

5180

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Form 584
Ed. June, 1933

DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
R. S. Patton, Director

U. S. COAST & GEODETIC SURVEY
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State: South Carolina

DESCRIPTIVE REPORT

Air Photo
Topographic
Hydrographic

Sheet No. Field 28
Reg. No. 5180

LOCALITY

~~CHARLESTON HARBOR AND VICINITY~~
SULLIVANS ISLAND, ~~FORT SUMTER~~ AND
CUMMINGS POINT.
Fort Moultrie and Fort Sumter

1934

CHIEF OF PARTY

E. H. KIRSCH

U. S. GOVERNMENT PRINTING OFFICE: 1931

E.H.K.

PHOTOS NO.

M-32 - 823B-8 to M-37 - 823B-8
M-86 - 823A-8 to M-87 - 823A-8
M-61 - 823B-8
M-68 - 823B-8

DATE

November 10, 1933
November 17, 1933
November 17, 1933
November 17, 1933

TIME

11:55 A.M.
12:15 P.M.
11:15 A.M.
11:20 A.M.

PROJECTION BY

L. C. Ripley
L. C. Ripley

2-13-34

PROJECTION CHECKED BY

J. H. Wulbern
J. H. Wulbern

2-14-34

CONTROL PLOTTED BY

M. L. Smith
M. L. Smith

2-14-34

CONTROL CHECKED BY

E. H. Kirsch
E. H. Kirsch

CONTROL PLOTTED ON PHOTOS BY

F. H. McBeth
F. H. McBeth

CONTROL CHECKED ON PHOTOS BY

J. F. Richardson
J. F. Richardson

TOPOGRAPHY TRANSFERRED BY

P. W. Hund
P. W. Hund

3-21-34

TOPOGRAPHY CHECKED BY

E. H. Kirsch
E. H. Kirsch

SMOOTH RADIAL LINE PLOT BY

L. C. Lande
L. C. Lande

2-16-34 (Sheet D)

RADIAL PLOT CHECKED BY

E. H. Kirsch
E. H. Kirsch

SMOOTH RADIAL LINE PLOT BY

E. S. Ethridge
E. S. Ethridge

3-13-34 (Sheet G)

SCALE PLOT BY

J. H. Wulbern
J. H. Wulbern

DETAIL BY

P. W. Hund
P. W. Hund

4-3-34

AREA OF DETAIL INKED: 3.4 Square Statute Miles (Land Area)

LENGTH OF COASTLINE: 5.4 Statute Miles.

LENGTH OF SHORELINE: 4.6 Statute Miles (More than 200m from opposite shore)

LENGTH OF STREAMS: 8.3 Statute Miles (Rivers and sloughs less than 200m wide)

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 5180

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. 28

REGISTER NO. 5180 5180

State South Carolina

General locality, ~~Charleston Harbor and Vicinity~~

Locality ~~Sullivans Island, Fort Sumter and Cummings Point.~~

Photographs - November 10, 1933

Scale 1:10,000 Date of survey - November 17, 1933 19

Compilation - April 6, 1934

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

Chief of party E. H. Kirsch

Surveyed by See data sheets in descriptive report.

Inked by P. W. Hund.

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

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

Instructions dated November 10, 193³, 19

Remarks:

Locality Fort Moultrie and Fort Sumter
Moultrie Sumter

GENERAL INFORMATION

The only aids used in compilation of this sheet were: "Notes from field inspection reports, information given by Lt. M. O. Witherbee and Lt. B. H. Rigg in questionable areas, and the compilers field inspection.

The accompanying "Notes on Compilation" gives all data in connection with the compilation of this sheet.

This sheet was compiled from the photographs taken by the U. S. Army Air Corps' single lens camera, photograph numbers M-32 823B-8 to M-37 - 823B-8 taken November 10, 1933 at 11:55 A.M. one hour and 26 minutes before high tide, M-61 - 823B-8 taken at 11:15 A.M. November 17, 1933 two hours and 6 minutes before low tide, M-86 - 823A-8 to M-87 - 823A-8 taken at 12:15 P.M. November 17, 1933 one hour and 24 minutes before low tide and M-68 - 823A-8 taken at 11:20 A.M. November 17, 1933 two hours and 19 minutes before low tide.

CONTROL

Sources:

The following sources of control were used in the compilation of this sheet:

Triangulation - G. D. Cowie and R. L. Shoppe - 1933
- M. O. Witherbee - 1933
1933 Aluminum Control Sheet "A" Reg. No. 7-6080.
Lt. M. O. Witherbee, Chief of Party
Whatmans Topographic Sheet "O" Reg. No. 7-4856, 1934
Lt. M. O. Witherbee, Chief of Party

The field partys' geographic positions were used: These are on N. A. 1927 datum.

The high water line on the coast of Sullivan's Island and Summings Point was obtained from the aluminum control sheet "A" Reg. No. 7-6080, ~~1933 Lt. M. O. Witherbee.~~ Lt. Rigg. 1934.

Errors:

There were no errors found in the position of the topographic signals on aluminum control sheet "A" Reg. No. 6080, or the Whatman's Topographic Sheet "O" Reg. No. 4856.

Discrepancies:

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

Two towers have been erected at Ft. Sumter to be used in radio compass work. Three towers were located by Lieut. M. O.

Witherbees' party in 1934, but have been omitted from the compilation to avoid too much congestion at this point. These towers are connected to N. A. 1927 datum.

N. Tower (Sumter) $32^{\circ} 45' 09.397''$ - 289.5 meters
 $79^{\circ} 52' 30.656''$ - 798.1 meters

S. Tower (Sumter) $32^{\circ} 45' 06.954''$ - 214.3 meters
 $79^{\circ} 52' 31.589''$ - 822.3 meters

These towers have been plotted in the office.

COMPILATION

Method:

The usual radial line method of plotting was used in the compilation of this sheet.

Adjustment of Plot:

The photographs used in this compilation were free from excessive tilt and scale fluctuation hence the radial plot required no unusual adjustments.

Remarks:

No difficulty was found in making the slight adjustments necessary for smooth radial plot.

Bridges; Cove Bridge

Swinging type highway bridge with a roadway of 16'. The length of the draw is 154.0'. The north span has a horizontal clearance of 61.0' while the South side of the span is not navigable. The vertical clearance at high water is 7.8'. This data was taken from Aluminum control sheet "A", Reg. No. 6080.

Interpretation:

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

The highwater line as shown on the celluloid sheet with the exception of that portion mentioned under CONTROL paragraph Sources was readily determined from the photographs. The low water line in the area West of Cummings Point was determined from a photograph taken two hours and 6 minutes before low tide, hence it is felt that there will be little or no departure from actual conditions. The portion of the low water line around Sullivan's Island shown on this sheet was determined from pictures, some of which were taken two hours and 19 minutes before low tide and the others one hour and 24 minutes before low tide, hence it is felt that the low water line as shown will not have much departure from actual conditions.

REVIEW OF AIR PHOTO COMPILATION T-5180 (1933)

The range mentioned in Paragraph 6, opposite page, has been discontinued and will be removed from charts 470 and 1239 at the next printing. (From aid proof 11/19/34). The range was apparently marked on this compilation by the tower shown on the end of the wharf on the south side of Fort Sumter and by a Beacon shown at lat. $32^{\circ} 45'$ 426 meters, long. $79^{\circ} 52'$ 1271 meters.

This range did not have the correct azimuth as compared with chart 470. The tower plots on the range but the Beacon falls some 25 meters north of the range. The photographs have been examined and the location is weak. This Beacon as shown on compilation is most likely the rear range light but the compiler has shown a weak position very likely in error. The Beacon has therefore been removed from the compilation but the position is given above and the point can be recovered on the celluloid.

B. G. Jones
B. G. Jones.

The full length of the jitty is not shown. chart 470 shows it extending S.E. across meridian $79^{\circ} 50'$ for some distance past the limit shown on the compilation. as stated on the opposite page the end of the jitty is too far out on the photographs to fix the exact length of the S.E. extension. The position along meridian $\approx 79^{\circ} 50'$ checks with chart 470 and the position on \approx parallel $32^{\circ} 45'$ checks chart 470 within a few meters.

The remaining portion was determined from pictures taken one hour and 26 minutes before high tide, hence there may be some departure from the low water line, as shown in actual conditions.

The sand dunes as shown may vary in size and shape in actual conditions but the dune area is clearly discernable from the photographs and has been followed.

The highwater line from the Coast Guard Dock on Sullivan's Island to the West point is largely determined by a rock breakwater giving it a ragged appearance.

The piles of rock along this shoreline are shown with dashed lines, instead of solid lines as on the present chart 470. This is done since these are covered at high water and we have been showing docks with solid lines.

Since the photographs in this area were taken the dock appearing on the Northeast side of Ft. Sumter has been removed, consequently it is not shown on the celluloid sheets

Shown on this sheet is a range on Fort Sumter Observation Tower which is being used for the purpose of dredging the main channel. This range is shown on the present U.S.C. & G.S. Chart (January 19, 1934) as permanent. However, information has been received from the Lighthouse Service that the only purpose of this range is that of night dredging and will be removed after the dredging is completed. } At Lat. $32^{\circ} 46'$ Long. $79^{\circ} 51'$ there is a portion of shoreline 90 meters long which does not agree with the photographs. This is due to a spoil bank made by the deposit of the spoil from the dredging of the channel starting at the cove through to Georgetown. *See opposite page.*

Rocks shown on beach between Long. $79^{\circ} 51'$ and $79^{\circ} 50'$ mark the beginning of the North Jetty and continue in a Southwesterly direction. For some distance out from the shore this jetty is submerged and can be traced only faintly on Photo M-86 - 823A-8 to the point near the edge of the photo where it reappears. Photo 86 was set by control for radial plotting and the Jetty line drawn in, although no radial point could be plotted on the far portion of the Jetty appearing on the Photo. Station MUD, FT. MOULTRIE TANK, recoverable center from Photo 87 and previously plotted radial points were used to orient this picture. It is believed that setting the picture in this manner will give the direction for the Jetty accurately as the Jetty runs out in the same general direction as a radial line drawn through the part of the Jetty appearing on the photo. The length of submerged Jetty can not be accurately given without getting a point radial plotted in, although from comparison to chart 470 (January 9, 1934) the Jetty reappears near Long. $79^{\circ} 50'$ as shown. *See opposite page.*

Chart 470 of January 9, 1934 shows a sand bar extending Southwest from Ft. Sumter that bares at low water. Photo No. 37 - 823B-8 shows two narrow bars that were too indefinite for tracing. Refer to ~~Smoothing Chart No. 1.~~

Smooth hydrographic sheet #1 Reg. # _____ B.H. Rigg Chief of Party 1934

The shoreline around Cummings Point and extending South was compiled after a study of the photographs.

The shoreline around the point and approximately to Lat. $32^{\circ} 43' 30''$ agreed very closely with aluminum control sheet "A" Reg. No. 7-6080. However, from this point South the shoreline did not agree with that shown on Whatman's Topo Sheet "O" Reg. No. 7-4856. This discrepancy is due, no doubt, to the fact that these photos were taken near the time of high tide. It is felt that since the Northern portion of this shoreline agreed so closely with the aluminum control sheet "A" Reg. No. 7-6080, that all of it is correct as shown on this sheet.

Information from other Sources:

The high water line on the coast area was run in by the topographic party on the aluminum control sheet "A" Reg. No. 7-6080, which line agrees very well with that compiled from the photos.

Conflicting Names:

There are no names on this sheet conflicting with names shown on the U.S.C. & G.S. Chart for this area. *No new names are shown Bgg.*

COMPARISON WITH OTHER SURVEYS

Junctions:

Satisfactory junctions were made with the following sheets:

North - Sheet No. 25, Reg. No. 5177
 East - None
 South - Sheet No. 31, Reg. No. 5183
 West - Sheet No. 29, Reg. No. 5181

The beacon shown on U.S.C. & G.S. Chart 470 near the Coast Guard Dock on Sullivans Island has been removed and is not shown on this compilation. From information received from the Lighthouse Service this beacon will be replaced in May and should appear on the New chart.

Beacons "A" and "2B" as shown on the present chart 470 have been removed.

Landmarks:

The list of landmarks for this area was submitted by Lt. M. O. Witherbee with aluminum control sheet "A" Reg. No. 6080, and Whatman Topo Sheet "O" Reg. No. 4856. *The two towers mentioned on page 2 should appear on the chart as landmarks.*

RECOMMENDATION FOR FURTHER SURVEYS

The compilation of this sheet is believed to have a

probable error of not more than 2 meters in well defined detail of importance for charting and of 4 meters for other data. *See below*

To the best of my knowledge this sheet is complete in all detail of importance for charting purposes, within the accuracy stated above, and no additional surveys are required.

Assisted by:

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

Submitted by:

P. W. Hund
P. W. Hund.

The accuracy of 2 to 4 meters given above is probably a little high for work on this scale. A better estimate is an accuracy of location of 3 to 4 meters for intersected points and 3 to 8 meters for other detail

B. G. Jones

REVIEW OF AIR PHOTO COMPILATION NO. T-5180 (1934)

U. S. E. Grid Systems:

There are two U. S. Engineers' grid systems shown on this sheet. The one has its origin at Flynn's Church (1889), while the other originates at Fort Sumter U. S. E. (1934). (cf. Title)

Recoverable Topographic Stations:

The following topographic stations shown on this compilation have been marked and described on Form 524, filed under survey No. T-6080.

U.S.B.M. No. 60 (d)	Steel Tower (d)
U.S.E. Cap 2 (d)	Beacon A (d)
Cupola C.G. Station (d)	Beacon B (d)
Sullivans Island Beacon (d)	U.S.B.M. (No. unknown) (d)
Light No. 2-C (d)	
U.S.B.M. No. 59 (d)	

These have been plotted in the office by L. H. Benson and checked by L. A. Madsen July 30, 1934.

Ranges:

The following azimuths of ranges have been copied from T-6080 on which they were determined:

Fort Sumter Range	299° 20') Azimuths from south through west.
Mt. Pleasance Range	317° 38'	
South Channel Range	270° 08'	

Comparison with Other Surveys:

Contemporary Topographic Surveys:

Good agreement was found with plane table survey T-6080. (1930)

With reference to paragraph Junctions, Page 4 of the Descriptive Report.

1. Beacon on end of C. G. wharf Sullivans Island has been plotted on this compilation in the office from plane table survey T-6080 of June 1934. The note on Page 4 states that this beacon was to be rebuilt by Lighthouse Service in May 1934 and it is assumed that the position on T-6080 is the new position. The landmark list attached to T-6080 does not list this beacon.

2. Beacon A has been transferred to this compilation in the office from T-6080, June 1934. This Beacon is listed in the landmark list submitted in the Descriptive Report T-6080.

A comparison of the compilation with T-4856 covering the shore-line south of Pt. Cummings shows differences of as much as 25 meters. (See Page 4 of the Report.) These differences are due both to change and to differences of interpretation. This shore-line is shown on T-6080 from Pt. Cummings to $32^{\circ} 43' 30''$ and on T-4856 from $32^{\circ} 43' 30''$ southward. T-6080 was surveyed 7 months after the photographs were taken and T-4856 about 3 months after the photographs were taken. The compilation agrees very closely with T-6080. T-6080 and T-4856 do not agree where they join. The compilation has not been changed to agree with T-4856 as this coast-line is no doubt subject to frequent change.

Topographic Surveys Nos. T-3842 (1921), T-3843 (1921), and T-2488 (1900) have been examined. Survey No. T-3842 shows a railroad on Sullivan Island. This is not shown on the compilation or on Chart 470. This ^{compilation} survey (T-5180) is complete and adequate to supersede the older topographic surveys of this area.

~~Leonard A. McGann.~~

B. G. Jones

GEOGRAPHIC NAMES
Survey No. T5180

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
										1
<u>Cummings Pt.</u>										2
<u>Morris Island</u>										3
<u>Fort Sumter Island</u>										4
<u>Sullivans Island</u>										5
<u>The core</u>										6
										7
Names approved as indicated										8
Dec. 9 1935										9
T. E. Egner										10
										11
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										27

REVIEW OF PHOTO TOPOGRAPHIC SURVEY NO.

Title (Par. 56) Sullivans Island, Fort Sumter and Cummings Point,

Chief of Party E. H. Kirsch

Compiled by P. W. Hund

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.) —
U.S. Engineers give clearance as 7.93 feet above H.W. for Cove Bridge. Larm.
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.C. Sheets
7-4880
Plotted by Bureau 7/30/34.
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. Sheets:
7-4856 and 7-6080.
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.) ✓
No conflicting names.
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: *See Following Page.*

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. Wulsame* ✓ *B. G. Jones*

Examined and approved: *E. H. Green*
Chief, Section of Field Records

L. O. Sabel
Chief, Division of Charts

B. B. Borden
Chief, Section of Field Work

G. H. de
Chief, Division of
Hydrography and Topography.

Applied to drawing of chart #470.

Feb. 19, 1935 G.H.S.

Applied to compilation of new chart #491

March 21, 1935 G.H.S.

Applied to chart 887 Sept 26, 1935 R.H.C.

" " " 1239 Apr. 1937 D.M.-h.