

5362

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

State: LOUISIANA

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. B 5362
Hydrographic }

LOCALITY

Lake Charles Deep Water Channel

Calcasieu Lake to Prien Lake

1933

CHIEF OF PARTY

J. C. Bose

5362

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 5362

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. B

REGISTER NO. 5362

State LOUISIANA

General locality Lake Charles Deep Water Channel

Locality Calcasieu Lake to Prien Lake

Scale 1:20,000 Date of survey Oct. - Nov., 1933

Vessel Project HT-138

Chief of Party J. C. Bose

Surveyed by J. C. Bose

Protracted by H. R. Burfford

Soundings penciled by H. R. Burfford

Soundings in ~~fathoms~~ feet

Plane of reference 0.5 ft. below mean water level

Subdivision of wire dragged areas by

Inked by P.H. Scherr, W.H. Bamford

Verified by P.H. Scherr, W.H. Bamford

Instructions dated September 8, 1933

Remarks:

D E S C R I P T I V E R E P O R T
To Accompany Hydrographic Sheet (Field) No. B.

Instructions. The survey was made in accordance with Supplemental Instructions from the Director dated September 8, 1933. ✓

Survey Methods. The work was done by the usual methods of launch hydrography. Positions were determined by sextant fixes; soundings were taken with the leadline, except in depths of nine feet or less, in which case a sounding pole was used.

The bottom in most of the water area was mud. To prevent the lead and the pole from sinking too deeply into the mud, a steel disc, 5 inches in diameter and an eighth of an inch thick, was bolted to the bottom of the lead and a wooden disc, four inches in diameter, was fastened to the bottom of the pole. ✓

In depths greater than about four fathoms, however, it was found that the lead with the disc required too much time to reach bottom and in those depths a lead without the disc was used. Tests showed, moreover, that in depths of about four fathoms and greater, the mud was not so soft as to cause the lead to sink into the bottom an appreciable amount. This was especially true of the bottom in the main waterway where the suction caused by vessels had removed the softest material.

The control consisted of a few triangulation stations but, for the most part, of signals located by the plane table, *on an aluminum mounted sheet*. ✓
* When the topographic survey was made, however, it was not known that a hydrographic survey would follow and for that reason the full number of required signals was not located on the aluminum-mounted topographic sheets. Furthermore, as the result of flood waters and other destructive causes, many of the signals located had been destroyed before hydrography was begun. It was therefore necessary to relocate signals with the planetable. The original topographic sheets had, in the meantime, been inked or partially inked, and it was not feasible to take them out in the field again. The additional signals required in the northern half were located by planetable directly on the boat sheets and transferred to the smooth sheet and checked before the boat sheet was used for hydrography. The additional signals in the southern half were located on a special projection made on white mounted paper. Some signals were also located by sextant fixes. *made on boat sheet*

A large number of signals was necessary because most fixes had to be taken from close objects. There were not many tall distinctive objects and even such tall ones as oil derricks could not be used over great distances on account of the tall trees and the tall marsh grass lining the banks of the sharply meandering river. ✓

Discrepancies. No differences in soundings on cross lines or adjacent lines were found which could not be accounted for by the slope of the bottom. A comparison of soundings taken on "a" day, Vol. 1, Prien Lake, with a private survey, showed that the soundings obtained were ✓

* Hydrography was not called for because of lack of funds. When N.S.R.A. allotment was made it became possible to go ahead with hydrography. *F.B.*

too deep because of the soft mud bottom. It was then that the discs were put on the ends of the lead and the sounding pole and the area re-surveyed. The soundings taken on "a" day were plotted on an overlay sheet of tracing cloth, which is attached to the smooth sheet.

Channels. The dredged channels of the deep waterway, as the Choupique Cut-off, the Rose Bluff Cut-off, and the channel across Moss Lake were dredged with a bottom width of 125 feet and a depth of 30 feet at mean low sea level. The soundings show that they have maintained their depth fairly well since 1927. The least depth found in the Choupique Cut-off was 31 feet (at 0.5 foot below mean river level), the second sounding after position 5-t.

In the Rose Bluff Cut-off, the least depth obtained was 30.8 feet; see soundings between positions 8 and 9-v and the sixth sounding after position 44-w.

There is an old canal between the Choupique Cut-off and Mud Lake, with a bottom width of 40 feet. This canal has a controlling depth of 7 feet at the west end. This sounding is the third after position 18-t. This depth was later verified, though not recorded because it was impossible to get a fix at that point. The channel depth is also 7 feet in its continuation across Mud Lake.

There is a channel, running approximately north and south, in Mud Lake between the Calcasieu River and Calcasieu Lake. This channel has a depth of 20 feet but loses itself in shallow Calcasieu Lake and therefore has no importance.

That part of Calcasieu River which is in the waterway, has a channel deeper than any of the dredged canals. The river is deepest where it is narrowest and in the sharp bends. A mid-channel course will carry a 31-ft. draft (at 0.5 ft. below mean river level) from the east end of the Intracoastal Canal to the docks of Lake Charles, except across Moss Lake, where the east side of the channel is marked by six spar buoys. Altogether there are ten spar buoys along the waterway shown on the sheet. Besides the six mentioned in Moss Lake, there are three spar buoys between the southern end of Moss Lake and the Choupique Cut-off. There is one spar buoy about half a mile south of the Magnolia Petroleum Co. dock, off O Hym. All of the buoys should be red but they are not kept painted.

Buoys

The overlay sheet shows a line of soundings in the Rose Bluff Cut-off. These soundings were taken under more favorable conditions than those shown on the smooth sheet. The soundings on "v" day (plotted on the smooth sheet) were taken on a windy day and the launch did not always remain exactly in the center of the channel. The soundings of "w" day were taken on a calm day and in the center of the channel. It was the intention of the chief of party to have the soundings of "w" day plotted on the smooth sheet and those of "v" day on the overlay but, through a misunderstanding on the part of the draftsman, this was reversed.

"v" day plotted on smooth sheet

There is deep water in the river at the northern and at the southern end of Prien Lake but the lake itself is quite shallow. Twelve feet is the controlling depth but there is no occasion for vessels to use the lake because the ship channel passes just north of it. The east shore of the southern half of Prien Lake has several

summer homes and cottages with private boat landings and boat houses. The Country Club is at the extreme southern end of the lake but is not in active use, having gone into receivership a couple of years ago. Prien Lake is used only by light pleasure craft.

The loop of the river around Coon Island has no navigational importance at the present time. It is good for a draft of only 14 ft. and, in addition, is cluttered up with piles and stumps east and north of Coon Island. The piles once formed log pens when a saw mill flourished at Lockport (© Red). This saw mill is no longer operating and the buildings are all in ruins.

J. C. Bose

J. C. Bose,
Chief of Party.

SEE NEXT PAGE

It is regretted that the soundings plotted on the smooth sheet are not plotted in accordance with Circular No. 5, 1929. An attempt was made to change those soundings which should not have been plotted to the half foot but, on account of the hardness of the pencil used to prevent smudging, it was found that erasures would make the figures illegible.

The chief of party examined the sheet, checked the plotting of some random positions, many of the soundings, and made a comparison with the boat sheets. Time needed for field work prevented a check of all of the plotted soundings, however.

The depth curves on the smooth sheet were not drawn with the completeness that would have been possible had the soundings been in ink because the penciled curves would interfere with the sounding lines but the ship channel is marked in red ink on the boat sheet.

J. C. Bose

J. C. Bose,
Chief of Party

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*Applied to drawing of Chart No. 592
Jan. 9 /35 Q.*

STATISTICS

Vol.	Miles (stat) of Soundings	Number of Soundings	Number of Positions
1	30.5	1454	232
2	27.0	2201	273
3	25.5	1886	270
4	30.5	1643	323
5	38.0	1634	401
6	34.5	1882	240
7	<u>20.5</u>	<u>865</u>	<u>133</u>
Total	206.5	11565	1872

82 LAC

Division of Hydrography and Topography:

January 27, 1934.

✓ Division of Charts:

Tide Reducers are approved in
7 volumes of sounding records for

HYDROGRAPHIC SHEET 5362

Locality Calcasieu Lake to Prien Lake, Louisiana

Chief of Party: J. C. Bose in 1933

Plane of reference is mean low water, reading

4.1 ft. on tide staff at Lake Charles Boat Club

8.6 ft. below B. M. 1

1.4 ft. on tide staff at Prien Lake

3.0 ft. below E.M. 1

1.3 ft. on tide staff at Triangulation Station GUY

8.4 ft. below B.M. 1

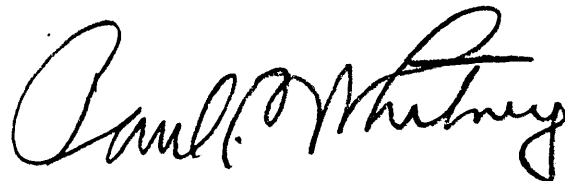
4.1 ft. on tide staff at Triangulation Station GRAND LAKE

2.3 ft. below B.M. 1

Practically there is no periodic tide in Lake Charles Waterway.

Plane of reference was taken 0.5 foot below mean water level.

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents

Partial Report on H. 5362

1. The protracting was found to have been exceptionally well done. The position numbers were fairly small, legible and well located. ✓
2. Soundings between pos. 5v and 10v were not plotted on the smooth sheet, as soundings between pos. 4lw and 48w were plotted in their place. See descriptive report by field party for explanation. ✓
3. Soundings on "a" day Vol 1 were not plotted on the smooth sheet, except soundings between position 1a and 2a and 7a and 8a. See descriptive report by field party for explanation. ✓

W.H. BAMFORD.

VERIFICATION REPORT H-5362

~~SECTION OF FIELD RECORDS~~

~~Report on H-5362~~

Chief of Party - J. C. Bose.

Protracted by - *H.R. Burrford*

Verified and inked by - P. N. Scherr. Geography inked by - Field Party.

W. H. Bamford.

Surveyed in Oct-Nov. 1933

Surveyed by - J. C. Bose.

Soundings plotted by - *H.R. Burrford*.

1. In Vol. 2 of the records the reducer had not indicated at the top of the page that feet and tenths are used. ✓

Bottom characteristics were not always given at the top of each page of the records. ✓

2. The depth curves were drawn incomplete in a number of places as was necessitated by the small scale of the sheet. The 30' curve, marking the channel is complete. The depth curves were omitted in the bayous and cutoffs where only one line of soundings had been run. ✓

3. The field plotter found it necessary to omit a number of soundings, each time calling attention to the omitted soundings in the records. ✓

4. The office draftsman did over ^{no} part of the drafting done by the field party. ✓

5. The junctions with the north and south sheets could not be made as the north sheet H. 5375 had not been verified and the other sheet not yet received. Line 1-7c, the junction with sheet C, could not be inked as it cannot be verified from the records of H. 5362.

6. Remarks -

a. The verifier did not always discard the soundings which had been marked in the records by the smooth sheet plotter as NP (not plotted). Many of these were used as the more critical soundings. ✓

b. The small island above the 2' sounding on line 14-15F (lat. 30° 11'.6; long. 93°16'.5) was enlarged and made more irregular in order that it may not be mistaken for a pile. The topographic sheet gives no note indicating that it may be a pile and inspecting it closely one sees that cuts have been taken on its limits. No line in the records mention it. The character of the land here and the surrounding soundings indicate it also as an island. ✓

c. The remarks in the records (P11-Vol. 7) concerning the pilings on line 114-115U do not give the distance to the pilings from the point of observation (). ✓

d. The two stakes, one on line 34-35F (P 13 Vol. 6) the other on line 29-30 F (P 12 Vol. 6) may be the same stake. ✓

e. In Prien Lake, a few lines were examined for 6 $\frac{1}{2}$ soundings. The

H. 5362 - 2.

north of Moss Lake was examined for $3\frac{1}{2}$ ' soundings and the south of the lake for $4\frac{1}{2}$ ' soundings. These bordered the channel. ✓

f. There is a slight channel with a least depth of 7' running across Mud Lake from the main channel leading to the cut-off which joins the Choupique Cut-off. The soundings here show fairly good crossings with the cross lines. ✓

g. A snag is reported in the records after the pos. 80L (P 69 Vol. 4) with no position for it. Position 80 L had been rejected. ✓

h. The characteristic "hrd" was often penciled on the smooth sheet as "Clay" *Log's Disc. Rep. mentions clay banks, etc. RHP* ✓

i. Position 79 C places a 36' sounding too far off the channel. The position was protracted and found to be correct. *It was not inked. pending the review. Omitted RHP*

j. Position 36 G plots a depth of 13', and 46 G plots a depth of 25' on the same place. The 13' sounding was inked. ✓ *North of Coon I. among piles RHP*

k. There is also a bad crossing between 37-38 G and 31-32 G where a 13' sounding has been inked. *Among piles at N end of Coon I.*

l. There is a 24' sounding plotted on Pos. 52 L (with a 38' sounding following on that line) which conflicts with a 47' sounding on line 18-19 L (latitude $30^{\circ}08'.9"$, long. $93^{\circ}19.9$) and also line 16 - 17 L which places a 42' sounding near. This position is at the center of the channel. *Pos. revised RHP*

m. Line 145 - 146 E (P 14 Vol. 3) places a 21' sounding in the center of the channel (lat. $30^{\circ}12'.2$; long. $93^{\circ}16'.7$). Capt. Colbert attributes this to the slope of the channel. ✓

n. The notation in the records as Sunken Piling (P 4 Vol. 4) gives no description. ✓

7. The field drafting was excellent and the smooth sheet plotter is to be commended for the fine work done on the sheet. Position numbers were clear and well placed, soundings as legible as could be expected for the scale of the sheet, and excellent lettering throughout. ✓

Submitted by - Paul H. Scherr. February 26, 1934.

Paul H. Scherr

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. *5362*

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

Number of positions on sheet	<i>1872</i>
Number of positions checked	<i>34</i>
Number of positions revised	<i>1</i>
Number of soundings recorded	<i>11565</i>
Number of soundings revised	<i>9</i>
Number of signals erroneously plotted or transferred	<i>✓</i>

Date: *February 26, 1934*

Cartographer: *Paul H. Scher*

→ Note several places where there is a projecting
channel point at a dredged turn. With less care than
was used in this hydrographer's limit of the channel might
well have been left in doubt on this scale. F

* In view of the fact that the ship channel will be
maintained by the U.S. Engineers and surveys made by them
will be used for chart correction the scale of this ~~chart~~ chart
is considered large enough. It furnished adequate data for all areas which are not dredged. F. S. Lindley

SECTION OF FIELD RECORDS
Review of Hydrographic Sheet No. 5362.
Calcasieu Lake to Prien Lake, Lake Charles Deep Water
Channel, Louisiana.
Surveyed Oct. - Nov. 1933.
Instructions dated Sept. 8, 1933 (Bose).

Chief of Party - J. C. Bose.
Surveyed by - J. C. Bose.
Protracted and soundings penciled by - H. R. Burfford.
Verified and inked by - P. H. Scherr, W. H. Bamford.

1. The records conform to the requirements of the Hydrographic Manual.
2. The plan and extent of development conform to the regulations and satisfy the specific instructions.

3. Soundings generally are consistent, with good agreement in depths at crossing of lines. A couple of unadjusted discrepancies noted in the Report on Verification, fall in unimportant areas or areas foul with broken piles. In all cases the shoaler depths are shown on the sheet.

The Descriptive Report notes the use of a special adaptation of sounding pole and sounding lead to overcome the effect of a very soft mud bottom.

4. Depth curves can be drawn satisfactorily.

5. Junction with contemporary surveys will be considered with the adjacent sheets.

6. Comparison. The sheet comprises sections of the Lake Charles Deep Water Channel and of the Intracoastal Waterway. Blueprint 27067 shows some depths in Prien Lake and Calcasieu River which are in substantial agreement with the present survey. The Descriptive Report notes that the depths found in the river and in the dredged cuts are in excess of the project depths, the minimum or controlling depth in Rose Bluff Cut-off being 30.8 feet.

Chart 1116 shows the general lay-out of these waterways in this vicinity.

7. Field drafting was excellent.

8. Recommendation. This sheet (H. 5362) is the basic survey for the areas represented and should supersede all previous information for charting purposes.

No further surveys are deemed necessary at this time.

9. Reviewed by - R. J. Christman, March 15, 1934.

* 10. It is believed that a larger scale would have been preferable for the execution of the hydrography.

L. O. Colbert
Chief, Section of Field Records.

* *Frank S. Borden*
Chief, Section of Field Work.

Examined and approved:

L. O. Colbert
Chief, Division of Charts.

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

