

FE58

Diagram No. 1248

NOAA FORM 76-35A	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY	
DESCRIPTIVE REPORT (HYDROGRAPHIC)	
Type of Survey	Field Examination
Field No.	
Office No.	FE-58 (1945)
LOCALITY	
State	Florida
General Locality	Intracoastal Waterway
Locality	South of Biscayne Bay
1945	
CHIEF OF PARTY LCDR J.C. Bose	
LIBRARY & ARCHIVES	
DATE	November 21, 1946

FE58

☆ U.S. GOV. PRINTING OFFICE: 1976-669-441

NOTE: A new system for registering Field Examinations was established in 1980. All FE's are now consecutively numbered as shown hereon. The date shown in the new format is the actual date of survey. This material was previously registered as:

FE No.3 1946

FENo.3 1946

Diag'd. on Diag. Ch. No. 1248

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic
Field No. _____ Office No. FE - 3
1946

LOCALITY

State Florida
General locality Intracoastal Waterway
Locality South of Biscayne Key

Scale 1:20,000

1945

CHIEF OF PARTY

J. C. Bose, Lieut. Comdr.

LIBRARY & ARCHIVES

DATE 21 November 1946

B-1870-1 (1)

SEE ~~BP No. 41927~~
Miscellaneous Drawer Topo. Diagram File Case.

Sheet filed in file case with Fe. negatives

FENo.3
1946

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.

REGISTER No. F. E. No. 3 (1946)

Field No. _____

State Florida

General locality Intracoastal Waterway

Locality South of Biscayne Key

Scale 1:20,000 Date of survey Nov. 1945

Instructions dated 31, August, 1945

Vessel U. S. N. Plane Rearming Barge 7806

Chief of party J. C. Bose, Lt. Comdr. U. S. C. & G. S.

Surveyed by George E. Varnadoe

Soundings taken by fathometer, graphic recorder, hand lead, wire Sounding Pole

Protracted by D. B. Small

Soundings penciled by D. B. Small

Soundings in ~~fathoms~~ feet at MLW ~~MLLW~~ All sdgs. were pole soundings

REMARKS: This sheet was processed in the Nautical Charts Section of the Washington Office.

839

Sdg. Records

11/21/46

Mr. Murray:

Field Examination No. 3, 1946 (Miami, Florida), has
been given the following shelf mark and accession
number:

872
SHS

Acc.No. S-2444 3 vols.

F.E.No.3,1946

KC (16)

Note: This work is filed

~~35 Bp. 44927~~

in miscellaneous drawer
Topo. Diagram Filing Case.

SPECIAL REPORT TO ACCOMPANY
HYDROGRAPHIC SHEET 848 (CHART) (F.E.No.3, 1946)

This Hydrographic investigation was done in accordance with instructions addressed to Lieut. Comdr. J. C. Bose, dated 31 August 1945.

The area embraced by this investigation is along Longitude $80^{\circ} 10'$ and between Latitude $25^{\circ} 34'$ and Latitude $25^{\circ} 41.4'$. The investigation was begun 13 November 1945 and completed ~~30~~²⁹ November 1945. Recorded in 3 volumes which include 906 Positions, numbered 1a to 151k (red letter)

The prominent objects, located by Triangulation, and mentioned in the instructions, were used to locate other natural objects, and Non Floating Aids to Navigation, which were also used as Hydrographic Stations. These Aids and objects were located by sextant fixes and cuts, and were circled in blue ink and given names. It will be noted that the position of some of the above mentioned Aids to Navigation do not conform very well to the position shown on Chart 848. The Front Range Light charted at Latitude $25^{\circ} 39.45'$, Longitude $80^{\circ} 10.55'$ no longer exists. It has been replaced by a lighted Buoy. The two lights charted at the southwest end of Featherbed Bank Latitude $25^{\circ} 31'$ Longitude $80^{\circ} 14.4'$ no longer exist. They have been replaced by Buoys.

The base of operations was at the U. S. E. D. base located at the south end of Miami Beach, Fla. approximately 15 Nautical Miles from the area worked. A 33 foot Plane Rearming Barge, borrowed from the U. S. Navy, was used for this work. The soundings were taken with a 13 foot sounding pole, marked in feet and half feet.

Whenever possible the sounding lines were run along the edge of the shoals, and sextant fixes taken at frequent intervals. When the conditions were good, i. e., clear skys, clear water and low tides, these shoals, where sharp, showed very plainly, as in the central portion of the area investigated. But, on the ends of the shoals where they tapered off, and in the area just west of Cape Florida Lighthouse, the shoal lines could not be followed, therefore these areas were developed by parallel lines. While following along the sharp edge shoals it was impossible to get every sounding on the 6 foot curve, and often the sounding would be taken within a very few feet of the edge of the shoal, which was clearly discernible, and although the actual sounding might have been 4 feet or 10 feet, it is believed that sufficient notes were made to locate the edge of the shoals where the 6 foot curve actually exists. Due to the scale on which this investigation was made 1:40,000 and due to the fact that the purpose of the investigation was to locate the 6 foot curve all of the "No bottom soundings" were not inked as such, i. e., some of the "no bottom at 12 feet" soundings appear on the boat sheet, but not in the records, as 12 feet.

In general the 6 foot curve of the shoals conforms very closely to those taken from the Photographs, but at Latitude 25° 37.35' 38' Longitude 80° 10' the investigation proved that what appeared on the Photographs as a small isolated depression was either a sandy streak on the bottom, or had filled in, as this small area was investigated thoroughly, under ideal conditions, and was found to be less than 6 feet throughout. Review
par. 4 c.

Due to the hurricane of September 1945 only one of the buildings that appear on the Photographs, and plotted on the Boat Sheet, remains. It is at Latitude 25 39.0' Longitude 80 09.7' (Hydrographic station DECK)

The soundings on the boat sheet were reduced using predicted tides. Attached hereto are hourly readings covering the period ^{while} the investigation was being made, taken from the Gage at "Primary Station #219" located on Carters Pier at Miami Beach, Fla., and tended by the U. S. Engineer Office.

Respectfully submitted,

George E. Varnadoe
George E. Varnadoe
Prin Photo Aide.

*Approved and forwarded,
J. C. Rose
Chief of Party*

The following readings were scaled from the tide gage roll of Nov. 2 to Dec. 4, 1945 from Gage Primary Station #219 located at Carters Pier, Miami Beach, Fla. and tended by the U S Engineer office. *Datum: U.S.C. + G.S. Mean Low Water*

Nov. 13 Gage out of order until 1129 AM
Gage set at 1129 AM at 2:05 feet.

1130	2.05 Ft.
1200	2.25 Ft.
1300	2.65 Ft.
1400	2.82 Ft.
1430	2.85 Ft. High Water
1500	2.82 Ft.
1600	2.62 Ft.
1700	2.20 Ft.
1800	1.75 Ft.
1900	1.45 Ft.
2000	0.93 Ft.
2100	0.85 Ft. Low Water

Nov. 14, 1945

8.00	0.75 Ft.
9.00	0.60 Ft.
10.00	0.73 Ft.
11.00	1.05 Ft.
12.00	1.53 Ft.
13.00	2.10 Ft.
14.00	2.45 Ft.
15.00	2.65 Ft.
16.00	2.65 Ft.

Nov. 15, 1945

8.00	1.08 Ft.
9.00	0.65 Ft.
10.00	0.42 Ft.
11.00	0.60 Ft.
12.00	1.00 Ft.
13.00	1.20 Ft.
14.00	2.20 Ft.
15.00	2.70 Ft.
16.00	2.95 Ft.

Nov. 19, 1945

8.00 3.70 Ft.
 9.00 3.30 Ft.
 10.00 2.65 Ft.
 11.00 1.70 Ft.
 12.00 0.85 Ft.
 13.00 0.30 Ft.
 14.00 0.25 Ft.
 15.00 0.60 Ft.
 16.00 1.35 Ft.

Nov. 27, 1945

8.00 0.70 Ft.
 9.00 0.65 Ft.
 10.00 0.85 Ft.
 11.00 1.20 Ft.
 12.00 1.70 Ft.
 13.00 2.15 Ft.
 14.00 2.50 Ft.
 15.00 2.55 Ft.
 16.00 2.55 Ft.

Nov. 20, 1945

8.00 3.70 Ft.
 9.00 3.70 Ft.
 10.00 3.25 Ft.
 11.00 2.50 Ft.
 12.00 1.60 Ft.
 13.00 0.85 Ft.
 14.00 0.30 Ft.
 15.00 0.30 Ft.
 16.00 0.80 Ft.

Nov. 28, 1945

8.00 1.15 Ft.
 9.00 0.80 Ft.
 10.00 0.75 Ft.
 11.00 0.95 Ft.
 12.00 1.35 Ft.
 13.00 1.75 Ft.
 14.00 2.20 Ft.
 15.00 2.50 Ft.
 16.00 2.70 Ft.

Nov. 21, 1945

8.00 3.25 Ft.
 9.00 3.60 Ft.
 10.00 3.50 Ft.
 11.00 3.00 Ft.
 12.00 2.20 Ft.
 13.00 1.35 Ft.
 14.00 0.70 Ft.
 15.00 0.30 Ft.
 16.00 0.25 Ft.

Nov. 29, 1945

8.00 1.50 Ft.
 9.00 1.10 Ft.
 10.00 0.80 Ft.
 11.00 0.75 Ft.
 12.00 1.00 Ft.
 13.00 1.35 Ft.
 14.00 1.80 Ft.
 15.00 2.30 Ft.
 16.00 2.60 Ft.

Nov. 26, 1945

8.00 0.75 Ft.
 9.00 0.90 Ft.
 10.00 1.25 Ft.
 11.00 1.75 Ft.
 12.00 2.25 Ft.
 13.00 2.65 Ft.
 14.00 2.65 Ft.
 15.00 2.55 Ft.
 16.00 2.20 Ft.

31 August 1945

To: Lieut. Comdr. J. C. Bose
U. S. Coast and Geodetic Survey
1101 E. Broadway
Tampa 5, Florida

Subject: Hydrographic investigation - Chart 848

Reference: Paragraph 23, Instructions for Project GS 312,
dated 25 May 1945

You will please undertake a hydrographic investigation for development of the 6 foot curve on the banks along longitude $80^{\circ}10'$ and between latitude $25^{\circ}34'$ and latitude $25^{\circ}41'$ in accordance with instructions contained in this letter. An especially prepared boat sheet made on a copy of Chart 848 is being forwarded to you for this purpose.

No hydrographic survey of this area has been made in recent years and it is desired to revise the 6 foot curve in detail to show the channels and deeps on this bank since this information is of considerable interest to local fisherman.

A comparison of single-lens photographs 450-1618 to 1622 and 1635 to 1638 with Chart 848 showed that shoal lines visible on the photographs correspond very closely with the 6 foot curve on Chart 848. Therefore, the curve has been revised in this office from the aerial photographs to show details of the channels across the banks. However, this revision must be verified by a hydrographic investigation before publication. The revised 6 foot curve is shown in red on the boat sheet mentioned above.

The object of your hydrographic investigation shall be to verify the 6 foot curve as shown on the boat sheet and to revise and correct it as necessary. It is thought that this investigation can be made satisfactorily with a skiff and outboard motor, using a sounding pole and sextant. Triangulation positions are available on several prominent objects and fixed aids to navigation. These are indicated by penciled check marks on the boat sheet and can be used for three-point-fix control. It is suggested that you contact the local U. S. Engineer office as regards the loan of a boat for this work and for the necessary field inspection and field identification of control for quadrangle T-8640.

Lt. Comdr. Bose

- 2 -

31 August 1945

Please understand that what is needed is an investigation to determine the general outline and approximate position of the 6 foot curve and not a complete hydrographic survey in the ordinary sense. Probably this can be accomplished by tracing out the curve more readily than by cross sounding lines. It is believed that you will find the curve as now delineated on the boat sheet to be approximately correct. However, some sections could not be delineated from the photographs and will need to be completed in the field.

This investigation should be made as soon as practicable, but should be done at the same time as your work on quadrangle T-8640 since, presumably, these two jobs are the only ones on the project which will require the use of floating equipment.

As stated in the above reference, the shoal lines in this area need not be delineated on quadrangle T-8640.

Director

839
DEC 16 1946

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography:~~

Division of Charts: H. W. MURRAY

Plane of reference approved in
3 volumes of sounding records for F. E. No. 3 - 1946

HYDROGRAPHIC SHEET

Locality Shoal Area, Vicinity of Soldier Key, South of Cape Florida.

Chief of Party: J. C. Bose in 1945
Plane of reference is mean low water, reading
2.0ft. on tide staff at Miami Beach (Carters Pier)
7.4ft. below B. M. 6 (U.S.E.)

Height of mean high water above plane of reference is 1.9 feet (*Working grounds*).

NOTE: Allowance made for time and range of tide at working grounds, as follows:

Miami Beach + 1hr.:00^{min.}

Height of HW --0.7 ft.

Condition of records satisfactory except as noted below:

E. C. McKay
Section
Chief, ~~Division of Tides and Currents.~~

GEOGRAPHIC NAMES

Survey No. FENo.3
1946

Name on Survey											
	A	B	C	D	E	F	G	H	K		
<u>Florida</u>		(for title)								U.S. & B	1
<u>Key Biscayne</u>											2
<u>Cape Florida</u>											3
<u>Soldier Key</u>											4
											5
											6
											7
											8
											9
											10
											11
											12
<u>Carters Pier</u>		(location of tide staff)									13
<u>Miami Beach</u>											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

Names underlined in red approved
by L. Heck on 2/28/47

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. *F.E. No. 3 (1946)*

Records accompanying survey:

Boat sheets *.1...*; sounding vols. *.3...*; wire drag vols. *.....*;
 bomb vols. *.....*; graphic recorder rolls *.....*;
 special reports, etc. *All sdgs. are pole soundings*
.....

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

Number of positions on sheet	.....	<i>906</i>
Number of positions checked	.....	<i>75</i>
Number of positions revised	.....	<i>15</i>
Number of soundings revised (refers to depth only)	.....	<i>200</i>
<i>(No bottom sdgs. were erroneously plotted as true values)</i>		
Number of soundings erroneously spaced	.....	<i>6</i>
Number of signals erroneously plotted or transferred	.....	<i>0</i>
Topographic details	Time	<i>8</i>
Junctions	Time	<i>0</i>
<i>Study & interpretation of air photos</i>		
Verification of soundings from graphic record	Time	<i>10</i>

Verification by *J.A. Winsmore* Total time *85 hrs.* Date *2/27/47*

Reviewed by *J.A. Winsmore* Time *8* Date *2/28/47*

Smooth plotting by: D. B. Small Time *200 hrs.* Date *Jan. 31, 1947*

REVIEW OF FIELD EXAMINATION NO. 3, 1946

1. The shoreline originates with air photographic survey T-8434. Triangulation positions on prominent objects and landmarks were used to establish subsidiary control. The fixes for supplementary hydrographic signals are recorded in Vol. 1, of the present field examination.
2. This investigation was made solely for the purpose of obtaining the general outline and approximate position of the 6-ft. depth curve. Pole-soundings only were obtained and resulted in a high percentage of "no bottom" - soundings where more than slight deviation from the 6-ft. curve occurred.
3. The field work was plotted on a buff copy of chart 848, scale 1:40,000. The work has been smooth plotted in the Washington Office on a scale of 1:20,000, which scale more clearly defines the narrow shoals and channels which lie in juxtaposition. Air photographs were used to supplement this investigation and as an aid in delineation of the shoals.
4. A comparison with chart 848 (print date of June 1946) reveals some disagreement. While the pattern of shoals and channels is generally similar, major differences noted are as follows:
 - a. Several depressions charted with a closed curve actually have entrances with controlling depths of 6-ft. (or more) and constitute open channels to deeper water on both the east and west.
 - b. The longitudinal width of the charted banks as indicated by the 6-ft. curve is measurably narrowed by depths obtained on the present investigation. This is particularly noticeable on the east.
 - c. The charted depression at lat. $25^{\circ} 37.38'$, long. $80^{\circ} 10.00'$ was thoroughly investigated and found to be less than 6-ft. throughout.
5. The present examination is considered adequate and the charted 6-ft. curve should be revised accordingly.

Reviewed, February 28, 1947

T. A. Dinsmore

Inspected by: Harold W. Murray

FE No. 3

1946

FE-58

~~SEE BLUEPRINT - 41927~~ Cancelled.

Smoot sheet filed in Misc. Drawer - ~~Topo. Diagram Filing Case.~~

~~Room 4415~~

with Fe. negatives

Applied to Chart 848 after review JFW 6/9/47

Applied to Charts 1248 & 1249 after review 2 July 47 HN.

Applied to Ch. 140 (Small Craft) after review.
10-14-59 JFW