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Air
Photo

Topographic }
Hydrographic } Sheet No. _____ Reg. 5241

Form 504
Rev. Dec. 1933
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

Field 41

State North Carolina

LOCALITY

Intracoastal Waterway
CAPE FEAR

CAPE FEAR RIVER ENTRANCE

1934

CHIEF OF PARTY

E. H. KIRSCH

U. S. GOVERNMENT PRINTING OFFICE: 1934

5241
SUPPLEMENTAL T

Applied to Cht. 1236 - Oct 1937 P.B.C.

PHOTOS

5-lens

393 to 397

398 to 412

431 to 450

DATE

January 31, 1933

"

"

TIME

Between 10:00 AM and 12:00 N

Single Lens

M-1 - 8 1/4 D-8 to M-21 - 8 1/4 D-8

January 19, 1934

12:50 P.M.

PROJECTION BY

L. C. Ripley

7-6-34

PROJECTION CHECKED BY

E. H. Kirsoh

7-6-34

CONTROL PLOTTED BY

F. H. McBeth

7-10-34

CONTROL CHECKED BY

H. W. Langley

7-11-34

CONTROL PLOTTED ON PHOTOS BY

W. W. King

6-29-34

CONTROL CHECKED ON PHOTOS BY

E. S. Ethridge

6-29-34

TOPOGRAPHY TRANSFERRED BY

H. W. Langley

TOPOGRAPHY CHECKED BY

L. C. Ripley

SMOOTH RADIAL PLOT BY

H. W. Langley

7-25-34

RADIAL PLOT CHECKED BY

L. C. Lande

7-26-34

SCALE PLOT BY

L. C. Lande

7-3-34

DETAIL INKED BY

H. W. Langley

8-20-34

AREA COVERED BY SHEET: 55.7 Square Statute Miles.

LENGTH OF SHORELINE: 23 St. Miles (More than 200 meters from nearest opposite shore)

LENGTH OF STREAMS: 52.3 St. Miles (Rivers and sloughs less than 200 meters wide)

LENGTH OF COASTLINE: 20.4 statute miles.

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. 41

REGISTER NO. 5241

5241

State North Carolina

General locality ~~Cape Fear~~ Intracoastal Waterway

Locality Cape Fear River Entrance

Scale 1:20,704 Photographs - Jan. 31, 1933
Date of survey Jan. 31, 1934

Compilation - Aug. 20, 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 H. W. Langley

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

Contour, Approximate contour, Form line interval - - feet

Instructions dated November 10, 1933, 19

Remarks: None

GENERAL INFORMATION

No general report covering this sheet is available. The only aids used in the compilation of this sheet were secured from the field inspection notes.

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

This sheet was compiled from photographs taken by the U. S. Army Air Corps' Single lens Camera, photograph numbers as follows: M-1 - 844 D-8 to M-21 - 844 D-8; and with the U. S. Army Air Corps' 5-lens camera, Photograph numbers as follows: No. 389 to 397, 398 to 412, and 431 to 450.

CONTROL

The following sources of control, reduced to N. A. 1927 datum were used in the compilation of this sheet:

(a) Triangulation by - Meaney 1932, Crosby 1934, Bond 1933, and Rigg 1934. *Also H.A. Seaman in 1913.*

T-6210 b (b) 1934 Aluminum control sheets AB, AC, and AD, Reg. Nos. *T-6210 a*, *T-6211 a*, Lt. B. H. Rigg, Chief of Party, 1934.

Errors:

No errors in control were noted.

Discrepancies:

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

COMPILATION

Method:

The usual radial line method of plotting, as described in the U.S.C. & G.S. "Notes on the compilation of Planimetric Line Maps from 5-lens Aerial Photographs" 1933 edition, was used.

Adjustment of Plot:

No unusual adjustment was required in the radial plot. The photographs were free of excessive tilt and scale fluctuation.

Remarks on Adjustment:

Due to the 5-lens photographs not being very clear around Ft. Caswell, Elizabeth Creek, Southport, and between Bald Head L. H., and Cape Fear L. H., only a few points could be recovered and

radial plotted. Hence, several more points were radial plotted by means of the single lens pictures, using the other radial points and control stations as control.

The beacons, Baldhead Front Range, Baldhead Rear Range, Smith Island Front Range, and Smith Island Rear Range, could not be spotted on the five lens pictures. Hence, it was necessary to radial plot them in from the single lens pictures. *Later located by triangulation, B.H. Rigg C.P. - Shown on sheet this Δ. Radial plot position & Δ position agreed. CHK.*

Interpretation:

The graphic symbols as approved by the Board of Surveys and Maps (1932) were the only symbols used. No difficulty was experienced in the interpretation of the photographic detail.

The single lens photographs used in this compilation were taken 19 minutes before a low of -1.9; the low water line were clearly seen; yet, there may be a departure from ~~Batter~~ actual conditions. The low water line around Battery Island ends abruptly. The reason for this is because the limit of the single lens water line could not be interpreted from the 5-lens pictures which were taken at a high tide.

The double rows of sand along the beaches represents a double beach at low tide. *This representation was changed to the one as shown. CHM.*

The low water line on the beach east of $78^{\circ} 03'$ was compiled from the single lens pictures which were taken at low tide. West of $28^{\circ} 03'$ it was continued at approximately the same distance from the H.W.L. as the 5-lens pictures were taken at high tide and L.W.L. could not be determined from them.

In comparing the two sets of photographs, which were taken a year apart, it was noticed that Cape Fear has shifted. The latest pictures were used in compiling this point. The same applies to Corn Cake Inlet.

The area north of the Intracoastal waterway consists of bays and flat savannah grass lands. These bays are very low, and in some cases have a definite ~~beam~~ ^{edge}. They consist of thick undergrowth and scrub trees, contain water in wet weather, and in general are wet and soggy all the time. In some cases, passage through them is difficult due to the thick undergrowth. The field inspection reports show the bays in this area have been burnt over in forest fires. These bays have been shown on this sheet by broken marsh lines with trees and bushes in them.

The savannah grass lands which surround the bays consist of either wire grass or broom sedge with scattered bushes and a few trees. These have been shown as grass with bushes.

The line North of the Intracoastal waterway at the western edge of this sheet is a ditch, the purpose of which is to prevent dredge

spoils from spreading too far and to allow drainage for the water which is pumped out with the spoils. The hachured line along the Cape Fear River H.W.L. North of Southport represents a steep cliff about 10 meters high.

The break in the road South of triangulation station ROAD and near the beach is caused by its being hidden on the photos by trees at that point. *This break was completed in the Washington office, the position of the road being shown on field photo No 433, A. print. Lam.* The U. S. Public Health Quarantine Station in Cape Fear River on this sheet is built entirely on piles.

Battery Island was entirely marsh at one time. The sanded area shown on Battery Island is dredge spoils. The sanded areas along the Intracoastal waterway behind the H.W.L. is dredge spoils.

Due to the great number of trails around Southport, only the main ones were drawn in, so as to prevent an overcrowded appearance.

Information from other Sources:

No information was obtained from other sources. *except from graphic control surveys T-6210 a, T-6210 b, and T-6211 a.*

Conflicting Names:

There are no names on this sheet conflicting with names shown on the U.S.C. & G.S. Charts of this Area.

There are no new names on this sheet. Lam.

COMPARISON WITH OTHER SURVEYS

Satisfactory junctions were made with sheet No. 5242 on the west, Sheet No. 5041 on the Northeast. There are no adjoining sheets on the other sides.

In the junction with sheet No. 5041, that part of Walden Creek South of latitude $33^{\circ} 58'$ would not agree with this compilation; but, from where Walden Creek crosses Lat. $33^{\circ} 58'$ to its entrance into Cape Fear River, a junction was made with no difficulty. Hence, the junction of Walden Creek was made inside the compilation of sheet 5041. It is felt that Walden Creek on sheet 5041 South of Lat. $33^{\circ} 58'$ ^{was} in error, so it was removed.

The southern side of Corncake Inlet on sheet 5041 failed to agree with this compilation. This point was compiled on sheet 5241 from the single lens pictures which were taken a year after the five lens pictures. Since the five lens pictures were used in compiling sheet 5041, it is felt that the more recent compilation, sheet 5241, is correct and that sheet 5041 is in error. The small portions in error have been erased from sheet 5041 as they appear correctly on sheet 5241.

It will be noticed in the junction of sheet 5041 and 5241 that the adjoining trails have been omitted on sheet 5041.

Landmarks:

The landmarks for charts and marked topographic stations included in this area have been submitted with aluminum control sheets AB, AC, and AD, Reg. Nos. *T-6210 a, T-6210 b* Lt. B. H. Rigg, Chief of Party 1934. *T-6211 a.*

RECOMMENDATIONS FOR FURTHER SURVEYS

The compilation of this sheet is believed to have a probable error ^{of} not more than .3 mm in well defined detail of importance for charting, and not more than .6 mm for other data.

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.

Remarks:

Beacons:

All ~~beacons~~ *lights and beacons* in the area covered by this sheet are shown on the sheet with the exception of Horseshoe channel Rear Range ~~beacon~~ *light*. No position was available for this ~~beacon~~ *light* and it could not be spotted on the photographs for radial plotting. Hence it is omitted.

Bridges:

The bridge over the Intracoastal waterways at triangulation station BRIDGE has a horizontal clearance of approximately 73 feet. The opening is filled by a lighter which is floated aside to open the waterway.

Assisted by:

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

Submitted by:

H. W. Langley
H. W. Langley.

Date Feb. 20, 1935

GEOGRAPHIC NAMES

Survey No. T-5241Chart No. 424, 1235-6Diagram No. 1235-36

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

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

Under investigation. Q

Status	Name on Survey	Name on Chart	New Names in local use	Names assigned by Field	Location
	<u>Oak Island</u> ✓	Same			✓
	<u>Cape Fear</u> ✓	"			✓
	<u>Smith Island</u> ✓	"			✓
	<u>Elizabeth River</u> ✓	"			✓
	<u>Molasses Creek</u> ✓	"			✓
	<u>Denis Creek</u> ✓	"			✓
	<u>Dutchman Creek</u> ✓	"			✓
	<u>Southport</u> ✓	"			✓
	<u>Battery Island</u> ✓	"			✓
	<u>Striking Island</u> ✓	"			✓
	<u>Shellbank Island</u> ✓	"			✓
	<u>Price Creek</u> * ✓	"			✓
	<u>Fort Caswell</u>	"			✓
	<u>Bald Head</u> ✓	"			✓
	<u>Lighthouse Creek</u> ✓	"			✓
	<u>Cape Creek</u> ✓	"			✓
	<u>Buzzard Bay</u> ✓	"			✓
	<u>National Quarantine</u>	"			✓
	<u>Muddy Slue</u> ✓	"			✓
	<u>Cape Fear River</u> ✓	"			✓
	<u>Walden Creek</u> ✓	"			✓
	<u>Still Creek</u> ✓	-----			✓
	<u>Cedar Creek</u> ✓	-----			✓

Bald head cr (v. r. a. t.)
H.S.B.B.)

Per USNB decision, include right branch

GEOGRAPHIC NAMES

Survey No. T-5241

Chart No. 424, 1235-36

Diagram No. 1235736

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

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

Under investigation. Q

(M-136)

REVIEW OF AIR PHOTO COMPILATION NO. 5241

Chief of Party: E. H. Kirseh

Compiled by: H. W. Langley

Project: HT 162

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)
Plane table surveys T-6210(a), T-6210(b), T-6211a
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 transmitted.
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)
High water line on sand beaches transferred from T-6210 a, T-6210 b, and T-6211 a.

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)

Descriptions filed under T-6210 a, T-6210 b, T-6211 a.

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)

Submitted with descriptive reports. T-6210 a, T-6210 b, T-6211 a.

11. ~~All bridges shown on the compilation are accompanied by a note stating whether fixed or draw, clearance, and width of draw if a draw bridge. Additional information of importance to navigation is given in the descriptive report. (Par. 16c) ✓~~

No bridges on this compilation. except as noted on p. 4.

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)

There are no U.S.G.S. Quadrangles available for this area. Compilation names compared with Charts 424, 3254. and old surveys.

13. The geographic datum of the compilation is *NA1927* and the reference station is correctly noted. *Datum sta. is adjusted.*

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;

E. H. Kirsch
Chief of Party

19. Remarks after review in office:

see following pages.

Reviewed in office by: Lionard A. McGowan
B. G. Jones

Examined and approved:

C. K. Green
Chief, Section of Field Records
L. O. Lobat
Chief, Division of Charts

J. B. Borden
Chief, Section of Field Work
G. W. Hude
Chief, Division of Hydrography
and Topography.

REVIEW OF AIR PHOTO COMPILATION NO. T-5241.

Projection.

The projection of this compilation was tested and found to be in error at the west end of the sheet between longitude 78°06' and 78°11'. The following table gives the amount of error at the various points.

	Total Distances from Central Meridian 78°03' <i>along the parallels</i>					
	78°05'	78°06'	78°07'	78°08'	78°09'	78°10'
On Latitude 33°57'	(2965) 3082 3081.4	(4449) 4623 4622	(5937) 6169.7 6162.7	(7418.) 7708.7 7708.4	(8900) 9248.8 9244.1	(10386) 10793. 10784.8
On Latitude 33°55'	(2966.5) 3082.7 3082.6	(4451) 4625.4 4623.8	(5937) 6169.7 6165.1	(7418) 7708.7 7706.4	(8903) 9251.9 9247.7	(10389) 10796.2 10789
On Latitude 33°53'	(2967) 3083.3 3083.8	(4453.5) 4628.0 4625.6	(5937) 6169.7 6167.5	(7422) 7712.9 7709.4	(8906) 9255.1 9251.3	(10389) 10796.2 10793.2

Values in red are the distances as scaled from the projection. Directly beneath them are these values with the scale factor (0.9622) applied. The third row contains the values as taken from the projection tables. The corrections for the 78°07', 78°08' meridians and 78°10' have been applied; these meridians are now correctly drawn on the compilation. ^{The 78°09' meridian could not be moved without} introducing an error in the position of the triangulation stations, whose forward positions in longitude have been plotted from this line.

Comparison with other Surveys.

(a) Chart 424. For reasons given in the descriptive report on page 4, the Horseshoe Channel Rear Range Light is not shown on this compilation.

One of the landmarks in Southport, shown on this chart as a spire, was plotted on the compilation in this office and appears under the following name:

Δ Southport Episcopal Church, ^{NYS,} 1923. 33°55'06.708" (206.6m) - 1927 Datum
78°01'04.607" (118.4m)

See Chart Letter No. 166 (1935) for landmarks to be deleted. The landmarks recommended in this letter are shown on the compilation, ~~except the northernmost of the two spires in Southport, marked in letter No. 166 (1935) as verified. This spire was not shown on the compilation or~~

~~on the plane table control sheets and no position has been found in this office. It seems probable that this may be a Southport white spire shown on the compilation just to the westward.~~ *- Cape Fear River, 1925*

~~This landmark is a Southport Meth Church w. spire, 1923. Plotted in this office.~~ *Done*

The two wrecks shown on this chart in approximate position latitude 33°54', longitude 77°59.8' are not shown on the compilation since T-4042; the most recent plane table survey of this area does not recover them. An additional wreck in the river channel, west of Battery Island appears on the compilation but is not shown on Chart 424. There are no other discrepancies with Chart 424, none with Chart 3254.

(b) Old Topographic Surveys. T-674 (1852). This survey covers a portion of this compilation at the mouth of Cape Fear River. T-1464 (1879). This survey covers ~~South~~ ^{Smith} Island and the river in the vicinity of Southport. T-1771 (1887). This covers shoreline only at the mouth of Cape Fear River. There is considerable change of shoreline throughout this area; changes are most rapid along the outer coast at the inlets. T-1464 and T-1771 are superseded in full by this compilation. T-674 is superseded ~~in part~~, for the area in common with this compilation which shows complete topographic detail.

T-4042 (1923). See Descriptive Report T-4043 for a history of the changes of this constantly shifting area. Some lights and beacons in this area have been moved to new locations since 1923. The new positions are shown on this compilation. With the exception of a number of unimportant geographic names which have not been shown on the charts, a number of control points (some of which were landmarks); viz. Δ Garrison, Δ Southport Pilot Tower, and Δ Caswell Wooden Watertank, all recoverable topographic information on T-4042 is also ~~is~~ shown on this compilation. (See Comparison with Charts 424 for reasons why the above mentioned stations are not shown).

(c) Graphic Control Surveys. T-6210(a) (1934). There is good general agreement with the compilation. A note has been made on T-6210(a) concerning the omission of a small marsh island. All topographic detail shown thereon is shown on the compilation with the exception of the magnetic declination, the buoys in Cape Fear River, and non-recoverable plane table positions. The following recoverable topographic stations have been transferred from T-6210(a) under which the descriptions are filed. Transfers were made in the field.

Lighthouse Stake No. 3.
B. H. Jr. No. 2 (U. S. E.)
Con
Rib

T-6210(b) (1934). There is satisfactory agreement between T-6210(b) and this compilation. All topographic detail shown on T-6210(b) is also shown on the compilation with the exception of the magnetic declination and non-recoverable plane table positions. The following

recoverable topographic stations have been transferred in the field from T-6210(b) under which the descriptions are filed:

Southport Weather Bureau
East Wireless Tower
West Wireless Tower
Obs. Tower, Oak. Island, C. G. Station
Cupola North C. G. Bldg.
W. Gable South C. G. Bldg. * Removed from compilation
E. Gable Old Searchlight Tower (T5241 supplemental) in favor
Chimney, New Fish Factory of O signal Mast(s).
Sewer Manhole, U. S. E. See note below in red.
E. Gable Caswell Beach Pavillion.

T-6211(a). There is good general agreement with the compilation. All topographic detail shown on T-6211(a) also appears on this compilation except the magnetic declination. The following recoverable topographic stations have been transferred in the field office from T-6211(a) under which the description is filed:

U. S. E. Rt. of Way Monument No. 14.

Lemard A. Mutsaers
✓ B. G. Jones

Note 11/23/36 Additional work

T 6493 and T 6494 (1936) Graphic Control surveys made after completion of this compilation. All details on T 6493 and T 6494 within this area have been added to this compilation (T5241) supplemental except for temporary planetable stations, and except for O West Gable CG Bldg. (d)

BGG 11/23/36

Lat. 33° 53'
Long. 78° 02'

This station left off compilation in favor of O signal Mast (d) which is within few meters.

Report for Supplemental T 5241

1. Supplemental filed 6/27/35
name corrections in red
2. Shoreline corrections from original photos
applied to supplemental in blue 1/25/36
3. Recoverable relations from g.c. survey
applied 10/5/36