

# 8011

*21117K*

Diag. Cht. Nos. 1252-2 & 1351-2.

Form 504

U. S. DEPARTMENT OF COMMERCE

COAST AND GEODETIC SURVEY

## DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. HY-8152 Office No. H-8011

### LOCALITY

State Florida

General locality Strait of Florida

Locality Key West to Dry Tortugas

1952

CHIEF OF PARTY

J. C. Sammons

LIBRARY & ARCHIVES

DATE April 10, 1953

USCOMM-DC 5087

8011

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*(filed with fgms)*

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-8011

Field No. HY-8152

State ..... Florida .....

General locality ..... Straits of Florida .....

Locality ..... Key West to Dry Tortugas .....

Scale ..... 1:80,000 ..... Date of survey 26 April to 21 July 1952

Instructions dated ..... 20 March 1952 .....

Vessel ..... HYDROGRAPHER .....

Chief of party ..... Jack C. Sammons .....

Surveyed by ..... R.A. Earle, I.R. Rubottom, M.T. Paulson & E.E. Jones .....

Soundings taken by fathometer, graphic recorder, ~~hydrographic~~ .....

Fathograms scaled by ..... R.T.K. & W.W.W. .....

Fathograms checked by ..... R.T.K. & W.V.W. .....

Protracted by ..... R. T. Koopman & W. V. Warner .....

Soundings penciled by ..... R.T. Koopman & W.V. Warner .....

Soundings in fathoms ~~XXXX~~ at MLW ~~XXXX~~ *and are true depths*

REMARKS: ..... Offshore survey .....

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DESCRIPTIVE REPORT

To Accompany

Hydrographic Survey H-8011 (HY-8152)

26 April to 21 July 1952

Ship HYDROGRAPHER      Scale 1:80,000

Jack C. Sammons  
Chief of Party

A. PROJECT:

This survey was accomplished under Supplemental Instructions for project CS-328, dated 20 March 1952, from the Director to the Commanding Officer, Ship HYDROGRAPHER. These instructions supersede all previous instructions for this project.

B. SURVEY LIMITS AND DATES:

This survey is offshore in the Straits of Florida. It extends from Sand Key in longitude  $81^{\circ} 55'$  to Dry Tortugas, longitude  $83^{\circ} 06'$ , and from the Florida Reefs southward to latitude  $24^{\circ} 00'$ . An index of adjacent hydrographic sheets is attached.

Starting at the northwest corner of the sheet and proceeding through the north, east and south this survey joins:

1. Survey H-8016 (HY-10452), scale of 1:100,000, partly surveyed in 1952.
2. Survey H-954, Scale 1:80,000, surveyed in 1867 -68
3. Survey H-955, Scale 1:40,000, surveyed in 1867 -68
4. Survey H-3978, Scale 1:40,000, surveyed in 1917-
5. Survey H-3387, Scale 1:40,000, surveyed in 1912-
6. Survey H-3300, Scale 1:40,000, surveyed in 1911-
7. Survey H-3385, Scale 1:10,000, surveyed in 1912-
8. Survey H-3384, Scale 1:20,000, surveyed in 1912-
9. Survey H-3299, Scale 1:40,000, surveyed in 1911-
10. Survey H-4166, Scale 1:15,000, surveyed in 1919-20-
11. Survey H-4169b, Scale 1:40,000, surveyed in 1920-
12. Survey H-7933, Scale 1:80,000, surveyed in 1951-
13. Survey H-8017 (HY-20152), Scale 1:200,000, surveyed in 1952.

The northern and eastern limits are the project limits. Satisfactory junctions were made with old surveys along the northern limits and with survey H-7933 of 1951, along the eastern limit. The survey was carried as close to the reefs as safety of the ship would permit. The survey was continued on the south on sheet H-8017 (HY-20152). Modern surveys will be made to the westward of this sheet and a satisfactory junction with this survey will be made at that time.

The field work was started on 26 April and was completed on 21 July 1952. The survey was made with the ship basing out of St. Petersburg, Florida, with Key West, Florida, being used as a temporary base of operations.

Due to heavy traffic in the Straits and a shortage of experienced watch officers it was necessary for the ship to return to anchorage north of the Florida Reefs at night. The layout of lines was such that the development of the survey could be made without long runs to begin sounding lines. A heavy concentration of lines does occur in the vicinity of entrances to anchorages.

#### C. VESSEL AND EQUIPMENT:

All work in this survey was accomplished by the Ship HYDROGRAPHER. The ship has a turning radius of 80 to 120 meters depending on the wind and/or current. The "Settlement and Squat Report" forwarded 11/2/50 shows no corrections on the fathom scale and there have been no changes in the ship's trim or hull since that time.

No subparties were operated from the ship on this survey.

Two 808-J type depth recorders and a NMC-2 fathometer were used as sounding units on this survey. The 808-J type units were used in water of less than 160 fathoms and the NMC-2 was used in greater depths. The installation of the 808-J type machines was such that either could be used at will and both are considered regular units and neither a standby. When shifting from one type machine to the other the two were operated simultaneously for a short period of time to assure the correct operation of the machines and to obtain comparisons between the two.

All soundings were recorded from the fathograms and they are the permanent records of the depths.

To obtain instrumental corrections, numerous simultaneous comparisons were made between the 808-J model fathometer and a wire sounding machine, with an accurately calibrated sheave, in depths of less than 25 fathoms as recommended in the Hydrographic Manual. The instrumental corrections of the NMC-2 fathometer were obtained by simultaneous comparisons with the 808 fathometer, because of the impossibility of obtaining accurate wire soundings in greater depths. A study of fathometer reports for previous seasons showed that simultaneous comparisons

with the wire sounding machine were made in deep water and the fathometer correctors were obtained by plotting the fathometer readings against the depth obtained by wire soundings. Some similar comparisons were made during the early part of this season, but the resulting differences were found to be irregular and increasing with the depth. This was believed to have been due to slopes and curves in the wire caused by strong currents in and near the Gulf Stream. Please refer to report on Fathometer Corrections for additional details. A copy of the fathometer correctors is attached to this report. *Report filed with records*

The gyro compass was used at all times while the survey was in progress. Bearings on charted objects were taken when proceeding in and out of port and sun azimuths were observed on the working grounds to check the operation of the compass. The error was found to be negligible.

#### D. TIDE AND CURRENT STATIONS:

No tide or current stations were occupied within the limits of hydrography on this survey.

Portable tide gages were installed and maintained at Sand Key Lighthouse and at Loggerhead Key. The observed tides at the Sand Key tide station were used for the reduction of soundings during the time the gage was in operation. For the remainder of the period the observed tides at the Loggerhead Key tide station were used. (See Tidal Note for additional information).

#### E. SMOOTH SHEET

The smooth sheet was plotted by junior officers attached to the Ship HYDROGRAPHER.

The projection was made by hand aboard the ship. This is an off-shore survey and no shoreline or topographic details were transferred to the smooth sheet.

The shoran arcs were drawn on the sheet by beam compass with the positions of the antennae as the centers of the circles. Station SAND falls just off the limit of the smooth sheet, but the projection was made large enough to include the station and the sheet was trimmed down after the arcs had been drawn. Geographic positions of several points on the circles were computed and plotted on the sheet as checks on the location of the circles.

The E.P.I. arcs were placed on the sheet with railroad curves using geographic positions of points on the arcs that were computed and furnished by the Washington Office.

The E.P.I. arcs are dashed lines and the shoran arcs are solid lines to minimize confusion of the different arcs.

F. CONTROL STATIONS:

The hydrographic lines on this survey were controlled - for the most part - by distance arcs from three shoran stations. One station was located at Sand Key Lighthouse, one on Marquesas Key and one at Loggerhead Key Lighthouse. The antennae at the lighthouse stations were located eccentrically from the lights with short antennae masts that extended approximately 15 feet above the tops of the light structures. The antennae on Marquesas Key was atop a 100 foot aluminum E.P.I. tower.

The antennae were located from triangulation stations, by triangulation methods. (See report "Geographic Positions, Observations and Computations, Shoran and E.P.I. Shore Stations," submitted 23 January 1953).

The western and southwestern portion of the sheet was beyond the range of shoran, except from station DRY, located on Loggerhead Key. In accordance with authority contained in the Director's letter, No. 22/MEK, S-1-HY, dated 23 May 1952, hydrography in this area was controlled by a combination of one shoran distance and one E.P.I. distance, EPIE, located on Grassy Key.

On the southeastern edge of the sheet, hydrography was extended to the extreme offshore limit of the sheet by using two E.P.I. stations, EPIE and EPIF located at the northern end of Boca Ceiga Bay in the vicinity of Largo, Florida.

See attached list of geographic positions for the positions of the shoran and E.P.I. stations.

G. SHORELINE AND TOPOGRAPHY:

This is an offshore survey.

H. SOUNDINGS:

All soundings on this survey were taken with 808-J type depth recorders numbers 131 SG and 132 SG or NMC-2 type fathometer. The 808-J type depth recorders were used to a general depth of 160 fathoms. In greater depths the NMC-2 fathometer was used. The effective length of

the stylus arm for these machines was determined and checked. The speed of the 808-J type machines was checked against the fathogram as described in paragraph 5554 of the Hydrographic Manual. Frequent additional checks were made during the season to assure the continued correct operation of the instruments. The speed of the 808-J type depth recorders was frequently checked by counting the number of turns of the stylus arm with the middle reed vibrating at maximum amplitude. There were times when the governor on the 808-J type machines failed to function properly. When this occurred an immediate shift was made to the other machine while repairs were being made. However, a displacement of the true soundings will occur at these times which cannot be accurately corrected. Notes have been made on the fathograms when this happened and the soundings should not be used.

The NMC-2 fathometer was equipped with a special gear which increased the travel speed of the paper four times its normal rate. This increase in speed does not effect the speed of the stylus arm or the disc on the visual red light, but makes for a more legible record on the fathograms.

The modified method of recording was used, as requested in paragraph 34 of Supplemental Instructions and as outlined in paragraph 817 of the Hydrographic Manual. All corrections were computed to be applied mechanically as outlined in paragraph 562 of the Manual.

The fathograms have the following notations made on them:

- (a) Fix marks, fix number, phase settings and the correct time on at least every sixth position mark.
- (b) The velocity template to be used is noted at the beginning of each fathogram and at each change of velocity.
- (c) Whenever a change occurs in the algebraic sum of all corrections (except velocity) the new corrector is entered at the bottom of the fathogram on the proper time ordinate if practicable. Otherwise the corrector is entered in a clear area on the fathogram paying due attention to the proper time ordinate. An abstract of the computations of these correctors is a part of this report.

In computing the correctors for use with the templates on the 808 graphs, a mean setting of 2 fathoms was used. The correctors as entered on the bottom of the 808 fathograms should be set off from the zero line on the graph.

The correctors as entered on the bottom of the NMC-2 fathogram should be set off from the zero line on the graph.



Only on rare occasions was the red light sounding read, such as when dropping down an extremely steep slope and the sounding on the fathogram was difficult to follow as it descended. All soundings are taken from the fathogram for the smooth sheet.

#### I. CONTROL OF HYDROGRAPHY:

The intersection of shoran arcs was not less than 30 degrees at any place within the limits of hydrography on this survey. Within the range of shoran distances all lines were strongly controlled, except for short periods of time due to breakdowns at the shore stations or electrical storms.

Most of the western and southwestern portion of the sheet was beyond the normal range of shoran, except from station DRY. During the early part of the season several attempts were made to carry shoran control to the western limits of the sheet, a distance of over 60 statute miles. On some occasions this was possible, but in most cases station MAR faded out beyond 51 or 52 miles. In some cases bearings were taken on Loggerhead Key Lighthouse to supplement the control when only the arc from DRY could be received.

During the period 25 June to 1 July 1952 hydrography was extended by using shoran fixes when they were obtainable. When one of the shoran stations faded, the E.P.I. station at Grassy Key, EPIE, was substituted. Shoran station MAR was removed on 2 July 1952.

During the period 17 July to 21 July, hydrography was completed on the western end of the sheet by using a combination of shoran arcs from station DRY and E.P.I. arcs from Station EPIE. The eastern portions of two offshore lines along the southeastern extremity of the sheet were controlled by two E.P.I. arcs. It will be noted that the E.P.I. distances on these lines were extremely erratic, due to technical difficulties in the adjustments of the equipment. During plotting of the smooth sheet it was necessary to make extensive use of adjustments by dead reckoning methods. The lines were first plotted on tracing paper, selecting consistent E.P.I. fixes and arcs and adjustments made accordingly. In the area where one shoran distance was received, that distance was held fixed and the line adjusted by the dead reckoning plot procedure, selecting consistent E.P.I. distances.

Procedures for calibrating shoran and E.P.I. are contained in detailed reports of each. During shoran calibrations, the position of the ship was obtained by sextant angles on triangulation stations or by short traverses from triangulation stations, and the position computations made by triangulation methods. The distances to the shoran stations were obtained from inverses or triangle computations.

Series of shoran readings were then compared with the computed distances, and the shoran "initial" or Zero Set values were obtained corresponding to these computed distances. The actual shoran "initial" or Zero Check values obtained during hydrography were abstracted and the differences applied as "correctors" to the shoran distances at each fix. A copy of the "Shoran Correctors" is attached to this report.

E.P.I. calibrations, during the period hydrography was in progress on this sheet, were obtained while the ship was at anchor and its position determined by sextant angles on triangulation stations. On 25 June 1952, the ships' position was computed by triangulation methods from sextant angles, and the distance to EPIE was obtained by Inverse Position Computations. A series of E.P.I. readings was then compared with the computed distance.

On 17 July 1952, another calibration was made while the ship was at anchor northwest of Garden Key. In this case, the mean of a series of E.P.I. distances was compared with a plot of simultaneous sextant fixes plotted on sheet HY-10452, and E.P.I. correctors were obtained for both station EPIE and station EPIF. A copy of the "EPI Correctors" is attached to this report.

The corrections as listed on the page of correctors were used in plotting the smooth sheet, except where simultaneous shoran comparisons could be made. In these instances, the shoran positions were plotted before and after a period of EPI - controlled hydrography and an independent EPI corrector determined for that portion of the sounding line. Appropriate notes have been made on the plotting abstracts concerning the corrector determined in each case.

The observed shoran readings are recorded in the top half of the space in each position block and the corrected distances are entered in ink underneath. Where simultaneous shoran positions and an EPI reading were obtained the EPI distance has been entered in the "Remarks" column of the plotting abstracts.

J. ADEQUACY OF SURVEY:

This survey is complete and adequate to supersede prior surveys for charting purposes. All junctions with contemporary adjoining surveys are satisfactory and no holidays or excessive differences exist. All depth curves can be drawn at the junctions with the other surveys without conflict. Minor differences on the boat sheet at junction with survey H-7933 occur because preliminary "Initial and Velocity Corrections" were applied to all NMC-2 soundings on this survey, but had not been applied on the prior survey.

Depth curves were drawn on the boat sheet in pencil as the survey progressed. When the survey was completed, the curves as listed in Table 27 of the Hydrographic Manual, were inked in the colors specified. The remaining curves were left in pencil.

K. CROSSLINES:

Approximately 11.6% of the hydrography on this survey is cross-lines. No excessive discrepancies are noted.

L. COMPARISON WITH PRIOR SURVEYS:

M. COMPARISON WITH EXISTING CHARTS:

Satisfactory junctions were obtained with surveys listed in paragraph B. In case of overlap this survey should supersede, all old surveys except H-7933. Where there is some disagreement with H-7933, at the northeastern corner of the sheet, this survey should be given precedence, since the control in this area is much stronger than on the former survey. *H-7933 now being verified - 5-17-55 by*

It is noted that Chart 1351, print date 11/3/52 has been compiled incorporating the results of this survey.

The latest edition of Chart No. 1252 at hand, print date 8/7/50, is compiled from the old surveys, but it is presumed that a new edition will be published incorporating the results of this survey. The same holds true for Charts 1007 and 1113.

The sounding of 30 feet, shown on survey H-4169b in latitude  $24^{\circ} 26.1$ , longitude  $81^{\circ} 00.3$ , was not specifically investigated since it had been located by wire drag on the prior survey. A least depth of 5.0 fathoms was found in carrying a regular system of relatively close spaced lines over the area. This depth is found at position 31-E plus 3 minutes. *Retained charted 30 ft depth on chart 584, 3-15-57.*

Item No. 14 on preliminary review dated 3/3/52, was investigated by a system of closely spaced lines and cross lines. No indication of any obstruction was found. This is on a fairly steep slope with a sandy bottom in an area of strong currents and it is thought that the small submarine sunk here has probably pretty well sanded in. *Delete from Charts*

N. DANGERS AND SHOALS:

No new dangers or shoals were found within the limits of this survey. All shoal soundings within the limits of the survey were found as charted, except those listed under L & M. *See #5 of Review*

O. COAST PILOT INFORMATION:

This is an offshore survey and no applicable Coast Pilot Information was compiled.

P. AIDS TO NAVIGATION:

There are no aids to navigation within the limits of this survey. During the progress of the survey some compass bearings were taken to the floating aids along the Florida Reefs west of Sand Key Lighthouse to verify the fact that they were in a position to adequately serve the purpose for which they were intended. This information indicated that they did adequately serve this purpose.

Z. TABULATION OF APPLICABLE DATA:

The data listed below were forwarded to the Washington Office as indicated:

11/1/50	-----	Report on Settlement and Squat Tests. †
1/6/51	-----	Method of Recording Hydrographic Data.
12/24/52	-----	Shoran Calibration for 1952
1/21/53	-----	Season's Report for 1952 X
1/21/53	-----	E.P.I. Calibration for 1952X
1/21/53	-----	Fathometer Corrections 1952 <i>filed with fms.</i>
1/22/53	-----	Computation of Velocity Corrections 1952
1/23/53	-----	Location of Stations, Shoran and E.P.I.
2/10/53	-----	Report on Calibration of Registering Sheaves X

The smooth sheet, boat sheet, sounding volumes, fathograms, Shoran Plotting Abstracts and related material are being forwarded direct to the Washington Office.



Ira R. Rubottom  
Comdr., USC&G Survey

APPROVAL SHEET

The field work accomplished on this survey was under the immediate supervision of Captain Jack C. Sammons. He made daily inspections of the records, fathograms and boat sheet as the survey progressed. He was detached after the 1952 field season and prior to the completion of the smooth sheet and this report.

The smooth sheet was plotted under my immediate supervision. It has been carefully inspected and is approved. The survey is considered complete and adequate and no additional field work is recommended.

The smooth sheet, boat sheet, sounding volumes, fathograms, shoran plotting abstracts and all related material have been inspected and are being forwarded to the Washington Office.



Robert A. Earle  
Comdr, USC&G Survey  
Commanding, Ship HYDROGRAPHER

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AIR MAIL

1 April 1952

To: The Director  
U. S. Coast & Geodetic Survey  
Dept. of Commerce Bldg.  
Washington 25, D. C.

Subject: Supplemental Instructions - Project CS-328

Receipt of Supplemental Instructions - Project CS-228, dated 20 March 1952, is acknowledged.

Verification of the project number is requested. It is assumed that the project number DS-228 is in error and should read Project CS-328, since this was the previous project number for the area.

Refer to paragraph 5 - "LIMITS, Area A"

Verification of positions (c), (d), and (e) is requested. It is believed that the referred positions are listed in error and should be corrected to read:

Position (c) in Lat.  $24^{\circ} 32'$ , Long.  $83^{\circ} 06'$

Position (d) in Lat.  $24^{\circ} 25'$ , Long.  $82^{\circ} 35'$

Position (e) in Lat.  $24^{\circ} 25'$ , Long.  $82^{\circ} 25'$

Refer to paragraph 15 - "ELECTRONIC CONTROL, SHORAN CONTROL"

Attached is a tracing of the layout for boat sheet HY-8152 which has been constructed. The southern limit of this boat sheet (Lat.  $24^{\circ} 00'$ ) was the extreme southern limit for adequate shoran control in 1951. E.P.I. equipment will probably be required, to control the survey of the area south from latitude  $24^{\circ} 00'$ .

Jack C. Sammons  
Captain, USC&GS Survey  
Commanding, Ship HYDROGRAPHER

Enclosure: Tracing Sheet Layout.

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22/MEK  
S-2-HY

4 April 1952

To: Commanding Officer  
USC&GS Ship HYDROGRAPHER  
P. O. Box 1259  
St. Petersburg 1, Florida

Subject: SUPPLEMENTAL INSTRUCTIONS --PROJECT CS - 328

Reference: Your letter dated 1 April 1952- File MTP/rab

This office has verified the corrections noted in the reference letter and has found that your assumptions are correct. ✓  
The copies in this office will be corrected in accordance with your letter.

With reference to the last paragraph in your letter, it is realized that the 5-mile strip located between latitudes  $23^{\circ} 55'$  North and  $24^{\circ} 00'$  North is beyond the limits of shoran control. Your offshore sheets for EPI-controlled hydrography will include this strip. It is now expected that EPI equipment will be ready for installation approximately 15 May for use in the control of this area before operations south of the Florida Keys are suspended.

/s/ R.F.A. Studds

Director

cc. Supervisor, Southern District  
Supervisor, Southeastern District  
Chief, Hydrography Section

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223/MEK  
S-1-HY

1 December 1952

To: Commanding Officer  
USC&GS Ship HYDROGRAPHER  
P. O. Box 1259  
St. Petersburg 1, Florida

Subject: Registry Numbers for Hydrographic Surveys  
Project CS-328, Gulf of Mexico

In compliance with your request of 24 November 1952, IRR/cld, the following registry numbers have been assigned to the hydrographic surveys listed in your letter for Project CS-328 in the Gulf of Mexico:

<u>Field Sheet</u>	<u>Registry Number</u>
HY-8152	H-8011
HY-10152	H-8013
HY-10252	H-8014
HY-10352	H-8015
HY-10452	H-8016
HY-20152	H-8017
HY-20252	H-8018
HY-20352	H-8019

Your sheet layout chart No. 1007 is returned, as requested.

/s/ Robert W. Knox

Acting Director

Enclosure:

cc. Chief, Hydrographic Section, Div. of Charts  
Chief, Hydrography Section, Div. of Coastal Surveys



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Refer: 22/MEK  
S-1-HY

14 August 1952

To: Commanding Officer  
USC&GS Ship HYDROGRAPHER  
P. O. Box 1259  
St. Petersburg 1, Florida

Subject: Boat Sheets, Straits of Florida

(H-8011)  
It is requested that as soon as boat sheet HY-8152 can be  
spared temporarily that it be forwarded to this office. If any  
hydrography has been accomplished on boat sheet HY-20152, it is  
requested that this sheet also be forwarded. (H-8017)

After photostatic copies have been made, the boat sheet, or  
boat sheets, will be returned to you.

/s/ Robert W. Knox

Acting Director

cc. Division of Charts (80 and 83)  
Supervisor, Southeastern District

Note: Boat sheets forwarded 8/27/52.  
Boat sheets returned 9/11/52

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Refer: 22/MEK  
S-1-HY

15 December 1952

To: Commanding Officer  
USC&GS Ship HYDROGRAPHER  
P. O. Box 1259  
St. Petersburg 1, Florida

Subject: Smooth Plotting of Sheet HY-8152 (8011)

Reference: Your letter dated 8 December 1952

Reference letter proposes that the junior officers aboard the HYDROGRAPHER smooth-plot sheet HY-8152. This proposal conforms to the general policy of having as much office work on field records as possible performed aboard the ships and is, therefore, approved.

The computations required for drawing EPI curves on the sheet, as indicated on the section of chart 1002 attached to your letter, will be made and forwarded as soon as practicable.

/s/ F. L. Gallen

Acting Director

cc. Supervisor, Southern District  
Supervisor, Southeastern District

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Refer: 36-rcb

19 June 1952

To: The Commanding Officer  
U. S. C. & G. S. Ship HYDROGRAPHER  
P. O. Box 1259  
St. Petersburg, Florida

Subject: Tide Data, Florida

With reference to your letter of 16 June 1952  
mean low water corresponds to a reading of 2.4 feet on staff  
of 1952 at your Sand Key Lighthouse tide station.

/w/ Robert W. Knox  
Acting Director

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Refer: 22/MEK  
S-1-HY

23 May 1952

To: Commanding Officer  
USC&GS Ship HYDROGRAPHER  
P. O. Box 1259  
St. Petersburg 1, Florida

Subject: Electronic Control for Hydrography \* Project CS-328

Reference: Your letter dated 21 May 1952 to Chief, Division of  
Coastal Surveys.

The first paragraph of your letter contains the proposal that hydrography in the southwest portion of sheet HY-8152--Straits of Florida -- be controlled by your shoran station at Loggerhead Key and by an EPI station located either at Grassy Key or Sand Key. The Washington Office is of the opinion that this pair of stations will provide more accurate control of the ship's position than two EPI stations would provide.

You are authorized to use the combination of one shoran station and one EPI station for the control of hydrography where you find it advantageous to do so.

/s/ R.F.A. Studds

Director

cc. Supervisor, Southeastern District  
Supervisor, Southern District

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Refer: 36-rch

26 May 1952

To: The Commanding Officer  
U.S.C. & G.S. Ship HYDROGRAPHER  
P. O. Box 1259  
St. Petersburg 1, Florida

Subject: Tide Data, Florida

With reference to your letter of 21 May 1952 mean low water corresponds to a reading of 2.3 feet on tide staff at Loggerhead Key.

Compared with simultaneous observations at Key West, the time and height relations from the record for Loggerhead Key are in close agreement with those obtained previously from records at Garden Key. Therefore the location of the tide station at Loggerhead rather than at Garden Key will not necessitate any modification of original instructions for tide reducers as furnished in my letter of 15 April 1952.

/s/ Robert W. Knox  
Acting Director

IRR/ljs

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21 May 1952

To: The Director  
U. S. Coast & Geodetic Survey  
Washington 25, D. C.

Subject: Tidal Data - Loggerhead Key, Dry Tortugas, Fla.

Tidal marigrams for Loggerhead Key Tide Station, covering the period 25 April to 15 May 1952, have been forwarded this date.

It is requested that the value of Mean Low Water on the staff be furnished this vessel as soon as possible.

Your attention is invited to the fact that this station is not in the same location as a previous station in the Dry Tortugas area. Since this station is not surrounded by reefs to the extent that the former station was, it seems possible that the time of the tides may be different to some extent.

Jack C. Sammons  
Captain, USC&G Survey  
Commanding, Ship HYDROGRAPHER

C  
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Y

C  
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Y

Refer; 36-rcb

15 April 1952

To: The Commanding Officer  
U. S. C. & G. S. Ship HYDROGRAPHER  
P. O. Box 1259  
St. Petersburg, Florida

Subject: Tide Reducers, Project CS - 328

Reference is made to your letter of 10 April 1952 with section of chart 1113 indicating zones for tide reducers for area A of subject project as recommended for the 1951 season.

Instructions for zoning area A as furnished in office letter of 14 May 1951 were based on the assumption, indicated by the cotidal lines of that area, that the time and range of tide were practically uniform throughout area A and about the same as at Sand Key. Observational tide data show the tides at Dry Tortugas to occur about  $1\frac{1}{2}$  hours later than at Sand Key, where the tidal conditions are considered to be representative of area A. Most of this retardation in time of tide can logically be assumed to occur in the shoal water area north of area A.

If, as proposed, Sand Key and Dry Tortugas are to be used as control tide stations for 1952 hydrography, that part of area A included within the area of sheet HY-3152 may be treated as a single zone in which tide reducers may be taken directly from gage records at Sand Key with no time or height corrections. Tide reducers may be taken from the Dry Tortugas record with no height correction but with a time correction of  $-1\frac{1}{2}$  hours. For any part of area A tide reducers may if necessary be taken from the record of the primary tide station at Key West with no height correction but with a time correction of -1 hour. Section of chart 1113 is returned with revised zoning indicated.

/s/ Robert W. Knox

Acting Director

Enclosure:

STATISTICS

For Hydrographic Survey H-8011 (HY-8152)

Date	Day Letter	Volume No.	Number of Positions	Statute Miles of Soundings
1952				
26 April	A	1	122	122.0
27 April	B	1	165	148.1
28 April	C	1	50	43.1
7 May	D	1	124	110.4
8 May	E	1	158	138.6
9 May	F	1	191	157.0
10 May	G	1	174	152.4
11 May	H	1	157	136.9
12 May	J	2	153	121.1
24 May	K	2	166	144.0
25 May	L	2	181	162.7
26 May	M	2	171	147.2
27 May	N	2	201	169.6
28 May	P	2	200	174.2
29 May	Q	3	197	167.6
30 May	R	3	179	153.3
31 May	S	3	184	157.2
1 June	T	3	142	99.5
9 June	U	3	147	109.7
10 June	V	3	149	107.2
11 June	W	4	79	56.5
12 June	X	4	76	60.7
24 June	Y	4	84	67.8
25 June	Z	4	204	169.2
26 June	AA	4	196	189.7
27 June	BA	4	201	150.6
28 June	CA	4	187	156.4
29 June	DA	5	154	125.6
30 June	EA	5	233	206.2
1 July	FA	5	221	190.9
18 July	GA	5	121	103.5
19 July	HA	5	219	192.0
20 July	JA	5	277	231.5
21 July	KA	6	196	138.0
<u>TOTALS:</u>		6	5659	4760.4
Number of Temperature and Salinity Observations				7
Total Area Surveyed		2386	Square Statute Miles.	
		(21)		



TIDE NOTE

Tide Station: (1) Sand Key Lighthouse

Latitude: 24° 27'.2 N.

Longitude: 81 52.7 W.

Plane of reference: Mean Low Water = 2.4 feet on tide staff  
(Director's letter of 19 June 1952)

Area Covered: Entire area of Sheet HY-8152 (H-8011)

Time Correction: None

Height Correction: None

This station was established 6 May 1952 and was dismantled 11 June 1952. Values obtained from the gage were used for reducing all soundings taken during the period the gage was in operation (D-Day through W-Day). The hourly heights for the hours during which hydrography was in progress were tabulated from the marigrams prior to forwarding them to Washington Office.

-v-v-v-v-v-v-v-v-v-v-v-v-v-v-v-v-v-v-

Tide Station: (2) Loggerhead Key

Latitude: 24° 37'.9 N.

Longitude: 82 55.2 W

Plane of reference: Mean Low Water = 2.3 feet on tide staff  
(Director's letter of 26 May 1952)

Area Covered: Entire area of Sheet HY-8152(H-8011)

Time Correction: -1½ hours -- Directors' Letter of 15 April 1952.

Height Correction: None --- " " " " " "

This station was established 25 April 1952 and was dismantled 22 July 1952. Values obtained from the gage were used for reducing soundings taken on 26, 27 and 28 April (A-Day, B-Day and C-Day) and from 12 June to 21 July inclusive (X-Day through KA-Day). The hourly heights for the hours during which hydrography was in progress were tabulated from the marigrams prior to forwarding them to the Washington Office.

# GEOGRAPHIC POSITIONS

Accession No. of Computation: \_\_\_\_\_

Locality Straits of Florida & West Coast of Florida North American 1927 Datum Fourth order Triangulation, State Florida  
10-1000-1 U. S. GOVERNMENT PRINTING OFFICE

STATION	LATITUDE AND LONGITUDE		SCORES IN METERS	AZIMUTH		TO STATION	DISTANCE	
	24	27		09	36		LOGARITHM (METERS)	METERS
1. Sand Key Lighthouse-Shoran Station - SAND	24	27 12.571	386.8					
	81	52 39.801	1121.0					
2. Marquesas Keys - Shoran Station MAR	24	32 52.588	1618.0					
	82	09 36.836	1036.7					
3. Loggerhead Key Lighthouse, Dry Tortugas-Shoran Station DRY.	24	37 58.288	1793.3					
	82	55 13.326	374.8					
4. EPIF - Boca Ciega Bay	27	50 15.82	487					
	82	49 22.46	615					
5. EPIE - Grassy Key, Florida Keys.	24	45 46.830	1441					
	80	57 37.559	1055					

Note: All stations are of a temporary nature.  
Positions of Shoran and E.P.I. shore station antennae as used by Ship HYDROGRAPHIC during season of 1952.  
Stations located by Fourth-order methods.

COMP: RTK  
CK'd: AJR

1 No check on this position. Abbreviations used: d.=described; m.=marked; n.=not; r.=recovered; l.=lost; p.=probably. (Examples: n. d.=not described; p. l.=probably lost)

SHORAN CORRECTORS  
(in statute miles)

Dates	Days	Times	Distance	Total Correctors	
				Rate	Drift
Ship Set No. 2 (Regular):					
26 Apr. 52	All except	All except	0 to 32	+0.01	+0.01
	to parts of	those			
21 July 52	Q, T, DA	noted be-	32 to 35	0	0
inclusive	& FA	low			
			35 to 37	-0.01	-0.01
			37 to 39	-0.02	-0.02
			39 to 41	-0.03	-0.03
			41 to 43	-0.04	-0.04
			43 to 46	-0.05	-0.05
			46 over	-0.06	-0.06
Ship Set No. 3 (spare):					
29 May	Q	to 0844	0 to 32	-0.01	-0.03
1 June	T	Aft 0837	32 to 35	-0.02	-0.04
29 June	DA	Aft 1239	35 to 37	-0.03	-0.05
1 July	FA	Aft 1339	37 to 39	-0.04	-0.06
			39 to 41	-0.05	-0.07
			41 to 43	-0.06	-0.08
			43 to 46	-0.07	-0.09
			46 over	-0.08	-0.10

Comp: EEE  
Ck'd: AJH

## EPI CORRECTORS

SHIP HYDROGRAPHER - Season 1952

<u>Dates</u>	<u>EPIF</u>	<u>EPIE</u>
25 June to 1 July (Sheet 8152 only)	----	-4.1
17 July to 21 July (Sheet 8152 only)	-7.8	-5.7
21 July to 23 July	-6.9	-5.2
30 July to 4 August	+2.7	+1.8
4 Aug. to 5 Aug. 2356 to 0225	+2.7	+1.8
0226 to 0450	+2.7	+1.6
0451 to 0715	+2.7	+1.4
0716 to 0940	+2.8	+1.2
0941 to 1205	+2.8	+1.0
1206 to 1430	+2.8	+0.8
5 August to 7 August	+2.8	+0.8
13 August to 2140	-3.3	-3.7
14 August to 0510	-2.8	-0.8
14 August after 1230 to 24 November (end of hydrography)	-3.3	-3.7

FATHOMETER INSTRUMENTAL CORRECTORS

PERIOD "A"  
(26 April to 5 August)

Surveys: H-8011 (HY-8152) H-8013 (HY-10152)  
H-8015 (HY-10352) H-8016 (HY-10452)  
H-8017 (HY-20152)

Fathometer, 808-J, No. 132-SG:

Scale (phase)	A	B	C	D
Correctors to 0.2 fathoms:	-0.2	+0.2	+0.2	-0.2
Correctors to 0.5 fathoms:	---	---	0.0	0.0

Fathometer, 808-J, No. 131-SG:

Scale (phase)	A	B	C	D
Correctors to 0.2 fathoms:	-0.2	+0.4	0.0	-1.2
Correctors to 0.5 fathoms:	---	---	0.0	-1.0

Fathometer, MMC-2:

(Refer: Fathometer Comparisons)

Correctors to 0.5 fathoms -1.0

Note

Fath. phase, Index, Draft, Instrumental and tide  
Correctors filed with fathograms for H-8011.

Comp: EEJ  
Ch'd: RTK

VELOCITY CORRECTION

TEMPLATES

SURVEYS: H-8011 (HY-8152); H-8017 (HY-20152); H-8018 (HY-20252);  
 H-8013 (HY-10152); H-8014 (HY-10252); H-8015 (HY-10352);  
 H-8016 (HY-10452); & H-8019 (HY-20352).

AREA A

SURVEY: H-8011 (HY-8152).

PERIOD: 26 April through 12 June 1952

DEPTH FATHOMS		TEMPLATE Meters per second
From	To	
00.0	84.0 - - - - -	1530
84.5	172 - - - - -	1515
173	431 - - - - -	1500 -
432	and deeper - - -	1485 -

PERIOD: 22 June through 22 July 1952

DEPTH FATHOMS		TEMPLATE Meters per second
From	To	
00.0	37.0 - - - - -	1545
37.2	84.0 - - - - -	1530
84.5	172 - - - - -	1515
173	431 - - - - -	1500 -
432	and deeper - - -	1485

SURVEY: H-8017 (HY-20152)

PERIOD: 29 July through 4 August 1952

DEPTH FATHOMS		TEMPLATE Meters per second
From	To	
00.0	48.0 - - - - -	1545
48.2	153 - - - - -	1530
154	267 - - - - -	1515
268	and deeper - - -	1500

Draft Correctors - 1952  
Correctors in  $\pm 0.2$  fms. &  $\pm 0.5$  fms.

<u>Trip No.</u>	<u>Time &amp; Date</u>		<u><math>\pm 0.2</math></u>	<u><math>\pm 0.5</math></u>
1	1930-26 April 2001-26 April	to 2000-26 April to 1530-28 April	0.0 -0.2	0.0 0.0
2	0900- 7 May 0001- 8 May	to 2400- 7 May to 1900-12 May	0.0 -0.2	0.0 0.0
3	1100-24 May 1201-27 May	to 1200-27 May to 1500- 1 June	0.0 -0.2	0.0 0.0
4	0500- 9 June 0401-10 June	to 0400-10 June to 1600-13 June	0.0 -0.2	0.0 0.0
5	1200-24 June 0001-30 June	to 2400-29 June to 1230- 3 July	0.0 -0.2	0.0 0.0
6	0850-17 July	to 1610-23 July	-0.2	0.0
7	1600-29 July 0001- 3 August	to 2400- 2 August to 0800- 7 August	0.0 -0.2	0.0 0.0
8	1600-13 August 0001-17 August 0001-21 August	to 2400-16 August to 2400-20 August to 1600-22 August	0.0 -0.2 -0.2	0.0 0.0 -0.5
9	0800-28 August 0001- 5 September	to 2400- 4 September to 1545- 5 September	0.0 -0.2	0.0 0.0
10	0800-16 September 0801-22 September	to 0800-22 September to 1545-25 September	0.0 -0.2	0.0 0.0
11	0800- 1 October 0001- 6 October	to 2400- 5 October to 1050- 9 October	0.0 -0.2	0.0 0.0
12	0745-16 October 0001-23 October	to 2400-22 October to 0925-24 October	0.0 -0.2	0.0 0.0
13	0800- 5 November 0801-10 November	to 0800-10 November to 0940-13 November	0.0 -0.2	0.0 0.0
14	0750-18 November 0001-21 November 0801-24 November	to 2400-20 November to 0800-24 November to 0915-25 November	0.0 -0.2 -0.2	0.0 0.0 -0.5

Comp: RTK  
Ck'd: EEJ

GEOGRAPHIC NAMES

Survey No. H-8011

Name on Survey	Source										
	A	B	C	D	E	F	G	H	K		
	On Chart No.	On previous survey No.	On U. S. Quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List			
<u>Florida</u>										BGN	1
<u>Straits of Florida</u>											2
<u>Key West</u>		(title)									3
<u>Dry Tortugas</u>		( " )									4
<u>Loggerhead Key</u>											5
<u>Sand Key</u>											6
											7
											8
											9
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											11
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											26
											27

Names underlined in red are approved  
4-15-53  
L. H. C. K.



Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-8011...

Records accompanying survey:

Boat sheets <sup>1</sup>.....; sounding vols. <sup>6</sup>.....; wire drag vols. ....;  
 bomb vols. ....; graphic recorder rolls <sup>16 Env.</sup>.....  
 special reports, etc. <sup>1</sup> Smooth Sheet; <sup>1</sup> Descriptive Report; <sup>1</sup> Cabier-...  
 Computations of Velocity Corrections; <sup>2</sup> Tracings for Transfer of Limits  
 of Adjoining Sheets; <sup>3</sup> Cabiers. Shear. & E.P.I. Abstracts; .....

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

Number of positions on sheet		5659
Number of positions checked		..42.
Number of positions revised		....3.
Number of soundings revised (refers to depth only)		...17.
Number of soundings erroneously spaced		....0.
Number of signals erroneously plotted or transferred		....0.
Topographic details	Time	....0 hrs.
Junctions	Time	....3 "
Verification of soundings from graphic record	Time	....16 "

Verification by *Stephen Rose*..... Total time *237 hrs* Date *3-31-55*  
 Reviewed by *Lu Zeskund*..... Time *70*... Date *5-25-55*

The sink hole at N. 24° 17.2' & W. 82° 10.05' is entered on p. 28, vol. 2,  
pos. 117-118 "L" day, but is not shown on the Boat Sheet. ←

FHC

### TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~

21 May 1953

Division of Charts: R. H. Carstens

Plane of reference approved in 6  
volumes of sounding records for

HYDROGRAPHIC SHEET 8011

Locality Straits of Florida

Chief of Party: J. C. Sammons in 1952  
Plane of reference is mean low water, reading  
2.4 ft. on tide staff at Sand Key Lighthouse  
3.5 ft. below B. M. 4 (1951)

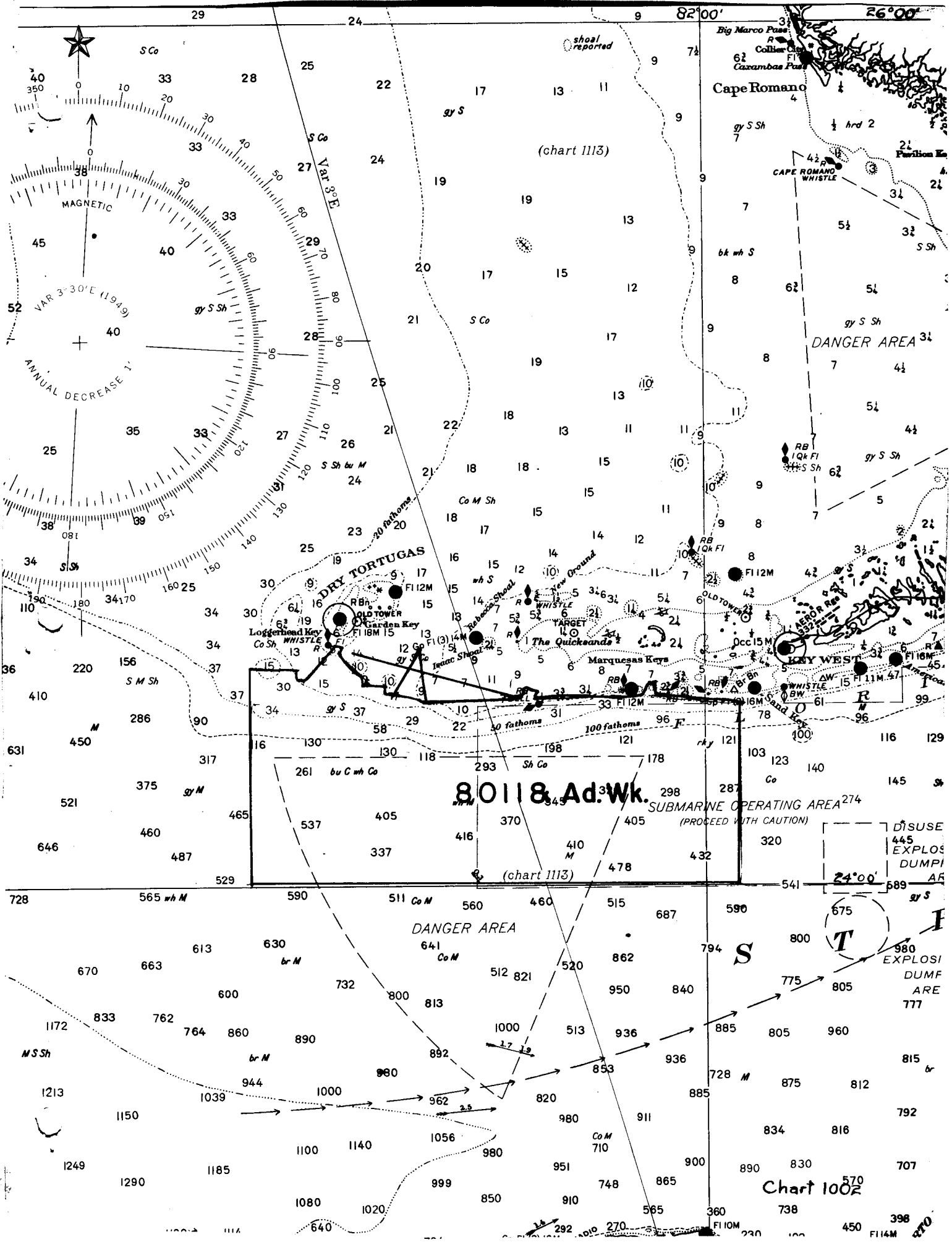
2.3 ft. on tide staff at Loggerhead Key  
9.0 ft. below B. M. 1 (1952)

Height of mean high water above plane of reference is as follows:

Sand Key Lighthouse	=	1.2 feet
Loggerhead Key	=	1.0 feet

Condition of records satisfactory except as noted below:

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



80118 Ad. Wk.

SUBMARINE OPERATING AREA<sup>274</sup>  
(PROCEED WITH CAUTION)

DANGER AREA

Chart 1002

DISEASE  
445  
EXPLOS  
DUMPI  
ARE

EXPLOSI  
DUMPI  
ARE  
777

24°00'

82°00'

26°00'

24°00'

82°00'

26°00'

24°00'

82°00'

26°00'

24°00'

82°00'

26°00'

24°00'

82°00'

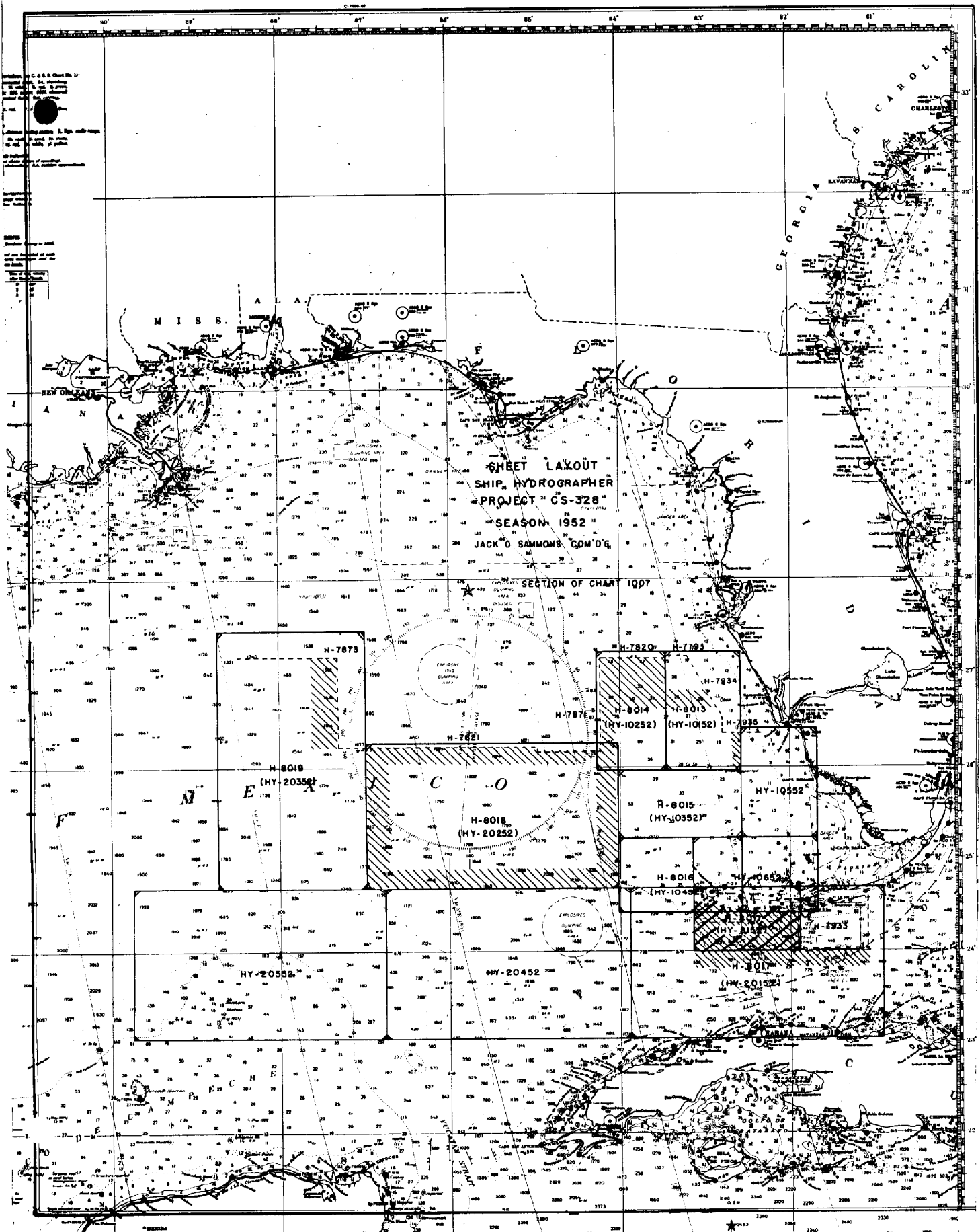
26°00'

24°00'

82°00'

26°00'

24°00'



SHEET LAYOUT  
SHIP HYDROGRAPHER  
PROJECT "CS-328"  
SEASON 1952  
JACK O. SAMMONS, CDM'D'G.

SECTION OF CHART 1007

H-7873

H-8019  
(HY-20352)

H-8018  
(HY-20252)

H-7820

H-7821

H-7822

H-8014  
(HY-10252)

H-8015  
(HY-10152)

H-7934

H-7935

H-8015  
(HY-10352)

H-8016  
(HY-10452)

H-8017  
(HY-10652)

H-8015  
(HY-20152)

H-8016  
(HY-20152)

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(HY-20152)

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HY-20452

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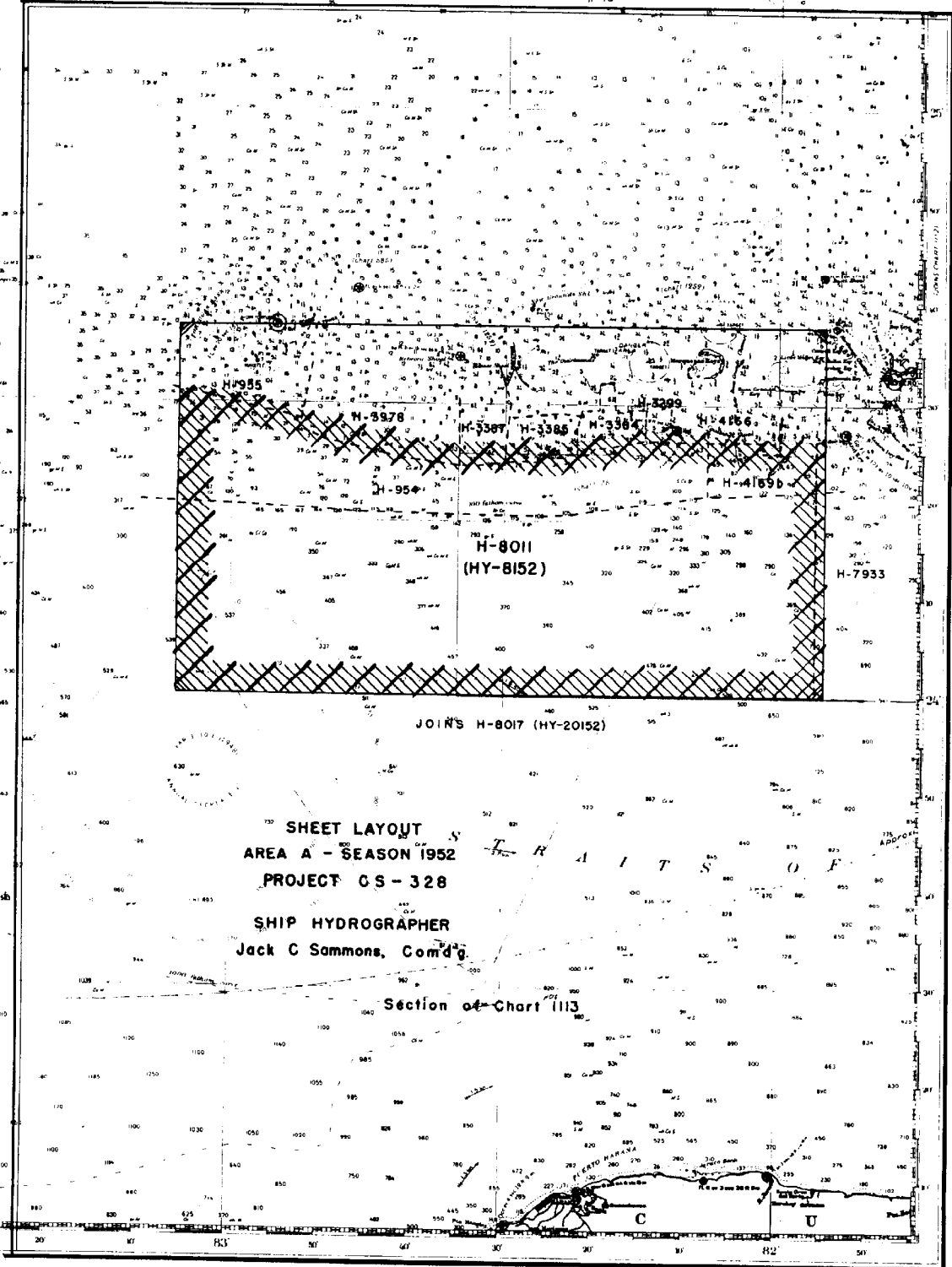
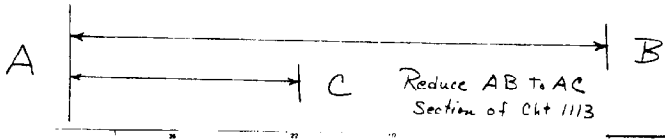
H-8270

H-8271

H-8272

H-8273

H-8274



DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8011

FIELD NO. HY-8152

Florida, Straits of Florida, Key West to Dry Tortugas

Project No. CS-328

Surveyed - April - July, 1952

Scale 1:80,000

Soundings:

Control:

808 Fathometer  
NMC-2 Fathometer

E P I  
Shoran

Chief of Party - J. C. Sammons

Surveyed by - R. A. Earle, I. R. Rubottom, M. T. Paulson and  
E. E. Jones

Protracted by - R. T. Koopman and W. V. Warner

Soundings plotted by - R. T. Koopman and W. V. Warner

Verified and inked by - S. Rose

Reviewed by - I. M. Zeskind 5-25-55

Inspected by - R. H. Carstens

1. Shoreline and Control

No shoreline is shown on this offshore survey.

The source of the control is given in the Descriptive Report.

2. Sounding Line Crossings

Depths at crossings are in adequate agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves were adequately delineated. The 350-450- and 550-fm. curves have been added to more clearly define the bottom configuration.

A prominent submerged valley pattern is delineated in the southwest portion of the survey. The valleys trending normal to the continental slope are relatively narrow and head at about the 300 fm. depth curve. These valleys are as much as 200 ft. deeper than the surrounding bottom. Pot holes with

depths as much as 200 ft. below the surrounding bottom are found in the northeast portion of the survey. These pot holes occur in a belt of irregular bottom extending from adjoining survey H-7933 (1951). Elsewhere the bottom is generally smooth.

#### 4. Junctions with Contemporary Surveys

The junction with H-7933 (1951) on the east will be considered in the review of that survey. The project surveys on the south and west have not yet been received in the Washington Office. The present survey extends to the project limits on the north. Depths here are in adequate agreement with charted depths.

#### 5. Comparison with Prior Surveys

H-281 (1850,1903), 1:20,000	H-3299 (1911), 1:40,000
H-282 (1851-52), 1:20,000	H-3300 (1911), 1:40,000
H-359 (1852), 1:20,000	H-3384 (1912), 1:20,000
H-912 (1867), 1:40,000	H-3385 (1912), 1:10,000
H-954 (1868), 1:80,000	H-3387 (1912), 1:40,000
H-955 (1868), 1:40,000	H-3978 <sup>a</sup> (1917), 1:40,000
H-1052 (1870), 1:40,000	H-3978 WD (1917), 1:40,000
H-2350 (1898), 1:20,000	H-4138 (1919), 1:15,000
H-2523 (1901), 1:20,000	H-4166 (1920), 1:15,000
H-2875 (1907), 1:15,000	H-4169 <sup>b</sup> (1920), 1:40,000

These prior surveys in general overlap the present survey 1-2 miles at its northern limits. However, several prior surveys overlap the present survey in the north as much as 4 miles, such as surveys H-954, H-912 and H-4169b. In the inshore reef area present soundings are sparse compared to the development on the prior large scale surveys. However, no significant conflicts in depths are noted here. A few prior critical least depths on the reefs have been carried forward to the present survey. In the offshore area, the prior surveys are sparsely developed and the hydrography shows the usual deficiencies found in many of the old offshore surveys. Some soundings in 130-fm depths on H-954 are 20 fms. deeper than present depths. A 10-fm sounding on the same survey in lat.  $24^{\circ}24.3'$ , long.  $83^{\circ}37.2'$  and adjacent soundings differ with present depths by as much as 10 fms. and are considered to be displaced about  $1\frac{1}{2}$  miles offshore from their actual positions. Attention is also directed to the following differences in depths between prior and present surveys:

- (1) The 72-ft. (12 fms.) sounding charted in lat.  $24^{\circ}25.78'$ , long.  $81^{\circ}59.57'$ , on Chart 584 (Latest print date 5-3-54) from H-912 (1867) falls in present depths of 21.5 to 22.5 fms. This prior sounding is considered displaced in position

12 removed from chrt. 1351  
72 removed from 1351  
72 removed from 1252



and should actually fall about 240 meters northward where comparable present depths are found.

(2) The 42-ft. (7-fms.) sounding charted in lat.  $24^{\circ}25.85'$ , long.  $81^{\circ}57.55'$ , on Chart 584 (latest print date 5-3-54) from H-912 (1867) falls in present depths of 15-22 fms. This prior sounding is considered displaced in position and should actually fall about 320 meters northward where comparable present depths are found.

A number of bottom characteristics have been carried forward to the present survey from the prior surveys.

With the addition of the soundings and bottom characteristics carried forward from the prior surveys, the present survey is adequate to supersede the prior surveys within the common area.

## 6. Comparison with Charts

### A. Hydrography

#### Chart 584 (latest print date 5-3-54)

The charted hydrography originates principally with the prior surveys previously discussed which need no further consideration, supplemented by soundings from the boat sheet of the present survey. Only minor differences in depths of as much as 1 fm. between the charted and present depths are noted, except for soundings specifically mentioned in item 5.

#### Chart 1252 (latest print date 10-11-54)

The charted hydrography originates principally with the present survey prior to verification and review and with previously discussed prior surveys which need no further consideration. The 39-ft. sounding charted in lat.  $24^{\circ}26.14'$ , long.  $81^{\circ}59.16'$ , originates with a source not readily ascertainable. A wire drag set to an effective depth of 39 ft. on H-2875 (1907-14) cleared this area on both H-4138 (1919) and the present survey where least depths of 42 ft. (7 fms.) and 8.2 fms. respectively were found. The charted 39-ft. sounding should be disregarded and in its place the 42 ft. (7 fms.) sounding on H-4138 which has been carried forward to the present survey should be charted.

Only minor differences of 1-3 fms. between the charted and present survey depths are noted otherwise.

*42 removed from chart 584  
42 removed from 1252*

*chart 584  
1252*

Chart 1351 (latest print date 4-26-54)

The charted hydrography originates with the boat sheet of the present survey. Numerous differences between the charted and present survey depths of 1-5 fms are noted.

The present survey is adequate to supersede the charted hydrography on the above mentioned charts within the common area.

B. Aids to Navigation

The survey positions of the aids to navigation are in substantial agreement with the charted positions and adequately mark the features intended.

7. Condition of Survey

(a) The sounding records and Descriptive Report are complete and comprehensive.

(b) The smooth plotting was accurately done.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work Recommended

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

Examined and Approved:

*Wallace A. Bruder*  
Wallace A. Bruder  
Acting Chief, Nautical Chart Branch

*E. R. McCarthy*  
E. R. McCarthy  
Acting Chief, Chart Division

*J. C. Bull*  
J. C. Bull  
Chief, Hydrography Branch

*Earl O. Heaton*  
Earl O. Heaton  
Chief, Division of Coastal Surveys



# NAUTICAL CHARTS BRANCH

SURVEY NO. 8011

Record of Application to Charts sheet 2

DATE	CHART	CARTOGRAPHER	REMARKS
2-18-54	584	<i>E. M. Bergin</i>	Before <del>After</del> Verification and Review <i>Partially appld.</i>
7-12-54	1252	<i>H. W. Burgoyne</i>	Before <del>After</del> Verification and Review <i>partially applied</i>
8-29-54	1351	<i>R. K. De lauder</i>	<i>Partially applied</i> Before After Verification and Review <i>pin marks from SHS.</i> <i>Added 6 1/2 fm ady at <math>\phi 24^{\circ} 25' 30''</math> <math>\lambda 82^{\circ} 22' 50''</math></i>
6-13-56	1351	<i>J. M. Albert</i>	Before After Verification and Review <i>Partial</i>
3-18-57	584	<i>M. Rogers</i>	Before After Verification and Review
6 Aug 57	1252	<i>H. MacEwen</i>	<del>Before</del> <i>Partially applied</i> After Verification and Review <span style="float: right;"><i>SMA</i></span>
18 June 59	1252	<i>Nichols</i>	Before After Verification and Review <i>Fully applied</i> <i>Thru <sup>chart</sup> 584</i>
16 Nov 59	1351	<i>Nichols</i>	Before After Verification and Review <i>Fully applied</i> <i>In part thru 1252</i>
18 Nov 59	1113	<i>Nichols</i>	Before After Verification and Review <i>Fully applied</i> <i>Thru Dngt Charts 1350</i>
30 Nov 59	1002	<i>Nichols</i>	Before After Verification and Review <i>Fully applied</i> <i>Thru Dng Chart 1113</i>
30 Nov 59	1007	<i>Nichols</i>	After V & R. <i>Fully applied</i> <i>Thru Dng Chart 1002</i>
26 Apr 60	585	<i>Nichols</i>	After V & R. <i>Full appl.</i>
3-11-64	1003	<i>Heberdon Radd</i>	<i>App'd thru 1113 drawing #15 after V &amp; R</i>

M-2168-1

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.

8011

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D

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# 8011

**Additional work**

Diag. Cht. Nos. 1252-2 and 1351-2.

<p>Form 504 U. S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY</p> <h2>DESCRIPTIVE REPORT</h2>	
<p>Type of Survey <u>Hydrographic</u></p>	
<p>Field No. <u>HY-20-2-60</u> Office No. <u>H-8011 Ad. Wk.</u></p>	
<p>LOCALITY</p>	
<p>State <u>Florida</u></p>	
<p>General locality <u>Florida</u> <i>Strait's</i> <u>Keys</u></p>	
<p>Locality <u>Off Marquesas Key</u></p>	
<p><u>1960</u></p>	
<p>CHIEF OF PARTY</p>	
<p>K. S. Ulm</p>	
<p>LIBRARY &amp; ARCHIVES</p>	
<p>DATE <u>June 23, 1960</u></p>	

USCOMM-DC 5067

8011

Additional work

H-8011 Ad Wk

REPORT TO ACCOMPANY INVESTIGATION OF REPORTED SHOAL AT  
LATITUDE 24°-20.2' N, LONGITUDE 82°-13.9' W

USC&GSS HYDROGRAPHER

K. S. Ulm, Comdg.

May 1960

Project CS-328

Authority: Paragraph No. 10, Revised Instructions - Project  
CS-328, dated 3 February 1960.

Limits and Dates of Survey: An area of approximately four square  
nautical miles centered on the reported position of the shoal was  
surveyed. Coordinates are as follows:

Lat. 24°-20.80' N	Long. 82°-15.37' W
Lat. 24°-21.58' N	Long. 82°-13.35' W
Lat. 24°-19.59' N	Long. 82°-12.39' W
Lat. 24°-18.78' N	Long. 82°-14.39' W

Survey started on 13 May 1960 and was completed on 14 May 1960.

Control: Hydrography was controlled by Raydist with shore stations  
located at Loggerhead Key, Dry Tortugas and Boca Chica Key, Florida.  
Standard calibration methods were used to obtain corrections to  
Raydist distances. See appendix.

Soundings: Sounding lines were spaced approximately 100 meters apart  
with sufficient crosslines to verify hydrography. Soundings were  
obtained with an 808 fathometer. Depths ranged from 92 to 129  
fathoms. Standard methods were used to obtain fathometer correct-  
ions. See appendix for tabulation of fathometer reducers.

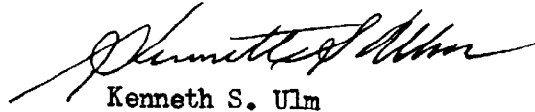
Records: Fathometer reducers have been entered in the sounding  
records and the soundings reduced.

Tide reducers have been omitted as they did not exceed  
one half of one per cent of the depths involved.

Due to the close development the work in the field was plotted  
on an overlay of Sheet HY-20-2-60 which included an extension to  
cover the southern limits of the work, instead of the Blue Line Copy  
of Sheet No. H-8011 furnished by the Washington Office. The overlay  
is forwarded with the records as a guide for smooth plotting.

Comparison: In general depths obtained on this survey were in agreement with Survey No. H-8011 and charted depths.

Results and Recommendations: No indication of the reported shoal was found by this survey. Therefore, it is recommended that the shoal be considered disproved at least in its reported position, and no further investigation be made unless additional information becomes available. CONCUR



Kenneth S. Ulm  
CAPT, C&GS  
Comdg., Ship HYDROGRAPHER



APPENDIX

Statistics

<u>Date</u>	<u>Day</u>	<u>Vol.</u>	<u>Pos.</u>	<u>Statute Miles</u>
13 May 60	A	1 & 2	379	125.6
14 May 60	B	2	73	27.4
			<hr/>	
Totals:			452	153.0

Square Statute Miles = 6.3

APPENDIX

Statistics

Raydist Correction:  $R_1 = -0.1$  Lane  
 $R_2 = -0.1$  Lane  
Per Calibration on 12, 13, and 14 May 1960.

Velocity Corrections:

0-6.1 fms = 0.0  
6.2-15.2 fms = ~~0.2~~  
15.3-26.8 fms = ~~0.4~~  
26.9-40.7 fms = ~~0.6~~  
40.8-63.0 fms = ~~0.8~~  
63.1-140 fms = ~~1.0~~

Settlement & Squat  
@ 120 RPM = ~~0.1~~ fms

Draft Correction = 0.0

Vertical Cast Comparison = 0.0

Phase Corrections:

808 Fathometer No. 57-31

A Scale = 0.0 fms  
B Scale = ~~0.5~~ fms  
C Scale = ~~1.4~~ fms  
D Scale = ~~2.2~~ fms

808 Fathometer No. 153-SPX

A Scale = 0.0 fms  
B Scale = ~~0.6~~ fms  
C Scale = ~~0.4~~ fms  
D Scale = -0.5 fms

Corrections were entered in volumes as follows:

Instrument Correction = Settlement and Squat Plus Draft  
Plus Vertical Cast Plus Phase Correction

Velocity Correction = Velocity Correction

EHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~

7 July 1960

Division of Charts: R. H. Carstens

Plane of reference approved in  
2 volumes of sounding records for

HYDROGRAPHIC SHEET 8011 (Add. Work)

Locality Florida Keys, Florida

Chief of Party: K. S. Ulm in 1960  
Plane of reference is mean low water  
ft. on tide staff at  
ft. below B. M.

Condition of records satisfactory except as noted below:

NOTE: No tide reducers entered due to depth of water.

*William Thompson*  
\_\_\_\_\_  
Chief, Tides Branch  
~~Chief, Division of Coastal Surveys~~

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8011 Ad. Wk.

Records accompanying survey: Smooth sheets .....;  
 boat sheets .....; sounding vols. 2...; wire drag vols. ....;  
 Descriptive Reports 1...; graphic recorder envelopes 2...;  
 special reports, etc. ....  
 .....

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

Number of positions on sheet	.....	<u>452</u>
Number of positions checked	.....	<u>75</u>
Number of positions revised	.....	<u>0</u>
Number of soundings revised (refers to depth only)	.....	<u>3</u>
Number of soundings erroneously spaced	.....	<u>0</u>
Number of signals erroneously plotted or transferred	.....	<u>0</u>
Topographic details	Time	.....
Junctions	Time	.....
Verification of soundings from graphic record	Time	<u>14 hrs.</u>
Special adjustments	Time	<u>0</u>

Verification by Mark J. Friese Total time 14 hrs. Date 11/21/75

Reviewed by Mark J. Friese Time 5 hrs. Date 11/24/75  
19 hrs TOTAL

Sup. Carpenter 2 hr 1/30/76

# NAUTICAL CHARTS BRANCH

SURVEY NO. 8011 Add'l. Wk. 1960

## Record of Application to Charts

11434

11439

11013

11439

DATE	CHART	CARTOGRAPHER	REMARKS
22 July '60	1351	H.N.	No correction Before <del>After</del> Verification and Review <span style="float: right;">57MG</span>
10 Oct 60	1007	E Thomas	No Correction - Before <del>After</del> Verification and Review Shoal deleted thru Aid proof 39.
1/16/61	1003	Helmert	Before <del>After</del> Verification and Review Shoal never added to dwg. #1
2-8-61	1252	R. E. Elkins	Before <del>After</del> Verification and Review Partly applied (deleted shoal)
7-19-61	1002	Svendsen	Deleted shoal Before <del>After</del> Verification and Review
12-8-78	1252 (11439)	E. Badonina	FULL Before After Verification and Review Ins. (Ad. work)
2/21/83	11438	M. J. Frue	Before After Verification and Review Applied for shoal edges in the area of the extended limits
4-8-83	(1351) 11434	JOE TURNER	FULL Before After Verification and Review APPLIED THRU 11439
7-9-84	11013	JOE TURNER	FULL Before After Verification and Review APPLIED THRU 11434
3-6-91	11006	DAN BLACK	FULL Before After Verification and Review APP'D THRU 11420

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.