

5511

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Form 504
Rev. Dec. 1933
DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. 24 5511
Hydrographic }

State Texas

LOCALITY

East Bay and

Gulf of Mexico

1933

CHIEF OF PARTY

Earl O. Heaton

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

U. S. COAST & GEODETIC SURVEY
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SEP 13 1934

REG. NO. 5511

HYDROGRAPHIC TITLE SHEET Acc. No. _____

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. 24

REGISTER NO. 5511

State Texas

General locality Galveston Bay and

Locality East Bay and Gulf of Mexico

Scale 1 : 20,000 Date of survey June to Nov., 19 33

~~Project:~~ Project: HT-118

Chief of Party Earl O. Heaton, Lieut.
Lieut. (j.g.) J. S. Norton Ensign W. C. Russell
Surveyed by G. S. Tinsley, Observer

Protracted by W. K. Doelittle, Surveyor

Soundings penciled by W. K. Doelittle, Surveyor

Soundings in ~~sections~~ feet

Plane of reference MLW

Subdivision of wire dragged areas by _____

Inked by R. B. Krum

Verified by R. B. Krum

Instructions dated November 5, 19 32

Remarks: _____

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SHEET #24
EAST BAY AND GULF OF MEXICO

Date of Instructions:

The instructions for this work were dated November 5, 1932.
(Project HT-118)

Survey Methods:

Most of the work was done with a launch using a lead line graduated in feet. For the remainder a sounding pole was used, having a plate about 6 in. in diameter on the lower end. For inshore work a skiff powered by an outboard motor was used.

Occasional soundings will be found in the sounding volumes for this sheet without a recorded time. These soundings serve as check soundings and were taken whenever a sudden change of depth was noticeable. They follow as closely as possible to the sounding which is being checked.

No sounding was done in the channel of the Intracoastal Waterway. Soundings which accidentally fell within that limit are marked c and were neither recorded nor plotted.

Discrepancies:

Positions 6 to 15 H (green) appear to be one half foot too shoal. Positions 1-2 V (red) seem to be a foot too ^{shoal} deep. Reasons therefor are not clear except that a severe tropical hurricane on September 4th may have changed the bottom in places so that some of the FF day soundings appear to be erroneous. FF day was run after September 4th.

Positions 2 to 4 QQ (red) are evidently made inaccurate by the ground swells noted in the record. Preference should be given to the FF day soundings where the disagreements occur.

Position 16 to 18 g (red, skiff) seems to contain an improbable change of speed, but should be trusted in the absence of other evidence.

Northeastward from meridian $94^{\circ} 35'$ to the edge of the sheet there is seeming irregularity in the 29, 30, and 31 ft. soundings. The worst spot is in the neighborhood of 52 K and 67 K (green). From 42 to 58 K seems too deep by about a foot. This is supported by the depths shown on 62 to 70 K (green) taken immediately after, which indicates this one foot difference to be due to a change in leadsmen. This is the only place where evidence exists to indicate that the soundings are in error. It is recommended that a foot be subtracted from K day 42 to 58 inclusive.

The cross lines in East Bay to the eastward of meridian $94^{\circ} 36'$ are apparently one half a foot to a foot too shoal and if retained on the sheet they should be adjusted to fit the regular system of lines. The first gross lines that were run showed the same trouble and therefore positions 45 to 54 RR and 13 to 44 HH were rejected. The regular system of lines is proven to be correct by the fact that shoal developments and skiff work are both in agreement with this system. The cause of the poor cross lines is not clear. Conditions were unusually good for accurate sounding and extreme care was used. The only possible solution which can be offered is that there was some unknown peculiarity of the tide existing in the narrow part of the bay which made the reducers wrong.

Dangers:

Hanna reef at the western edge of the sheet is composed of numerous islets of a hard shell-and-sand mixture. Breakers between islets in rough weather show that the reef extending westward from East Bay Pass Bn. 1 & 3

The sheet was changed to meet in checking.
Plotted as recorded. Corrected tidal readings eliminated most of this discrepancy. RFB
Plotted as recorded. Must effect may have caused this difference.

is continuous with the exception of Moodys Pass and Ladies Pass. Openings in the reef apparently clear in smooth water are dangerous to small boats. Several locations of breakers noted in the hydrography are shown and noted.

Several shoals occur in other parts of the bay, the bottom specimens indicating that they are composed of hard oyster shell. The locations and data are given below:

Latitude	Longitude	Least Depth M.L.L.W.	Depth of surrounding Water - M.L.L.W.	Position number for least sounding
29 27.3	94 42.2	Bare	2½ and 3'	60-Y 13 to 14 a (blue)
29 31.2	94 43.0	3½	4½ to 6'	61 M
29 31.5	94 43.1	2 ½	3 to 5 ¼	44-AA 49 AA (red)
29 32.1	94 39.6	2 ½	3 to 4½	59 DD
29 32.4	94 38.5	2	3 to 5	21 BB
29 31.4	94 38.2	3	5	17 MM

Three wrecks located on this survey and a foul area, which is a graveyard for old hulks, are noted on the latest revision of chart 1282 (see letters to the Director of June 29, 1933 and January 26, 1934). Detailed survey further revealed two other wrecks, the first at 29° 25.0' and 94° 41.2', and the second at 29° 24.9' and 94° 40.8'.

Channels:

Bn. #1 and Bn. #5 are at the NW side of the only important channel on the sheet. The controlling depth as shown by this survey is 3' between 42 and 43 PP. This is the best passage for the reef, and is used by small fishing boats.

Several small and relatively unimportant channels have been marked temporarily for private information by fishermen who use the bay. Such a one is in Lat. 29° 27.8', Long. 94° 42.1', marked by a day beacon and other marks almost in range as plotted.

The dredged canal of the Louisiana-Texas Intracoastal Waterway was not sounded. However, the line of temporary markers where the channel crosses the portion of the bay near Rollover was located roughly by the hydro party. There are also three temporary markers at the head of the bay, not located by the hydro party. For all of these the topographic Sheet E has accurate locations.

Comparison with Previous Surveys:

Chart 1282 corrected to July 21, 1934 is taken as representing all previous surveys.

The following differences are noted, it being understood that the reference plane for this sheet is M.L.L.W. and for the chart is M.L.W.

Several shoal soundings were selected from the chart and compared with the sheet. The results are shown in the following table:

Sounding on Chart 1282	Approx. location		Depth on Sheet 24	Remarks
	Lat.	Long.		
1 ft.	29° 27.9'	94° 42.4'	4½ ft.	2 ft. occurs 200 m. SSE
2 "	-28.1'	-42.6'	2 "	Agrees
4 "	-28.4'	-41.6'	4 "	Agrees
4 "	-31.9'	-37.8'	4½ "	3 ft. found 600 m. SW
3 "	-31.5'	-36.1'	3½ "	3 ft. 300 m. NW
4 "	-30.1'	-38.1'	4 "	Agrees
4 "	-29.5'	-38.9'	4 "	Agrees
2½ "	-33.4'	-34.6'	2½ "	Agrees
2½ "	-32.8'	-34.6'	3 "	2½ ft. 500 m. NE

Reference plane of Law of the Sea was changed to M.L.L.W. in 1934.

A disagreement of about 100 m. in the location of the axis of Hanna reef and an error of four hundred meters approximately in the location of Bn. #1 and about 300 m. in the location of Bn. #3 were found.

Hanna Reef is of the same structure and nature as Redfish Bar, and the question arises as to whether it is proper to call them by different designations, and letter one with vertical letters and one with sloping letters on the same chart #1282.

Geographic Names:

No new geographic names.

Statistics for Sheet, Field No. 24:

Statute miles of sounding lines -----	1,452.0
Number of soundings -----	36,328
Number of positions -----	5,210

Men in Charge of Hydrography:

Ensign W. C. Russell was in charge of all of the launch work except seven days of the Gladys' work and one day of the Tacoma's which were in charge of Lieut. (j.g.) J. S. Morton, and except seven days of the Hudie's work which were in charge of G. S. Tinsley, Observer. Skiff work was in charge of G. S. Tinsley, Observer, except the two blue skiff days which were in charge of Ensign W. C. Russell.

Inspected and approved:

Earl O. Heaton

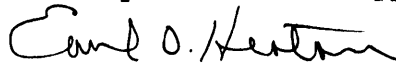
Earl O. Heaton,
Chief of Party, C. & G.S.

Respectfully submitted,

W. K. Doolittle

W. K. Doolittle,
Surveyor.

Hydrographic sheet number 24, Project HT--118, and
accompanying records have been inspected and are approved.



Earl O. Heaton,
Chief of Party, C. & G. S.

To: Mr. Bacon
 From: L.L.S.

Survey No. H 5511

GEOGRAPHIC NAMES
 TEXAS

Date. September 26, 1934

Chart No. 1282 & 1280

Diagram No. 1282 & 1280

*Names underlined in red approved Oct 3, 1934
 H.B.*

* Approved by the Division of Geographic Names, Department of Interior.

⊘ Not Approved by the Division of Geographic Names, Department of Interior.

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

Status	Name on Survey	Name on Chart	New Names in local use	Names assigned by Field	Location
	<u>East Bay Bayou</u> ✓	Same	----	-----	29° 33.5' 94° 28'
	<u>Oyster Bayou</u> ✓	Same	----	-----	29° 33.6' 94° 28.5'
	<u>Mussel Pt.</u> ✓	Same	----	-----	29° 32.0' 94° 29.1'
✓	<u>Intracoastal Waterway</u> ✓	On 1282 <u>Intracoastal</u> ^{Wp.} On 1280 Same <u>Waterway</u>	----	-----	29° 37' 94° 39'
✓	<u>Frozen Pt.</u> ✓	Same	----	-----	29° 32.5' 94° 31.4'
	<u>Rollover</u> ✓	Same	----	-----	29° 30.6' 94° 30.4'
✓	<u>Marsh Pt.</u> ✓	Same	----	-----	29° 31.9' 94° 34'
	Robinson's Bayou ⊘	<u>Robinson Bayou</u> ✓	----	-----	29° 34.4' 94° 34.1'
	<u>Yates Bayou</u> ✓	Same	----	-----	29° 30.1' 94° 34'
✓	<u>East Bay</u> ✓	Same	----	-----	29° 31' 94° 37'
✓	<u>Bolivar Peninsula</u> ✓	Same	----	-----	29° 27' 94° 37'
✓	<u>Moody's Pass</u> ✓	Same			29° 28.8 94° 43.4
✓	<u>Hanna Reef</u> ✓	Same			29° 28.5 94° 45'
	* Note: <u>Elmgrove Pt.</u> 29° 28.9' by 94° 37' is on T 4862, but is not shown on Chart #1282, or on H 5511. <i>Not necessary to show on this survey</i>				

LAC

October 31, 1934

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
22 volumes of sounding records for

HYDROGRAPHIC SHEET 5511

Locality East Bay, Galveston Bay and Gulf of Mexico, Texas

Chief of Party: Earl O. Heaton in 1933
Plane of reference is mean low water reading
2.0 ft. on tide staff at Beacon 3
--- ft. below B.M. No bench marks established

2.0 ft. on tide staff at Rollover gage, Gilchrist, Texas
3.0 ft. below B.M. 1

(1.6 ft. on tide staff No. 1, South Jetty
(1.2 ft. on tide staff No. 2, South Jetty
(1.7 ft. on tide staff No. 3, South Jetty

3.1 ft. below B.M. 1

Height of mean high water above plane of reference is 1.4 ft. at South Jetty;
0.9 ft. at Beacon 3 and Rollover.

Condition of records satisfactory except as noted below:

Hammer

Acting Chief, Division of Tides and Currents.

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. 5511..

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

Number of positions on sheet	5210.....
Number of positions checked	29....
Number of positions revised	.1....
Number of soundings recorded	36,328.
Number of soundings revised	.4....(plus approx. one third of all soundings due to changed tide reducer)
Number of signals erroneously plotted or transferred	none..

Date: November 20, 1934

Verification by R. B. Krum

Time: 137 hrs.

Review by

R. J. Christman

Time: 17½

Verification Report H. 5511.

Records.

The records are neat and legible. They conform to the General Requirements of the Hydrographic Manual. ✓

Protracting.

The field protracting was well done. ✓

The hydrography was of sufficiently open character so that a good check of positions could be made by visual comparison with the boat sheet. Therefore the protracting in the office was held to a minimum, checking only important positions on shoals and passes.

Drafting.

The field drafting was well done. ✓

Generally, only alternate soundings were inked in the Gulf of Mexico because the slope of the bottom was so regular and because the inking of all the two digit soundings would have unnecessarily congested the area. ✓

Approximately one third of the soundings on the sheet were revised in value because the tide reducers were changed in the office. ✓

Crossings.

The crossings are in good agreement with the exception of those crossings noted in the Descriptive Report under Discrepancies. ✓

Comparison with Other Data.

The hydrographic sheet was carefully compared with the boat sheet and the topographic sheets 4861, 4862 and 4863. The locations of wrecks and reef markers were taken from the topographic sheets, whereas the number of feet they are bare at M.H.W. was taken from the sounding records.

Curves.

The usual depth curves could be drawn. ✓

Junctions.

This sheet joins H. 5510 (1933) on the north west, H. 5394 (1934) on the west and H. 5424 (1934) on the south west. H. 5510 has not yet been verified. The junction of the other two surveys on this sheet shows good agreement.

Remarks.

It was not considered advisable to carry out the recommendation con-

tained in par. 4 under Discrepancies in the Descriptive Report. The change in the tide reduction of the soundings on this area remedied much of the former difficulty. ✓

Rather than adjust the soundings on the cross lines in East Bay, which is recommended in par. 5 under Discrepancies in the Descriptive Report, it was considered advisable to ink the sounding in feet and halves to show better agreement. ✓

Respectfully submitted - R. B. Krum,
November 20, 1934.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5511 (1933)

East Bay and Gulf of Mexico - Galveston Bay - - Texas.
Instructions dated Nov. 5, 1932 (Earl O Heaton)
Date of Survey June to November 1933.

Handlead and Pole Soundings - - - - 3-Point Fixes on Shore Objects.

Chief of Party - E.O.Heaton
Surveyed by - J.S.Morton - W.C.Russell
Protracted and soundings penciled by -W.K.Doolittle
Verified and inked by- R.B.Krum

1. Condition of Records

The records conform to the requirements of the Hydrographic Manual.

2. Compliance with Instructions for the Project

The plan and extent of development are in accordance with the instructions for the project. The survey is well planned and well controlled.

3. Sounding Line Crossings

Except for the discrepancies noted in the Descriptive Report the depths on cross lines are in good agreement. ~~For comments on the discrepancies see par. 9 of this review.~~

4. Depth Curves

Within the limits of the survey the usual depth curves may be satisfactorily drawn including portions of the low water line.

5. Junctions with Contemporary Surveys.

The junction with H-5424 (1934) to the southwest and H-5394 (1934) to the west are satisfactory. Junction with H-5510 (1933) will be considered in the review of that sheet.

Junction with prior surveys in the Gulf of Mexico was to be effected at about the 30 foot curve. This has been done satisfactorily, see par. 6 b of this review.

6. Comparison with Prior Surveys

(a) H-265 (1851), H-471 (1855), H-906 a and b (1867)

A few soundings on these sheets fall within the area of the present survey, the main part of the sheets are surveys of the entrance to Galveston and channel improvements there have affected the area under consideration to such an extent that it is unnecessary to consider these differences cartographically. None of the soundings on these sheets affecting the area embraced by H-5511 (1933) should be used for future charting purposes.

6. Comparison with Prior Surveys (con'td.)

(b) H-1556 a (1883)

The area common to the two surveys lies between the 12 foot curve and the 30 foot curve on the Gulf side of the Bolivar Peninsula. The agreement between the two surveys is very good.. Changes in the detail of the 30 foot curve toward the eastern edge of H-5511 (1933) are due to the larger scale and closer development of the later survey rather than resulting from the effect of changes in the bottom. However on account of the larger scale and closer development H-5511 (1933) should within its limits be used for future charting of this area in preference to the older survey.

(c) H-425 (1854)

This is a survey of East Bay. The depths are 1 to 2 feet greater than than on the new survey. The lines of soundings, however, are so open that no indication is given of some of the shoaler areas shown on H-5511 (1933) The information on this sheet is not in use on the present edition of Chart 1282 and no useful cartographic purpose would be served by a more detailed comparison. (See par. 7 this review)

7. Comparison with Chart 1282 and Chart 520

Within the area of the present survey the chart is based on surveys discussed in the foregoing paragraphs and on B.P. 10987 which is a chart of Galveston Bay issued by the U.S.Engineer Dept. in 1905.

The channel into East Bay marked by Beacon No.1 and Beacon No. 3 is now charted "4 $\frac{1}{4}$ ft. June 1926". The present survey shows a controlling depth of 3 feet through this channel and the channel and beacons are about 300 meters northwest of the charted location.

8. Field Plotting.

Protracting of positions and penciling of soundings were excellent.

9. Additional Field Work Recommended

The survey is complete and satisfactory and no additional work is necessary. }} }

10. Superseding Old Surveys

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

H- 285 (1851) In part	H-425 (1854) In part	H-471 (1855) In part
H-906a (1867) " "	H-906b(1867) " "	H-1556a(1883) " "

11. Reviewed by- R.J.Christman Dec. 1934

Inspected by- A.L.Shalowitz

Examined and approved:

Chas K. Green, *L. K. Green*
Chief, Section of Field Records

H. B. Borden
Chief, Section of Field Work

L. O. Polbut.
Chief, Division of Charts

E. J. ...
Chief, Division of H. and T.

Applied to new compilation of Chart #520 by J. Fleming
May 29, 1935 G.H.S.

Applied to Chart 1280. Sept. 13, 1937 G.H.S.

" " " 885 1950 H. Keeler

New Chart 518 - Supplemented new hydro 1962-3. Added ~~...~~ and bottoms
and soundings H. Keeler 7/26/64

Chart 518 - Dog #2 - Supplemented 1962-5 hydro in new compilation
for chart extension east of 94°38' H. Keeler 6/29/65