

4434

4434

Form 504

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: Florida

11-5613

DESCRIPTIVE REPORT.

Hydrographic Sheet No. 4434

LOCALITY:

~~Precise Dead Reckoning work~~

East Coast

Flagler Beach, — Offshore

1924

CHIEF OF PARTY:

J. H. Hawley

4434

D E S C R I P T I V E R E P O R T

to accompany

HYDROGRAPHIC SHEET "D"

- - - 0 - - -

East Coast of Florida

Northeast from Ormond

Scale 1:100,000

Surveyed by Steamer LYDONIA

February to April

1924

J.H.Hawley, Commanding

DESCRIPTIVE REPORT
to accompany
Hydrographic Sheet No. D

- - - - 0 - - - -

On this sheet is plotted the precise dead reckoning work done by the Steamer LYDONIA off the east coast of Florida during the season from February 1 to April 30, 1924. The signals on this sheet are buoys located on sheet "B" and transferred to this sheet.

This work was done under instructions dated November 4, 1922 and February 26, 1923. It was executed in accordance with the methods described in Special Publication 73 (Precise Dead Reckoning in Offshore Soundings) except that all courses are average courses determined by taking the mean of the standard compass heading at each even minute. In several cases two logs were used and the mean of their readings used for the distance unless some accident to one of the logs such as fouling or stopping for a short time was noted. One of the logs did not work very well at times so that it was not always practicable to obtain two log readings. When two logs were used the readings of the second log are recorded on a separate sheet of form 612.

The ship was swung for compass deviations on February 1, 1924 and the compass errors determined at that time were used for dead reckoning work to and including March 19, 1924. A second swing on April 26th showed some change and the deviations determined on that date are used for the work on and after April 22nd.

The logs were first rated on January 31, 1924. Two logs were used on "A" day, February 17th and their readings agreed fairly well. On "C" day, March 17th, considerable discrepancy was noted and the logs were rated again on April 9, 1924. The revolutions per mile were rated at the same time. The new log factors are used on and after March 17th.

The usual methods for plotting precise dead reckoning work are followed.

Current observations were obtained in the usual manner and the diagrams are plotted on polar coordinate paper and bound in a cahier that accompanies the sheet. The currents encountered were usually rotary in character but on several occasions freakish currents were noted that may have been due to the uneven bottom near the inshore end of the work.

The value for leeway of 0.4 knots for a 20 mile breeze abeam as determined during the previous season was used. No full and stop sounding work was done so that there are no log loss and transfer corrections for this class of work. When leaving current anchorages a log loss of 0.05 knot was allowed when there was no material change of course necessary after the anchor was aweigh. When there was an appreciable change of heading an allowance for

transfer based upon observation was made. The maximum allowance was 0.2 knot for a swing thru 180° based upon observations of similar swings during fixed position work.

In accordance with supplemental instructions dated January 10, 1924 the direction of sounding lines was changed from east and west to a course normal to the beach. The lines on this sheet therefore approach at an angle and join the most southerly line of the previous season.

"A" day starts at a buoy, runs out to and returns from a junction with previous work. Depths of less than 10 fathoms were obtained on this line and short split lines were run on "B" day to investigate the extent of the shoal water. Currents observed on this day were erratic and with the curve that was first assumed the closure was large. The ship remained at anchor during the afternoon and observed currents. Unusual results were obtained as shown on the graph and the morning curve was drawn to conform with the later observations. The weather was calm and the unusual currents are probably due to the uneven bottom rather than to errors in observations.

"C" day starts at a fixed position, splits two half-mile lines on sheet "B" where shoal water was noted, runs out to and returns from the 15-fathom curve. Depths of less than 10 fathoms were also obtained on this line about 4 miles from the start. This line touches a line run during the previous season at three different points. The soundings fail to agree at the first two points but check at the last. Later in the season a buoy was located in this vicinity as described below and from this buoy a line was run (1F to 6F) to cross the two doubtful points. The soundings on this line seem to check the later work.

On "D" day short split lines were run to investigate the shoal water mentioned above.

"E" day starts at signal buoy AIR and runs out to a point a little beyond the 15-fathom curve. At this anchorage a signal buoy (named RELAY) was planted and located by full speed runs in to and out from a fixed position (see positions "a" to "d", form 612). Distance on these runs was obtained by using two logs and revolutions per mile while the course is the mean of standard compass headings read every 15 seconds. This position was regarded as fixed and the correct location of position 8E.

A line 7F to 10F starts at buoy RELAY and runs out to a junction with previous work. It is closed by a full speed run back to the buoy. A line 11F starts at the buoy and runs in to position 14F where the ship anchored over night. This line resumes at 1E and ~~11F~~ at 5G, the weather being unusually clear, the buoy signals were picked up and the line located by fixed positions for the remainder of it's length.

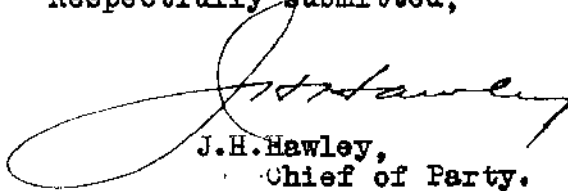
During the night while the ship was anchored at position 14F a strong northerly wind caused Buoy AIR to drag. It was

re-located and named AIR 2. This signal is used for right object for positions 5G to 8G.

On "G" day a signal buoy (named OUT) was located by two full speed runs from a fixed position (see positions 9G to 12G) and used on "H" days as an initial for running dead reckoning lines to develop the shoal water mentioned above. It was found that there are several points in this vicinity with depths a little less than 10 fathoms surrounded by slightly deeper water.

Readings from the automatic gauge at St. Augustine were used for reducing all of the work on this sheet assuming that the tide is 1 hour earlier than at the station.

Respectfully submitted,



J.H. Hawley,
Chief of Party.

T I D A L S H E E T

to

accompany

HYDROGRAPHIC SHEET No. D

| | |
|-----------------------------|---|
| Locality of Gauge Reading | St. Augustine |
| Type of Gauge | Automatic |
| Reading of Gauge for M.L.W. | 6.4 ft. |
| Highest tide observed | April 24, 1924. 0 h. 06 m A.M. 11.9 ft. |
| Gauge Reading | |
| Lowest tide observed | April 20, 1924. 3 h. 42 m. P.M. 4.9 ft. |
| Gauge Reading | |

Note:

For P.D.R. the time for reduction of soundings, was taken one (1) hour earlier than as recorded for gauge readings.

HYDROGRAPHIC STATISTICS.

BOAT: LYDONIA

SHEET: "D"
mi.

| Date | Day | vol. | Soundings | Positions | Miles | Area. sq. sta/ | Cu. Stat. |
|---------|-----|-------|-----------|-----------|-------|----------------|-----------|
| Feb. 17 | A | 1 | 293 | 17 | 23.8 | | 5 |
| " 18 | B | 1 | 97 | 10 | 9.2 | | 3 |
| Mar. 17 | C | 1 | 514 | 16 | 43.4 | | 7 |
| " 19 | D | 1 | 147 | 13 | 13.0 | | 3 |
| Apr. 22 | E | 1 | 275 | 10 | 23.0 | | 7 |
| " 23 | F | 1 & 2 | 270 | 14 | 28.5 | | 6 |
| " 24 | G | 2 | 132 | 8 | 12.0 | | 5 |
| " 25 | H | 2 | 513 | 29 | 31.0 | | 5 |
| TOTALS: | | | 2241 | 127 | 184.8 | 270.2 | 41 |

January 31, 1924

OBSERVED CURRENTS

| TIME | VELOCITY | | DIRECTION | | MEAN | |
|-------|----------|--------|-----------|--------|----------|-----------|
| | North | South | North | South | Velocity | Direction |
| 8:55 | 0.20 | (0.21) | 146° | (171°) | (0.20) | (158) |
| 9:15 | .29 | (0.24) | 141 | (166) | (0.26) | (153) |
| 9:30 | .29 | (0.18) | 158½ | (183) | (0.24) | (171) |
| 9:45 | .15 | 0.19 | 166 | 191 | 0.17 | 176 |
| <hr/> | | | | | | |
| 10:00 | .16 | 0.22 | 166 | 201 | 0.19 | 184 |
| :15 | .15 | 0.27 | 174½ | 211 | 0.21 | 193 |
| :30 | .14 | 0.21 | 183½ | 221 | 0.18 | 202 |
| :45 | .15 | 0.20 | 186 | 221 | 0.18 | 204 |
| <hr/> | | | | | | |
| 11:00 | .10 | 0.20 | 206 | 231 | 0.15 | 218 |
| :15 | .14 | 0.24 | 211 | 231 | 0.19- | 221 |
| :30 | .16 | 0.25 | 218½ | 233½ | 0.20 | 226 |
| :45 | .16 | 0.21 | 226 | 243½ | 0.18 | 235 |
| <hr/> | | | | | | |
| 12:00 | .17 | 0.24 | 226 | 246 | 0.20 | 236 |
| :15 | .24 | 0.24 | 226 | 251 | 0.24 | 238 |
| :30 | .33 | 0.20 | 226 | 248½ | 0.25 | 237 |
| :45 | .38 | 0.25 | 221 | 253½ | 0.32 | 237 |
| <hr/> | | | | | | |
| 1:00 | .42 | 0.21 | 235½ | 256½ | 0.32 | 246 |
| :15 | .40 | 0.23 | 233½ | 271 | 0.32 | 252 |
| :30 | .48 | 0.26 | 236 | 271 | 0.37 | 254 |
| :45 | .50 | 0.27 | 243½ | 276 | 0.38 | 260 |
| <hr/> | | | | | | |
| 2:00 | .47 | 0.32 | 246 | 276½ | 0.40 | 262 |
| :15 | .45 | 0.23 | 251 | 283½ | 0.34 | 267 |
| :30 | .49 | 0.29 | 261 | 291 | 0.39 | 271 |
| :45 | .45 | 0.27 | 266 | 281 | 0.36 | 274 |
| <hr/> | | | | | | |
| 3:00 | .45 | 0.30 | 271 | 278½ | 0.38 | 275 |
| :15 | .42 | 0.25 | 276 | 283½ | 0.34 | 280 |
| :30 | .36 | 0.21 | 281 | 283½ | 0.28 | 282 |
| :45 | .35 | 0.25 | 276 | 288½ | 0.30 | 282 |
| <hr/> | | | | | | |
| 4:00 | .30 | (0.23) | 283½ | (294) | (0.27) | (288) |
| :15 | .27 | (0.22) | 281 | (291) | (0.25) | (286) |
| :30 | .20 | (0.20) | 285 | (295) | (0.20) | (290) |

FULL SPEED 100 f.p.m.

LOG 152

LOG 173

Factors

| Position Number | Time | Elapsed Time | Current Correct. | Log reading | Log distance | Log dist. correct. | Log. reading | Log distance | Log dist. correct. | True distance | Log 152 | Log 173 |
|---------------------|-------------------|-----------------|------------------|--|--|--------------------------------------|--------------------------------------|--------------|--------------------|---------------|---------|---------|
| 1 | 9:06 | | +0.087 | 95.24 | | 3.207 | 9.98 | 2.84 | 2.927 | 3.215 | 1.002 | 1.098 |
| 6 | 9:26 | 20 | | 98.36 | 3.12 | | 12.82 | | | | | |
| 7 | 9:45 ² | | -0.059 | 99.68 | 3.50 | 3.441 | 14.01 | 3.17 | 3.111 | 3.342 | 0.971 | 1.074 |
| 13 | 10:06 | 22 ¹ | | 103.18 | | | 17.18 | | | | | |
| 14 | 10:11 | | +0.053 | 103.82 | 2.19 | 3.243 | 17.82 | 2.87 | 2.923 | 3.223 | 0.994 | 1.103 |
| 19 | 10:31 | 20 | | 107.01 | | | 20.69 | | | | | |
| 20 | 10:37 | | -0.032 | 7.86 | 3.82 | 3.788 | 21.45 | 3.47 | 3.438 | 3.718 | 0.982 | 1.082 |
| 26 | 11:01 | 24 | | 11.68 | | | 24.92 | | | Mean | 0.987 | 1.089 |
| FULL SPEED and STOP | | | | | | | | | | | | |
| 51 | 3:13 | 24 | -0.034 | 27.57 | 2.23 | 2.166 | 39.51 | 2.09 | 2.026 | 2.2503 | 2.1378 | 2.2063 |
| 56 | 3:37 | | | 29.80 | | | 41.60 | | | | | |
| 63 | 4:13 | | +0.070 | 31.25 | 2.56 | 2.630 | 42.98 | 2.41 | 2.460 | 2.7905 | 2.5956 | 2.7007 |
| 72 | 4:43 | 30 | | 33.81 | | | 45.39 | | | | | |
| | | | | $\frac{2.2903 - 2.1378}{3 \text{ (steps)}} = 0.0508$ | $\frac{2.7905 - 2.5956}{4 \text{ (steps)}} = 0.0487$ | $\frac{2.2903 - 2.2063}{3} = 0.0280$ | $\frac{2.7905 - 2.7007}{4} = 0.0225$ | | | | | |

January 31, 1924.

LOG LOSS FACTOR PER SOUNDING 70.0498 4 70.0252

Log 152 reading
Log 173 reading
rfa factor
rfa factor

January 31, 1924.

| Position Number | Time | Elapsed Time | Current Correction | Log 152 | | | Log 173 | | | Factors | | |
|-----------------|-------|--------------|--------------------|-------------|-----------|-------------------|-------------|--------------|-------------------|-----------------------|---------|---------|
| | | | | Log Reading | Log Dist. | Correct Log Dist. | Log Reading | Log Distance | Correct Log Dist. | Log 152 True Distance | Log 152 | Log 173 |
| 27 | 11:20 | 40 min. | + .033 | 12.92 | 2.10 | 3.133 | 26.04 | 2.85 | 2.883 | 3.331 | 1.063 | 1.156 |
| 32 | 12:00 | | | 16.02 | | | 28.89 | | | | | |
| 40 | 1:47 | 41 " | - .06 | 20.78 | 2.99 | 2.93 | 33.16 | 2.90 | 2.84 | 3.140 | 1.072 | 1.106 |
| 45 | 2:28 | | | 23.77 | | | 35.06 | | | | | |
| 53 | 12:48 | 47 " | + .047 | 18.58 | 3.45 | 3.497 | 29.40 | 3.04 | 3.087 | 3.612 | 1.033 | 1.170 |
| 39 | 1:35 | | | 20.03 | | | 32.44 | | | | | |
| 46 | 2:35 | 32 " | + .096 | 24.20 | 2.64 | 2.736 | 35.48 | 2.84 | 2.436 | 2.750 | 1.006 | 1.129 |
| 50 | 3:07 | | | 28.84 | | | 38.82 | | | | | |

Mean 1.043 1.140

OBSERVED CURRENTS

EAS COAST of FLORIDA.-----1924. April 9, 1924

| TIME | VELOCITY | DIRECTION |
|-------|----------|-------------------|
| 8:15 | .60 | 350 $\frac{1}{2}$ |
| 8:30 | .62 | 348 |
| 8:45 | .62 | 348 |
| 9:00 | .64 | 350 $\frac{1}{2}$ |
| 9:15 | .60 | 345 $\frac{1}{2}$ |
| 9:30 | .62 | 350 $\frac{1}{2}$ |
| 9:45 | .56 | 345 $\frac{1}{2}$ |
| 10:00 | .60 | 345 $\frac{1}{2}$ |
| 10:15 | .60 | 350 $\frac{1}{2}$ |
| 10:30 | .54 | 345 $\frac{1}{2}$ |
| 10:45 | .52 | 338 |
| 11:00 | .58 | 343 |
| 11:15 | .46 | 341 $\frac{1}{2}$ |
| 11:30 | .40 | 343 |
| 11:45 | .32 | 343 |
| 12:00 | | |

April 9, 1924.

HAIF SPEED 54 R.P.M.

| Position Number | Time | Elapsed Time | Current Correction | Log 152 | | Log 173 | | Factors | | | | |
|-----------------|-------|--------------|--------------------|-------------|--------------|---------------------|-------------|--------------|------------------------|---------------|--------|-------|
| | | | | Log reading | Log distance | Corrected Log dist. | Log reading | Log distance | Corrected Log distance | True distance | | |
| 1 | 8:20 | minutes | | 53.83 | 2.58 | 2.908 | 52.48 | 2.37 | 2.698 | 2.853 | 0.9810 | 1.057 |
| 5 | 8:52 | 32 | +0.328 | 56.41 | 2.58 | 2.908 | 54.85 | 2.37 | 2.698 | 2.853 | 0.9810 | 1.057 |
| 6 | 8:59 | . | | 58.93 | 2.92 | 2.664 | 55.30 | 2.76 | 2.404 | 2.817 | 1.099 | 1.172 |
| 11 | 9:36 | 36 | -0.356 | 59.85 | 2.92 | 2.664 | 58.05 | 2.76 | 2.404 | 2.817 | 1.099 | 1.172 |
| 12 | 9:41 | | | 60.24 | 2.60 | 2.914 | 58.40 | 2.39 | 2.704 | 2.856 | 0.9801 | 1.056 |
| 16 | 10:13 | 32 | +0.314 | 62.84 | 2.60 | 2.914 | 60.79 | 2.39 | 2.704 | 2.856 | 0.9801 | 1.056 |
| 17 | 10:20 | | | 63.32 | 2.99 | 2.682 | 61.22 | 2.78 | 2.478 | 2.847 | 1.061 | 1.152 |
| 21 | 10:55 | 35 | -0.308 | 66.31 | 2.99 | 2.682 | 64.00 | 2.78 | 2.478 | 2.847 | 1.061 | 1.152 |

FULL SPEED 100 R.P.M.

| Position Number | Time | Elapsed Time | Current Correction | Log 152 | | Log 173 | | Factors | | | | |
|-----------------|-------|--------------|--------------------|-------------|--------------|---------------------|-------------|--------------|------------------------|---------------|--------|--------|
| | | | | Log reading | Log distance | Corrected Log dist. | Log reading | Log distance | Corrected Log distance | True distance | | |
| 22 | 11:01 | | | 66.91 | 3.05 | 3.217 | 64.60 | 2.94 | 3.107 | 3.183 | 0.989 | 1.025 |
| 27 | 11:21 | 20 | +0.167 | 69.96 | 3.05 | 3.217 | 67.54 | 2.94 | 3.107 | 3.183 | 0.989 | 1.025 |
| 28 | 11:25 | | | 70.52 | 2.99 | 2.664 | 68.08 | 2.51 | 2.784 | 3.070 | 1.071 | 1.102 |
| 33 | 11:45 | 20 | -0.126 | 73.51 | 2.99 | 2.664 | 70.99 | 2.51 | 2.784 | 3.070 | 1.071 | 1.102 |
| 34 | 1:32 | | | 75.65 | 3.10 | 3.10 | 73.09 | 2.95 | 2.95 | 3.207 | 1.0303 | 1.0633 |
| 38 | 1:52 | 20 | | 78.75 | 3.10 | 3.10 | 76.02 | 2.95 | 2.95 | 3.207 | 1.0303 | 1.0633 |
| 39 | 1:57 | | | 79.45 | 2.99 | 2.99 | 76.69 | 2.88 | 2.88 | 2.982 | | |
| 43 | 2:17 | 20 | | 82.44 | 2.99 | 2.99 | 79.57 | 2.88 | 2.88 | 2.982 | | |

March 5, 1925.

Section of Field Records

~~Division of Hydrography and Topography~~

Division of Charts:

Tide reducers are approved in
2 volumes of sounding records for

HYDROGRAPHIC SHEET 4434

Locality: Off Flagler Beach, E. Coast of Florida

Chief of Party: Jean H. Hawley in 1924

Plane of reference is mean low water

6.5 ft. on tide staff at St. Augustine, Florida

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 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.

HALF-SPEED

(Current neglected)

April 9, 1924

| Position Number | Time | Prop. Revol. | Log 152 | Log distance | True distance | Log 173 | Log distance | Log factor | Revolutions per mile | |
|--------------------------------|-------|--------------|---------|--------------|---------------|---------|--------------|----------------|----------------------|-------|
| 1 | 8:20 | | 53.83 | | | 52.48 | | # 152 | | |
| 5 | 8:52 | 1713 | 56.41 | 2.58 | 2.85 | 54.85 | 2.37 | 1.0307 | | |
| 6 | 8:59 | | 56.93 | | | 55.30 | | # 173 | | |
| 11 | 9:35 | 1922 | 59.85 | 2.92 | 2.82 | 58.06 | 2.76 | 1.1052 | 641.1 | |
| 12 | 9:41 | | 60.24 | | | 58.40 | | # 152 | | |
| 16 | 10:13 | 1728 | 62.84 | 2.60 | 2.86 | 60.79 | 2.39 | 1.0202 | | |
| 17 | 10:20 | | 63.32 | | | 61.22 | | # 173 | | |
| 21 | 10:55 | 1932 | 66.31 | 2.99 | 2.85 | 64.00 | 2.78 | 1.1030 | 640.0 | |
| | | | | | | | Mean | #173 #152 | 1.1041 1.0255 | 640.5 |
| FULL SPEED (Current neglected) | | | | | | | | | | |
| 22 | 11:01 | | 66.91 | | | 64.60 | | # 152 | | |
| 27 | 11:21 | 2009 | 69.98 | 3.105 | 3.183 | 67.54 | 2.94 | 1.035 | | |
| 28 | 11:25 | | 70.52 | | | 68.08 | | # 173 | | |
| 33 | 11:45 | | 73.51 | 2.99 | 3.070 | 70.99 | 2.91 | 1.0686 | 645.4 | |
| 34 | 1:32 | | 75.65 | | | 73.09 | | # 152 | | |
| 38 | 1:52 | 2013 | 78.75 | 3.10 | 2.93 | 76.02 | 2.93 | 1.0156 | | |
| 39 | 1:57 | | 79.45 | | | 76.69 | | # 173 | | |
| 43 | 2:17 | 2006 | 82.44 | 2.99 | 2.88 | 79.57 | 2.88 | 1.0646 | 649.8 | |
| | | | | | | | Mean | # 152 # 173 | 1.0253 1.0666 | 647.6 |
| Mean factor, full speed | | | | | | | | # 152 # 173 | 1.028 1.065 | |

ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No.

9-VEC

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

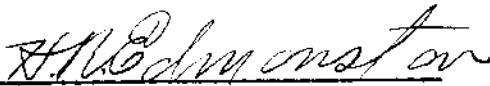
May 28, 1925.

REPORT ON VERIFICATION OF HYDROGRAPHIC SHEET No. 4434

The smooth sheet was well protracted and the log intervals were carefully adhered to in the plotting of the soundings.

The drafting conforms to the general instructions for field work.

The sounding books are clean and well kept.


H. R. Edmonston
H. R. Edmonston, Cartographer,
Field Records Section.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4434

Flagler Beach - Offshore, Florida

Surveyed in 1924

Instructions dated November 4, 1922, February 26, 1923 and Jan. 10, 1924.

Chief of Party, J. H. Hawley.

Surveyed by J. H. H.

Protracted and soundings plotted by L. S. Hubbard.

Verified and inked by H. R. Edmonston.

1. The records conform to the requirements of the General Instructions. The descriptive report is unusually complete.
2. The plan and character of development conform to the requirements of the General Instructions.
3. The plan and extent of development satisfy the specific instructions.
4. The sounding line crossings are adequate.
5. The information is sufficient for drawing the usual depth curves.
6. The usual field plotting was done by the field party.
7. The junctions with H. 4377 on the westward and at the extreme eastern edge of the work with H. 4300 are excellent. The junction with E day of 4430 indicates that the latter work is a mile or more too far eastward.
8. There is a 58 foot sounding at 29° 26', 80° 50' that was not developed. Additional work on this spot might show shoaler water, but there is no indication of dangerous depths. Except possibly on this shoal no further surveying is needed.
9. The character and scope of the surveying and field drafting are excellent.
10. Reviewed by E. P. Ellis, July, 1925.

L.O.R.

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. 4434

State Florida

General locality East Coast

Locality ~~Off~~ Flagler Beach-Offshore

Chief of party J. H. Hawley

Surveyed by J. H. Hawley

Date of survey February 17 - April 25, 1924

Scale 1 : 100,000

Soundings in Feet

Plane of reference M. L. W.

Protracted by L. S. H. Soundings in pencil by L. S. Hubbard

Inked by H. W. Edmonston Verified by A. R. C.

Records accompanying sheet (check those forwarded):

Des. report, 1 Tide books, _____ Marigrams, 1 Boat sheets,

2 Sounding books, _____ Wire-drag books, _____ Photographs.

1 cahier P.D.R. log, 3 current records, 1 book cuts to buoy signals.
Data from other sources affecting sheet

Remarks:

Precise Dead Reckoning work.

L. S. Hubbard

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. "DM" 4434

State Florida.

General locality East coast of Florida.

Locality Off shore, off Flagler Beach, Off shore.

Chief of party J. H. Hawley

Surveyed by LYDONIA, J. H. Hawley, Commanding.

Date of survey February to April 1924.

Scale 1-100,000.

Soundings in Fest.

Plane of reference Mean Low Water.

Protracted by L.S. Hubbard Soundings in pencil by L.S. Hubbard

Inked by Verified by

Records accompanying sheet (check those forwarded):

1 Des. report, Tide books, Marigrams, 1 Boat sheets,

2 Sounding books, Wire-drag books, Photographs.

Data from other sources affecting sheet 1 Cahier current records & graphs.
1 Cahier P.D.R. abstracts.
1 Vol. Log rating data.

Remarks: