

# 5153

~~SUPPLEMENTAL T~~

U. S. COAST & GEODETIC SURVEY  
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DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
R. S. PATTON, DIRECTOR

## DESCRIPTIVE REPORT

Air  
Photo

Topographic

Hydrographic

Field No. 1,

Sheet No. Reg. No. 5153

5153

Lt. B. H. Riggs' SPECIAL REPORT ON  
FIELD INSPECTION  
AT CHARLESTON, S.C.

State SOUTH CAROLINA

LOCALITY

S.W. of CHARLESTON HARBOR

JOHNS ISLAND

1934

CHIEF OF PARTY

E. H. KIRSCH

U. S. GOVERNMENT PRINTING OFFICE: 1934

# 5153

~~SUPPLEMENTAL T~~

Applied to Chart 792 October 21, 1936  
" " 1239 April 1937

Hell.  
F.M.L.

SPECIAL REPORT ON  
FIELD INSPECTION AT  
CHARLESTON, S.C.

AREA - The photographed area covered in report extends approximately 15 miles back from the coast and runs from the Cooper River on the north to the South Edisto on the south.

CONTROL - Control is basically triangulation, although it was considered necessary in some instances to supplement the existing schemes by traverses between triangulation stations. By beginning and ending the traverse on triangulation, we were able to determine the accuracy of the traverse, and to be sure that the error was not large enough to be plottable, i.e. 2 meters. A sketch showing all traverse run is included in this report.\* A copy of report of traverse is also included.

Field inspection points were selected and spotting of control points on the traverse was carried on as the traverse was run. The computed positions and field inspected photographs were turned over to the compiling section for control of the radial plot. Control points located in this manner were designated with blue triangles and left on the celluloid sheet to enable the office to determine the amount of control used.

In addition, a system of Aluminum mounted control sheets were run in all important waterways to locate additional points easily distinguished on the photographs.

These sheets were also the means of locating obscure points on the photographs, such as determination of high water, docks, and areas that did not show clearly on the photograph.

FIELD INSPECTION OF CONTROL POINTS - In locating control points on the photograph, the field inspection parties were guided by the pamphlet, "Notes On the Compilation of Planimetric Line Maps," and in general, little difficulty was experienced. In some cases, control stations were located in marsh covered areas that offered practically no points that could be

\*See last sheet.

used in the spotting. When long measurements were necessary (100 meters), a scale factor was determined as near as possible to the spotted point. It was found necessary in many cases to re-inspect control points on single lense pictures that had been successfully located on five lense pictures due to the fact that features that could be determined on the 1-20,000 photographs could not be determined on the 1-10,000 photographs. For these reasons, it is better, when possible, to have both sets of photographs in the field at the same time.

Special care was taken to note character of vegetation<sup>e</sup>, names, etc., on photographs while field inspection was in progress. Field prints were supplied to the topographic parties with instructions to fill in all possible information for the compilers.

SHORE LINE - The location of sand beach shore line, aids to navigation, landmarks, marsh lines, river mouths in critical areas were accomplished on the aluminum mounted control sheets. Areas that appeared fuzzy on the photographs were rodded in for final location. The high water mark on sand beaches was also located. All bridges, docks, etc., were likewise located by topography.

The aluminum mounted sheet has been of great value in this, in that the distortion is zero. At the beginning of the season, some of this work was tried on Whatmans paper sheets with the result that the topography and the compiling would not check by as much as 10 meters in some cases. Upon examination, it was soon proven that the Whatmans sheets were in error, and that the errors were due to distortion.

TOPOGRAPHIC FEATURES - Sand beaches at the mouths of the rivers and along the ocean front on this strip of coast are liable to change overnight due to the strong currents and wave action set up by winds. Whenever an area of this character fell on topographic control sheets, the high water

mark obtained by the topographer was used. In the inland routes and rivers, changes are much slower, but here again points and banks subject to strong tidal currents are <sup>sh</sup>waking away. The greater part of the inland area, however, is not subject to change, the waterways being bordered by broad strips of grass-covered marsh which at its junction with the higher ground is bordered by bushes and trees.

Many of the rice fields of the early days are still distinguishable on the photographs. The dykes and canals show as a grid of dark lines on the photographs. These areas have all been labeled as abandoned rice fields, because they are not used at present for growing rice. Practically all are used for duck shooting preserves as part of the estates of wealthy northern sportsmen. The term abandoned rice field, therefore, means abandoned as far as growing rice for market is concerned.

Larger areas on the photographs appear to have been worked over by a giant rake leaving wavy tracks that appear in the cleared country as well as the wooded. This is a condition caused by the trenches left by old phosphate rock workings, of which there were many some years ago. All are now abandoned.

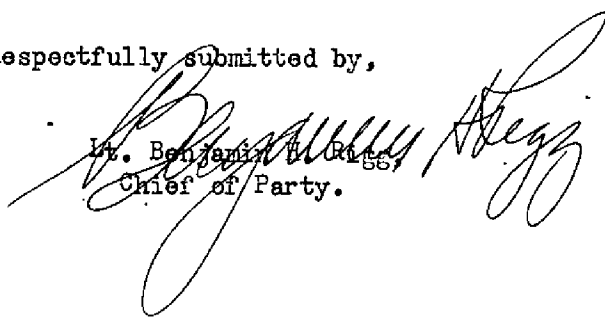
ROADS - Roads are of three classes, those that are paved, improved dirt, and those used by farmers, woodcutters, and fishermen.

FIELD INSPECTION BY COMPILING UNIT - It has been found advisable in many cases to send the compilers out with photographs in order that they may clear up certain areas and to make a general check-up of the sheet as a whole. In assigning draftsmen to compile sheets, in many cases it was possible to select men familiar with the area they were compiling, as many of the compilers are from the locality included in this survey.

VALUE OF ALUMINUM MOUNTED CONTROL SHEETS - It is felt that the aluminum mounted control sheets are a necessary and valuable addition to photo- compilation. One particular case was the discovery of a section of compiled sheet that was in error as much as 30 meters. The error in the compilation was due to faulty field inspection of a triangulation control point situated in an area of flat marsh with little or nothing to take measurements to. While the field inspection of this station was accomplished by a thorough, conscientious man, and check measurements were made that appeared to locate the point on the photograph beyond a reasonable doubt, the only way the error would have been picked up was by comparing with the topographic shore line on the aluminum sheet.

Special care should be taken in delegating field inspection to any- one other than an officer, and in the opinion of the writer, at least four measurements should be taken if there is any doubt about the exact location of features on the photograph.

Respectfully submitted by,

  
Lt. Benjamin D. Rice,  
Chief of Party.

\*Traverse shown on tracing accompanying Director's Annual Report.

# COST OF TRAVERSES

## Cost of Traverse Warren to Spur.

Length of traverse 12.47 miles

Men and days spent on traverse		Cost per man.
Harnden	3 days	\$ 10.50
Rogers, A	3 days	9.99
Rogers, L	"	9.99
Foster	"	11.64
Ricker	"	12.48
Harryman	"	9.00
Seaborg	"	10.50
Elliott	"	11.64
		<u>\$ 85.74</u>
Cost per mile \$6.87		

## Cost of traverse Johns to Davis

Length of traverse 11.00 miles.

Men working	Days	Cost
Rogers	1	\$ 3.33
Seaborg	1	3.50
Harnden	1	3.50
Ricker	3	12.48
Harryman	3	9.00
Foster	3	11.64
Elliott	3	11.64
Beck	2	9.48
		<u>\$64.57</u>
Cost per mile \$5.87		

## Cost of traverse from Hamlin to Mt. Pleasant Tank.

Length of traverse 5.37197 miles.

Ricker	1	\$ 4.16
Rogers	1	3.33
Harryman	1	3.88
Foster	1	3.88
Gregg	1	3.00
Adams	1	3.33
Meaney	1	3.66
Beck	1	4.72
Rigg	1	12.00
		<u>\$41.96</u>

This traverse closed to 1 part in 5,000

Cost per mile \$7.81--Points located 7--Cost per point \$5.99

## Cost of traverse Zip to Green Pond

Length of traverse 11.70 miles

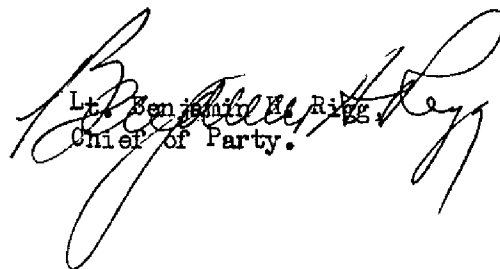
Rigg	1	12.00
Ricker	3	\$12.48
Meaney	3	10.98
Foster	3	11.64
Harryman	3	11.64
Gregg	2	6.00
Adams	2	6.66
Rogers	2	6.66
		<u>\$78.06</u>
Cost per mile \$6.67		

Cost of traverse Green Pond to Gardner  
Length of traverse 14.44 miles.

Men working	Days	Cost
Ricker	3	\$12.48
Meaney	3	10.98
Foster	3	11.64
Harryman	3	11.64
Gregg	1	3.00
Adams	1	3.33
Rogers	1	3.33
		<u>\$56.40</u>

Cost per mile \$3.90

Respectfully submitted,

  
Lt. Benjamin H. Rice  
Chief of Party.



SHEET NO. 1,  
Reg. No. 5153

PHOTOS NO.  
579 through 583  
1254 through 1263

Date  
June 22, 1933  
October 12, 1933

Time  
2:45 P.M.  
10:40 A.M.

PROJECTION BY	<u>L. C. Ripley</u> L. C. Ripley	1-2-34
PROJECTION CHECKED BY	<u>J. H. Wulbern</u> J. H. Wulbern	1-3-34
CONTROL PLOTTED BY	<u>M. R. Donaldson</u> M. R. Donaldson	1-10-34
CONTROL CHECKED BY	<u>T. P. Mitchell</u> T. P. Mitchell	1-11-34
CONTROL PLOTTED ON PHOTOS BY	<u>J. F. Richardson</u> J. F. Richardson	12-22-33
CONTROL CHECKED ON PHOTOS BY	<u>F. H. McBeth</u> F. H. McBeth	12-22-33
SMOOTH RADIAL PLOT BY	<u>R. G. Hickson</u> R. G. Hickson	3-19-34
RADIAL PLOT CHECKED BY	<u>E. H. Kirsch</u> E. H. Kirsch	
SCALE PLOT BY	<u>J. H. Wulbern</u> J. H. Wulbern	12-29-33
TOPOGRAPHY CHECKED ON PHOTOS BY	<u>E. J. Anderson</u> E. J. Anderson	7-3-34
DETAIL INKED BY	<u>M. R. Donaldson</u> M. R. Donaldson	4-26-34

AREA OF DETAIL INKED: 32.58 Sq. Statute Miles (land area).

LENGTH OF COASTLINE: (Negligible) Statute miles.

LENGTH OF SHORELINE: 2.36 Statute miles (200m or more from opposite shore)

LENGTH OF STREAMS: 24.73 Statute miles (Rivers and sloughs less than 200m wide)

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO. 5153

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. 1

REGISTER NO. 5153 5153

State South Carolina

General locality S.W. of Charleston Harbor

Locality Johns Island

Scale 1:20,000 = 1:21,390 Photographs - June 22, 1933  
Date of survey October 12, 1933  
Compilation April 26, 1934

Vessel Air Photo Compilation Party No. 21, Charleston, S. C.

Chief of party E. H. Kirsch

Surveyed by See data sheet in descriptive report.

Inked by M. R. Donaldson

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

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

Instructions dated November 10, 1933, 19

Remarks: This sheet will be printed on a scale of 1:20,000

## GENERAL DESCRIPTION OF TOPOGRAPHY

The area covered by this sheet, is the eastern end of Johns Island, one of the important coastal islands near Charleston Harbor, and the eastern end of Kiawah Island.

The topography is typical of the region adjacent to Charleston. Johns Island is mainly a farming area, and where uncultivated, is covered with forests of pine and live oak. The relief is negligible; the land uniformly flat, and along the tidal creeks, consisting of mud covered by salt marsh grass.

Kiawah Island, forming the coast line, is very sparsely settled and covered with a dense forest of pine, oak and palmettos.

The description of topography given in the report on adjacent sheet No. 5154 also made by the compiler, is applicable to sheet No. 5153.

## GENERAL INFORMATION

Area of Detail Inked: 32.58 sq. statute miles (land area)

Length of Coastline: (Negligible) - statute miles

Length of Shoreline: 2.36 statute miles (200m or more from nearest opposite shore).

Length of Streams: 24.73 statute miles (rivers and sloughs less than 200m wide).

### General Report:

The general report is given under "General Description of Topography".

A separate field inspection report covering all sheets in general will be furnished by Lt. B. H. Rigg, along with this report.

### Photographs:

The compilation was made from photographs taken on two flights, made by the U. S. Army Air Corps' 5-lens Aerial Camera AC32-1-B. Photos 579 through 583 were taken June 22, 1933 at 2:45 P.M. being 1 hour 17 minutes after low tide, the line of flight parallel to and approximately 4500 meters from the coast line.

Photos 1254 through 1263 were taken on October 12, 1933 at 10:40 A.M., being 2 hours 38 minutes after low tide, the line of flight parallel to and approximately 6400 meters from the first flight.

The photos of the 1200 flight were much clearer than those of the 500 flight.

### CONTROL

Triangulation by G. D. Cowie and R. L. Shoppe 1933, Station JOHNS established by C. D. Meaney 1932, and a traverse from Stations JOHNS to DAVIS by Lt. B. H. Rigg 1933 form the only control used in compiling this sheet.

All control reduced to 1927 N. A. datum. The following traverse stations are shown on the celluloid by blue ink triangles:

BRIDGE	32° 42' 1589.4 80° 05' 779.2	} This traverse was not marked and is not filed in geology. Points will not be shown on the printed compilation.
2nd Intersecting Road	32° 43' 67.77 80° 05' 291.1	
1st Intersecting Road	32° 43' 422.31 80° 04' 1456.9	

### Errors:

No errors of importance were discovered in the projection or radial plot.

Station "STONO" couldnot be recovered on photos, as it was far out on wing prints. The railroad beside which it is located was very difficult to distinguish, but it is thought to be compiled within the allowable error.

### Discrepancies:

No control stations established by other organizations were used in the compilation of this sheet.

### COMPILATION

The standard radial line method was used in making the plot.

### Adjustment of Plot:

Difficulty was encountered in compiling portions of the sheet, as the photos were in general tilted and having scale variations.

The 500 flight was at a good distance from the coast line and the photos not very clear. However, one photo, No. 583 was remarkably free of tilt and scale variation, and it was possible to compile most of the area from the coast line inland to Abbapoola Creek from this photo.

As the 1200 flight was very far from the 500, the region midway was compiled with difficulty and required very careful and frequent adjustment between radial points. Likewise the northern part of the sheet lay far out in the 1200 wing photos and was badly tilted. By plotting many additional radial points and using many photos, quite satisfactory junctions were made with the 1:10,000 sheets.

Some of the center prints of the 1200 photos were excellent, such as Nos. 1254, 1255 for the area around Church Creek and Hoopstick Island.

Also No. 1263 was excellent and very true to scale for the area around Fenwick Castle and Highway to Stono River Bridge.

It was found that in the 1200 and 500 photos, almost without exception, the skew photos were in general truer to scale and less tilted than the straight photos, and were used as much as possible.

Before the sheet was compiled, a small hole was accidentally made in the celluloid. Later it was found that this hole fell squarely across Church Creek. The shoreline, thus broken, continues as a smooth line through the hole.

#### Interpretation:

Only the usual graphic symbols were used as approved by the Board of Surveys and Maps (1932) and no great difficulty was experienced in interpreting the photographic detail.

Ditches in cultivated fields were shown by light solid lines wherever distinguishable, otherwise such cultivated areas were enclosed by a dashed line.

Boundaries of shoal water areas were shown by a light dashed line, solely from their appearance on photos, and may be expected to depart from actual conditions.

#### Information from other Sources:

No information from other sources was used in the compilation. Names of roads were taken from the map of the Sanitary and Drainage Commission of Charleston County, and also from a map issued by the Stono River Bridge Co.

#### Conflicting Names:

No conflicting names were discovered.

*See memo of lack*

#### COMPARISON WITH OTHER SURVEYS

Comparison with U.S.C. & G.S. Chart 1239 shows no discrepancies.

Junctions:

No difficulty was experienced in making junctions with the following sheets:

North - 5164 - 5165 (1:10,000)  
 South - None  
 West - 5154 (1:20,000)  
 East - 5182 - 5185 (1:10,000)

Landmarks:

The area covered by this sheet does not include any important streams, so there are no A.C.S. covering the area. No landmarks were found from a stereoscopic study of the photos.

RECOMMENDATIONS FOR FURTHER SURVEYS

This compilation is believed to have a probable error of 3 meters in well defined detail of importance for charting and of not more than 6 meters in other detail. *See below.*

To the best of my knowledge this sheet is complete in all detail of importance for charting and no additional surveys are required.

Assisted by:

*E. H. Kirsch*  
 E. H. Kirsch,  
 Chief of Party.

Submitted by:

*M. R. Donaldson*  
 M. R. Donaldson

*The value of 3 to 6 meters given above is high for work on this scale. A better estimate is an accuracy of elevation of  $\pm$  5 to 8 meters for interested points and 5 to 15 meters for other detail.*

*B. G. Jones*

REVIEW OF PHOTO TOPOGRAPHIC SURVEY NO.

Title (Par. 56) Johns Island

Chief of Party E. H. Kirsch

Compiled by M. R. Donaldson

Project HT-162

Instructions dated November 10, 1933

1. The survey and preparation for it conform to the requirements of the Topographic Manual. (Par. 8; and 16, a, b, c, d, e, g and i.) ✓
2. The character and scope of the compilation satisfy the instructions and the "Notes on the Compilation of Planimetric Line Maps from Five Lens Aerial Photographs". ✓
3. The control and adjustment of the radial plot were adequate. (Par. 12, 29.) ✓
4. There is sufficient control on maps from other sources that were transmitted by the field party for their application to the charts. (Par. 28.) No information taken from outside sources.
5. High water line on marshy and mangrove coast is clear and adequate for chart compilation. (Par. 16a, 43, 44.) ✓
6. 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.) ✓
7. Important details shown on previous surveys and on the chart have been compared with this sheet and a statement has been entered in the report regarding the removal from the chart or change in position of important detail such as rocks, lights, beacons, prominent objects, bridges, docks, and structures along the water front.
8. The span, draw and clearance of bridges are shown. (Par. 16c.) ✓
9. The data furnished by the Field Inspection is adequate. ✓

NOTE: Strike out paragraphs, words or phrases not applicable and modify those requiring it. Paragraph numbers refer to those in the Topographic Manual. Use reverse side for extending remarks.

10. The descriptive report covers all details listed in the Manual, so far as they apply to this survey. (Par. 64, 65 and 66.) ✓
11. The descriptive report also contains all additional information required in photo topography as prescribed in the instructions and in the "Notes on the Compilation of Planimetric Line Maps from Five Lens Aerial Photographs". ✓
12. The descriptions of recoverable stations and references to shore line were accomplished on Form 524, and scaling of positions checked. (Par. 29, 30 and 57.) Submitted with A.S.S.
13. A list of landmarks for charts was furnished on Form 567 and scaling of positions checked. (Par. 16d, e, 60.)  
Submitted with A.C.S.
14. The geographic datum of the sheet is N.A. 1927 and the reference station is correctly noted. (Par. 34.)
15. Junctions with contemporary surveys are adequate. ✓
16. Geographic names are shown on the sheet and are covered by the Descriptive Report. (Par. 64, 66k.) ✓
17. The quality of the drafting is good. (Par. 31, 32, 33, 35, 36, 37, 38, 39, 40, 41, 42, 45, 46.) ✓
18. No additional surveying is recommended. ✓
19. Remarks:

20. Examined and approved: E. H. Kirsch  
E. H. Kirsch, Chief of Party

21. Remarks after review in office:

Reviewed in office by: Leonard A. Williams B. G. Jones

Examined and approved: K. T. Adams  
Asst Chief, Section of Field Records  
Division of Charts  
L. O. Pollock  
Chief, Division of Charts

J. S. Borden  
Chief, Section of Field Work  
G. H. Hude  
Chief, Division of  
Hydrography and Topography.



REVIEW OF AIR PHOTO COMPILATION T-5153 (1934)

Topographic Stations: A number of temporary topographic stations are shown on the compilation for use of the hydrographic parties. These are shown with a black circle without name and will not appear on the printed copies of the compilation. There are no recoverable topographic stations on this sheet.

Names: New names submitted by the compiler are shown pending Mr. Bacon's decision except for the name "Main Road" which has been left off the compilation. This road appears as "Inland Road" on U. S. G. S. sheet "Wadmelaw", and no authority is given in the descriptive report. It is recommended that the remainder of the new names be accepted. The descriptive report does not state that these have been investigated and found in local use but part of them show on the G. S. quadrangle and the remainder are names of roads which the compiler probably got from local maps or from his field inspection. *See page 3.*

Comparison with Other Surveys: *only a* ~~On account of the small portion of this sheet which is also covered by previous topographic surveys, a complete comparison cannot be made.~~ North of latitude  $32^{\circ} 40'$  the area mapped is *not covered by other topographic surveys of this Bureau sources* ~~original work (the charts received this information from other sources)~~. Comparison was made with overlapping detail as shown on T-491 (1856) and T-1604a (1876). The compilation is complete and sufficiently detailed to supersede both of these former surveys for the area in common.

L. A. McGann.

*B. G. Jones*

Survey No. T-5153

## GEOGRAPHIC NAMES

Date. Jan. 25, 1935

S.C.

Chart No. 1239

Names approved Jan. 25, 1935.

Diagram No. 1239

\* Approved by the Division of Geographic Names, Department of Interior

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

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

[illegible]

Survey No. 5153GEOGRAPHIC NAMES  
SC.Chart No. 1239Date. Oct 25, 1934

Approved Mar. 27, 1935

Harlow Bacon.

Diagram No. 1239

\*, Approved by the Division of Geographic Names, Department of Interior.

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

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

Names on this sheet  
are to remain on the  
compilation. Would  
use them for charting  
H.B.

Status	Name on Survey	Name on Chart	New Names in local use	Names assigned by Field	Location
	<u>Cinder Creek</u> *	*OK,			
	<u>Bass Creek</u> *	*OK,			
	<u>Plowed Ground Road</u> *				
	<u>River Road</u> *				
	<u>Fenwick Road</u> *				
	<u>Brown's Woodland Road</u>				
	<u>Bohicket Road</u>				
	<u>Edenvale Road</u>				
	<u>Chisholm Road</u>				
	<u>Legarerville Road</u>				
	<u>Main Road</u> *				
* These names appear on Wadmalow Quadrangle.					
+ This name appears as <u>Inland Road</u> on same quadrangle					
Remainder of names are not shown on quadrangle sheet.					
See Review attached to desc. report for T-5153.					

Applied to chart 837 Oct. 1, 1935 H.M.C.