

6656

6656

Form 504
Rev. April 1935

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. H-6656
Hydrographic }

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES
DEC 22 1941
Acc. No.

State Florida and Alabama

LOCALITY

Gulf of Mexico

South of Pensacola and Mobile Bays

1940

CHIEF OF PARTY

G. C. Mattison

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

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.

Field No. 83

REGISTER NO. H-6656

State Florida and Alabama

General locality Gulf of Mexico

Locality South of Pensacola and Mobile Bays

Scale 1 : 80000 Date of survey July, August, Sept., October, 19 40

Vessel HYDROGRAPHER

Chief of Party G. C. Mattison
Surveyed by W.M. Scaife, E.R. McCarthy, E.C. Baum, J.C. Tison, P.A. Weber, J.W. Stirni, J.F. ...

Protracted by A. J. Compagna

Soundings penciled by A. J. Compagna

Soundings in fathoms ~~1000~~

Plane of reference M. L. W.

Subdivision of wire dragged areas by _____

Inked by _____

Verified by _____

Instructions dated Supplemental June 24
July 1, 19 39

Remarks: _____

DESCRIPTIVE REPORT

To Accompany

HYDROGRAPHIC SHEET H-6656

(Field 83)

U.S.C. & G.S.S. HYDROGRAPHER

G. C. MATTISON, COMMANDING

PROJECT HT-236

1940

AUTHORITY:

This survey was executed in compliance with the Director's Instructions dated June 24, 1939 and Supplemental Instructions dated July 1, 1939.

LIMITS:

This is an offshore sheet south of Pensacola and Mobile Bays. It is bounded on the east by Longitude $87^{\circ} 00'$ and on the west by Longitude $88^{\circ} 05'$; it extends from Latitude $29^{\circ} 18'$ to Latitude $30^{\circ} 00'$.

CONTROL:

The majority of the buoys on this sheet were located by taut wire and sun azimuth traverses. These consisted of four strings of buoys in a north-south direction whose southerly ends were tied together by another string or strings to make a complete traverse. There were several buoys located by R.A.R. methods. The buoys on the taut wire traverses were tied in at their northerly ends by buoys located by sextant fixes on

shore objects. There were several temperature and salinity observations taken to obtain fathometer corrections and velocity determinations.

METHODS:

In the vicinity of buoys the lines were controlled by sextant fixes. In other cases R.A.R. methods were used for controlling the lines; very little dead reckoning occurred except for short distances between bomb arcs.

Soundings were taken with a Dorsey III fathometer using the 20 fathom and 100 fathom dials almost exclusively. The 1000 fathom dial was used mainly to check other dials.

The gyro compass was used for steering and for bearings. The correction was determined by frequent bearings on shore objects in range and by sun amplitudes.

RECORDS:

Soundings were corrected for tides and the usual fathometer corrections where the reducer or correction amounted to over one percent.

An abstract of R.A.R. and dead reckoning was kept independently of the sounding record and the bomb record. The abstract was used primarily for plotting and the sounding record for pencilling the soundings.

COMPARISON WITH PREVIOUS SURVEYS:

Comparison with the charts shows that, in general, this survey is in agreement with only a slight indication of shoaling.

See Review

Comparison with Sheet H-4133: The recent survey indicates considerable shoaling since previous projects.

Comparison with Sheet H-4134: There has been shoaling since the preceding surveys but the contrast between this and existing surveys is uniform.

See Review

Comparison with Sheet H-4139: There is fair agreement in shoal water but in greater depths there has been shoaling.

JUNCTIONS:

This sheet joins Sheet H-6554 on the northwest. The juncture is satisfactory and there is agreement where soundings coincide.

A junction is made with Sheet H-6555 on the northeast and this juncture is satisfactory.

This sheet joins Sheet H-6550 on the southwest. There is close agreement in the soundings.

Current surveys join this sheet on the west and southeast, so no study of the junctions can be made at this time.

CROSSINGS AND DISCREPANCIES:

In general, there are few discrepancies on this sheet because the draftsman took particular care to insure good crossings before considering his sounding lines established. There are some crossings where there ^{appears on the sheet} seems to be discrepancies but by consulting the sounding volumes and ascertaining the soundings that were taken but not pencilled one obtains close agreements.

The discrepancies referred to are very minor; for example, 31² against 31² on an irregular bottom with abrupt changes in depth in the form of waves. An exact delineation of the bottom would require closer surveying on a larger scale. This is not warranted as the shallow sloughs and slight ridges do not involve more than 2 fms. in depths of 20 to 50 fms.

Most soundings were pencilled at intervals of one minute on the lines because of lack of space.

The soundings between 1H and 2H in Latitude 29° 23.0', Longitude 87° 33.2' were not pencilled on the sheet because the fathometer was not functioning properly. The discrepancy with regard to adjacent soundings is from 8 to 38 fathoms.

In Latitude 29° 28.8', Longitude 87° 29.5' a sounding of 36 2/6 fathoms between 22D and 23D falls on one of 39 1/6 fathoms between 56B' and 57B'. The shoaler sounding was accepted. *This is the only plotted discrepancy worthy of noting.*

In Latitude 29° 37.6', Longitude 87° 31.3' a sounding of 34 3/6 fathoms between 35U and 36U falls on one of 33 4/6 fathoms between 58D. The difference is likely and the shoal sounding was pencilled on the sheet.

In Latitude 29° 37.2', Longitude 87° 29.8' a sounding of 37 5/6 fathoms between 15 D and 16D falls on one of 36 3/6 fathoms at 37U. This discrepancy is probable.

In Latitude 29° 40.7', Longitude 87° 33.1' a sounding of 23 5/6 fathoms between 9L and 10L falls on one of 24 5/6 fathoms between 4F and 5F. *satisfactory crossing*

Soundings between positions 52V and 53V were not put on the sheet for they are noted as strays in the sounding record and fail to agree at crossing.

In Latitude 29° 46.0', Longitude 87° 19.8' a sounding of 45 5/6 fathoms between 68U and 69U falls on one of 49 5/6 fathoms between 7W and 8W. The 49 5/6 fathom sounding was *neither sounding is inked*

'pencilled on the sheet for the shoaler sounding seemed wrong as evidenced by an erasure in the sounding volume of another sounding.

In Latitude $29^{\circ} 39.8'$. Longitude $87^{\circ} 18.2'$ a sounding of $61 \frac{3}{6}$ fathoms between 13V and 14V falls on one of $62 \frac{4}{6}$ very steep slope fathoms between 13W and 14W. The discrepancy is possible because of the irregular bottom.

CONTROL SURVEY BUOY:

For complete data pertaining to methods of locating each survey buoy see "List of Survey Buoys" attached to this report.

STATISTICS:

Statute miles of sounding lines.....	1586.8
Number of soundings.....	16960
Number of positions.....	1081
Area in square statute miles.....	1557.6

Respectfully submitted,

William F. Deane
William F. Deane,
Jr. H. & G. E.

Approved and forwarded:

C. K. Green
C. K. Green, H. & G. E.
Chief of Party

FATHOMETER CORRECTIONS:

T & S Corr'n Ft.	June to October Fm. Ft.
Plus 2.2	17-3
2.3	18-3
2.4	19-0
2.5	21-3
3.0	26-0
3.5	31-3
4.0	37-0
4.5	43-0
5.0	52-3
6.0	69-3
7.0	96-0
8.0	117-0
9.0	135-0
10.0	155-0
11.0	190-0
12.0	200-0

VALUES FOR SETTLEMENT

Plus 0.8 ft. (full speed)	120 RPM
0.6	100
0.4	80
0.2	60
0.0 ft.	40 RPM

IDS CORRECTIONS AND GYRO CORRECTIONS:

DATE 1940	DAY	I ft.	D ft.	S ft.	IDS ft.	GYRO CORR'N •
Jul. 23	A	-1.9	+1.0	+0.8	-0.1	0.0
Aug. 1	B	"	+0.2	"	-0.9	0.0
7	C	"	+0.7	"	-0.4	-0.1
8	D	"	+0.7	"	-0.4	-0.1
9	E	"	+0.6	"	-0.5	-0.1
16	F	"	+0.0	"	-1.1	+0.3
21	G	-2.8	-0.1	+0.8	-2.1	+0.3
24	H	"	-0.3	"	-2.3	+0.3
29	J	"	-0.6	"	-2.6	-1.2
30	K	"	-0.7	"	-2.7	-1.2
Sep. 6	L	"	-0.2	"	-2.2	-1.2
8	M	"	-0.5	"	-2.5	-1.2
9	N	"	-0.5	"	-2.5	-1.2
10	P	"	-0.6	"	-2.6	-1.2
11	Q	"	-0.7	"	-2.7	-1.2
12	R	"	-0.8	"	-2.8	-1.4
13	S	"	-0.9	"	-2.9	-1.4
18	T	"	-0.1	"	-2.1	0.0
19	U	"	-0.2	"	-2.2	0.0
20	V	"	-0.3	"	-2.3	0.0
23	W	"	-0.2	"	-2.2	0.0
24	X	"	-0.3	"	-2.3	0.0
25	Y	"	-0.3	"	-2.3	0.0
26	Z	"	-0.4	"	-2.4	0.0
27	A'	"	-0.5	"	-2.5	0.0
28	B'	"	-0.6	"	-2.6	0.0
30	C'	"	-0.7	"	-2.7	0.0
Oct. 1	D'	"	-0.8	"	-2.8	0.0
2	E'	"	-0.8	"	-2.8	+0.7
10	F'	"	-0.7	"	-2.7	+0.7
11	G'	"	-0.7	"	-2.7	+0.7
12	H'	"	-0.8	"	-2.8	+0.7

LIST OF SURVEY BUOYS

8

TO ACCOMPANY

DESCRIPTIVE REPORT FOR HYDROGRAPHIC SHEET H-6656

The following survey buoys controlling hydrography on the sheet were located by taut wire - sun azimuth traverse (See special report "Taut Wire - Sun Azimuth Traverses, 1940" for all data relative to such locations):

<u>Buoy Name</u>	<u>Traverse No.</u>	<u>Buoy Name</u>	<u>Traverse No.</u>
APE	I	NED	VII
CAT	I	NUT	IV
GIG	V	OAK	VII
HEN	V	OX	IV
IVY	IV	PAT	IV
IZY	V	POR	VII
JAX	IV	RIM	VII
JOB	V	RIP	IV
JOE	V	SEW	VII
JON	V	SON	VI
KAT	V	SUM	IV
KIT	V	TIN	VI
LIP	VII	ULY	VI
LOG	V	VET	VI
MAT	IV	WIN	VI
MAY	VII		

R.A.R. survey buoys controlling hydrography on the sheet and located by means other than taut wire - sun azimuth traverse are listed below in the order in which their positions were plotted. Under the name of each buoy is listed all available data fixing its position, with pertinent notes regarding plotting on the sheet.

1. COY - Position transferred from Sheet H-6555.
2. ED - Position transferred from Sheet H-6555.
3. FLY - Position transferred from Sheet H-6555.

LIST OF SURVEY BUOYS

4. BEN - Located from following data:-

Gyro compass bearing BEN - IZY = 317° True. (Ship underway full speed).
 Depression angle to BEN = $5^{\circ} - 15'$ = 91 m. (Ship stopped. BEN & IZY on range).
 Depression angle to IZY = $2^{\circ} - 00'$ = 234 m. (Taken simultaneously with above).

Distance BEN to IZY = 143 m.

5. DAY - Located from following data:-

Bomb distance DAY - BEN = 13.75 sec. (Mn. of 2). Vel.=1530 m/s. (9/19/40).
 Bomb distance JOE - DAY = 14.28 sec. (Mn. of 2). Vel.=1530 m/s. (9/19/40).
 Bomb distance ED - DAY = 31.36 sec. (Mn. of 2). Vel.=1530 m/s. (9/23/40).

A velocity of 1530 m/s. was used in plotting the above bomb arcs because this value is indicated as the actual velocity by the bomb distance from COY to BEN as obtained on 9/18/40. The locations of COY and BEN are dependent upon positions of nearby buoys located by taut wire - sun azimuth traverse, and a bombed distance between them of 14.83 sec. (Mn. of 3) indicates a velocity of 1530 m/s. in order to make this distance check the taut wire locations. By using this velocity a perfect intersection is obtained at DAY from the three arcs listed above.

6. RIG - Located from following data:-

Bomb distance RIG - LOG = 17.08 sec. (Mn. of 3). Vel.=1517 m/s. (8/1/40).
 Bomb distance RIG - GIG = 19.84 sec. (Mn. of 3). Vel.=1530 m/s. (9/28/40).
 Bomb distance RIG - DAY = 15.36 sec. (Mn. of 3). Vel.=1530 m/s. (9/28/40).

The above arcs give a perfect intersection at RIG, and this position is checked by reciprocal gyro compass bearings observed on RIG and LOG while on sounding line on B day this sheet. (See B day, 8/1/40, positions 13 and 14).

The velocity of 1517 m/s. used for the bomb distance RIG - LOG, 8/1/40, is from velocity curves.

The velocity of 1530 m/s. used for the bomb distances RIG - GIG and RIG - DAY is the indicated velocity from velocity tests made on 9/29/40, when bomb distances between buoys HEN - GIG, IVY - GIG, JAX - GIG, and KEY - JAX were obtained. All these buoys were located by taut wire - sun azimuth traverse.

7. ANN - Located from following data:-

Bomb distance ANN - JAX = 18.91 sec. (Mn. of 3). Vel.=1528 m/s. (9/30/40).

The bomb distance ANN - RIG is obtained by plotting the following data which controls hydrography on D day, 8/8/40, this sheet:-

<u>Position</u>	<u>To Buoy</u>	<u>True Bearing</u>	<u>Time in Secs.</u>	<u>Velocity Used</u>
80-D	RIG	72.1°	8.34	1503 m/s.
"	ANN	----	10.40	1506 m/s.
81-D	RIG	72.5°	6.65	1503 m/s.
"	ANN	----	12.07	1506 m/s.
82-D	RIG	73.1°	4.84	1503 m/s.
"	ANN	----	13.82	1506 m/s.

The resulting arcs at ANN check closely with respect to each other and a mean was selected as giving the distance from buoy RIG.

LIST OF SURVEY BUOYS

7. ANN - (continued):

The following data which controls hydrography on E day, 8/9/40, this sheet, was also used in locating buoy ANN:-

<u>Position</u>	<u>To Buoy</u>	<u>True Bearing</u>	<u>Time in Secs.</u>	<u>Velocity Used</u>
5-E	LOG	49.2°	8.56	1533 m/s.
"	RIG	----	13.61	1521 m/s.
"	Ann	----	20.24	1522 m/s.
21-E	RIG	119.0°	8.05	1517 m/s.
"	ANN	-----	14.49	1517 m/s.

Plotting all of the above data on the sheet gives a perfect intersection of arcs at ANN, and this is the position shown.

The velocity of 1528 m/s. used for the bomb distance ANN - JAX is the indicated velocity from velocity tests made on 9/29/40 and 10/13/40, when bomb distances were obtained between buoys located by taut wire - sun azimuth traverse. All other velocities used are from velocity curves. These curves were based on bottom velocity theory and mean water depths between buoy and bomb were used to determine this variable velocity.

Positions of buoys located by R.A.R. methods plotted by J. C. Tribble.
 " " " " " " " " checked by E .L. Jones.

Above data assembled by James C. Tison, Jr.
 " " checked by A. J. Campagna.

rae
HRC

TIDE NOTE FOR HYDROGRAPHIC SHEET

December 24, 1941

~~Division of Hydrography and Topography:~~

✓ Division of Charts: Attention: Mr. H. R. Edmonston.

Plane of reference approved in
10 volumes of sounding records for

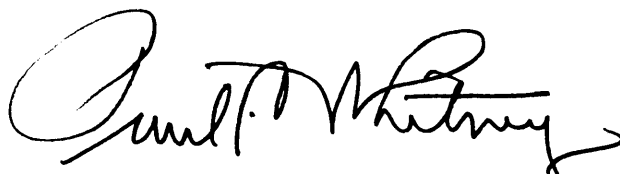
HYDROGRAPHIC SHEET 6656

Locality South of Pensacola and Mobile Bays, Gulf of Mexico.

Chief of Party: G. C. Mattison in 1940
Plane of reference is mean low water reading
2.4 ft. on tide staff at Fort Morgan
5.4 ft. below B. M. 1

Height of mean high water above plane of reference is 122 feet.

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents.

GEOGRAPHIC NAMES
 Survey No. **H6656**

Name on Survey											
	A. On Chart No.	B. On previous survey No.	C. On U. S. quadrangle Maps	D. From local information	E. On local Maps	F. P. O. Guide or Map	G. Rand McNally Atlas	H. U. S. Light List	K.		
<u>Alabama</u>											1
<u>Florida</u>											2
<u>Gulf of Mexico</u>											3
<u>Mobile Bay</u>											4
<u>Pensacola Bay</u>											5
											6
<u>Fort Morgan</u> (Alabama)											7
											8
											9
											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

THIS SURVEY HAS BEEN APPROVED
 BY L. Heck ON 7/31/42

Remarks

Decisions

1		U.S.G.B
2		4
3		
4		
5		
6		
7	Location of tide staff	
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		

Surveys Section (Chart Division)

HYDROGRAPHIC SURVEY NO. 6656...

Records accompanying survey:

Boat sheets *7*!; sounding vols. *8*...; wire drag vols. *—*...;
 bomb vols. *2*...; graphic recorder rolls *—*...;
 special reports, etc. *Cahier containing Abstracts of R.A.R.*.....

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

Number of positions on sheet	<i>1081</i> .
Number of positions checked	<i>0</i> .
Number of positions revised	<i>0</i> .
Number of soundings recorded	<i>16,960</i>
Number of soundings revised (refers to depth only)	<i>3</i>
Number of soundings erroneously spaced	<i>0</i> .
Number of signals erroneously plotted or transferred	<i>—</i>
Topographic details	Time <i>—</i>
Junctions	Time <i>6</i> .
Verification of soundings from graphic record	Time <i>0</i> .

Verification by *G.F. Jordan*..... Total time *96*. Date *9/3/43*....

Review by *G.F. Jordan*..... Time *14½*. Date *9/3/43*....

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
 DESCRIPTIVE REPORT
~~PHOTOSTAT COPY~~

No. H **H6656**
~~116507~~

received Dec. 16, 1941
 registered Dec. 24, 1941
 verified
 reviewed
 approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
24			
25			
26			
30			
40			
62			
63			
82			
83			
88			
90			

RETURN TO

82	R.W. Knox
----	-----------

RWK

DIVISION OF CHARTS

REVIEW SECTION - SURVEYS BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. 6656

Field No. 83

Gulf of Mexico, South of Pensacola and Mobile Bays
Surveyed July to October 1940; Scale 1:80,000
Instructions dated June 24 and July 1, 1939

Soundings:

Dorsey Fathometer

Control:

Three-point fix on buoy signals
Dead-reckoning
R.A.R.

Chief of Party - G. C. Mattison
Surveyed by - Ship's Officers
Protracted by - A. J. Compagna
Soundings plotted by - A. J. Compagna
Verified and inked by - G. F. Jordan
Reviewed by - G. F. Jordan
Inspected by - H. R. Edmonston, September 4, 1943

1. Shoreline and Signals

The buoy signals and R.A.R. buoys are discussed in the descriptive report.

No shoreline is included on this offshore survey.

2. Sounding Line Crossings

The sounding line crossings are excellent. This fact is established by an exceptionally large number of crossings nearly all of which agree in depth. A few discrepancies are listed in the descriptive report, but only one discrepancy of 3 fathoms in 40 fathoms is worthy of noting. The bottom is irregular and rolling in the lesser depths, dropping off rapidly at 40 to 50 fathoms.

3. Depth Curves

Satisfactory.

4. Junctions with Contemporary Surveys

This survey is completely bordered by other surveys of the present project. Starting from the east they are, respectively, H-6691 (1940), H-6692 (1941), H-6548 (1940), H-6650 (1940), H-6688 (1940), H-6554 (1940), and H-6555 (1940). Satisfactory junctions have been made with H-6692, H-6548 and H-6688. The other surveys are in the process of verification.

5. Comparison with Prior Surveys

H-483 (1855); H-599 (1858); H-2920c (no date)

These prior surveys on the small scale of 1:1,200,000 are not suitable for comparison. No critical soundings are involved.

H-1354 (1876) 1:600,000

The extreme northwest soundings on this prior small scale survey are in gross disagreement with the present survey and should be disregarded.

H-4133 (1920); H-4134 (1920); H-4139 (1920); H-4171 (1920)

These prior surveys on scales of 80,000 and 120,000 compare satisfactorily with the present survey in depths out to 20 fathoms but disagree in progressing amount in the deeper depths. The descriptive report refers to shoaling on the present survey, but the discrepancies in depth are considered to be due to poor control of dead reckoning lines on the prior surveys. The present survey shows the 100-fm. curve to be 1-1/2 to 3 miles farther offshore with 40-60-fathom depths falling on the 100-fm. curve on the prior survey.

These prior surveys should be disregarded. No shoals are included in this area.

6. Comparison with Chart 1115 (latest print of 11-20-42)

The charted soundings originate from the prior surveys discussed in Par. 5, with the exception of two soundings.

No authority was found for the 98-fm. sounding, in 125-fm. depths, charted at Lat. 29°46.6', Long. 87°07' nor the 43-fm. sounding, in 50-fm. depths, charted at Lat. 29°22', Long. 87°46.5'.

No aids to navigation are included in the area of this survey.

7. Condition of Survey

The sounding records, descriptive report and smooth plotting are very good. This is an excellent survey.

8. Compliance with Instructions for the Project

Satisfactory.

9. Additional Field Work Recommended

The present survey is complete. No additional work is recommended.


10. Superseded Surveys


The following surveys are superseded in part:


H- 483	(1855)	H-4133	(1920)
H- 599	(1858)	H-4134	(1920)
H-1354	(1876)	H-4139	(1920)
H-2920c	(- -)	H-4171	(1920)

Examined and approved:


Chief, Surveys Branch


Chief, Section of Hydrography


Chief, Division of Charts


Chief, Division of
Coastal Surveys

Applied to chart 1115. May 1944. L.A.M.