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U. S. COAST & GEODETIC SURVEY
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SUPPLEMENTAL I

Form 504
Ed. June, 1928

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

State: North Carolina

DESCRIPTIVE REPORT

Photo *Topographic* } Sheet No. 5041
~~Hydrographic~~

LOCALITY

Cape Fear River

Carolina Beach to Corncake Inlet

1934

CHIEF OF PARTY

O. S. Reading.

Applied to Oct 1236 - Oct 1937 - P.Blo.

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. 5041

5041

State North Carolina

General locality Cape Fear River

Locality Carolina Beach to Corncake Inlet

Photographs January 31, 1933.

Scale 1/20,000 Date of Compilation April, 1934. 19.....

Vessel Army Air Corps F. 1A airplane Lieutenant Goodrich, Pilot
Sgt. Matos, Photographer

Chief of party Compilation O. S. Reading

Photographs plotted by L. A. McGann
~~Surveyed by~~ L. A. McGann Feb. 23, 1934

Inked by L. A. McGann Apr. 7, 1934

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

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

Instructions dated....., 19.....

Remarks: Compilation of aerial photographs Nos. 408 to 425
incl. and 374 to 395 incl. printed by photo lithographic process.

...

Polyconic projection by	E. R. Hand	January 11, 1934.
Projection verified by	<u>L. A. McGann</u> L. A. McGann	January 12, 1934.
Control plotted by	E. R. Hand	January 13, 1934.
Control verified by	<u>L. A. McGann</u> L. A. McGann	February 24, 1934.

Descriptive Report
to accompany
Air Photo Topographic Sheet No. 5041.

General Information.

(a) This sheet is a compilation of Army Air Corps five lens photographs taken with a type T-3A camera from an altitude of approximately 10,000 feet, a Fairchild F-1A plane was used piloted by Lieutenant Goodrich with Sergeant Matos as photographer.

(b) Statistics:

- 27 Sq. statute miles of area.
- 9.1 miles of coastline.
- 38.9 miles of inside shoreline.
- 10 miles of streams less than 200 meters wide.

(c) No general description of this sheet is available. All portions of this sheet are flat and low in relief. The coastal strip is covered with Myrtle bushes and grass while the mainland strip for the most part is covered with low coniferous trees. The southern area near Corncake Inlet is uncertain, composed of shifting sand dunes and marsh islands.

(d) The photographs Nos. 408 to 425 inclusive, and Nos. 374 to 395, inclusive, which embrace this sheet, are parts of two separate strips. The former were taken about 12:00 M. January 31, 1933, when the stage of tide was approximately 2.7 feet above M.L.W. The latter photographs were taken about 11:30 A. M. January 31, 1933, when the stage of tide was approximately 2.2 feet above M.L.W. Mean range of tide in each case is 4.2 feet and 3.9 feet, respectively.

Control.

(a) The control consists of third order triangulation by W. C. Hodgkins in 1917, by C. L. Garner in 1918, by L. P. Raynor in 1922 and 1923, and by J. A. Bond in 1933, all adjusted to the N. A. 1927 Datum, aluminum control sheet No. 4785 was also used.

(b) Not all stations, however, could be identified on the photographs and used for control, such as stations: Grave, 1917; Peters Point, 1917; Isle, 1918; Wreck, 1918; Bend, 1918; and Beacon 67, 1933.

(c) Stations Corn, 1923, Cake, 1887, and Post, 1887, have been lost and their approximate positions only have been given on the photographs. These were used.

Compilation.

(a) The radial line method of compilation was used. Marked adjustment of plot was required throughout for the projection was made by others on 1/10,000 scale exactly, while the average scale of the photographs is considerably smaller than this scale. Adjustment was

made by grouping closely together the secondary control points of the plot and by confining adjustments wherever possible to the center "B" print.

(b) On the inland branches of Walden Creek and the Orton Pond, it was difficult to secure well defined points, the identical point on three successive photographs. Consequently, the error of position in these areas may be somewhat greater than in important areas along the line of flight where good points and good intersections had been obtained.

(c) Field inspection notes covered the "B" prints only and for this area they are complete. No interpretation of the upper spoilbank island in the river was given and the delineation as shown was interpreted by the compiler.

(d) The photographs were not clear and in places such as along the branches of Walden Creek, along the Orton Pond and the marsh islands north of Corncake Inlet, the marsh line was hard to determine. For this reason, no attempt was made to show the marsh lines around the Orton Pond, except at its head.

(e) All names were taken from Chart No. 1235, the aluminum control sheet No. 4785, and the field photographs.

~~By~~ The double full line is used to indicate improved roads; the double broken line, secondary roads, and a single heavy dark line to show narrow unimproved roads or trails.

Comparison with other Surveys.

(a) There is a satisfactory junction with sheet No. 5042 (aerial) on the north. Sheet No. 5081 will adjoin on the south. The most recent survey which covers the coastal area from Corncake Inlet to Kure Beach was made in 1923, and discrepancies with this sheet (No. 4042), are due to change of coastline.

Recommendations for further Surveys.

(a) The compilation is believed to have a probable error of five meters in position of well defined detail and ten meters for other less important positions.

(b) There is attached herewith a list of recoverable topographic stations.

Respectfully submitted:

Approved:

B. S. Reading

Leonard A. McGann.

Leonard A. McGann

FEB 16 1935

Acc. No. _____

SUPPLEMENTARY REPORT

SHEET NO. 5041

This sheet was compiled from photographs taken January 31, 1933. Since that time a large factory has been built within the area covered by this sheet, and appears on photo Nos. M-24, M-25, and M-26 - 844D of a flight of single lens photographs, M-1 - 844D to M-29 - 844D, taken January 15, 1934. This factory is the Ethyl Dow Chemical Company, a description of which is given in an attached letter from the Wilmington Chamber of Commerce, and is located about 5 miles North by East of Corncake Inlet, South of Wilmington, N. C.

METHOD OF COMPILATION

Since the radial plotted points on the celluloid were erased, and the 5-lens photographs were not available to make another plot, it was necessary to use compiled points as control in compiling the factory area. The following points were used: The dock S.E. of the factory, the house East of the factory just west of the paved beach road, the road intersection between the above named point and the factory, the point of high water line just west of the factory, the road intersection south of the factory, and the road intersection southeast of the factory.

Since the compilation of the factory was made, the positions of the factory stack and water tank have been computed by triangulation by Lt. B. H. Rigg's Party - 1934. These positions have been submitted as landmarks for charts. The compilation was checked, using the above mentioned positions, which could be spotted on the photographs, as control. The positions agreed with the compiled positions of the stack and tank.

The compilation agrees with a blue print of the factory which has been received since the compilation was made. The blue print is being submitted with the compilation. A ship channel has been dredged from the factory dock to the channel of the Cape Fear River. This channel is 8 feet deep, 100 feet wide, and 7200 feet long, and is now marked with stakes. It is to be marked with day markers. The position of this channel is not known in this office, and is roughly sketched on chart No. 425 a copy of which is being submitted with the air photo sheet.

INTERPRETATION

The dashed line north of the dock and projecting outside the beach high water line was not noticed on the photographs by the field inspection party. It is felt that this is an outlet for waste and is a continuation of a known pipeline from the discharge ditch across the road just west of it. (See enclosed Blue Print)

The double line south of the above mentioned dashed line represents two lines of bulkheads, made of steel sheet piling, which are on either side of the intake for sea water. A drag line operating on a track on the

southerly bulkhead, keeps the intake free of sand.

The overlay sheet, the blue print, and chart No. 425, gives all other data necessary for a more complete description of this factory area.

Assisted by:

E. H. Kirsch

E. H. Kirsch,
Chief of Party.

Submitted by:

H. W. Langley

H. W. Langley.

*The blue print and copy of chart #425 mentioned above
has been sent to the Cartographic Section - 2/20/35
hwt*

REVIEW OF PHOTO TOPOGRAPHIC SURVEY NO. 5041

Title (Par. 56) *Carolina Beach to Comcaac Inlet, Cape Fear River, N. C.*Chief of Party *J. L. Bading*Compiled by *R. A. McGinnis*

Project -

Instructions dated -

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.) *see Descriptive Report*
 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.)~~
 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. *(see ~~report~~ page 3)*
 8. The span, draw and clearance of bridges are shown. (Par. 16c.)
Except in bridge over Walden Creek
 9. The data furnished by the Field Inspection is adequate. *Inspection was furnished for "B" prints only. The field inspection, aided to investigate all landmarks appearing on the chart.*
- 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.

Triangulation station Prick Creek Bay Light, 1886 is
a discontinued light house. It was recorded in
1933 as described. The description states that the
station is in the floor of a low massive brick
tower. On the compilation the explanatory note
"Light Discontinued" has been added to the name.

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.) *none submitted*
13. A list of landmarks for charts, ^{*recommended by the field inspection*} was furnished on Form 567 and scaling of positions checked. (Par. 16d, e, 60.) *a copy is included in this report. (See page 3)*
14. The geographic datum of the sheet is ^{*N.A. 1922*} ~~and~~ ^{*undistorted*} and the reference station is correctly noted. (Par. 54.)
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: *This sheet was compiled in the Washington Office*
20. Examined and approved: *J. R. Reading*
Chief of Party
21. Remarks after review in office:
- Reviewed in office by: *Frank G. Eubank* *Feb. 20, 1935*
V.B. Jones
- Examined and approved:
- K.T. Adams*
Asst Chief, Section of Field Records
~~Division of Charts~~
- L.O. Colburn*
Chief, Division of Charts
- T.S. Borden*
Chief, Section of Field Work
- G.F. Rude*
Chief, Division of
Hydrography and Topography.

Additional Review Notes T-5041

7. (Cont.) Chart 1235 and T-1464a (1878) show a bluff on each side of the Cape Fear River. This bluff is not shown on T-5041. However, a dashed line indicating the edge of the high ground is shown and this line agrees fairly well with this bluff line.

In comparing this sheet with Charts 424 and 425, differences in the islands in the Cape Fear River were noted.

1. The group of islands at $33^{\circ} 58'$, $77^{\circ} 58'$ have changed in details.

2. At $34^{\circ} 01\frac{3}{4}'$, $77^{\circ} 56'$ four small islands are shown on the chart while the compilation shows only one. At $34^{\circ} 02\frac{1}{4}'$, $77^{\circ} 56'$ only shoal area is shown on the chart while the compilation shows an island. Field Inspection was not available for these islands and the delineation is the compiler's interpretation. Aerial examinations of the photographs indicate the compilation to be correct.

The wreck shown on the chart at $34^{\circ} 02\frac{1}{2}'$, $77^{\circ} 56\frac{1}{2}'$ is not shown on the compilation as it was not noted by the field inspection and it could not be identified from the photographs.

13. (Cont.) The charted landmarks not appearing on this sheet were not noted by the Field Inspection and were impossible to identify using the stereoscope due to the poor photographs.

It was noticed that all of the landmarks appearing on Chart 1235 are not shown on Chart 425.

(Page 1 of Report, Control, paragraph C) Triangulation Stations CORN, CAKE, and POST were reported lost in 1933. As these stations were spotted on the field photographs it has been assumed that the Field Inspection Party found the station marks or was able to determine the ground location of these marks within one or two meters.

After this sheet was photographed and a proof submitted October 1934, the celluloid was sent to the Charleston, South Carolina Compilation Party for corrections. The report of its work is attached. The corrections were made on the celluloid and transferred to the negatives and plate by the Printing Section.

In photographing the sheet to the northeast (T-5042) it was found to be too long, hence the detail between $77^{\circ} 54'$ and $77^{\circ} 55'$ north of the canal to $34^{\circ} 04'$ and between $77^{\circ} 53'$ and $77^{\circ} 54'$ from $34^{\circ} 02\frac{1}{2}'$ to $34^{\circ} 04'$ was transferred to the negatives and plate of this sheet (T-5041) from the celluloid of T-5042 by the Printing Section.

February 25, 1935.

Frank G. Eskine
B. J. Jones

T 5041 Supplemental

Graphic Control Survey T 6526 a and b (4/7/37)

These graphic control surveys have been compared with compilation T 5041 and all detail within the area added to a supplemental copy of T 5041 except for the location of Beacons

L. C. Lande
5/18/37