

4540

Form 504  
Ed. June, 1928

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

R.S. Patton, Director

G. & G. SURVEY

L. & A.

NOV - 4 1930

Acc. No.

State: Florida

DESCRIPTIVE REPORT

Topographic

~~Hydrographic~~

Sheet No. 4540

LOCALITY

Florida, East Coast,

South Miami to Cutler.

1930

CHIEF OF PARTY

O.S. Reading, H. & G. E.

Descriptive Report to Accompany  
Air Photo Topographic Sheet

No. 4540 - South Miami to Cutler.

This sheet is a compilation of a single strip of four-lens air photographs taken by the Army Air Corps camera No. 26-1 in 1928. Photograph No. 427, which defines the southern boundary of this sheet, was taken about 10:20 A.M. April 17 and the end of the photographic film was reached near latitude  $25^{\circ} 42'$  at 10:30 A.M., photograph No. 441. A new flight line begins at around latitude  $25^{\circ} 41'$  (overlapping the photographs of April 17 about one mile) with photograph No. 442, April 20 at 3:55 P.M., and the northern boundaries of this sheet are reached a few minutes later with photograph 448. The photographs of April 17 were taken about two hours before a low tide of -0.4 foot. at Cape Florida, Key Biscayne, which was the closest available tide station given in the predicted tide tables. The photographs of April 20 were taken about an hour and a half before a low tide of -0.4 foot obtained from the predicted tide tables.

A Loening amphibian plane was piloted by Lieutenant J. A. Dexter at an approximate height of 9,300 feet, giving an average scale of about 1:18,600 (scale factor = 1.075) to the photographs.

LIMITS.

The area of this sheet is covered by a single strip of photographs extending about three miles inshore from the Bay of Biscayne. South Miami (in the vicinity of  $\Delta$  Miami Biltmore Hotel (Coral Gables) 1928) defines the northern extremity, while about two miles south of the town of Cutler along parallel  $25^{\circ} 35'$  marks the southern boundary.

The south end of this sheet joins with air photo topographic sheet No. , photograph No. 427, and the north end makes a junction with air photo topographic sheet No. 4528, photograph No. 448.

CONTROL.

In addition to topographic sheets Nos. 3758, 3760, 744 and 336, two roads extending in an approximate east and west direction were traversed with a steel tape. A theodolite was set up at the intersection of the road and railroad and solar azimuths determined.

All turning points, azimuth stations, pluses to crossroads, trails, etc., are shown by small red circles. Miami Biltmore Hotel 1928 and Elliotts Beach 2, 1907-08, were the only two recoverable stations. The position of the tank at Cocconut Grove was computed from theodolite observations at Miami Biltmore Hotel and the Everglades Hotel. Sextant angles were taken at the Cocconut Grove tank, but these failed to give

a sufficient closure so they were rejected. No close check on this position was secured. Control is further supplemented by the tank at Warwick, the position of which was determined by theodolite observations at the tank involving a three-point problem. Miami Biltmore Hotel, Cape Florida Old Tower, and Fowey Rocks L. H. were used in case 1 and the positions obtained agreed very closely (0.6 meters in latitude and 0.7 meters in longitude) to the positions secured in case 3 using Everglades Hotel, Fowey Rocks L. H. and Cape Florida Old Tower. Cuts were also taken from Warwick tank to conspicuous houses at Cutler and Kendall. Additional control was secured by plotting the railroad traverse by the aid of data secured from the principal assistant engineer of the Florida East Coast Railway Company.

#### COMPILATION.

A projection was laid on the celluloid sheet to the approximate scale of the photographs (about 1:18,600), as determined by a preliminary radial plot, and the triangulation and control traverses were plotted. Photostats of topographic sheets Nos. 3760, 3758 and 744 were then made to this scale. Sheets Nos. 3760 and 3758 were traced on the celluloid sheet in blue and topographic sheet No. 744 traced on in light green. This was deemed necessary because of the insufficient control of the 1919 sheet (No. 3760) at the southern extremity. A radial line graphic traverse was then plotted holding to the control stations and traverses and the general trend of the old topography. Southward of Shoal Point the old topography could not be closely adhered to because of the disagreement with the control. This control consists of a steel taped road traverse at Cutler extending westward to the Florida East Coast Railway (pluses along the traverse are shown by small red circles). The railroad traverse was previously plotted on the sheet and the plus to the traversed road determined. With this point as the initial, the road traverse was plotted on the celluloid sheet in agreement with the solar azimuth obtained from the field inspection. A theodolite cut from  $\Delta$  Warwick to the conspicuous house at Cutler confirmed the east and west position of the traverse and a similar cut to a house at Kendall checked the north and south plus on the railroad traverse at this point.

This sheet was prepared from two photographic negatives and no attempt was made to make a junction between the two negative plates.

#### DIFFERENCES FROM FORMER TOPOGRAPHY.

No appreciable differences in the shoreline were apparent north of  $\Delta$  Elliotts Beach 2. The small indentation just to the south of this triangulation station shows a slight change while to the southward of Shoal Point the greatest discrepancies are noted. In the vicinity of Cutler the new shoreline falls to the northward of that of 1859 and to the southward of the 1919 topography and gradually blends in with the 1859 topography as it approaches parallel  $25^{\circ} 35'$ .

Both Chicken Key and the small island to the north have been displaced somewhat from the old topography.

The dashed lines designating boundaries between deep and shoal water areas were determined by a stereoscopic examination of the photographs.

The small tank and the street system at Chapman Field has been changed slightly. A theodolite cut from Warwick tank was also taken to this small wooden tank.

NAMES.

The names appearing on this sheet are those appearing on charts 583, 1112 and 3260 and the state highway map of this locality.

SYMBOLS.

The standard topographic symbols were used together with the following special symbols in order to bring out the topographic character of the locality: A single full line was used for a ditch, a double full line for all improved, graded and paved highways and streets, a double dashed line for all unimproved but graded roads, and a single dashed line for trails. The boundaries of cultivated areas only are shown and no distinction is made as to the number of separate fields comprising this area.

The culture was noted on the photographs from the principal highways and roads traversed during a limited field inspection. At inaccessible places the culture was interpreted in the office from the similarity noted to that obtained from field inspection.

LANDMARKS.

The landmarks for this sheet were previously submitted (Div. of Charts, file No. 107) on February 11, 1930. It is to be noted that the position of the Warwick tank has been changed. This new position is determined as stated in the previous paragraph on "Control" and is herewith enclosed.

In addition, a tower and the dome of a church can be readily distinguished and should be charted.

Respectfully submitted,

*Roswell C. Bolstad*  
Roswell C. Bolstad  
Jr. H. & G. E.,  
C. & G. Survey.

APPROVED

Approved:

*O. S. Reading*  
O. S. Reading  
Chief of Party, C. & G. Survey.

*K.T. Adams*  
FIELD RECORDS (C)

*J. B. Borden*  
Chief, Section Field Work

*L.O. Lobnitz*  
Chief, Division of Charts

*G. H. Hude*  
Chief, Div. of Hyd'y and Top'y

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

## LANDMARKS FOR CHARTS

Washington, D.C.

**Sept. 15** \_\_\_\_\_, 19**30**

DIRECTOR, U. S. COAST AND GEODETIC SURVEY:

The following determined objects are prominent, can be readily distinguished from seaward from the description given below, and should be charted.

### O.S. Reading

Chief of Party.

[illegible]

A list of objects which are of sufficient prominence for use on the charts, together with a description of the same, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report. The selection, determination, and description of these points are of primary importance.

The description of each object should be short, but such as will identify it; for example, standpipe, water tower, church spire, tank, tall stack, red chimney, radio mast, etc. Generally, flagstuffs and like objects are not sufficiently permanent to chart.

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4540

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. 4540

State.....Florida.....

General locality.....East Coast.....

Locality.....South Miami to Cutler.....

Scale.....1:20,000..... Date of survey.....April 17 & 20....., 19.28

Vessel.....Army Air Corps Loening Amphibian Airplane.....

Chief of Party.....O. S. Reading.....

Surveyed by.....R. C. Bolstad.....

Inked by.....R. C. Bolstad.....

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

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

Instructions dated.....June 6....., 19.29

Remarks:.....Compilation of four-lens air photographs Nos. 427 to 448.....

Reduced to 1:20,000 and printed by photolithographic process  
in Printing Section.

G P O