

5864

U. S. COAST & GEODETIC SURVEY
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DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. 10
Hydrographic }

State TEXAS

LOCALITY

Pass Cavallo

Gulf Coast

1935

CHIEF OF PARTY

E.O. Heaton, & ~~E.B. Roberts~~

5864

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 10

REGISTER NO. **5864**

State TEXAS

General locality Gulf Coast

Locality Pass Cavallo

Scale 1/10,000 Date of survey Nov. 1934 to June, 1935

~~XXXXXX~~ Proj. HT-118

Chief of Party E.O. Heaton & B.D. Roberts

Surveyed by J.L. Hale, Observer.

Protracted by J.H. Burney, C.W.O'Melveny, W.H. White, & W.L. Moore

Soundings penciled by C.W.O'Melveny & W.L. Moore

Soundings in ~~fathoms~~ feet

Plane of reference M.L.W.

Subdivision of wire dragged areas by _____

Inked by George F Jordan

Verified by George F Jordan

Instructions dated Nov. 5, 1932, Nov. 16, 1933, Mar. 5, 1934
May 17, 1934 and letter dated April 18, 1934

Remarks: _____

DESCRIPTIVE REPORT
TO ACCOMPANY
HYDRO SHEET NO. 10

Pass Cavallo

Date of Instructions:

Instructions for this work were dated Nov. 5, 1932, with supplemental instructions dated Nov. 16, 1933, Mar. 5, 1934, May 17, 1934 and letter dated April 18, 1934.

Survey Methods:

For depths of about 10 feet and over, which includes most of this sheet, a leadline graduated in feet was used from a launch. For depths less than 10 feet a pole, graduated in feet and having a thin perforated plate about 6 inches in diameter to prevent its sinking in soft mud, was used. For inshore work the pole was used from a skiff powered by an outboard motor.

The reducers for this sheet are entered in half feet where the soundings will reduce to over 15 feet and in tenths of feet where the soundings will reduce to 15 ft. or less. In plotting, the half feet were dropped for all depths of $10\frac{1}{2}$ ft. or over. The 12 foot depth curve is the deepest one shown on this sheet since no boat of greater depth could enter the bay due to controlling depth on entrance bar ($8\frac{1}{2}$ ft.)

Triangulation stations "Pipe" and "Life" were plotted from the 1906 coordinates corrected to the 1927 datum. ("Old lighthouse iron pile" 1906 and "Life saving station 1906")

The shoreline is transferred from topo sheet Field Letter "V". T-4903 (1934)

No soundings were taken on the bar from Decros Point south to Lat $28^{\circ} 22.3'$ and farther south in approximate Latitude $28^{\circ} 21'$. Weather conditions must be ideal to prevent breakers on the bars and altho repeated attempts were made no suitable weather was forthcoming. During the period from June 1934 to June 1935 there were only a few days when it was reasonably safe for a small boat on the bars. The hydrographer estimates the depths at from 2 to 6 feet in the areas not sounded.

The low water line was not determined by the soundings except north of Decros Point. The rest of the low water line is transferred from the topo sheet.

Discrepancies:

Necessity for doing the field work at widely varying times of favorable weather allowed changes to take place in the junction area between two days of work. This is probably the cause of poor agreement in several places.

There are occasional notations in red in the record books for this sheet of "apparent increase in speed not noted" or "apparent decrease in speed not noted". This notation was probably used in many places where there was not an omission in recording but changes of speed actually occurred without the recorder's knowledge. These changes are probably mostly due to tidal currents thru the pass.

The shifting character of Pelican Island is responsible for the soundings from 78-79d (red) and the zero sounding on 80d (red) apparently plotting on dry land. The island probably shifted after the topography was done and it is recommended that the soundings be accepted as correct.

Steep slopes and difficulty in applying a varying tide reducer have caused discrepancies in the crossing soundings. The shoal sounding is accepted in each case. ✓

Dangers:

The ruins of East Shoal Lighthouse were not found by the hydrographic party. altho the party drifted in the vicinity. According to local fishermen these ruins are covered by sand at certain periods and exposed at others due to the strong scouring action in the vicinity. ✓

The 10 inch iron pipe bare 9 feet at M.L.W. at Signal "Pipe" is dangerous at night altho it serves as a landmark by day. The steel framework of the old lighthouse proper is 5 or 6 meters NE of the pipe and submerged about 1 foot at M.L.W. ✓

At Lat $28^{\circ} 21.73'$, Long $96^{\circ} 23.08'$, is the wreckage of an old side wheel steamer. An iron crank 2 feet bare at M.L.W. marks the wreckage which is dangerous to any boat going in that shoal water. ✓

Soundings of $2\frac{1}{2}$ and $3\frac{1}{2}$ feet on the shoal at Lat $28^{\circ} 23.65'$, Long $96^{\circ} 23.45'$ are dangerous in that they are close to good water to the west. ✓

6 foot soundings at Lat $28^{\circ} 19.64'$, Long $96^{\circ} 24.5'$ are dangerous in that depths to the west are considerably deeper and a boat coming from the west gets no indication of the shoal until right on it. ✓

The string of piles running NW from Station "Pile" ^(SW corner of sheet) is a danger to small boats moving along the shore at night as there is no light. ✓

The fact that the shoal areas and bars shift with each storm constitutes a danger. The entrance buoy is now located at Lat $28^{\circ} 20.3'$, Long $96^{\circ} 21.8'$, which is too far east to be of greatest value. Boats rounding the buoy would be deceived by the appearance of the pass. At present a better location for the buoy would be about Lat $28^{\circ} 19.5'$, Long $96^{\circ} 23.0'$ ✓

Channels:

As noted in the report for sheet # 9 the entrance bar to Saluria Bayou from Matagorda Bay has a least depth of 5 feet at M.L.W. (2 ft. controlling depth on the west end of Saluria Bayou, see sheet #9.) ✓

Pass Cavallo is a natural pass from Matagorda Bay to the Gulf of Mexico. When looking at the pass from the Gulf side the shore seems to run in a continuous line from Matagorda Island to Matagorda Peninsula. Almost always there is an unbroken line of breakers from Lat $28^{\circ} 20'$, Long $96^{\circ} 23.3'$ to a point about a quarter mile south of triangulation station "Cavallo". No openings show in the breakers until you get west of the Longitude given above. The entrance bar from the Gulf has a minimum depth of $8\frac{1}{2}$ feet at M.L.W. The minimum depth on the bar at the Matagorda Bay end of the pass is 10 ft. at M.L.W. according to the report for Sheet 15. These minimum depths preclude the necessity for depth curves greater than 12 ft. except in the Gulf. ✓

* 6 ft. can
be gotten into
the Bayou
J.G.H.

In very calm weather a boat of 3 feet draft can pass close around the end of Decros Point into the bay. This is not advisable, however, except for boatmen with local knowledge of the pass.

Anchorage:

Anchoring in the pass should be avoided during season of "northers" as a northwest storm causes the current to become very swift and no ground tackle would be adequate to hold a boat against it.

Comparison with Previous Surveys:

This survey was compared to Chart 1284.

Pelican Island is a sand island which changes daily in size, location and shape, altho remaining in the same general vicinity. Its present location appears to fall in about the center of the group of islands now shown on the chart.

The SW tip of Decros Point is in about the same place as charted but that part of Matagorda Peninsula which shows on this sheet is 300 to 400 yards narrower than it formerly was, the recession having occurred about equally on the Gulf and the bay shores. The hydrographer for this sheet asserts that the hurricane of July 25, 1934 changed the shoreline at Decros Point considerably after it had been surveyed for this sheet by plane table. Undoubtedly the shoreline was altered in other portions of the pass to some extent at the same time.

Big Bayou Bn is now located about N 10° E 800 meters from its charted location.

At Lat 28° 23.2', Long 96° 22.8' the present depth of 8 feet corresponds to a charted depth of 26 feet. This is typical of the changes in the pass, so no attempt will be made here to describe the depth changes in detail.

Geographic Names:

As noted in the report for topographic Sheet "V", three changes in names are recommended on this sheet as follows:

- (1) Pelican Islands should be changed to Pelican Island.
- (2) McHenry Bayou, in conformity with local usage, should be changed to Saluria Bayou.
- (3) Saluria should represent a locality and not a village symbol. The charted location of the village symbol is now submerged due to shoreline changes.

Statistics:

Number of statute miles sounding lines - - 241.9
 Number of positions - - - - - 969
 Number of soundings - - - - - 6841

Men in Charge of Hydrography:

J.L.Hale, Observer, was in charge of hydrography for this sheet.

Respectfully submitted,

Warren L. Moore
Warren L. Moore,
Surveyor, C. & G. Survey.

Inspected and Approved,

C.R. Reed
C.R. Reed, Aid,
C. & G. Survey.

Smooth Sheet Yes

Boat Sheet 1

Sounding Records 5 Vols. _____

Descriptive Report Yes

Title Sheet Yes

List of Signals Vol 1

Landmarks for Charts (Form 567) Yes

Statistics Yes

Approved by Chief of Party No

Recoverable Station Cards (Form 524) None

Special Chart for Lighthouse Service None.

(Circular No. 30, 1935)

Remarks The floating aids falling within the area of this survey are not charted due to changeable bottom and shifting of aids to show best water thru channel.

VERIFIER'S REPORT ON H-5864 (1934-35)

1. Survey H-5866 (1934-35) joins this survey on the north, and H-5877 (1934-35) makes a junction on the west at Saluria Bayou.
2. Control and shoreline are taken from plane table survey T-4903 (1934), which is the basis of air photo compilation T-5045. Comparison has been made with the latter, and a wharf on the south side of Saluria Bayou was transferred to this survey from T-4903.
3. The Tide Gage located at the southwest limits of this survey originates from penciled location on the smooth sheet.
4. No additional plotting or changes were made.
5. The records conform to the requirements of General Instructions.

6. Remarks-

a. Attention is called to the disagreement between hydrography and topographic location of Pelican Island. The descriptive report refers to the changing shoreline from wave and hurricane causes, and the continual shifting of size, shape, and location of the island. The shoreline was run many months previous to this survey.

b. Considerable disagreement in adjoining soundings is noticed in and adjacent to the Pass. This is accepted as resulting from shifting bottom and accomplishing hydrography under adverse conditions of the sea. Vol.5, page 27 carries the notation "too rough for accurate hydrography". This days work is in especial disagreement, although consideration is given in that the adjoining hydrography at certain points was accomplished a month previous.

c. The descriptive report under "Dangers", 3rd paragraph, notes the crank as being exposed "2ft at MLW", whereas in Vol 5, page 34, the crank is noted as baring 2.9 ft. at MLW.

d. The approximate position of the entrance buoy at 20.38/ 21.8' originates from the boat sheet only, with no reference to the same in the records.

e. Notations " Estimated Depths of 2 to 6 ft" originate solely from penciled notations on the smooth sheet.

f. Beacons # 3 and #4 at the entrance to Saluria Bayou exist only on this survey. Air Photo Comp. report T-5045 considers their origin as hydrographic. However, pinholes on T-4903 correspond to the location of these beacons. These stations were not used or referred to in this survey. *The beacons were inked on T-4903 in the office, they were also shown on the boat sheet.*

g. The 1st sounding at Pos. 59c, page 23, Vol.5, 23.7' /23.7' is believed to be erroneous and one fathom shoal. Note that the next three soundings were missed, giving evidence of irregular hydrography at this point. *Sdg. probably erroneous but has been retained on sheet.*

* Air photos made 1933 (Nov.)
Plane table - May 1934.
Compilation has no subsequent surveys. Consulted Andrews.
G.F.J.

Respectfully submitted

George F. Jordan
George F. Jordan

Mar. 25, 1936

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. 5864

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet	969
Number of positions checked	52
Number of positions revised	2
Number of soundings recorded	6841
Number of soundings revised	8
Number of signals erroneously plotted or transferred	0

Date: Mar. 25, 1936

Verification by George F Jordan

Time: 62

Review by

R. J. Christman

Time: 18½ hrs

Hydrographic Sheet No. 10 and the accompanying records have been inspected and are approved. ✓

C.R. Reed

C.R. Reed, Aid,
Coast & Geodetic Survey.

TIDE NOTE FOR HYDROGRAPHIC SHEET

February 13, 1936.

Division of Hydrography and Topography:

✓ Division of Charts: Attention: Mr. E. P. Ellis

Tide Reducers are approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 5864

Locality Pass Cavallo, Texas.

Chief of Party: E. O. Heaton & E. B. Roberts in 1934, 1935.

Plane of reference is mean low water reading

1.5 ft. on tide staff at Pass Cavallo

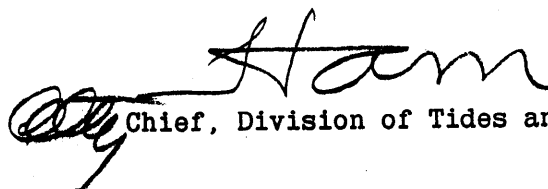
~~ft. below B.M.~~ washed out

2.6 ft. at Port O'Connor

7.9 ft. below B.M. 1

Height of mean high water above plane of reference is approximately
1.3 feet at Pass Cavallo; 0.4 feet at Port O'Connor.

Condition of records satisfactory except as noted below:


Chief, Division of Tides and Currents.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5864 (1934-5) FIELD NO. 10

Pass Cavallo, Gulf Coast, Texas
Surveyed in Nov. 1934 to June 1935
Instructions dated Nov. 5, 1932, Nov. 16, 1933, Mar. 5 and
May 17, 1934 (E. O. HEATON)

Hand Lead and Pole Soundings.

3 Point fixes on shore signals.

Chief of Party - E. O. Heaton.

Surveyed by - J. L. Hale.

Protracted by - J. H. Burney, C. W. O'Melveny, W. H. White, W. L. Moore.

Soundings penciled by - C. W. O'Melveny, W. L. Moore.

Verified and inked by - G. F. Jordan.

1. Condition of Records.

The records are neat and legible and conform to the requirements of the Hydrographic Manual.

The Descriptive Report is complete and satisfactorily covers the various items of importance.

2. Compliance with Instructions for the Project.

The plan and character of the survey are in accordance with the instructions for the project. The complete development of the area was prevented by the existence of breakers.

3. Shoreline and Signals.

The shoreline originates with plane table survey T-4903 (1934) and air photo compilations T-5045 (1933-4) and T-5352 (1934).

The topographic signals come from T-4903 (1934), and the hydrographic signals come from sextant cuts recorded in the sounding records (See List of Signals, Vol. 1 of the sounding records for index of cuts).

4. Sounding Line Crossings.

No regular system of cross lines was run. Crossings resulting from the work show considerable differences, due in part to the changeable nature of this area. (See "Discrepancies" page 1 of the Descriptive Report).

5. Depth Curves.

The larger portion of the bar extending southwest of Matagorda Peninsula and the inshore area of the Gulf coast were not developed due to the prevalence of breakers (See Descriptive Report, page 1).

The information around Pelican Island and in the vicinity of latitude 28°22.5', longitude 96°24.0', is insufficient to draw the depth curves. In other areas the usual depth curves may be satisfactorily drawn.

6. Junction with Contemporary Surveys.

The junctions with H-5866 (1934-5) and H-5877 (1934-5) to the north and northwest will be considered in the reviews of those sheets.

In the outside areas in the Gulf no surveys adjacent to the present survey are contemplated for some time. On these limits the present survey is in general agreement with the last previous survey, H-1427b (1879).

7. Comparison with Prior Surveys.

a. H-635 (1856), H-1097 (1871), H-1231 (1874).

Parts of these surveys on scale of 1:20,000, 1:20,000 and 1:10,000 respectively fall within the area of the present survey. The bottom is very changeable, characteristic features changing with every storm. (See last par. under "Dangers" page 2 of the Descriptive Report). Very little or none of the information from these surveys is in use on the present charts and it would serve no useful cartographic purpose to list differences in detail. Because of the changeable nature of the area and the time elapsed since the above surveys were made, they should not be used in future charting of this area.

b. H-1427b (1879).

This survey, on a scale of 1:40,000, overlaps the present survey on the Gulf coast. The lines of soundings approaching the shore are spaced about 1 mile apart but the agreement is good in depths greater than about 20 feet. In lesser depths, especially outside the bar across the pass, there have been many changes, some areas deepening and others shoaling. The present survey extends out to about the 30 foot depth and because of the larger scale and closer development should supersede the above survey for charting the common area.

8. Comparison with Chart 1284 (New Print dated March 1, 1935).

a. Hydrography.

Within the area of the present survey the chart is based on

surveys discussed in the foregoing paragraphs and a survey by the U. S. Army Engineers in July 1887. The file number of the Engineer's survey could not be ascertained, however, a comparison with the printed chart shows numerous shifts in shoreline and radical changes in the vicinity of Pelican Island. Because of the highly changeable nature of this area and the time elapsed since the Engineers' survey was made, it should be disregarded in future charting.

b. Aids to Navigation.

- (1) The bar buoy at the entrance to Pass Cavallo is not charted because it is frequently shifted in position. Although not definitely located its position at the time of the present survey is given in the Descriptive Report, page 2, as latitude 28°20.3', longitude 96°21.8'. The field party reports that its position was too far east at that time and a better location for the buoy would be about latitude 28°19.5', longitude 96°23.0'.
- (2) The present survey located topographically three beacons marking the channel into Saluria Bayou in the vicinity of latitude 28°24', longitude 96°24'. These beacons are not charted and are not listed in the 1936 buoy list.
- (3) The beacon marking the entrance to Big Bayou is considerably north of its charted position. It falls well outside the northern limits of the present hydrography and its location will be considered in the review of E-5866 (1935).

9. Field Plotting.

The field plotting is satisfactory.

10. Doubtful Sounding.

The 28 foot sounding (pos. 59c, Vol. 5, page 23) in latitude 28° 23.7', longitude 96°23.7', is probably 1 fathom too shoal. However, as there is no basis for rejecting it the 28 has been retained on the sheet. It does not constitute a danger as the approach to the pass is limited to 8-1/2 feet at the south and to 10 feet at the north.

11. Additional Field Work Recommended.

Pass Cavallo is very changeable and, though some parts are not as fully developed as desirable, it is considered impractical to attempt to supplement the present work. The survey is adequate for general charting purposes.

12. Note to Compiler.

The attention of the compiler is called to the fact that Pelican Island is being constantly changed in shape and position. The south shore of this island was determined by a sextant fix on Feb. 19, 1935. This determination on H-5864 (1934-5) is later and should be used in preference to that shown on T-4903 (1934).

13. Superseding Old Surveys.

Within the area covered the present survey supersedes the following survey for charting purposes:

H-635	(1856)	in part
H-1097	(1871)	" "
H-1231	(1874)	" "
H-1427b	(1879)	" "

14. Reviewed by - R. J. Christman, April 13, 1936.
and R. L. Johnston.

Inspected by - A. L. Shalowitz.

Examined and approved:

C. K. Green.
C. K. Green,
Chief, Section of Field Records.

L. O. Pollock.
Chief, Division of Charts.

~~CHH~~
Fred. L. Peacock
Chief, Section of Field Work.

G. Hude
Chief, Division of H. & T.

applied to chart	1284	Feb. 18, 1938
applied to chart	1285	May 1940
" " "	890	1952
" " "	889-SC	Aug 1967
" " "	522	Dec 29, 1969

J. G. L.
P.B.C.

J.M.O.C.

Wall