

6491

6491

Form 504
Rev. April 1935
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

~~Hydrographic~~ } Sheet No. H-6491
Hydrographic }

State TEXAS

LOCALITY

WEST GULE

BRAZOS SANTIAGO

193 9

CHIEF OF PARTY

G. C. MATTISON

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. 23 **H6491**

REGISTER NO. **H-6491**

State TEXAS

General locality WEST GULF

Locality BRAZOS SANTIAGO

Scale 1:20,000 Date of survey May-June, 19 39

Vessel HYDROGRAPHER (FARIS)

Chief of Party G.C.MATTISON

Surveyed by E.C.Baum and P.A.Weber

Protracted by S.A.Fellner

Soundings penciled by S.A.Fellner

Soundings in ~~fathoms~~ feet

Plane of reference Mean Low Water

Subdivision of wire dragged areas by

Inked by Glenn C. Wright

Verified by Glenn C. Wright

Instructions dated February 17, 19 37

Remarks:

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
L. O. COLBERT, DIRECTOR

DESCRIPTIVE REPORT
HYDROGRAPHIC SHEET NO. H-6491
WEST GULF
BRAZOS SANTIAGO
TEXAS

SHIP HYDROGRAPHER
GALVESTON, TEXAS

G.C.MATTISON
CHIEF OF PARTY

Project HT 214


Memo by chief of party.

The sheet and records have been examined and are approved.

The chief of party had very little opportunity to inspect the field or office work on this sheet while in progress. The boat sheet was inspected after the completion of the field work. The office work on sheet and records was done in the Pensacola processing office, and inspected by the chief of party when the vessel was in port between semi-monthly field trips.

There were greater discrepancies between soundings on cross lines on this sheet when compared with other inshore sheets along the Texas coast. Some of the work was done when the weather conditions were too unfavorable to work at a greater distance from sheltered waters. The launch based at Brownsville and took opportunity to work on this sheet when it was inadvisable to work further away.

No additional field work is necessary.


G. C. Mattison,
Chief of Party.

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SHEET 6491

AUTHORITY

Instructions date February 17, 1937.

LIMITS

Off Padre Island, Brazos Island and part of the mainland of Texas from latitude 26 degs. 21 mins. on the north to a line due east from the mouth of the Rio Grande on the south, and from shore to the approximate five fathom curve.

METHODS

Soundings were taken with a phosphor-bronze center lead line graduated in fathoms and feet.

Positions were fixed with sextant angles on signals on shore located by triangulation and planetable.

EQUIPMENT

All soundings were taken using the launch FARIS, which draws about five feet.

DISCREPANCIES

Some crossings on the sheet fail to agree by from $1\frac{1}{2}$ to $2\frac{1}{2}$ feet but as the bottom is sand and mud it is not reasonable to expect that all crossings will agree.

1. Lat. 26-11.7 Long. 97-09.6
Pos. 84-5a and 39-40f (red)

Cross line differs by $3\frac{1}{2}$ '. On "a" day there was a heavy sea with swells about 4', the leadsman probably did not judge correctly the average between trough and crest of wave ; the bottom is sand and both soundings may be correct but since the shoaler was obtained on a better day than the deeper sounding, the shoal sounding should be accepted. *Deep soundings omitted.*

2. ^{08.3} Lat. 26-12.3 Long. 97-09.7
Pos. 106-7j and 20-21d, 120-21d (red)

Cross line differs by 3' and 4', the weather and sea on both days were about the same, bottom is fine sand. It is believed the shoal soundings are in error because of the good crossings obtained on "f" day in the same vicinity. However, since these crossings occur near the beach, the differences are of no importance. *10, 11, 13, 14' soundings on cross line rejected.*

DISCREPANCIES (Cont'd)

3. Lat. 26-01.7 Long. 97-08.6
Pos. 148-9k and 165-6(1) red

Cross line differs by 3'. Weather and sea about the same on both days, with heaviest swell on "k" day, the leadsman probably not judging the correct depth from crest to trough of wave. The bottom is sand, and as this area is more than likely affected by the flow from the Rio Grande during flood stage the difference is not important.

No soundings rejected.

COMPARISON WITH PREVIOUS SURVEYS

The launch party was not furnished with any detailed previous surveys of the area, and it is believed that none exist. The sheet was not compared with the few soundings that appear on the chart.

H-1845 a-b (1881) and U.S.E.D. Surveys.

SHOALS AND DANGERS

There are no shoals or dangers within the limit of the survey.

JUNCTION WITH CURRENT SURVEYS

Junction with current work on the north and east is good.

CHANNELS, HARBORS, ANCHORAGES

There are no channels, harbors or anchorages in the area surveyed; however, ships may pass thru Brazos Santiago and thence into the Brownsville and Port Isabel ship channels. Small boats may anchor in Laguna Madre near the Coast Guard Station.

GEOGRAPHIC NAMES

There are no new names on the sheet. All names shown are well established.

LANDMARKS

The only landmark on the sheet is the water tank at Del Mar Beach, station RAM.

MISCELLANEOUS

The area at Brazos Santiago not covered by this sheet is covered by sheet H-6493. (1939)

The position of Brazos Santiago Entrance Lighted whistle buoy #1 as shown on this sheet is very good and should

Per. 64. Review

MISCELLANEOUS (Cont'D)

be gted instead of the position shown on the ship sheet if the two do not agree.

The recorder had some difficulty at times to keep the time straight and became so rattled that it was necessary for one of the officers to help him get his record straight.

Hydrography inside the approximate 9 foot curve was omitted as it would have delayed the party considerably to wait for suitable weather to do this work. In the area just north of the Rio Grande the bottom is subject to change due to the river during flood stage. See Director's letter dated July 2, 1938, copy attached. *Par. 7d Review.*

Tides were taken from automatic portable gage No. 153 located on the north jetty at Brazos Santiago. Reducers were scaled directly from the marigrams. See Director's letter dated June 28, 1939, copy attached.

The shore line was transferred from Topographic sheets 6705⁽¹⁹³⁹⁾ and 6706⁽¹⁹³⁹⁾. The missing shore line is on Topographic sheet No. 6707⁽¹⁹³⁹⁾ which is on a scale of 1:10,000. *The shore line from T-6707 (1939) applied to the hydrographic survey in the Washington office.*

On Padre Island, besides the people at the Coast Guard Station, there are a few people who live near the jetty and operate a small store. They cater to tourist fishermen. On Brazos Island at the jetty there a few people who operate small stores handling fishing gear and bait. At Del Mar Beach about 3 1/2 miles south along Brazos Island from the jetty there is a tourist camp.

At all times soundings were taken as close to the beach as safety permitted.

Respectfully submitted

Philip A. Weber

Philip A. Weber
Ensign, C & G S

Forwarded Approved:

G. C. Mattison
G. C. Mattison
Chief of Party.

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STATISTICS

PROJECT HT 214

WEST GULF

HYDROGRAPHIC SHEET NO. H-6491

LAUNCH FARIS

DAY	DATE	MILES (STATUTE)	SOUNDINGS	POSITIONS	DAYS RUN
a	5/19/39	38.1	686	107	58.8
b	5/22/39	19.8	296	55	37.8
c	5/26/39	19.8	412	58	37.8
d	5/29/39	35.4	498	137	55.7
e	5/30/39	20.0	301	71	22.0
f	6/1/39	16.5	324	56	36.5
g	6/6/39	13.1	220	58	28.1
h	6/8/39	19.9	342	85	21.9
j	6/9/39	29.0	499	120	29.0
k	6/20/39	41.6	794	195	52.6
l	6/23/39	35.2	879	176	59.7
m	6/29/39	8.5	297	65	11.9
TOTAL		296.9	5548	1183	451.8

Area surveyed, 29.7 square statute miles.

COAST AND GEODETIC SURVEY
WASHINGTON

June 28, 1939.

9

To: The Commanding Officer,
U. S. C. & G. S. Ship HYDROGRAPHER,
Box 585,
Galveston, Texas.

5352

From: The Director,
U. S. Coast and Geodetic Survey.

Subject: Tide records.

With reference to your letter of June 20 forwarding tide records for Brazos Santiago and requesting instructions for the reduction of offshore soundings in this area, it is recommended that your tide observations for Brazos Santiago jetty be used for this purpose without time or range correction. Mean low water as determined from your observations corresponds to a reading of 1.6 feet on tide staff at Brazos Santiago jetty.

The portable gage records for this station are being returned to you for use in scaling tide reducers directly from the marigrams. It is believed that this method will be more practicable, as due to the confusion of tide curves on some of the marigrams, satisfactory tabulation of hourly heights would be very difficult, if not impossible. This condition emphasizes the need of changing marigrams at least every two days in areas where the tide is small and erratic.

When the gage on the jetty is removed, records for the Coast Guard station can be used with a time correction of minus one-half hour, a comparison between simultaneous observations at the two stations showing the tide at the Coast Guard station to occur on the average one-half hour later than at the jetty. The difference in range between the two stations is small and can be disregarded. Mean low water corresponds to a reading of 2.7 feet on staff at the Coast Guard station.

When it becomes necessary or convenient to remove the gages at Brazos Santiago, it appears that satisfactory results can be obtained by using observations at the Galveston primary station for reduction of offshore soundings. For this purpose, it can be considered that the tide offshore occurs one hour earlier than at the Galveston primary station. The difference in range can be disregarded. Hourly heights for Galveston for such periods as needed will be furnished upon request.

(s) J. H. Hawley
Acting Director.

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

Refer to: 22-AB
1995 HY 4

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

July 2, 1938.

To: The Commanding Officer,
U.S.C. & G.S. Ship HYDROGRAPHER,
P.O. Box 565,
Galveston, Texas.

From: The Director,
U. S. Coast and Geodetic Survey.

Subject: Inshore Hydrography.

Referring to your letter of June 28, 1938, your recommendation that the inshore lines along the open beach inside the approximate 9-ft. curve be omitted on the remainder of Project HT-214 if they cannot be obtained without serious delay to the party, has the approval of this office.

The descriptive report on each inshore hydrographic sheet on which hydrography inside the 9- or 10 ft. curve has been omitted under this authorization shall contain an explanation of your reasons for the omission and shall refer to this authorization.

The fact that in some localities the contours close to the beach are changed by each heavy storm is a pertinent reason for the omission of the lines in question for that locality. In localities where this is not the fact, extra effort to obtain a closer inshore development is desirable unless it could not be obtained without serious delay to other more important work.

(Signed) J. H. Hawley
Acting Director.

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. **H6491**

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

Number of positions on sheet	.1183.
Number of positions checked	..53.
Number of positions revised	...3..
Number of soundings recorded	.5548.
Number of soundings revised	..7..
Number of soundings erroneously spaced	..11..
Number of signals erroneously plotted or transferred	..0...

Date: 9-25-40

Verification by *Glenn C. Wright*

Time: 62 hrs.

Review by *[Signature]*

Time: 12 hours.

HYDROGRAPHIC SURVEY NO. H6491

Smooth Sheet Yes

Boat Sheet 2

Records; Sounding 4 Vols., Wire Drag Vols., Bomb Vols.

Descriptive Report Yes

Title Sheet Yes

List of Signals Yes

Landmarks for Charts (Form 567) No

Statistics Yes

Approved by Chief of Party Yes

Recoverable Station Cards (Form 524) No

Special Chart for Lighthouse Service No
(Circular Nov.30, 1933)

Hydrography: Total Days 12; Last Date 6/29/39

Remarks _____

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H-649*

Verified and Inked by *Glenn C. Wright*

Date 9-25-40

1. The descriptive report was consulted and appropriate action taken. ✓
2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude. ✓
3. All references to survey sheets mentioned in the descriptive report include the registry number and year. ✓
4. Geographic names of hydrographic features are in slanting lettering and of topographic features in vertical lettering. ✓
5. All items effecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken. ✓
6. All positions verified instrumentally were check marked in the sounding records. ✓
7. All critical soundings are clear and legible. ✓
8. The metal protractor has been checked within the last three months. ✓
9. The protracting and plotting of all bad crossings were verified. ✓
10. All detached positions locating critical soundings, rocks or buoys were verified. *None* ✓
11. The boat sheet was compared with the smooth sheet. ✓
12. The spacing of soundings as recorded in the records was closely followed. ✓
13. The bottom characteristics were shown on outstanding shoals. *None* ✓
14. The reduction and plotting of doubtful soundings were checked. ✓

15. The transfer of contemporary topographic information was carefully examined. ✓
16. All junctions were transferred. ✓
Junctions were made with H-6496 & H-6495 1939 before they were verified
17. The notation "JOINS H" was added for all contemporary adjoining or overlapping sheets now registered. ✓
18. The depth curves have been drawn to include the significant depths. ✓
Discussed in par 2 & 7d of the Review.
19. All triangulation stations and transfer of topographic and hydrographic signals were checked by the field party. ✓
20. Heights of rocks were checked against range of tide. *None* ✓
21. Rocks transferred from topographic survey have a dotted curve where shown thereon. *None* ✓
22. Unnecessary pencil notes have been removed. ✓
23. Objects on which signals are located and which fall outside of the low water line have been described on the sheet. ✓
24. The low water line and delineation of shoal areas have been properly shown (see letter of October 20, 1934). ✓
25. Degree and minutes values and symbols have been checked. ✓
26. Source of shoreline and signals (When not given in report). *Given* ✓
27. Depth curves were satisfactory ~~except as follows:~~

28. Sounding line crossings were satisfactory except as follows: ✓

Refer to Page 5 of report also

Pos. 118J-119J & 8-99
Pos. 151-152K & 162-163L

*Discussed in
part 3 of the Review.*

29. Junctions with contemporary surveys were satisfactory ~~except as follows:~~

30. Condition of sounding records was satisfactory ~~except as follows:~~

31. The protracting was satisfactory ~~except as follows:~~

32. The field plotting of soundings was satisfactory ~~except as follows:~~ ✓

33. Notes to reviewer:

GEOGRAPHIC NAMES
 Survey No. **H6491**

Name on Survey	A. On Chart No.	B. On previous survey No.	C. On U. S. quadrangle Maps	D. From local information	E. On local Maps	F. P. O. Guide or Map	G. Rand McNally Atlas	H. U. S. Light List	K.
<u>Padre Island</u>									1
<u>Brazos Santiago</u>									2
<u>Brazos Island</u>									3
Gulf of Mexico									4
<u>RIO GRANDE RIVER</u>									5
									6
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									8
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by Heck on 7/20/40

Remarks

Decisions

1		268973
2		260971
3		260971
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MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
 DESCRIPTIVE REPORT
 PHOTOSTAT OF

No. H **H6491**
~~No. T~~

received June 10, 1940
 registered June 14, 1940
 verified
 reviewed
 approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
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62			
63			
82			
83			
88			
90			

RETURN TO

82	T. B. Reed
----	------------

V BBR

RAC
HCC

TIDE NOTE FOR HYDROGRAPHIC SHEET

June 25, 1940

Division of Hydrography and Topography:

✓ Division of Charts: Attention: Mr. H. R. Edmonston

Tide Reducers are approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 6491

Locality Padre and Brazos Islands, Gulf of Mexico

Chief of Party: G. C. Mattison in 1939

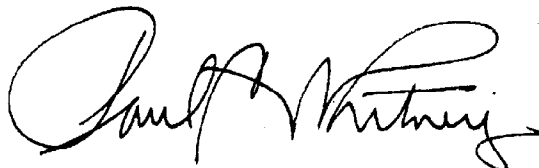
Plane of reference is mean low water reading

1.6 ft. on tide staff at Brazos Santiago, North Jetty

6.1 ft. below B.M. 1

Height of mean high water above plane of reference is 1.1 feet.

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents.

DIVISION OF CHARTS

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6491 (1939) FIELD NO. 23

Texas, Gulf of Mexico, Padre Island and Brazos Island
Surveyed in May and June 1939, Scale 1:20,000
Instructions dated February 17, 1937 (HYDROGRAPHER)

Soundings:
Hand Lead

Control:
Three point visual fixes on
shore signals

Chief of Party - G. C. Mattison.
Surveyed by - E. C. Baum and P. A. Weber.
Protracted by - S. A. Fellner.
Soundings plotted by - S. A. Fellner.
Verified and inked by - G. C. Wright.
Reviewed by - Leo S. Straw, September 27, 1940.
Inspected by - H. R. Edmonston.

1. Shoreline and Signals.

The shoreline and signals are from T-6705a and b (1939)
T-6706a and b (1939) and T-6707 (1939).

2. Depth Curves.

Satisfactory. See paragraph 7d of this review.

3. Sounding Line Crossings.

The sounding line crossings on some parts of this survey
are not in good agreement. As indicated in the descrip-
tive report, these discrepancies are probably due to the
difference in judgment of the correct depth from the
crest to the trough of the waves by the various leadsmen
during unfavorable weather conditions.

4. Junction with Contemporary Surveys.

The junction on the north with H-6490 (1939) is satis-
factory.

The junction with H-6493 (1939) at the entrance to
Brazos Santiago is satisfactory, but there are several
soundings from H-6491 (1939) in the overlapping area
either side of the entrance, which are two to three
feet shoaler than the surrounding depths on H-6493
(1939). These are both hand lead surveys done at about

the same time, and under normal conditions there should not be appreciable differences in depths. The discrepancies are undoubtedly due to the same causes as stated in paragraph 3 (Sounding Line Crossings) of this review.

The junctions with H-6495 (1939) and H-6496 (1939) on the east will be considered in the reviews of those surveys.

There are no contemporary surveys on the south.

5. Comparison with Prior Surveys.

a. H-337 (1853) 1:10,000 and H-909 (1867) 1:20,000.

Small portions of these sparsely developed surveys are common with the present survey at Brazos Santiago and just north of the mouth of the Rio Grande River. As may be expected, there are large differences in depths as well as changes in shoreline due to the artificial and natural changes subsequent to these old surveys. They contain no information of current charting value and should be disregarded.

b. H-1485a and b (1881) 1:40,000.

The development on this old survey consists of lines run normal to the beach at intervals of two to five miles and a line parallel to the beach in the vicinity of the 18 foot curve. The shoreline has receded varying amounts of 150 to 350 meters along this barrier beach. The depth curves have receded proportionally to the shoreline, the depths being from 2 to 8 feet deeper on the present survey.

Changes in depths and in the high water line at Brazos Santiago are due to harbor improvements subsequent to the old survey. The wrecks on either side of the entrance to Brazos Santiago were probably removed or otherwise disposed of when these improvements were made. They are not shown on the U. S. Engineers survey blue print No. 27894 (1934).

The shoreline at latitude 26°00' is continuous, the Boca Chica inlet having filled in.

The mouth of the Rio Grande River is located on the present survey about 3/4 of a mile north of its location on the old survey.

There is no information on this old survey that should be retained on the chart, and it is therefore superseded within the common area by the present survey.

6. Comparison with Chart No. 1288 (New Print dated Nov. 3, 1939)

a. Hydrography.

The hydrography on the chart is based on the survey discussed in the preceding paragraph and from U. S. Engineers' surveys in the vicinity of Brazos Santiago.

b. Aids to Navigation.

It is recommended that the position of the Brazos Santiago Entrance Lighted Whistle buoy No. 1, as plotted on this survey be accepted as correct, although it does not agree with the charted position or the position on H-6496 (1939). (See page 6 of the descriptive report).

For other aids to navigation in the Brazos Santiago area see the larger scale hydrographic and topographic surveys H-6493 (1939) and T-6707 (1939).

7. Condition of Survey.

- a. The records conform to the requirements of the Hydrographic Manual.
- b. The descriptive report satisfactorily covers all matters of importance.
- c. The field protracting and plotting were satisfactory.
- d. Except for four short sections, the 6 foot curve was not developed. (See the Director's letter of July 2, 1938 in the Descriptive Report).
- e. The low water line on the topographic surveys T-6705a and b (1939), T-6706a and b (1939) and T-6707 (1939) is very close to the high water line thereon and was not transferred to the present

hydrographic survey. The small difference between the high and low water lines, owing to the small range of tide in this locality, is not enough to show on the 1:80,000 scale chart.

8. Compliance with Instructions for the Project.

Satisfactory.

9. Additional Field Work Recommended.

No additional field work is required.

10. Superseded Surveys.

H-1845a and b (1881) in part.

Examined and approved:



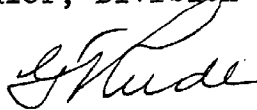
T. B. Reed,
Chief, Section of Field Records.



Chief, Division of Charts.



Chief, Section of Field Work.



Chief, Division of H. & T.

Applied to chart 898 (after review) 11/5/52 JVE

H6491 Applied to Chart 898-SC June 1969 MCW.