

5462

IMPORTANT

PAGE 24 WAS ADDED
IT IS NOT A PAGE IN THE REPORT
IT SHOWS SHORELINE FROM
ORIGINAL DOCUMENT MISSING
FROM THE SCAN OF PAGE 23

Diag. Cht. No. 1282-2.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. 13 Office No. H-5462

LOCALITY

State Texas

General locality Galveston Bay

Locality Galveston to Texas Bay

194 33-34

CHIEF OF PARTY

Earl O. Heaton

LIBRARY & ARCHIVES

DATE June 11, 1934

B-1870-1 (1)

5462

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES

JUN 11 1934

REG. NO. 5462

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. 13

REGISTER NO. 5462

State Texas

General locality Galveston Bay

Locality Galveston to Texas City *Lange*

Scale 1:10,000 Date of survey Sept. 1933 to May, 19³⁴

Vessel Launch Gladys Launch Hudie Project HT-118

Chief of Party Earl O. Heaton

Surveyed by W. C. Russell, J. L. Hale

Protracted by C. W. O'Melveny

Soundings penciled by C. W. O'Melveny

Soundings in ~~fathoms~~ feet

Plane of reference M.L.X.W

Subdivision of wire dragged areas by

Inked by *Mark S. Gunne*

Verified by *Mark S. Gunne*

Instructions dated November 5, 19³²

Remarks:

DESCRIPTIVE REPORT TO ACCOMPANY
HYDRO. SHEET #13
GALVESTON TO TEXAS CITY.

Date of Instructions:

Instructions for this work were dated Nov. 5, 1932. ✓
(Project HT-118)

Survey Methods:

The major part of the work on this sheet was accomplished with a launch using a lead line or sounding pole graduated in feet. The sounding pole had a thin plate about six inches in diameter on the bottom to prevent its sinking in soft mud; the sounding lead was moulded so that its base was about 4 inches in diameter. For inshore work a skiff with an outboard motor was used.

Occasional soundings will be found in the sounding records for this sheet without a recorded time; the soundings thus shown serve as check soundings and were taken on an average about ten seconds following the soundings to be checked. ✓

Along slips in the Texas City and Galveston harbors the inner line of soundings were taken without regard to time interval. They were spaced certain definite distances apart and a time of sounding recorded to serve for the purpose of tide reduction only. ✓

Discrepancies:

With exception of one place the lines and soundings checked very well, and there were no errors in depths or positions.

Exception: At about Latitude $29^{\circ} 22' 3''$, Longitude $94^{\circ} 48' 0''$ the soundings on the K day (Red, launch) fixes numbered 45 and 46 do not agree with soundings as shown on the line for JJ day (red, launch) for Sheet 23. Soundings on one or both of these lines are somewhat displaced, but it is unimportant as this area is soon to be covered with a new spoil dump from the widening of the Houston Channel. ✓

The difference between the mean lower low water line, as determined by hydrography and the mean low as determined by topography is due to the fact that the area affected is largely mud or sand flats where a difference of a few tenths in tide would cause the low water line to move a considerable distance.

*Tide
reducers
changed
in spots
refer soundings
to M.L.W.*

Dangers:

At Latitude $29^{\circ} 21' 2''$, Longitude $94^{\circ} 47' 2''$ the soundings show a shoaling in the Houston Channel entrance. This entrance is maintained to a depth of 31 feet along the center line from Bolivar Roads to Morgans Point. At the position mentioned the depths were found to be $27\frac{1}{2}$ feet, 23 meters northeast of the center of the channel, and 23 to 24 feet between there and the north edge. Because of deep water west and south of this shoal it is probable that ships with 28 to 30 feet draft have avoided this spot intentionally by bearing to the west at this point.

*Houston Ent.
Channel range
produced.*

Of some danger at night to small craft drawing less than five feet of water, is the wreck of an old three-masted schooner at Latitude $29^{\circ} 20' 9''$, Longitude $94^{\circ} 47' 7''$. The wreck lies in a NE and SW direction, is 50 meters long and 10 meters wide. At the after end of the hull it bares 10 feet in 3 feet of water at M.L.W. At the forward end

it is bare 6 feet in 5 feet of water at M.L.W. This wreck was located by the topography party and checked by the hydrographic party with sextant positions No's 34 and 35a (green, skiff day, Dec. 4, 1933). The wreck is clearly visible in daylight and presents no danger at that time.

At Latitude 29° 20'7, Longitude 94° 47'2 there is the wreck of an old concrete ship 18 meters wide and 120 meters long. This wreck lies in a SW to NE direction and bares 25 feet forward in 5 feet of water at M.L.W.; the after part is bare 10 feet in 22 feet of water at M.L.W. It can be seen readily in daytime but at night it becomes somewhat of a danger for vessels of 15 feet or less draft. This wreck was located by the topographer and checked by the hydrographic party with sextant positions No's. 15 and 16a (green skiff day, Dec. 4, 1933).

Location of Buoys:

Buoy positions on this sheet were transferred from the topographic sheet except the following positions which were taken from hydrographic records; Texas City Channel buoys #3 and #5 also spar buoys #3-G and 4-G in the ~~in the~~ Houston Ship Channel. Topographic locations of the channel buoys were checked by sextant fixes about five months later; they had all apparently drifted in the opposite direction from the previous location but were still within length of the anchor chain.

Channels:

There are five channels on this sheet, of which three are of major importance. The Houston Ship Channel proper is not shown on this sheet; but the entrance extends from Bolivar Roads to the first turn beacon. This channel is used by shipping interests serving the upper Galveston Bay cities. The least width shown by soundings on this sheet is 376 feet with a depth of 29½ feet on the north edge and 29 feet on the south edge. The Army Engineers maintain a minimum depth of 31 feet along the center line of this channel from Bolivar Roads to Morgans Point. This is the most important channel on the Texas coast. Freighters and oil tankers drawing 30 feet and slightly more use this channel extensively.

The Texas City channel starts from a point at about Latitude 29° 21'1, Longitude 94° 47'4 and runs in a northwesterly direction to Texas City. No soundings were taken in this channel since it is maintained to a 31 foot depth by the Army Engineers and periodically surveyed by them. It is protected on the north side for about four miles out from the mainland by an earth and timber dike reinforced by rubble. This channel is used by vessels drawing as much as 33 feet on high tides.

At Texas City the harbor is maintained by the Army Engineers to a minimum depth of 30 feet for the entire area of 800 feet by an average length of 3255 feet. The dredging stops at a point about 75 feet from the face of the wharves, according to information from the U.S. Engineers and that shown on a blue print #1220-B-2-1, of the Texas City Terminal Ry. Co. dated December 1930 and revised to November 1933.

A small boat channel of minor importance used largely by skiffs leads to the inner end of the Texas City dike from the Texas City

inner front range beacon. The least depth is 6 feet with a minimum width of 17 meters. This channel is poorly marked by iron pipes of a temporary nature.

No soundings were taken in Galveston Channel as it is maintained by the U. S. Engineers to a minimum depth of 33 ft. as of April 1934, for a width of 1000 ft. The U. S. Engineers dredge this channel on the south side to within 75 feet of the faces of the wharves and the Galveston Wharf Co. dredges along the wharf faces and in the slips yearly. The deep slips are dredged to a minimum depth of 32 feet, when this dredging is done. Galveston Channel is used by Marine interests for vessels seldom exceeding 30 ft. in draft.

Port Bolivar Channel connects Galveston Bay with a turning basin at Port Bolivar. The channel has a minimum depth of $17\frac{1}{2}$ ft. near the east edge at Latitude $29^{\circ} 21'$ +1215 m. and Longitude $94^{\circ} 46'$ +1558 m. The Army Engineers are supposed to maintain this channel to a depth of 22 feet, and if the above shoal is avoided by going to the westward at this point there is plenty of water. The channel is used at the present time for a R. R. car-ferry from Galveston to Port Bolivar. The channel is marked by lighted ranges and 2 second class nun buoys.

Comparison with Previous Surveys:

On previous Coast Survey charts, particularly #520, the following differences have been noted:

At Latitude $29^{\circ} 21:2$, Longitude $94^{\circ} 50:9$ there is shown a 4 ft. spot. This was developed to an extent of about 375 meters each way from the chart location and the launch was allowed to drift over it carefully taking soundings and no shoal soundings were obtained. It is recommended that this 4 ft. spot be removed from the chart.

At Latitude $29^{\circ} 21:5$, Longitude $94^{\circ} 49:3$, there is shown a 12 foot depth curve; this particular area has now shoaled up to about 9 feet.

A shoal and two 1 foot soundings are shown on the previous chart at Latitude $29^{\circ} 21:9$, Longitude $94^{\circ} 50:1$. This shoal was originally a spoil dump and has now been washed down so that the shoalest sounding is 2 ft.

At about Latitude $29^{\circ} 22:2$, Longitude $94^{\circ} 51:4$ a shoal shown on the chart was not found, the depths as found being about 5 feet.

The shoal at Latitude $29^{\circ} 22:25$, Longitude $94^{\circ} 51:5$ was found as indicated with $\frac{1}{2}$ foot of water on it.

The shoals mentioned above were evidently the spoil bank of the channel from dredging operations and have been considerably disintegrated by wave action.

There is a decided difference in depths along the north side of the Texas City dike and around the nose of the dike into Galveston Harbor; the charts show the maximum depth NE of the end of the dike to be 31 feet. Now, due to strong currents, the maximum depth is 36 feet. The general effect of the current has been to scour out the bottom in the open water between the Texas City dike and the Houston Channel Entrance.

Some shoaling is noticeable in the Houston Channel Entrance at Latitude $29^{\circ} 21:2$, Longitude $94^{\circ} 47:3$ as noted under "Dangers" paragraph.

The general southwest half of this sheet shows considerable differences in places; at Latitude $29^{\circ} 21:7$, Longitude $94^{\circ} 51:3$ there is a $4\frac{1}{2}$ ft. sounding on this sheet, and a shell reef extends in a south and westerly direction to a junction with the shoreline just north of the

entrance to Swan Lake. These are not charted.

Not shown in published charts are shell reefs along the west edge of this sheet and west of the small boat channel leading into the inner end of the Texas City dike. ✓

The 6 foot curve on the west half of this sheet follows generally the one shown on previous charts except that the soundings on this sheet show the area affected to be deeper. ✓

The positions of beacons and buoys shown on the chart vary considerably in comparison with this sheet. The greatest discrepancies found in these were on buoys 1G, 2G, #2 and #4 in the Houston channel entrance, and #2, 5 and 7 in the Texas City channel. The greatest displacement was 170 meters. The three day beacons numbered 1, 2 and 4 along the Texas City Channel no longer exist. There is, however, a reference line of U. S. Engineer pilings along the south side of the channel which it is understood the lighthouse service may maintain as beacons (see topographic report for sheet H). The inner range day beacon for the entrance to Texas City Harbor has also been destroyed.

See Review
page 7
RJB

These beacons
are no
marked on
latest edition
of Chart 520

The inner range day beacon on the turn of the channel into the harbor at Texas City was found to be destroyed on May 23, 1934. The iron pipe for this day beacon was located and noted in passing on the 8th sounding beyond position 31E (Red) Nov. 10, 1933. The location as found at that time was used as an aid in determining the center line of the channel into Texas City Harbor. *This iron pipe is not plotted on H-5462 as it no longer exists.*

About 200 meters north of the Texas City channel there shows on this sheet what was apparently an old uncharted channel. It has no value now.

The maps of the United States Army Engineers do not agree with this sheet in the location of ranges or beacons and as a result there is a considerable displacement of soundings. *The differences are probably due to distortion of the blueprints. The surveys are consistent in the immediate vicinity of the range beacons.*

Geographic Names:

No new geographic names were assigned to this sheet.

Statistics:

Number of Positions	1,842
Number of Soundings	12,165
Statute miles of sounding lines	352.6

Men in Charge of Hydrography:

The hydrography on this sheet was accomplished by Ensign W. C. Russell assisted by J. L. Hale, Observer. The sounding in the wharf area of Galveston channel was done by W. H. White, Observer.

Approved:

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

Respectfully submitted,

C. W. O'Melveny
C. W. O'Melveny,
Surveyor.

230 Nixon Bldg.; Corpus Christi, Texas

May 2, 1934.

District Engineer,
U. S. Engineer Dept.,
Galveston, Texas.

Dear Sir:

In completing some of our hydrographic sheets for Galveston, I find that according to some of our soundings taken on Nov. 22, 1933, there was a shoal spot in the entrance channel to the Houston ship channel, at a point 560 meters slightly ^{North} West of ^{West} North from the Bolivar Channel Buoy 24, as shown on Engineer's blueprint 9-4-124, dated Oct. 1933, and almost due South of the 18 ft. spot shown on the same blueprint.

On our work we have a 24 foot sounding about midway from the north edge of the channel to the center and a $27\frac{1}{2}$ foot spot not far North of the center.

Will you please inform me as to whether this place has been dredged since November, so that I shall know whether or not these soundings should be retained.

Yours very truly,

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

ADDRESS REPLY TO
DISTRICT ENGINEER
U. S. ENGINEER OFFICE
GALVESTON
TEXAS

WAR DEPARTMENT
UNITED STATES ENGINEER OFFICE
GALVESTON, TEXAS

May 5, 1934

Lieut. Earl O. Heaton,
Chief of Party,
U. S. Coast & Geodetic Survey,
230 Nixon Bldg.,
Corpus Christi, Texas.

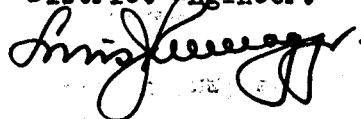
Dear Sir:

Replying to your letter of May 2nd, the blue print 9-4-124 referred to has been examined here to determine the exact location of the soundings mentioned. No dredging has been done at this location since last November. Some time this year it is expected that a hopper dredge will work in the entrance portion of the Houston Ship Channel up to the first turn but the time when this will be done is very indefinite at present.

Very truly yours,

For and in the absence of

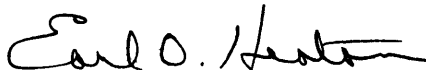
E. H. Marks,
Lieut. Col., Corps of Engineers:
District Engineer.



By Louis J. Rumaggi,
First Lieut., Corps of Engineers, U.S.A.
Assistant.

Approval of Records

Hydrographic Sheet #13 and its records have
been inspected and approved by me.



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

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

JUN 11 1934

LANDMARKS FOR CHARTS

Acc. No. _____

Corpus Christi, Texas

May 28, 1934

DIRECTOR, U. S. COAST AND GEODETIC SURVEY:

The following determined objects are prominent, can be readily distinguished from seaward from the description given below, and should be charted.

Earl O. Heaton

Earl O. Heaton

Chief of Party.

DESCRIPTION	POSITION					METHOD OF DETERMINATION	CHARTS AFFECTED	
	LATITUDE		LONGITUDE		DATUM			
	°	'	°	'				
(1,2,3) Bolivar Pt. Light House	29	21	1836.4	94	46	7.1	1927 Triangulation	1117, 1282, & 520
(2) Tower (45' wood)	29	21	1856.4	94	46	1004.5	Tape-graphy	1282 & 520
(3) Tank (45' black metal)	29	21	1645.7	94	46	792.3	"	"
(3) Flag Pole							"	"
(3) U.S. Coast Guard Sta.	29	19	738.5	94	46	1496.3	"	"
(3) Pelican Spit, U.S. Quar. Sta. Cupola	29	20	354.5	94	46	1012.9	1927 Triangulation	"
(3) Stack, Texas Sugar Ref. Co.	29	22	1328.8	94	53	805.5	"	1282
(3) Grain Elevator, Texas City	29	22	970.6	94	53	1051.7	"	"
(3) East W.T., T.C.T.R.R.Co.	29	22	966.3	94	53	1260.4	"	"
(3) West W.T., T.C.T.R.R.Co.	29	22	969.4	94	53	1323.1	"	"
(3) 35' Tripod W. end Pelican I. "U.S.E. 1900	29	21	346.2	94	49	718.2	"	1282 & 520
(3) 35' Tripod N. central Pelican I. "U.S.E. 1900	29	20	844.9	94	48	341.7	"	"
(3) Water Tank, Pier 16, Galveston	29	18	1269.4	94	47	332.3	"	"

A list of objects carefully selected because of their value as landmarks as determined from seaward together with individual descriptions, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report.

The selection, determination, and description of these points are an important factor in the value of the chart. Landmarks selected at appropriate intervals can be clearly charted. However, when none is outstanding, a group of two or three objects may by their interrelationship provide positive identification. A group so selected should be indicated.

The description of each object should be short, but such as will clearly identify it; for example, a standpipe, elevated tank, gas tank, church spire, tall stack, red chimney, radio mast, etc. Assign numerals to landmarks to indicate: (1) offshore, (2) inshore, (3) harbor, 1, 2, 3 would be a mark useful on all charts. Generally, flagstaves and like objects are not sufficiently permanent to chart.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

LANDMARKS FOR CHARTS

Corpus Christi, Texas

May 28

1934

DIRECTOR, U. S. COAST AND GEODETIC SURVEY:

The following determined objects are prominent, can be readily distinguished from seaward from the description given below, and should be charted.


Earl O. Henton

Chief of Party.

DESCRIPTION	POSITION					METHOD OF DETERMINATION	CHARTS AFFECTED
	LATITUDE		LONGITUDE		DATUM		
	°	'	°	'			
(1)(2)(3) Bolivar Pt. Light House	29	21	1855.4	94 46	7.1	1927	Triangulation 1117, 1282, & 520
(3) Tower (45° wood)	29	21	1858.4	94 46	1004.5		Topography 1282 & 520
(3) Tank (45° black metal)	29	21	1645.7	94 46	792.3		"
(3) Flag Pole							"
(3) U.S. Coast Guard Sta.	29	19	738.5	94 46	1498.3		"
(3) Pelican Spit, U.S. Quar. Sta. Cupola	29	20	354.5	94 46	1012.9	1927	Triangulation "
(3) Stack, Texas Sugar Ref. Co.	29	22	1522.8	94 53	803.5	"	"
(3) Grain Elevator, Texas City	29	22	970.6	94 53	1051.7	"	"
(3) East W.F., T.C.T.R.R.Co.	29	22	965.3	94 53	1260.4	"	"
(3) West W.F., T.C.T.R.R.Co.	29	22	969.4	94 53	1323.1	"	"
(3) 38° Tripped W. end Pelican I. " " U.S.R. 1900	29	21	346.2	94 49	718.2	"	"
(3) 35° Tripped N. central Pelican I. " " U.S.R. 1900	29	20	844.9	94 48	341.7	"	"
(3) Water Tank, Pier 16, Galveston	29	18	1269.4	94 47	332.3	"	"

A list of objects carefully selected because of their value as landmarks as determined from seaward together with individual descriptions, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report.

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The description of each object should be short, but such as will clearly identify it; for example, a standpipe, elevated tank, gas tank, church spire, tall stack, red chimney, radio mast, etc. Assign numerals to landmarks to indicate: (1) offshore, (2) inshore, (3) harbor, 1, 2, 3 would be a mark useful on all charts. Generally, flagstaves and like objects are not sufficiently permanent to chart.

POST-OFFICE ADDRESS: 230 Nixon Bldg.; Corpus Christi, Texas.

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

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DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

August 7, 1934.

To: The Director,
Coast & Geodetic Survey,
Washington, D. C.

From: Earl O. Heaton, Lieut., C. & G. S.

H5462

Subject: Aid to navigation (Sheet #13, Project: HT-118).

At the time sheet #13 was submitted to the Office there was doubt about the position of a pile at the first bend in the Texas City Channel. The position of this pile was only noted with reference to one of the sounding lines on this sheet.

This pile has since been located by sextant angles, which are given below, so that it may be added to the smooth sheet. It is a cresoted pile, 14" in diameter bare 6 ft. above M.H.W., at north side of Texas City Channel at the first bend.

	Rear	130° 19'	✓
FIX:	"O"		✓
	"M"	22° 30'	✓
	"O"		✓
1st Check Angle:	Tan	55° 57'	✓
	"O"		✓
2nd Check Angle:	Bout	52° 19'	✓

Earl O. Heaton
Earl O. Heaton,
Lieut., C. & G. S.

Plot above on smooth and back sheets

File this letter in desc. report H5462

E O E

*Plotted
CRBSr.*

GEOGRAPHIC NAMES

Survey No. H 5462

Date 11-15-34

Chart No. 1282, 520

*Names underlined in red approved Nov. 22, 1934
H Bacon*

Diagram No. 1282-2

* 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>GALVESTON</u>	SAME			
	<u>TEXAS CITY</u>	SAME			
	<u>PORT BOLIVAR</u>	SAME			
	<u>BOLIVAR POINT</u>	SAME			
	PELICAN ISLAND	PELICAN ISLAND PELICAN SPIT		This feature is referred to as Pelican in Galveston. Will be referred to Div. of Geog. Names for a decision	
	NONE	<u>QUARANTINE STA.</u>			
	SHORE POINT	SAME		Erase. No longer in local use!	
	<u>GALVESTON CHANNEL</u>	SAME			
	<u>ANCHORAGE</u>	SAME			

October 26, 1934.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
10 volumes of sounding records for

HYDROGRAPHIC SHEET 5462

Locality Galveston to Texas City, Galveston Bay, Texas.

Chief of Party: Earl O. Heaton in 1933-1934

Plane of reference is mean low water, reading

2.3 ft. on tide staff at Bolivar Pt.

8.0 ft. below B.M. 1

2.4 ft. on tide staff at Galveston Causeway

7.6 ft. below B.M. 1

3.0 ft. on tide staff at Galveston, 20th St.

6.5 ft. below B.M. 28a

Height of mean high water above plane of reference is
approximately 1.0 ft.

Condition of records satisfactory except as noted below:



Acting Chief, Division of Tides and Currents.

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. *H-5462*.

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

Number of positions on sheet	<i>.1842..</i>
Number of positions checked	<i>..192..</i>
Number of positions revised	<i>...18..</i>
Number of soundings recorded	<i>12,165.</i>
Number of soundings revised	<i>(Approx) 50</i> <small>* MANY MORE DUE TO OFFICE CORRECTION OF TIDE REDUCERS. (Roughly 1/4 of all)</small>
Number of signals erroneously plotted or transferred	<i>..NONE..</i>

Date:

Verification by *Mark S. Lunnell* Time: *118.5 HRS*

Review by *R. J. Christman Jan. 1935* Time: *22 hrs*

REPORT ON H-5462.

1. Conformity to Hydrographic Manual.

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

2. Depth Curves.

The zero, six, twelve, eighteen and thirty foot depth curves appear complete on this sheet. The zero curve on the two shell spits on the west side of the sheet ^{is} not definitely terminated by the soundings. In each case the zero curve is extended as a sunken reef line. On the edge of the Texas City channel where the slope is very steep, intermediate curves are omitted for clarity. ✓

3. Field and Office Plotting.

The smooth sheet plotting was carefully checked with the boat sheet, and two hundred positions were checked by protracting. Eighteen positions were found in error and changed. In addition, several other positions, notably along the western edge of the sheet, were determined by extremely weak fixes. In cases of disagreement with Boat Sheet, these positions were replotted to a close agreement with the time and course and the Boat Sheet. ✓

Due to an office change of the tide deduction, a large percentage of the soundings were incorrectly penciled. ✓

Six and one-half foot soundings were plotted in many instances to smooth out the six foot depth curve. ~~Otherwise all half foot soundings were dropped except where the sounding was a critical depth on a shoal.~~ ✓

The year date on the triangulation stations was added in the office. ✓

4. Junctions.

Junctions were made with H-5426 (1933-34) and H-5394 (1933-4). The agreement is good. The disagreement as mentioned in the D. R. under "Discrepancies" is very slight and explainable as it occurs at the extremity of the spoil bank as shown on H-5394 (1933-34) where a slight displacement of either sounding line would straighten out the six foot curve. ~~if it is slightly incorrect as shown.~~ ✓

5. Remarks.

1. This sheet has distorted considerably. This was especially noted in checking the distance between the Texas City Channel Inner Ranges, where an appreciable disagreement is due to distortion. *about 5 m shrinkage on 670 meters.*

2. All soundings along docks on the smooth sheet are at a distance of twenty feet from the faces of the docks. Additional soundings varying from three to six feet from the faces of the docks may be found on tracings filed with this descriptive report. This inner line of soundings at the Texas City docks averages about four or five feet shoaler than the line shown on the smooth sheet. In the Galveston

5. Remarks (continued).

Channel area, the inshore line of soundings averages only about three feet shoaler. The spacing of soundings on the tracings was left by the verifier as plotted (see Par. 3, Survey Methods, in the D. R.). ✓

3. A wrecked barge at Lat. $29^{\circ}19.1'$, Long. $94^{\circ}49.4'$, had been plotted on the smooth sheet, and for some reason, erased. Inasmuch as it appeared in the records (42G, Vol. 3, Page 51) and on the Topographic Sheet T-6054, it was replotted on the smooth sheet and inked. ✓

4. Several shell reefs, unverified by the records (on the Topographic Sheet) but appearing on the smooth sheet in pencil and on the boat sheet, have been inked as sunken reefs. ✓

5. The ends of three old piers on the spoil dump east of Texas City were located by fixes. These do not appear on the Topographic Sheets. They were inked by the verifier as indicated by a dashed line. ✓

6. In the most northern of the three slips at Texas City, a small ~~unexplained obstruction~~ *probably landing float* appears on the Topographic Sheet T-6051 at Lat. $29^{\circ}22.7'$, Long. $94^{\circ}53.6'$. This has ~~not~~ been shown on the smooth sheet, and warrants ~~further investigation~~. ✓

7. Between position 1 and 2K, Vol. 10, the end of a dock is noted in the records. The Topographic Sheet T-6053 shows a dock in this locality (Lat. $29^{\circ}19.0'$, Long. $94^{\circ}46.8'$), but does not clearly define its limits. ~~Inasmuch as this line is limited offshore by clearance with two groups of dolphins, it is considered possible that this dock might extend further than shown on T-6053, and has been so entered in pencil, on the smooth sheet, pending further investigation.~~ *shown as on T-6053.* ✓

8. All low water lines were added by the verifier. On the west side of Pelican Island, the low water line has been changed inshore to agree with hydrography. On the northeast side of Pelican Island the low water line had also been changed to agree with the Hydrography, but, upon office correction of tidal reducers this change was no longer substantiated, and the line was returned by the verifier to its location as shown on T-6052 and T-6054. In both cases the areas affected are extensive mud flats where a few inches of tide moves the low water line a relatively large distance. ✓

9. All buoys (except as noted in D. R.) and the large groups of piles on the south side of the Texas City Channel were plotted on the smooth sheet from the Topographic Sheets. Practically all of these were checked by notes in the records as they were passed on sounding lines. Two buoys which were checked by fixes (16N and 17N-Vol. 5, Page 8) do not check the topographic location. Buoy N2A (Lat. $29^{\circ}21.2'$, Long. $94^{\circ}46.8'$) fails to check by 20 M, and Buoy (FL R)2 (Lat. $29^{\circ}20.8'$, Long. $94^{\circ}46.5'$) fails to check by 30 M. ✓

5. Remarks (continued).

Black can buoy #7 (Lat. $29^{\circ}21.5'$, Long. $94^{\circ}48.3'$) also is not checked by sounding line 21-22K (Vol. 4, Page 30) which notes it as about 265 M northwest of its topographic location. In all three cases, the topographic location has been accepted by the verifier. *Positions of buoys shift frequently in this area, see Review pgs. 7, 8*

10. ~~Attention is again invited to fact that Δ T.C.C.C.B. Inner Front Range (By) no longer exists.~~

11. All reports called for in paragraph 16 of Rules for Verifying and Inking Hydrographic Sheets were submitted except the Special Chart for the U. S. Lighthouse Service. *not received 1-8-1935*

12. Attention is invited to a 17 foot depth at Buoy #9 (6N day) (Lat. $29^{\circ}21.7'$, Long. $94^{\circ}48.9'$) with nearby inshore soundings of 21 and 26 feet on line 19-20K, which line is three meters inshore from Buoy #9. *No angle fix on this sdg. buoy probably swung inshore from the topog. location.*

Respectfully submitted,

Mark S. Gurnoe

Nov. 17, 1934.

Mark S. Gurnoe.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5462 (1934)

Galveston to Texas City, Galveston Bay, Texas
Instructions dated November 5, 1932 (E.O.Heaton)
September 1933 - May, 1934

Hand Lead and Sounding Pole - 3-Point Fixes on Shore Object.

Chief of Party - Earl O. Heaton.
Surveyed by - W. C. Russell, J. L. Hale.
Protracted and soundings penciled by - C. W. O'Melveny.
Verified and inked by - Mark S. Gurnee.

1. Condition of Records.

The records conform to the requirements of the Hydrographic Manual except that the special chart for the Light House Bureau was not received.

2. Compliance with Instructions for the Project.

The plan and extent of the survey conform to the instructions for the project. What appears to have been the former channel to Texas City, northward of the present dredged channel, was not completely developed. However it is of no importance to navigation at present and may in time entirely disappear. It is not shown on the published charts. The holiday at Port Bolivar is part of the turning basin maintained by the U. S. Engineers and is covered by B.P. 26947.

3. Sounding Line Crossings.

Sounding line crossings are good, depth agreement generally being within $\frac{1}{2}$ foot or less.

4. Depth Curves.

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

5. Junctions with Contemporary Surveys.

Junctions with H-5394 (1933-34) to the north and with H-5424 (1933-34) to the east are satisfactory.
Junctions with H-5522 (1934) will be considered in the review of that survey.

6. Comparison with Prior Surveys.

H-247(1850), H-264(1851), H-323(1852), H-471(1855), H-906b(1867) H-918(1867) and H-1530(1883), H-919(1867).

The area represented by these surveys has been extensively changed by harbor improvements. The only information from them retained on present charts is a 4 foot depth from H-918a(1867) lat. 29°21.2', Long. 94°50.9'. The original shoaling was caused by obstructions (piling) placed during the Civil War. These obstructions were rapidly disintegrating at the time of the 1867 survey. A careful search during the 1934 survey failed to disclose any shoal in the vicinity and the 4 foot depth should no longer be charted.

7. Comparison with Charts No. 520 and 1282.

a. Within the area of the present survey the chart is based on surveys by the U. S. Engineers, the basis survey being represented by the map of Galveston Harbor in Engineers Report for 1914, Vol. 12. Subsequent changes in the channels are covered by Engineer's blue-prints and reports which it is not deemed necessary to list in detail in this review. The present survey, H-5462(1934) supersedes for charting purposes the above mentioned information except that which refers to the maintained channels.

b. Aids to Navigation.

The Descriptive Report under "Comparison with Previous Surveys" notes a wide variation of the charted positions of the floating aids to navigation when compared with the survey. The difference varies up to 170 meters at buoy No. 7, but no menace to navigation is caused as in all cases the displacement is parallel with the channel axis.

The charted locations of the range beacons are in good agreement with the survey. The 4 beacons noted in the Descriptive Report as destroyed are so marked on the latest prints of charts 520 and 1282.

c. Other changes noted in the Descriptive Report are the breaking down of spoil banks and the changes caused by different conditions resulting from harbor improvements especially from the construction of the Texas City dike.

8. Field Plotting.

Protracting of positions and penciling of soundings were well done although an office change in the tidal plane necessitated many changes while inking the sheet.

9. Additional Field Work Recommended.

The survey is complete and satisfactory. Dredging is under way to widen and to relocate portions of the maintained channels and it may be desirable to resurvey the adjacent areas to show the changes resulting from the dumping of the dredged materials. (N.M. 51 of 1934).

10. Superseding Old Surveys.

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

H-247(1850)	In part
H-264(1851)	" "
H-323(1852)	" "
H-471(1855)	" "
H-906b (1867)	" "
H-918a (1867)	" "
H-918b (1867)	" "
H-919 (1867)	" "
H-1530 (1883)	" "

11. Reviewed by - R. J. Christman, January, 1935.

Inspected by - A. L. Shalowitz.

Examined and approved:

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

Frank S. Boden
Chief, Section of Field Work.

L. O. Colburn
Chief, Division of Charts.

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

*Applied to new compilation of chart #520 by J. Fleming.
May 28, 1935 J.H.S.*

Sketches (overlays)

#5463

ON ORIGINAL
DOCUMENT

39

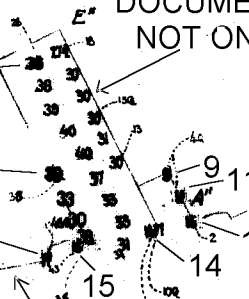
17

16

38

ON ORIGINAL
DOCUMENT

NOT ON PAGE 23
SCAN

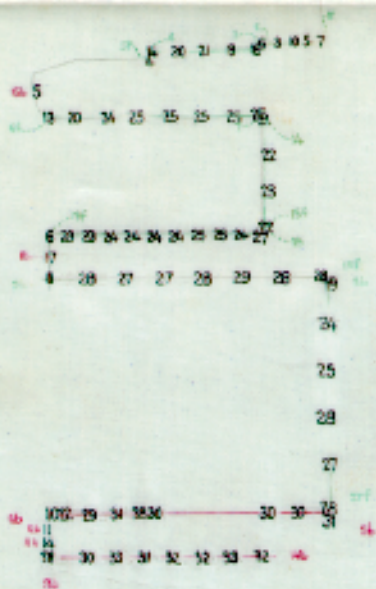


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PAGE 23 SCAN

G A L V E S T O N

56'
22'



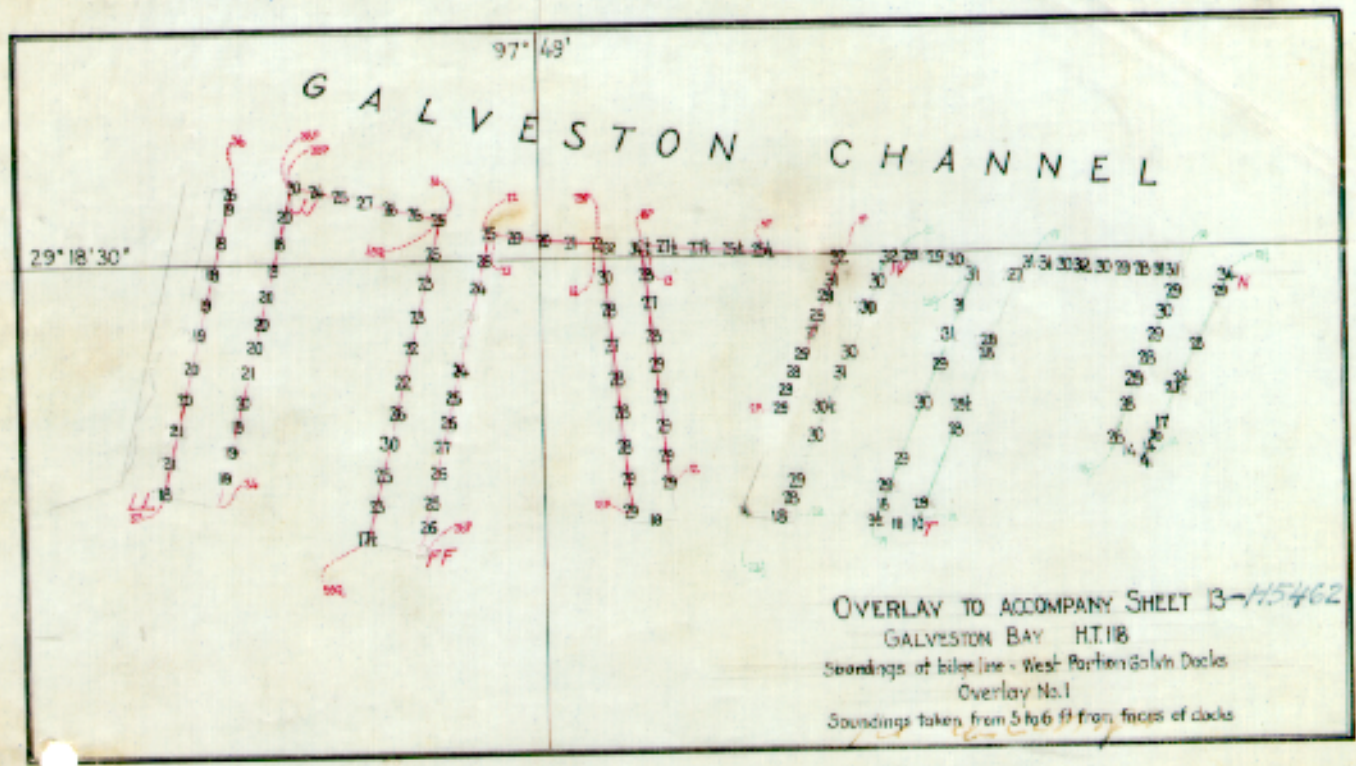
OVERLAY TO ACCOMPANY SHEET 13 - H-5462

TEXAS CITY DOCKS

Soundings along bilge keel line
from 3 to 6 ft from faces of the docks

29' 22"

94' 53"



New Chl 518 - Appd misc information as charted on 886 and bottoms
Helen 7/24/64