

5866

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

DESCRIPTIVE REPORT

~~Hydrographic~~ } Sheet No. 15
Hydrographic }

State Texas

LOCALITY

~~Coast of Texas~~

Matagorda Bay
Western Part

1934&5

CHIEF OF PARTY
Earl O. Heaton
~~E. B. Roberts~~

5866

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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. 15

REGISTER NO. **5866**

State TEXas

General locality ~~Coast of Texas~~ Western Part¹²

Locality Matagorda Bay¹²

Scale 1:20,000 Date of survey June 1934 to May, 1935

Vessel Project H T 118

Chief of Party Earl O. Heaton and E. B. Roberts

Surveyed by J. L. Hale, Obs.; W. R. Helm, Surv.; W. H. White, Obs.

Protracted by Ensign C. R. Reed

Soundings penciled by W. K. Doolittle, Surv.

Soundings in ~~fathoms~~ feet

Plane of reference Mean Low Water

Subdivision of wire dragged areas by

Inked by C. F. McKenney

Verified by Chas. P. Bush Jr.

Instructions dated Nov. 5, 1932; Nov. 16, 1933; Mar. 5, 1934; May 17, 1934
and by letter of April 18, 1934., 19

Remarks:

DESCRIPTIVE REPORT
TO ACCOMPANY HYDRO. SHEET # 15
MATAGORDA BAY

Date of Instructions:

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

Survey Methods:

Most of this work was done from launches except the shoaler portions inshore which were done with a skiff powered by an outboard motor. A leadline graduated in feet or a sounding pole graduated in feet, having a metal plate about 5 inches in diameter on the lower end, was used.

The shoreline is transferred from photo topographic sheets, Register Nos. 5351 to 5356 inclusive, and from plane table topographic Sheet V. The method used to enlarge the shoreline traced from photo-topographic sheets to a true 1:20,000 scale was to subdivide the shoreline into segments of about half an inch long and to properly locate the segment in the projection rectangle by estimation of the differences at the edges. It is thought that no greater error than 5 meters (0.01 inches) has resulted. The shoreline was inked prior to receipt of Field Memorandum No. 5, 1935.

The low water line was not surveyed. The hydrographer has sketched it on the boat sheet by estimate from sounding lines. In only one case does the sounding reduce to zero.

The boundary of the reef at Well Point and the low water line at Oliver Point are estimated from hydrographic information in the record, and reference to the boat sheet.

Discrepancies:

Thruout this sheet discrepancies of $\frac{1}{2}$ ft. are disregarded as they may be caused by as little as 0.1 ft. difference in the soundings. The shoaler sounding is placed at the crossing.

Discrepancies of $\frac{1}{2}$ and 1 foot between work from June 26-June 30, 1934 (C to G days, red) and the cross lines run later were so frequent as to cast serious doubt on the tide reducers. Additional cross lines were run as a check and showed that the reducers on the parallel lines were a half foot too small. The marigrams show that the attendant had misunderstood his instructions. Therefore the half foot was added to all reducers for those 5 days and the soundings were so plotted.

18 to 19 B (red) disagrees with 12 to 13 NN (red) by one foot. It is recommended that the 12 ft. sounding be used.

20 to 22 C (red) disagrees with 32 to 33 QQ and 17 to 18 SS (red) by one foot. The whole line of C day from position 18 to position 24 seems $\frac{1}{2}$ to 1 ft. too shoal. It is recommended that the soundings on the cross lines be taken as correct.

35 to 36 C (red) disagrees with 33 to 34 NN (red). It seems that 34 to 39 C is from $\frac{1}{2}$ to 1 foot too deep and it is recommended that the cross lines be taken as correct.

8 to 9 N (red) disagrees with 83 to 84 U (red). The line 5N to 15N seems $\frac{1}{2}$ to 1 foot too deep as shown by distortion of the 12 ft. curve. It is recommended that the parallel lines be taken as correct. The same is true of 24-26N (red).

5 to 6Y (red) disagrees with 15 - 16 XX. No cause is apparent. It is recommended that the Y day be used. Also 32 - 33Y

with 10 to 11XX, use the Y day. ✓

1 to 2DD (red) disagrees with 30f (red). The "f" day soundings look to be in error because the 6 ft. curve is so well defined. Use the DD day line. ✓

85 to 86EE (red) disagrees with 17 - 18k (red) by one foot. It is recommended that the "k" day soundings be used. ✓

62 - 63HH (red) disagrees with 28 - 29MM (red) by one foot. Use the MM day soundings since the HH line appears about a half foot too deep where it crosses 25 - 26MM also. ✓

18 - 19NN (red) disagrees with 52 - 53H and 54 - 55H (red). The course of the 12 foot curve at this point makes it improbable that there are any 13 foot soundings so far north. It is recommended that the cross line soundings be retained. ✓

20 - 21QQ (red) disagrees with 29 - 30D (green) by 2 feet. It is recommended that the 6 ft. sounding ($5\frac{1}{2}$ ft. reduced) on the green D day be considered a leadsman's error which should have been 8 ft. ($7\frac{1}{2}$ ft. reduced). The bulge in the six foot curve seems to indicate an error. ✓

62 - 63SS (red). There is not enough time given in the record for the distance between positions. No explanation is apparent but since this is closely paralleled by 16 - 18NN it is recommended that the soundings between 62 and 63SS be rejected. ✓

On "e" day (red) skiff work changes of speed were made and noted without an intermediate position being obtained. The position of the change of speed was estimated on the basis of a ratio of $1\frac{1}{2}$ to 1 of full speed to half speed with an outboard motor. ✓

1 - 2f (red) disagrees with 2 - 3B (blue) by $1\frac{1}{2}$ ft. Use the blue day soundings. The bottom here is uneven and both soundings may well be true. ✓

30j and 106K (red). The soundings show that these positions are not good. There is ample evidence as to the location of the six foot depth curve, therefore corrections were made in the record to bring about agreement. Altho this is not a perfectly satisfactory solution the importance of this area is not believed great enough to require further work. ✓

At position 85E (blue) no sounding was placed in the sounding column, altho a 2 ft. sounding is given in the remarks under 84E which has its own sounding of 1.2 ft. It is recommended that the 2 ft. sounding be taken as belonging to Position 85. ✓

29 - 30b (blue) disagrees with 122 - 123d (blue). This is probably due to uneven bottom and both lines should be considered correct. ✓

46 - 47g (red). Soundings do not check with the well established location of the six foot depth curve. No explanation is apparent. It is therefore recommended that this line be rejected. ✓

Dangers:

At Lat. $28^{\circ} 24.8'$, Long. $96^{\circ} 22.7'$ the ruined lighthouse (signal "Pipe") consists of a 10 inch pipe sloping at 45° and projecting 9 ft. above M.L.W. This is dangerous at night but serves as an aid in the daytime inasmuch as the best water for entering the main body of the bay passes about 150 meters NW of the pipe.

2 Plotted 2
At Lat. $28^{\circ} 25.24'$, Long. $96^{\circ} 22.67'$ there are several $2\frac{1}{2}$ ft. soundings, the shoalest points on the sand bar which extends from this point in a horseshoe shape for about $1\frac{1}{4}$ miles northward and $3/4$ miles westward with depths of $6\frac{1}{2}$ ft. or less. The shoalest spots on the western arm are the 3 ft. soundings at Pos.3 - 4m (red) Lat. $28^{\circ} 25.45'$, Long. $96^{\circ} 23.14'$ and at 37 - 38k (red) Lat. $28^{\circ} 25.75'$, Long. $96^{\circ} 23.01'$. A boat leaving the ruined lighthouse $1/10$ mile to starboard and making good a course of 38° True will find 10 feet of water into the body of the bay. This entrance is known to shift rapidly.

3 The $1\frac{1}{2}$ ft. soundings at Lat. $28^{\circ} 24.83'$, Long. $96^{\circ} 22.30'$ 63 - 64D (green) are the most dangerous points of an area north, of Matagorda Peninsula extending as far east as meridian $96^{\circ} 20'$ containing numerous 2 ft. soundings close to the 6 ft. curve which are dangerous to small boats because of their distance from shore and proximity to safe water. This whole area should be marked foul on the chart.

4 In Lat $28^{\circ} 31.10'$, Long. $96^{\circ} 28.35'$ there is a wreck (Str Portland) marked by a day beacon. This is dangerous to small boats.

5 In Lat $28^{\circ} 31.14'$, Long. $96^{\circ} 29.12'$ there is a wreck of a steel boiler bare $1\frac{1}{2}$ ft. at M.L.W. in $6\frac{1}{2}$ ft. of water. 180 meters SW of this is a concrete object awash at M.L.W. in 4ft. depth. These are both dangerous to small boats.

6 The highest point of the reef at the entrance to Tres-palacios Bay is the $1\frac{1}{2}$ ft. sounding occurring at Lat. $28^{\circ} 38.80'$, Long. $96^{\circ} 16.50'$ (15 - 16A blue). This is a small projection about 25 meters in diameter surrounded by $3\frac{1}{2}$ and 4 feet of water and is dangerous to small boats.

7 The reef extending southeastward from Well Point is not a danger since it shoals gradually toward the point in all directions.

8 The reef extending westward from Oliver Point is dangerous to small boats. From a point 380 meters east of Oliver Point Beacon, where the sounding is $1\frac{1}{2}$ ft. between 31 & 32D (blue), on in to the point there is no place where even small boats may safely cross the reef. The best water is found 240 meters NW of the beacon and from there a true NE course made good will clear all dangers.

9 A small detached reef with a minimum depth of 1 ft. occurring at position 84E (blue) Lat. $28^{\circ} 36.54'$, Long. $96^{\circ} 13.66'$ extends from that point 300 meters toward shore. The surrounding depths are $4\frac{1}{2}$ and 5 feet. It is dangerous to small boats.

10 Halfmoon Reef is a shell reef varying from 100 meters to 500 meters wide extending 3 miles from shore in a southwesterly direction. It is covered only one foot at mean low water for the greater part of its length. It is marked by a lighthouse $2\frac{1}{4}$ miles from shore and by a day beacon on the very tip. Lines 35 to 48A (green) define a passage thru the reef $1/3$ mile off Palacios Point with a controlling depth of 5 ft. This is called on the chart "Palacios Channel" and at the time of the survey was marked by a small pipe erected by fishermen but a light has since been

established on the inshore side of the channel. (See "Notice to Mariners" No. 27, July 3, 1935 Paragraph No. 1095.)

The shallowest sounding on Halfmoon Reef is $\frac{1}{2}$ ft. at about Lat. $28^{\circ} 34.3'$ and Long. $96^{\circ} 14.0'$ which was located by estimating its position on the range from 44A (green) to the lighthouse. The sounding is not plotted but its location is thought to be good enough for charting purposes in view of its position on the backbone of a reef having depths of 2 ft. or less, and the depth fairly certain because to be visible it must have been awash. This reef is composed of shell which has a tendency to build up and break down so that the depth varies considerably from day to day with a change in wind and tide.

*Estimated depth
not added to survey*

2 A 2 ft. sounding occurring on Position 18F (blue) in Lat $28^{\circ} 35.58'$, Long. $96^{\circ} 14.24'$, is the high point of a reef about 250 meters long parallel to the shore and surrounded by $4\frac{1}{2}$ and 5 ft. of water. It is dangerous to small boats.

3 A 2 inch iron pipe bare 1 ft. at M.L.W. at Lat $28^{\circ} 37.65'$, Long $96^{\circ} 20.57'$ is a privately established marker but is dangerous to small boats, the more so in that it is situated in about 8 feet of water.

Channels:

4 The channel connecting Matagorda Bay to Barroom Bay has a controlling depth of 5 ft. for the portion surveyed on this sheet. (Controlling depth on Sheet # 9 is 4 feet.) The channel is marked by Port O'Connor Beacons # 1 and # 3 (lighted)

5 Palacios Channel has a depth of 5 ft. as mentioned above under "Dangers".

Comparison with Previous Surveys:

6 Chart # 1284 revised to Feb. 15, 1934 has been taken to represent all previous surveys.

7 In general the depths in the body of the bay are the same as on the chart, being 12 and 13 feet.

8 The deeper portions of the bay leading to Pass Cavallo where the water has scoured out the bottom are changed so that there is no use of attempting detailed comparison as witness 38 feet at Lat $28^{\circ} 24.47'$, Long $96^{\circ} 23.31'$ where the chart says 17 feet.

9 Pass Cavallo at the narrowest point has widened some 370 meters by erosion from the west bank. (See sheet # 10.)

10 Big Bayou Bn (signal "Bay") is at Lat $28^{\circ} 24.88'$, Long $96^{\circ} 23.58'$ which is 680 meters north of the charted location.

11 Ruins (Triangulation station "Old lighthouse, iron pile, 1906" Hydrographic Signal "Pipe") at Lat $28^{\circ} 24'$ plus 1389.6 meters, Long $96^{\circ} 22'$ plus 1145.2 meters, are 430 meters SW of the charted location.

12 The ruins charted at Lat $28^{\circ} 25.4'$, Long $96^{\circ} 22.4'$ were not found, nor was any indication discovered. Soundings are closely spaced in this area and it is not considered probable that they still exist. Doubt as to the exact location (due to error in charting the other ruins mentioned above) made a more thoro search impractical. It is probable that they have been covered by shifting sand bars. It is recommended that the landmark symbol on the chart be changed to show the present wrecked nature of the lighthouse ruins (submerged).

13 The pier shown in short dash lines at Lat $28^{\circ} 27'$, Long $96^{\circ} 24'$ has disappeared but the piles which supported the tide gate are part of the remains.

14 The piers shown in dashed lines at Lat $28^{\circ} 31'$, Long $96^{\circ} 29'$ have disappeared.

The detached 6 ft. sounding was not found at Latitude 28° 27.3', Long 96° 23.55' the soundings here being 10 and 10½ ft. Additional soundings were taken on "p" day (red) but the least sounding on that day was 11 feet.

The wreck beacon is at Lat 28° 31.11', Long 96° 28.34' which is 330 meters SSE of its position as given on the chart.

The 1 ft. sounding near the end of the reef at Well Point, Lat 28° 38.4', Long 96° 17.3' was not found. Search in that vicinity revealed 4½ ft. as the shoalest sounding.

The beacon at the end of Halfmoon Reef is located 200 meters N by E of its charted position. The conformation of the six foot curve on this reef is much changed but the shoal soundings remain as charted 1 foot.

The detached 5 ft. spot in Lat 28° 33.45', Long 96° 15.65' was not found. Special search was made on A day (brown). The least sounding found was 8 feet.

In the northeastern section of the bay there has been a shoaling of about 1 ft. making the most easterly end of the 12 foot curve come about 3000 meters SW of the curve as derived from the soundings on the chart. Soundings along the edge of the sheet average 1 foot shoaler.

Greens Bayou and Cotton Bayou no longer cut thru Matagorda Peninsula.

The 9 ft. spot shown on the chart in Lat 28° 32.2', Long 96° 17.6' was not found, soundings here being 10 or 10½ ft. Nine ft. depths occur 600 meters further east. An 8½ ft. sounding was obtained at position 3 - 4SS in Lat 28° 31.96', Long 96° 16.81'.

New Lights Established:

Since the completion of hydrography on this sheet lights have been established off Well Point and off Palacios Point. See "Notice to Mariners" No. 27, July 3, 1935, Par. 1093.

Geographic Names:

It is recommended that the names "Greens Bayou" and "Cotton Bayou" be deleted from the chart as the peninsula is no longer cut thru at these points.

Statistics:

Statute miles of sounding lines - - 1434.4
Number of soundings - - - - - 38,312
Number of positions - - - - - 4,498

Men in Charge of Work:

The greater part of the launch and skiff work was in charge of J.L.Hale, Observer. The inshore work on the northeastern part of the bay was in charge of W.H.White, Observer, as was also the work in the vicinity of Port O'Connor designated by green day letters. Blue day lettered skiff work including the development of Halfmoon Reef was in charge of W.R.Helm, Surveyor. Brown lettered A day north of Halfmoon Reef was in charge of R.J.Roberts, Recorder.

Respectfully submitted,

W.K. Doolittle
W.K. Doolittle, Surveyor,
Coast & Geodetic Survey.

Approved:

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

HYDROGRAPHIC SURVEY NO. 5866

Smooth Sheet yes

Boat Sheet s 2

Sounding Records 22 Vols. _____

Descriptive Report yes

Title Sheet yes

List of Signals Volume 1

Landmarks for Charts (Form 567) Yes

Statistics Yes

Approved by Chief of Party ~~no~~ (C R Reed)

Recoverable Station Cards (Form 524) None

Special Chart for Lighthouse Service None
(Circular Nov. 30, 1933)

Remarks _____

Hydrographic Sheet No. 15 and the accompanying records have been inspected and are approved.

C.R. Reed

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

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. **5866**

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

Number of positions on sheet	.4498.
Number of positions checked	.135.
Number of positions revised	...10.
Number of soundings recorded	.38312
Number of soundings revised	..213
Number of signals erroneously plotted or transferred

Date: **April 29 1936**

Verification by

Chas R Bush

Inking by **CF McKenny**

Review by

R. J. Christman

Time:

13 days 4 1/4 hrs

10 days 4 1/2 hrs

Time:

27 3/4 hrs

220

TIDE NOTE FOR HYDROGRAPHIC SHEET

February 26, 1936.

Division of Hydrography and Topography:

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

Tide Reducers are approved in
22 volumes of sounding records for

HYDROGRAPHIC SHEET 5866

Locality Matagorda Bay, Western Part, Texas.

Chief of Party: E. O. Heaton and E. B. Roberts in 1934-1935.

Plane of reference is mean low water reading

2.6 ft. on tide staff at Half Moon Reef Light

1.9 ft. below B.M. 1 (1934)

2.6 ft. on tide staff at Port O'Connor

7.9 ft. below B.M. 1

Height of mean high water above plane of reference is approximately

0.5 foot.

Condition of records satisfactory except as noted below:


Chief, Division of Tides and Currents.

April 28, 1936.

Verifiers Report on H -5866.

The records conform in most part to the General Instructions. The smooth plotter however changed some angles to make the sounding lines straighter which were unnecessary due to the fact that all depths in the vicinity were the same. The records were very complete in that there were sufficient notes in the remarks column when in the vicinity of any dangers or landmarks to locate same. ✓

The usual depth curves could be completely drawn, however not as they were drawn on the smooth sheet. As they were drawn there were numerous isolated shoals, whereas the curves as they now appear completely outlines the generally shoal areas. The difference was made by using or dropping the half foot soundings. ✓

The field plotting was complete and very accurate. ✓

The office draftsman did not have to do over any part of the drafting except the low water or shoal line which had to be completely drawn by the verifier. That part of the low water line taken from T-5045 and T-4903 is considered to be the low water line. It will be noticed that where it joins the adjacent air photo sheets at Lat. 28-25.5, Long. 96-21 and Lat. 28-26.6 and Long. 96-24 that there is a break in this line. The line as continued in either direction from these two points is a dashed line representing the sketched edge of the shoal areas as taken from the air photo compilations. Any discrepancies of this line with the hydrography was taken up with Mr. Jones who will change the air photo compilations to agree. Comparison was made with T-5351, T-5352, T-5353, T-5354, T-5355, T-5356, T-5045 and T-4903. Topographic signals which the verifier was able to compare were taken from T-4903. The shore line was taken from the above mentioned topographic sheets. ✓

Junctions were made on this sheet with H-5857, H-5813, H-5865 and H - 5877 and with H-5864 on that sheet. The junctions were satisfactory and curves changed to make same continuous where necessary. ✓

The discrepancies as noted in the Descriptive Report were all traced carefully. The field party enlarged on these discrepancies and made them worse than is actually the case. As a matter of fact with a large comparatively shoal body of water, as this is, the crossings were considered very good. It is conceivable that an adverse wind could very easily cause discrepancies of 1 and $\frac{1}{2}$ ft. in crossings but the actual differences were nearly always only on the half foot. Changes and recommendations made by the field party were considered logical and accepted. A few of the worst discrepancies will be enumerated. ✓

There is only $\frac{1}{2}$ ft. difference between 18 to 19b(red) and 12-13N.N.(red). ✓

The curve was straightened out between 8 to 9N (red) and 83 to 84 (red) by simply dropping the $\frac{1}{2}$ ft.. ✓

By omitting several 13ft. soundings the discrepancy between 18 to 19NN (red) and 52-55H (red) was corrected. ✓

These are a few to show the relative unimportance of the discrepancies.

From 107 to 129d (blue) the sounding line follows up one side of a reef and down the other side. This reef is well developed with cross lines and is apparently under one foot of water at all times. The notes in the records were hence considered of no value since the soundings clearly outlined the reef.

On page 69 Vol. 21, note is made of a concrete object. It then notes it as a wreck and is plotted as such.

Logs were mentioned on pages 6, 8, and 16 of volume 15. A similar note is made on page 13 of volume 14 with the further note (Do not plot). It is considered that these are only temporary logs (probably floating) and as they are not plotted on the boat sheet, nor were they plotted by the field party on the smooth sheet, they are omitted.

It is considered unnecessary to ink the details of hydrographic signal "wreck" as has been pencilled on the smooth sheet by the field party.

Numerous notations of breakers were inked together with dashed black lines showing their extent but it is felt that the soundings themselves at these locations should be sufficient.

The work is very accurate and all areas sufficiently covered. The dangers as listed in the Descriptive Report were not gone into as they are not considered a part of the verifiers work.

Chas. P. Bush Jr.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5866 (1934-5) FIELD NO. 15

Matagorda Bay, Western Part, Texas

Surveyed in June 1934, May 1935.

Instructions dated Nov. 5, 1932; Nov. 16, 1933; Mar. 5, 1934;
May 17, 1934, (E. O. HEATON), and Letter dated April 18, 1934.

Hand Lead and Pole Soundings.

3 Point fixes on Shore Signals.

Chief of Party - E. O. Heaton.

Surveyed by - J. L. Hale, W. R. Helm, W. H. White.

Protracted by - C. R. Reed.

Soundings penciled by - W. K. Doolittle.

Verified and inked by - Chas. R. Bush, Jr., and C. F. McKenney.

1. Condition of Records.

The records are neat and legible and conform to the requirements of the Hydrographic Manual except that it is desirable to use a distinctive color to designate signals located from aerial photographs. The accepted office practice is to show them in green. The red circle should be reserved for signals located by plane table methods.

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

2. Compliance with Instructions for the Project.

The plan, character and extent of development are in accordance with the instructions for the project, except that the entrance to Big Bayou (latitude $28^{\circ}25'$, longitude $96^{\circ}24'$) should have been developed to prove or disprove the existence of a channel across the shoal area.

3. Shoreline and Signals.

The shoreline originates with air photo compilations T-5045 (1933), T-5351 (1933), T-5352 (1934), T-5353 (1934), T-5354 (1933), T-5355 (1933), T-5356 (1933-4).

Topographic signals come from the above air photo compilations. Hydrographic signals were located by sextant fixes recorded in the sounding records and indexed on page 1 of Volume 1.

4. Sounding Line Crossings.

The sounding line crossings are satisfactory. An analysis of the discrepancies noted in the Descriptive Report (page 1) shows that the differences generally are 1 foot or less which is not excessive in a soft mud bottom.

5. Depth Curves.

Within the area covered by the survey, the usual depth curves can be satisfactorily drawn.

6. Junction with Contemporary Surveys.

The survey joins H-5864 (1934-5), H-5877 (1934-5), H-5857 (1934-5), H-5813 (1934-5), and H-5865 (1934-5). All the junctions are satisfactory except that the line of soundings in the dredged channel at Port O'Connor should have been extended to the westward to meet the hydrography on H-5877 (1934-5). The field party states that the depth in this channel is in excess of the controlling depth to the westward. (Descriptive Report H-5877).

7. Comparison with Prior Surveys.a. T-720 (1858).

This survey is a reconnaissance on a scale 1:50,000 that shows a few soundings off Big Bayou in the area under consideration. The locality has changed greatly and the survey need not be considered in future charting.

b. H-588 (1856), H-635 (1856), H-689 (1859), H-727 (1860), H-1031 (1866 to 71), H-1094 (1871), H-1095 (1871).

These surveys, all on scales 1:20,000, constitute a single survey of the area under consideration. H-635 (1856) is a replotting in 1858 from the original notes and superseded a portion of H-588 (1856). A general comparison of the above surveys with the present survey shows a fair agreement in depths over the larger portion of Matagorda Bay. The deeper area as represented by the 12 foot curve appears to have shifted southward from 1/2 to 1 mile but the actual change in depth is only from 1/2 to 2-1/2 feet. In general the present survey shows slightly deeper water, though in several large areas the reverse is true. There are a number of areas where extensive changes have taken place. The more notable of them are the following:

- (1) The inner part of Pass Cavallo is very changeable. As noted above, the 1856 survey was replotted in 1858 but a resurvey was made in 1871 which is discussed in par. 7c of this review.
- (2) No authority was found for the detached 6 foot spot (charted) in latitude $28^{\circ}27.35'$, longitude $96^{\circ}23.60'$. It first appears on the Feb. 1926 edition of Chart 1284 where the previous edition had a 9 foot sounding. The present survey found 10 to 11 feet in the vicinity (Descriptive Report, page 5). It is assumed that the

6 was a typographical error in charting and should be expunged from the chart.

- (3) The pier charted in latitude $28^{\circ}27'$ longitude $96^{\circ}24'$ has disappeared only a few piles remaining which were used as a support for the tide gage during the present survey. (See Descriptive Report, page 4, par. 13).
- (4) The two piers charted in latitude $28^{\circ}31'$, longitude $96^{\circ}29'$, are shown in red on H-727 (1860), but no authority for them is indicated. The Descriptive Report (page 4, par. 14) states that they have disappeared.
- (5) The shoal area off the entrance to Carancahua Bay (latitude $28^{\circ}37'$ longitude $96^{\circ}21'$) has shifted to the southwestward to a position directly off the entrance. The depths on H-1095 (1871), 1-1/2 mile on either side of the entrance to the bay are in fair agreement with the present survey.
- (6) Depths over the middle ground at the entrance to Trespalacios Bay (latitude $28^{\circ}38.8'$, longitude $96^{\circ}16.5'$) have increased. A considerable area with 1 foot soundings is shown on H-1094 (1871) whereas the present survey shows a small area (about 25 meters in diameter) with a least depth of 1-1/2 feet (Descriptive Report, page 3, par. 3). The general outline of the shoal within the 6 foot curve remains about the same. Changes also have taken place on the shoal areas extending off the points on either side of the entrance. The present survey shows an adequate development and should be accepted for charting purposes.
- (7) The area off Palacios Bayou southward of a 6-1/2 foot sounding from H-1094 (1871) charted as a detached 6 foot spot in latitude $28^{\circ}37.5'$, longitude $96^{\circ}13.8'$, has shoaled considerably, the larger portion of the area being now within 6 foot curve.
- (8) Halfmoon Reef has built up about 600 meters to the southward of the shoal area shown on H-1031 (1866 & 71) and the southern tip is now marked by a day beacon (latitude $28^{\circ}32.30'$, longitude $96^{\circ}15.48'$).
- (9) The detached 5 foot spot charted in latitude $28^{\circ}33.45'$, longitude $96^{\circ}15.65'$, comes from H-1031 (1871). An examination of the original sounding record (IX of H-1094) shows that it was incorrectly plotted, the corrected plotting placing it 330 meters to the southeast and close to the 6 foot curve of the 1871 survey. The present survey shows a general deepening of the shoal in the vicinity to 7 feet and the 5 foot spot should not be retained.

Because of the changes noted above, the lapse of time since the surveys were made and the larger scale and close development of the present survey, H-5866 (1934-5) should supersede the above surveys for future charting.

c. H-1097 (1871).

This survey on a scale 1:20,000 is a resurvey of Pass Cavallo. The area common to the present survey has greatly changed. The positions of the two light structures (charted as ruins) was plotted on this survey from information furnished by the Lighthouse Service in June 1873. No evidence of these structures was found during the present survey. The remains of a light structure mentioned in Chart Letter 775 (1935) and the Descriptive Report, page 4, par. 11, as being 430 meters S W of its charted location are probably the remains of a later structure. The two "ruins" are still listed in the Local Light and Buoy List, Gulf Coast 1936. Because of the many changes, the lapse of time since the 1871 survey was made and the larger scale and closer development on the present survey, H-5866 (1934-5) should supersede the above survey for charting purposes.

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 contains no other information that needs discussion in this review except as follows:

- (1) The present representation of Halfmoon Reef has been retained from the Jan. 1909 edition of obsolete chart 207. The authority for the change from the previous charting of the reef was not determined but the chart gives the Bureau of Fisheries to 1905 as the source for information other than that of this Bureau. The present charting of the crest of the reef is in good agreement with H-5866 (1934-5) but details of the 6 foot curve have changed considerably.
- (2) The location of the improved channel (latitude $28^{\circ}26.3'$ longitude $96^{\circ}24.0'$) was charted from Coast Pilot information submitted on a copy of chart 207 and filed as Blue print 15555 (1915).
- (3) The feature representing a 5 foot channel and beacon (latitude $28^{\circ}24.3'$, longitude $96^{\circ}23.6'$) has been retained on Chart 1284 from obsolete Chart 207. It is not an improved channel but probably a convention to

indicate a 5 foot channel into Big Bayou. The present survey shows great changes in this vicinity but is not adequate to disprove the existence of a 5 foot channel into this Bayou. However, as the Intracoastal Waterway route passes through the improved channel at Port O'Connor this feature should no longer be charted.

- (4) The recommendation in paragraph 12, page 4 of the Descriptive Report, which calls for charting the submerged wreck symbol for the lighthouse ruins in approximate latitude $28^{\circ}24'$, longitude $96^{\circ}22'$, is not concurred in since a portion of the ruins is above high water.

D.R. page 4 refers only to the northernmost of the two towers which could not be located - now charted as submerged S.C.L. Feb. 1938

b. Controlling Depths.

The controlling depth charted for the improved channel at Port O'Connor is "3 ft. Aug. 1934" from Chart Letter 597 (1934). A later report from the U. S. Engineers (Chart Letter 630/15 of 1935) gives the same depth for June 1935.

c. Aids to Navigation.

The charted aids to navigation are in agreement with the positions given on the present survey, except as follows:

- (1) The two beacons formerly marking a 5 foot channel into Big Bayou (latitude $28^{\circ}24.3'$, longitude $96^{\circ}23.6'$) are no longer in existence. The Coast Guard maintains a marker beacon (Sig. Bay) about 680 meters north of the above position to mark the edge of the shoal extending off the entrance to Big Bayou. (Descriptive Report, page 4, par. 10; also see Descriptive Report H-5864 of 1934-5).
- (2) The wreck and beacon charted in latitude $28^{\circ}31.3'$, longitude $96^{\circ}28.4'$, was located on the present survey by sextant fix about 330 meters SSE of its charted position. The authority for this charting of the wreck was not ascertained. The position of the wreck as shown on the present survey is in agreement with the location given on H-727 (1860).
- (3) The day beacon charted at the southern tip of Halfmoon Reef (latitude $28^{\circ}32.2'$, longitude $96^{\circ}15.5'$) was located on the present survey by triangulation about 200 meters N. by E. of its charted position. The Bn. was charted from Lighthouse Notice to Mariners 17 and 19 of 1927.
- (4) The lighted beacon off Oliver Point charted in latitude $28^{\circ}38.4'$, longitude $96^{\circ}15.5'$, was located by triangulation on the present survey about 100 meters east of its

charted position. The light was established in 1913 and was charted from Lighthouse information.

The above beacons adequately mark the features intended and the differences between their charted positions and the locations on the ground do not constitute a menace to navigation.

Several new lights have been established since the field work was completed. (See Descriptive Report, page 5).

9. Field Plotting.

The field plotting was complete and accurate.

10. Doubtful Sounding.

The estimated 1/2 foot depth on Halfmoon Reef in approximate latitude 28°34.3', and longitude 96°14.0', (discussed in paragraph 1, page 4 of the Descriptive Report), has not been placed on the sheet. The depth obtained on the regular system of lines is 2 feet, and the Descriptive Report states that the reef is composed of shell and that the depth, "varies considerably from day to day with a change in wind and tide".

11. Additional Field Work Recommended.

The survey is very satisfactory and no further work is required. The channel into Big Bayou was not developed but this is of minor importance. (See par. 8a(3) of this review).

12. Superseding Old Surveys.

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

T-720 (1858) hydrography in part.	H-1031 (1866 & 1871) entirely.
H-588 (1856) in part	H-1094 (1871) in part.
H-635 (1856) " "	H-1095 (1871) " "
H-689 (1859) " "	H-1097 (1871) " "
H-727 (1860) " "	

13. Reviewed by - R. J. Christman, May 8, 1936.

Inspected by - C. K. Green.

Examined and approved:

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

L. O. Polbit
Chief, Division of Charts.

L. O. Polbit
Chief, Section of Field Work.

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

Fred. L. Peacock
(over)

NAUTICAL CHARTS BRANCH

SURVEY NO. 5866

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
8-8-51	888	Keeler	Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
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A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

applied to chart 1284 # Jan. 1938 J.G.H.

About 8 inches of the eastern edge of the sheet was damaged after duplication and review. The hydrography involved has been transferred to the sheet as a sub sketch and the damaged portion cut off.

Ed. Straw
July 15. 1936.

Applied to chart 889-SC Aug 1967 J.M.O'C.

Applied to chart 52 12/24/69 ~~Wall~~