

" " " T-5429, 1935

Plane Table Survey No. 2308, 1898

U. S. G. S. Gunpowder Quadrangle

Military Map No. 2654:7531:146/

The agreement with the 1935 sheets is very good. There is some slight difference which is probably largely in the interpretation of the features and some slight changes. The extensive shoal areas which are shown on these sheets can not be identified on the present photos. and have not been transferred. These areas may possibly represent grass in the water, which is known to extend for a considerable distance off shore in the late summer. The fish net stakes shown on these sheets have apparently disappeared.

There has been considerable change in this area from the comparison with Sheet 2308, especially on the marshy points. These have receded considerably. Spry Island has almost disappeared. However, much of the detail agrees well with that shown on the present sheet.

Detail on Military Map 2654:7531:146 agrees very well with the present sheet except for such changes as have occurred.

JUNCTIONS:

This sheet makes good junctions with Sheet T-5678 to the North and Sheets T-5680 and T-5429 to the West.

RECOVERABLE TOPOGRAPHIC STATIONS:

There are two Fire Control Towers within the limits of this sheet which are of a recoverable nature and have been shown with 2 $\frac{1}{2}$ mm. circles. These objects have not been described on Form 524 because their positions may be of a confidential nature.

LANDMARKS:

No landmarks on this sheet are recommended for charting.

Except 3 lights on Pooles Island which have been located by triang.

*Also also review of both
do page 7 doc. report T-5678
regarding dip in abandoned moving ground
do also review of both*

There are no very prominent objects within the limits of this sheet and the semi-prominent objects are of a military nature.

RECOMMENDATIONS FOR FUTURE SURVEYS:

This sheet is complete and no additional topographic surveys are required.

The probable error is not greater than 5 meters for radial points and well defined objects along the water front. The error in other detail is probably not greater than 10 meters.

REMARKS:

The area covered by this sheet is a military reservation connected with Fort Hoyle and Edgewood Arsenal.

Respectfully submitted

James N. Jones,
Jr. H. & G. E.

Forwarded approved

L. W. Swanson, Chief of Party.

~~Note all details of confidential nature removed in accordance with instructions of commanding officer Aberdeen proving grounds see Page 7 also report T 5678 for method of handling surveys covering the proving grounds~~
-Page-

Remarks

Decisions

1		393 763
2		393 763
3		"
4		393 762
5		"
6		392 762 USGB
7		393 762
8		"
9		"
10		" USGB
11		"
12		392 763
13		392 762 USGB
14		392 762
15		393 763
16		USGB
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
M 234		

GEOGRAPHIC NAMES

Survey No.

T-5681

Name on Survey

GEOGRAPHIC NAMES											
Survey No.											
T-5681											
Name on Survey											
		</									

L. Heck 1/9/40

REVIEW OF AIR PHOTO COMPILATION NO.

Chief of Party: L. W. SWANSON

Compiled by: J. W. JONES

Project: HT-215

Instructions dated: 3/4/39
5/13/39

1. The charts of this area have been examined and topographic information necessary to bring the charts up to date is shown on this compilation. (Par. 16a, b,c,d,e,g and i; 26; and 64)
2. Change in position, or non-existence of wharfs, lights, and other topographic detail of particular importance to navigation which affect the chart, is discussed in the descriptive report. (Par. 26; and 66 g,n) none
3. Ground surveys by plane table, sextant, or theodolite have been used to supplement the photographic plot where necessary to obtain complete information, and all such surveys are discussed in the descriptive report. (Par. 65; and 66 d,e)
small section of road located by sextant.
4. ~~Plane tables and~~ Maps from other sources which were transmitted by the field party contain sufficient control for their application to the charts. (Par. 28)
5. Differences between this compilation and contemporary plane table and hydrographic surveys have been examined and rectified in the field before forwarding the compilations to the office and are discussed in the descriptive report.
6. The control and adjustment of the photo plot are discussed in the descriptive report. Unusual or large adjustments are discussed in detail and limits of the area affected are stated. (Par. 12b; 44; and 66 c,h,i)
7. High water line on marshy ~~and mangrove~~ coast is clear and adequate for chart compilation. (Par. 16a, 43, and 44)

NOTE: Strike out paragraphs, words or phrases not applicable and modify those requiring it. Paragraph numbers refer to those in the Topographic Manual. Refer also to the pamphlet "Notes on the Compilation of Planimetric Line Maps from Five Lens Air Photographs."

8. The representation of low water lines, ~~reefs, coral reefs and rocks, and legends pertaining to them~~ is satisfactory. (Par. 36, 37, 38, 39, 40, 41)
✓
9. Recoverable objects have been located and described on Form 524 in accordance with circular 30, 1933, circular letter of March 3, 1933, and circular 31, 1934. (Par. 29, 30, and 57)
now described see Desc. Report.
10. A list of landmarks was furnished on Form 567 and instructions in the Director's letter of July 16, 1934, Landmarks for Charts, complied with. (Par. 16d, e; and 60)
None
11. All bridges shown on the compilation are accompanied by a note stating whether fixed or draw, clearance, and width of draw if a draw bridge. Additional information of importance to navigation is given in the descriptive report. (Par. 16c)
✓
12. Geographic names are shown ^{directly on sheet} ~~on the overlay tracing~~. The accepted local usage of new names has been determined and they are listed in the report, together with a general statement as to source of information and a specific statement when advisable. Complete discussion of place names differing from the charts and from the U. S. G. S. Quadrangles is given in the descriptive report, together with reasons for recommendations made. (Par. 64, and 66k)
✓
13. The geographic datum of the compilation is *NA 1927* and the reference station is correctly noted.
✓
14. Junctions with adjoining compilations have been examined and are in agreement. (Par. 66j)
✓
15. The drafting is satisfactory and particular attention has been given the following:
 1. Standard symbols authorized by the Board of Surveys and Maps have been used throughout except as noted in the report.
✓
 2. The degrees and minutes of Latitude and Longitude are correctly marked.
✓

3. ✓ All station points are exactly marked by fine black dots.
4. Closely spaced lines are drawn sharp and clear for printing. *Rough draft*
5. Topographic symbols for similar features are of uniform weight. *Rough draft*
6. All drawing has been retouched where partially rubbed off. *Rough draft*
7. ✓ Buildings are drawn with clear straight lines and square corners where such is the case on the ground.
- (Par. 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48)

✓ 16. No additional surveying is recommended at this time.

✓ 17. Remarks: *THE AREA COVERED BY THIS SHEET IS A MILITARY RESERVATION.*

18. Examined and approved;

L. L. Sullivan
Chief of Party

19. Remarks after review in office:

PLANE COORDINATE GRID SYSTEM

Positions of grid intersections used for fitting the grid to this compilation were computed by Division of Geodesy and the computation forms are included in this report.

Positions plotted by S. Kass

Positions checked by S. K. (ON RULING MACHINE)

Grid inked on machine by S. K.

Intersections inked by R. E. ELKINS.

GRID APPLIED TO "BLUE LINE"

Points used for plotting grid:

MINUTE INTERS.

39-21
76-16

x
y

39-21
76-19

x
y

Δ CARROLL 1934 (plane coords p. 27)

x
y

Δ ROBINS POINT 2 (p. 20)

x
y

STATIONS

NOTE - GRID CHECKS WITHIN APPROXIMATELY 0.2 mm.
Triangulation stations used for checking grid:

- | | |
|----------------------|----------|
| 1. <u>Δ DAYS</u> | 5. _____ |
| 2. <u>Δ RICKETTS</u> | 6. _____ |
| 3. _____ | 7. _____ |
| 4. _____ | 8. _____ |

PLANE COORDINATES ON LAMBERT PROJECTION

(For calculating machine computation)

State md. Station _____
 $\phi = 39^{\circ} 21'$ " $\lambda = 76^{\circ} 16'$ "
 Tabular difference of R for $1''$ of $\phi =$ _____

R (for min. of ϕ)		y' (for min. of ϕ)	
Cor. for sec. of ϕ	-	Cor. for sec. of ϕ	+
R	25,816,762.31	y'	552,350.45
		$y'' (=2R \sin^2 \frac{\phi}{2})$	+ 832.99
θ (for min. of λ)		y	553,183.4
Cor. for sec. of λ	-		
θ	+ 0 27 36.7541		1.3 48.47705
θ''			.00401655928
$10^5 M$ (for given $10''$)		$10^7 K$ (for given $10''$)	
Cor. for fraction of $10''$	-	Cor. for fraction of $10''$	+
$10^5 M$	258	$10^7 K$	416.495
$\sin \theta$ ($\theta'' M$)	.00803305376	$2 \sin^2 \frac{\theta}{2}$ ($\theta'' K$)	
x' ($R \sin \theta$)	207 8 258 000,000.00	$2 R \sin^2 \frac{\theta}{2}$	(Place result above)
x	1,007,387.4		

$$x = 2,000,000.00 + R \sin \theta.$$

$$y = y' + 2R \sin^2 \frac{\theta}{2}$$

y' = the value of y on the central meridian for the latitude of the station.

R , y' , and θ are given in special tables.

$\sin \theta = \theta'' M$ (see table for M).

$2 \sin^2 \frac{\theta}{2} = \theta'' K$ (see table for K)

The factors 10^5 and 10^7 indicate that the decimal point has been moved to the right five places in M and seven places in K . To determine the position of the decimal point in the result, move the decimal point in θ'' five places to the left for M and seven places for K . Multiplication will then give the result properly pointed off.

PLANE COORDINATES ON LAMBERT PROJECTION

(For calculating machine computation)

State md. Station _____
 $\phi = 39^{\circ} 21' "$ $\lambda = 76^{\circ} 16' "$
 Tabular difference of R for $1''$ of $\phi =$ _____

R (for min. of ϕ)	<u>25816762.31</u>	y' (for min. of ϕ)	
Cor. for sec. of ϕ	-	Cor. for sec. of ϕ	+
R	<u>25816762.31</u>	y'	<u>552350.45</u>
		$y'' (= 2R \sin^2 \frac{\theta}{2})$	<u>832.99</u>
θ (for min. of λ)		y	<u>553183.44</u>
Cor. for sec. of λ	-		
θ	<u>0 27 36.9541</u>		
θ''	<u>1656.9541</u>		
$10^5 M$ (for given $10''$)	<u>.4848085105</u>	$10^7 K$ (for given $10''$)	<u>.19391052</u>
Cor. for fraction of $10''$	<u>421</u>	Cor. for fraction of $10''$	<u>81725</u>
$10^5 M$	<u>4848084684</u>	$10^7 K$	<u>.19472777</u>
$\sin \theta (\theta'' M)$	<u>.008033053794</u>	$2 \sin^2 \frac{\theta}{2} (\theta'' K)$	<u>.00032265498</u>
$x' (R \sin \theta)$	<u>20738749</u>	$2 R \sin^2 \frac{\theta}{2}$	(Place result above)
	<u>2,000,000.00</u>		
x	<u>1007387.44</u>		

$$x = 2,000,000.00 + R \sin \theta.$$

$$y = y' + 2R \sin^2 \frac{\theta}{2}$$

y' = the value of y on the central meridian for the latitude of the station.

R , y' , and θ are given in special tables.

$\sin \theta = \theta'' M$ (see table for M).

$2 \sin^2 \frac{\theta}{2} = \theta'' K$ (see table for K)

The factors 10^5 and 10^7 indicate that the decimal point has been moved to the right five places in M and seven places in K . To determine the position of the decimal point in the result, move the decimal point in θ'' five places to the left for M and seven places for K . Multiplication will then give the result properly pointed off.

2

PLANE COORDINATES ON LAMBERT PROJECTION

State md Station 39 21
76 19
 $\phi =$ $\lambda =$
Tabular difference of R for $1''$ of $\phi =$

R (for min. of ϕ)		y' (for min. of ϕ)	
Cor. for sec. of ϕ	--	Cor. for sec. of ϕ	+
R	<u>25,816,762.31</u>	y'	<u>552,350.45</u>
		$y'' (= 2R \sin^2 \frac{\theta}{2})$	+
			<u>723.27</u>
θ (for min. of λ)		y	<u>553,073.7</u>
Cor. for sec. of λ	--		
θ	<u>+ 25 43.9799</u>	$\frac{\theta}{2}$	<u>12' 51.98995</u>
θ''	For machine computation *		For machine computation *
		$\log \theta''$	
$\log \theta''$		$\text{colog } 2$	<u>9.69897000</u>
S for θ		S for $\frac{\theta}{2}$	
$\log \sin \theta$	$\sin \theta$	$\log \sin \frac{\theta}{2}$	$\sin \frac{\theta}{2}$
	<u>.0074853559</u>		<u>.0037427042</u>
$\log R$		$R \sin \frac{\theta}{2}$	
$\log x'$		$\log \sin^2 \frac{\theta}{2}$	$R \sin^2 \frac{\theta}{2}$
x'	$R \sin \theta$	$\log R$	$2 R \sin^2 \frac{\theta}{2}$
		$\log 2$	<u>0.30103000</u>
	<u>2,000,000.00</u>	$\log y''$	
x	<u>993,247.7</u>		

$$x = 2,000,000.00 + R \sin \theta.$$

$$y = y' + 2R \sin^2 \frac{\theta}{2}.$$

y' = the value of y on the central meridian for the latitude of the station.

S = log of ratio for reducing arc expressed in seconds to sine.

(See log tables.)

R , y' , and θ are given in special tables.

3,073.7
19263

* This method is for use when tables of natural sines to ten decimal places are available. A different method for machine computation was devised early in 1938 which does not require a table of sines but instead a special table, copies of which are available at the Coast and Geodetic Survey. A new form, No. 725a, has been printed for this new method.

DIVISION OF CHARTS

Section of Field Records

REVIEW OF AIR PHOTOGRAPHIC SURVEY T-5681

1:10,000

There are no graphic control surveys in this area.

Previous Topographic Surveys.

T-213 (1846) 1:20,000.

T-2308 (1898) 1:20,000.

T-2366 (1898) 1:10,000.

T-5681 is complete and adequate to supersede the sections of the above surveys which it covers, except for contours and bluff lines. On T-5681 bluffs were not carried out in detail by the field inspection and the compilation party apparently has ignored bluffs of less than 25 feet in elevation (Refer to page 3, descriptive report T-5676.) A number of fence and what seem to be property lines on the old surveys are not shown on T-5430.

T-5429 (1933) 1:10,000.

T-5430 (1933) 1:10,000.

T-5681 is adequate to supersede the sections of T-5429 and T-5430 which it covers. There are differences in shoreline position ranging from 0 to 30 and 40 meters between T-5681 and T-5429 and T-5430. These occur on both fast land and marsh areas. The larger differences are excessive and probably are due to errors in point locations of the photographic plot on T-5429 and T-5430.

Contemporary Hydrographic Surveys.

H-6367 (1938) 1:10,000.

H-6373 (1938) 1:10,000.

The hydrographic surveys were compared with T-5681 September 25, 1940 and no discrepancies were noted.

Chart 1226 (April 5, 1939) and Chart 572 (Compilation in progress)

Pooles Island Front Range Light located by triangulation in 1919 was rebuilt in 1926. The Notice to

Mariners does not indicate a position change and the station has been left on T-5681.

T-5681 was applied to Chart 572 prior to the completion of this review. Numerous interior details of a confidential nature have since been removed from T-5681. See next paragraph.

Confidential Information.

T-5681 is within the Aberdeen Proving Ground. Confidential copies of T-5681 have been furnished the Commanding Officer, Aberdeen Proving Ground and a confidential plate is filed in the vault for possible future printing. Confidential information has been painted off of the negatives in accordance with instructions from the Commanding Officer, Aberdeen Proving ground and a new non-confidential plate made for printing the file copy and copies for sale.

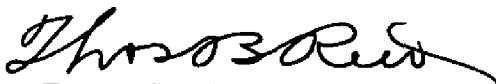
The instructions regarding the removal of confidential details consisted of notes made on a copy of T-5681. This copy has been destroyed. The original celluloid drawing and all confidential prints of T-5681 have been destroyed.

Instructions regarding removal of confidential information from T-5681 have been reported to the Nautical Chart Section, September 10, 1940.

Reviewed by - T. M. Price, January 1940.

Inspected by - B. G. Jones, September 17, 1940.

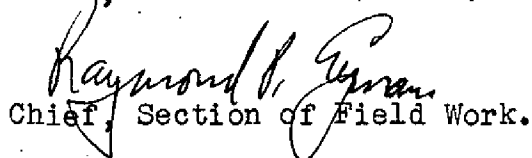
Examined and approved:



T. B. Reed,
Chief, Section of Field Records.



Chief, Division of Charts.



Chief, Section of Field Work.



Chief, Division of H. & T.