

5418

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: LOUISIANA

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. 1 5418
Hydrographic }

LOCALITY

GULF OF MEXICO

LOUISIANA COAST

EAST OF CALCASIEU PASS

193 3-4.

CHIEF OF PARTY

W. E. Parker.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 5418

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.

5416

Field No. 1

REGISTER NO. 5418

State LOUISIANA

General locality GULF OF MEXICO

Locality EAST OF CALCASIEU PASS

Scale 1:40,000 Date of survey Mar. 15 '33 - June 30, 1933

Vessel U. S. Coast and Geodetic Survey Ship HYDROGRAPHER.

Chief of Party W. E. Parker.

Surveyed by W.D.Patterson, R.W.Woodworth, K.G.Crosby, E.H.Kirsch,
G. R. Shelton.

Protracted by D. H. Bassett.

Soundings penciled by D. H. Bassett.

Soundings in ~~fathoms~~ feet

Plane of reference Mean Low Water.

Subdivision of wire dragged areas by -----

Inked by [Signature]

Verified by [Signature] & [Signature]

Instructions dated December 17, 1932 - January 7, 1933.

Remarks: -----

Descriptive Report to Accompany

Hydrographic Sheet #1

Gulf of Mexico

Louisiana Coast

DATE OF INSTRUCTIONS:

Instructions for this survey were dated December 17, 1932; Supplemental Instructions January 7, 1933. Letter of May 31, 1933, authorized the plane of reference and location of tide gauge.

SURVEY METHODS:

The positions for work to a point approximately twelve miles offshore were located by sextant fixes on towers. The starboard launch of the Ship HYDROGRAPHER, worked the area from the beach to a point about two miles offshore from Longitude $93^{\circ} 04'$ to Longitude $93^{\circ} 12'$. The remaining launch work was done by the Hudie working from Longitude $92^{\circ} 55'$ to Longitude $93^{\circ} 04'$. The bottom of this area was found to be muddy in its entirety, no bottom characteristics were put on the sheet.

The remainder of the work was done by the Ship HYDROGRAPHER. Signal towers, located by plane table methods and several triangulation signal towers were used for control. The triangulation control for this sheet was done by Lieutenant E. R. McCarthy in 1933.

Beyond the limit of visibility of these signal towers, R.A.R. methods were used for position finding. Control for R.A.R. was a system of buoys tied in to signal towers on the beach by a system of triangulation using sextant angles, bombed distances and

taut wire measurements. The positions of the buoys were determined graphically on an aluminum sheet from which the geographical positions were scaled.

The chartered launches American and Hudie, each equipped with a magnetophone were used as station ships and moved about to the different buoys in the section that was being worked. The positions of the magnetophones relative to the buoy anchors were determined by the officers on the launches every thirty minutes while the work was going on.

Bearings on buoys were taken from R.A.R. positions where conditions permitted. These bearings are indicated on the smooth sheet by yellow lines approximately 2 m.m. long. Arcs from the American are shown in green ink and those from the Hudie shown in orange ink.

All soundings on Sheet #1 were taken by hand lead line which was checked before and after each days work.

Velocities of sound were obtained from data compiled by Officers on each launch twice each day during the progress of the work. These data consisted of temperatures of the water, surface and bottom, and specimens of the water from which specific gravities were obtained. These results were used to find velocities of sound through water from standard tables (B.A. Tables of 1927).

Tidal reductions were made from data obtained by the recording tidal station at Calcasieu Pass Lighthouse, Cameron, Louisiana.

DISCREPANCIES:

The inshore ship and launch hydrography was plotted without

difficulty except for an occasional error in either observing or recording. All doubtful fixes were checked against the boat sheet and corrected where mistakes were found and a notation made opposite the position in the sounding record book.

It will be noted that the area Latitude ^{29°}28° 24' to Latitude ^{29°}28° 34' and Longitude 93° 02' 30" to Longitude 93° 12' has been omitted. This section was worked by the Ship OCEANOGRAPHER in the early part of 1933. (H-5315).

Owing to the fact that the first part of the R.A.R. work on this sheet was the first and experimental R.A.R. work done in the Gulf, considerable difficulty was experienced in starting the work but this difficulty decreased as the work progressed.

During days "L" and "M" on many positions only single arcs were obtained. Therefore, the positions were plotted by using the course, time and log run. On "P" day, positions 9 and 10 were plotted by using the arc "I₂" with log and time, "C" being rejected as too long. Position 26P plotted with log, time and course as "I₂" was too short. Position 30P plotted the same as 26P as the arcs were both rejected for being too long. Several other positions will be noted as plotted with only one arc or even no arc at all. These positions were all adjusted and plotted in the same manner as previously explained by using the log run, time and course.

On "R" day, positions 9, 10, 11 and 20 to 24 inclusive were plotted with log, time and course and the one arc. Positions 15 to 21 J' inclusive were plotted with one arc, log, time and course.

With the exception of positions 2, 4, 7, 8, 9 and 13, "Y" day was plotted by using one arc where possible with the log run,

course and time.

On "Z" day quite a bit of difficulty was experienced in plotting which was caused by the fact that the area covered is midway between two buoys and too, the possibility of the wrong velocity being used. The bearings were used throughout the day and positions plotted on them and the positions spaced proportional to the distance from each buoy along these bearings. This method was also used in plotting "C" and "E" days.

CROSS LINES:

There is an average difference of about one foot between soundings on lines and cross lines, the cross lines being deeper the majority of the time. Poor agreement was found at the junction of the launch work and that of the Ship Hydrographer on the western part of the sheet. A difference varying between one and three feet being found. The launch cross lines checked with an average difference of one foot or less.

Line 36J to 37J crossing line 153D to 154D shows a 3 foot greater depth. Line 104K to 105K crossing line 46K to 47K is deeper by two feet. Cross line 24N to 27N shows a difference of three and four feet, 30 feet being over 27 feet, 28 feet being over 32 feet and then 30 feet over 28 feet. The remainder of this cross line has an average difference of about one foot.

Cross line 17N to 23N shows varying errors, first a 32 foot sounding over 36 feet, 32 feet over 35 feet, 33 feet over 34 feet and finally a checked sounding on position 23N. Cross line 57N to 75N shows an average difference of one foot. Cross line 99E' to 101E' shows 42 feet over 44 feet, 41 feet over 44 feet and then an agree-

ment between the remaining soundings.

On cross line 57B' to 61B', 50 feet is shown over a 52 foot sounding and 50 feet over 53 feet.

Errors are apparent on cross line between 13S and 24S, differences varying from one to three feet being found. Between 29S and 30S, there is a 56 foot sounding over one of 58 feet. Two foot errors are found between 46S and 48S, 58 feet crossing 60 feet and 59 feet crossing 57 feet. On cross line 22K' through 47K' errors are found varying from four feet over position 18K' to an agreement at position 47K'. It is apparent that the cross line is in error and, as there is a note in the sounding record book to the effect that the ship was bucking a $1\frac{1}{2}$ knot current from position 34K' to 54K' and running with current between 22K' and 31K', it is recommended that the cross line be rejected from ~~35~~ to ~~42~~. ^{34 45} Line rejected as recommended - H.W.M.

Line 12G' to 13G' and 14G' to 15G' is crossed by line 3B' to 4B'. B' line shows 50 feet over 47 feet and 50 feet over 48 feet. Line 69F' to 70F' is crossed by and also nearly parallels line 69A' to 70A'. This line shows depth of 46 feet beside 50 feet, 46 feet beside 49 feet and 46 feet being crossed by 50 feet. On the turn in line 11 to 12E' a depth of 48 feet is found and this line is closely paralleled by line 29 to 30Z' and this line has a depth of 52 feet at the nearest point to line 11 to 12E'.

There is only one taut wire measurement on this sheet along which a sounding line was run, this being between positions 15 and 25B' day and was run to check the position of buoy "R".

H-5418 Desc. Rept.

DANGERS TO NAVIGATION:

No dangers to navigation were found in this area. There is a gradual slope from the inshore limit of the work to the outside limit which is about 30 miles offshore with a depth of 65 feet. Two shoals were found in the area covered by this sheet. One being found at Latitude 29° 21', Longitude 93° 02.5'. The least depth found was forty feet between positions 2 and 3 "V" day. The second shoal was found and developed at Latitude 29° 22' Longitude 93° 11.5'. The

least depth found is 38 feet and is between positions 40 and 41 P day. * A 37 ft. sdg. has been transferred from H-4364 (yr. 1924) as overlap and falls in this vicinity. - f.d.

COMPARISON WITH PREVIOUS SURVEYS:

H-5418

Comparison of sheet #1 with previous surveys show good agreement and no change of importance with the exception of the shoreline which has been changed by erosion and has moved northward approximately 550 meters. This sheet joins satisfactorily with Hydrographic Sheet #6 which is the adjoining sheet to the eastward. The western limit of this sheet are sheets with register number 4372, surveyed by Party of Hydrographer, G. C. Jones, Chief of Party, during May and June 1924. Register #4364, Chief of Party, F. S. Borden, surveyed April and May 1924. Sheet Register #4335, Chiefs of Party, E. R. Hand and F. S. Borden, surveyed March 1924.

These sheets, Nos. 4372, 4364 and 4335 agree with Hydrographic Sheet #1 with an average difference of one foot or less.

D. H. Bassett

D. H. Bassett, Draftsman,
Coast and Geodetic Survey.

Examined and approved,

W. E. Parker

W. E. Parker, Captain,
Coast and Geodetic Survey,
Chief of Party.

**STATISTICS FOR
HYDROGRAPHIC SHEET NUMBER ONE**

Number of Positions	3,842
Number of Soundings	22,473
Number of Statute Miles	2,043

Memorandum for Review of H-5418,
by Leo S. Straw.

1. Records.

The records conform to the requirements of the General Instructions, except as noted in P. 1 of the review.

2. Plotting.

This sheet (H-5418) comprises position finding by Three-point-fix and R. A. R. A visual check and a few investigations of positions, indicate that the plotting was carefully done and that it is satisfactory. Concentric circles for use in radial measurement in plotting the R. A. R. fixes were not drawn on the sheet. In order to avoid crowding of soundings on some of the inshore work, it is thought advisable not to ink all of the penciled soundings. Since the slope is gradual, as it is on this sheet, omission of some of the soundings can be made without effecting the value of the hydrographic information.

3. Discrepancies.

On page 5 of the Descriptive Report, last part of second paragraph, it is recommended, by Mr. Bassett that line 35K' to 42K' be rejected. Because of the conditions, as set forth in the records, under which this portion of the cross line was run it is believed that the line should not be plotted from position 34K' to 42K'. (See pp 26 - Vol. 13.)

The usual depth curves (6, 12, 18, 30, and 60 ft.) will be inked. Although H 5411 joins this sheet (H5418) satisfactorily on the south, it is noted that the 10 fathom or 60 ft, curves vary from two to five miles. This is undoubtedly due to the gentle slope of the bottom and the variation introduced by the difference in plotting in feet on the inshore sheet and in fathoms on the offshore sheet.

(For solution see TP 5c of Review - Y.S.M.)

REPORT ON H. 5418
FIELD RECORDS SECTION - June 19, 1934.

The sounding records were neat, ^{and} legible, ~~and complete.~~ ✓

The protracting was visually checked by L. S. Straw. ✓

The field drafting was neatly done; however, about 200 soundings were erroneously plotted as to amount. The number of soundings between positions were in a few cases erroneous. These were corrected. ✓

The crossings in quite a few instances are in poor agreement. (see Descriptive Report for remarks). ✓

The meridian ⁹73°12' was found to be out as much as 25 m from lat. 29°30' to 44'. This was corrected. ✓

Because of poor agreement cross line 34 to 45k' (red) ^{was} were not inked (See D. R.) Line rejected as recommended by Chief of Party - H.W.M. 7/10/34 ✓

Overlaps - ~~East~~, completed.

South, *H. 5411 in work - not available.

West - *Lat. 29°32' to 46' - H. 4372 - not done

~~because this work is not considered contemporaneous.~~

*Lat. 29°12' to 24' - H. 4335 - not done because

~~this work is also not considered contemporaneous.~~

*Lat. 29°24' to 35' overlaps sheet H. 5315.

*Overlaps of these sheets have now been made. 7/10/34

A (red) day was not plotted on smooth sheet or on Boat Sheet. No notation was made in either the sounding records or the descriptive report stating why this work was rejected. Frequent notations, however, are made in the "remarks" column to the effect that the weather is "cloudy" and "hazy" and that the signals are obscured.

Notation now made in agreement by Chief of Party

An overlay was made of this day's work to correspond with the area covered by subsequent work. There is frequent poor agreement between overlay and smooth sheet.

The 60 ft. curve is left in pencil and is to be inked when H. 5411 is completed. This curve has now been adjusted and inked.

Respectfully submitted,

I. M. Zeskind.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5418 (1933)

East of Calcasieu Pass, Gulf of Mexico, Louisiana.
Instructions dated Dec. 17, 1932 and Jan. 7, 1933 (HYDROGRAPHER)
Surveyed in 1933.

Hand Lead Soundings - 5 Point Control on Shore Signals and
RAR using Floating Hydrophone Stations.

Chief of Party - W. E. Parker.
Surveyed by - W. D. Patterson; E. H. Kirsch; R. W. Woodworth.
Protracted by - D. H. Bassett.
Soundings penciled by - D. H. Bassett.
Verified and inked by - L. S. Straw; I. M. Zeskind.

1. Condition of Records.

The records are neat, legible and conform to the requirements of the Hydrographic Manual except as follows:

- a. No list of signals was attached to the sounding records (Par. 139 of H. M.).
- b. The name of the leadsman was not consistently entered at the beginning of each day's work (Par. 64b of H. M.).
- c. No concentric circles for R.A.R. distances were shown on the sheet. This is probably due to the closeness at the various hydrophone stations, distortion of the paper being negligible in plotting distances.
- d. Projection. The $93^{\circ}12'$ meridian was found to be misplaced by nearly 25 meters for a distance of $14'$. This was corrected in the office.
- e. No reference station was placed on the sheet and was accordingly added in the office.

2. Compliance with Instructions for the Project.

The plan, character and extent of the survey satisfy the instructions for the project.

3. Sounding Line Crossings.

Generally speaking, agreement of soundings at crossings is within 1 to 2 feet. There are, however, several isolated cases throughout the survey in which differences vary by as much as 3 to 4 feet.

4. Depth Curves.

The 6, 12, 18, 30 and 60 foot curves may be completely drawn within the limits of the survey.

5. Junctions with Contemporary Surveys.

a. H. 4372, 4364 and 4335 (Surveys of 1924).

The junctions of the above surveys with H. 5418 (1933) on the west as prescribed by the Specific Instructions are adequate. Agreement of soundings is excellent.

b. H. 5315 (1933).

The agreement of soundings at the junction of this survey with H. 5418 (1933) on the west between lat. $29^{\circ}24'$ and $29^{\circ}35'$ is excellent.

c. H. 5411 (1933).

Agreement of soundings at the junction of this survey with H. 5418 (1933) on the south is within 1 to 2 feet. In order to avoid illogical irregularities in the 60 foot curve, it was decided to retain the hand lead soundings of H. 5418 (1933) and to omit all fathometer soundings of H. 5411 (1933) within the limits of H. 5418 (1933) which conflict with the latter sheet. Soundings of H. 5411 (1933) and curves of both surveys have been adjusted accordingly.

d. H. 5410 (1933).

Agreement of soundings at the junction of this survey with H. 5418 (1933) on the east is excellent. The slight shift noted in the 6, 12 and 18 foot curves may be due to the entry of tide reducers to the nearest foot.

e. H. 5361 (1933).

The junction with this survey on the north at the entrance to Mermentau River is satisfactory.

6. Comparison with Prior Surveys.

a. H. 1647 (1885).

This survey covers a small portion of the new survey on the north at the entrance to Mermentau River. Soundings of the new survey (H. 5418, 1933) though not so extensive, are deeper than those of H. 1647 (1885) by from 1 to 2 feet. No critical depths are involved.

b. H. 5303c (1933).

This is a "track" fathometer survey controlled by dead reckoning and astronomical positions on a very small scale. It is of reconnaissance value only and contains no information which would conflict with the new survey H. 5418 (1933).

c. H. 1645 (1885).

Soundings of this survey are generally in good agreement with those of the new survey H. 5418 (1933).

d. H. 1596a (1884).

But a very small portion of this survey falls within the southwestern limits of the new survey H. 5418 (1933). Soundings of the two surveys are generally in good agreement.

7. Comparison with Chart No. 1278.

Apart from matters considered in paragraph 6 above, there are no other items of importance shown on the chart which need consideration in this review.

8. Field Plotting.

Field protracting and plotting of soundings conform to the requirements of the Hydrographic Manual with the exception that in many cases soundings were not correctly plotted with respect to depth and time interval.

9. Additional Field Work Recommended.

This survey is complete, no additional work is required.

10. Superseding Old Surveys.

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

H. 1647 (1885)	In part.
H. 1645 (1885)	In part.
H. 1596a (1884)	In part.
H. 5303c (1933)	In part.

11. Miscellaneous Matters.

A note "Lead struck something at 4 fathoms" (23 ft. MLW) is recorded in the records at the first sounding of 30 feet obtained after pos. 42k (Ship) in lat. $29^{\circ}39'.8$, long. $93^{\circ}3'.7$. A line of soundings was subsequently run over this spot (pos. 106 - 108k) and nothing less than 29 feet obtained.

12. Reviewed by - Harold W. Murray, July 17, 1934.

Inspected by - A. L. Shalowitz.

K. T. Adams
K. T. Adams,
Chief, Section of Field Records.

J. B. Brown
Chief, Section of Field Work.

Examined and approved:

L. O. Robert
Chief, Division of Charts.

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

RAC

April 23, 1934

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
14 volumes of sounding records for

HYDROGRAPHIC SHEET 5418

Locality East of Calcasieu Pass, Gulf of Mexico, Louisiana Coast

Chief of Party: W. E. Parker in 1933, ~~Lewis~~
Plane of reference is mean low water, reading
3.5 ft. on tide staff at Calcasieu Lighthouse
5.8 ft. below B. M. 1

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

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. *H. 5418*

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

Number of positions on sheet	<i>3,842</i>
Number of positions checked	<i>5</i>
Number of positions revised	<i>0</i>
Number of soundings recorded	<i>22,473</i>
Number of soundings revised	<i>200 approx</i>
Number of signals erroneously plotted or transferred	<i>0</i>

Date: *June 19, 1934*

Cartographer: *C. J. Jeske*

Verification of protracting by *A. S. Straw* Time: *13 hrs.*

Verification and inking by *C. J. Jeske* Time: *93 "*

Review by *H. W. Murray* Time: *12 1/2 "* ✓

applied to drawings of charts 1007 & 1116.

Oct. 15/34, C.S.D.