

Tides

Chines

85889

# 4214

247 2017  
13/17

Diag. Cht. No. 1272-2

# 4214

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

State: *Louisiana*

11-5613

DESCRIPTIVE REPORT.

*Hyd* Sheet No. *4214*

LOCALITY:

*Mississippi Delta*  
*off North Pass and*  
*North East Pass.*

1921

CHIEF OF PARTY:

*E. R. Hand*

ORIGINAL

DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SHEET NO. 2

OFF SHORE MISSISSIPPI PASSES

GULF OF MEXICO

STEAMER BACHE

EOLINE R. HAWD, H. & G. ENGINEER, COMMANDING

1922

DESCRIPTIVE REPORT TO ACCOMPANY  
HYDROGRAPHIC SHEET NO. 2  
OFF SHORE MISSISSIPPI PASSES  
GULF OF MEXICO

LIMITS.

Hydrographic Sheet No.2 extends from Latitude 29-00 on the south to a junction with sheet No.1 on the north. It extends offshore from the limit of visibility of fixes to cover the hundred fathom curve.

The Scale is 1:80,000.

CONTROL AND METHOD.

The usual method of Precise Dead Reckoning was followed thruout the work. Lines begin and ended on fixes or at buoys that had been located by 3 point fixes. Hand lead and trolley were used up to about twenty five fathoms. In greater depths the electric sounding machine was used and the ship stopped and backed at each sounding.

Lines were run two miles apart out to about twenty or twenty two fathoms as was done by the previous party on work adjacent to this. From this point the lines were run four miles apart.

GENERAL CONSIDERATIONS.

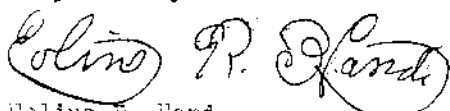
In general very satisfactory results were obtained. The depth curves are quite regular, and no suspicious soundings requiring further development were found.

But one point requires further consideration. The line for A day, after adjustment, shows a difference of four or five fathoms in fifteen or twenty fathoms at the crossing of the outward and return sections of the line. This line had a closing error of about seven miles. The last line on Hydrographic Sheet No.1 covers very nearly the same ground and it is not believed that there will be too large an area unsounded if the work for A day this sheet is rejected. The sheet is finished.

WEATHER.

Ideal weather for dead reckoning prevailed during the last two weeks of the work.

Respectfully forwarded,



Eoline R. Hand,  
Commanding.

Respectfully submitted,



L. O. Stewart,  
Hydro. & Geod. Eng.

STATISTICS FOR SHEET #2 P.D.R.

| 1922   | Volume | Letter | Soundings | Positions | Miles(statute) | Vessel |
|--------|--------|--------|-----------|-----------|----------------|--------|
| May 8  | 1      | A      | 334       | 16        | 109.2          | ship   |
| May 10 | 1      | B      | 157       | 16        | 102.9          | "      |
| May 12 | 2      | C      | 105       | 11        | 61.0           | "      |
| May 13 | 2      | D      | 55        | 14        | 53.0           | "      |
| May 15 | 2      | E      | 37        | 12        | 42.2           | "      |
| May 16 | 2      | F      | 31        | 12        | 35.2           | "      |
| May 16 | 2      | G      | 14        | 6         | 15.8           | "      |
| TOTALS |        |        | 733       | 89        | 419.4          |        |

E.A.L.

COPY TO FIELD RECORDS

July 26, 1922.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in  
2 volumes of sounding records for

HYDROGRAPHIC SHEET 4214

Locality: Off Mississippi Delta, Louisiana.

Chief of Party: H. R. Head in 1922.

Plane of reference is mean lower water, reading  
1.6 ft. on tide staff at Wharf, Chandeleur Light House.

For reduction of soundings.

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

Chief, Division of Tides and Currents.

3917  
6  
20

COPY TO FIELD RECORDS.

Nov. 15, 1923.

Division of Hydrography and Topography:

Division of Charts:

Current diagrams are forwarded for

and reductions are submitted in  
2 volumes of sounding records for

HYDROGRAPHIC SHEET 4214 (Dead reckoning)

Locality: Off Chancelour Islands, Gulf of Mexico

Chief of Party: E. R. Head in 1922

Plane of reference is  
ft. on tide staff at

For reduction of soundings, condition of records satisfactory  
except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.



Chief, Division of Tides and Currents.

## Information concerning office work on H.4214. (P.D.R.)\*

1. When this sheet was received in the office it was noticed that a different log loss had been used from that on some other P.D.R.\* sheets, H.4178 for example. The log loss of .20 mile was applied to each stop for sounding and each stop for anchorage on the latter sheet, while on 4214 the log loss of .20 mile was applied only to stops for anchorages.

2. To see what effect this application of .20 mile for each sounding produced, B day (being one of the longest lines and therefore likely to show the effect at a maximum) was replotted on tracing paper using the original abstract with the modification of .20 mile log loss for every stop whether for sounding or for anchorage. The result of this replotting showed a displacement of almost 10 miles in an ESE direction at the off shore end of the dead-reckoning line.

3. With so great a difference in the plotting, the assistant chief of the Field Records Section held up the verification and inking of the sheet until further data could be secured to guide the verification. Inasmuch as all the dead-reckoning sheets consulted were done by the same methods and by the same vessel, it is evident that the results should be in harmony with these other sheets.

4. The area covered by H.4214 was surveyed between May 8-16, 1922 and subsequently some experimental runs (Nov. 6-9, 1922) were made to determine the log loss and also the log factors. For the former an average value of .05 miles per stop was found and for the latter .94 for full speed and .95 for sounding speed. No log factor for full and stop was determined since it was thought unnecessary, since the full speed factor with the proper allowance for log loss

\* P.D.R. = Precise deadreckoning.

would take care of full and stop runs.

5. The data concerning currents was turned over to the tide division who plotted graphs and determined approximate ellipses with current rotating in a clockwise direction, instead of the short-courses with sudden bends as shown on the field graphs. The currents in ocean areas do act continuously and in approximate ellipses as is shown by long series of observations on light-vessels.

6. The leeway was taken care of by a method determined by the assistant chief of Field Records Section whereby the displacement normal to the course is computed and applied; the displacement parallel to the course being absorbed by the log.

7. Now, with the information outlined in the three preceding paragraphs at hand, the sheet was replotted on tracing paper. The offshore ends of the lines thus plotted were found to differ by about  $1\frac{1}{2}$  to 2 miles in the case of some lines and less than this in others. A critical study then was made by the chief and assistant chief of field records of the lines. It was found that relatively little difference resulted. Two apparent discrepancies which had existed according to the field plotting, namely a disagreement of 5 fathoms in A day where it crosses itself and a break in the 50 fathom curve due, it seems, to D day, were not improved.

8. A day was therefore rejected, since it is recommended by the chief of party in his descriptive report, and D day was rejected by the Field Records Section, because it does not check adjacent soundings, because it was done when a high wind was



blowing while part of the line was being run, and because this day's work had a greater closure in proportion to the length of line than had any day except A day, previously mentioned. G day had a large percentage of error but was so short that it cannot be used as a comparison.

9. As the arbitrary change from the log factors used by the field party to the factors subsequently determined seemed unjustifiable, it was decided, as a solution to the problem of obtaining a correct position of the line, to use the data of the first replotting done in the office with the original values of the log factors for full speed and sounding speed and not using any full and stop factor, but to use .05 mile log loss for each stop.

10. To elucidate as far as possible the history of work on H4214 the values as far as possible for each of the various steps in plotting are tabulated below, for the field plotting and the various office plottings.

| Plotting by               | Log Factors |                   |             | Log loss              | Current            | Leeway                   | Transfer                |
|---------------------------|-------------|-------------------|-------------|-----------------------|--------------------|--------------------------|-------------------------|
|                           | Full Speed  | Stop & Full Speed | Full & Stop |                       |                    |                          |                         |
| Field                     | .90         | 1.00              | .95         | .20 per $\frac{1}{2}$ | From Field graphs  | as on original Abstract  |                         |
| Office Trial "B" day only | .90         | 1.00              | .95         | .20 per stop          | "                  | "                        | .05 naut. mile per stop |
| First office Replotting   | .94         | .95               | —           | .05 per stop          | from office graphs | By method of E. P. Ellis | —                       |
| Second office Replotting  | .90         | 1.00              | —           | .05 per stop          | "                  | "                        | —                       |

January, 1924.

Frank M. Albert,  
Draftsman,  
Section of Field Records.

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

April 1, 1924.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4214

East of Mississippi Delta

Surveyed in 1922

Instructions dated Nov. 20, 1919, Jan 19, 1921, and Nov. 8, 1921.

Chief of Party, E. R. Hand.

Surveyed by party of Steamer Bache.

Protracted and soundings plotted by C. H. Wright.

Verified and inked by F. M. Albert.

1. The records conform to the requirements of the General Instructions. The dead reckoning abstract, however, does not conform to standard practice. Log loss was allowed for only at anchorages instead of at each stop, current corrections are based on assumption that the currents are oscillating rather than rotary and only one leeway correction was made.
2. The plan and extent of development fulfill the requirements of the General Instructions.
3. The plan and extent of development satisfy the specific instructions except that the rejection of two days' work leaves part of the area unsurveyed.
4. The sounding line crossings of the work that has been retained are excellent.
5. The information is sufficient for drawing the usual depth curves.
6. The field plotting was completed to the extent prescribed in the General Instructions.
7. As described in the report of the office cartographer who verified the sheet, the dead reckoning abstracts were revised and the work re-plotted but, as the resulting changes were not large, the field plotting was retained.

8. The junction with H. 4134 at the outer end of B day is excellent. Owing to the rejection of all of the work done on A and D days there is an unsurveyed zone 10 miles wide between the two sheets H. 4212 and H. 4214.
9. The zone referred to in the preceding paragraph should be surveyed when opportunity offers.
10. The character and scope of the surveying and field drafting are good.
11. Reviewed by E. P. Ellis, March, 1924.

*Approved  
by  
Hydrographic  
1924*

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 4214

State Louisiana

General locality ~~Gulf of Mexico~~ Mississippi Delta

Locality ~~Off Mississippi Delta~~ Off North Pass & North E. Pass

Chief of party Eoline R. Hand

Surveyed by Steamer Bache

Date of survey May, 1922

Scale 1:80,000

Soundings in Fathoms

Plane of reference Mean Low Water

Protracted by C.H. Wright Soundings in pencil by C.H. Wright

Inked by . . . . . Verified by . . . . .

Records accompanying sheet (check those forwarded):

Des. report,  Tide books,  Marigrams,  Boat sheets,

Sounding books,  Wire-drag books,  Photographs.

Data from other sources affecting sheet P.D.R. Abstracts  
Current book

Remarks: