

5206

U. S. COAST & GEODETIC SURVEY
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Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

R. S. Patton, Director

State: South Carolina

DESCRIPTIVE REPORT

Photo

Topographic

~~Hydrographic~~

Sheet No. 5206 5206

LOCALITY

SOUTH CAROLINA-

~~Coccosaw River-vicinity of Morgan~~

~~Island, south coast of South~~

~~Carolina. WEST OF ST. HELENA SOUND~~

~~IN MORGAN ISLAND~~

19 34

CHIEF OF PARTY

Lieut.(j. g.) S. B. Grenell

5206

Applied to Chart 794 Sept 30 1935 - H. MacEwen

Applied to Chart 838 Nov, 1935 - W. A. Bender

Applied to Chart 793 February 12, 1936 - H. MacEwen

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 5206

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. 5206 5206

State South Carolina

General locality West of St. Helena Sound
South coast of South Carolina

Locality Cecaw River vicinity of Morgan Island

Scale 1:10,000 Date of Photographs 10/25/33
Date of ~~survey~~ Comp. June, 19 34

Vessel

Reviewed and recommended for approval
Chief of party Lieut. (j.g.) S. B. Grenell

Photographs plotted by: F. B. Hickman
~~Successor by~~

Inked by Bryan Williams Jr.

Heights in feet above to ground to tops of trees

Contour, Approximate contour, Form line interval feet

Instructions dated November 10, 1933, 19

Remarks: Compilation of aerial photographs Nos. (807)M27 to M32
(807)M48 to M51

GENERAL REPORT
for
SINGLE LENS-AERIAL PHOTO TOPOGRAPHIC SHEETS

Nos. 5206 to 5235 Inc.

Scale 1:10,000

The purpose of this report is to cover all of the general information contained in the regular Descriptive Report which accompanies each sheet and thus make unnecessary a great deal of repetition as the individual sheet reports are written.

FIELD INSPECTION:

All of the field inspection of photographs was carried on by the regular office personnel. The equipment consisted of one light truck and one chartered launch with two bateaus equipped with out-board motors.

The permanent launch personnel consisted of one engineer-cox'n and one deck hand. In addition to this, four draftsmen from the office were assigned to the launch each trip, which was generally for one week. These four men were picked in rotation from twelve of the draftsmen and two of them were changed each week; leaving two men to carry on from the last stations and two to come into the office and transfer to the photographs those stations which they had personally inspected. Two separate inspection parties of two men each worked from the launch each day. The truck inspection party consisted of two men.

It will be noted that, under the system of rotation noted above, it would be impossible for any one man to write a complete field inspection report for each sheet. Therefore, the field inspection section of the descriptive reports will be written by the chief of party from notations on the photographs made by the men on field inspection and from information gained from these men through office discussions of the photographs.

From St. Helena Sound to Brunswick, Ga. the single lens flights fall within the area covered by the 5-lens photographs. When field inspection was first begun, the single lens prints had not arrived at this office so a great deal of the field inspection was done on the 5-lens prints. This will explain the apparent lack of adequate field notes on the single lens field prints.

Many of the control stations along the Inside Route are located on the extensive salt marsh which borders this route. These stations are particularly difficult to "tie in" accurately on the photographs due to the lack of sharply defined features which will appear on the photographs. This made the field inspection very difficult, and, in case of some stations, of questionable accuracy. This fact should be kept in mind when the sheets are reviewed in the office and it is found that a control station plotted on some photographs will not hold the radial plot. Most of these questionable stations were re-

inspected but that often failed to assure a correct location on the photograph. This was particularly true where the original inspection was made on a 5-lens print.

GENERAL DESCRIPTION OF TOPOGRAPHY:

Throughout the area covered by these sheets the general characteristics of terrain remain the same. The outer coastline is formed by a series of long low islands generally heavily wooded and separated by numerous inlets and sounds. The area immediately behind these islands, and extending in to the mainland, consists of a broad expanse of salt marsh separated into numerous islands by a network of narrow twisting channels. On these marsh islands sometimes appear small areas of low, fast land which support various types of vegetation, palmetto, brush, pine, oak, etc. These small islands have a ground elevation which is seldom more than 10 feet above high water. Some of the larger coastal islands have varying elevations of twenty or thirty feet in places. These are generally old dune formations now heavily wooded.

VEGETATION:

The larger islands and the mainland - except where cleared - are in general heavily wooded with live oak and pine, the live oak predominating. The smaller islands and hammocks have a larger percentage of low trees and brush with a fringe of scattering tree palmettos and an underlying carpet of tropical growth-scrub palmetto, spanish bayonet, cactus, etc. The oak and pine, however, predominate.

The salt marsh grass grows in either isolated clumps or in dense masses. This grass is in general about waist high but in some sections, particularly around the Savannah River, it reaches a height of 8 to 10 feet during the summer.

TOPOGRAPHIC SYMBOLS:

The standard symbols listed in the topographic manual were used throughout the sheets. The photographs have been carefully studied in the office and these symbols⁵²⁸ in such combinations as will give to the completed sheets an appearance which approaches as closely as possible the actual conditions. It is the desire of the writer to call particular attention to the following features which are peculiar to this section of the country.

A. High Water Line:

In general, a high water line means the point where mean high water touches solid ground. In the area covered in this report that condition seldom exists, because most of the channels are bordered by salt marsh. This marsh grows on low mud banks which in general are bare only at the lower stages of tide. In such cases it is the practice to draw in the high water line along the edge of the marsh because at high water, although the land is actually covered, the tops of the marsh grass show the edge of the channel. In general this is perfectly correct because the grass grows to a definite line where the land drops off steeply into deep water but in some cases the slope of the bank has an appreciable width, and, where the grass covering this slope thins gradually to the water's edge, it is very difficult to determine from the photographs just where the channel edge should be. This is especially true when the pictures were flown at half tide or better.

In some sections the marsh borders of the channels are not continuous and in such cases it is impossible to show a continuous high water line as is the general custom. In these areas the high water lines have been broken in such a way as to indicate as nearly as possible the actual marsh formation. Behind these breaks in the high water, where the marsh is not continuous, the marsh lines have been broken to show the mud flat symbol with scattering tufts of grass. In some sections, especially along the lower reaches of the Savannah and Ogeechee Rivers, the marsh formation has been modified by extensive rice plantations now abandoned. Although these areas are no longer planted to rice, the old dikes and canals remain more or less intact and form a definite topographic feature. The larger canals have been shown as a double, solid line, the ditches as single line. The high embankments along the main drainage canals have been shown as parallel lines of round dots. This symbol was used in preference to the regular hachure symbol because the latter would exaggerate too greatly the width of the embankments. The same symbol has been used to indicate abandoned railway embankments across the lowland and marsh.

In places where the marsh has thinned out to mud flats bare at low water, which are covered with scattering clumps of marsh, the marsh line symbol has been out or broken to show intermittent mud and marsh. This condition exists on nearly every sheet.

In the few sections, where palmetto is sufficiently prevalent to be indicated on the sheets, the palm symbol has been used. This was done because the greater part of the palmetto is of the tree type—that is a sort of palm growing fifteen to twenty feet high. The scrub palmetto exists merely as an undergrowth of secondary importance.

In some sections the channels separating the marsh islands spread out to a considerable width with poorly defined outline due to the broken character of the marsh. These sections of the channels are generally shoal with large sand banks partly bare at low water. When the pictures were taken at or near low water the outlines of these sand banks are often sharply defined and in such cases these outlines have been shown with a single line of sand dots. This symbol is especially valuable in that it generally indicates the trend of the channel through these areas.

Street, road and railway lines have been exaggerated in width so that they will remain distinct when reproduced by the photo-lithographic process. Small buildings and structures have been shown as nearly true to shape and size as possible but in some cases these too are slightly over size.

CONTROL:

With the exception of a few cases, which will be taken up on the individual sheet reports, the radial plot was controlled by first, second, and third order triangulation and traverse of third order triangulation accuracy. Various triangulation schemes exist within the limits of this work dating as far back as 1853 to the present date. Most of the recoverable stations of the old schemes have been coordinated with the more recent control so the greater part of the triangulation can be considered as up to date. The following is a list of the more important schemes executed in recent years.

C. A. Egner, Natoma, 1931 Beaufort to Calibogue Sound.
 C. A. Egner, Natoma, 1933 Beaufort to St. Helena Sound.
 C. M. Durgin, 1932-1933, Revision, Savannah, Ga. to Jacksonville, Fla.
 C. D. Meaney, 1932, First order coastal arc.
 H. C. Warwick, 1932, First order coastal arc.
 C. M. Durgin, 1933-1934, Second order break down schemes, Savannah.
 C. A. Egner, 1934 Third order breakdown-Savannah - Sapelo Sound.

The up to date descriptions and well marked stations of the schemes noted above made the field inspection relatively easy. In fact, many of the stands were still over the stations occupied by Durgin in 1933 and in a few cases these structures could be identified on the photographs thus giving a very accurate location of the control point.

In running the aluminum control sheets on his present project, Lieut. Egner found it necessary to put in additional triangulation for adequate control of the sheets. In some cases this control was available to the photo-topographic party but much of it came too late - that is, the photo topo sheets were partially completed when the control was put in. This was sometimes unfortunate because the radial plots were run in on a minimum of control when the later control would have been of great value in holding the plot.

Another difficulty was encountered where beacons, which had been located by Durgin in 1932-33, were used. Many of these beacons along the Inside Route had been moved and this caused considerable confusion in the plot, especially when they had been moved such a short distance that there could be no certainty of the fact. These beacons were all cut in on aluminum control sheets by the field parties but the new positions were not available until the plots had been run. It was impossible to hold up the sheets for the corrected positions of the beacons because the field parties executing this control were anxious to get the shoreline if possible before the hydrography was run.

There were five field parties working in the area covered by these sheets-Lieutenants Rittenburg, Egner, Odessey, Bond and Paton- and it was impossible to get all of the latest information to date from all of them.

METHOD OF PLOTTING:

The standard radial-line method of plotting was used on all of these sheets. The plots were carried through continuously from sheet to sheet by matching the projections and securing the sheets together temporarily with scotch cellulose tape.

As soon as the field inspection party had transferred the control to the contact prints, a careful scale plot was run on clear celluloid and the enlargement factor determined. The necessary information was forwarded to the U. S. Army Air Corps and the enlargements received from them were for the most part true to scale and fairly clear as to detail. In three cases only were the enlargements out of scale in excess of one percent.

All radial plots were adjusted as closely as possible before being turned over to the tracers and the resulting shoreline checked excellently with the hydrography which was controlled independently from the photo-topographic sheets.

STAGE OF TIDE:

The photographs for the single lens sheets were flown at every stage of tide from extreme low water to extreme high water. In listing the time, date and stage of tide of photographs in the reports for the individual sheets it will be noted that the stage of tide is listed as a fraction ($2/6$, $4/7$, etc.). The numerator is the height of tide at the time the photograph were made and the denominator is the range of tide. It is the belief of the writer that this method gives the best idea of the actual tidal condition for interpretation of topographic detail.

Respectfully submitted,


S. B. Grenell

NOTES ON COMPILATION

One copy of this form must accompany each chart from beginning to completion. The last draftsman, whose name appears on this form, is responsible for it and all personnel will endeavor to keep these forms up to date and correctly posted. This form is very important inasmuch as the final Descriptive Report of the Chart compiled is based upon the information contained herein.

SHEET NO. 5206
 (807)M27 (807)M32
 PHOTO NO. (807)M48 TO PHOTO NO. (807)M51

	BY	START	FINISH
ROUGH RADIAL PLOT			
SCALE FACTOR()			
SCALE FACTOR CHECKED	<u>S.B. Grenell</u>		
PROJECTION	<u>A. A. Futral</u>	<u>3/14/34</u>	<u>3/14/34</u>
PROJECTION CHECKED	<u>F.B. Hickman</u>	<u>3/19/34</u>	<u>3/19/34</u>
CONTROL PLOTTED	<u>F.B. Hickman</u>	<u>3/19/34</u>	<u>3/19/34</u>
CONTROL CHECKED	<u>J.C. Partington</u>	<u>3/19/34</u>	<u>3/19/34</u>
TOPOGRAPHY TRANSFERRED			
TOPOGRAPHY CHECKED			
SMOOTH RADIAL LINE PLOT	<u>F.B. Hickman</u>	<u>3/19/34</u>	<u>5/30/34</u>
RADIAL LINE PLOT CHECKED	<u>S.B. Grenell</u>	<u>5/30/34</u>	<u>5/30/34</u>
DETAIL INKED	<u>Bryan Williams Jr.</u>	<u>6/7/34</u>	<u>6/27/34</u>
AREA DETAIL INKED	<u>11.5</u>	sq. Statute Miles	
LENGTH OF SHORELINE OVER 300 m.	<u>20.0</u>	Statute Miles	
LENGTH OF SHORELINE UNDER 300 m.	<u>32.4</u>	Statute Miles	
GENERAL LOCATION	<u>South coast of South Carolina</u>		
LOCATION	<u>West of St. Helena Sound</u> <u>Coosaw River vicinity of Morgan Island</u>		
DATUM STATION	<u>Parrot 2 1933</u>	Latitude <u>32° - 28' + 767.9 m</u>	
	<u>N.A. 1927 datum</u>	Longitude <u>80° - 32' + 935.5 m</u>	

7 (1)
Page 7

FIELD INSPECTION REPORT

SHEET No. 5206

REFERENCE:

See General Report on Field Inspection attached ^{pages 1 to 5.} to the sheet.

GENERAL INFORMATION:

This sheet consists mainly of marsh areas adjoining the Coosaw River and connecting streams. This marsh is of the type encountered throughout this section of the coast and is thoroughly described in the general report of above reference.

The fast land areas of Morgan Island are clearly indicated by symbol. This land is low-only a few feet above high water-and is covered with a dense growth of deciduous trees except where indicated as sand flats. These sand flats are generally so low that they are covered on the storm spring tides.

The solid shoreline follows the edge of the dense marsh growth along the streams. In some sections this marsh high water line has a secondary line outside shown ^{by Mud and Marsh symbol} as a dotted or low water line. The area between is in general a mud or sand and mud flat which covers at high water but which supports a scattering growth of low marsh grass, the tips of which do not cover except on the extreme high tides. This intermediate area is shown with a broken marsh line to indicate scattering marsh or mud flats.

CONTROL:

The radial plot of this sheet was controlled entirely by triangulation established by Lieut. C. A. Egner in 1933.

There was no supplementary topographic control.

LANDMARKS FOR CHARTS:

A list of landmarks for charts, form 567, was submitted by the Commanding Officer, M. V. Natoma, 1934.

COAST PILOT NOTES:

Coast pilot notes were submitted by the Commanding Officer, M. V. Natoma, 1934.

LIST OF NAMES:

All names appearing on this compilation were taken from current issues of charts. *Names agree with the charts*

and no new names are shown B.G. Jones

Respectfully submitted,

S. B. Grenell
S. B. Grenell,
Chief of Party

REPORT OF COMPILATION

COMPILATION METHOD:

This sheet was compiled by the standard radial line plot method.

ADJUSTMENT OF PLOT:

Photostatic copies of this sheet were sent to Charleston, S. C. A small error found in the shoreline, at the junction on the Combahee River has been corrected. The remaining junctions were correct for all adjoining sheets.

INTERPRETATION:

The photographs were clear with the exception of a few pictures at the east end of the sheet. No great difficulty was experienced in interpreting the photographic detail.

Only the usual graphic symbols were used. The stereoscope was used to pick up as accurately as possible a definite line between the wooded hammocks and the marsh.

All mud covered at high tide has been shown with a broken ~~shore~~ and marsh line. This was done in order to show the mud and to give a true high water line.

INFORMATION FROM OTHER SOURCES:

The photographs were the only source of information.

COMPARISON WITH OTHER SURVEYS:

Junctions with other sheets are complete and satisfactory.

ACCURACY AND COMPLETENESS:

The area covered on this sheet is complete in every detail. As nearly as can be determined from the photographs, all well defined detail is located with a probable error of not more than 4 meters; less well defined detail with an error not more than 10 meters.

PHOTOGRAPHS:

	No.	to	No.	Date	Time	Stage of tide
(807)	M27		M32	10/25/33	11:00	3/7
(807)	M48		M51	10/25/33	11:00	3/7

J. B. Williams Jr.
J. B. Williams, Jr.,
Draftsman.

Approved:

S. B. Grenell
S. B. Grenell,
Chief of Party

REVIEW OF AIR PHOTO COMPILATION NO. 5206

Chief of Party: S. B. GRENELL

Compiled by: J. B. Williams, Jr.

Project: F.P. 4, Ga. - Party #18

Instructions dated: Nov. 10, 1933

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 changes* ✓
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) *No supplementary information. The plane table surveys mentioned in the review at the lock were evidently not examined by the compilation party.* ✓
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) *None* ✓
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 review at the lock.* ✓
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) ✓
*No recoverable objects on this sheet.
added in the field office. See review at back.*
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) ✓
Lists of landmarks furnished by field hydrographic parties.
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) ✓
No bridges on this sheet.
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) ✓
No new names.
13. The geographic datum of the compilation is *N.A. 1927* and the reference station is correctly noted. ✓ *unadjusted positions used.*
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.
- 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:

It is believed that all detail shown on this sheet is self-explanatory

18. Examined and approved;

8/20/34



Chief of Party

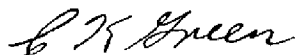
19. Remarks after review in office:

see following page.

Reviewed in office by:

B.G. Jones

Examained and approved:



Chief, Section of Field Records



Chief, Division of Charts



Chief, Section of Field Work



Chief, Division of Hydrography and Topography.

REVIEW OF AIR PHOTO COMPILATION NO. 5206 (1934)

Comparison with other Surveys: The contemporary planetable surveys in this area show only a few short sections of shore line and location of signals for Hydrography.

1. T-6093 **b** (1934): This survey shows a 200 meter section of shore line at lat. 32°27', long. 80°29' which differs by about 50 meters from the compilation. This difference is due largely to a difference in the interpretation. The compilation shows a strip of grass Outside of H.W. for reasons explained on pages 2, 3, and 7, of the preceeding descriptive report. The compilation has not been changed ~~as, in any case~~ the planetable shoreline was not carried to a junction.

2. T-6094 **b** (1934) : This survey also shows several short sections of H.W. line which differ with the compilation for the same reasons given in paragraph 1 above. The compilation has not been changed.

③ GOL, described on Form 524, filed under T-6094 h (1934), has been transferred to the compilation in this office.

3. T-6095 **b** (1934) : ^{"AL"}~~AL~~, described on Form 524 filed under T-6095 **b** has been transferred to the compilation in this office.

4. Comparison with T-996 (1865) and with charts 1240 and 435 show numerous small changes in detail of the H.W. line and large changes at the S.W. end of Morgan I. The N.W. end of Morgan I. on this compilation does not show completed H.W. line as does T-996, but the compilation no doubt gives a better representation of actual conditions. The compilation is adequate to supersede T-996.

B. G. Jones