

4042

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Form 504
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
State: <u>North Carolina</u>
11-5613
DESCRIPTIVE REPORT.
Topographic Sheet No. <u>4042</u>
LOCALITY:
Cape Fear
Atlantic Coast
Wilmington Beach to
Mouth
Vicinity of Cape Fear River
to
Wilmington Beach
1923
CHIEF OF PARTY:
Leroy P. Rayner H. & O. E.

DESCRIPTIVE REPORT

Accompanying Topographic Sheet No. 4042

Which is a Revision of

VICINITY OF CAPE FEAR RIVER

NORTH CAROLINA

Surveyed from Launch Mikawe. -- June to November 1923.

Authority, Dates, Parties.-

The topography on this sheet was done by parties from the Launch Mikawe, Leroy P. Raynor H.& G.E., in charge, under 'INSTRUCTIONS' dated May 7, 1923, issued to and assigned by the Commanding Officer of the U.S.C. & G.S.S. Lydonia.

The date of beginning work was June 14, 1923 and work was done at convenient times until November 12, 1923 when the last field work was done on the sheet.

The outside shoreline from Wilmington Beach to Bald Head, Battery Is., Shell Bank, and two adjacent islands, was done by L.D. Bell, Deck Officer. The remainder of the work was done by F.G. Outcalt, Deck Officer.

Limits, Scale.-

The work included a resurvey of the outside shoreline from Wilmington Beach to Corncake Inlet, and of the entire area bordering the Cape Fear River and south of a line from Δ Price Creek Bug Light to Corncake Inlet. Smith Island was completely detailed and the tributaries of the Cape Fear River were surveyed to the limits of usual navigation.

Except for the tape location of some hydrographic signals along the outer shore of Smith Island, the entire survey was

made by plane table methods on a scale of 1:20,000.

Control, Traverse, Methods.-

Numerous triangulation stations previously established served as control, and traverse, resection, and the three point problem were used to determine the plane table stations.

In the traverse from Δ Bat to Δ Cape Fear Light House the error of closure was 12 meters and the discrepancy was distributed proportionally as the distance between the stations.

In a traverse run from Δ R to Δ Oak there was no error of closure and in a run from Δ Price Creek Bug Light to Δ Garrison the error was inappreciable.

In the marsh areas the roding was done almost entirely from row-boats and the most satisfactory results were obtained by assigning one man to each boat to do both rowing and roding. For the greater part of the work three rods were used, and by having the ends of the rods beyond the graduations marked with distinguishing symbols and using different whistle signals for each marking, it was quite easy to communicate with the different rodmen without confusion, altho only the top of the rod might be visible above the marsh grass. The use of sets of simple whistle signals saved much time even when the rodmen were visible.

General Remarks, Comparison with Former Surveys, Shoreline, Vegetation.-

With the exception of a small hill at Fort Fisher the country was generally flat and contours were omitted. In the vicinity of Cape Fear Lighthouse there are wooded sand hills and low shifting dunes of perhaps 25 feet maximum elevation. These heaps are however indistinguishable from the general wooded skyline.

By comparing the existing chart and the former original topographic sheets with the present work it is evident that

the outer shoreline is very unstable. Even since the work of 1914 there have been very appreciable changes. New Inlet has

shifted approximately 1200 meters down the coast. (Corncake Inlet, while retaining its same approximate position, suffers many minor changes with each period of rough water and the bars and shoreline in the vicinity are constantly shifting.)

Since 1914 the beach for a distance of about 2500 meters north of Cape Fear Light has moved inland 150 meters or so, and judging from the trees which are falling on the beach it is being washed away still more. On the southeastern shore of Smith Island west of Cape Fear Light there has been a similar erosion of the beach while on the southwestern shore to the south of Bald Head Light-house considerable sand has been deposited, so that at the place of maximum change the high water line has moved out about 300 meters from its 1914 position.

The interior of Smith Island in its general features is much the same as shown on the sheets of 1878-79. The woods are quite dense, dogwood, live oak, and palmetto being most prominent.

The main creeks are much the same in their lower stretches. The two southern tributaries of Left Branch Cape Creek are at present entirely different than as shown on all former sheets. The upper portions of all the creeks and the ponds near the beach are strikingly different than as represented on the present charts and there seems no reason for believing that these features are subject to such radical changes even in 45 years. The northern two of the three ponds have no well defined outlet and their tidal range is probably due to the flow of water thru the marsh grass or

to the percolation thru the narrow beach. There are evidences that during an extremely high tide the waves wash over into the ponds, just as they wash over most of the narrow strip of sand between this point and Corncake Inlet.

The low water areas as shown are more or less indefinite since their determination was incidental. As the areas bare at low water are very flat a slight variation in the tide makes a great difference in the area exposed. The marsh areas are principally deep soft mud, black and sticky, with occasional oyster growths along the edges. Some of the smaller islands are of shell formation entirely. The grass in the marshes is about from 3 to 4 feet high.

Elizabeth River.-

Elizabeth River is navigable up to the second 'fish factory', the channel to this point being marked by red and white lanterns suspended from arms pointing to channel, which are supported on rough privately constructed beacons as shown on the sheet. Fishing boats of a draft of $4\frac{1}{2}$ feet use the channel regularly, altho the trip is not usually attempted at extreme low water. Dutchman's Creek is also used by these boats and at present the entrance is from Elizabeth River after the third red beacon is passed. The critical points of the channel are staked.

Southport.-

The details of the Southport waterfront and one block back were done with the plane table, the remainder of the street system being transferred from a town map surveyed by F.L. Fargeson and procured from a local real estate agent.

Southport (1923) has a population of about 1600 to 1700. Oils and gasoline may be obtained at two of the landings and coal may be had on order at the railroad wharf. Food and general

supplies may be purchased at the local stores. There is one train daily from Southport to Wilmington and return and one boat daily from Wilmington to Southport and return. The principal business of the town is fishing and fish products.

Geographic names.-

The geographic names shown on the sheet were obtained from pilots and fishermen of Southport and are those in common use in the vicinity.

Magnetic Declination.-

The magnetic declination was carefully determined at the following places,-

<u>Station.</u>	<u>Declination.</u>
Point in Thorofare @	N 3° 37' W
△ Crook [Probably local disturbance,- not investigated]	0° 00'
△ R B'	N 2° 53' W

Plane Table Positions.^a

(see next page)

Respectfully submitted,

Frederick L. Outcalt.

Deck Officer U.S.C. & G.S.

Approved:

Leroy P. Raynor

H. & G. E. Chief

LIST OF PLANE TABLE POSITIONS

Object and Description	Lat.	D.M.	Long	D.P.
White Tank	33°59'	1764.5	77° 54'	640.4
Sea ✓ Seaward Gable House.	33° 59'	1159.5	77° 54'	698
Fun	33° 59'	1070	77°54'	715
Elf	33° 58'	1806	77° 54'	1007
May	33°58'	1251	77° 54'	1151
Dan	33° 58'	1103	77° 55'	1174
Pin ✓ Seaward Gable Barn	33° 58'	563	77° 55'	1345
Yel ✓ Flagpole, cupola yellow house, near Fort Fisher	33° 58'	207	77° 55'	00000
S.E. Cor Fish Shack	33° 57'	1695	77° 55'	163
Cat	33° 57'	1353	77° 55'	266
But	33° 57'	504	77° 55'	605
Art	33° 56'	1232	77° 55'	1127
Doe	33° 54'	1028	77° 56'	1485
Shack	33° 53'	1679	77° 57'	198
Dell	33° 52'	1828	77° 57'	374
Dog	33° 52'	1011	77° 57'	470

LIST OF PLANE TABLE POSITIONS (continued)

Object and Description	Lat.	D.M.	Long.	D.P.
Fat	33° 51'	1065	77° 57'	714.5
Signal top old cedar tree				
Fog	33° 51'	130	77° 57'	883
Signal top old palmetto				
Gin	33° 50'	1372	77° 58'	723
Hydr. signal				
Hek	33° 50'	1799	77° 58'	1437
Hydr. signal				
Ill	33° 51'	734350'	77° 59'	699
Age	33° 51'	516	77° 59'	571'
Cup	33° 51'	498	77° 59'	612
Cupola				
✓ C.G.S.194	33° 53'	1062	78° 02'	6
Flagpole				
✓ E. Wireless Tow.	33° 53'	1089	78° 01'	1012
Ft Caswell				
✓ W. Wireless Tow.	33° 53'	1098	78° 01'	1050
Ft Caswell				
Larger Stack	33° 55'	500	78° 03'	1026
lower Fish factory				
Elizabeth River				
Larger Stack	33° 55'	683	78° 03'	1530
upper Fish factory				
Elizabeth River				
Larger Stack	33° 55'	1571	78° 03'	181
Fish factory				
Dutchman's Creek				

ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No. **4-DEM**

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

January 29, 1924

SECTION OF FIELD RECORDS

Report on Topographic Sheet No. 4042

Mouth of Cape Fear River

Surveyed in 1923

Instructions dated May 7, 1923

Chief of Party, L. P. Raynor

Surveyed by F. G. Outcalt and L. D. Bell

Inked by F. G. Outcalt

1. The records conform to the requirements of the General Instructions. The descriptive report is unusually comprehensive.
2. The plan and character of the survey fulfill the requirements of the General Instructions.
3. The plan and extent of the survey satisfy the specific instructions.
4. The junctions with the adjoining work are satisfactory.
5. No further surveying is required within the area of the sheet.
6. The character and scope of the surveying and field drafting are excellent.
7. Reviewed by E. P. Ellis, January, 1924.

ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY

AND REFER TO NO. 7-MCS.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

FAK-
MO.
DIRECTOR
HYDROGRAPHIC
SALES
GEODETIC
April 17, 1924.

APR 23 8 53 AM '24

OFFICE
LIBRARY
RECORDS

To: Lieutenant L. P. Raynor,
Box 922,
Charleston, South Carolina.

From: Director, U. S. Coast and Geodetic Survey.

Subject: Location of Signal Shack.

There is forwarded to you under separate cover section of topographic sheet No. 4042, executed by your party last season.

2. The descriptive report on the hydrographic sheet states that the position of signal Shack was taken from the topographic sheet. As will be seen this position as inked on the topographic sheet is south of parallel $33^{\circ} 54'$, whereas the position of the same signal plotted on the smooth hydrographic sheet and the boat sheet is plotted north of this parallel and shown on the photostat in red. On the topographic sheet there is a prick point in a similar location to that shown on the hydrographic sheet, but this was not inked and no circle is drawn around it.

3. It is requested that you inform me at your earliest convenience whether either you or Mr. Outcalt remember which is the correct location of this signal.

Chester Jones

Director,
Charleston, S.C.
April 21, 1924

First Endorsement.

The location as shown in red on the photostat is apparently correct according to Mr. Outcalt. The boat sheet which I used for the development of Channel from Corncake Inlet to the Cape Fear River might also be consulted as positions on this were traced from the original topographic sheet.

Lewy P Raynor
Chief of Party.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

4042

TOPOGRAPHIC TITLE SHEET

The finished Topographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 4042042

State . . North Carolina
General locality . . Cape Fear
Wilmington Beach to Mouth of Cape Fear River
Locality Lower Cape Fear River and Coast to Wilmington Beach
Chief of party Leroy P. Raynor . . H. & G. E. . . .
Surveyed by . Lawrence D. Bell . and . Frederick G. Outcalt.
Date of survey . . June 14, 1923 --- November 12, 1923. . .
Scale 1 : 20,000
Heights in feet above . . High Water.
Contour interval . 10 . feet.
Inked by . F. G. Outcalt. Lettered by . F. G. Outcalt.
Records accompanying sheet (check those forwarded): Photographs,
☒ Descriptive report, Horizontal angle books, Field computations,
Data from other sources affecting sheet Tracing of map of Southport
Information from local pilots regarding names of creeks, etc.

Remarks: