

5219

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Ed. June, 1928

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES

AUG 1 1935

State: Georgia

Acc. No. _____

DESCRIPTIVE REPORT

Topographic }
Hydrographic } Sheet No. 5219

LOCALITY

Coast
GEORGIA, Ga.

Via Sapelo Sound and

Mud River

1934

CHIEF OF PARTY

S. B. Grenell

Applied to new compilation drawing of Chart 574 - Oct. 9, 1936 - JFW.

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.

5219

5219

State..... Georgia

General locality..... *Vicinity of Sapelo Sound*

Locality..... *Mud River*

Date of photographs: 11/24/33

Scale 1:10,000 Date of survey Comp:, 19....

Vessel.....

Reviewed and recommended for approval:

Chief of party Lieut. (j.g.) S. B. Granall

Photographs plotted by:

F. B. Hickman

~~Surveyed by~~

Inked by..... A. M. Gruber

Heights in feet above..... to ground to tops of trees

Contour, Approximate contour, Form line interval..... feet

Instructions dated..... November 10....., 1933

Remarks: Compilation of aerial photos Nos. 789 M-38 to 789 M-48,

789 M-29 to M-37, 789 M-20 to 789 M-25

--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. 5219

PHOTO NO. 789 M38 to PHOTO NO. 789 M-48 & 789 M29 to M37
789 M20 789 M25

BY	START	FINISH
ROUGH RADIAL PLOT		
SCALE FACTOR ()		
SCALE FACTOR CHECKED <u>J. B. Hickman</u>		
PROJECTION <u>A. A. Futral</u>	<u>3/12/34</u>	<u>3/13/34</u>
PROJECTION CHECKED <u>F. B. Hickman</u>	<u>3/30/34</u>	<u>3/30/34</u>
CONTROL PLOTTED <u>F. B. Hickman</u>	<u>3/30/34</u>	<u>3/30/34</u>
CONTROL CHECKED <u>R. D. Cross</u>	<u>3/30/34</u>	<u>3/30/34</u>
TOPOGRAPHY TRANSFERRED		
TOPOGRAPHY CHECKED		
SMOOTH RADIAL LINE PLOT <u>F. B. Hickman</u>	<u>1/11/34</u>	<u>1/28/34</u>
RADIAL LINE PLOT CHECKED <u>J. B. Hickman</u>		<u>4/28/34</u>
DETAIL INKED <u>A. M. Gruber</u>	<u>5/2/34</u>	<u>9/27/34</u> (intermittently)
AREA DETAIL INKED <u>17.3</u>	Square Statute Miles	
LENGTH OF SHORE LINE OVER 200m. <u>29.8</u>	Statute Miles	
LENGTH OF SHORE LINE UNDER 200m. <u>60.7</u>	Statute Miles	
GENERAL LOCATION <u>Georgia - Sapelo Sound</u>		
LOCATION <u>Mud River</u>		
DATUM STATION <u>Cedar Hummock 2, 1902</u>	LATITUDE <u>31° - 33' + 538.5m</u>	
DATUM <u>N. A. 1927</u>	LONGITUDE <u>81° - 11' + 1501.0m</u>	

INSPECTION REPORT

Sheet # 5219

REFERENCE:

In reviewing this sheet in the Washington office, reference should be made to the General Report for Single Lens Sheets which was forwarded with single lens sheet #5206.

GENERAL INFORMATION:

With the exception of small sections of fast land on Sapelo~~s~~ Island, Creighton Island and Harris Wech the sheet is composed primarily of salt marsh areas and the tributary waterways of Sapelo~~s~~ Sound. Neither the land or marsh areas offer features of special note being of the usual character found along this section of the coast.

In most cases the stream lines were well defined by clean cut marsh edges and the photographs were sharp and clear.

SCALE VARIATIONS:

There are three short flights of single lens prints covering this sheet and two of these flights have scale variations of two and three per cent within the sheet limits. In order to assure accurate adjustment of detail between radial points, a special system for breaking down radial points: control was used and a special report on this method has been forwarded to the Washington office. A copy of the report is attached to this sheet.

CONTROL:

Due to the fact that many of the beacons in the Mud River area had been moved since the triangulation survey of C. M. Durgin in 193~~2~~³, it was not possible to use those beacons for control so the radial plot was run through and adjusted on marked triangulation stations only.

A relocation of the shifted beacons was made by the party on the GILBERT in 193~~4~~⁴ on aluminum mounted topographic sheets but this information was not available at the date of compilation. *Has been added to the compilation in the office. B.G.G.*

All triangulation was included in the coordination scheme of C. M. Durgin 1932-33.

LANDMARKS FOR CHARTS:

A list of landmarks on form 567 has been submitted by Lieut. H. P. Odessey, 193~~4~~⁴.

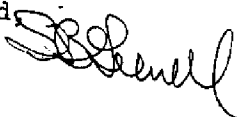
COAST PILOT NOTES:

Coast pilot notes have been submitted by Lieut. H. P. Odessey, 193~~4~~⁴.

NAMES:

All names appearing on this compilation were taken from current issues of charts.

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



REPORT OF COMPILATION:

COMPILATION METHOD:

This sheet was compiled by the standard radial line plot method. No difficulty was experienced in the adjustment of plot with the control available, except station FRONT (Lat. $31^{\circ} - 31'$ - - Long. $81^{\circ} - 17'$). This station fell off a small amount due to impossibility of definitely pricking the correct point on photographs.

ADJUSTMENT OF PHOTOGRAPHS:

Difficulty in adjusting photographs on this sheet was experienced because of the following reasons:

1. Two of the three flights on this sheet were at different scales. The radial plot and projection were made to an average scale.
2. Photo #M 29 to 37 being 2% smaller.
3. Photo #M 38 to 47 being 3% larger.
4. Photo #M 20 to 25 being at the scale of the radial plot.

Compilation of the high water line and details was accomplished by gradual shifts throughout the two odd scale flights. Radial points were properly distributed. This distribution, combined with additional guide points, obtained by lacing radial points together, increased the accuracy and ease of reducing or enlarging the details of the respective photographs. (See explanation of lacing radial points together at the end of this report.)

INTERPRETATION OF PHOTOGRAPHS:

The photographs used in the compilation of this sheet were clear and no difficulty was experienced in tracing detail. Interpretation of the exact position of high water line along the shores bordering SAPELO/ SOUND is doubtful. (See General Report, Single Lens, Page 2, Paragraph A, High Water Line.) The standard topographical symbols were used for detail on this sheet.

INFORMATION FROM OTHER SOURCES:

The photographs and field inspection sketches form the only source of information used in compiling this sheet.

COMPARISON WITH OTHER SURVEYS:

Junctions with adjoining 1 : 10,000 single lens sheets compiled in this office are complete and satisfactory. The word SAPELO/ ISLAND on chart #3257 (Lat. $31^{\circ} - 30'$ - - Long. $81^{\circ} - 20'$) lying between Creighton Narrows and Front River should be removed. It does not appear on chart #1241 of same scale. The island locally known as SAPELO/ ISLAND is the large coastal island to the east and is indicated by capital letters on charts #3257 and 1241.

REPORT OF COMPILATION (cont'd)

ACCURACY AND COMPLETENESS:

As nearly as can be determined from the photographs and with exceptions as noted in reference to shore line bordering SAPELOW SOUND, this sheet is complete in every detail. It is also felt that the difficulty experienced in adjusting the photographs did not allow errors in excess of 4 meters for well defined detail or errors in excess of 10 meters for less well defined detail.

PHOTOGRAPHS:

No.	to	No.	Date	Time	Stage of Tide
(789-J) M-29		M- 37 36	11/24/33	11:05 A.M.	3/6
(789-J) M-38		M-47	11/24/33	11:20 A.M.	4/6
(789-J) M-20 21		M-25	11/24/33	11:00 A.M.	3/6

A. M. Gruber
A. M. Gruber,
Draftsman

Approved:

S. B. Grenell

S. B. Grenell

METHOD OF LACING RADIAL POINTS TOGETHER

OBJECT:- To furnish additional control for the adjustment of topographic detail.

- Where it is impossible to pick enough radial points for accurate adjustment of detail.
- Where tilt distortion or scale variance of the photographs is excessive.

CONDITIONS:-

- The radial points used for this method must be correct.
- The radial points must be at virtually the same elevation.
- The radial points should be distributed in such manner that small areas are inclosed.
- The location of the guide point should be at practically the same elevation as the radial points.

THEORY:-

The diagonals from corresponding points on the celluloid and photographs intersect at a point that marks the location of the guide point. This guide point can be used as an additional radial point. (It is recognized that the direction of the diagonals on the photograph are not true direction lines but their intersection is a point that bears a true relation to the true location on the celluloid.)

METHOD:-

- Radial point on celluloid
- Radial point on photo

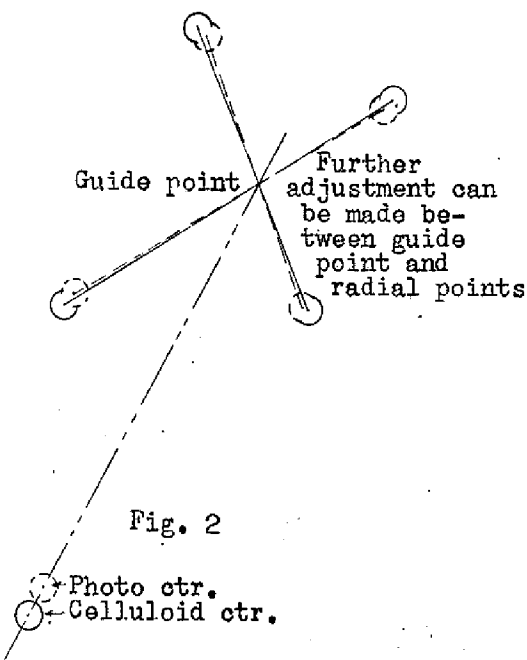
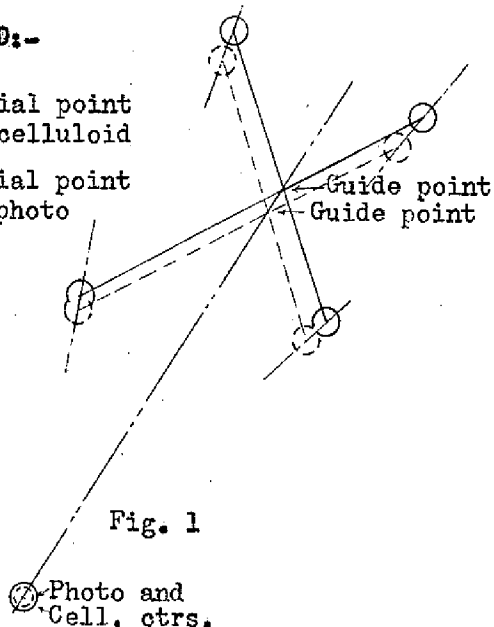


Fig. 1 Shows photo ctr. coinciding with celluloid center

Fig. 2 Shows guide points on celluloid and photograph in coincidence.

Submitted by:

A. M. Gruber,
Surveyor

Approved by:

S. B. Grenell,
Chief of Party

Note This method not applicable except in flat areas and will not take care of changes in relief of the photos. due to differences in elevation. Should not be used too freely in even flat country as any error in one radial point is carried over into the diagonals.

B. G. Jones

Review of Air Photo Compilation T-5219 (1934)

March 1935

Projection

The projection has been checked in the office and all lines are correct within two meters.

Comparison with T-6159a (1934)

This is a graphic control survey on 1:10,000 scale. At lat. $31^{\circ} 33.2'$, long. $81^{\circ} 14.0'$ the compilation shore line differs from the shore line on T-6159a by 0 to 20 meters. As originally drawn the compilation shore line was about 25 meters inside the shore line on T-6159a and did not include the narrow points of marsh shown on T-6159a. After inspecting the photographs under the stereoscope, the compilation shore line has been revised from lat. $31^{\circ} 33.2'$, long. $81^{\circ} 13.9'$ to lat. $31^{\circ} 33.3'$, long. $81^{\circ} 15.2'$. The high water line in this area is very irregular and difficult to determine. The difference between the compilation shore line, as now shown, and the shore line on T-6159a is probably due to a difference in interpretation as both shore lines follow the same general outline and cross in several places. No further change has been made in the compilation at this place.

All detail shown on that part of T-6159a covered by the compilation is included on the compilation with the exception of the magnetic meridian and non-recoverable plane table stations.

Comparison with T-6159b (1934)

This is a graphic control survey on 1:10,000 scale. At Lat. $31^{\circ} 32.1'$, long. $81^{\circ} 17.7'$ the compilation shore line is from 0 to 13 meters inside the shore line on T-6159b. This is probably due to different interpretations and sketching between rod readings on T-6159b. The compilation has been checked with the photographs and has not been changed.

At lat. $31^{\circ} 30.7'$, long. $81^{\circ} 16.7'$ the compilation shore line differs from the shoreline on T-6159b by 0 to 63 meters. The shore line on T-6159b is carried across one end of the slough separating a small marsh island from the larger island. The difference appears to be caused by different interpretations, sketching between rod readings, and a possible error in rod reading at lat. $31^{\circ} 30.5'$, long. $81^{\circ} 16.9'$. Inspection of the photographs shows that the shore line on T-6159b is in error. The compilation has been accepted as correct.

At lat. $31^{\circ} 30.8'$, long. $81^{\circ} 18.8'$ the compilation shore line differs from the shore line on T-6159b by 0 to 19 meters. This is probably due to a difference in interpretation. Inspection of the photographs shows that the compilation gives the best interpretation and it has not been changed. The compilation and T-6159b agree closely for location of shore line just south and east of this point.

At lat. $31^{\circ} 33.2'$, long. $81^{\circ} 16.2'$ the compilation high water line differs from the high water line on T-6159b by 0 to 17 meters. This is probably due to different interpretations. As originally drawn, the compilation shore line differed from the shore line on T-6159b by 0 to 38 meters. After inspecting the photographs in the office the shore line from lat. $31^{\circ} 33.0'$, long. $81^{\circ} 15.5'$ to lat. $31^{\circ} 33.2'$, long. $81^{\circ} 16.2'$ has been retraced on the compilation and agrees with the plane table sheet within 17 meters as stated above.

Details shown on the plane table survey which are not included in the compilation are as follows:

1. Magnetic meridian.
2. Mud River ranges. The beacons are shown on the compilation, but the range lines and azimuths are not included. The azimuths as shown on the plane table survey are as follows:

<u>Range</u>	<u>Azimuth from plane table</u>
1	$224^{\circ} 04'$
2	$233^{\circ} 20'$
3	$228^{\circ} 54'$
4	$218^{\circ} 24'$
6	$196^{\circ} 32'$

Comparison with T-6148 (1934)

This is a graphic control survey on 1:10,000 scale. At lat. $31^{\circ} 30.2'$, long. $81^{\circ} 18.4'$ the plane table shore line differs from the compilation by 0 to 20 meters. This is probably due to a difference in interpretation and sketching between rod readings, as the shore lines agree in several places. The compilation has been checked with the photographs and has been accepted as correct.

Details shown on the section of T-6148 which is covered by the compilation and not shown on the compilation are as follows:

1. Magnetic meridian.
2. Mud River Range "5".
The beacons for Mud River Range 5 were shown on both the plane table survey T-6148 and the compilation as

Triangulation station Mud River Front Range Beacon "5", 1932
 " " " " Rear " " " "

Notice to Mariners No. 46, 1933 states that these beacons were moved October 18, 1933 and the 1932 triangulation positions have been re-

moved from this compilation. Mr. Sutcliffe, Division of Geodesy, has been notified of this change. New positions of these beacons do not show on the photographs.

Comparison with T-721 (1857-58) and T-4121 (1924-25)

There are plane table topographic surveys on 1:20,000 scale. Comparison with these surveys shows many changes in marshy shore line, but the general characteristics of the area remain the same.

T-4121 shows rocks at lat. $31^{\circ} 31.9'$, long. $81^{\circ} 16.3'$. Inspection of the photographs shows no signs of rocks in this area, but what is probably a shell bank which is shown by sand symbols on the compilation. The compilation is complete and adequate to supersede the portions of T-721 and T-4121 that it covers.

Comparison with charts

The area covered by the compilation is included on charts Nos. 1241 and 574. Comparison with these charts shows only minor differences in shore line. No new landmarks are shown on the compilation.

Shore line

In addition to the changes discussed under T-6159a and T-6159b, the shore line from lat. $31^{\circ} 31.7'$, long. $81^{\circ} 15.5'$ to lat. $31^{\circ} 31.5'$, long. $81^{\circ} 16.5'$ has been retraced in the office. There is no plane table shore line in this area, but inspection of the photographs shows that the field compilation party probably drew the high water line too far out. The photos were taken at one-half tide and the high water line was shown at the edge of the water. Careful examination of differences as listed in the preceding paragraphs indicates that these are due largely to differences in selection of high water line and not to errors in the photo plot or in the plane table triangulation and traverse.

Recoverable stations

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

<u>Station name</u>	<u>Filed under</u>
Jo (d)	T-6159a
Ale (d)	T-6159b
Ear (d)	"
Lie (d)	"
Mud River Front Range "1" (d)	"
Mud River Front Range "2" (d)	"
Mud River Rear Range "2" (d)	"

<u>Station name</u>	<u>Filed under</u>
Mud River Front Range "3" (d)	T-6159b
Mud River Rear Range "3" (d)	"
Mud River Front Range "4" (d)	"
Mud River Rear Range "4" (d)	"
Mud River Front Range "6" (d)	"
Mud River Rear Range "6" (d)	"
Sam (d)	"
Creighton (d)	T-6168

V. R. Sobieralski *D. H. Benson*
 Plotted by V. R. Sobieralski; checked by D. H. Benson.

V. R. Sobieralski
May 27, 1935
B. G. Jones

Survey No. T-5219

Chart No. 1241 - 574

Diagram No. _____

Ⓢ Not Approved by the Division of Geographic Names, Department of Interior.

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

(M 100)

REVIEW OF AIR PHOTO COMPILATION NO.

Chief of Party: S. B. GRENELL

Compiled by: A. M. GRUBER

Project: F.P. 4, 6a. Party No. 18

Instructions dated: 11/10/33.

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 ✓
- ~~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. ✓
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 H.P. Odyssey, 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, complied with. (Par. 16d, e; and 60)
Form 567 - H.P. Odyssey, 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)~~ *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)

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 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:

copy of special report on adjustment attached.

18. Examined and approved;

10/19/34

J.B. Gault

Chief of Party

19. Remarks after review in office: *See review.*

See following pages

Reviewed in office by: *V.R. Sobinski* ✓ *B.G. Jones*

Examained and approved:

K.T. Adams

Asst Chief, Section of Field Records

L.O. Dolbuit

Chief, Division of Charts

F.S. Borden

Chief, Section of Field Work

W. H. H. H.

Chief, Division of Hydrography and Topography.