

# 8105

Diag. Cht. No. 1002.

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE  
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION  
COAST AND GEODETIC SURVEY

## DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No HY-100-3-54 Office No. H-8105

### LOCALITY

State Florida

General locality Straits of Florida

Locality W. End - Nicholas Channel

1954

CHIEF OF PARTY

L. S. Hubbard

LIBRARY & ARCHIVES

DATE May 10, 1961

8105

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. H-8105

Field No. Hy-10354  
<sup>100-3-54</sup>

State FLORIDA

General locality STRAITS OF FLORIDA  
~~NICHOLAS CHANNEL~~

Locality W. END - NICHOLAS CHANNEL  
~~WEST OF CAY SAL BANK & NORTH OF CUBA~~

Scale 1:100,000 Date of survey 12 to 28 June 1954

Instructions dated 20 Mar. 1952; 9 Mar. 1953 & 27 Mar. 1954

Vessel SHIP HYDROGRAPHER

Chief of party L.S. HUBBARD

Surveyed by W.J. CHOVAN, G.E. MORRIS, JR., R.M. STONE, MT. PAULSON,  
C.S. FROST, G.W. THOMPSON & J.D. HODGES

Soundings taken by ~~XXXXXXX~~ fathometer, graphic recorder, ~~XXXXXXX~~

Fathograms scaled by SHIP PERSONNEL

Fathograms checked by PERSONNEL OF NORFOLK PROCESSING OFFICE

Protracted by R.D. LYNN (NORFOLK OFFICE)

Soundings penciled by R.D. LYNN " "

Soundings in fathoms ~~1000~~ at MLW ~~1000~~

REMARKS: THIS SURVEY WAS CONTROLLED BY EPI.

26

## REVIEW

### TO ACCOMPANY HYDROGRAPHIC SURVEY

H-8105

HY-10354

NICHOLAS CHANNEL  
SCALE 1:100,000

1954  
SHIP HYDROGRAPHER

Chief of Party: L. S. Hubbard

#### A. PROJECT:

Project CS-328, instructions dated 20 March 1952, supplemental instructions dated 9 March 1953, and 27 March 1954.

#### B. SURVEY LIMITS AND DATES:

This survey is in the Nicholas Channel westward from longitude 80° 19' to longitude 81° 06' 30" around the western side of Cay Sal Bank and the northern side of Cuba. The northern limit is <sup>latitude</sup> longitude 23° 59' and joins H-8104. The sheet is about 60% complete, the western portion remaining (to be done). This sheet will join H-8017 (1952-54) to the west. ← See Review Par. 5 (1954)

Work began on 12 June 1954 and concluded on 28 June 1954.

#### C. VESSEL AND EQUIPMENT:

The Ship HYDROGRAPHER was used solely in this survey using 808 type fathometer number 132, <sup>and</sup> NMC II number 68.

The turning radius at sounding speed is 80 - 120 meters.

#### D. TIDE AND CURRENT:

The standard tide gage at Key West, Florida was used for tides with a range ratio of 1.5 and a time correction of minus 1 hour. Also see Tide Note.

No current stations were observed within the limits of this sheet.

#### E. SMOOTH SHEET:

The smooth sheet <sup>was originally</sup> ~~is being made~~ and plotted by the Norfolk Processing Office. However, to assist in verification, the records were digitized and a new smooth sheet was plotted by Gerber Digital Plotter at PMC, Seattle, Wash. (See Review Par. 4)

F. CONTROL STATIONS:

Control was by EPI using stations EPIG and EPIH.

Station EPIG was located at Key West, Florida at triangulation station EPIG, 1954 by L. S. Hubbard on the U. S. Naval Station.

Station EPIH was located at Miami Beach at triangulation station EPIH, 1954 by L. S. Hubbard on the north side of the main channel on the south end of Miami Beach. It is on the U. S. Government Reservation, Engineer Department.

G. SHORELINE AND TOPOGRAPHY:

The Cuban shoreline was transferred from Cuban Chart 2624 and is adjusted to hydrographic cuts on lighthouses. *No Shoreline is applied to the smooth sheet.*

H. SOUNDINGS:

The soundings were taken by fathometer. See item "C". A Velocity Correction Report and a Fathometer Correction Report will be sent to the Norfolk and Washington Offices.

I. CONTROL OF HYDROGRAPHY:

Control for the entire sheet was by EPI.

J. ADEQUACY OF SURVEY:

This sheet has not been completed and is not considered adequate at this date. *Sheet considered adequate within its limits.*

K. CROSSLINES:

This sheet has not been completed at this date. *Crosslines adequate. See Review Par. 3*

This report has been prepared by an officer who was not aboard this ship at the time of the survey and is to be considered only as a review or aid in further work on this sheet.

Respectfully submitted,

*J. Morgan Ogilvie*  
J. Morgan Ogilvie  
Ensign, USC&GS

Approved & Forwarded:

Walter J. Chovan  
Comdr., USC&GS  
Commanding Officer  
Ship HYDROGRAPHER



HY 8105  
1954

-3-

*see table in verifier's report*

## STATISTICS

<u>Letter Day</u>	<u>Date</u>	<u>Vol.</u>	<u>No. Pos.</u>	<u>Stat. Mi.</u>
A	6-12	I	205	160.2
B	6-13	I	273	233.0
C	6-14	I	284	261.0
D	6-15	I	135	124.8
E	6-22	I	51	47.8
F	6-23	I, II	260	218.7
G	6-24	II	285	223.8
H	6-25	II	224	203.8
J	6-26	II	265	240.4
K	6-27	II, III	273	246.6
L	6-28	III	115	102.7
			<hr/> 2370	<hr/> 2062.8

Square Stat. Miles: 1190

## TIDE NOTE

A standard tide gage was maintained at Key West, Florida at latitude  $24^{\circ} 33.2$  N, longitude  $81^{\circ} 48.5$  W. Mean low water of the gage is the 4.3 foot mark on the tide staff as per Directors letter of 9 August 1954. The gage is for the entire area of this sheet as directed in the letter of 9 August 1954. There is a 1.5 range ratio and a minus (-) one hour time correction to be applied as per letter of 9 August 1954.

Tides for the project area for 1954 were determined by using the observed tides of Key West, supplied by the office, and using the above height and time corrections.

## EPI CORRECTORS

(in microseconds)

## STRAITS OF FLORIDA

Surveys: H-8104, (HY-10254)  
 H-8105, (HY-10354)  
 H-8112, (HY-10154)  
 H-8017, (HY-20152)

<u>Date</u>	<u>EPI Corrector</u>			
	G		H	
	<u>Regular</u> <u>Set #31</u>	<u>Spare</u> <u>Set #11</u>	<u>Regular</u> <u>Set #32</u>	<u>Spare</u> <u>Set #10</u>
5 May - 28 June	-5.5	-5.0	-5.9	-4.4

Comp: GEM  
 Chkd: JDH

1954  
✓

## INSTRUMENTAL CORRECTIONS

1954

SHIP HYDROGRAPHER

L. S. Hubbard, Comdg.

808 Fathometers

No. 132					No. 153				
Scale	0.1	0.2	0.5	1.0 fm. corr.	Scale	0.1	0.2	0.5	1.0 fm. corr.
A	<del>0.2</del>	<del>0.2</del>			A	-0.2	<del>-0.2</del>		
B	-0.6	<del>-0.6</del>	-0.5		B	<del>1.1</del>	<del>1.0</del>	<del>1.0</del>	
C	-1.1	-1.2	-1.0		C	<del>1.7</del>	<del>1.6</del>	<del>1.5</del>	
D		-1.2	<del>-1.5</del>	-1.0	D		<del>0.8</del>	<del>0.5</del>	<del>1.0</del>
C+D									

NMC Fathometer

Scale	0.2	0.5	1.0	2.0	4.0 fm. corr.
0-400, 400-800	-1.2	<del>-1.5</del>	-1.0	-2.0	
Deep			<del>-3.0</del>	-4.0	-4.0

Edo Fathometer

Scale	0.2	0.5	1.0	2.0	4.0 fm. corr.
0-600, 600-1200	-4.6	<del>-4.5</del>	-5.0	-4.0	
1200-1800				<del>-22.0</del>	
Deep				<del>-30.0</del>	<del>-20.0</del> -40.0

Revised from comparison  
along sdg. lines.

5-19-66

1954

Note:

Velocity templates were originally used to reduce the soundings on this survey. However, digitizing the correctors required a table (following) which was devised from historical information.

## VELOCITY TEMPLATE ABSTRACT

1954

Ship HYDROGRAPHER

Project GS-328

DLW

Sheets H-8017, H-8015, H-8104, H-8112, H-8013, H-8015, H-8016, H-8018, H-8061

No. 1		No. 2		Gulf of Mexico Mean	
Depths fm	Template m/s	Depths fm	Template m/s	Depths fm	Template m/s
0-55	1545	0-75	1545	0-101	1545
55-155	1530	75-220	1530	101-280	1530
155-325	1515	220-400	1515	280-530	1515
325 & over	1500	400 & over	1500	530-2000	1500
				2000 & over	1515

Sheets H-8017, H-8105, H-8013, H-8015, H-8016, H-8018, H-8061  
Gulf of Mexico Mean

Sheet H-8104 A thru M day, 5 May thru 17 May - No. 1  
N thru T day, 21 May thru 26 May - No. 2  
U thru end, 8 June thru end, Gulf of Mexico Mean

Sheet H-8112 A thru C day, 5 May thru 17 May - No. 1  
D day, 21 May - No. 2  
E day thru end, 16 June thru end - Gulf of Mexico Mean

H-8105 use table 2 as per memo dated 5/14/66

insert copy table #2  
" " memo

C324

*Chambers*

ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION

AIR MAIL

Director, Pacific Marine Center  
Coast and Geodetic Survey, ESSA  
1801 Fairview Avenue, East  
Seattle, Washington 98102

May 18, 1966

C32

Chief, Marine Chart Division

Velocity correctors for 1952-1954 Hydrographic Surveys -  
Straits of Florida

The Office of Hydrography and Oceanography has orally  
approved (telephone conversation: R. Starr/E. Thomas) the  
Straits of Florida Velocity Correction Tables I and II as  
adequate for use to correct data in the area shown on  
attachment.

Table I should be used north of the Gulf Stream axis and  
Table II south of the axis. These tables are based on a  
calibration velocity of 800 fms./sec. and must be converted  
for use of the 808 fathometers which are calibrated for a  
velocity of sound of 820 fms./sec. The printout of each  
survey should contain the converted table used.

Tables I and II are enclosed.

(Signed) Lorne G. Taylor

Lorne G. Taylor

Enclosures: 3

# VELOCITY CORRECTIONS

800 fm./sec.  
NMC-2 EDO

Table 2

Corrections to Depth

0.1 fm.	5.0 fm.	4.3 fm.	91.0 fm.	DEW
+ 0.2	7.0	+ 4.5	95.0	
+ 0.3	9.0	+ 4.7	100.0	
+ 0.4	11.0	+ 4.9	105.0	
+ 0.5	14.0	+ 5.0	112.0	
+ 0.7	18.0	+ 5.5	123.0	
+ 0.9	22.0	+ 6.0	135.0	
+ 1.1	26.0	+ 6.5	148.0	
+ 1.3	30.0	+ 7.0	160.0	
+ 1.5	34.0	+ 8.0	195.0	
+ 1.7	38.0	+ 9.0	222.0	
+ 1.9	42.0	+10.0	254.0	
+ 2.1	46.0	+11.0	289.0	
+ 2.3	50.0	+12.0	327.0	
+ 2.5	54.0	+13.0	367.0	
+ 2.7	58.0	+14.0	408.0	
+ 2.9	62.0	+15.0	462.0	
+ 3.1	66.0	+16.0	542.0	
+ 3.3	70.0	+17.0	615.0	
+ 3.5	74.0	+18.0	722.0	
+ 3.7	78.0	+20.0	835.0	
+ 3.9	83.0	+22.0	933.0	
+ 4.1	87.0	+24.0	1018.0	

Table above submitted by Staff, Oceanographic Analysis Branch,  
is extended to greater depths from field corrections in  
sounding volumes, H-8061 (1953-54)

+26.0 fm.	1035 fm	+38.0 fm	1435 fm	+50.0 fm	1750 fm
+28.0	1115	+40.0	1495	+52.0	1840
+30.0	1185	+42.0	1545	+56.0	Deepest
+32.0	1250	+44.0	1605		
+34.0	1315	+46.0	1655		
+36.0	1380	+48.0	1705		

## DRAFT CORRECTORS

1954

Ship HYDROGRAPHER

L. S. Hubbard, Comdg.

<u>From</u>	<u>To</u>	<u>0.5 fm. corrector</u>
5 May	0712 30 July	0.0
0712 30 July	31 July	-0.5
5 August	1424 29 August	0.0
1424 29 August	30 August	-0.5
9 September	1000 29 October	0.0
1000 29 October	30 October	-0.5
6 November	0500 19 November	0.0
0500 19 November	21 November	-0.5

Draft correction zero for 1.0, 2.0, and 4.0 fathom correctors for all days.



## DRAFT CORRECTIONS

1954

Ship HYDROGRAPHER		L. S. Hubbard, Comdg.	
From	To	0.1 fm. corr.	0.2 fm. corr.
5 May	0936 10 May	0.0	0.0
0936 10 May	17 May	-0.1	-0.2
21 May	1912 25 May	0.0	0.0
1912 25 May	29 May	-0.1	-0.2
7 June	1424 12 June	0.0	0.0
1424 12 June	17 June	-0.1	-0.2
21 June	0448 22 June	-0.1	0.0
0448 22 June	0000 27 June	0.0	0.0
0000 27 June	30 June	-0.1	-0.2
9 July	16 July	0.0	0.0
21 July	0000 26 July	0.0	0.0
0000 26 July	31 July	-0.1	-0.2
5 August	0000 7 August	-0.1	0.0
0000 7 August	0330 12 August	0.0	0.0
0330 12 August	15 August	-0.1	-0.2
21 August	0000 26 August	0.0	0.0
0000 26 August	30 August	-0.1	-0.2
9 Sept.	1320 13 Sept.	0.0	0.0
1320 13 Sept.	16 Sept.	-0.1	-0.2
21 Sept.	1312 27 Sept.	0.0	0.0
1312 27 Sept.	30 Sept.	-0.1	-0.2
6 October	0000 7 October	-0.1	0.0
0000 7 October	9 October	0.0	0.0
15 October	2136 17 October	0.0	0.0
2136 17 October	20 October	-0.1	-0.2
23 October	0448 26 October	0.0	0.0
0448 26 October	30 October	-0.1	-0.2
6 Nov.	1200 10 Nov.	0.0	0.0
1200 10 Nov.	12 Nov.	-0.1	-0.2
16 Nov.	0400 20 Nov.	-0.1	-0.2
0400 20 Nov.	21 Nov.	-0.2	-0.2

APPROVAL SHEET

Survey considered complete within  
area covered.

This survey is not complete and the approval sheet should be made after the smooth sheet has been plotted.

The field work accomplished was under the immediate supervision of Captain L. S. Hubbard. Daily inspections of the records, fathograms and boat sheet were made by him while the survey was in progress. The area<sup>not</sup> covered was deliberately left in order to permit the running of sounding lines en route to and from port.

No topography of Cay Sal Bank was available, however, numerous rocks, hills, bluffs and lighthouses were cut in by sextant and Gyro bearings while on EPI sounding lines. This probably will be of value when topography of Cay Sal Bank becomes available.

Cuts  
not  
used  
on smooth  
sheet.

However they  
have been  
retained.  
(See next  
page)

*Walter J. Chovan*

Walter J. Chovan  
CDR, C&GS

Commanding, Ship HYDROGRAPHER

# CROSS REFERENCING OF POSITION NUMBERS

H-8105

<u>Original Records</u>				<u>Automated Records</u>		
(Sounding Volumes)						
Day	Date	Position		Day	Year	Positions
A	6-12-54	1-205		163	54	1-204
B	6-13-54	1-273		164	54	205-475
C	6-14-54	1-284		165	54	476-764
D	6-15-54	1-135		166	54	765-898
E	6-22-54	1-51		173	54	899-949
F	6-23-54	1-260		174	54	950-1216
G	6-24-54	1-61		175	54	1217-1278
	6-24-54	95-285		175	54	1279-1468
H	6-25-54	1-224		176	54	1469-1695
J	6-26-54	1-265		177	54	1696-1966
K	6-27-54	1-273		178	54	1967-2245
L	6-28-54	1-115		179	54	2246-2367

The total number of positions for a certain day as recorded in the original records and the automated records may differ by a few numbers. Positions not plotted and rejected positions recorded in the original records are not reflected in the totals of the automated records. Also additional artificial fixes (turning positions, etc.) recorded in the automated records are not reflected in the totals of the original records.

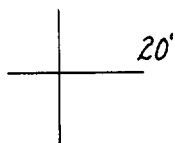
## ARTIFICIAL FIXES

Day	Year	Positions
165	54	506, 549, 718, 721, 739
166	54	776, 777
173	54	931

*(Artificial fixes continued on next page)*

ARTIFICIAL FIXES (CONT)

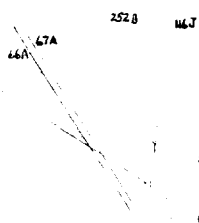
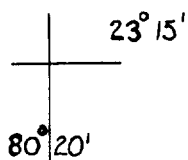
Day	Year	Positions
174	54	991, 999, 1036, 1055, 1057, 1063, 1111
176	54	1567, 1666, 1669
177	54	1709, 1711, 1749, 1900, 1928, 1941
178	54	2082, 2101, 2102, 2106, 2154, 2189, 2241
179	54	2253, 2254, 2261, 2264, 2296, 2317



To Accompany

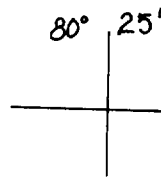
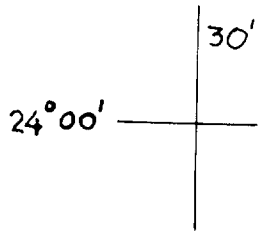
H-8105

HY-10354



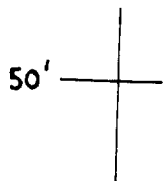
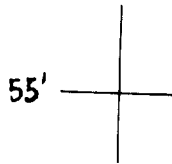
CAYO MEGANO

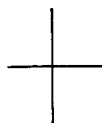
To Accompany  
H-8105



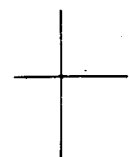
ELBOW CAY TOWER

16A  
75Q  
18A  
99A





20'



23° 15'

35'

38A  
38A  
39A  
59A  
37A  
54A  
65A  
1500  
78F

30'

64A  
67A

80° 25'

252 B CAYO BAHIA DE CADIZ

20' +

+

+

23° 15' +

+

+

60° 45'

1709 1609 1659 1676 1639 1626 1646 1609 1596 1589 1576 1566

40'

80°

BAR (Tallest of 2 Masts)



25'

80° 20'

45'

+

23° 40'

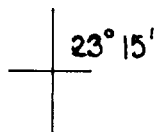
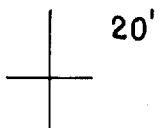
+

35'

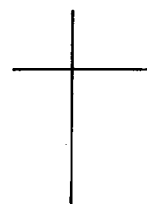
CAY SAL

Purple bearing SW tan  
Red " E tan Cliff  
Orange " N tan  
Green " N GAB Bldg





CAYO PIEDRAS  
LITE

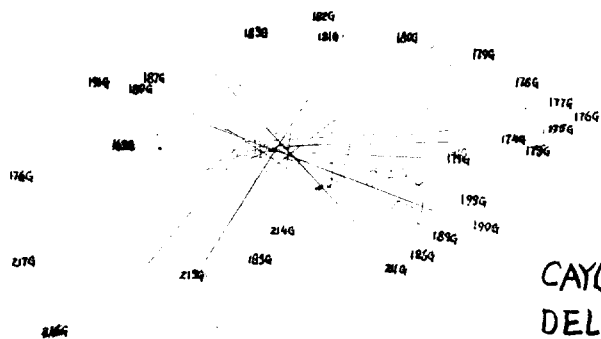


81°00'

10'

05'

20'



CAYO CRUZ  
DEL PADRE

23° 15'



55'

80° 50'

NORFOLK PROCESSING OFFICE  
ADDENDUM  
To Accompany

HYDROGRAPHIC SURVEY H-8105 (Hy-10354)

GENERAL

This survey was considered complete and was smooth plotted ✓  
in accordance with the Director's letter to Norfolk District  
Officer, dated 1 April 1960, 839:hrm.

*Survey replotted by  
Gerber Digital Plotter to  
aid verification process.*

SOUNDINGS

Soundings are in generally good agreement at crossings.  
How-ever, there are minor discrepancies in depths along the West ✓  
edge of Salt Key Bank and along the North coast of Cuba, where  
the gradient is steep and the bottom irregular. This condition  
may be attributed to minor displacement due to the inherent weak-  
ness of EPI where exact positioning is needed.

All fathograms were check scanned by personnel of this Office.  
The soundings were reduced with templates using the velocity cor- ✓  
rections entered on the fathograms, and were entered in the vol-  
umes in red pencil under corresponding field readings.

*Field readings subsequently digitized for machine plot*

OVERLAYS

The bearings to natural objects, which are recorded in the  
EPI abstracts, were plotted on a Kodatrace overlay to accompany  
the smooth sheet. Numerous sextant angles, observed on objects on  
Double Headed Shot Key, were not plotted. In these instances, El-  
bow Cay Tower was used as the initial and this Office was unable  
to obtain a satisfactory intersection of bearings to locate this  
object, either on this survey or on H-8104 which makes a junction  
to the North.

*Bearings not  
used on  
Smooth sheet.*

INSERTS

When the smooth sheet was being constructed, an insert was overlay ✓  
prepared for plotting the positions appearing in the NE part of  
the boat sheet. It was later found that these positions were re-  
corded in the volumes and were smooth plotted on adjoining survey  
H-8104. The insert was left on the smooth sheet to avoid damag-  
ing the paper.

*Bearings to natural objects  
retained in Desc. Report on  
overlay.*

*Insert not plotted on  
new automated smooth sheet.*

Norfolk, Va.  
3 May 1961

Respectfully submitted,  
*Hugh L. Proffitt*  
Hugh L. Proffitt  
Cartographer

RHC

## TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~

31 May 1961

Division of Charts: R. H. Carstens

Plane of reference approved in  
3 volumes of sounding records for

HYDROGRAPHIC SHEET 8105

Locality Nicholas Channel West of Cay Sal Bank and North of Cuba

Chief of Party: L. S. Hubbard (1954)  
Plane of reference is mean low water  
ft. on tide staff at  
ft. below B. M.

Height of mean high water above plane of reference at the working grounds  
is: 2.0 ft.

Condition of records satisfactory except as noted below:

Burt W. Wilson  
Chief, Tides and Currents Branch

~~Chief, Division of Tides and Currents~~

# GEOGRAPHIC NAMES

Survey No. 8105

Name on Survey	A On Chart No. 1002	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
Straits of Florida	✓									1
Nicholas Channel	✓									2
Cay Sal Bank	✓	← added during review								3
										4
										5
										6
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*George M. Ball*  
*Geographic Names*  
*6/22/61*



## Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. .8105....

Records accompanying survey: Smooth sheets .1....;  
 boat sheets .1....; sounding vols. .3....; wire drag vols. ....;  
 Descriptive Reports .1....; graphic recorder envelopes .6....;  
 special reports, etc. 1. Cahier. - EPI. Plotting Abstracts and  
 .1-Overlay, plot of bearings:.....

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

Number of positions on sheet	2370
Number of positions checked	2370
Number of positions revised	20
Number of soundings revised (refers to depth only)	0 (1)
Number of soundings erroneously spaced	0
Number of signals erroneously plotted or transferred	0
Topographic details	Time .....
Junctions	Time .....
Verification of soundings from graphic record	Time ..... 8
Special adjustments	Time ..... 0

Verification by *J. B. Chambers* Total time *113* } TOTAL 157 hrs.  
*Donnis Rosenberg* Date *10-24-68*  
*44* } Date *10-24-68*  
 Reviewed by *Dale E. Westbrook* Time *60* hrs. Date *12/27/68*

Note: 81 hrs. additional time  
 was spent logging  
 this survey, preparing it  
 for automated plotting,  
 during the  
 verification phase.

H-8105 (1954)

INFORMATION FOR FUTURE PRE-SURVEY REVIEWS

No information for future pre-survey reviews is deemed necessary for this area.

Dale E. Westbrook



OFFICE OF HYDROGRAPHY AND OCEANOGRAPHY

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8105

FIELD NO. HY-100-3-54

Florida, Straits of Florida, West End of Nicholas Channel

SURVEYED: June 1954

SCALE: 1:100,000

PROJECT NO.: CS-328

SOUNDINGS: 808 and NMC II  
Depth Recorders

CONTROL: EPI (Electronic  
Position Indicator)

Chief of Party.....	L. S. Hubbard
Surveyed by.....	W. J. Chovan
.....	G. E. Morris, Jr.
.....	R. M. Stone
.....	M. T. Paulson
.....	C. S. Frost
.....	G. W. Thompson
.....	J. D. Hodges
Plotted by.....	Gerber Digital Plotter
Soundings by.....	Gerber Digital Plotter
Verified by.....	J. C. Chambers
.....	D. J. Romesburg
.....	(Rockville)
Reviewed by.....	D. E. Westbrook
.....	date: December 20, 1968
Inspected by.....	R. H. Carstens

1. Description of the Area

The area covered by this survey is located in the south-east portion of the Straits of Florida, at the west end of Nicholas Channel, southwest of Cay Sal Bank.

This survey portrays a relatively steep slope from about 200-fm. depths, off the shelves of both Cuba to the south and Cay Sal Bank to the northeast, down to 500-600 fm. depths over the gently sloping sea floor near the center of Nicholas Channel. The slopes are somewhat irregular, particularly off Cay Sal Bank where numerous small canyons intersect the slope.

2.

There are no other outstanding features within the present survey area and no dangers to surface navigation exist.

## 2. Control and Shoreline

The control is adequately described in the Descriptive Report.

No shoreline has been shown on the smooth sheet. However, a few geographic names have been added to the sheet for orientation purposes.

## 3. Hydrography

- A. Depths at crossings are in good agreement.
- B. The usual depth curves were adequately delineated.
- C. The development of the bottom configuration and determination of least depths are considered adequate.

## 4. Condition of the Survey

The sounding records, automated plotting, and the Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual, and the Instruction Manual--Automated Hydrographic Surveys.

This survey was originally smooth plotted by manual methods prior to the availability of automated plotting equipment. In order to facilitate the verification routine, and to eliminate the tedious inking of soundings, the decision was made to digitize the original data and replot the survey using standard automated methods.

Since this survey is the first to be processed in this manner, an evaluation of the results is thought to be appropriate.

A rough estimate of the time it might have taken to manually verify and ink this sheet is about 300 hours. The actual verification time spent was 238 hours, including logging time, but not including computer or machine plotting time. Although it can be concluded that some savings of time has been effected using this system it will take several surveys before a good estimate of time savings can be made. Nevertheless, more experience using these methods should produce greater savings.

3.

In addition to the resulting savings in time, a machine plotted smooth sheet is generally more accurate overall than a manually plotted sheet (less distortion, etc.), Also, the complete reprocessing of the original data and its subsequent replotting enables the verifier to compare manual and automated plots which greatly aids and enhances the verification of the survey. Much of the time previously spent tediously inking soundings can now be utilized for knowledgeable verification procedures.

The original manually plotted smooth sheet will be destroyed after the review is signed.

It will be noticed that soundings on many positions have been omitted. This was caused by the selection in the field of a fix interval of five minutes and a sounding interval of two minutes, a practice considered undesirable.

A portion of crossline from Pos. 1247-01 to Pos. 1250-02 had to be rejected, since it differed by as much as 30 fms. with other sounding lines at crossings. It was determined that the discrepancy was most probably caused by a momentary fault in the fathometer sounding speed.

No distortion ticks were plotted on the automated smooth sheet by the Pacific Marine Center as required by the manual.

#### 5. Junctions

Adequate junctions were effected with H-8104 (1954) on the north, and H-8733 (1963) on the west. There is, however, a holiday (outlined by dashed lines on the smooth sheet) of approximately 130 sq. mi. in about lat.  $23^{\circ}25'$ , long.  $80^{\circ}58'$  which is not covered by any contemporary survey, and which would normally have been surveyed on H-8733 (1963). The holiday area was not covered because an amendment to the Project Instructions for OPR-328, dated March 22, 1963, stated that in view of the international situation the limits of hydrography shall extend no closer than 12 miles from Cuba.

There are no surveys with which to make junction to the south and east. However, the present survey is in harmony with charted depths in these areas.

#### 6. Comparison With Prior Surveys

H-1532	(1:2,400,000)	1880-83
H-1514	(1:2,400,000)	1881
H-1091	(1:400,000)	1894
H-4088a	(1914-23)	

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4.

All of the above surveys are diagrammed as covering the area of the present survey. Only one, though, (H-1532) contains soundings in the common area. This prior survey consists of reconnaissance profile lines made by the Steamer BLAKE, two lines of which cross the present survey. These few soundings compare reasonably well with the present survey. A detailed comparison will not be made due to the much smaller scale and lack of complete information on the prior survey.

The present survey supersedes the above surveys within the common area.

7. Comparison With Chart 1113, 8th., ED., March 20, 1967  
Chart 1002, 20th., ED., Sept. 30, 1968

A few charted soundings originate with the previously discussed survey H-1532 (1880-83) which requires no further consideration. These soundings have been supplemented on the charts by soundings from the boat sheet of the present survey, and from U.S. Navy reconnaissance trackline compilations Bp-35935, 35937, and 48066.

The larger scale, more accurate control, and more precise depth determination on the present survey qualifies it to supersede the charted soundings within the common area.


8. Compliance With Instructions

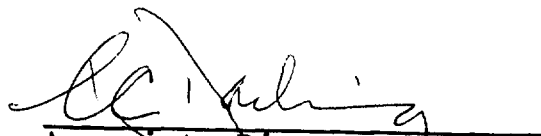
This survey adequately complies with the Project Instructions.

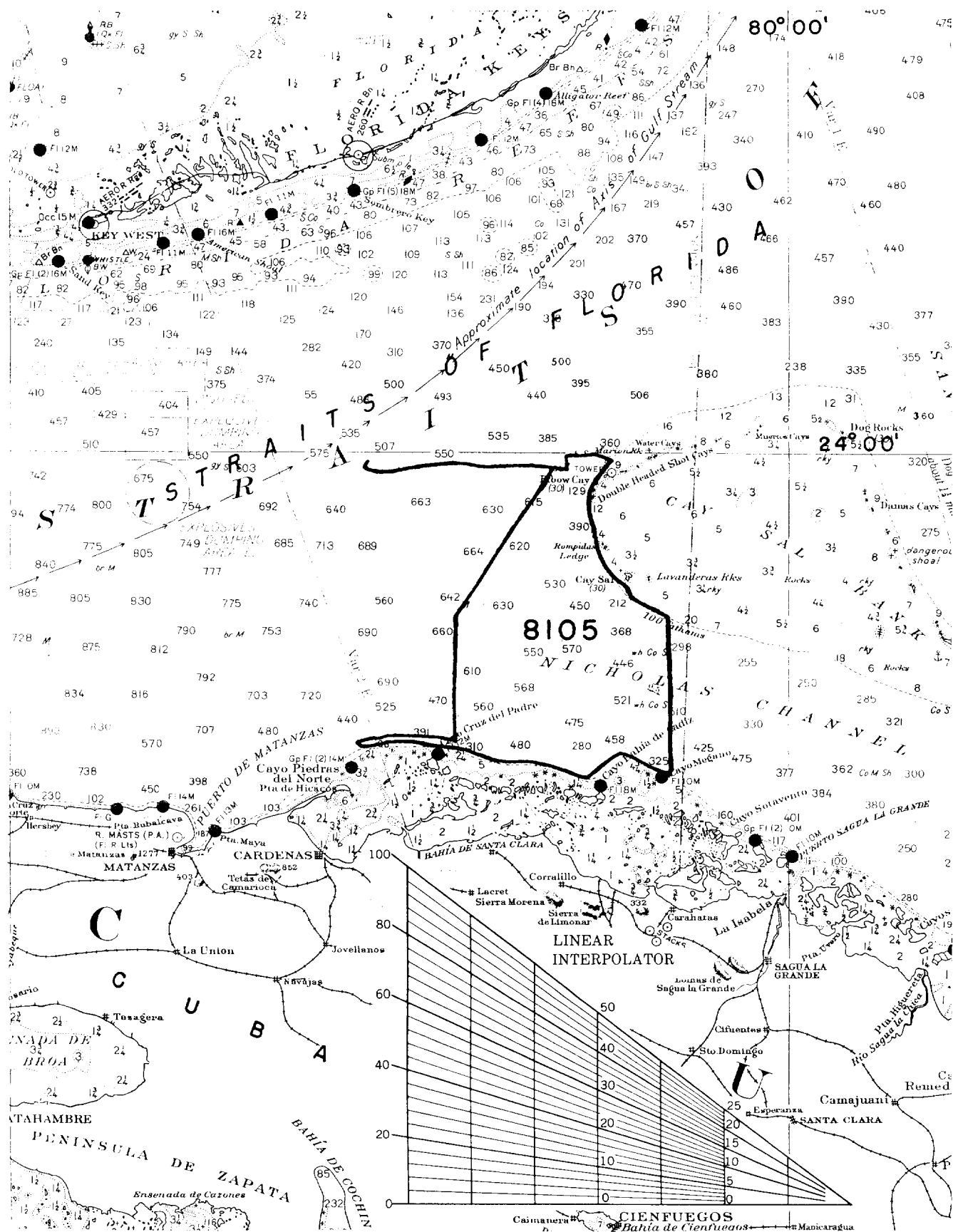
9. Additional Field Work

This survey is considered to be an excellent basic survey and no additional field work is recommended.

Examined and Approved:

  
Chief  
Marine Chart Division

  
Associate Director  
Office of Hydrography  
and Oceanography



## NAUTICAL CHARTS BRANCH

SURVEY NO. H-8105

## Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
7/19/61	1002	O. Svendsen	Exam. No corr. applied Before After Verification and Review
<del>10/7/70</del>	<del>1002</del>	<del>O. Williams</del>	<del>App'd after verified, reviewed and inspected.</del>
✓10/63	1113	H. Quinby	Before After Verification and Review Examined no correction
8-24-70	1007	Eric Tray	Part app'd Before After Verification and Review Examined review for critical corrections only. Fwd. for application to large scale chart
10/7/70	1002	O. Williams	Consider fully app'd. Before After Verification and Review Inspected
10/30/70	1113	O. Williams	Before After Verification and Review, Inspected, Fully App'd. Added curves & sdgs.
11/8/71	1007	J. McKellar	Before After Verification and Review & inspection. Fully applied thru chart 1002
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-216A-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.