

5116

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

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

Director

State: Georgia

DESCRIPTIVE REPORT

Topographic } Sheet No. 5116  
Hydrographic }

LOCALITY

Georgia

Ogeechee River  
~~Atlantic Coast~~

Murtle Grove  
~~Ogeechee River~~

1935

CHIEF OF PARTY

S. B. Grenell

U. S. GOVERNMENT PRINTING OFFICE: 1923

5116

GENERAL REPORT  
for  
FIVE LENS - AERIAL PHOTO TOPOGRAPHIC  
COMPILATIONS

Nos. 5113 to 5138

Approximate Scale - 1:20,000

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 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 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.

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.

On the "inland" strip of sheets, a great deal of the inspection was carried on by truck. This was particularly true of the traverse along the S. A. L. R.R. and the main scheme of stations of the first order arc. These latter stations were widely spaced and every effort was made to tie them in accurately because so great an area depended for control on these stations. Wherever

possible, long measurements were made by computing a scale factor for the tie points and all of the ties were plotted and checked before leaving the station.

As noted later under "CONTROL", it was necessary to run a great deal of traverse between triangulation stations in order to secure sufficient control points to hold the radial plot. These traverses were run along the highways and such points as road intersections, bridges, center lines of ditch intersections etc. were selected and tied into the traverse. These points invariably proved to be excellent control because they were carefully selected for their clearness and the ease with which they could be tied in and checked.

#### GENERAL DESCRIPTION OF TOPOGRAPHY:

Sheets Nos. 5135, 5134, 5113, 5115, 5117, 5120 and 5123 extending along the coast in the order listed from Broad River, (S. C.) to the vicinity of Brunswick, Ga., cover the same general area as the single lens, 1:10,000 sheets of the Inside Route Nos. 5211 to 5224 inclusive. In reviewing the 5-lens sheets listed above reference should be made to the paragraph under this same heading which appears in the General Report for Single Lens Sheets and which reads as follows:

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 <sup>behind</sup> 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 supports various types of vegetation, palmetto, brush, pine, oak etc. These small islands have a ground elevation which is seldom more than ten feet above high water. Some of the larger coastal islands have varying elevations of twenty or thirty feet in places. These are generally old dunes formations now heavily wooded. X

The western or "inland" row of sheets includes the balance of the 1:20,000 series. These sheets join either the single lens sheets or the 5-lens coastal sheets listed above and extend inland to the limits of the photographs. The greater part of the area on these sheets is mainland, although some of the larger sounds and rivers extend well into the sheets.

The whole coastal area covered is very flat and of uniform characteristics as to soil, vegetation, drainage etc. There are few points of elevation over 20 or 30 feet and where such elevations occur along streams the resulting cut banks have been carefully indicated.

#### VEGETATION:

The salt marsh areas on all of these sheets are very uniform in character. The ground area ~~in general~~ covers on the

spring tides but the outline is distinctly indicated by the dense growth of marsh grass. The grass varies in height from two or three feet to as much as eight or ten feet in some sections. The higher grass is generally found along the main rivers such as the Savannah, Ogeechee and Altamaha and especially in those sections once devoted to rice growing.

This marsh is generally clean out along the main waterways and channels and gives a definite line for channel delineation. However, in some places the grass gradually thins out at and, when the pictures are taken at or near high water, the channel line becomes indefinite. This has been observed several times when such "shoreline" has been rodged in on field topographic sheets and later compared to photo compilations with evident discrepancies. These discrepancies, when discussed with the field topographer, have proven to be a matter of interpretation rather than an actual error in the plot. When the difference is slight and a careful check indicates that the discrepancy is due to interpretation, rather than plotting error, the original compilation is left uncorrected because in many cases it appears that the detail is more correct as taken from the photographs. This can be easily explained when it is understood that much of the shoreline was rodged in from topographic setups in soft mud where the topographer was forced to sight over the marsh grass and sketch in the detail between rod readings without actually seeing such detail. X

Advancing inland the land elevation rises slightly and the character of the soil and vegetation changes. Large, flat sand areas appear supporting a more or less dense growth of young seedling pine. There are many stands of mature timber still remaining but much of the area has been either logged or burned over and has come up in a varied second growth.

There are large swamp areas with considerable cypress but the predominating growth, except in the deeply flooded areas, is a mixture of gum and various other deciduous trees. There is very little scrub palmetto or palm except along the coastal section and along the larger rivers and this is scattering.

#### 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 symbols 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 lower stages of the tide. In such cases it is the practice to draw in the highwater 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 cases 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 line has 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 expansive 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 lines. The high embankment 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. X

In some places where the marsh has been thinned out to mud flats, bare at low water, and covered with scattering clumps of marsh, the marsh line symbol has been broken or out 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.

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

In filling in the vegetation on the "inland" sheets south of the Ogeechee River, an interesting feature developed. This area has been pretty thoroughly logged over and some sections have been burned over as well. Due to the swampy conditions along the smaller tributary streams the fire did not destroy the timber in these areas. Also the logging operations did not include the low areas bordering these streams with the result that a narrow dense band of timber marks these depressions. When viewed as a whole on the completed sheet these ~~marks~~ carefully inked in sections show very clearly the entire drainage system of the area covered by the sheet.

In several sections clearings for telephone and transmission lines have been made through the dense timber paralleling the rail-roads and highways. These cleared transmission lines as well as fire breaks, have been carefully indicated by breaking of the tree symbols along a clean cut line.

In many sections where logging operations have been carried on, the roadbeds of the narrow gauge tram roads show clearly on the photographs. Where these lines have been abandoned the old roadbed still remains as an important feature and has been shown by a double line of fine dots. Where the tracks still remain and are in use the standard railroad symbol has been used with the word "TRAMROAD" on the overlay sheet.

In the dense swamps where there is a large percentage of cypress this tree can be distinguished by a shading in coloration and gives a fairly accurate indication of the area actually flooded. Such areas have been indicated by the standard cypress swamp symbol. The swamps which are not flooded except during the very wet seasons are covered by a mixed growth, principally gum, and are merely shown as heavily wooded with the deciduous tree symbol.

#### 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 back as far 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:

Melvin E. Lutz	1918	Traverse along S.A.L. R.R. south of Savannah
C. A. Egner, Natoma,	1931	Beaufort to Calibogue Sound
C. A. Egner, Natoma,	1933	Beaufort to St. Helena Sound.
C. M. Durgin, 1932-33,	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, 1933-34		Second order break down schemes, Savannah, Ga.
C. A. Egner, 1934		Third order breakdown-Savannah-Sapelo Island.
H. A. Paton, 1934		Third order extension - south of Brunswick, Ga.

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 points.

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 latter control would have been a great value in holding the plot.

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.

The "inland" row of sheets follows more or less closely the main scheme of the first order arc. These stations are generally located along the main highways and were easy to tie in on the photographs, however, they were so widely spaced that they alone were sufficient for accurate control of the radial plots. x

From Savannah south-ward to Brunswick a traverse executed in 1918 along the S. A. L. R. R. supplemented the first order arc and furnished the necessary control. From Brunswick south, however, it was necessary to run in considerably third order traverse between first order triangulation stations in order to secure additional control points. Several such traverses were run in on other sections of the work other than the area noted above.

The control in this area, south of Brunswick, was so widely spaced that several sheets had two or three stations only within tracing limit and one sheet, No. 5126, had not one single control station within the tracing limit until two loop traverses were run in by this party.

The state C. W. A. programs included running in traverse along the highways, much of which would have been of value to this party had it been possible to secure the positions as needed but much of their observing was incomplete and no final position computation had been made so it was necessary for the Chief of Party to run in his own control.

The control points were tied in to the photographs as the field work progressed but no effort was made to permanently mark any of the tie points. The traverses were all tied in at both ends to triangulation and the computations carried through from station to station. All closures were within third order triangulation accuracy. Approximately 151 miles of such traverse was run in during 1934.

#### SHEET JUNCTIONS: -

Before the present Chief of Party arrived in the field, Lieut. (j.g.) M. H. Reese had laid out a system of 5-lens sheets along the coast south of Savannah. Work on five of these sheets was begun immediately and had progressed to the detail stage when the first shipment of single lens, 1:10,000 prints of the inside Route arrived. Work was abandoned on the 5-lens, 1:20,000 sheets and then the single lens sheets were completed. These single lens sheets cut approximately through the center of the 5-lens system already begun thus necessitating the removal or alteration of detail on ~~about~~ the 5-lens sheets due to the fact that a great deal more detail appeared on the larger prints.

One 5-lens sheet, No. 5113, was completely done over and the remaining four sheets have been partially "erased" to show the

area which is to be taken from the 1:10,000 sheets. This caused considerable delay in completing and adjusting junctions on both systems.

Since the construction of the enlarging and reducing projector in this office, the labor of making complete and accurate junctions between flights of different scale has been materially reduced.

However, the photostat reductions of the 1:10,000 sheets, made early in the season for later junction detail with the 1:20,000 sheets, have caused considerable trouble because these photostats are seldom true to scale and are generally badly distorted along the edges where the greatest accuracy is required in joining sheets.

PLOTTING METHOD: -

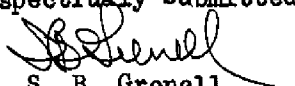
The standard radial line method of plotting was used on all sheets. Where the scale factor was the same, the sheets were joined together temporarily with cellulose tape and the plots run through continuously from sheet to sheet. Where the scale factor differed the plot was carried to the edge of the celluloid; then the radial points on the overlap were transferred proportionately by either proportional dividers or by use of the projector and the plot carried on from these points common to the two celluloid sheets.

After the radial point circles were placed on the back of the sheet the plot was inspected by the Chief of Party and when approved the cuts were removed from the face of the sheet.

STAGE OF TIDE: -

The photographs for the 5-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 photographs 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,  
Chief of Party #18

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. ....

REGISTER NO. 5116

State Georgia

General locality Ogeechee River  
Georgia - Atlantic Coast

Locality Ogeechee River Myrtle Grove

Scale 1:20,000 Date of Photographs 6-28-33 & 9-22-33  
Date of survey Comp., 19

Vessel Aerial photo compilation party #18

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

Photographs plotted by: F. B. Hickman

Surveyed by: F. B. Hickman

Inked by T. R. Cooper

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 photos Nos.: 20 2  
72 to 73

119  
M-67 106 to 121



--NOTES OF 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 personnell 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. 5116

PHOTO NO. <sup>20</sup>~~736~~ to PHOTO NO. <sup>2</sup>~~738~~  
M-67-106 to M-67-~~121~~

BY

START

<sup>119</sup>FINISH

ROUGH RADIAL PLOT	<u>Warren Fitch</u>	<u>12-20-33</u>	<u>12-21-33</u>
SCALE FACTOR (.933)	<u>A. A. Futral</u>	<u>12-22-33</u>	<u>12-22-33</u>
SCALE FACTOR CHECKED	<u>S. B. Grenell</u>	<u>12-22-33</u>	<u>12-22-33</u>
PROJECTION	<u>J. C. Partington</u>	<u>1-2-34</u>	<u>1-3-34</u>
PROJECTION CHECKED	<u>F. B. Hickman</u>	<u>1-3-34</u>	<u>1-3-34</u>
CONTROL PLOTTED	<u>F. B. Hickman</u>	<u>1-3-34</u>	<u>1-3-34</u>
CONTROL CHECKED	<u>A. A. Futral</u>	<u>1-4-34</u>	<u>1-4-34</u>
TOPOGRAPHY TRANSFERRED			
TOPOGRAPHY CHECKED			
SMOOTH RADIAL LINE PLOT	<u>F. B. Hickman</u>	<u>1-5-34</u>	<u>1-16-34</u>
RADIAL LINE PLOT CHECKED	<u>S. B. Grenell</u>	<u>1-16-34</u>	<u>1-16-34</u>
DETAIL INKED	<u>T. R. Cooper</u>	<u>2-1-34</u>	<u>3-16-34</u>
AREA DETAIL INKED	<u>87</u>	Square Statute Miles	
LENGTH OF SHORE LINE OVER 200m.	<u>56.1</u>	Statute Miles	
LENGTH OF SHORE LINE UNDER 200m.	<u>72.7</u>	Statute Miles	
GENERAL LOCATION	<u>Georgia - <del>Atlantic Coast</del> Ogeechee River</u>		
LOCATION	<u><del>Ogeechee River</del> Myrtle Grove</u>		
DATUM STATION	<u>Ford, 1932</u>	LATITUDE <u>31° - 49' - 35.861(1104.5m)</u>	
DATUM	<u>N. A. 1927</u>	LONGITUDE <u>81° - 12' - 32.409" (852.3m)</u>	

Unadjusted

REPORT OF COMPILATION: -

COMPILATION METHOD: -

This sheet was compiled by the standard radial line plot. The original plot was run through from the Ogeechee River south westward to include all of the Belfast River since the latter section was urgently needed by the field hydrographic party of Lieut. C. A. Egner. After the radial plot was completed and the detail was being traced, Lieut. Egner put in additional triangulation up the Belfast River. In making field inspection of this new control a check inspection was made of station Belfast and it was found to be spotted out of true position on the photographs. Since this was the only station available to hold the radial plot on this section of the sheet the original plot was obviously wrong.

With the new control put in by Lieut. Egner, a new radial plot was run through the questionable area and on into the sheet adjoining on the south, No. 5118. The control was much stronger on sheet No. 5118 so the detail was traced in correctly on this sheet and the questionable sections either corrected or removed from sheet No. 5116. When the second plot was adjusted and the detail traced, a satisfactory agreement was obtained between the photo compilation and the hydrographic and topographic control sheets of Lieut. Egner.

ADJUSTMENT OF PHOTOGRAPHS: -

Photographs Nos. 716 to 733 extend along the southeast border of the sheet. These photographs are the poorest set on the whole project. They were evidently taken on a hazy day and the detail is very indistinct - especially the smaller streams in the marsh areas. Also the overlap between this flight and the adjoining flight to the north westward, Nos. 106 to 121, was insufficient. The small overlap caused considerable difficulty in picking common radial points between flights with the resulting difficulty in adjusting detail. Additional points were located where needed by the "interlacing" method and the shoreline and other definite detail run in as accurately as possible.

Some sections of the 700 flight were so dim as to make it almost impossible to trace out the smaller stream lines. By comparison with field topographic and hydrographic sheets and with the charts and geological Survey quadrangles, it was possible to determine most of the indistinct detail.

COMPARISON WITH CONTEMPORARY SURVEYS:-

Junctions have been compiled and checked with all adjoining sheets.

All shoreline detail from field topographic sheets has been traced on the compilation and checked. The shoreline from the compilation has been projected to the scale of the smooth hydrographic sheets and checked against the fixed position hydrography.

COMPARISON WITH OTHER SURVEYS: -

Very little area covered by this compilation appears on current issues of charts. Such detail as does appear has been checked for such information as landings, docks, roads etc.




The Geological Survey and U. S. Army Tactical maps covering this area are old and very inaccurate. They appear to be reconnaissance sketches only and no comparison could be made for definite detail.

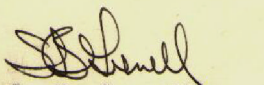
ACCURACY AND COMPLETENESS: -

The detail shown within the tracing limits of this compilation is as complete as could be determined from the photographs. The probable error in definite detail such as roads, streams, canals, etc. is less than 5 meters. The probable error of less well defined detail not more than 10 meters. *See below*

<u>PHOTOS NOS.</u>	<u>to</u>	<u>NOS.</u>	<u>TIME</u>	<u>DATE</u>	<u>STAGE OF TIDE</u>
<del>716</del> 720		<del>733</del> <sup>2</sup>	12:30 P.M.	6-28-33	High Water
M-67 106		<del>121</del> 119	10:30 A.M.	9-22-33	High Water

T. R. Cooper  
Draftsman 

Approved:

  
S. B. Grenell

*The value of 5 to 10 meters given above is too high for work on this scale. A better estimate is an accuracy of location of 5 to 10 meters for intersected points and 5 to 20 meters for other detail.*

*B.G. Jones*



## INSPECTION REPORT

Compilation No. 5116

Scale : 1;20,000

### GENERAL INFORMATION: -

This sheet covers roughly, the area from the Ogeechee River Valley extending south westward to the Belfast River and from a junction with coastal sheet 5115 inland to the Seaboard Air Line Rail Road.

The most important section of this sheet is the Ogeechee River. The area bordering this river, was at one time the principal rice-growing area in this section. An extensive and very elaborate system of canals and embankments was constructed to aid in the irrigation of the rice fields. These rice fields have been long abandoned but the canals and embankment still exist as important topographical features. The detail shows very clearly on the photographs and has been compiled very carefully to show as accurately as possible the actual drainage system.

The Biological Survey is contemplating the purchase of a large section in this area as a bird refuge. Also various private interests are investigating this area for possible development. The soil is the richest to be found in the state.

As noted in the compilers report, some of the photographs of this sheet were very indistinct but the draftsman who compiled the sheet was very familiar with the entire area and was able to ~~interpret~~ <sup>carefully</sup> interpret correctly the important detail.

The symbols have been <sup>carefully</sup> clearly used to indicate clearly the distribution and type of vegetation, extent of marshes and swamps and density and character of wooded areas.

All highways appearing on this sheet are maintained by the county but are unpaved and at certain seasons of the year in poor condition, hence the double dash line.

### CONTROL: -

There are two main scheme triangulation stations of the first order arc, C. D. Meaney, 1932, which have been adjusted to the 1927 datum. There are a series of traverse stations along the S. A. L. R. R. established in 1918 by Melvin E. Lutz. The balance of the control is from coordinating scheme of C. M. Durgin, 1932-33. The last two schemes have been reduced to the 1927 datum by applying Lat. and Long. datum corrections obtained from the first order connections.

There were no topographic control stations used on this plot. The existing control was so widely and inadventagously spaced in relation to the photo flights that considerable difficulty was experienced in running in the plot.

COMPARISON WITH CONTEMPORARY SURVEYS: -

All junctions with adjoining compilations have been run through and checked as well as comparisons made with field hydrographic and topographic sheets executed by Lieut. C. A. Egner as discussed in the compilers report.

LANDMARKS FOR CHARTS: -

Form 567 for the area covered by this sheet has been submitted by Lieut. C. A. Egner, 1934

COAST PILOT NOTES: -

Have been submitted by Lieut. C. A. Egner, 1934.

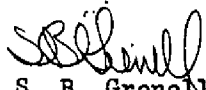
NAMES: -

All names appearing on this sheet were taken from current issues of charts, U. S. Army tactical maps or Geological Survey maps.

BRIDGE DATA: -

The draw, span and clearance for two railroad bridges on the upper Ogeechee River have been indicated on the overlay sheet. *See Review*

Respectfully submitted,

  
S. B. Grenell,  
Chief of Party #18

## REVIEW OF AIR PHOTO COMPILATION NO. 5116

Chief of Party: S. B. GRENELL

Compiled by: T. R. Cooper

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)
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) None used
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 used
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*
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)  
*Form 524 submitted by C.A. Egner, 1934*
  
10. A list of landmarks was furnished on Form 567 and instructions in the Director's letter of July 16, 1934, Landmarks for Charts, T-5116 complied with. (Par. 16d, e; and 60)  
*Form 567 submitted by C.A. Egner, 1934*
  
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) *See Review*
  
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)
  
13. ✓ The geographic datum of the compilation is *N.A. 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. ✓
- ✓ 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:

18. Examined and approved; Jan. 16, 1935

S. B. Borden  
Chief of Party

19. Remarks after review in office:

Reviewed in office by: McCrook April 16, 1935  
✓ B. G. Jones

Examined and approved:

K. T. Adams  
Asst Chief, Section of Field Records  
Division of Charts  
L. O. Collett  
Chief, Division of Charts

T. B. Borden  
Chief, Section of Field Work  
G. H. Smith  
Chief, Division of Hydrography  
and Topography.

Note This compilation is made on a low grade of celluloid which is no longer in use. Errors in the projection are apparently due to both celluloid distortion and to error in drawing. The projection is not sufficiently accurate for use as a base map or as survey sheet.

B.G. Jones 9/12/31

C

REVIEW OF AIR PHOTO COMPILATION T-5116 (1934)

Projection:

The projection has been checked in the office and numerous small errors noted.

1. The center construction lines are not truly perpendicular, the meridian failing to cut the intersections by 3 to 4 meters.
2. The diagonals do not check by 3 to 6 meters across the 8 minute blocks.
3. The following latitude lines are out as follows:

31°-49' too far north 3 meters

31°-51' too far south 2 meters "

31°-53' too far south 3 meters

31°-58' too far north 6 meters (no control was

plotted on this line which is at the top of the projection and it has been corrected.)

Longitude line 81°10' is too far east 10 meters at 31°52' and 6 meters at 31°54'. ~~Longitude 81°09' is approximately east by the same amount.~~

(This has been corrected).. *Note - Part of the lack of perpendicularity is due to the small differential change of the celluloid and not to error in drafting. See opp. page.*

Comparison with other surveys and charts:

The contemporary plane table surveys show only short sections of HWL being primarily for hydrographic and air photo control. However, ~~it seems~~ the compilation party did not use the plane table control as the radial plot was finished before the ground surveys were completed.

- I. (a) T-6144, 1934 (1:10,000). The HWL along the north shore of the Ogeechee River from latitude 31°53.3', longitude 81°14.2' to latitude 31°54.8', longitude 81°13.3' differs from the compilation by 0 to 8 meters. Examination of the photographs showed no error in the compilation and it has not been changed. At described station PREP (lat. 31°53.2', long. 81°14.1') the HWL has been changed and two small islands added from the photos in this office. The remaining difference of 0 to 10 meters is largely a difference in interpretation. The HWL directly west of ANECK, 1932 has been replotted and moved north and west by 0 to 30 meters. No shore line is given on T-6144 but this change agrees with the hydrography. *at this location*

At latitude 31°53.1', longitude 81°14.2' and latitude 31°53.3', longitude 81°13.4' the plane table HWL differs 18 and 23 meters respectively. The careful rerunning of the plot and checking of the compilation at these points failed to show any error in the compilation. Just what the Surveyor means by "boat line" at latitude 31°53.1', longitude 81°14.2' is not known and no structure shows on the photos. No change <sup>other</sup> was made in compilation at these two points.

*is probably a small island for hauling out small boats <sup>2</sup> this or a landing and has been transferred to the compilation.*

At  $\Delta$ Fort McAllister (lat.  $31^{\circ}53.5'$ , long.  $81^{\circ}11.8'$ ) the plane table HWL differs by 0 to 30 meters. The photographs covering this area are not available. This difference is for a short stretch of shore line (200 meters) ~~and is more likely to be an error in one red reading, as the remainder of the plane table shore line at this point agrees closely. The above difference is due to a difference in interpretation and not to an erroneous rod reading as was first thought. No change has been made in the Compilation.~~

The description on form 524 for described station PREP was not clear and directions given were unquestionably in error. The description has been corrected.

The distance back of HWL on form 524 for station JO does not agree by 20 meters. The plot and Compilation has been carefully checked around this point but no error was found. As no HWL is given on plane table survey, the difference is assumed to be either <sup>due to</sup> a misread chain distance or a difference of opinion as to the HWL. The distance to HWL given on form 524 has been questioned.

All detail shown on that part of the plane table survey covered by this compilation is included on the compilation except ~~the boat line mentioned above~~, the magnetic meridian, and nonrecoverable stations.

(b) T-6150a, 1934 (1:10,000). At undescribed stations PI (lat.  $31^{\circ}50.1'$ , long.  $81^{\circ}20.7'$ ) and ROT (lat.  $31^{\circ}49.8'$ , long.  $81^{\circ}20.5'$ ) the compilation shore line fell 20 and 10 meters respectively in back of these stations, which are marked as blazes on trees. Additional radial points were spotted on the photos around these stations and the radial plot rerun to make connections in this vicinity. Practically the entire HWL of Belfast River in this area was recompiled. The new HWL checked with the hydrography better and placed stations PI and ROT inside of HWL. The error in the compilation was due to location of too few points and too large adjustment of detail.

All detail shown on that part of the plane table survey covered by this compilation is included on the compilation except the magnetic meridian.

(c) T-6150b, 1934 (1:10,000). East of described station EX, at bend in Belfast River (lat.  $31^{\circ}49.4'$ , long.  $81^{\circ}17.5'$ ), the west HWL failed to check with plane table HWL by about 20 meters. Additional radial points were cut in and the compilation redrawn around  $\Delta$ Belfast and  $\odot$ EX. This recompiled HWL east of  $\odot$ EX agrees with plane table within a few meters.

East and west of  $\Delta$ Belfast about 500 and 200 meters respectively the north shore line of Belfast River was moved south about 10 meters. This agreed much better with the Hydrography.

Form 524 for station EX the description states the station is about 30 meters from HWL to north and about 40 meters from HWL to east. This is evidently an error as both plane table survey and compilation scale



north about 55 meters and east about 230 meters. The card (form 524) has been changed accordingly.

All detail shown on that part of plane table survey covered by this compilation is included on the compilation except the magnetic meridian.

Recoverable Stations:

Recoverable topographic stations transferred to the compilation in the office are described on Form 524 and filed as follows:

<u>Station's Name</u>	<u>Filed Under</u>
BAKE (d)	T-6144
EASY (d)	"
FOX (d)	"
JACK (d)	"
GO (d)	"
MIKE (d)	"
PREP (d)	"
TOPO (d)	"
JO (d)	"
EX (d)	"

*md Crook*  
Plotted by M. D. Crook

Checked by - L. C. Lande  
*L. C. Lande*

Triangulation station ROCK, 1934, was added to compilation by reviewer and checked by L. C. Lande.

- II. (a) H-5573a, 1934, compared well with compilation except the north shore of Belfast River in the vicinity of Belfast. This shore line (as noted under T-6150b) has been moved south about 10 meters and agrees with soundings and remarks in sounding records. However, a row of piles along shore line east of Belfast, which the reviewer of H-5573a requested to look for, failed to show on photographs and are not shown on the compilation.

*Piles probably  
very close to  
shore line. Only  
one pile noted  
or shown on  
Hydro. H.W.M.  
10/5/36*

- (b) H-5573b, 1934. As noted under T-6150a, HWL on H-5573b has been replotted on the compilation in this office. The new HWL checks with the Hydrography.

- III. Very little of the area covered by T-5116 (1934) is covered by old surveys. T-991 (1965) and T-1109 (1869) cover that part of Ogeechee River between latitude 31°53' and 31°55' and longitude 81°11' and 81°13.5'. Also that part of Red Bird Creek west of longitude 81°10' and north of latitude 31°52'. T-2664 (1904) covers that area of Belfast River lying between latitude 31°48' and 31°50' and longitude 81°17' and 81°19'.

(a) T-991 (1865) and T-1109 (1869). The compilation is complete and adequate to supersede ~~these~~ surveys for the area it covers. There have been large changes in the shore line.

(b) T-2664, (1904). The compilation is complete and adequate to supersede T-2664 for the area it covers.

IV. Chart 1241 <sup>are noted</sup> covers only a small part of this compilation and shows only minor differences in the shore line of Ogeechee River, Belfast River, and Red Bird Creek. No landmarks fall within the area of this compilation.

Bridge Data:

The clearance values, referred to on page 2 of the Descriptive Report, for the two railroad bridges on the upper Ogeechee were shown on the overlay as 9.6 feet at M.L.W., for the north bridge (A.C.L. Vertical Lift), and 13 feet at M.L.W. for the south bridge (S.A.L. Swing-span). The 9.6 feet at M.L.W. checks exactly with the U.S. Engineers List of Bridges, 1927, and has been changed on the compilation to read 3.1 feet at HW as given in the U. S. Engineers Bridge List. The Bridge List includes the South Bridge (page 312) but does not give clearances. The value of 13 feet at M.L.W. given on overlay has been changed to 6.5 feet at HW by applying the difference between M.L.W. and HW clearances as given by the Bridge List for the North Bridge.

No information has been furnished by the compiler as to how these clearances were determined.

Remarks:

Taking into consideration that the control was limited across the southern part of the compilation, the work could have been done to a closer degree of accuracy by making the radial plot more <sup>care</sup> dense. The field compilation could have been improved by locating more points and reducing the adjustments in tracing detail. Most of the errors noted were due to location of insufficient number of points by the photo plot. This had to be done in the office by the reviewer in order to decide which was correct--the plane table survey or the compilation. And as noted previously in this report, the plane table survey was correct in many places and the compilation changed accordingly.

~~Now~~ The compilation is <sup>now</sup> considered ~~adequate~~ complete, and accurate enough to supersede previous <sup>T.P.O.</sup> surveys in this area.

Respectfully submitted by,

*M. D. Crook*

M. D. Crook.

Approved  
*K.T. Adams*

*B.G. Jones*

*applied to chart 573.*

*1/7-37 S.H.S.*

Survey No. T-5116

Date. 4/5/35

Chart No. 1241 and  
P.M.M. Quads

Diagram No.

Referred to the Division of Geographic Names, Department of Interior. R

Under investigation. Q

[illegible]