

5580

Form 504  
Rev. Dec. 1933  
DEPARTMENT OF COMMERCE  
U.S. COAST AND GEODETIC SURVEY  
R. S. PATTON, DIRECTOR

1229

DESCRIPTIVE REPORT

Topographic Sheet No. T- 5580  
~~Hydrographic~~

State North Carolina

LOCALITY

Atlantic Coast

Oregon Inlet

Photos taken July 1937  
Other surveys to Oct. 1937  
1938

CHIEF OF PARTY

S. R. Grenell

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Applied to Aug. 1229 Apr. 24, 1939 G.M.C.

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO.

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. T - 5580

REGISTER NO.  
T - 5580

**T5580**

State North Carolina

General locality Atlantic Coast

Locality Oregon Inlet

Scale 1/10,000 Date of survey photos July, 1937  
other surveys of shoreline to Oct. 1937

Vessel Shore party

Plane: Army Air Corps Camera: Coast Survey 9 Lens.

Chief of party S. B. Grenell

Surveyed by Air Photographs 1937 see data sheet des. report

Inked by John C. Bull (Spring 1938)

Heights in feet above \_\_\_\_\_ to ground to tops of trees

Contour, Approximate contour, Form line interval \_\_\_\_\_ feet

Instructions dated August 20, 1937

Remarks: \_\_\_\_\_

SHEET NO. T- 5580

PHOTO NO. 1783 TO PHOTO NO. 1786

ROUGH RADIAL PLOT S. B. Grenell

SCALE FACTOR 0.974

SCALE FACTOR CHECKED G. C. Mast

PROJECTION Washington Office- True scale 1/10,000

PROJECTION CHECKED S. B. Grenell

CONTROL PLOTTED S. B. Grenell

CONTROL CHECKED G. C. Mast

TOPOGRAPHY TRANSFERRED NONE

TOPOGRAPHY CHECKED Comparison made with field sheet "A" H. E. Finnegan, 1937

SMOOTH RADIAL LINE PLOT S. B. Grenell - G. C. Mast

RADIAL LINE PLOT CHECKED S. B. Grenell - G. C. Mast

DETAIL INKED John C. Bull (Spring 1938)

AREA DETAIL INKED 9.0 sq. statute miles

LENGTH OF SHORELINE OVER 200m \_\_\_\_\_ STATUTE MILES

LENGTH OF SHORELINE UNDER 200m \_\_\_\_\_ statute miles

GENERAL LOCATION Atlantic Coast - North Carolina.

LOCATION Oregon Inlet

DATUM STATION Bodie Island Lighthouse- <sup>1875</sup>~~1885~~ Latitude 35-49-06.178 (190.4 m)

Longitude 75-33-49.337 (1238.5m) *(adjusted)*

DATUM N. A. 1927

*Field Inspection probably by John Bull, Oct. 1937*

*Photos 1783-1786, 9 lens Taken July 9, 1937, 9:50 AM.  
Tide (from tide tables) 1/2 ft. below high water.*

REPORT OF MAP DRAWING

T - 5580

RADIAL LINE PLOT:

The standard radial line plot was used. No unusual difficulty was encountered except with the picture # 1785. On this picture the center fell in the inlet and could not be used to carry the azimuth along the line of plot. The pictures 1784 and 1786, on either side of the inlet were fixed and by this the plot was smoothed out and good intersections were obtained.

The mean scale factor for this sheet was found to be 0.974. This was so close to unity that the projection was made to true scale - 1/10,000.

ADJUSTMENT OF PHOTOGRAPHS:

The radial points were well selected and but few additional points were necessary. These were obtained by interlacing. No difficulty was encountered.

INTERPRETATION OF DETAIL:

The photographs were clear and no difficulty was experienced in interpretation of detail.

ROADS: *(Main travelled routes shown with double dashed line; others with trail symbol; roads vary in location, but those double dashed are desirable to chart.)*

~~The roads shown on this map drawing are indicated by the trail symbol. This symbol was used because the roads are not permanently located. Their location depends upon local conditions.~~

SAND FENCES:

*Trails are dashed lines with long dashes.*  
*(single short dashed line)* The sand fences on this sheet are shown by the general fence symbol. These fences are made up of brush nailed to a lattice fence. Sand has blown in around these fences forming a line of sand dunes. The most prominent and most important being the first line west of beach. This line of dunes ranges in height from a foot or two feet at the inlet to approximately ten feet both north and south of the inlet.

PONDS:

Just east of Bodie Island Lighthouse is a low swampy area now used as duck ponds. These ponds were formed by damming the creeks that allowed this area to drain. ~~The shore line is shown where possible and appropriate symbols used where shore line is indefinite.~~

SHORELINE:

The shore line to the west, on the Sound side, is definite. The marsh grows to the edge of the shore and forms a very definite line and this is shown by a heavy line.

On the western side of the southern tip of Bodie Island the high water line is very indefinite. The water flows in

*Outside shore line between lat. 35-46.1 and lat. 35-49.1 from plane table survey (T-6562a) Oct. 1937*

from the west and covers the area shown by widely spaced fine dots to the sand dunes formed by the sand fences just west of the beach. This area is covered by two or three inches of water at high tides. *Because of indefinite nature the H.W.L. was omitted. At extremely high tides the water flows back to the*  
On the south side of the inlet the high water line is more definite and is shown by a heavy line up to the sand fence. *From this point on the high water line is indefinite and is shown by a line of heavy dots. In this area, on extra high tides, the water flows in from the west through the sand fence covering the whole area with two or three inches of water except for a very narrow strip along the front beach.* *closely spaced standing dots.*

GENERAL:

*of* Bodie Island and the island south of the Inlet are made up of sand beach backed by sand dunes covered with grass, this in turn is backed by marshy areas and low brush which extends westward to the sound. The small islands are marshy with low brush.

COMPARISON WITH CONTEMPORARY SURVEYS:

No comparison could be made as this is the only sheet in this area. *except for 2 graphic control surveys & 1 hydrographic - see next par.*

COMPARISON WITH OTHER SURVEYS:

A comparison was made with topographic sheet "A" (T-6562a) H. E. Finnegan, October 1937. It is noted that the high water line along the front beach shows slight changes in the vicinity of the inlet. *(20 m. 1937)* On the north side of the inlet a good junction was made at the more permanent areas at the west tip of the south end of Bodie Island. On the south side of the inlet the junction was made about 0.8 miles south of the inlet on the west side of the island in the vicinity of the Coast Guard Storehouse. On the island south of the inlet more sand fences have been built since the pictures were taken. The topographer shows two fences just south of the inlet where the photographs show only one. Also, along the front beach an additional fence has been built just east of the one shown on the photographs. *All information transferred to T-5580 from G. C. surveys upon review. (see attached Review)*

ACCURACY AND COMPLETENESS:

All definite detail is shown on the sheet. The pictures are clear and control points definite so no difficulty was encountered in interpreting detail.

LANDMARKS FOR CHARTS:

*Chart Letter #58 (1938)*

Form 567 Landmarks for charts has been submitted with topographic sheet "A" H. E. Finnegan, October 1937.

NEW NAMES:

No new names appear on this map drawing. Charted names are in local use.

Approved:

*S. B. Grenell*  
S. B. Grenell  
Chief of Party

Respectfully submitted

*John C. Bull*  
John C. Bull

*for further information see Office Review*  
T.M.P.

## REVIEW OF AIR PHOTO COMPILATION NO. T-5580

Chief of Party: *J. B. Grenell*Compiled by: *John C. Bull*Project: *Oregon Inlet*Instructions dated: *Aug. 20, 1937*

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) ✓  
*no mention in report of comparison of topographic detail to charts*
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)  
*Comparison with Plane table Sheet "A" - H. E. Finney, 1937  
T-6562 a, b*
4. Blue-prints 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. *See # 3  
no comparison to contemporary hydro. in report.  
no rectification to the plane table survey T-6562 a  
was made in the field.*
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) ✓  
*no mention of any unusual or large adjustments.  
probably none.*
7. High water line on marshy ~~and mangrove~~ coast is clear and adequate for chart compilation. (Par. 16a, 43, and 44) ✓  
*see Des. Report and Office Review for discussion of H.W.L. on flat sand beaches.*

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." M-67

8. The representation of low water lines, reefs, ~~coral reefs and~~ ✓  
reefs, and legends pertaining to them is satisfactory. (Par.  
36, 37, 38, 39, 40, 41)  
*see Office Review for discussion of  
the L.W.L.*
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)  
*No form 524 submitted.*
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)  
*Form 567 forwarded with Topo Sheet "A" - H.E. Finneyan, 1937  
(T-6562a)  
Filed as Chart letter #58 (1938)*
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 naviga-  
tion is given in the descriptive report. (Par. 16c) *None*
12. Geographic names are shown 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)  
*Charted names only*
13. The geographic datum of the compilation is *N.A. 1927* and the  
reference station is correctly noted. *see data sheet des. report.*
14. ~~Junctions with adjoining compilations have been examined and are  
in agreement.~~ (Par. 66j) *No adjoining map drawings.*
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 Longi- ✓  
tude 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. ✓
  - 5. Topographic symbols for similar features are of uniform weight. ✓
  - 6. All drawing has been retouched where partially rubbed off. ✓
  - 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: *See descriptive report relative to comparison with contemporary planimetric survey. Both the plane table survey and this map drawing were made by Ensign John C. Bell.*

18. Examined and approved; *Feb. 28, 1938*



Chief of Party

19. Remarks after review in office: *notes in red by T. A. Price upon review April 15, 38 See office. Review for further information*

REVIEW OF AIR PHOTOGRAPHIC SURVEY T-5580

Data Record

Triangulation: to 1933  
Photographs taken: July 1937  
Field Inspection: October, 1937  
Planetable Graphic Control Surveys: October, 1937  
Recoverable stations of less than 3rd order accuracy: 1937  
Hydrographic Surveys: October, 1937.

The detail of T-5580 is of the date of the photographs except for the following:

- (1) From Graphic Control Survey T-6562a:
  - (a) High water line and low water line on outside coast between lat.  $35^{\circ} 46.1'$  and Lat.  $35^{\circ} 49.1'$ .
  - (b) High water line on inside from the inlet south to Lat.  $35^{\circ} 46.1'$
  - (c) Certain sand fences on point S. of inlet.
  - (d) Recoverable H. & T. stations.

Comparison with Recent Graphic Control Surveys

T-6562a and b (1937) 1:10,000  
T-4938 (1937) 1:10,000

T-4938

This survey was made in October, 1937, for the purpose of locating one signal and identifying one triangulation station. No topographic detail is shown; only control appears on this sheet. All information is shown on T-5580.

T-6562a

- (1) T-6562a was made for the purpose of:
  - (a) Locating the H.W.L. on the flat sand beach of Oregon Inlet and the outer coast between Lat.  $35^{\circ} 46.1'$  and Lat.  $35^{\circ} 49.1'$
  - (b) Locating signals for the hydrography.
- (2) T-6562a was made in October 1937, whereas the photographs were taken in July, 1937. Because T-6562a is more recent and because the shoreline on the sand beach could be more accurately located by planetable, the sections of H. W. L. and the L. W. L. as given by this survey have been accepted in preference to that of the photographs and are shown on T-5580 and H-6228 (the contemporary hydrographic survey).
- (3) All detail on this graphic control survey is now shown on T-5580, except:

- (a) A short section of H.W.L. at Latitude  $35^{\circ} 46.5$ , Longitude  $75^{\circ} 31.6'$  and at Latitude  $35^{\circ} 47.5'$ , Longitude  $75^{\circ} 33.05'$ . At these two places, the photographic representation of H.W.L. was considered the more accurate.
  - (b) Certain hydrographic and topographic stations.
  - (c) Magnetic declination.
- (4) T-5580 (the air photo survey) has been carefully compared to and corrected against the photographs, the above graphic control survey, and the recent hydrographic surveys. In case of any difference between the above graphic control survey and T-5580, the latter should now be taken as correct.
- (5) The following omissions have been noticed on the above graphic control survey: T6562a:
- (a) Altho there were a number of recoverable objects located by this survey, no forms 524 were submitted. The triangulation is not so closely spaced but that several described stations would have been advantageous.
  - (b) None of the natural objects located for use as signals carry a descriptive legend on the graphic control sheet or were explained in the report. Example: station Tow, Chim, Run, Peak, Gab etc. are prominent natural objects which could be identified only by a position comparison with T-5580. There are other natural objects located which could not be identified at all, such as station HOW, which is probably a point of a large building on Duck Island.

T6562b

No detail, only control, appears on this survey. All information within the area of T5580 is shown on T5580 except :

- (a) Certain undescribed H & T stations.
- (b) Magnetic declination.

Comparison with Previous Topographic Surveys.

T-354 (1849) 1:20,000  
T-791 (1860) 1:20,000  
T-2951 (1909) 1:20,000  
T-3538 (1915-16) 1:40,000.

Because the scale of T-5580 is 1:10,000 whereas the above surveys were made on 1:20,000 scale or smaller, and because of the enormous amount of change to which this area is subject, it is considered that a detail comparison would be of no purpose. However the above surveys have been examined in connection with T-5580 and the later survey has been found adequate to supersede them.

Comparison with Recent Hydrographic Surveys

Comparison with Recent Hydrographic Surveys

H-6228 (1937) 1:10,000

(1) There is no conflict between the soundings shown on the above hydrographic survey and the topographic detail on T-5580 except as follows:

(a) Latitude  $35^{\circ} 49.1'$ , Longitude  $75^{\circ} 34.5'$ , on West side of Cedar Island, a 2 ft. sounding comes within the H.W.L. The adjustment in tracing the detail from the photos was examined and found correct on T-5580. The photos are clear and the shoreline appears definite. The sounding should be moved slightly to the west. Hydrographic reviewing section advised.

(2) See the following paragraph <sup>"Low Water Line"</sup> REMARKS for a discussion of the source of the L.W.L., on T-5580.

Comparison with Charts

Chart 1229 (plate corrected to 5/28/37) scale 1:80,000

(1) There are large shoreline changes, (the result of wave action.)

(2) Changes in landmarks and houses have been submitted from the field in Chart Letter 58 (1938).

(3) The canal or road running S.W. <sup>from</sup> of Oregon Inlet C.G. is no longer in existence.

(4) All changes made in T5580 during the review have been completed prior to its application to the charts.

Landmarks

(1) All landmarks were located by triangulation or planetable.

(2) The landmarks for the area covered by T-5580 were submitted with Chart Letter No. 58 (1938). All of the landmarks recommended therein, that come within the area, appear on T-5580.

Low Water Line

(1) The L.W.L. on the outside coast between Latitude  $35^{\circ} 46.1'$  and Latitude  $35^{\circ} 49.1'$  is from G.C.S. - T-6562a. It was transferred in the Washington Office.

(2) The L.W.L. on the outside coast, other than that mentioned in (1) above, was taken from the photographic appearance only. It forms a satisfactory junction with that obtained by planetable in (1) above. This was drafted in the field office.

(3) The approximate L.W.L. of the shoals on the inside (includes all <sup>L.W.L.</sup> not mentioned in (1) and (2) above,) was taken from the photographs used in conjunction with the contemporary hydrographic sheet H-6228. This approximate L.W.L. has been delineated with a single row of dots; and supplements the sections of L.W.L. determined by the hydrography.

#### Changes Made in the Office

Practically no field inspection notes were made on the photographs for T-5580 nor was any information given in the descriptive report as to who made the field inspection, at what date it was made, and how thoroughly it was made. Much of the area is difficult of interpretation. H.W.L. on the wide sand beaches of the outer coast is particularly difficult to determine without careful examination on the ground and reference measurements. The details of the marshes and low <sup>on the main islands</sup> areas <sup>and south</sup> north of Oregon inlet are also difficult to interpret.

The following changes and additions have been made in the drawing during the office review. Changes in items of doubtful interpretation have been made from a careful study under the stereoscope. Lt. Finnegan, who did the hydrography, examined T-5580 in Washington while it was being reviewed and corrected. He had definite knowledge of the items which are marked\*, and verbally substantiated the present representation.

#### Additions

1. Three triangulation stations.
2. One topographic station from T-6562a, landmark.
3. Clubhouse and trail thereto.
4. New sand fences from T-6562a.
5. Approximate L.W.L. inside inlet from a study of the photographs in conjunction with the hydrographic surveys.

(No instructions were issued regarding item 5 and it was not expected that this be accomplished in the field.)

#### Changes

1. H.W.L. and L.W.L. changed to agree with T-6562a in area covered by that survey (minor exceptions noted elsewhere in this review). This has been done because T-6562a is of a later date, and as far as is known in the office, the field inspection was incomplete for this part of H.W.L. on T-5580.

\*2. Tree symbols north of Oregon inlet changed to give effect of predominating bush.

3. Dotted line between <sup>low sand flats</sup> plots and higher sand ridges changed to indicate the change in elevation of the ground.

\*4. The trail symbol changed to double dashed line for those roads desirable for charting. The trail symbol shown by the field party was in accordance with

usual practice in the past. The change was made because roads shown by a single dashed line are not ordinarily charted.

5. Remaining trail symbols made lighter.
6. The sections/<sup>of</sup>shoreline around the partially flooded marsh at latitude  $35^{\circ} 49'$ , longitude  $75^{\circ} 33.5'$  were entirely removed and the marsh shown by symbol only. The sections of shoreline were not incorrect but were difficult to interpret as drawn, and were of little value.
7. From Latitude  $35^{\circ} 46'$  to the south end of the sheet, and from Latitude  $35^{\circ} 49.5'$  to the north limit of the sheet, some change has been made in ~~the interpretation of the interior limits of marsh, and the line of change~~ <sup>between the</sup> ~~from marsh to higher~~ (grass covered sand)
- \* 8. Duck Island - All of Duck Island was added in the Washington office, altho it was far out on the wings of the photographs. It was desired because the contemporary hydrography surrounded it and the last survey showing this island was made in 1916 on a scale of 1:40,000 whereas the recent hydrography was ~~done~~ on the 1:10,000 scale.

Fairly good intersections could be obtained from the photos for the east shoreline and this has been shown with a solid line; however the west part of the shoreline is approximate only, as indicated by the broken line. The gables of the 2 buildings shown on Duck Island were located by planetable (T-6562). The outlines of the buildings were added from the photos, upon review.

#### ACCURACY

No statement of accuracy is given in the report but from a review of the sheet it is believed that a probable error of 6-8 meters obtain; except for the west side of Duck Island where the probable error is 10-15 m.

#### Additional Work

It is suggested that when the next survey is made in this vicinity the following items not definitely established by this survey receive attention:

- (1) A more accurate determination of the shoreline of Duck Island and the outline of the houses thereon.
- (2) A check on the interpretation of the areas changed in the Washington Office as noted in paragraph 8, page-5
- (3) A check on the existence of clubhouse at Latitude  $35^{\circ} 45.5'$ , Longitude  $75^{\circ} 31.3'$ .

April 15, 1938

Reviewed by

*J. M. Price*  
*T. M. Price*  
*- B. G. Jones*

Examined and approved:

*Thos B Reed*  
Chief, Section of Field Records

*K. T. Adams*  
Chief, Division of Charts

*K. T. Adams*  
Chief, Section of Field Work  
*Chief, Division of Charts*  
*J. M. L. Powell*  
*Chief, Section of Field Work*  
*Stude*  
Chief, Div. of Hydro. and Topog.

Remarks

Decisions

1		<i>see H-6228</i>
2		<i>USGB decision</i>
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6		<i>see H-6228</i>
7		<i>USGB decision</i>
8		<i>see H-6218</i>
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11		<i>see H-6228</i>
12	<i>Out side limits of sheet</i>	
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GEOGRAPHIC NAMES  
Survey No. T-5580

Name on Survey	Source of Name											
	A	B	C	D	E	F	G	H	K			
<u>Oregon Inlet</u>	✓											1
<u>Bodie Island</u>	✓											2
<u>Cedar Island</u>	✓	T-354										3
<u>Cedar Point</u>	✓	T-354										4
<u>Cutoff Island</u>	✓	The Cutoff T-354										5
<u>Walter Slough</u>	GNS											6
<u>Pamlico Sound</u>	✓											7
<u>Roanoke Sound</u>	✓											8
<u>Bild Island</u>	✓											9
<u>Green Island</u>	✓	T-791										10
<u>Davis Slough</u>	GNS											11
<u>Garr Island</u>	✓	T-791										12
<u>Duck Island</u>	✓											13
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Names underlined in red approved											24	
by <u>SHE</u> on 3/30/38											25	
												26
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