4946

Diag. Cht. No. 1000-2 & 1246

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. ..... Office No. 4946

LOCALITY

State Florida

General locality East Coast

Locality Of Florida

Cape Canaveral

1929

CHIEF OF PARTY

O. C. Mattison

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DATE .....

4946

4946

Form 504
Ed. June, 1928

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

State: Florida

DESCRIPTIVE REPORT

~~Topographic~~
Hydrographic | Sheet No. 4946
Field No. 4

LOCALITY

East Coast of Florida

Off Cape Canaveral

19 29

CHIEF OF PARTY

G. C. Mattison

U. S. GOVERNMENT PRINTING OFFICE: 1928

DISCRIPTIVE REPORT
to accompany

HYDROGRAPHIC SHEET # 4946

(FIELD NO.4)

AUTHORITY:

Instructions from the Director dated December 3, 1928.

LIMITS:

Sheet # 4 extends from the junction with field sheet # 1 on the north to field sheet # 2 on the east. On the south sheet # 4 extends from a point 28°-20'; 80°-36' to a point 28°-29'; 80°-12' on the east.

METHODS:

Positions were fixed by sextant angles taken on shore objects to the limits of visibility. The shore signals were located by triangulation and topography. Positions that were beyond the limit of visibility of the shore signals were fixed by sextant angles taken on hydrographic signal buoys.

Hydrographic signal buoys were planted in a line parallel to the coast, within the limits of visibility of the shore signals, at intervals of about three miles. These buoys were located by simultaneous sextant cuts taken with the ship anchored, the position of the ship being located by sextant fixes taken on shore signals. The position of the ship and cuts were plotted on an aluminum sheet, and the position of the buoys were scaled from the aluminum sheet.

The Dead Reckoning on this sheet was plotted by Lieut. (j.g.) E. R. McCarthy. For methods and particulars see Descriptive Report on Field Sheets # 2 & 3.

From the five fathom curve inshore the hydrography was done from the launch and whale boat. On a, b, c days the whale boat was pulled by hand, and d, e, f, days it was towed by a dinghy with an outboard motor attached to it.

Soundings were taken with the hand lead up to depths of 13 fathoms. The soundings were taken at intervals in accordance with the Hydrographic Manual. In depths over 13 fathoms the soundings were taken by fathometer, using the red light throughout the entire sheet. The fathometer was in first class working condition and the results obtained were very satisfactory. Serial temperatures and salinities obtained for the reduction of soundings are reported on separately.

The fathometer soundings were kept in a separate volume, and were recorded by the officer reading the fathometer. The recorder rang a bell for the exact time of each position. The clock on the bridge and the one in the radio room were set on the exact time, ane were checked at frequent intervals to note any changes. The soundings were plotted at the end of each day as the ship vibrates so much at full speed that it was impracticable to plot the soundings when the ship was underway at full speed.

The Natoma surveyed the shoals that could not be economically surveyed by the Lydonia. The shoals surveyed by the Natoma are noted on the sheet.

DISCREPANCIES:

There are some small discrepancies between the shore fixes and buoy fixes, also between some of the buoy fixes. This is probably explained by the fact that the buoys had a considerable scope of chain and do not always remain in their exact original position, but change as the metrological conditions change. The shore fixes this far off shore are weak, and probably cause some of the error. The errors between different buoy fixes are probably due to the buoys being cut in at different times. This discrepancy is very small and does not effect the accuracy of the work.

In doing ship hydrography among the shoals there was noted various changes in current. In some cases due to the currents it was necessary to hold up the ship from 5 to 10 degrees. In many cases this is the reason why the distance between positions of the same time do not check.

In general the soundings on this sheet check very good at the points where lines crossed. The launch and whale boat soundings check excellent with the ship's work, except in one case. The discrepancies that occured in the crossing of ship lines are due to slight shifts in position and steep slopes. The fathometer and lead line soundings check very good.

It is recommended that where fathometer and lead line soundings cross each other the lead line soundings be accepted in all cases.

Lat. 28°-32'; Long. 80°-31.5' lh to 7h launch work does not check with the ship's hydrography. There is a difference of 5' to 6'. There is no apparent reason for this discrepancy. From the shape of the 6 fathom curve it appears that the launch soundings, in this particular case, were read one fathom shoal. It will be well to note that this is the only discrepancy of any size on the entire sheet between the launch and ship's hydrography.

Reject 11h to 12h Area.

Lat. 28°-43.2; Long. 80°-20.1' at the crossing of lines just after position 48E there is a difference of 10'. This differehce is due to a steep slope at that point.

Lat. 28°-37'; Long. 80°-27.2'. Crossing at 56M and 100K a difference of 5'. This discrepancy is probably due to one or the other lines being slightly out of position, as the weather conditions were practically the same on both days.

Lat. 28°-39.3'; Long. 80°-29.9'. Crossing of 205P to 206P and 133C to 134C a difference of 5'. It is probably due to 134C being slightly out of position as the time and distance between positions do not check.

Lat. 28°-32.2'; Long. 80°-21', difference of 5' between 39C' to 40C' and 4B' to 5B', Due to very irregular bottom. All abrupt changes were O. K.

COMPARISONS WITH PREVIOUS SURVEYS:

In general previous surveys compare fairly well with the recent one. The errors between the old work and the new work is probably due to inaccuracy of the old work. In most cases the old soundings were scattered over large areas, making it impracticable for an accurate comparison. The shoals off Cape Canaveral in general checked very good with the new survey.

Lat. 28°-40.5'; Long. 80°-27.8' there is a sounding (14 feet P. D.). This area was throughly surveyed and the shoalest depth found was 47 feet. It is recommended that the sounding (14 feet P. D.) be removed from the chart.

Lat. 28°-39.4'; Long. 80°-23.8' there is a sounding (18 feet P. D.). This area was throughly surveyed and the shoalest depth found was 67 feet. It is recommended that the sounding (18 feet P. D.) be removed from the chart.

Sheet # 4.

In Lat. 28°-34' , Long. 80°-22' an uncharted shoal was thoroughly developed. The shoalest depth found was 34 feet. The shoal is about 1200 meters in length and about 400 meters wide.

DANGERS:

The wreck in Cape Canaveral bight was found to be out of position The correct location of the wreck is:- Lat. 28°-23'-49.5", Long. 80°-32'-07.4".

MISCELLANEOUS:

The abstract of the Dead Reckoning work on this sheet are enclosed with the Field Records.

Volume 23 containes sketches and soundings taken around the wharf located at Cape Canaveral Harbor. Due to the small scale of sheet # 4 this information was not plotted on the sheet.

In closely developed areas no attempt was made to draw the depth curves, as the soundings were rather close, and in most cases steep slopes existed.

Respectfully submitted,

Marshall H. Reese

Marshall H. Reese,
Aid, U. S. Coast & Geodetic Survey.

Forwarded approved,

G. C. Mattison

G. C. Mattison,
H. & G. Engineer,
Commanding Officer,
U.S.C.& G.S.S. LYDONIA.

STATISTICS

FIELD SHEET # 1.

Day	Date	Volume	Mileage	Soundiggs	Positions	Boat
A	4-29-29	1	21.7	382	58	Ship
B	4-30-29	1	38.4	698	111	Ship
C	5- 1-29	1	45.8	705	135	Ship
D	5-10-29	2	61.3	895	188	Ship
E	5-11-29	2	60.0	646	177	Ship
F	5-12-29	3	57.8	678	175	Ship
G	5-13-29	3	43.6	712	164	Ship
H	5-14-29	4	69.1	543	133	Ship
J	5-15-29	4	39.5	629	120	Ship
K	5-16-29	4&5	59.5	873	191	Ship
L	5-16-29	5	45.9	646	158	Ship
M	5-24-29	6	56.5	1060	192	Ship
N	5-25-29	6	25.1	385	76	Ship
P	5-26-29	6&7	64.9	974	218	Ship
Q	5-27-29	7	64.5	981	240	Ship
R	5-28-29	7&8	71.5	992	225	Ship
S	5-29-29	8&9	76.5	1728	235	Ship
T	5-30-29	9	18.3	297	61	Ship
U	5-31-29	9	6.9	147	37	Ship
W	6-10-29	9	26.9	483	76	Ship
X	6-11-29	10	56.9	588	178	Ship
Y	6-12-29	10&11	89.2	782	188	Ship
Z	6-13-29	11&12	39.9	310	79	Ship
A'	6-14-29	11&12	9.1	53	17	Ship

STATISTICS

FIELD SHEET # 1 (Continued)

Day	Date	Volume	Mileage	Soundings	Positions	Boat
B'	6-21-29	11&12	25.8	340	80	Ship
C'	6-22-29	12	72.5	893	229	Ship
D'	6-23-29	13	6.7	951	197	Ship
E'	6-25-29	13	9.5	150	27	Ship
Totals			1263.2	18,521	3,695	

STATISTICS ?

FIELD SHEET # 1 (Launch)

Day	Date	Volume	Mileage	Soundings	Positions	Boat
a	4-30-29	1	1.3	47	9	Launch
b	5-10-29	1	20.2	616	101	Launch
c	5-15-29	1	16.3	597	109	Launch
d	5-16-29	1	15.2	593	129	Launch
e	5-17-29	2	29.1	740	146	Launch
f	5-26-29	2	10.7	262	65	Launch
g	5-30-29	2	26.8	867	164	Launch
h	5-31-29	3	19.0	701	97	Launch
j	6- 9-29	4	27.5	1091	122	Launch
k	6-10-29	4&5	3.2	110	13	Launch
l	6-11-29	5	27.7	1126	119	Launch
m	6-21-29	5&6	24.8	1137	141	Launch
T otal			221.8	7,887	1,206	

STATISTICS

SHEET #

FIELD SHEET # 1.

Day	Date	Volume	Mileage	Soundings	Positions	Boat
a	4-19-29	1	6.9	485	48	Whaleboat
b	5-15-29	1	3.2	333	39	"
c	5-30-29	1	7.1	392	66	"
d	6- 9-29	1&2	24.0	1020	195	"
e	6-10-29	2	8.2	305	61	"
f	6-11-29	2	2.4	100	19	"
Total			51.8	2635	428	

Total area 383 sq. mi. (sta.)

TIDAL NOTE

to accompany

SHEET #

FIELD SHEET # 4

An automatic tide gauge was located in Cape Canaveral bights, and the reducers for this sheet were scale from the curves.

Location:- Lat. 28-26, Long. 80-34.

Highest tide observed: 9.5 feet - June 7, 1929.

Lowest tide observed: 2.6 feet - May 9, 1929.

Plane of reference on Tide Staff = 3.3'M L W

NOTE TO ACCOMPANY SHEET # 4.

The Chief of Party was in constant touch with the field and office work on this sheet. The sheet and records are approved.

The two charted P. D. soundings of 18 feet and 14 feet could not be noted in heavy weather, when seas should have broken over any shoal in the vicinity.

G. C. Mattison,
Commanding Officer,
U.S.C.& G.S.S. LYDONIA.

Form 567

DIVISION OF CHARTS, FILE NO. _____

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

LANDMARKS FOR CHARTS

Norfolk, Va.

January 3, 1930

DIRECTOR, U. S. COAST AND GEODETIC SURVEY:

The following determined objects are prominent, can be readily distinguished from seaward from the description given below, and should be charted.

G. D. Mattison
G. D. Mattison Chief of Party.

DESCRIPTION	POSITION						METHOD OF DETERMINATION	CHARTS AFFECTED
	Latitude			Longitude		Datum		
	°	'	D. M. meters	°	'	D. P. Meters		
Casino, Coca Beach	28	19	4892.2	80	39	412.3	N. A.	△'tion	161,1001,1111
A prominent buff colored building visible off shore								
The above object is the only prominent landmarks not previously sent to the office.								
Note: Copy filed with Chart Form See letter re discrepancy								

A list of objects which are of sufficient prominence for use on the charts, together with a description of the same, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report. The selection, determination, and description of these points are of primary importance.

The description of each object should be short, but such as will identify it; for example, standpipe, water tower, church spire, tank, tall stack, red chimney, radio mast, etc. Generally, flagstaffs and like objects are not sufficiently permanent to chart.

GOVERNMENT PRINTING OFFICE

January 30, 1930

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in
23 volumes of sounding records for

HYDROGRAPHIC SHEET 4966

Locality: Florida East Coast (off Cape Canaveral)

Chief of Party: O. C. Matthieu, in 1929
Plane of reference is mean low water, reading
3.2 ft. on tide staff at Cape Canaveral
ft. below B. M.

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.

Paul C. Whitney

Chief, Division of Tides and Currents.

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. 11-WSW

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

August 22, 1930.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4946

Off Cape Canaveral, East Coast of Florida

Surveyed in 1929

Instructions dated December 3, 1928. (Lydonia)

Hand lead and fathometer soundings

Chief of Party, G. C. Mattison.

Surveyed by F.E.Okeson; E.B.Roberts; H.A.Paton; E.R.McCarthy.

Protracted and plotted by M. H. Reese.

Verified and inkedbby J. D. Torrey.

1. The records conform to the requirements.

2. The plan, character and extent of the survey satisfy the general and specific instructions except that the lines close inshore are run normal to the beach instead of parallel and the spacing interval, just outside the breakers considerably exceeds 100 meters. The ground has been uniformly covered however and the curves can be completely drawn.

3. In general the sounding line crossings are very satisfactory. There are some differences, most of which are noted in the descriptive report. All of these lines were accepted except the line from position 1 h to position 12 h (Launch Work) which was rejected. Outside of these differences the launch and whale boat soundings check well with the ship hydrography. The lead line and fathometer soundings check well.

4. The information is sufficient for completely drawing the usual depth curves.

5. The junction on the north with H. 4935 is satisfactory.

   a. The junctions with the areas developed by the Natoma, H. 4916, are satisfactory.

   b. The junction on the north east with H. 4932 is satisfactory.

c. The junction on the east with H. 4931 is satisfactory.

d. There is no junction with contemporary work on the southern limits.

e. A detailed comparison with the old surveys H. 1409, H. 1410 and H. 1411 is difficult to make, as the old work is open and the soundings scattered over large areas. The old sheets check only fairly well with this survey and in some cases shoaler depths can be found on the old work, but in view of the changable character of the bottom and the more accurate methods used on the recent survey, it is believed that this sheet, H. 4946, should supersede the previous work.

f. A 14 foot P. D. (position doubtful) sounding is shown on chart No. 161 in about Lat. 28° 40.5', Long. 80° 27.8', by authority of Letter No. 149, 1916.

g. An 18 foot P. D. (position doubtful) sounding is also shown on the chart in about Lat. 28° 39.4', Long 80° 23.8', by authority of Hydrographic Office in Notice to Mariners 22 of 1908.

h. The existence of these two spots in the charted positions is disproved by this survey and their removal from the chart is recommended. (See Director's letter of January 31, 1930, attached to Letter No. 284 of 1930.)

6. The usual amount of field plotting was well done by the field party. The dead reckoning lines were accepted as plotted by E. R. McCarthy and were not checked in the office.

7. Character and scope of surveying --- very good.

a. The ground is well covered and in general about the proper amount of shoal development has been done.

8. On the northern portion of the sheet, the bottom is quite irregular between the ten fathom and twenty fathom curve.

a. As reports of shoals in this vicinity have been received and this survey shows numerous sharp shoalings, there is a possibility that a shoaler depth, than discovered by this survey, may exist. However no additional work is recommended at the present time.*

9. Reviewed by R. L. Johnston, June 18, 1930.

* There are indications of possible small shoals to the northeastward of the Ohio + Hetzel Shoal areas, but it is doubtful whether survey methods used on this sheet would develop them

Approved:

A. M. Schwalbach
Chief, Section of Field Records (CHARTS)

H. A. Borden
Chief, Section of Field Work (H. & T.)

Form 537

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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. 4946

State Florida

General locality East Coast ~~of Florida~~

Locality Off Cape Canaveral

Scale 1 : 40,000 Date of survey April 29 to June 25 19 29

Vessel Lydonia, Launch, Whale boat

Chief of Party C.C.Mattison

Surveyed by F.E.Okeson, E.B.Roberts, H.A.Paton, & D.R.McCarthy

Protracted by Marshall H. Reese

Soundings penciled by Marshall H. Reese

Soundings in ~~fathoms~~ feet

Plane of reference Mean Low Water

Subdivision of wire dragged areas by

Inked by J. W. Torrey.

Verified by J. W. T.

Instructions dated December 3, 1929

Remarks:

U. S. GOVERNMENT PRINTING OFFICE