5912

U. S. COAST & GEODETIC SURVEY
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Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. Patton, Director

State: Texas

DESCRIPTIVE REPORT

~~Topographic~~
Hydrographic } Sheet No.

LOCALITY

Gulf of Mexico

Heald Bank

19 35

CHIEF OF PARTY

Thos. B. Reed

U. S. GOVERNMENT PRINTING OFFICE: 1930

Form 537
Ed. Dec., 1930

REG. NO.

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. .....

REGISTER NO. 5912

State Texas

General locality Gulf of Mexico 13

Locality Heald Bank 10

Scale 1:40,000 Date of survey November 19 to 21, 19 35

Vessel Lighthouse Tender SUNFLOWER

Chief of Party Thos. B. Reed

Surveyed by Thos. B. Reed

Protracted by Thos. B. Reed

Soundings penciled by J. A. Mc Cormick

Soundings in ~~fathoms~~ feet

Plane of reference M. L. W.

Subdivision of wire dragged areas by .....

Inked by J. A. Mc Cormick

Verified by J. A. Mc Cormick

Instructions dated November 1, 1935, 19

Remarks: .....

U. S. GOVERNMENT PRINTING OFFICE: 1931

DESCRIPTIVE REPORT
TO ACCOMPANY

Hydrographic Sheet, Heald Bank, Texas

Thos. B. Reed, Chief of Party.

DATE OF INSTRUCTIONS: Nov. 1, 1935; No. 22-RS-1990 (4).

DATE OF SURVEY: Nov. 19 to Nov. 21, 1935.

PURPOSE: This survey was made for the purpose of locating Heald Bank Lightship.

SURVEY METHODS:

This survey was controlled by four buoys, all planted on range and related to each other by full speed double runs and sun azimuths. The survey was made by the usual hydrographic methods from the Lighthouse Tender SUNFLOWER.

Positions, only, were plotted on the smooth sheet and it is requested that tide reducers be obtained from the records of the standard gage at Galveston, and the soundings be reduced and plotted in the office. Soundings on the boat sheet were reduced from predicted tides.

The projection shown on the boat sheet was constructed by superimposing the depth curves on the photostatic enlargement of Sheet No. H-4333 (1923).

It was intended to obtain at least one set of star sights during the progress of the work; however there was no suitable weather available during the time of the survey.

DISCREPANCIES:

The records of the Lighthouse Service show that Heald Bank Station Buoy has not been moved since before 1923. The position of buoy "HEAL" on Sheet H-4333 (1923) falls close to the present position of the station buoy and it is thought probable that HEAL was the station buoy in the 1923 survey and that the Lightship and Station Buoy have been erroneously charted since that time. Chart No. 1280 with a correction date of 1925 shows the Lightship and Station Buoy in the same position as on the present chart.

From soundings obtained in the present survey it is believed that the shoaler parts of the bank have deepened about 2 feet. However the development lines of the present survey are not thought close enough to entirely disprove the 25 foot sounding obtained in the 1923 survey and it is recommended that this sounding be retained on the chart. As this survey was being made at a considerable expense to the Lighthouse Service, it was not thought advisable to continue sounding lines beyond those necessary to locate the Lightship and to determine if the bank had shoaled since the 1923 survey.

HYDROGRAPHIC STATISTICS

Date	Day Letter	Stat. Mi. Sndg. Lines	No. of Sndgs.	No. of Positions
Nov. 19	A	13.8	147	28
20	B	47.7	558	104
21	C	5.0	104	18
	Totals	66.5	809	150

Respectfully submitted,

Thos B Reed

Thos. B. Reed,
Lieut., C. & G. Survey.

AZIMUTH SIGHT FOR HYDROGRAPHIC CONTROL

U.S.L.H. Tender ~~USC&GSS~~ SUNFLOWER, Thos. B. Reed ~~Comdg.~~ C. of P. Lat. 29°-07.5 Long. 94°-13.6

Date 11/20/35 Buoy _____ bears ____ °T. dist. _____ m. Hor. scope _____ m.

Astro. object sighted ☉, bearing ____ °T., H.I. _____ ft., Watch No. Chr.

Horizon object sighted "Boy"-"Cat"-"Dog" ~~00~~ bearing NE° T., Dir. cur. (S.H. ±180°) SW. °T.

Anchor of buoy _____ is distant ____ m., bearing ____ °T. from horizon object

Incl. ∠ by T.B.R., sext. #H-763, I.C. 0. Vert. ∠ by P.T., sext. #H-833, I.C. 0

	(1)			(2)			(3)			(4)		
	h	m	s	h	m	s	h	m	s	h	m	s
W												
C-W												
90 M C.T.	8	18	25	8	21	08						
C.C.	-	41	49	-	41	49						
G.C.T.	13	36	36	13	39	19						
Eq. T. RAMS+12	+	14	28	+	14	28						
Table 3												
G.A.T. G.S.T.	13	51	04	13	53	47						
Long. W.	6	16	54	6	16	54						
L.A.T. L.S.T.	7	34	10	7	36	53						
R.A.												
L.H.A.												

	(1)		(2)		(3)		(4)							
	deg	min	deg	min	deg	min	deg	min						
obs. h	09	37	09	59										
I. C.		0		0										
s. d.	+	16	+	16										
h_o	9	53	10	15										
H.P.(moon) Corr.														
h_o (moon)														
Incl. ∠	61	01	61	24										
I. C.		0		0										
s. d.	+	16	+	16										
V_o	61	17	61	40										
declin.	-19-338		-19-338											

	(1)	(2)	(3)	(4)
Log cos. V_o	9.681674	9.676328		
Log cos. h_o	9.993506	9.993013		
Log cos. V_c	9.688168	9.683315		
V_c	60°-48.5	61°-10.6		
Az. astro. body	118-53.3	119-16.0		
Dip corr.				
Az. hor. object	58° 05'	58° 06'		

Mean

sketch "Boy"

Buoys "Abe" "Cat", "Dog" ~~00~~

All buoys here 15 fms. & chain.

From azimuth tables

H.A.	Lat. = 29° δ = 19°	δ = 20°	δ = 19-34	Lat. = 30° δ = 19°	δ = 20°	δ = 19-34	Lat. = 29°-07.5
7-30	117-47	118-36	118-17	117-55	118-44	118-25	118-18
7-40	119-11	120-00	119-41	119-21	120-09	119-51	119-42

Observed az.	
Near end corr.	
Dist. end corr.	
Az. ⚓ to ⚓	58°-06'

ECCENTRIC REDUCTION

	Stations	a	log sin a	log s (meters)	$\log \frac{\sin a}{s}$	log of reduction	c (min)
Ecc. sta. _____ d = m. log colog sin 1' 3.5363 sum	Buoy ⚓	0°	—	—	—	—	—
Ecc. sta. _____ d = m. log colog sin 1' _____ sum	Buoy ⚓	0°	—	—	—	—	—

(OVER)

Comp. by [illegible]

✓ by J.N.J.

INSTRUCTIONS.

This form permits of the simultaneous computation of four sets of azimuth observations. If the observations are all within a very few minutes of one another, the mean altitude and mean time may be extracted and the computation made singly for these mean values. In this case, scrutinize the relations between the time intervals and the altitude intervals to determine if all observations are acceptable.

DIP CORRECTION.

Special diagrams are available for the proper determination of this correction.

AZIMUTH TABLES.

The form provides space for abstracting the proper values from the tables, and for making all necessary interpolations.

ECCENTRIC REDUCTION.

"d" is the distance between the buoy anchor and the eccentric station. "a" is the direction, in whole degrees, at the eccentric station, of the distant buoy, reckoned clockwise from the direction of the nearby buoy as initial. Logs should be carried to four places and distances to whole meters. The quantity "log of reduction" is obtained by adding the "sum" obtained at the left of the form with the quantity log $\frac{\sin a}{s}$.

It should be noted that the result is expressed in minutes of angle.

(R-234)

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. 5912

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

Number of positions on sheet	150
Number of positions checked	3
Number of positions revised	0
Number of soundings recorded	809
Number of soundings revised	8
Number of signals erroneously plotted or transferred	0

Date: Dec. 30, 1935

Verification by J. C. McCormick Time: 7 hr.

Review by Time:

HYDROGRAPHIC SURVEY NO. 5912

Smooth Sheet yes

Boat Sheet 1

Sounding Records 1 Vols. _____

Descriptive Report yes

Title Sheet yes

List of Signals in D.R,

Landmarks for Charts (Form 567) offshore sheet

Statistics yes

Approved by Chief of Party no

Recoverable Station Cards (Form 524) none

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

Remarks _____

	Remarks	Decisions
1		
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M 234		

GEOGRAPHIC NAMES

Survey No. 5912

Name on Survey	A On Chart No. 1280	B On previous survey No. H4333	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 Coast Pilot	
Heald Bank	✓	✓						✓	✓	1
Gulf of Mexico	✓									2
										3
										4
										5
										6
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										27

M 234

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. 22-AA
720 Vc5

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

December 10, 1935.

Memorandum to Chart Division.

Attention - Mr. Kelly.

5912

The accompanying records are for a special survey made of Heald Bank for the purpose of locating the lightship. The lightship was fixed in position by superimposing the curves developed on the new survey on the curves as developed on the 1923 survey. The smooth sheet has been plotted, but the soundings have not been reduced for tides and, of course, have not been plotted on smooth sheet. It is suggested that the Tidal Division be requested to reduce the tides and that the Chart Division plot the soundings on the smooth sheet. The sheets should carry the regular registered number in the usual manner.

F. S. Borden,
Chief, Field Work.

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Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Ed. Feb. 1935

TIDE NOTE FOR HYDROGRAPHIC SHEET

December 13, 1935.

Division of Hydrography and Topography:

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

Tide Reducers are approved in
1 volume of sounding records for

HYDROGRAPHIC SHEET 5912

Locality Heald Bank, Gulf of Mexico, Coast of Texas.

Chief of Party: Thos. B. Reed in 1935
Plane of reference is mean low water reading
3.0 ft. on tide staff at Galveston
6.5 ft. below B.M. 28a

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

Condition of records satisfactory except as noted below:

Chief, Division of Tides and Currents.

U. S. GOVERNMENT PRINTING OFFICE

Verifier's Report on H-5912

This sheet was received in the office with no projection on it and no soundings penciled. Positions of hydrographic signals had been plotted in the field with reference to each other. Plotting of signals was verified. In this connection the question arises as to whether the chief of party rated his patent logs before making his full speed runs. In the absence of such information the verifier accepted the distances as recorded. Soundings were inked and curves drawn.

The Chief of Party recommended that the projection be hung on the azimuth which he obtained and fitted to the depth curves on H-4333. The verifier found on investigating the records of H-4333 that the station buoy was located on that sheet and shown as Signal Heal. The Chief of Party states that the Lighthouse Service has not changed the location of this buoy since before 1923 which was the date of the work shown on H-4333. Verifier decided to hold the position of the station buoy fixed as shown on H-4333 and swing the projection in with the azimuth obtained on the current survey. This gave fairly good agreement with the depth curves on H-4333. The chief of party based the projection shown on the boat sheet entirely on the azimuth and depth curves. He was not certain that Signal Heal was the 1923 location of the station buoy. It is realized that the buoy may have shifted since 1923 but the agreement obtained by using the 1923 location is satisfactory.

Lt. Comdr. F. S. Borden has requested (verbally) that a copy of the review be filed as a chart letter. Although the buoy was located in 1923 it was not charted correctly on subsequent issues of Chart ~~1252~~ 1280.

December 30, 1935.

Submitted,

J. A. McCormick

J. A. McCormick.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5912 (1935) FIELD NO. 5

Heald Bank, Gulf of Mexico, Texas
Surveyed in November, 1935.
Instructions dated Nov. 1, 1935 (T. B. Reed)

Hand Lead Soundings. 3 Point Fixes on Signal Buoys

Chief of Party - T. B. Reed.
Surveyed by - T. B. Reed.
Protracted by - T. B. Reed.
Soundings plotted by - J. A. McCormick.
Verified and inked by - J. A. McCormick.

1. Condition of Records.

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

The Descriptive Report is clear and adequately covers all matters of importance.

2. Compliance with Instructions for the Project.

Except that no set of star sights was obtained because no suitable weather was available, the survey adequately complies with the instructions for the project.

3. Shoreline and Signals.

This is an offshore survey and no shoreline or topographic signals are shown.

4. Sounding Line Crossings.

Sounding lines are in satisfactory agreement at crossings.

5. Depth Curves.

The 30 and 36 foot curves can be satisfactorily drawn.

6. Junctions with Contemporary Surveys.

There are no contemporary surveys adjacent to the present survey.

7. Comparison with Prior Surveys.

a. H-1596a (1894).

This survey, on a scale of 1:80,000, covers the eastern portion of Heald Bank. It is in only fair agreement with

H-4333 (1923) and the present survey. The positions of the shoalings are a little different and the eastern part of Heald Bank appears to have deepened several feet. The least depth shown on the bank is 27 feet. The information shown on this survey has been superseded on the chart by a later survey and it should not be considered in future charting of the area covered by the present survey.

b. H-4333 (1923).

This survey, on a scale of 1:80,000, covers the entire area of the present survey and the depths are in fair agreement. The general shape of the 36 foot curve is about the same and the 30 foot curve on the bank proper is in agreement. On the eastern part of the bank there appears to have been a general deepening of several feet and the present survey shows no indication of some of the 29 and 30 foot spots. The present survey shows a least depth of 28 feet on the crest of the bank. However, the development is insufficient to disprove the old 25 foot sounding and the latter has been carried forward as recommended by the field party.

8. Comparison with Chart 1280 (New Print dated May 28, 1935).

a. Hydrography.

Within the area of the present survey the chart is based on H-4333 (1923), discussed in the foregoing paragraph and contains no additional information that needs consideration in this review.

b. Aids to Navigation.

Heald Bank Lightship and Station Buoy are at present charted about 1-1/2 miles northeast of the present location. Their positions on the chart are to be corrected to agree with the present locations. (Lighthouse Notice to Mariners 49, 1935 and Chart Letter 988, 1935).

9. Field Plotting.

The plotting of signal buoys and protracting of positions was accurately done in the field. Soundings were plotted and the projection drawn in this office. For method of constructing projection see verifier's report.

10. Projection on Sheet.

In the absence of any astronomic determination for position, the projection on this sheet was constructed by using the common position of "station buoy" (shown as signal Heal on H-4333 and not changed since that survey) and the azimuth of 58°06', as determined on the present survey between signal buoys Abe and

Dog. This brought the depth curves on the two surveys into close agreement. A position of Heald Bank Lightship is thus obtained sufficiently close for charting purposes.

11. Additional Field Work Recommended.

No additional work is required.

12. Superseding Old Surveys.

Within the area covered the present survey, with the indicated additions from previous surveys, supersedes the following surveys for charting purposes:

H-1596a (1894) in part
H-4333 (1923) " "

13. Reviewed by - R. L. Johnston, Feb. 3, 1936.

Inspected by - A. L. Shalowitz.

Examined and approved:

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

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

F. B. Borden
Chief, Section of Field Work.

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

applied to Chi. 1280 - June 12-36 - NLB.