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U. S. COAST & GEODETIC SURVEY
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DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

R. S. PATTON, Director

State: TEXAS

DESCRIPTIVE REPORT

Photo
Topographic } Sheet No. 5353
~~Hydrographic~~

LOCALITY

MATAGORDA BAY

MATAGORDA PENINSULA

Central Section

~~LONGITUDE 96° 00' TO COTTON BAYOU~~

193 4

CHIEF OF PARTY

T. M. PRICE JR., ENSIGN

U. S. GOVERNMENT PRINTING OFFICE: 1928

5353

1
applied to chart 1284, Jan. 17, 1938 J. S. L.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 5353

TOPOGRAPHIC TITLE SHEET

PHOTO

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. 3

REGISTER NO. 5353

State Texas

General locality Matagorda Bay

Locality Matagorda Peninsula, *Central Section* Longitude 96°-00' to Cotton Bayou

Scale 1/20,000 Date of survey December 7, 1933

Compilation: May, 1934

Vessel U. S. Army Air Corps. Camera: Single lens, 8 1/4" cone,

K-3b, #31-39

Chief of party Ensign T. M. Price Jr.

Surveyed by See data sheet in the descriptive report.

Inked by W. Mack Crook

Heights in feet above _____ to ground to tops of trees

Contour, Approximate contour, Form line interval _____ feet

Instructions dated November 7, 1933.

Remarks: Compilation of aerial photographs #17-1 to 34-1 incl.,

Single Lens. Sheet reduced to scale and printed by photo-

lithographic process.

- NOTES ON COMPILATION -

SHEET NO. 3

PHOTOS: Single Lens No.s 17-1 to 34-1 incl.

DATE OF PHOTOGRAPHS: December 7, 1933. TIME: 2:14 P.M. to 2:38 P.M.

	<u>BY</u>	<u>DATE</u>
SCALE FACTOR (1.00)(sgd)	<u>C. H. Rulfs</u>	4/18/34
PROJECTION (sgd)	<u>T. M. Price Jr.</u>	4/25/34
PROJECTION CHECKED (sgd)	<u>W. H. Burwell</u>	4/26/34
CONTROL PLOTTED (sgd)	<u>J. L. Smith & W. Mack Crook</u>	5/ 1/34
CONTROL CHECKED (sgd)	<u>C. H. Rulfs & Dan Allen</u>	5/ 2/34

TOPOGRAPHY TRANSFERED

TOPOGRAPHY CHECKED

SMOOTH RADIAL LINE PLOT (sgd) C. H. Rulfs 5/ 5/34

RADIAL LINE PLOT CHECKED (sgd)

DETAIL INKED (sgd) W. Mack Crook 5/23/34

AREA OF DETAIL INKED 13.5 sq. statute miles.

LENGTH OF SHORE LINE OVER 200m. 26.9 statute miles.

LENGTH OF SHORE LINE UNDER 200m. 36.1 statute miles.

GENERAL LOCATION: Matagorda Bay, Texas.

LOCATION: Matagorda Peninsula, Longitude ^{Central Section} 96°-00' to Cotton Bayou.

DATUM STATION: <u>SLED 1934.</u>	LATITUDE: <u>28°-33'-34.246"</u>	<u>METERS</u>
	LONGITUDE: <u>96°-04'-26.314"</u>	<u>1054.2</u>
		<u>715.2</u>
(position from field computations)		

COMPILER'S REPORT

for

PHOTO TOPOGRAPHIC SHEET FIELD NO. 3

1. GENERAL INFORMATION

This sheet was compiled from photographs taken by the U. S. Army Air Corps using a single lens K-38 camera #31-39, lens #126593, 8 $\frac{1}{4}$ " cone. The photographs used were Single Lens No. 17-1 to No. 34-1 (inclusive). The first flight for this area, made November 4, 1933, consisted of 59 exposures, #39 to #98. Because of insufficient overlap of these pictures another flight was made over this same area on December 7, 1933, 2:14 P.M. to 2:38 P.M., and consisted of 64 exposures, #1-1 to #64-1. The pictures taken December 7, 1933 were the ones furnished this party for compilation. The tide on the outer coast was low at the time these photographs were taken.

2. CONTROL

(a) Sources

Triangulation by Lieut. E. O. Heaton, 1934.

* Theodolite three point fixes and short traverse and azimuth locations from triangulation stations were made by Field Inspection Party without establishing recoverable marks.

THREE MOUNDS U. S. E. established by triangulation by U. S. E. Intracoastal Waterway Survey, 1928. Computation by Field Inspection Party.

The control is adjusted to 1927 N. A. Datum.

(b) Errors

An error in the location of station POE on the photograph by the Field Inspection Party was discovered by the radial line plot. It had been picked directly on the photograph without measurements from the station. When this station was re-located by short ground measurements its position agreed with the radial plot location.

(c) Remarks

* The hydrographic stations on this sheet (shown by black circles) were located on the ground and pricked directly on the photographs by the Field Inspection Party and their position is established by the radial line plot only, except for four stations the location of which were established by theodolite three-point fix.

* The following are the theod. 3 pt. fix stas. located with 4th order accuracy. Those marked * were selected for use as possible hydro. stas.

Station "Y"	Lat. 28°30' 39.061"	Long. 96°10' 44.184"
" " "Z" *	28-31-30.465	96-10-59.040
" " "27" *	28-33-33.790	96-06-04.026
" " "P" *	28-35-17.898	96-01-35.012
" " "M" *	28-35-53.321	96-00-06.711

3. COMPILATION

(a) Method

The usual radial line method of plotting from single lens photographs was used in the compilation of this sheet. Because the triangulation control did not furnish sufficient grouping of stations to fix any individual single lens picture, enough supplemental control points were established to give four control points on at least every tenth picture, or three on two adjoining photographs.

(b) Adjustment of Plot

No photographs covered by this sheet give evidence of excessive tilt and the radial line plot required no unusual adjustments to give good intersections.

(c) General Description of Topography and Interpretation

For interpretation of this sheet the following notes are given in addition to the General report of Matagorda and Adjoining Bays, by the Field Inspection Party (filed with Descriptive Report Register No. 5351):

The Gulf coast of Matagorda Peninsula consists of a wide sand beach sloping gradually upward to meet sand dunes with steep sides seaward. These dunes diminish gradually into sandy prairie in the middle of the peninsula and on into marsh and wet sand flats on the Matagorda Bay coast, the shore of which is indented by many bayous. The size of the dunes, which is 8-12 feet at the southwest limit of this sheet, decreases toward the northeastern limit of the sheet, dying out almost altogether at 96° longitude. Most of the area is covered with tall coarse grass. There are occasional salt cedar trees,* usually about 15 feet high. Most of these are found near the few houses on the peninsula and serve as wind-breaks. No cultivation goes on at present, the fields shown being covered with grass.

No attempt was made to show on this tracing the individual sand dunes but a symbol was used to indicate their general position. Wet sand and washes were indicated by closely spaced sand symbol. ~~while The wet sand-and-mud~~ areas were indicated by parallel broken lines spaced as in the marsh symbol but without showing grass, and labeled "sand and mud". This is not in agreement with the same type of flats found on the adjoining sheet #5352, on which no symbol was used but the area left open and labeled. (see Descriptive Report #5352, page 4.)

Due to the small scale it was necessary to exaggerate slightly the size of the houses shown on this sheet.

* Although salt cedar trees are evergreen, the "general tree" symbol was used to denote these.

(d) Information From Other Sources

The only source of information was that furnished by the photographs and notes written in the photographs by the Field Inspection Party.

(e) Conflicting Names

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

(f) Shoals

- Shoal areas were outlined from their appearance on the photographs only, using a dotted line, which should not be taken as *exact*
4. COMPARISON WITH OTHER SURVEYS (representing the low water line.)

Surveys of this area were made by the Coast & Geodetic Survey about 1880 (Chart No. 1284).

~~No~~ Comparison was made. *see Page 6*

This sheet is joined by Sheet Register No. 5359 (Field No. 9) on the northeast, and by Sheet Register No. 5352 (Field No. 2) on the southwest.

The junction with adjoining sheets is satisfactory.

5. LANDMARKS

No landmarks are recommended for this sheet.

6. RECOMMENDATION FOR FURTHER SURVEYS

The compilation of this sheet is believed to have the probable error of 5 meters in well defined detail of importance for charting and of 8 meters for other data. *The estimate of accuracy is high for work on this scale. A better estimate is an accuracy of 0.3 to 0.5 mm on the chart for intersected points and 0.3 to 0.8 mm for other detail. By Jones*

7. RECOVERABLE OBJECTS

recommended for H.S.T. stations

There were no recoverable objects within the limits of this sheet.

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.

W. Mack Crook
Submitted By (sgd) W. Mack Crook

Note: The intermittent water areas were cross-hatched with lines parallel to the parallels of latitude instead of at 45 degrees which is standard.

DETAIL COMPARISON TO SURVEYS TO 1880 (CHART # 1284)*

1. Change in position of V.V.W. line from 1880 to 1900

Longitude	Latitude (approx)	Change, old to new **			Remarks
		Gulf M.H.W. m.	Mat.Bay M.H.W. m.	Width of Pen.*** m.	
96°-10'-00"	28°-31'	+70	0	0	
96°-07'-30"	28°-32'	+80	-80	0	
96°-05'-00"	28°-33'	0	+60	-40	{Lake different where perpen- dicular intersects Bay shore. (Shape of Bay shore changed.)}
96°-02'-30"	28°-34'	-32	0	-110	
96°-00'-00"	28°-35'	-95	+20	-240	

2. Numerous differences in marsh, islands, ponds and inlets on the Matagorda Bay shore make a width comparison of the Peninsula difficult. Hurricanes annually change the Peninsula somewhat causing new breaks through and new deposits of sand and mud.

Greatest difference from old survey found in the Bay shore between 96°-02' and 96°-03'.

* Account taken of change of datum.

** + accumulation; - recession.

*** Measured approximately perpendicular to Gulf shore where it crosses the meridian shown.

REVIEW OF AIR PHOTO COMPILATION T-5353

Scale 1:20,000

Comparison with Graphic Control Surveys.

There are no graphic control surveys in this area.

Comparison with Previous Topographic Surveys.

T-600 (1857) 1:20,000.

T-600 covers both sides of Matagorda Bay and Matagorda Peninsula from Colorado River to Oyster Lake.

For one mile from the eastern limit of the compilation the shore line of the Gulf of Mexico has receded 0 to 50 meters. For the rest of the sheet, the Gulf shore agrees within 20 meters, and in most places within 10 meters.

The bluff is shown about 50 meters farther inland on the compilation. Examination of the photographs shows this to be the case. This recession probably is the result of the very heavy erosion work in progress in this area.

On the Matagorda Bay side, the shore line has receded 100 meters.

The break and wash across the Matagorda Peninsula at longitude 96° 02' is not shown on T-600.

The compilation is adequate to supersede T-600 in all points of detail within the area common to the two surveys.

Comparison with Contemporary Hydrographic Surveys.

Hydrographic surveys in the area are under way but have not as yet been received in this office.

Landmarks and Aids to Navigation.

No landmarks or aids to navigation are charted in area and none are submitted with the compilation.

Comparison with Chart 1284.

A very complete and detailed comparison with Chart 1284 is given on page 6 and of the descriptive report for the compilation.

August 16, 1935.

Approved
K.T. Adams

Respectfully submitted,
Ralph M. Berry
- Ralph M. Berry.

B.J. Jones

REVIEW OF PHOTO TOPOGRAPHIC SURVEY NO. 5353

Title (Par. 56) See page one of Descriptive Report.

Chief of Party T. M. Price Jr.

Compiled by See page two of
Descriptive Report.

Project Party # 20,
Corpus Christi, Texas.

Instructions dated Nov. 7, 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.) None submitted.
- 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.) Shoal areas indicated only, by a dotted outline. No low water line obtained. This symbol not changed, pending arrival of hydrographic survey. *RMB 8/17/35*
- 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.) No bridges over navigated waters are shown on this sheet.
- 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.) The only recoverable stations are triangulation stations.
- 13.✓ A list of landmarks for charts was furnished on Form 567 and scaling of positions checked. (Par. 16d, e, 60.)

No landmarks recommended

Survey No. T-5353

Chart No. 1117 & 1284

Diagram No. _____

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

[illegible]

APPROVED NAMES
UNDERLINED IN RED

W. W. W. W.