

# 5039

Diag. Cht. No. 1246

# 5039

Form 504  
Ed. June, 1928

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

U. S. COAST & GEODETIC SURVEY  
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State: FLORIDA

DESCRIPTIVE REPORT

~~Hydrographic~~ } Sheet No. 4 5039  
Hydrographic }

LOCALITY

EAST COAST OF FLORIDA

SOUTH OF CAPE CANAVERAL

19 30

CHIEF OF PARTY

George D. Cowie

U. S. GOVERNMENT PRINTING OFFICE: 1928

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO. 5039

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. 4

REGISTER NO. 5039

State Florida

General locality East Coast

Locality South of Cape Canaveral

Scale 1:40,000 Date of survey Mar. - May, 1930

Vessel LYDONIA

Chief of Party George D. Cowie.  
G.D. Cowie, W.M. Scaife, K.G. Crosby, F.E. Okeson, W.F. Malnate,  
Surveyed by M.H. Reese, O.B. Hartzog, Jr., M.A. Hecht.

Protracted by W.F. Malnate and M.A. Hecht.

Soundings penciled by W.F. Malnate

Soundings in ~~fathoms~~ feet

Plane of reference M.L.W.

Subdivision of wire dragged areas by

Inked by

Verified by

Instructions dated December 31, 1929

Remarks:

3 B.S.  
11 Vols.  
1 Binn. Re.

DESCRIPTIVE REPORT TO ACCOMPANY  
FIELD SHEET # 4  
EAST COAST OF FLORIDA ----- 1930.

AUTHORITY:

Authority for this survey was given in the Director's instructions dated December 31, 1929, covering Projects #50 and 51.

SURVEY METHODS:

Depths were measured by hand-lead or echo (Fathometer) soundings in accordance with instructions contained in Hydrographic Manual, Publication #143.

Ship hydrography was controlled by sextant angles to the limit of visibility, or for approximately ten miles off-shore. The angles were observed on previously located triangulation or hydrographic signals.

Sextant angles observed on either topographic or triangulation signals controlled the inshore or launch hydrography.

The sounding lines beyond the limit of visibility were located by one or a combination of the following methods, viz:

By bomb distances from a hydrophone station previously located by bearings or by several bomb distances which closely checked a log run and a bearing from a known position.

By adjusted log run and bearings, or

By bearings and vertical angles on a previously located object.

These lines, in general, were held fixed at the inner and outer end and were plotted on an aluminum sheet and then transferred to the smooth sheet in order to prevent large errors in adjustment due to distortion.

LIMITS:

The area covered by this sheet extends from Lat.  $27^{\circ} 51'$ , Long.  $80^{\circ} 26'$  in a direction of about  $72^{\circ}$  true to Lat.  $27^{\circ} 54'$ , Long.  $80^{\circ} 16'$ ; then in a direction of about  $340^{\circ}$  true to Lat.  $28^{\circ} 04'$ , Long.  $80^{\circ} 21'$ ; then in a direction of about  $75^{\circ}$  true to Lat.  $28^{\circ} 06'$ , Long.  $80^{\circ} 08'$ ; then in a direction of about  $345^{\circ}$  true to Lat.  $28^{\circ} 14'$ , Long.  $80^{\circ} 10'$ ; then in a direction of about  $260^{\circ}$  true to Lat.  $28^{\circ} 11.5'$ , Long.  $80^{\circ} 24'$ ; then S to Lat.  $28^{\circ} 09'$ , Long.  $80^{\circ} 24'$ ; then in a direction of about  $255^{\circ}$  true to Lat.  $28^{\circ} 06'$ , Long.  $80^{\circ} 34'$ .

DISCREPANCIES:

The soundings between positions 31 to 41, J day, taken by Fathometer and using the "red light" method, failed to check adjacent lines so that a supplementary line using hand-lead was run over this distance. The Fathometer soundings were consistently 3 to 7 feet less in an average depth of about 50 feet. This new line checked the adjacent lines, therefore the rejection of positions 31 to 41, J day, is recommended. *31 to 41 J rejected E.P.S.*

The soundings between Positions 9 to 19, Q day, Fathometer sounding, red light method, also fail to check adjacent lines. Rejection recommended. *9 to 15 Q rejected, 15 to 19 Q retained. E.P.S. \*15 to 53 Q rejected. See reviewer's report par. 3*

All crossings are good and well within the allowable error. *BR*

DANGERS:

One sounding of 38 feet in an area of a depth of about 58 feet was obtained in Latitude  $28^{\circ} 03.8'$ , Longitude  $80^{\circ} 29.8'$ . Further

search did not warrant the holding of this sounding but for the fact there is charted a wreck in this vicinity, which was not found on searching. The leadsman, an experienced man, was certain of this sounding, but was taking his first sounding for that day.

Respectfully submitted,

  
William F. Malnate,  
Jr. H. & G. Eng'r.

Approved:

  

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George D. Cowie,  
Chief of Party.

December 1st, 1930.

*from H. 1488a (1881)*

The search for the charted wreck near Latitude  $28^{\circ} 03'.8$ , Longitude  $80^{\circ} 31'.5$ , did not indicate that it still existed in that area. The 38-foot sounding in Latitude  $28^{\circ} 03'.8$ , Longitude  $80^{\circ} 29'.8$ , might be an indication of the wreck. The sounding was not verified by subsequent soundings but the leadsman insists that the sounding was correct. The red rag of 7 fathoms was just above the water's edge, and the lead seemed to be on something hard. It is, however, not a menace to navigation.

There was considerable difficulty in running the lines between the 10 and 20 fathom curves. No buoys were used on this work since it was expected to have R.A.R. control. Buoys along the 10 fathom curve would have been used in steadying the ship on the proper courses before resort was had to dead reckoning and would have permitted a better spacing of lines.

Weather at the end of the season did not permit the running of an additional line inside the inshore work. Heavy swells made it inadvisable to work further inshore.

At the southern end of the sheet there are several lines with less than 40 feet. These lines were not split, as it was understood that the RANGER had developed the shoal there to the 40-foot curve.

There are no menaces to navigation in the area surveyed.

*George D. Cowie*  
George D. Cowie,  
Chief of Party.

(FOR FILES OF FIELD RECORDS SECTION)

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February 25, 1931

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in  
13 volumes of sounding records for

HYDROGRAPHIC SHEET 5039

Locality Florida East Coast, North of Sebastian Inlet

Chief of Party: G. D. Cowie in 1930  
Plane of reference is mean low water  
4.1 ft. on tide staff at Cape Canaveral  
11.1 ft. below B. M. 1

Allowance made for time of tide at place of sounding.

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 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.

RCW

Chief, Division of Tides and Currents.



STATISTICS  
FOR  
HYDROGRAPHIC SHEET NO. 4

DAY	DATE 1930	MILES (Statute)	SOUNDINGS		POSITIONS	BOAT	VOLUME
			H.L.	Fath.			
A	March 13,	63.0	784		132	Ship	1
B	14	31.0	428		75	"	1
C	19	53.6	631		136	"	1-2
D	20	43.5	483		103	"	2
E	21	6.5	84		15	"	2
F	22	13.0	153		32	"	2
G	23	46.0	601		119	"	2-3
H	24	45.1	582		113	"	3
J	25	51.5	504	56	108	"	3
K	26	54.8	617		114	"	4
L	27	34.5	415		85	"	4
M	April 4	33.3	348		80	"	4
N	5	10.2	151		26	"	5
P	19	54.0	20	411	84	"	6
Q	20	58.0	171	58	53	"	6
R	21	40.6	262	120	75	"	6-7
S	22	37.7	269	177	82	"	7
T	23	40.4	126	141	41	"	7
U	May 2	50.6	616		109	"	7-8
V	3	58.8	569		127	"	8
W	4	64.9	684		132	"	8
X	5	71.6	898		155	"	9
Y	6	75.9	930		162	"	9-10
Z	7	68.4	829		153	"	10
A'	8	38.2	534		97	"	10-11
a	3	10.5	294		45	Launch	1
b	4	26.3	636		87	"	1
c	5	18.3	505		42	"	1
d	7	12.5	397		78	"	2
Totals		<u>1212.7</u>	<u>13521</u>	<u>963</u>	<u>2660</u>		

1, 2  
4

# Section of Field Records.

Report on H. 5039.

South of C. Canaveral, East Coast of Florida.

Surveyed in 1930 by Lydonia.

Instructions dated Dec. 31, 1929.

G. P.  
Chief of Party G. D. Corie Surveyed by Field Party  
Directed by W. F. Malnate, M. A. Decht  
Soundings plotted by W. F. M.  
Verified and Inked by G. Prezani.

1. The records conform to the requirements of the Genl. Instr. <sup>Surveying</sup>  
Exception: Failure to enter cuts on page 2 of respective volumes  
where such information was entered in the "Remarks" column.

2. The plan and character of development fulfill the requirements of the Genl. Instr.

3. The plan & extent of development satisfy the Specific Instructions.

Attention is called to the work extending from about the 70 foot curve eastwardly, which was largely controlled by the north & south positions of the "Ranger" acting as a hydrophone station and Bury Snel.

The south position of the Ranger controls a considerable portion of the work in this area mentioned with the exception of T day. The position was located by one cut only and several bomb distances from position 35, which determination could be considered about as good as a weak visual fix.

The north position of Ranger and Bury Snel control most of the work of T day.

Bury Snel was located by the intersection of bomb distances from the Ranger (south location) and Echo (another hydrophone station not plotted on this sheet).

The North position of Ranger was determined by a depression angle, bearing and range with Snel from a position of the Lydonia about 10 meters southwest of Snel. The Lydonia was bombed into position <sup>established</sup> by arcs from Ranger (South)

3 (cont.). Buoy Suel was located by a number of depression angles with steering compass bearings and pelorus readings taken from the Lydonia, which was bombed into position established by arcs from the Ranger (south) and Echo (another hydrophone station not plotted on this sheet). See p. 70, Vol. 6 and bomb record, R day.

The north position <sup>of</sup> the Ranger was determined by a depression angle, compass bearing with a pelorus reading, and in range with Suel from a position of the Lydonia about 10 meters southwest of Suel. The Lydonia was established into position by the same method mentioned above. This position of the Ranger <sup>was found to agree</sup> satisfactorily with values deduced, see page 39 Vol. 7.

It is evident from the interdependency of stations Suel, Ranger-north with each other, <sup>which is relatively weak</sup> and with Ranger-south, that the work controlled by these <sup>stations</sup> cannot be considered satisfactory for accurate work.

N. 5120, a resurvey of this area, tends to bring out this fact. This later survey is excellently controlled and has been accepted to supersede N. 5039 <sup>in general</sup> of the questionable work in this area on N. 5039. Where portions of a line were found to disagree with N. 5120, the balance of the line was rejected. All other lines that agreed <sup>and over</sup> were transferred to N. 5120 which lines helped to fill in gaps on that sheet.

The following portions of lines overlap N. 5120 and were <sup>for above reasons</sup> rejected: ~~15S-41S, 2T-12T, 25T-41T~~, 16P-32P, 62P-72P, 15Q-53Q, 3R-32R, 15S-41S, 2T-12T, 25T-41T.

4. The sounding line crossings are adequate and show in most places, very good agreement.

5. The usual depth curves can be drawn within the scope of the survey <sup>except the 120 foot curve</sup> ~~is acceptable~~. The 6 foot curve, however, is incomplete but swells made it inadvisable to work closer inshore.

6 (cont.) The junction with H. 5034 (north) is satisfactory.  
 " " " H. 5032 (south) " " "  
 " " " H. 5120 (east) is in part satisfactory.  
 " " " H. 5116 (east) is satisfactory.

7. The soundings between 31J + 41J day, Lat.  $27^{\circ}58'$ , Long.  $80^{\circ}22'$ , plot too shoal as shown by comparison of cross lines and by adjacent hand lead sounding lines. They have been rejected as they are evidently erroneous. The rejection is also recommended by the Chief of Party.

On chart 162, Lat.  $28^{\circ}02'$ , Long.  $80^{\circ}32'$  there is shown a shipwreck. This wreck has been shown on the charts since the 1<sup>st</sup> edition of chart 162, published in 1883. It was located on H. 1488 a (1881). The location of the wreck on H. 5039 (transferred from the chart) plots on the edge of an area fairly well developed and it is probable that it no longer exists.

It is, however, recommended that the wreck symbol be taken off the chart.

Attention is called, however, that a sounding of 38 feet was found about 2400 meters east of this spot. It may be possible that this is an indication of the wreck in question.

Further investigation by the Chief of Party regarding this shoal sounding leads him to believe that the sounding should be accepted, though no subsequent soundings of in the development of this area were found to be as shoal.

There appears to be no good reason to discredit this shoal sounding and it is recommended that it be retained. Its retention should also serve as a precautionary measure in case the wreck on the chart shifts elsewhere in this vicinity and was not picked up by this survey.

8. Comparison with the old work (H. 1488) shows no bad disagreement with ~~the~~ ~~new~~ ~~work~~ ~~on~~ ~~H.~~ ~~5039~~ ~~work~~ ~~on~~ ~~H.~~ ~~5039~~ and checks in most cases very well. FF

9 (cont.). No further surveying, <sup>the</sup> it is believed, is necessary to fully develop important areas <sup>from shoreline to</sup> within the vicinity of the 70 foot curve. The work extending beyond the 70 foot curve is fully covered by later surveys.

10. Character and scope of the surveying is good, except, it is believed, the offshore control and some of the dead reckoning work.

Field drafting - good.

11. Reviewed by S. Prigari May 15, 1931 and Mar. 4, 1932.

App. A. M. Bohieralski

3 (cont.) Buoy Suel was located by a number of depression angles <sup>with</sup> steering compass bearing and pelorus readings from the Lydonia, which was bombed into position established by arcs from the Ranger (south) and Echo (another hydrophone station not plotted on this sheet. See p. 70 Vol. 6 and bomb record, R day.

The <sup>North</sup> position of the Ranger was determined by a depression angle, <sup>compass</sup> bearing with pelorus reading and in range with Suel from a position of the Lydonia about 10 meters southwest of Suel. The Lydonia was established into position by the same method mentioned above. The plotted <sup>positions of the</sup> Suel and Ranger (cont.) <sup>and appears to be correct, notes</sup> were checked by my values, see p. 39 vol. 7, but it is evident that the control for Suel and Ranger cannot be considered entirely satisfactory for excellent work.

It is evident that the work controlled by <sup>station</sup> Suel, Ranger-north, Ranger-south cannot be considered satisfactory for accurate work.