

7932

Diag. Cht. No. 1251-2

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

CS-328

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. HY-2151 Office No. H-7932

LOCALITY

State FLORIDA

General locality GULF OF MEXICO

Locality SOUTH OF KEY WEST

194 51

CHIEF OF PARTY

J. C. Sammons

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7932

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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-7932

Field No. HY-2151

State Florida

General locality Gulf of Mexico
~~Straits of Florida~~

Locality South of
~~Off Main Channel Entrance to Key West~~

Scale 1:20,000 Date of survey 11 May - 8 July 1951

Instructions dated 26 Sept. 1946 and 21 March 1951

Vessel Ship HYDROGRAPHER

Chief of party Jack C. Sammons

Surveyed by Jack C. Sammons, J.P. Lushene, J.E. Waugh

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

Fathograms scaled by Personnel aboard Ship HYDROGRAPHER

Fathograms checked by Personnel aboard Ship HYDROGRAPHER

Protracted by Lt. jg R.A. Parker

Soundings penciled by Ben T. Lewis

Soundings in ~~fathoms~~ & feet at MLW ~~XXXXXX~~ and are true depths

REMARKS: This survey was smooth plotted in the Hydrographic Section of the Norfolk Processing Office.

JAE

DESCRIPTIVE REPORT

To Accompany

HYDROGRAPHIC SURVEY H-7932 (HY-2151)

11 May - 8 July 1951

Ship HYDROGRAPHER

Scale 1:20,000

Jack C. Sammons
Chief of Party

A. PROJECT

This survey was made under Instructions from the Director to the Commanding Officer, Ship HYDROGRAPHER, for Project CS-328 and are dated 26 September 1946; amended by Supplemental Instructions dated 21 March 1951.

B. SURVEY LIMITS AND DATES

This survey is offshore of the Florida Keys and south and west of the entrance to the main channel to Key West, Florida. The survey covers an area approximately one mile in diameter and centered on the plotted position of the wreck listed in paragraph 25 of the Supplemental Instructions. It was made primarily to assist in the execution of the wire-drag investigation called for in paragraph 25. An index of adjacent hydrographic sheets is attached.

Starting on the east side and proceeding thru the south, west and north to the point of beginning this survey joins:

- 1. Survey H-7933, surveyed during 1951, scale 1:80,000
- 2. Survey H-4138, surveyed during 1919, scale 1:15,000
- 3. Survey H-2875, surveyed during 1907-13, scale 1:15,000
- 4. Survey H-2932, surveyed during 1907-14, scale 1:15,000

See P 4
of Review

The western and northern limits are the project limits in this area. The survey was carried as close as possible to the reefs as was consistent with the safety of the vessel. It effects a junction with and overlaps in part Survey H-7933 (HY-2151) on the eastern and southern limits.
(1951)

The field work on this survey was started on 11 May with Launch No. 115 and continued on 28 May, 29 June and 8 July with the Ship Hydrographer. The survey was made when the Ship was based in Key West, Florida. Due to the heavy traffic in and out of Key West during the day, work was limited to the early morning hours.

C. VESSEL AND EQUIPMENT

All hydrographic work, except for one very short day, was accomplished by the Ship HYDROGRAPHER. A subparty from the Ship accomplished a short day of sounding, using Launch No. 115, but due to the difficulty experienced in using the existing signals it was decided that it would be more economical to use the Ship. No other subparties (except the manning of the shoran stations) were operated from the ship on this survey.

The Ship HYDROGRAPHER has a turning radius of 80 to 120 meters at sounding speed, depending on the wind and/or current.

Two 808-J type depth recorders were used aboard the ship as sounding units on this survey. These 808-J type units were installed in such a manner that either could be used at will and both are considered regular units and neither a standby. The fathograms are the permanent records and in plotting the smooth sheet should be used. (See paragraph H).

Frequent simultaneous comparisons were made during the working season with the wire soundings to obtain corrections and to assure the correct operation of the fathometers at all times. Please refer to the report on Velocity Corrections and Initial and Instrumental Corrections for additional details.

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

808-J type depth recorder No. 132-SG was used for the sounding accomplished with the launch. These soundings were recorded in the record book in the regular manner and the method outlined for use with the ship's work was not used. The computation of the corrections for velocity is outlined in the applicable report. The instrumental corrections are based on bar checks. Please refer to the applicable reports.

D. TIDE AND CURRENT STATIONS

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

The observed tides at the Sand Key tide station were used for the reduction of soundings. (See Tidal Note for additional information).

E. SMOOTH SHEET

The plotting of the smooth sheet ^{was} ~~will be~~ plotted by the Norfolk Processing Office.

F. CONTROL STATIONS

The launch hydrography on this survey was controlled by three point sextant fixes taken on shore signals and/or navigation buoys. Hydrographic signal ABE is an old pile and was located by a three point sextant fix taken on triangulation stations. Hydrographic signals OUT, TID, and SUT are navigation buoys. They were located by a three point sextant fix taken when the launch was alongside.

The ship hydrography on this survey was controlled by one distance arc from the shoran station (AND) at Sand Key Lighthouse and a sextant angle observed on Signals AND and KEY.* The antenna at AND was located eccentrically from the light by a subparty working from the Ship HYDROGRAPHER at the time the Shoran equipment was installed. The boat sheet was plotted from arcs drawn on the sheet with the position of the lighthouse used as the center of the circles. Given below is a table listing the DM's and DP's of both the antenna and the Lighthouse.

Station	Position Light	Position Antenna
AND (Sand Key Light-house -1853)	Lat. $24^{\circ} 27'$ 385.7 meters Long. $81^{\circ} 52'$ 1119.2 meters	387.3 meters 1,117.6 meters

The arcs for every degree change in the observed sextant angle between signals AND and KEY were also drawn on the boat sheet.

G. SHORELINE AND TOPOGRAPHY

This is an offshore survey and no shore line or topography shown on this sheet. ^{was} (Shoreline on smooth sheet from T-8490 (1943) and 431) _{the boat advance print of T-8491 (1943)}

H. SOUNDINGS

The computation of sounding corrections for velocity of sound and instrumental errors are discussed under the applicable reports. (see paragraph Z for dates forwarded).

All soundings shown on the boat sheet were taken with 808-J type depth recorders. The foot scales were used out to the limits of the instrument (approximately 160 feet) and the fathom scales in greater depths to the southern limits of the survey.

The effective length of the stylus arm for the 808-J type machines was determined and checked and the speed of the 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.

* Refer to "List of Signals Used on H-7932", page 15 of this report.

The speed of the machines was also checked frequently on the fathom scale by counting the number of turns of the stylus arm with the middle reed vibrating at its maximum amplitude.

There were times when the governor on the 808-J type machines failed to function properly. This accounts for a large displacement of the true soundings on numerous occasions. Notes have been made on the fathogram when this happened. These soundings should not be used unless proper correctors are applied.

No evidence
of time dis-
crepancies.
See Process-
ing office
notes

The method of recording mentioned in paragraph 20 of the Supplemental Instructions was followed on the ship work. The soundings on this survey were recorded as described in paragraph 817 of the Hydrographic Manual using every other column - the intermediate columns being used to record the extra soundings as needed.

The fathograms have the following notation made on them:

- (A) Fix marks, fix number, correct time on at least every sixth position mark, mark for each second and fourth minute between positions and the phase settings.
- (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 correctors (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.

In computing the correctors for use with the templates on the 808 graphs a mean setting of 12 fathoms or 12 feet was used. The corrector as shown on the bottom of the 808 fathograms should be set off from the zero line on the graph.

The launch work was accomplished using standard methods of recording the soundings.

A list of applicable reducers is attached to this report for both the launch and the ship work.

I. CONTROL OF HYDROGRAPHY:

The sounding lines run with the launch were controlled by three point sextant fixes on shore objects, by three point fixes on navigation buoys and/or a combination of the two methods. This work is on the

27

extreme northerly limit of the survey.

The sounding lines run with the ship were controlled by a distant arc from shoran station AND and an observed sextant angle between signals AND and KEY.

For the calibration of the shoran please refer to the applicable report. The values of zero set were determined to be:

Station	Set 2		Set 3	
	Rate	Drift	Rate	Drift
AND	99.788 ✓	99.793 ✓	99.780 ✓	99.785 ✓

✓ AmS.

The values of zero check have been summed for each day's work. The value of zero set has been applied to these mean values. The resulting corrector may be applied to each shoran reading when the smooth sheet is plotted. The observed shoran readings are recorded in the top half of each position block to facilitate this reduction.

J. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede prior surveys for charting except as noted in this paragraph. All junctions with contemporary adjoining surveys are satisfactory, no holidays or excessive differences exist although minor adjustments will be necessary along the eastern and southern edges of this survey to bring it into exact agreement with Survey H-7933. These discrepancies are probably due to the phase jumps on the 808-J type machines which should be adjusted when the instrumental corrections are applied. All depth curves can be drawn at the junction with the other surveys. The differences on the boat sheet between the soundings taken with the two instruments are due largely to errors (phase jumps) which have been eliminated through the application of instrumental corrections.

Junctions with H-7933 (1951) adequate.

Depth curves have been left in pencil on the boat sheet.

K. CROSSLINES

Approximately 3.7% of the hydrography is crosslines. It appears from checking against the reduced soundings that the apparent discrepancies will be automatically taken care of on the smooth sheet either by shifts in the sounding lines, by the application of rather large phase correctors, or by a combination of the two.

(all discrepancies have been resolved.)

- L. COMPARISON WITH PRIOR SURVEYS
- M. COMPARISON WITH EXISTING CHARTS

Satisfactory junctions were obtained with the surveys listed in paragraph B above, except as noted in paragraph J above. This survey supersedes in part the following surveys:

- 1. Survey H-4138, surveyed during 1919, scale 1:15,000
- 2. Survey H-2932, surveyed during 1907-14, scale 1:15,000

See
TPS of
Review

(1951)
It supplements Survey H-7933, scale 1:80,000, surveyed during 1951 at the junctions and the overlap. This survey should be used for charting in the area covered.

The surveys named above are the source of the hydrography shown in the area covered by this survey on the following charts:

- 1. Chart 584 - Print date 12/8/47
- 2. Chart 1002 - Print date 7/17/50
- 3. Chart 1007 - Print date 9/18/50
- 4. Chart 1112 - Print date 12/11/50
- 5. Chart 1113 - Print date 1/29/51
- 6. Chart 1251 - Print date 1/8/51
- 7. Chart 1351 - Print date 4/24/50

N. DANGERS AND SHOALS

All charted dangers and shoals were found as charted.

O. COAST PILOT INFORMATION

The coast pilot information for this area was the subject of a separate report.

P. AIDS TO NAVIGATION

No fixed aids to navigation were located within the limits of this survey by this party.

Floating aids to navigation located within the limits of this survey are as follows:

FLOATING AIDS TO NAVIGATION
SURVEY H-7932 (HY-2151)

<u>HYDROGRAPHIC NAME</u>	<u>LIGHT LIST NAME</u>	<u>POSITION</u>	<u>LOCATED</u>	<u>DEPTH OF WATER</u>
OUT	Key West Main Channel Lighted Buoy 1	24° 28' 355 m 81° 48' 240 m	11 May 1951 ✓	44 ft.
SUT	Side Channel Shoal Buoy 2	24° 28' 430 m 81° 46' 925 m	11 May 1951 ✓	30 ft.
TID	Key West Main Channel Buoy 2	24° 28' 80 m 81° 47' 1505 m	11 May 1951 ✓	34 ft.
	Key West Entrance Lighted Whistle Buoy	24° 27' 1095 m 81° 48' 55 m	28 May 1951 & 8 July 1951	110 ² ft. (located approximately)

copy of Am.

NOTE:

Locations by sextant fixes 11 May 1951 may be found in sounding record, "a" Day, page 4. Location of 28 May 1951 was checked during ship hydrography at Pos. 24 A Day and 8 July Pos. 4 C.

Q. LANDMARKS FOR CHARTS

No landmarks for charts were located within the limits of this survey.

U. MISCELLANEOUS

In reference to paragraph 3 of Director's letter 22/MEK, S-1-HY, dated 29 Nov. 1951, copy of which is appended to this report, no comment can be made due to the fact the Chief of Party and all other personnel directly connected with the field work on this Survey are no longer attached to the HYDROGRAPHER. It is assumed that no further field work is practicable. The field records are, therefore, being forwarded to the Norfolk Processing Office for processing.

Z. TABULATION OF APPLICABLE DATA

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

<u>DATE</u>	<u>DATA</u>
11/1/50	Report on Settlement & Squat Tests
1/6/51	Method of Recording Hydrographic Data
1/21/52	Season's Report for 1951

<u>DATE</u>	<u>DATA</u>
1/29/52	Shoran Report
1/23/52	Report on Calibration of Registering Sheaves
1/9/52	Report on Triangulation
12/12/51	Coast Pilot Report
1/23/52	Report on Velocity Corrections for 1951 <i>Spec. Report</i>
1/23/52	Report on Initial and Instrumental Corrections for 1951 "

The sounding volumes, fathograms, shoran plotting abstracts, boat sheet and related material are being forwarded to the Officer-in-Charge, Norfolk Processing Office.

The body of this report was prepared by J.E. Waugh, LCdr., USC&GS, one of the officers directly connected with subject survey.



Raymond M. Stone
LCdr., 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 this report.

The sounding volumes, fathograms and boat sheet as submitted to the Norfolk Processing Office have been reviewed and approved by me.

It is assumed that the survey is considered complete and adequate and no additional field work is recommended.

Robert A. Earle

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

STATISTICS FOR HYDROGRAPHIC SURVEY H-7932 (1951)

Volume Number	Day Letter	Date 1951	Number of Positions	Statute Miles of Soundings
1	a	11 May	11	2.5 (Launch CS 115)
2	A	28 May	123	38.0 (Ship)
2	B	29 June	69	22.5 (Ship)
2	C	8 July	47	15.2 (Ship)
TOTAL:			250	78.2

TOTAL AREA SURVEYED 4.0 SQUARE STATUTE MILES.

copy ✓ AMS.

TIDE NOTE

Tide Station: Sand Key Lighthouse
Latitude: $24^{\circ} 27'.2$
Longitude: $81^{\circ} 52'.6$
Plane of reference: Mean Low Water - 2.7 feet on tide staff
Time Correction: None
Height Correction; None

The value of the observed hourly heights for the times the ship was sounding was tabulated from the marigrams prior to forwarding them to the Washington Office. Tide curves were drawn and tide correctors were applied in the field as indicated in the Director's letters of 14 May 1951, 36-rcb; 22 May 1951, 36-rcb; and 31 May 1951, 36-mkl.

Correctors for Soundings on Survey H-7932 (HY-2151)
 Soundings and Correctors in Feet & Fathoms

Date Day Letter	Time	Fath. Phase	Index	Draft	Inst.	Tide	Total Corr.	Remarks
A - Day								
5/28/51								
Correctors to ± 0.5 ft.								
	0525	132 B	0.0	0.0	-1.0	-1.0	-2.0	LB 80 rpm
	0531 $\frac{1}{4}$	132 B	0.0	0.0	-1.0	-1.0	-2.0	
	0531 $\frac{1}{2}$	132 A	0.0	0.0	-1.0	-1.0	-2.0	
	0533	132 A	0.0	0.0	0.0	-1.0	-1.0	120 rpm
	0534	132 A	0.0	0.0	0.0	-1.0	-1.0	
	0534 $\frac{1}{4}$	132 B	0.0	0.0	0.0	-1.0	-1.0	
	0537 $\frac{1}{4}$	132 B	0.0	0.0	0.0	-1.0	-1.0	
	0537 $\frac{1}{2}$	132 C	0.0	0.0	+0.5	-1.0	-0.5	
	0604	132 C	0.0	0.0	-0.5	-1.0	-1.5	80 rpm
	0606	132 C	0.0	0.0	+0.5	-1.0	-0.5	120 rpm
	0643	132 C	0.0	0.0	+0.5	-0.5	0.0	
	0645	3/4-132 C	0.0	0.0	+0.5	-0.5	0.0	
	0646	132 D	0.0	0.0	+0.5	-0.5	0.0	
	0655	132 D	0.0	0.0	+0.5	-0.5	0.0	LE 120 rpm
	0707 $\frac{1}{2}$	132 D	0.0	0.0	+0.5	-0.5	0.0	LB 120 rpm
0718	3/4	132 D	0.0	0.0	+0.5	-0.5	0.0	
	0719	132 C	0.0	0.0	+0.5	-0.5	0.0	
	0723 $\frac{1}{4}$	132 C	0.0	0.0	+0.5	-0.5	0.0	
	0723 $\frac{1}{2}$	132 D	0.0	0.0	+0.5	-0.5	0.0	
	0733 $\frac{1}{4}$	132 D	0.0	0.0	+0.5	-0.5	0.0	

Correctors to ± 0.2 fathoms

0733 $\frac{1}{2}$	132 A	-9.8	0.0	0.0	-0.2	-10.0
0738 3/4	132 A	-9.8	0.0	0.0	-0.2	-10.0

Correctors to ± 0.5 feet

0739	132 D	0.0	0.0	+0.5	-0.5	0.0
0752	132 D	0.0	0.0	+0.5	-0.5	0.0
0752 $\frac{1}{4}$	132 C	0.0	0.0	+0.5	-0.5	0.0
0758 $\frac{1}{2}$	132 C	0.0	0.0	+0.5	-0.5	0.0
0758 3/4	132 D	0.0	0.0	+0.5	-0.5	0.0
0806 $\frac{1}{2}$	132 D	0.0	0.0	+0.5	-0.5	0.0

Correctors to ± 0.2 fathoms

0806 3/4	132 A	-10.0	0.0	0.0	-0.2	-10.2
0811 $\frac{1}{4}$	132 A	-10.2	0.0	0.0	-0.2	-10.4
0824 $\frac{1}{4}$	132 A	-10.0	0.0	0.0	-0.2	-10.2
0827	132 A	-10.2	0.0	0.0	-0.2	-10.4
0836 3/4	132 A	-10.0	0.0	0.0	-0.2	-10.2
0841	132 A	-10.2	0.0	0.0	-0.2	-10.4
0854 $\frac{1}{2}$	132 A	-10.0	0.0	0.0	-0.2	-10.2
0858	132 A	-10.2	0.0	0.0	-0.2	-10.4

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Correctors for Soundings on Survey H-7932 (HY-2151)
Soundings and Correctors in Feet & Fathoms

Date Day Letter	Time	Fath. Phase	Index	Draft	Inst.	Tide	Total Corr.	Remarks
A - Day 5/28/51 (cont.)		Correctors to ± 0.2 fathoms						
	0858	132 A	-10.2	0.0	0.0	-0.2	-10.4	
	0909	132 A	-10.0	0.0	0.0	-0.2	-10.2	
	0920	132 A	-10.2	0.0	0.0	-0.2	-10.4	
	0931	132 A	-10.2	0.0	0.0	-0.2	-10.4	
		Correctors to ± 0.5 feet						
	0931 $\frac{1}{4}$	132 D	0.0	0.0	+0.5	-0.5	0.0	
	0934	132 D	0.0	0.0	+0.5	-0.5	0.0	
	0935 $\frac{1}{4}$	131 D	+9.0	0.0	+3.0	-0.5	+11.5	
	0936	131 D	+9.0	0.0	+3.0	-0.5	+11.5	LE 120 rpm
B - Day 6/29/51		Correctors to ± 0.5 feet						
	0552	132 C	0.0	-0.5	+0.5	-1.5	-1.5	LB 120 rpm
	0617 $\frac{3}{4}$	132 C	0.0	-0.5	+0.5	-1.5	-1.5	
	0618	132 D	0.0	-0.5	+0.5	-1.5	-1.5	
	0623 $\frac{1}{2}$	132 D	-0.5	-0.5	+0.5	-1.5	-2.0	
	0639 $\frac{1}{4}$	132 D	-0.5	-0.5	+0.5	-1.5	-2.0	
	0639 $\frac{1}{2}$	132 C	-0.5	-0.5	+0.5	-1.5	-2.0	
	0642 $\frac{3}{4}$	132 C	0.0	-0.5	+0.5	-1.5	-1.5	
	0644 $\frac{1}{4}$	132 C	0.0	-0.5	+0.5	-1.5	-1.5	
	0644 $\frac{1}{2}$	132 D	0.0	-0.5	+0.5	-1.5	-1.5	
	0655 $\frac{1}{2}$	132 D	0.0	-0.5	+0.5	-1.5	-1.5	
		Correctors to ± 0.2 fathoms						
	0655 $\frac{3}{4}$	132 D	-9.8	-0.2	0.0	-0.4	-10.4	
	0708 $\frac{3}{4}$	132 A	-9.8	-0.2	0.0	-0.4	-10.4	
		Correctors to ± 0.5 feet						
	0709	132 D	0.0	-0.5	+0.5	-1.5	-1.5	
	0713 $\frac{1}{4}$	132 D	-0.5	-0.5	+0.5	-1.5	-2.0	
	0719	132 D	-0.5	-0.5	+0.5	-1.5	-2.0	LE 120 rpm
	0729	132 D	0.0	-0.5	+0.5	-1.5	-1.5	LB 120 rpm
	0754 $\frac{1}{2}$	132 D	0.0	-0.5	+0.5	-1.5	-1.5	
	0754 $\frac{3}{4}$	132 C	0.0	-0.5	+0.5	-1.5	-1.5	
	0757	132 C	0.0	-0.5	+0.5	-1.5	-1.5	
	0757 $\frac{1}{4}$	132 B	0.0	-0.5	0.0	-1.5	-2.0	
	0802	132 B	0.0	-0.5	0.0	-1.5	-2.0	LE 120 rpm
	0809	132 C	-0.5	-0.5	+0.5	-1.5	-2.0	LB 120 rpm
	0815	132 C	-0.5	-0.5	+0.5	-1.0	-1.5	
	0821	132 C	-0.5	-0.5	+0.5	-1.0	-1.5	LE 120 rpm

Correctors for Soundings on Survey H-7932 (HY-2151)
Soundings and Correctors in Feet & Fathoms

Date Day Letter	Time	Fath. Phase	Index	Draft	Inst.	Tide	Total Corr.	Remarks
C - Day								
7/8/51								
Correctors to ± 0.5 feet								
	1335 $\frac{1}{2}$	131 C	0.0	-0.5	+2.0	-1.5	0.0	LB 120 rpm
	1343	131 C	0.0	-0.5	+2.0	-1.0	+0.5	
	1344	131 C	-0.5	-0.5	+2.0	-1.0	0.0	
	1351 $\frac{3}{4}$	131 C	-0.5	-0.5	+2.0	-1.0	0.0	
	1352	131 B	-0.5	-0.5	0.0	-1.0	-2.0	
	1352 $\frac{1}{2}$	131 B	-0.5	-0.5	0.0	-1.0	-2.0	
	1352 $\frac{3}{4}$	131 A	-0.5	-0.5	-0.5	-1.0	-2.5	
	1354	131 A	-0.5	-0.5	-0.5	-1.0	-2.5	
	1354 $\frac{1}{4}$	131 B	-0.5	-0.5	0.0	-1.0	-2.0	
	1356	131 B	-0.5	-0.5	0.0	-1.0	-2.0	
	1356 $\frac{1}{4}$	131 C	-0.5	-0.5	+2.0	-1.0	0.0	
	1407 $\frac{1}{2}$	131 C	-0.5	-0.5	+2.0	-1.0	0.0	
	1407 $\frac{3}{4}$	131 B	-0.5	-0.5	0.0	-1.0	-2.0	
	1408	131 C	-0.5	-0.5	+2.0	-1.0	0.0	
	1410	131 C	-1.0	-0.5	+2.0	-1.0	-0.5	
	1414 $\frac{1}{2}$	131 C	-1.0	-0.5	+2.0	-1.0	-0.5	
	1414 $\frac{3}{4}$	131 B	-1.0	-0.5	0.0	-1.0	-2.5	
	1416	131 B	-1.0	-0.5	0.0	-1.0	-2.5	
	1417 $\frac{1}{2}$	131 C	-1.0	-0.5	+2.0	-1.0	-0.5	
	1430 $\frac{3}{4}$	131 C	-1.0	-0.5	+2.0	-1.0	-0.5	
	1431	131 B	-1.0	-0.5	0.0	-1.0	-2.5	
	1433 $\frac{3}{4}$	131 B	-1.0	-0.5	0.0	-1.0	-2.5	
	1434	131 C	-1.0	-0.5	+2.0	-1.0	-0.5	
	1442	131 C	-1.5	-0.5	+2.0	-1.0	-1.0	
	1445	131 C	-1.5	-0.5	+2.0	-1.0	-1.0	
	1445 $\frac{1}{4}$	131 C	0.0	-0.5	+2.0	-1.0	+0.5	
	1446 $\frac{1}{2}$	131 D	0.0	-0.5	+3.0	-1.0	+1.5	
	1449 $\frac{3}{4}$	131 D	0.0	-0.5	+3.0	-1.0	+1.5	

Correctors to ± 0.2 fathoms

	1450	131 A	-9.8	-0.2	-0.2	-0.2	-10.4	
	1456	131 A	-9.8	-0.2	-0.2	-0.2	-10.4	LE 120 rpm

ENT. BY: RTK RTK RTK RTK AJR
 CK'D BY: AJR AJR AJR AJR EEJ

LIST OF SIGNALS USED ON H-7932 (HY-2151)

NAME USED ON HYDROGRAPHIC SURVEY	ORIGIN OF STATION
ABE	Survey H-7932 - See Descriptive Report
AND	Sand Key Lighthouse - 1853
BEA	Ship Channel Shoal - Beacon 0 - 1935
KEY	Key West, Naval Radio Mast, Middle, 1917,35
OUT	Survey H-7932 - See Descriptive Report
SUT	Survey H-7932 - See Descriptive Report
TID	Survey H-7932 - See Descriptive Report
TRI	East Triangle Light - 1934

INSTRUMENTAL CORRECTIONS

1951

Abstract of Instrumental Corrections including the correction for Settlement and Squat (Ship installation)

Surveys: H-7932 (HY-2151); H-7933 (HY-8151); H-7934 (HY-8251); H-7935 (HY-8351)

FATHOM SCALES

Depth Rec.	Date	Scales:	A	B	C	D
131SG	21 April - 8 July	CORRECTORS TO 0.2 FATHOM				
		Speed: All speeds				
	Corrn:	- 0.2	+ 0.2	+ 2.0	+ 3.2	
	CORRECTORS TO 0.5 FATHOM	Speed: All speeds				
		Corrn:	0.0	0.0	+ 2.0	+ 3.0

FOOT SCALES

131 SG	21 April - 8 July	Speed: 120 RPM and over				
		Corrn:	- 0.5	0.0	+ 2.0	+ 3.0
		Speed: 106 RPM to 119 RPM incl.				
	Corrn:	- 1.0	- 0.5	+ 1.5	+ 2.5	
	25 July 10 December	Speed: 105 RPM and under				
		Corrn:	- 1.5	- 1.0	+ 1.0	+ 2.0
		Speed: 120 RPM and over				
	Corrn:	- 0.5	0.0	+ 3.0	+ 4.5	
	Speed: 106 RPM to 119 RPM incl.	Corrn:	- 1.0	- 0.5	+ 2.5	+ 4.0
Speed: 105 and under						
Corrn:		- 1.5	- 1.0	+ 2.0	+ 3.5	

Comp: JEW
AJR

VELOCITY CORRECTION

TEMPLATES

SURVEYS: H_7932 (HY-2151); H-7933 (HY-8151); H-7934 (HY-8251):
H-7935 (HY-8351).

AREA A

PERIOD: 21 April through 8 July 1951

DEPTH FATHOMS		TEMPLATE
From	To	Meters per second
00.0	50.5	1530
50.6	205	1515
206	and deeper	1500

AREA B

PERIOD: 25 July through 9 October 1951

DEPTH FEET		TEMPLATE
From	To	Meters per second
All depths		1545

PERIOD: 17 October through 9 December 1951

DEPTH FEET		TEMPLATE
From	To	Meters per second
All depths		1530

VELOCITY CORRECTIONS

For Type 308J Depth Recorder - Velocity of sound 820 fathoms per second

NOTE: All Corrections additive unless otherwise indicated

SURVEYS: H-7932 (HX-2151)

PERIOD: 19 April through 12 July 1951

LAUNCH			SHIP		
FLEET			FLEET		
Depth		Corrn. (0.5)	Depth		Corrn. (0.5)
From	To		From	To	
	12.0	0.0		21.5	0.0
12.5	30.5	0.5	22.0	39.0	0.5
31.0	49.5	1.0	39.5	59.5	1.0
50.0	69.5	1.5	60.0	80.0	1.5
70.0	91.0	2.0	80.5	102.5	2.0
91.5	114.5	2.5	103.0	123	2.5
115.0	129	3.0			

INSTRUMENTAL CORRECTIONS

1951

Abstract of Instrumental Corrections - Launch CS 115

Survey: H-7932 (HY-2151)

FOOT SCALES

Depth Rec.	Date	Scales:	A	B	C	D
132 SG	11 May	Corrn:	- 0.5	- 0.5	0.0	0.0

Comp: JEW
✓ AJR

14 November 1951

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

Subject: Supplemental Instructions - Project CS-328,
Paragraphs 24 & 25

1. The wire-drag investigation called for in paragraph number 24 of the subject instructions has not been made this season. The wreck lies well outside this year's working grounds. It would have been necessary to establish a special set of shore stations to furnish control if the investigation was to be made this year. The area is too far offshore to be done economically using visual fixes. It can easily be reached when the shore controlled hydrography is carried north of Tampa Bay Entrance and a junction is made with H-7793 in that area.

2. The wire-drag investigation called for in paragraph number 25 of the subject instructions was not made this season. In order to reduce the necessary wire-drag coverage to a minimum, this area was surveyed on a scale of 1:20,000 using the Ship HYDROGRAPHER as the survey vessel. The maximum spacing of lines as laid out was 150 meters. The area investigated on this survey was centered on the charted position of the wreck and extended at least one mile in all directions except to the north. The limit on the north was the rocks and shoals inshore from the charted position of the wreck. No indication was found of any shoal soundings that would furnish a clue as to the position of the wreck. Verbal inquiry was made in Key West of both the Coast Guard and the Naval Authorities regarding this wreck. No local information or knowledge was obtained from these sources. The use of the sonar in searching for this wreck was restricted due to the close proximity of the shoals on the north. Due to the steep gradient inshore from the wreck, poor control for visual fixes on the launches, as well as the light equipment and the size of the launches available to this party, it is impracticable to undertake an extensive wire-drag investigation covering this area.

**Subject: Supplemental Instructions - Project OS-328,
Paragraphs 24 & 25**

3. You are requested to modify the instructions accordingly.

Signed: Jack G. Sammons

**Jack G. Sammons
Commander, USCAGS
Commanding, Ship HYDROGRAPHER**

C
O
P
Y

22/MEK
S-1-HY

29 November 1951

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

Subject: Investigation of Wrecks -- Project CS-328

Reference: (a) Supplemental Instructions CS-328 dated 21 March 1951
(b) Your letter dated 14 November 1951 -- 9251.7 L&W/s

Paragraph one of your letter states that a ~~wire~~-drag investigation of wreck No. 502, situated 11.5 statute miles 296° true from Egmont Key Lighthouse was not made this season because it would have been uneconomical to make without shoran control. Permission is granted to postpone an investigation of this wreck until a time when shoran control which will cover the area of this wreck is established.

Paragraph two of your letter describes the preliminary investigation made for the wreck located near the entrance to the Key West main ship channel, in latitude $24^{\circ} 27.7'$, longitude $81^{\circ} 48.35'$. This investigation was restricted on the north side of the reported wreck because of the inadvisability of maneuvering the Ship HYDROGRAPHER close to the shoals north of the area being investigated. Further search for the wreck using launches equipped for shoran control is advisable.

Your comment is invited upon the practicability of a further search for the wreck near the Key West main ship channel using equipment now available to the HYDROGRAPHER.

/s/ Robert W. Knox

Acting Director

cc. Supervisor, Southeastern District
Supervisor, Southern District
Division of Charts (80) (83)
Chief, Hydrography Section

area wire-dropped. (See Ch. Letter 467 1954.) Now found.

2-25

ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-7932 (Field No. HY-2151)

GENERAL

This appears to be an excellent basic survey and no difficulty was experienced with the smooth plot.

SOUNDINGS

All soundings were scaled and the applicable corrections applied. They are recorded horizontally in the record books in red pencil, directly under the field readings.

No evidence of fathometer time discrepancies was found during the scanning process (see paragraph "H" in the body of the descriptive report.

SHORELINE

All shoreline was transferred directly from compilations T-8490 and T-8491.


Respectfully submitted,



Hugh L. Proffitt
Cartographer.

Norfolk, Va.
6 January 1954

Approved & Forwarded:



H.A. Paton
Supervisor, S.E. District.

GEOGRAPHIC NAMES

Survey No. H-7932

Name on Survey	Source										No.
	A	B	C	D	E	F	G	H	K		
<u>Florida</u>			(title)								1
<u>Straits of Florida</u>			(u)								2
<u>Key West</u>			(u)								3
<u>Main Channel</u>			(u)								4
											5
											6
											7
											8
											9
											10
											11
											12
<u>Sand Key lighthouse</u>			(hide station)								13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

Names approved
1-17-54.
L. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7932....

Records accompanying survey:

Boat sheets ...1.; sounding vols. .2....; wire drag vols.; bomb vols.; graphic recorder rolls 2.Env.; special reports, etc. .1.Smooth Sheet; 1.Descriptive Report; 1.Cahier-Shoran Plotting Abstracts;.....

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

Number of positions on sheet 250
Number of positions checked 20
Number of positions revised
Number of soundings revised (refers to depth only) 20
Number of soundings erroneously spaced 30
Number of signals erroneously plotted or transferred
Topographic details Time 1hr.
Junctions Time 10hrs
Verification of soundings from graphic record Time 4 hrs.
Verification by A.J. Hoffman Total time 7 Date 5/3/54
Reviewed by [Signature] Time 16 Date July 27, 1954

4-hrs - Stirni

2-28

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7932

FIELD NO. HY-2151

Florida, Gulf of Mexico, South of Key West

Project no. CS-328

Surveyed - May - July, 1951

Scale 1:20,000

Soundings:

Control:

808 Fathometer

Sextant fixes on shore signals and/or navigation buoys. Distance arc from shore station and a sextant angle.

Chief of Party - J. C. Sammons
Surveyed by - J. C. Sammons, J. P. Lushene and J. E. Waugh
Protracted by - R. A. Parker
Soundings plotted by - B. T. Lewis
Verified and inked by - A. J. Hoffman
Reviewed by - I. M. Zeskind 7-27-54
Inspected by - R. H. Carstens

1. Shoreline and Signals

The shoreline originates with air-photographic survey T-8490 (1943) and advance print of air-photographic survey T-8491 (1943).

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

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated.

The bottom is smooth.

4. Junctions with Contemporary Surveys

The junction with H-7933 (1951) on the east, south and west will be considered in the review of that survey. The survey extends to the limits of the project on the north where the charted information is in adequate agreement with present survey depths.

5. Comparison with Prior Surveys

- a. H-248 (1850), 1:20,000
H-281 (1850-1903), 1:20,000

Those portions of the prior surveys which fall within the area of the present survey are of a reconnaissance nature. Difference in depths between the prior and present surveys of as much as 38 ft. are noted, as for example, in lat. $24^{\circ}27.12'$, long. $81^{\circ}48.95'$, where a prior depth of 97 ft. falls in present depths of 133-135 ft. Attention is also directed to the shoal soundings of 17, 27 and 28 ft. (charted) originating with the prior surveys and falling on the present survey in the vicinity of lat. $24^{\circ}27.95'$, long. $81^{\circ}48.70'$, in depths ranging from 33 to 60 ft. The 17, 27 and 28 ft. depths are believed to be out of position and should actually fall 75 to 100 meters northward. The differences in depths are attributed largely to the dead reckoning control and the inaccurate spacing of soundings on the prior surveys.

The present survey is adequate to supersede the prior surveys within the common area.

- b. H-4138 (1919), 1:15,000
H-4169a (1920), 1:40,000

A comparison between the prior and present surveys reveals only minor differences of 2 to 3 ft. in depth, except on H-4138 in lat. $24^{\circ}27.10'$, long. $81^{\circ}49.90'$, where a prior depth of 101 ft. falls in present depths of 112-115 ft. This prior sounding was obtained by hand lead and was probably read 2 fms. too shoal.

With the addition of several bottom characteristics from survey H-4169a, the present survey is adequate to supersede the prior surveys within the common area.

- c. H-2875WD (1907-09-13), 1:15,000
H-2932WD (1908-13-14), 1:15,000

These wire-drag surveys partially cover the northwest portion of the present survey. The effective wire-drag depths are in harmony with the present depths.

6. Comparison with Chart 584 (Latest print date 5-3-54)

A. Hydrography

The charted hydrography originates with the previously discussed prior surveys which need no further consideration, supplemented by soundings from the present survey prior to verification and review.

The present survey is adequate to supersede the charted hydrography 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.
- c. No bottom characteristics were obtained within the area of the present survey.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions, except that at the time of the present survey, no wire-drag investigation was made of the wreck of the Schooner Rose Mary located near the entrance to the main ship channel to Key West, in lat. $24^{\circ}27.7$, long. $81^{\circ}48.35'$. However, the area around the wreck was subsequently wire-dragged to an effective depth of 60 ft. and no evidence of the wreck was found (Chart letter 467, 1954). The wreck has been deleted from Chart 584, dated 5-3-54. 62 ft (see FR 9, 1954) 1M2

9. Additional Field Work Recommended

This is a very good basic survey and no additional field work is recommended.

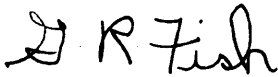
Examined and approved



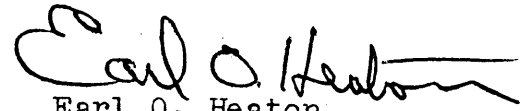
H. R. Edmonston
Chief, Nautical Chart Branch



E. R. McCarthy
Acting Chief, Division of Charts



G. R. Fish
Chief, Hydrography Branch



Earl O. Heaton
Chief, Division of Coastal Surveys

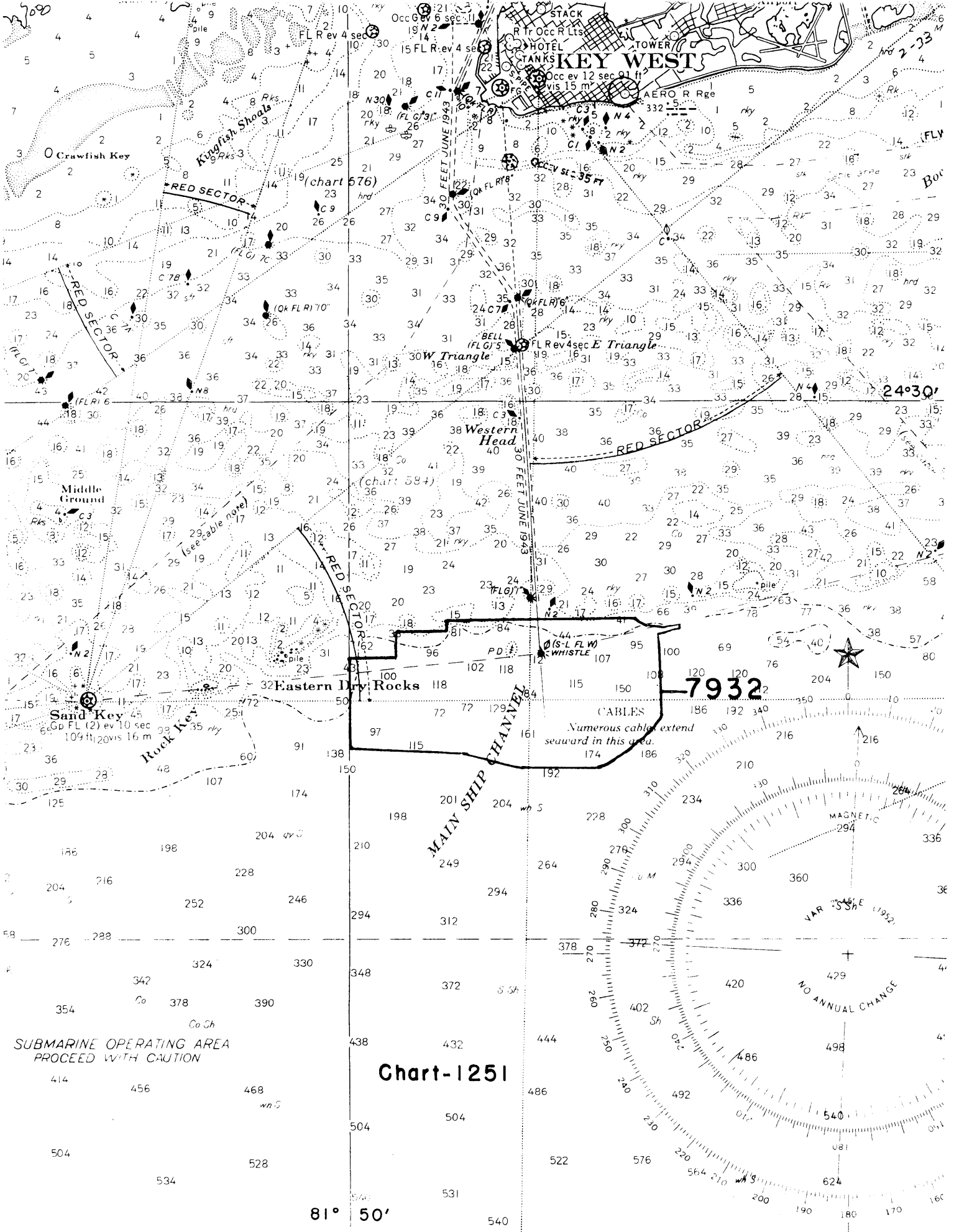


Chart-1251

81° 50'

SUBMARINE OPERATING AREA
PROCEED WITH CAUTION

7932

MAGNETIC
29.4
VAR 23.5 E (1952)
NO ANNUAL CHANGE

RHC
234

TIDE NOTE FOR HYDROGRAPHIC SHEET

26 January 1954

~~DIVISION OF HYDROGRAPHY AND SOUNDINGS~~

Division of Charts: R. H. Carstens

Plane of reference approved in
2 volumes of sounding records for .

HYDROGRAPHIC SHEET 7932

Locality Straits of Florida

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

Height of mean high water above plane of reference is 1.2 feet.

Condition of records satisfactory except as noted below:

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