

8626

Diag. Cht. No. 1007-2.

| | |
|---|--------------------------|
| Form 504 U. S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY DESCRIPTIVE REPORT | |
| <i>Type of Survey</i> | HYDROGRAPHIC |
| <i>Field No.</i> HY-40-1-61 | <i>Office No.</i> H-8626 |
| LOCALITY | |
| <i>State</i> | Florida |
| <i>General locality</i> | Gulf of Mexico |
| <i>Locality</i> | S. E. Gulf of Mexico |
| <u>19 61</u> | |
| CHIEF OF PARTY | |
| Emmett H. Sheridan, Capt, USC&GS | |
| LIBRARY & ARCHIVES MAR 4 1962 | |
| DATE | February 1962 |

USCOMM-DC 5087

HYDROGRAPHIC TITLE SHEET

H-8626

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

HY-40-1-61

State Florida

General locality Gulf of Mexico

Locality North of Key West
~~S.E. Gulf of Mexico~~

Scale 1:40,000 Date of survey 17 May thru 1 August 1961

Instructions dated 22 December 1960 Supplemental Instructions

Vessel HYDROGRAPHER

Chief of party Captain Emmett H. Sheridan

Surveyed by C.A. Schoene, J.F. Guth, R.C. Munson, R.L. Speer, R.F. Dudley, R.M. Hagan, H. Floyd

Soundings taken by echo sounder, ~~hand lead, wire~~ 808 fathometers 57-31 and 153

Fathograms scaled by ship's personnel

Fathograms checked by ship's personnel

Protracted by G. Fussell

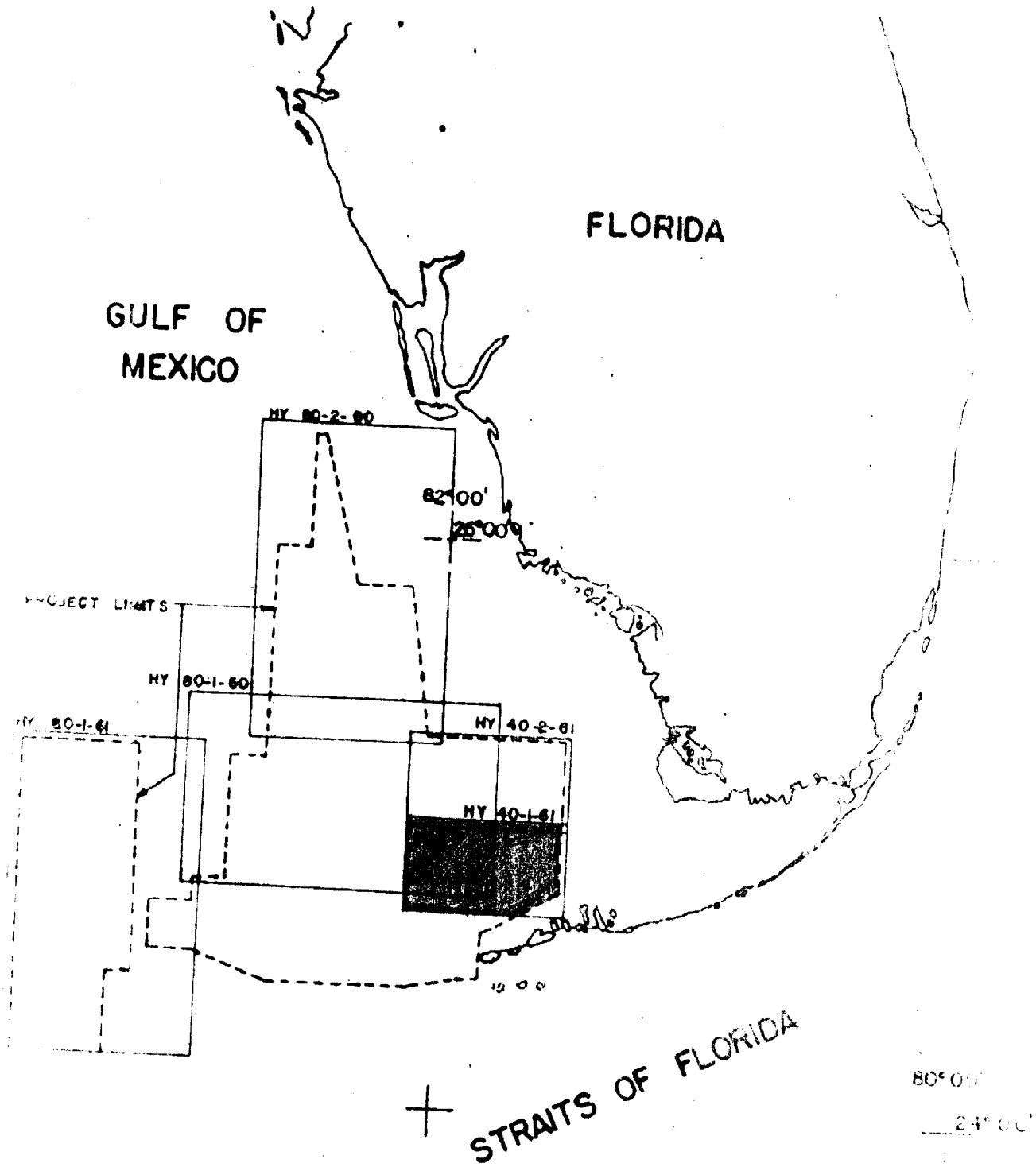
Soundings penciled by G. Fussell

Soundings in fathoms feet at MLW MLLW

REMARKS:

Handwritten initials and date:
D.W.
206

INDEX OF SHEETS



INDEX OF SHEETS

GULF OF MEXICO & STRAITS OF FLORIDA
 PROJECT OPR-328
 USCGSS HYDROGRAPHER
 1961 WINTER SEASON

Descriptive Report to Accompany
Hydrographic Survey HY-40-1-61
Registry No. H-8626
Gulf of Mexico and Straits of Florida
Ship HYDROGRAPHER
Scale: 1:40,000
Ernett H. Sheridan, Chief of Party

A. Project

Project OPR-328 Straits of Florida and Gulf of Mexico
Supplemental Instructions - dated December 22, 1960. Amended Instructions
dated April 5, 1961.

B. Area Surveyed

This survey covers an area of approximately 506 square miles in the southeastern Gulf of Mexico, North of Key West. The survey extends from Lat. $25^{\circ} 00' N$ Long. $81^{\circ} 32' W$, South to $24^{\circ} 49' N$, $81^{\circ} 32' W$ thence southwest to Lat. $24^{\circ} 42' N$, Long. $81^{\circ} 48' W$ then West to Lat. $24^{\circ} 42' N$ Long. $82^{\circ} 04'$ then North to Lat. $25^{\circ} 00' N$ Long. $82^{\circ} 04'$ then east to point of origin.

Field work began on May 17, 1961 and was completed on August 1, 1961. During this period considerable work was accomplished on other projects.

This 1961 survey overlaps prior surveys H-1825 surveyed in 1888, scale 1:40,000 and H-1131 surveyed in 1872, scale 1:80,000. In the southeastern part of the sheet the 1961 survey overlaps prior survey H-1828 surveyed in 1888, scale 1:40,000.

Junction was not made with surveys 5924-1935 scale 1:10,000, 5925-1935 scale 1:10,000, H-2623 - 1903 - scale 1:20,000 or 6326 - 1939 - Scale 1:20,000 due to the dangerous ship navigation that such a junction would impose.

Junction was made on the Northern part of the sheet with HY-40-2-61, on the Western side of the sheet with HY-80-1-60, and on the Eastern and the Southern side by project limits.

This survey overlapped surveys H-5924, H-1825, and H-1131 - scale 1:40,000, almost entirely. A junction was made with survey H-1828, with considerable overlap.

| <u>No.</u> | <u>Date</u> | <u>Scale</u> | <u>No.</u> | <u>Date</u> | <u>Scale</u> |
|------------|-------------|--------------|------------|-------------|--------------|
| H-1828 | 1888 | 1:40,000 | H-2623 | 1903 | 1:20,000 |
| H-1131 | 1872 | 1:80,000 | H-5924 | 1935 | 1:10,000 |
| H-1825 | 1888 | 1:40,000 | H-5925 | 1935 | 1:10,000 |
| | | | H-6326 | 1939 | 1:20,000 |

C. Sounding Vessel

The hydrography on this sheet was done by the Ship HYDROGRAPHER and launch CS-185 of the Ship HYDROGRAPHER.

The turning radius of the HYDROGRAPHER at sounding speed of 120rpm or approximately 10 knots is about 100 meters. The turning radius of the launch at sounding speed of 1500rpm or approximately 7 knots is about 30 meters.

Capital letters in blue, identify the work of the HYDROGRAPHER. Small letters in blue identify the work of hydrographic launch CS-185.

D. Sounding Equipment

Type 808 Fathometers, serial no. 57-31 and 153, were used for all sounding on this hydrography. These fathometers were used in water varying in depth from 25 feet to 75 feet.

Salinity and temperature observations were taken to determine velocity corrections for fathometer.

The algebraic sum of the fathometer error, settlement, squat, and draft were grouped under one correction (INST) and are tabulated at the end of this report.

A separate report for Fathometer and Velocity corrections has been submitted for 1961.

Between Position #185H and 187H the fathometer recorded the depth as 11 feet shoaler. These soundings were checked on another day. Position 21K-23K were taken on the same line and deeper depths were recorded. By comparison with surrounding soundings, it was concluded that the first soundings were in error and the deeper (latter) soundings were accepted as correct.

14% speed correction

E. Smooth Sheet

The smooth sheet projection and Raydist Arcs were constructed and inked in the Washington Office.

F. Control

All hydrography on this sheet was controlled by RaydistA (the 1961 Raydist lane value was 148.94669 feet) with the exception of a small area about 0.8 square miles in the southwestern corner of the sheet. This small area was controlled visually and developed by launch, since shoal water made ship navigation dangerous.

freq 3307.4 KC

F. (con'd)

Two Raydist stations were established at the following locations:

Boca Chica Key: (R₁) Triangulation Station Rock Point 3
1934, RM4 Latitude 24° 33' 36.139"N
 Longitude 81° 41' 03.731"W

Loggerhead Key: (R₂) Triangulation Station

Loggerhead Key Lighthouse: 1938, RM1
 Latitude 24° 37' 58.222"N
 Longitude 82° 55' 12.167"W

The station at Boca Chica Key (R₁) was located using third order traverse methods by ship's personnel in March 1960.

The station at Loggerhead Key (R₂) was located in June 1961 by the Ship's personnel using second order tellurometer traverse.

The launch work in the southwestern corner of the sheet was controlled visually by using a buoy anchored on top of the shoal, Smith shoal light, 1934, and the ship HYDROGRAPHER'S Mast.

The buoy was located by taking Raydist positions of the ship and bearings to the buoy. Four bearings were taken in this manner from widely spaced points and intersected in a point which was the location of the top of the shoal and the buoy. The HYDROGRAPHER anchored and a Raydist fix accurately indicated its position.

The Raydist dials were set from visual fixes and planted calibration buoys.

G. Shoreline

No shoreline or topography is shown on this sheet. The geographic position of Smith Shoal light was plotted by R. M. Hagan and verified by R.C. Munson.

H. Crosslines:

Two Hundred and Twenty One (221) of the twenty two hundred and fifty three (2253) nautical miles of soundings were crosslines. This is 9.8% of crosslines.

No depth curves were penciled because of the difference in line crossings, causing problems in accurately delineating the configuration of the bottom.

H. Crosslines (Con'd)

An attempt was made to weigh the actual tides between Key West, Dry Tortugas, and Naples to improve poor line crossing comparisons; however, it was found that the actual tides from the Naples gage produced the most satisfactory results. Crosslines comparisons vary from 0 to 4 feet. It is probable that the only way better results could have been obtained, was to record the actual tide in the area at the time of the hydrography, which would require an offshore tide gage.

I. Junctions

The comparison with the junction soundings H-1131 and H-1825, and H-1828 was adequate. Comparison with HY-40-2-61 and HY-80-1-60 was good.

J. Comparison with Prior Surveys

Preliminary Review Items - For details of Preliminary Review Items #10, #11, #12, #174 on Wreck List, and Preliminary Review Item for January 4, 1956 Chart 1351 refer to the letter to the Director dated August 2, 1961 subject - Chart Information.

The comparison with prior surveys H-1131, H-1825, and H-1828 is in general agreement. For reason of difference, see Crosslines of this report.

K. Comparison with the Chart

Comparison with Chart 1351 dated 21 November 1960 and Chart 1113 dated October 12, 1960 is good agreement with exception of the shoal near Smith Shoal Light 1934. An extensive development resulted in a least depth of 12 feet. On the chart, the shoal is $2\frac{1}{2}$ fathoms. (Refer to Letter to the Director dated August 3, 1961 subject - Shoal Development)

L. Adequacy of Survey

This survey is complete and adequate to supersede prior surveys for charting.

M. Aids to Navigation

Smith Shoal Light and two RB "WR" Buoys are within the area surveyed. Comparison of positions with chart #1351 agree very good.

There were several buoys within the area that were not shown in the Light List. These are Wildlife and Fishery buoys and are not smooth plotted as they are subject to change of location and description. Refer to the Coast Guard for the latest position and description.

N. Statistics

This survey consists of 3826 ship positions and 44 launch positions, 2253.7 n.m of sounding line by ship and 7.1 n. m of sounding line by launch. The survey covers 506 square nautical miles.

Oceanographic stations were observed. For detailed information, refer to Oceanography Report 1961, USC&GS Ship HYDROGRAPHER, Project OPR-328.

A total of 31 bottom samples were taken over the area the sheet covered.

O. Miscellaneous

Day letters C and D are both dated June 28, 1961 because of an error, which was not found in time to correctly letter the smooth sheet. Therefore, both letters are used for the same day. *Consequently the numbering will duplicate this discrepancy*

P. Recommendations

The survey is complete and adequate and no additional field work is recommended.

Q. Reference to Reports

1961 Reports

| Title | Forwarded to | Date |
|----------------------|-------------------|-------------------|
| Coast Pilot Report | Washington Office | November 17, 1961 |
| Season's Report | Washington Office | November 15, 1961 |
| Oceanographic Report | Washington Office | November 16, 1961 |
| Fathometer Report | Washington Office | February 13, 1962 |
| Raydist Report | Washington Office | January 17, 1962 |

A list of data applicable to this survey is enclosed.

Respectfully submitted,

Gerald Fussell

Gerald Fussell
ENS C&GS

TIDE NOTE

An attempt was made to weigh the actual tides between Key West, Dry Tortugas, and Naples to improve poor line crossing comparisons; however, it was found that the actual tides from the Naples gage produced the most satisfactory results.

A portable tide gage was established at Dry Tortugas, Loggerhead Key, Florida. Mean Low Water (MLW) on the staff was 2.6 feet.

Lat. $24^{\circ} 38'N$
Long. $82^{\circ} 55'W$
Time Meridan: 75th W

A portable tide gage was also established at Naples, Florida.

Lat. $26^{\circ} 07.86'N$
Long. $81^{\circ} 48.47' W$
Time Meridan: 75th W
Mean Low Water (MLW) on the staff was -0.4 feet

GEOGRAPHIC NAMES

The only charted geographic name in the area covered by this survey is Smith Shoal. On the shoal is a light (triangulation station).

The shoal located at longitude $81^{\circ}58'40''$ W Lat. $24^{\circ}42'30''$ N is not named on the chart.

TIDE CORRECTIONS

| <u>Day Letter</u> | <u>Date 1961</u> | <u>Time</u> | <u>Correction</u> |
|-----------------------|----------------------|-------------|-------------------|
| A | May 27 | 0000-0027 | -2.5 |
| | | 0028-0130 | -2.0 |
| | | 0131-0238 | -1.5 |
| | | 0239-0538 | -1.0 |
| | | 0539-0647 | -1.5 |
| | | 0648-0733 | -2.0 |
| | | 0734-1112 | -2.5 |
| | | 1113-1211 | -2.0 |
| | | 1212-1310 | -1.5 |
| | | 1311-1404 | -1.0 |
| | | 1405-1445 | -0.5 |
| | | 1446-1534 | 0.0 |
| | | 1535-1743 | 0.5 |
| | | 1744-1845 | 0.0 |
| | | 1846-1942 | -0.5 |
| | | 1943-2110 | -1.0 |
| 2111-2400 | -1.5 | | |
| B | June 27 | -1135 | -3.0 |
| | | 1136-1215 | -2.5 |
| | | 1216-1258 | -2.0 |
| | | 1259-1332 | -1.5 |
| | | 1333-1418 | -1.0 |
| | | 1419-1445 | -0.5 |
| | | 1446-1526 | 0.0 |
| | | 1527-1602 | 0.5 |
| | | 1603-1800 | 1.0 |
| | | 1801-1841 | 0.5 |
| | | 1842-1922 | 0.0 |
| | | 1923-2022 | 0.5 |
| | | 2023-2120 | -1.0 |
| | | 2121-2222 | -1.5 |
| 2223-2400 | -2.0 | | |
| C | June 28 | 0000-0304 | -2.0 |
| | | 0305-0440 | -1.5 |
| | | 0441-0724 | -1.0 |
| | | 0725-0810 | -1.5 |
| | | 0811-0850 | -2.0 |
| | | 0851-0952 | -2.5 |
| | | 0953-1252 | -3.0 |
| | | 1253-1338 | -2.5 |
| | | 1339-1422 | -2.0 |
| | | 1423-1450 | -1.5 |
| | | 1451-1544 | -1.0 |
| | | 1545-1612 | -0.5 |

| | | | |
|-----------|---------|-----------|------|
| C & D | June 28 | 1613-1638 | 0.0 |
| | | 1639-1710 | /0.5 |
| | | 1711-2005 | /1.0 |
| | | 2006-2038 | /0.5 |
| | | 2039-2112 | 0.0 |
| | | 2113-2145 | -0.5 |
| | | 2146-2257 | -1.0 |
| | | 2258-2400 | -1.5 |
| E | June 30 | -0122 | -2.0 |
| | | 0123-0250 | -2.5 |
| | | 0251-0436 | -2.0 |
| | | 0437-0622 | -1.5 |
| | | 0623-0806 | -1.0 |
| | | 0807-0908 | -1.5 |
| | | 0909-0956 | -2.0 |
| | | 0957-1106 | -2.5 |
| | | 1107-1438 | -3.0 |
| | | 1439-1522 | -2.5 |
| | | 1523-1608 | -2.0 |
| | | 1609-1640 | -1.5 |
| | | 1641-1720 | -1.0 |
| | | 1721-1758 | -0.5 |
| | | 1759-1833 | 0.0 |
| | | 1834-1927 | /0.5 |
| | | 1928-2054 | /1.0 |
| | | 2055-2132 | /0.5 |
| | | 2133-2206 | 0.0 |
| | | 2207-2248 | -0.5 |
| 2249-2330 | -1.0 | | |
| 2331-2400 | -1.5 | | |
| F | July 11 | 0000-0227 | -2.0 |
| | | 0228-0430 | -1.5 |
| | | 0431-0633 | -1.0 |
| | | 0634-0736 | -1.5 |
| | | 0737-0848 | -2.0 |
| | | 0849-1041 | -2.5 |
| | | 1042-1154 | -3.0 |
| | | 1155-1320 | -2.5 |
| | | 1321-1418 | -2.0 |
| | | 1419-1457 | -1.5 |
| | | 1458-1544 | -1.0 |
| | | 1545-1615 | -0.5 |
| | | 1616-1723 | 0.0 |
| | | 1724-1902 | /0.5 |
| | | 1903-2007 | 0.0 |
| | | 2008-2046 | -0.5 |
| | | 2047-2137 | -1.0 |
| | | 2138-2257 | -1.5 |
| 2258-2400 | -2.0 | | |

| | | | |
|-----------|---------|-----------|------|
| G. | July 12 | 0000-0219 | -2.0 |
| | | 0220-0420 | -1.5 |
| | | 0421-0713 | -1.0 |
| | | 0714-0814 | -1.5 |
| | | 0815-0953 | -2.0 |
| | | 0954-1340 | -2.5 |
| | | 1341-1448 | -2.0 |
| | | 1449-1522 | -1.5 |
| | | 1523-1621 | -1.0 |
| | | 1622-1701 | -0.5 |
| | | 1702-2017 | 0.0 |
| | | 2018-2113 | -0.5 |
| | | 2114-2210 | -1.0 |
| | | 2211-2400 | -1.5 |
| H | July 13 | 0000-0243 | -2.0 |
| | | 0244-0450 | -1.5 |
| | | 0451-0754 | -1.0 |
| | | 0755-0921 | -1.5 |
| | | 0922-1020 | -2.0 |
| | | 1021-1418 | -2.5 |
| | | 1419-1517 | -2.0 |
| | | 1518-1552 | -1.5 |
| | | 1553-1712 | -1.0 |
| | | 1713-1726 | -0.5 |
| | | 1727-1922 | 0.0 |
| | | 1923-2010 | 0.5 |
| | | 2011-2100 | 0.0 |
| | | 2101-2150 | -0.5 |
| 2151-2232 | -1.0 | | |
| 2233-2400 | -1.5 | | |
| J | July 14 | 0000-0010 | -1.5 |
| | | 0011-0316 | -2.0 |
| | | 0317-0510 | -1.5 |
| | | 0511-0833 | -1.0 |
| | | 0834-0958 | -1.5 |
| | | 0959-1110 | -2.0 |
| | | 1111-1436 | -2.5 |
| | | 1437-1541 | -2.0 |
| | | 1542-1630 | -1.5 |
| | | 1631-1726 | -1.0 |
| | | 1727-1757 | -0.5 |
| | | 1758-2132 | 0.0 |
| | | 2133-2241 | -0.5 |
| | | 2242-2328 | -1.0 |
| 2329-2400 | -1.5 | | |

| | | | |
|---|---------|-----------|------|
| K | July 15 | 0000-0048 | -1.5 |
| | | 0049-0412 | -2.0 |
| | | 0413-0543 | -1.5 |
| | | 0544-0943 | -1.0 |
| | | 0944-1102 | -1.5 |
| | | 1103-1350 | -2.0 |
| | | 1351-1428 | -2.5 |
| | | 1429-1604 | -2.0 |
| | | 1605-1656 | -1.5 |
| | | 1657-1805 | -1.0 |
| | | 1806-1902 | -0.5 |
| | | 1903-2210 | 0.0 |
| | | 2211-2300 | -0.5 |
| | | 2301-2350 | -1.0 |
| | | 2351-2400 | -1.5 |
| L | July 16 | 0000-0603 | -1.5 |
| | | 0604-1018 | -1.0 |
| | | 1019-1140 | -1.5 |
| | | 1141-1621 | -2.0 |
| | | 1622-1737 | -1.5 |
| | | 1738-1833 | -1.0 |
| | | 1834-1955 | -0.5 |
| | | 1956-2241 | 0.0 |
| | | 2242-2336 | -0.5 |
| | | 2337-2400 | -1.0 |
| M | July 17 | 0000-0048 | -1.0 |
| | | 0049-0637 | -1.5 |
| | | 0638-1105 | -1.0 |
| | | 1106-1256 | -1.5 |
| | | 1257-1730 | -2.0 |
| | | 1731-1840 | -1.5 |
| | | 1841-1936 | -1.0 |
| | | 1937-2050 | -0.5 |
| | | 2051-2308 | 0.0 |
| | | 2309-2400 | -0.5 |
| N | July 18 | 0000-0031 | -0.5 |
| | | 0032-0103 | -1.0 |
| | | 0104-0218 | -1.5 |
| | | 0219-0424 | -2.0 |
| | | 0425-0538 | -2.5 |
| | | 0539-0749 | -2.0 |
| P | July 26 | 2030-2112 | -1.0 |
| | | 2113-2157 | -1.5 |
| | | 2158-2400 | -2.0 |

Q

July 27

| | |
|-----------|------|
| 0000-0230 | -2.0 |
| 0231-0407 | -1.5 |
| 0408-0602 | -1.0 |
| 0603-0650 | -1.5 |
| 0651-0740 | -2.0 |
| 0741-0828 | -2.5 |
| 0829-1008 | -3.0 |
| 1009-2111 | -3.5 |
| 1212-1316 | -3.0 |
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| 1431-1502 | -1.5 |
| 1503-1542 | -1.0 |
| 1543-1607 | -0.5 |
| 1608-1652 | 0.0 |
| 1653-1920 | -0.5 |
| 1921-2005 | 0.0 |
| 2006-2037 | -0.5 |
| 2038-2122 | -1.0 |
| 2123-2204 | -1.5 |
| 2205-2300 | -2.0 |
| 2301-2400 | -2.5 |

R

July 28

| | |
|-----------|------|
| 0000-0220 | -2.5 |
| 0221-0341 | -2.0 |
| 0342-0449 | -1.5 |
| 0450-0709 | -1.0 |
| 0710-0758 | -1.5 |
| 0759-0849 | -2.0 |
| 0850-0932 | -2.5 |
| 0933-1030 | -3.0 |
| 1031-1317 | -3.5 |
| 1318-1412 | -3.0 |
| 1413-1501 | -2.5 |
| 1502-1538 | -2.0 |
| 1539-1617 | -1.5 |
| 1618-1706 | -1.0 |
| 1707-1730 | -0.5 |
| 1731-2031 | 0.0 |
| 2032-2113 | -0.5 |
| 2114-2152 | -1.0 |
| 2153-2226 | -1.5 |
| 2227-2318 | -2.0 |
| 2319-2400 | -2.5 |

| | | | |
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| | July 29 | 0000-0047 | -2.5 |
| | | 0048-0150 | -3.0 |
| | | 0151-0333 | -2.5 |
| | | 0334-0500 | -2.0 |
| | | 0501-0612 | -1.5 |
| | | 0613-0748 | -1.0 |
| | | 0749-0832 | -1.5 |
| | | 0833-0917 | -2.0 |
| | | 0918-1013 | -2.5 |
| | | 1014-1138 | -3.0 |
| | | 1139-1411 | -3.5 |
| | | 1412-1510 | -3.0 |
| | | 1511-1547 | -2.5 |
| | | 1548-1630 | -2.0 |
| | | 1631-1707 | -1.5 |
| | | 1708-1742 | -1.0 |
| | | 1743-1818 | -0.5 |
| | | 1819-2108 | 0.0 |
| | | 2109-2143 | -0.5 |
| | | 2144-2228 | -1.0 |
| | | 2229-2310 | -1.5 |
| | | 2311-2400 | -2.0 |
| T | July 30 | 0000-0022 | -2.0 |
| | | 0023-0342 | -2.5 |
| | | 0343-0452 | -2.0 |
| | | 0453-0609 | -1.5 |
| | | 0610-0922 | -1.0 |
| | | 0923-1003 | -1.5 |
| | | 1004-1040 | -2.0 |
| | | 1041-1130 | -2.5 |
| | | 1131-1552 | -3.0 |
| | | 1553-1658 | -2.5 |
| | | 1659-1747 | -2.0 |
| | | 1748-1824 | -1.5 |
| | | 1825-1918 | -1.0 |
| | | 1919-2006 | -0.5 |
| | | 2007-2146 | 0.0 |
| | | 2147-2243 | -0.5 |
| | | 2244-2322 | -1.0 |
| | | 2323-2400 | -1.5 |
| U | July 31 | 0000-0005 | -1.5 |
| | | 0006-0118 | -2.0 |
| | | 0119-0458 | -2.5 |
| | | 0459-0622 | -2.0 |
| | | 0623-0718 | -1.5 |
| | | 0719-1029 | -1.0 |
| | | 1030-1120 | -1.5 |
| | | 1121-1209 | -2.0 |
| | | 1210-1332 | -2.5 |
| | | 1333-1630 | -3.0 |
| | | 1631-1736 | -2.5 |
| | | 1737-1834 | -2.0 |
| | | 1835-1920 | -1.5 |

| | | | |
|-----------|---------------|-----------|------|
| U | July 31 Con'd | 1921-2043 | -1.0 |
| | | 2044-2307 | -0.5 |
| | | 2308-2347 | -1.0 |
| | | 2348-2400 | -1.5 |
| V | August 1 | 0000-0040 | -1.5 |
| | | 0041-0152 | -2.0 |
| | | 0153-0540 | -2.5 |
| | | 0541-0711 | -2.0 |
| | | 0712-0821 | -1.5 |
| | | 0822-1206 | -1.0 |
| | | 1207-1248 | -1.5 |
| | | 1249-1421 | -2.0 |
| | | 1422-1756 | -2.5 |
| | | 1757-1937 | -2.0 |
| | | 1938-2028 | -1.5 |
| 2029-2400 | -1.0 | | |

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VELOCITY CORRECTIONS 1961

| Depth in feet | Corr. |
|---------------|----------------|
| 0-63 | 0.0 |
| 63.5 and over | 0.5 |

INSTRUMENT CORRECTIONS 1961

| Date | Phase | Fath. #153 | | | Fath. #57-31 | | |
|-----------------------------|-------|--------------|----------------|------------|--------------|----------------|------------|
| | | RPM 0-105 | RPM 106-119 | RPM 120 | RPM 0-105 | RPM 106-119 | RPM 120 |
| M ay 11 thru August 1 | A | /0.5 | /1.0 | /1.5 | -0.5 | 0.0 | /0.5 |
| | B | /1.5 | /2.0 | /2.5 | 0.0 | /0.5 | /1.0 |
| | C | /1.0 | /1.5 | /2.0 | /1.0 | /1.5 | /2.0 |

LIST OF SIGNALS

Boy

Hip

Sho

Buoy on Shoal

HYDROGRAPHER'S MAST

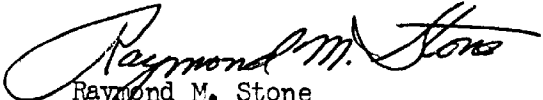
Smith Shoal Light 1934

A P P R O V A L

The records, smooth sheet and boat sheet for Survey H-8626, HY-40-1-61, are approved as submitted. All field work was performed under the supervision of Captain F. H. Sheridan, prior to my assuming command on January 19, 1962.

The records and smooth sheet as submitted to the Washington Office have been reviewed and approved.

The survey is complete and adequate and no additional field work is recommended.


Raymond M. Stone
CDR, C&GS
Comdg, Ship HYDROGRAPHER

GEOGRAPHIC NAMES

Survey No. H-8626

| Name on Survey | Sources | | | | | | | | | | | No. |
|-----------------------|--------------|-------|------------------------|--------------------------|------------------------|---------------|--------------------|--------------------|------------------|-----|---|-----|
| | A | B | C | D | E | F | G | H | K | BoW | | |
| | On Chart No. | 11/13 | 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 | | | |
| <i>Gulf of Mexico</i> | ✓ | | | | | | | | | | ✓ | 1 |
| <i>Smith Shoal</i> | ✓ | | | | | | | | | | | 2 |
| | | | | | | | | | | | | 3 |
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George M. Bell
Geographic Names
13 April 1962

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8626.....

Records accompanying survey: Smooth sheets ...¹..;

boat sheets ..¹..; sounding vols. ¹⁴~~12~~..; wire drag vols.;

Descriptive Reports ..¹..; graphic recorder envelopes ..¹⁵..;

special reports, etc. ..1 Cahier - Raydist Brush Tapes and

Clary Printer Tapes.

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

Number of positions on sheet

Number of positions checked

Number of positions revised

Number of soundings revised (refers to depth only)

Number of soundings erroneously spaced

Number of signals erroneously plotted or transferred

Topographic details Time

Junctions Time

Verification of soundings from graphic record Time

Special adjustments Time

Coastal 109 2/72

Verification by Total time Date

Reviewed by Time Date

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H-8626

The verifier should deal with the present hydrographic survey only, as the reviewer considers its relation to previous surveys and published charts. He should be thoroughly familiar with Chapters 3, 7 and 9 of the Hydrographic Manual.

1. The descriptive report was consulted and appropriate notes were made in soft pencil regarding action taken.
2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude.
3. All reference to survey sheets mentioned in the descriptive report include the registry number and year.
4. Geographic names of hydrographic features if on sheet are in slanting lettering and of topographic features in vertical lettering.
5. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken.
6. All positions verified instrumentally were check marked in the sounding records.
7. All critical soundings are clear and legible and are a little larger than the adjacent soundings.
8. The metal protractor has been checked within the last three months.
9. The protracting and plotting of all bad crossings were verified.
10. All detached positions locating critical soundings, rocks or buoys were verified.
11. The boat sheet was compared with the smooth sheet.

12. The spacing of soundings as recorded in the records was closely followed.
13. The bottom characteristics were shown on outstanding shoals.
14. The reduction and plotting of doubtful soundings were checked.
15. The transfer of contemporary topographic information was carefully examined.
16. All junctions were transferred and overlapping curves made identical.
17. The notation "JOINS H- (19--)" was added in ink for all contemporary adjoining or overlapping sheets now registered. Those not verified are shown in pencil.
18. The depth curves have been inspected before inking.
19. All triangulation stations and transfer of topographic and hydrographic signals were checked.
20. Heights of rocks were checked against range of tide.
21. Rocks transferred from topographic surveys have a dotted curve where shown thereon. Rocks located accurately by hydrographer are encircled by dotted red curve.
22. Unnecessary pencil notes have been removed.
23. Objects on which signals are located and which fall outside of the low water line have been described on the sheet.
24. The low water line and delineation of shoal areas have been properly shown.
25. Degree and minutes values and symbols have been checked.
26. Questionable soundings have been checked on the fathograms.

27. Source of shoreline and signals (when not given in report).
28. All notes on sheet are in accordance with figure 171 in the Hydrographic Manual.
29. All aids located, with those on contemporary topographic sheets, have been shown on survey.
30. Depth curves were satisfactory except as follows:
31. Sounding line crossings were satisfactory except as follows:
32. Junctions with contemporary surveys were satisfactory except as follows:
33. Condition of sounding records was satisfactory except as follows:
34. The protracting was satisfactory except as follows:
35. The field plotting of soundings was satisfactory except as follows:
36. Notes to reviewer:

NAUTICAL CHARTS BRANCH

SURVEY NO. 8626

Record of Application to Charts

| DATE | CHART | CARTOGRAPHER | REMARKS |
|----------|-------|-------------------|---|
| 4-2-62 | 1251 | J. Daily | Before After Verification and Review Partially Applied Critical Corr Only. |
| 4-2-62 | 1351 | J. Daily | " " " " " " |
| 4-3-62 | 1253 | J. Daily | Before After Verification and Review No Corr. |
| 5-2-62 | | | |
| 5-2-62 | 1007 | G.R. Johnson | Before After Verification and Review Examined - No Corrections Applied |
| 5-23-62 | 1112 | J. Daily | Before After Verification and Review Corrections Appld |
| 3/30/62 | 1252 | N. W. Bergayac | Before After Verification and Review Exam ^{NO} Crit Corrs |
| 7/27/62 | 1002 | O. Svendsen | Before After Verification and Review Exam. No corr |
| 12/12/62 | 1113 | H. M. Quinly | Before After Verification and Review Partially applied thru 1351. |
| 12/15/62 | 859 | John P. Weir | Before After Verification and Review Exam, No correction |
| 1/15/63 | 1003 | H. Quinly | Before After Verification and Review Partially applied - revised 10 for course. |
| 7/23/70 | 1253 | Harold M. Schantz | Before After Verification and Review Part. Appl'd Added soundings in area of former inset |
| 11/6/79 | 11449 | Fannie Bowen | Adequately applied before verification and review. Cat I. |
| 11/1/79 | 11442 | Fannie Bowen | Adequately applied before verification and review. Cat. Overlap applied through chart 11439. |
| 2-3-83 | 11434 | J. TURNER | ADEQUATELY APPLIED AFTER VERIFICATION. THE OVERLAP WAS APPLIED THRU CHARTS 11439 & 11442 |
| 2-3-83 | 11460 | J. TURNER | THE REMAINDER WAS APPLIED DIRECTLY TO 11434 |

2-3-83 11460 J. TURNER No CORRECTION - SURVEY FALLS OUTSIDE AREA OF CHARTED HYDRO. 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.

2-7-84 11420 J. TURNER ADEQUATELY APPLIED AFTER VERIFICATION THRU CHART 11434 AFTER VERIFICATION.

| | | | |
|---------|-------|------------|---|
| 7-9-84. | 11013 | JOE TURNER | ADEQUATELY APPLIED AFTER VERIFICATION THRU CHART 11420 |
| 5-10-90 | 11431 | DMCALINDON | ADEQUATELY APPLIED CATEGORY I |
| 4-8-92 | 411 | Ken Foster | Adequately Applied - Cat. I |

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TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coast and Surveys~~

May 17, 1962

Division of Charts: R. H. Carstens

Plane of reference approved in
14 volumes of sounding records for

HYDROGRAPHIC SHEET 8626

Locality Southeast Gulf of Mexico

Chief of Party: E. H. Sheridan (1961)

Plane of reference is mean low water reading

-0.4 ft. on tide staff at Naples, Florida

10.0 ft. below B. M. No. 1 (1933)

2.6 ft. on tide staff at Dry Tortugas, Florida

8.8 ft. below B.M. No. 1 (1952)

Height of mean high water above plane of reference is:

Naples, Florida 2.1 ft.

Dry Tortugas 1.0 ft.

Condition of records satisfactory except as noted below:

J. M. Symons

Chief, Tides and Currents Branch

~~Chief, Division of Tides and Currents~~

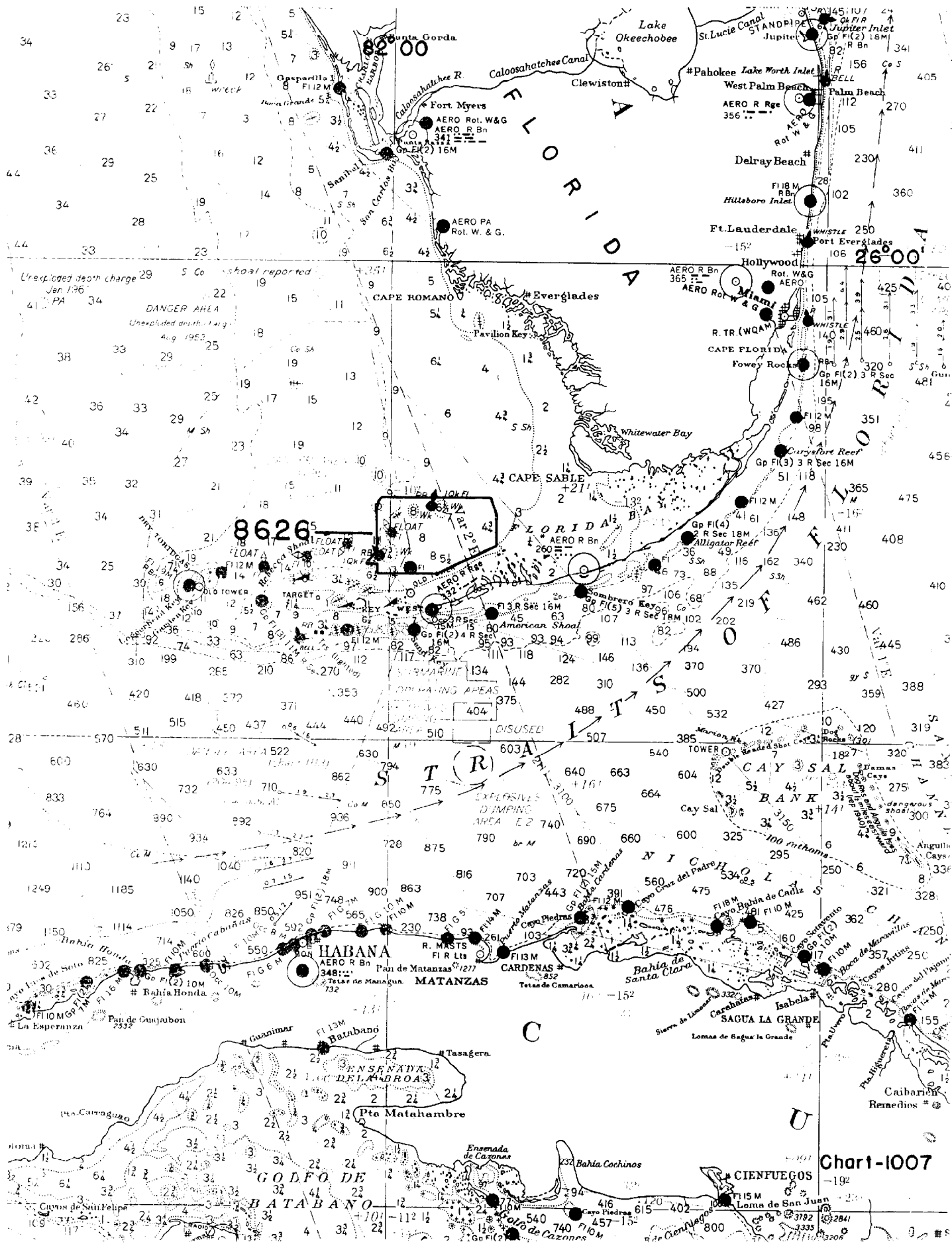


Chart-1007

Discrepancies on H-8626 (1961) Gulf of Mexico

Discrepancies of 1-4 ft. occur at numerous crossings of 808 bathometer lines on H-8626. A study of the initial traces on many days indicate two strong lines of trace composing the initial. The top trace normally considered as the initial is actually excited by a pulse going through a direct circuit in the bathometer to the stylus. This is manually maintained at a constant value by mechanical means. The second trace appearing 2 to 4 feet below the first trace probably reflects the discharge of the transducer though possibly not a direct measure of it. Depth as verified by means of the second echo is still related to the top initial trace.

The second initial trace varies in position and sometimes the line breaks down into erratic traces. Malfunction and instability in the transducer circuit is indicated as far

example at position 257 H where, although the top initial trace is constant, the second trace has dropped and the bottom trace has also dropped. A connection between the bottom profile and the second initial trace is thus established. There too is seen a very ragged second initial and similar traces in the bottom profile.

Light traces extending up from the second initial appear at random places with corresponding light traces in the bottom profile. Using the light traces will improve many of the crossing discrepancies although a complete explanation of this situation is not readily apparent. With some exceptions the light traces were generally not read in the field.

Three vertical east comparisons were taken during the morning to determine the instrumental correction. These were taken

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with the second initial at about 14.7 feet which should be accepted as a base when correcting soundings for movement of the second initial. Changes in the TRA correction may be made to correct for these shifts. Where the light bottom profile on spikes should be reflected in the depth this also can be accomplished by revisions to TRA.

Where the second initial appears to blend with the first initial trace the malfunction is considered to have ceased and ^{generally} work of those days may be used as a base for evaluating other days work. As there is uncertainty regarding the accuracy of tide returns in this area, complete consistency in final depth is unlikely to be obtained. Possibly residual discrepancies of ± 2 feet would be reasonable. Predicted tide based on ~~net~~ ^{net} ~~rather~~ ^{rather} consistency differed with recorded corrections from the Hopkins gauges by as much as 2 feet. However, greater ~~crossing~~ ^{crossing} differences would result in some instances.

The program to resolve these discrepancies should consist of the following:

- (1) Determining correctors to bring bottom readings to the level of light traces or spikes.

The correctors for the second initial offset should not be applied on these sections of lines.

(2) Determine correctors to bring second initial to 14.7, the value at calibration time. Since this may be only an approximation a deviation of only $\frac{1}{2}$ ft. may be disregarded.

(3) Log preliminary TRA corrector tapes and study preliminary plot. Additional adjustments may be required in some sections of lines based on crossings. Portions of A, B, and N day may be ^{re-adjusted}.

The following are recommendations for correctors on many day work or information regarding deviations from correctors now applied in the volumes:

a. An adjustment determined from crossing differences after preliminary plot, may be advisable for portions of A, B and C days.

b. D, E and F day - plot as recorded.

c. 2nd initial on 19-46 G, 183-186 G and

the entire H-day may be somewhat deep and may require a minus correction.

d. 2nd initial pos. 1-58 J show and should have corr. of -1.0 as also should a couple of rdgs. near 75 J. For light trace pos. 226 to 233 J, corr. 2.10'.

e. K day to correct to top of light trace use:

pos 1-3 K, corr. -2.0'

pos 3K+15 to 20K, corr. -1.5'

pos 21K to 24K, corr. -2.0'

pos 25K to 40K, corr. -1.0'

f. L-day pos 5-90 L 2nd initial correction
is up to -1.0, Pos. 130 to 133 L 2nd initial
corr. -1.0. Pos 169-175 L 2nd initial corr. -1.0

g. M-day pos 1-197 M 2nd initial corr. -1.0

h. N-day pos 67-89 N adjustment may be
needed later.

j. P-day pos. 2P+2 sdy to 16P, corr -2.0 for
light trace. Pos. 19P + 1 sdy to 21P, corr.
-1.0 for light trace

k. Q-day Pos 1-121 Q OK
To correct to light trace

Pos 141-143 K, corr -1.5

Pos 148-150 + 2 sdy, corr -2.0

Pos 151 Q + 3 sdy to 154 Q + 2 sdy, corr -2.0

Pos 164 Q to 165 Q + 1 sdy, corr. -2.0

Pos 165 Q + 2 sdy to 172 Q, corr. -3.0

Pos 172 Q + 1 sdy to 177 Q + 3 sdy, corr. -2.0

Pos 178 Q to 184 Q, corr. -3.0

Pos 184 Q + 1 sdy to 204 Q, corr. -2.0

Pos 204 Q + 1 sdy to 207 Q, corr. -1.0

Pos 217 Q to 247 Q, corr. -1.5

L. R-day to correct to light trace

Pos 1 R to 10 R, corr. -1.0

On days 5, 7, U & V the initial and
profile appeared normal and without
indications of malfunctions. These
days may be useful for evaluating other
days where crossing occur.

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Survey H-8627 on the north done during
the same period as H-8626 also has the
inaccuracies characteristic of
H-8626. On H-8627 and H-8628,
surveys plotted in fathoms, the same
fathometers were used and are as accu-
rately functioning with surveys plotted in
feet, the malfunctioning may be
significant. Supplemental sounding
lines run on H-8627 to be used
in resolving problems on H-5325 (1956)
should also be examined for the same
type of malfunctioning.

P. H. Carleton
12/10/71

3/30/62 1252 (11439) H.W. Borgome -

Before Ver + Review - Exam
Cat
No Corr.

11/1/79 11439 (1252) Fannie Powers

Adequately applied before
verification and review

11/1/79 Chart 11442 Fannie Powers

Cat I

Adequately applied
before verification
and review.

Cat I. Applied
on logging parties
through chart 11439

4-25-84 Chart 11006 Steve Tartar's

Exam No correction after
verification and review