

7603

Diag. Cht. No. 1115-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey OFFSHORE HYDROGRAPHIC

Field No. HY-20147 Office No. H-7603

LOCALITY

State FLORIDA

General locality GULF OF MEXICO

Locality SOUTHWEST OF CAPE SAN BLAS

194 7-'48

CHIEF OF PARTY

F. L. PEACOCK

LIBRARY & ARCHIVES

DATE 13 SEPTEMBER 1948

8-1870-1 (1)

7603

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-7603 (~~Additional Work~~ 1948)

Field No. HY-20147

State Florida

General locality ~~NE central~~ Gulf of Mexico

Locality ^{Southwest} SW of Cape San Blas

Scale 1:200,000 Date of survey ^(5 Aug - 28 Nov. 1947) 1 June - 1 August 1948

Instructions dated 26 September 1946 and 9 July 1947

Vessel Ship HYDROGRAPHER

Chief of party Fred. L. Peacock

Surveyed by Ship's Officers

Soundings taken by fathometer, graphic recorder, ~~hand lead, wire~~

Fathograms scaled by Ship's personnel

Fathograms checked by Ship's personnel

Protracted by ~~W.N. Martin~~ ^{and} ~~No smooth plot~~ R.K. DeLauder

Soundings penciled by ~~W.N. Martin~~ R.E. Elkins and R.K. DeLauder

Soundings in fathoms ~~feet~~ at MLW ~~MLLW~~

REMARKS: Control by E.P.I. Additional work to furnish data for direct comparison between 1947 and 1948 corrected E.P.I. positioning and to eliminate minor holidays in 1947 seasons work.

APR 5 1948

Form 587
(Ed. June 1946)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

H7603

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REGISTER No. H-7603

Field No. Hy-20147

State Florida

General locality ~~NE central~~ Gulf of Mexico

Locality SW of Cape San Blas

Scale 1:200,000 Date of survey 5 Aug. to 28 Nov. 1947.

Instructions dated 26 September 1946 and 9 July 1947

Vessel Ship HYDROGRAPHER

Chief of party Fred. L. Peacock

Surveyed by F.L. Peacock, E.B. Latham, C.I. Aslakson, G.P. Shelton,

W.J. Chovan, J.D. Thurmond, W.N. Martin and L.S. Baker.

Soundings taken by fathometer, graphic recorder, ~~hand lead, wire~~

Fathograms scaled by Various and many personnel under officer supervision.

Fathograms checked by Various and many personnel under officer supervision.

Protracted by W. N. Martin

Soundings penciled by W. N. Martin and R. E. Elkins.

Soundings in fathoms ~~feet~~ at MLW ~~MLLW~~

REMARKS: Positioning entirely by E. P. I. system.

TIDE NOTE

FOR SURVEYS H-7603 AND H-7604

Reference Station: Pensacola Primary Tide Station

Position: Lat. 30° 24' 12"
 Long. 87° 12' 45"

Plane of Reference: MLW

Height of Staff at reference Plane 8.0 ft.

Time of Tide: 2 hours earlier

Range: Same

Authority: Office Letter dated 24 December, 1947

Hourly Heights were furnished from the Washington Office

DESCRIPTIVE REPORT TO ACCOMPANYOFFSHORE HYDROGRAPHIC SURVEY H-7603, (FIELD NO. 20147).

Scale 1:200,000

Ship HYDROGRAPHER 1947

Fred. L. Peacock, Chief of Party

PROJECT

This survey is a part of project No. C.S.-328. The original project instructions are dated 26 September 1946. Supplemental instructions for E.P.I. controlled offshore surveys are dated 9 July 1947.

SURVEY LIMITS AND DATES

The general locality of this survey is southwest of Cape San Blas, Florida.

The northern limit is irregular but averages Latitude 29° 20' N. The southern limit is Latitude 28° 50' N. The eastern limit is also irregular and is the approximate 30 fathom curve between Latitude 29° 24' N, Longitude 85° 54' W and Latitude 28° 50' N and Longitude 85° 02' W. The western limit is Longitude 87° 30' W.

This survey junctions with surveys ^{H-6690,} H-6691 and H-6692 (scale 1:80,000, year 1941) on the north, with H-6548 (scale 1:160,000, year 1940) on the west; and with ~~uncompleted~~ survey H-7604 (scale 1:200,000, year 1947) on the south. There are no modern surveys along the northeastern and ^{* H-7679 (1948-49)} eastern limits.

Hydrography on this survey began 5 August 1947 and concluded on (28 November 1947.) Aug 1, 1948

Progress on this survey was hindered by the unusually severe 1947 hurricane season. The new E.P.I. control for offshore hydrography required time and study to establish distance corrections and the desirable operational techniques. (See ^{* Not filed in Library} special report on E.P.I. corrections transmitted 22 Dec. 1947).

VESSEL AND EQUIPMENT

All hydrography on this survey was accomplished from the ship HYDROGRAPHER. All soundings were obtained by either 808-J type depth recorder No. 105-S or by a tuning fork

controlled NMC-1 depth recorder. The dividing depth between the 808 type instrument and the NMC-1 instrument was approximately the 150 fathom curve. Position control was entirely by the new "electronic position indicator system".

The turning radius of the Ship HYDROGRAPHER with the amount of rudder used was between 80 and 120 meters, depending on the velocity and direction of the wind. Full rudder was rarely used since, with full rudder, headway is radically diminished.

TIDE AND CURRENT STATIONS

The tide corrections for this survey were all obtained from the actual tides observed at the Pensacola Primary Tide Station at Pensacola. The time of tide was considered to be 2 hours earlier than that at Pensacola. The range was considered to be the same as at Pensacola. This in accordance with office letter dated 24 December 1947.

No current stations.

SMOOTH SHEET

The smooth sheet was prepared at the Washington Office. Some discrepancies between adjacent distance curves were encountered.

No shoreline or topographic detail appears on the offshore sheet.

CONTROL STATIONS

The hydrography on this survey was controlled by two E.P.I. shore stations. The western station was at the Department of Interior Wild-life Reservation on Santa Rosa Island near Pensacola Beach. The eastern station was at Carrabelle Beach.

The effective center of each station was located by triangulation methods from nearby stations of the coastal triangulation. The eastern station was located by G.A. Burmister. The western station was located by a party from the Ship HYDROGRAPHER under the immediate charge of J. D. Thurmond.

The length of baseline is approximately 152 statute miles.

SHORELINE AND TOPOGRAPHY

None shown on this offshore survey.

SOUNDINGS

(See paragraph on vessel and equipment.)

Sounding corrections for velocity of sound and instrumental error were controlled by adequate salinity and temperature serials and by frequent vertical cast comparisons using sounding machine No. H-141 with stranded wire over calibrated registering sheaves. Frequent simultaneous comparisons between the two depth recorders within their common range were also recorded and proved to be of much assistance in the final determination of sounding corrections.

The NMC-1 depth recorder is geared for a velocity of sound in water of 800 fathoms per second. With the installed tuning fork control, this instrument proved to be very accurate. Comparisons with vertical cast soundings indicated an instrumental error of minus 0.5 fathoms in depths of 30 fathoms, ranging gradually to plus 1.0 fathom in depths of 150 fathoms. Since vertical cast soundings have been proven to be in general too deep and since the NMC-1 depth recorder was used only in depths greater than 100 fathoms the instrumental correction for this instrument was considered to be zero. However, it is possible that a minus 0.5 fathom is actually a constant instrumental error applicable to all depths.

*The 808-J type depth recorder No. 105-S is geared for a velocity of sound in water of 820 fathoms per second. A number of tests taken at various times, with the middle tachometer reed vibrating at maximum amplitude, substantiated this velocity in general. The tests showed a velocity of 820 to 821 fathoms per second early in the season and a velocity of 817 to 818 fathoms per second at the close of the season. The vertical cast comparisons and the simultaneous readings with the NMC-1 instrument showed however an apparent variable instrumental error increasing with depth for the 808-J type depth recorder used. This instrument was sent to the Radiosonic Laboratory for examination and test. A letter received 13 March 1948 states that the stylus arm was found to be too short which condition would produce an apparent instrumental error increasing with depth. The exact effect of this defect appears to be ^{not readily} indeterminate and since the soundings had already been reduced in accordance with the vertical cast and NMC-1 comparisons, these reductions have been allowed to stand. Variable phasing errors were found

* Discussed in Special Reports #9, 11, 62 (1948)

to exist with this instrument. It was also noted that, with this instrument, the initial setting would sometimes creep.

Personal equation of newly trained and partially trained fathometer readers has been largely eliminated by rescaling the 808-J type depth recorder fathograms. Such personal equation is still occasionally apparent in the early NMC-1 soundings on this survey. ✓

A settlement and squat correction of plus 0.1 fathom has been applied to soundings on this survey obtained with the vessel proceeding at regular full speed. This correction is dropped at all lesser speeds. ✓

Attention is directed to the special reports^{NAS 9, 11, 62 (1948)} on the study of the 808-J type depth recorder errors (fathom scale). This report is at present approaching completion. ✓

CONTROL OF HYDROGRAPHY

All hydrography on this survey is controlled by the new electronic position indicator system. ✓

ADEQUACY OF SURVEY

This is the first survey utilizing the electronic position indicator system for horizontal control. In general an exceptionally well coordinated survey was obtained. The results of this survey indicate plainly that the new system for horizontal control of offshore surveys is very promising with respect to accuracy and economy and that the perfection of the system with respect to instrumental equipment and operating techniques should require a relatively short period. ✓

As was to be expected, however, we did run into some unforeseen complications. The chief difficulty was one which was not fully apparent until near the end of the field season. It was finally discovered that with separate sending and receiving antennae an inductive field was set up with the result that the shore station corrections to E.P.I. distances were not constants but were directional with a maximum observed range of up to 10 microseconds. ✓

The smooth plotting of this survey, using the results of the studies and tests made to determine the directional corrections to the E.P.I. distances, differs from the boat sheet. On account of precautions taken only three small

holidays have been noted. A small amount of additional development would improve the delineation of two bottom features. Otherwise, this survey, in the opinion of the Chief of Party, is an adequate and exceptionally well coordinated survey of an offshore area.

see attached
report 1948
work

Satisfactory junctions and overlap with adjoining surveys were obtained. Differences with the 1940-41 surveys do exist. Their disposition is left to the study of the reviewer without specific recommendation.

Attention is directed to additional information on this subject contained in the Chief of Party's seasons report submitted 12 Feb., 1948 and to the special report on the study of E.P.I. corrections submitted 22 Dec., 1947.

12.148 (1947)

Not filed in library

An interesting phase of the discovery of applicable directional E.P.I. corrections was that the many small changes of course, made to stay on or close to proposed sounding lines, while plotting with assumed constant corrections, were incident to the unknown directional errors instead of being the result of shifting currents or bad steering, as at first assumed. It was later demonstrated that when using the same non-directional antennae for both sending and receiving very straight lines could be run under E.P.I. control.

CROSSLINES

A system of 8% of crosslines was originally planned. When the evidence of directional corrections to E.P.I. distances was encountered additional crosslines were run to demonstrate and study the amount of the directional effect and also to strengthen the framework of crosslines for any smooth plotting and verification adjustments which might be necessary. Over 80% of the crossings on the smooth plotted sheet are excellent without any adjustment. Most of the imperfect crossings occur on the steep slopes in the vicinity of the 50 fathom curve where only a slight displacement could produce discrepancies of several fathoms.

All of the crosslines except those run for demonstration of directional effect, were obtained without extra cost on necessary runs to and from port or to and from shelter from bad weather.

(See attached special notes on crossing and junction discrepancies by W. N. Martin and R.E. Elkins.)

COMPARISON WITH PRIOR SURVEYS AND WITH THE CHART

A thorough comparison has not been made since it is believed that the decisions involved should be those of the reviewer. The general agreement appears good. The spacing of sounding lines on this survey and the accuracy of the horizontal control is so much more adequate than heretofore available that in the Chief of Party's opinion the new survey should supersede all prior surveys and charted data for the area. ✓

The specified maximum spacings of the main system of sounding lines for this survey is considered to be just about right. Very little additional development is required and no important bottom feature is apt to remain undetected. No changes in the specified line spacings for offshore areas in this general area are recommended. ✓

DANGERS AND SHOALS

None. The least depth on this survey is approximately 29 fathoms. The bottom slopes throughout the area of the survey are fairly regular and gradual with two notable exceptions.

At several places in the vicinity of the 50 fathom curve the depth plunges abruptly from a little more than 40 fathoms to 60 fathoms or deeper. On the top edge of these slopes there are several small shoalings with 37 fathoms the minimum depth noted. There also appear to be a few small canyons indenting these steep slopes. They are so small that on the 1:200,000 scale one cannot be sure that they are not errors in positioning, without further development. ✓

*See Review
Part 2*

A short distance beyond the 800 fathom curve the continental slope begins. There is only a small section of this slope at the southwestern corner of this survey.

COAST PILOT INFORMATION, AIDS TO NAVIGATION AND

LANDMARKS FOR CHARTS

None for the area of this offshore survey. ✓

The 1947 Region I hurricane season was unusually severe. Five of twelve hurricanes under observation produced bad weather in this area. The hurricane of 18-19 Sept. was exceptionally large and severe and interrupted field work for several days. ✓

GEOGRAPHIC NAMES 84 ✓

No new geographic names are recommended for any feature within the area of this survey. ✓

SILTED AREAS

No silted areas were detected. ✓

TABULATION OF APPLICABLE DATA

Chief of Party's seasons report transmitted 12 February 1948. (No. 146 (1947))

Special report on the study and investigation of E.P.I. distance corrections. Authors: Lieutenant Commander C. I. Aslakson and Lieutenant W. N. Martin. Transmitted 22 Dec., 1947. (Not filed in Library)

Special report on the study of 808-J type depth recorder No. 105-S errors (fathom scale). Author: Lieutenant W. N. Martin. (In preparation). Reports #9, 11, 62 (1948).

Triangulation field records, location of E.P.I. shore station EPIA. Transmitted 6 Feb., 1948.

Triangulation records location of E.P.I. shore station EPIB transmitted by Lieutenant Commander C.A. Burmister.

One cahier salinity and temperature data, not yet transmitted.

One cahier, containing zero check corrections and (in rough form) detailed tabulations of E.P.I. distance corrections as used in smooth plotting and to be transmitted for the temporary use of the verifier.

1 cahier, hourly heights, tides.

1 cahier, calibrations, registering sheaves and depth recorders.

1 cahier, original E.P.I. test data.

1 cahier, computations for fathometer corrections.

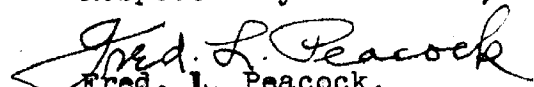
with
Sdg. Vols.

6 note books, record at E.P.I. receiver station.

Special notes on crossing and junction discrepancies.
(Attached to this report).

17 March 1948.

Respectfully submitted,


Fred. L. Peacock,
Captain, C. & G. Survey.

SPECIAL NOTES ON CROSSING AND JUNCTION DISCREPANCIES

SURVEY NO. H-7603

The following notes were prepared during the inspection and adjustment of the smooth plotted survey.

1. POSITIONS NOT PLOTTED OR WHICH WERE REJECTED

(a) U-day, 13 Oct., V-day, 14 Oct., and the first part of W-day, 15 Oct., beginning at Lat. $28^{\circ} 28' N$, Long. $86^{\circ} 46' W$.

(1) The 3 positions of U-day and the first 3 positions of V-day were rejected because of poor positioning. After examining the line from 4 V to 22 V, it was determined, on the basis of course, crossings and leg distances, that positions 5 and 14-21 appear correct. These positions were held and the remaining positions were plotted on time and course.

(2) Beginning with position 23 V and continuing to 57 W, positions were obviously in error and were not plotted on the smooth sheet. The errors were caused by sky waves from both EPIA and EPIB, but mostly from the former. During this time, the plotting of a few consecutive positions corresponds with the time and course, but, there is no assurance that the signals were not following relatively stable sky waves from one or both stations. A penciled overlay showing positions 32 V to 57 W is attached to the smooth sheet for information. The work omitted was replaced by later sounding lines. The main scheme line was rerun on BB-day. OK 009

(3) 60 W to 119 W. Because of the trouble experienced with sky waves before position 58 W, intermediate five minute fixes were taken between the regular ten minute intervals. Standard practice is for the shore stations to synchronize from $1\frac{1}{2}$ minutes before to $1\frac{1}{2}$ minutes after the regular fix time. As the shore stations were probably not in exact synchronization except at the regular fixes, these intermediate positions were not plotted.

(b) R-day, 2 Oct., positions 34 to 37, Lat. $28^{\circ} 56' N$, Long. $87^{\circ} 27' W$.

(1) On positions 34 to 37, the ship was headed into a heavy sea with force 7 to 8 wind. A great amount of fathometer trouble was caused by pitching of the ship and consequent aeration in the vicinity of the transceiver. It is believed many of the recorded soundings were erroneous. In addition, the positions from E.P.I. fixes are erratic and do not correspond with

time, course and log distance. Consequently positions 34 R to 37 R were not plotted. This section was also rerun on BB-day.

2. CROSSING DISCREPANCIES

(a) Discrepancies in positioning possibly due to land effect.

Most of the large discrepancies in crossings on this sheet fall in the northwestern part of this survey, in the area designated on Fig. 22, Special E.P.I. Report of 22 Dec. 1947 as being subject to maximum land effect. This apparent land effect increases in a northerly direction as discussed in section XVII, "Location Of Shore Stations," page 22, of the same report. There is a possibility that attenuation of signals from EPIB were different for different days of hydrography; a clear dry period might cause a higher ground wave absorption than a period of moist rainy weather.

(1) 12 - 13 Nov., *33 GG to 15 HH starting at Lat. $29^{\circ}10'N$, Long. $86^{\circ}08'W$. This is the northwestern end of a cross line, with discrepancies of 1 to 5 fathoms on eight crossings. It should be noted that on the lower section of this line, 10 GG to 33 GG, the crossings were excellent, and beginning with 33 GG (which is the southerly limit of the maximum land effect) the discrepancies get continuously larger. Shifting this section of the line toward EPIB from 2 to 8 micro-seconds would cause the crossings to agree. This is the correct direction if retarding of the signal was the cause. An inspection of the weather data showed a high barometer and low humidity this date.

* Positions 31GG to 15HH plotted on time, course, station EPIA and Crossings - R.K. Del.
 (2) 28 Nov., 3LL to 7 LL starting at Lat. $29^{\circ}19'N$, Long. $86^{\circ}34'W$. ~~Rejected - Soundings plotted from new line.~~

This cross-line is in the same category as sub-paragraph 2. (a) (1), with discrepancies of 2 to 6 fathoms.

On this date the barometer was very high and the humidity was low.

(3) 19 DD - 24 DD, ^{rejected} Lat. $29^{\circ}13'N$, Long. $85^{\circ}41'W$. - Same category as (1) above.

(b) Discrepancies - corrected.

(1) 30 Sept., 1 P to 12 P, Lat. $29^{\circ}40'N$, Long. $86^{\circ}50'W$.

On this watch a new fathometer reader was observing the NMC-1. A vertical cast comparison and simultaneous comparisons with the 808J depth recorder were taken. On the basis of these comparisons, which deviated from the means explained in the Special Report on 808J fathometer errors, an

additional correction of plus 2.0 fathoms was applied to the NMC-1 soundings taken on this watch.

(2) 19 Oct., Positions 32 Z to 46 Z, Lat. $29^{\circ} 10' N$, Long. $86^{\circ} 44' W$.

As discussed in the E.P.I. Report of 22 Dec., 1947, the time 1800, 19 Oct. was fixed as the time the change was made from the inverted V antenna to the whip antenna. This time was fixed because no hydrography was done between 1420 and 1940 while Mr. Hickley was repairing the E.P.I., and he subsequently reported that the antenna shift was made in the evening of Oct. 19 but no note was kept of the exact time. Plotting the line 32 Z to 46 Z using Figs. 3 & 4 (whip antenna) showed large discrepancies on all crossings. Replotting the line using Figs. 5 & 6 brings all crossings into agreement; therefore the antenna change has been refixed after 2200, Z day, 19 Oct.

(c) Discrepancies noted with possible explanations.

(1) 19 Oct. 3 Q to 6 Q, Lat. $29^{\circ} 14' N$, Long. $86^{\circ} 45' W$.

Two crossings are noted on this crossline with discrepancies of 2 fathoms each. The spacing of positions on this line is not too good and it is possible the line should be shifted slightly because of small position errors. *(unimportant)*

(2) 11 Sept. 8 L to 18 L, Lat. $29^{\circ} 04' N$, Long. $85^{\circ} 57' W$.

The soundings on this section of the line do not agree with the adjacent hydrography, being too far to the eastward. A study was made of this line but no discrepancies in fixes or soundings were found. It is possible that the EPI returns during the period were slightly in error. *(unimportant)*

(3) 19 Aug., 14-15 D, Lat. $29^{\circ} 24' N$, Long. $86^{\circ} 32' W$.

There is a 3 fathom discrepancy on the E-day crossing here. This discrepancy is possibly due to weather conditions. A force 7 wind was blowing. Sounding was discontinued immediately after position 17 D and the ship ran to Pensacola Bay for shelter from impending worse weather. Weather conditions were good in this locality on E-day. *(Deeper soundings omitted)*

(4) 5 Aug., 18 A to 25 A, Lat. $29^{\circ} 14' N$, Long. $85^{\circ} 51' W$.

There are discrepancies of 1 to 2 fathoms on this N-S crossline between 18 A and 25 A. An inspection of the 808-J fathogram showed the profile very dim. It is recommended that these soundings be deleted. -done.

(5) 5 Aug., 27 A to 30 A, Lat. 28° 57'N., Long. 85° 55'W.

There are discrepancies of 2 fathoms where this line crosses 2 AA-day sounding lines. As this was the first time the red light on the NMC-1 had been used, it is probable that the A-day soundings were read incorrectly through lack of experience. *Soundings accepted.*

(6) 23 Aug., 31 E to the sounding before 33 E, Lat. 29° 05'N, Long. 85° 51'W.

Soundings disagree with crossings. It is recommended these soundings be rejected as the voltage on the tuning fork was not stabilized. *done*

(7) 146 W to 148 W and 151 W to 157 W, Lat., 29° 07'N., Long. 85° 48'W.

These sections are in an area of steep slopes. A small positioning change would cause the soundings to agree with adjacent hydrography. *Rejected - soundings not needed in well-developed area*

(d) Discrepancies noted - no explanation.

The following discrepancy has been investigated but cannot be explained.

(1) 5 K to 6 K and 38a H to 39 H, 3 fathoms discrepancy, Lat. 29° 16'N, Long. 86° 02'W. *Unimportant - steel soundings plotted.*

3. JUNCTIONS AND OVERLAP DISCREPANCIES

(a) Survey H-6691 (1941) The junction is in good agreement.

(b) Survey H-6692 (1941) The junction is in fair agreement, east of Long. $87^{\circ} 00'$. West of Long. $87^{\circ} 00'$ the soundings of the present survey are generally 10 fathoms shaller than those of Survey H-6692 in depths of 500 to 600 fathoms, causing a maximum lack of agreement of 8 mm. in the depth curves on scale of 1:200,000.

(c) Survey H-6548 (1940) The soundings of H-7603 appear 10 to 20 fathoms shaller than those of H-6548 in depths of 600 to 1000 fathoms, causing about 4 mm. lack of agreement of depth curves on the 1:200,000 scale.

(d) A tracing of soundings and depth curves from Survey H-7603 smooth sheet used in the inspection of junctions and overlaps with transferred soundings from Surveys H-6691, H-6692 and H-6548 on the boat-sheet is being transmitted attached to Survey H-7603 boat-sheet.

- Review
Rev. 4

4. MISCELLANEOUS

(a) Many vertical casts were taken with out fixes at ends of sounding lines. This is because VCs were usually taken at odd time intervals when E.P.I. shore stations were not in synchronization. Most probable position of VC was spotted on beat sheet by the Officer in Charge. These positions have been transferred to the smooth sheet. ✓

(b) In congested areas, additional soundings at crossings have been lightly penciled at reduced size in order to study cross lines. ✓

These have not been removed, as it is thought that they will be of value to the verifier. ✓

(c) Extra curves (60, 70, 80 and 90 fms.) have been penciled at the request of the Chief of Party. ✓

5. SHOALINGS

(a) Near the 50 fathom curve, several detached shoalings were found. The more important are:

| | | |
|-------------------------------|----------------|-----------------|
| (1) 37 ^{1/2} fathoms | Lat. 29°16.7', | Long. 85° 50.2' |
| (2) 43 " | " 29°10.0' | " 85° 43.5' |
| (3) 50.5 " | " 29°08.9' | " 85° 47.0' |
| (4) 37 " | " 29°11.0' | " 85° 41.3' |

- Review
Part 2

24 March, 1948

Respectfully submitted

William N. Martin

 William N. Martin
 Lieutenant, C. & G. S.

Roy E. Elkins

 Roy E. Elkins
 Cartographer, C. & G. S.

APPROVAL SHEET

SURVEY NO. H-7603

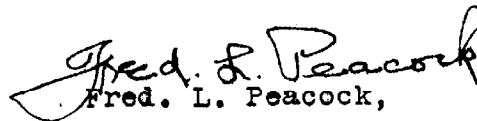
Owing to a number of post war difficulties existing during the progress of the survey, the quality of the field work and of the field records is deemed not up to the usual standard of this Chief of Party.

The smooth plotting of the survey has been expertly done.

The Chief of Party inspected the progress on the boat sheet at frequent intervals each day of work and supervised the work to the best of his ability.

He has consulted and advised frequently with the officers engaged in the processing of the field records and has inspected the smooth plotting daily while that process was in progress.

This survey is complete except as stated in the descriptive report. It is deemed adequate for charting purposes of the area covered and acceptable. It is accordingly approved as the best obtainable at the time and under the existing circumstances.


Fred. L. Peacock,

Chief of Party.

✓

DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SURVEY H-7603 (FIELD NO. HY-20147) 1947 ~~(ADDITIONAL WORK)~~

1948

SCALE 1:200,000

USC&GSS HYDROGRAPHER

Fred. L. Peacock, Chief of Party

- A. PROJECT: CS-328 Original instructions dated 26 September 1946 and supplemental instructions dated 9 July 1947. ✓
- B. SURVEY LIMITS AND DATES: This report covers a small amount of additional work accomplished during 1948 to furnish data for direct comparison between 1947 and 1948 corrected E.P.I. positioning and to eliminate minor holidays. This work was done at various times between 1 June and 1 August 1948 mostly on necessary runs across the area to reach work on Survey H-7604. (1:200,000 1947-48) ✓
- C. VESSEL AND EQUIPMENT: All work was done by the Ship HYDROGRAPHER. Turning radius of this vessel is approximately 100 meters. The vessel's NMC-1 Fathometer was used in depths greater than 135 fathoms. 808-J Graphic Recorder No. 131 SG was used for depths to 135 Fathoms. ✓
- D. TIDE AND CURRENT STATIONS: Tidal data from the Primary Tide Station at Pensacola, Fla., was used. A time correction of minus 2.0 hours has been applied. ✓
- E. SMOOTH SHEET: The smooth sheet for the survey has previously been plotted and transmitted. It is assumed that the additional work can be applied to the Survey during verification and review. ✓
- F. CONTROL STATIONS: E.P.I. A at Pensacola Beach and E.P.I. B at Carabelle Beach. Both positions were determined during the 1947 season. ✓
- H. SOUNDINGS: Velocity Corrections for the period 1 - 6 June 1948 were taken from "Fathometer Velocity Corrections 1948" which is to be transmitted later. Velocity corrections for the period 26 July - 1 August 1948 have been computed from temperature and salinity observations made during the period. The computations will be forwarded separately. Instrumental corrections were taken from "FATHOMETER INSTRUMENTAL CORRECTIONS 1948" which will be transmitted later. ✓
- I. CONTROL OF HYDROGRAPHY: Sounding lines were controlled by the Electronic Position Indicator. Corrections for the period 1 - 6 June 1948 are from the results of the calibration tests at the station West of Cape St. George on 6 June 1948. Those for the period 26 July - 1 August 1948 are from the results of tests at the same station on 26 July 1948. These corrections are fully discussed in "E.P.I. Corrections 1948" which will be transmitted later. ✓

J. ADEQUACY OF SURVEY: The smooth plotting of this additional work should afford some valuable data on the adequacy of this and prior E.P.I. surveys in the common areas. ✓

K. TABULATION OF APPLICABLE DATA.

1. Seasons Report 1948 (to be transmitted later) *No. 3, 1949, No 108 (1948)*
2. Fathometer Velocity Corrections 1948 (to be transmitted later)
3. Fathometer Velocity Corrections, 26 July - 1 August 1948, Survey H-7603 (Additional Work) (to be forwarded separately)
4. Records of Temperatures and Salinities 1948 (to be transmitted later)
5. Fathometer Instrumental Corrections 1948 (to be transmitted later)
6. E.P.I. Corrections 1948 (to be transmitted later in connection with special report on operation of E.P.I. 1948)
7. Tidal Data 1948 (to be transmitted later)
8. Calibration of Registering Sheaves 1948 (to be transmitted later) *No. 178 (1948)*

30 August 1948

Respectfully submitted:

Fair J. Bryant

Fair J. Bryant,
Lieut. Commander, C. & G. S.

Respectfully forwarded: *Approved:*

Fred. L. Peacock
Fred. L. Peacock, Captain, C&GS.
Chief of Party

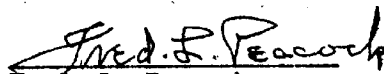
APPROVAL SHEET

Survey No. H-7603 (Additional Work)

The field work was done under the immediate supervision of the Chief of Party and processing of field records has been inspected by him.

No smooth plot has been made.

The survey is believed adequate for the purpose intended, as set forth in the body of the report.


Fred. L. Peacock,
Chief of Party, C&GS.

✓

STATISTICS FOR HYDROGRAPHIC SURVEY H-7603

| Vol. | Letter day | Date | Number of positions | Statute miles of sounding line |
|-------|---------------|--------------|------------------------|-----------------------------------|
| 1 | A | 5 Aug., 1947 | 59 | 120.0 |
| 1 | B | 6 " | 66 | 161.0 |
| 2 | C | 7 " | 63 | 158.7 |
| 3 | D | 19 " | 17 | 37.4 |
| 3 | E | 23 " | 66 | 150.2 |
| 3-4 | F | 24 " | 73 | 172.4 |
| 4-5 | G | 25 " | 70 | 172.0 |
| 5 | H | 26 " | 76 | 184.5 |
| 6 | J | 27 " | 69 | 160.0 |
| 6-7 | K | 10 Sept. | 69 | 157.1 |
| 7-8 | L | 11 " | 72 | 174.9 |
| 8 | M | 12 " | 89 | 165.5 |
| 8 | N | 13 " | 15 | 22.8 |
| 9 | P | 30 " | 12 | 26.5 |
| 9 | Q | 1 Oct. | 87 | 198.6 |
| 9-10 | R | 2 " | 37 | 90.9 |
| 10 | S | 4 " | 108 | 182.1 |
| 10-11 | T | 5 " | 115 | 172.5 |
| 11 | U | 13 " | 3 | 5.3 |
| 11-12 | V | 14 " | 99 | 130.5 |
| 12-13 | W | 15 " | 196 | 224.1 |
| 13-14 | X | 16 " | 149 | 236.7 |
| 14 | Y | 17 " | 18 | 29.5 |
| 14-15 | Z | 19 " | 46 | 78.7 |
| 15-16 | AA | 20 " | 109 | 189.9 |
| 16 | BB | 21 " | 54 | 81.9 |
| 16 | CC | 3 Nov. | 16 | 40.2 |
| 16 | DD | 7 " | 24 | 40.7 |
| 16-17 | EE | 9 " | 48 | 80.5 |
| 17-18 | FF | 10 " | 123 | 193.6 |
| 18 | GG | 12 " | 40 | 68.1 |
| 18 | HH | 13 " | 15 | 27.0 |
| 18 | JJ | 20 " | 5 | 9.7 |
| 18-19 | KK | 27 " | 14 | 33.4 |
| 19 | LL | 28 " | 7 | 15.9 |

Totals 2129 3992.6

Number of vertical cast comparisons 28
 Number of salinity and temperature serials 9
 Area surveyed in square statute miles 4500

STATISTICS - HYDROGRAPHIC SURVEY H-7603 (ADDITIONAL WORK)

| Volume No. | Day Letter | Date | Number of Positions | Statute Miles of Sounding Lines |
|------------|------------|--------------|---------------------|---------------------------------|
| 1 | A | 1 June 1948 | 19 | 40.0 |
| 1 | B | 2 June 1948 | 5 | 11.2 |
| 1 | C | 6 June 1948 | 5 | 6.8 |
| 1 | D | 26 July 1948 | 45 | 64.0 |
| 1 | E | 31 July 1948 | 10 | 15.8 |
| 1 | F | 1 Aug. 1948 | 10 | 13.7 |
| TOTALS | | | 94 | 151.5 |

Number of vertical cast comparisons 1
 Number of temperature and salinity observations 1

VELOCITY CORRECTION ABSTRACT

Period 1 - 6 June 1948

NMC-1 Fathometer

| Corrn. Fms. | To Depth Fms. |
|----------------|------------------|
| 5.2 | 147.5 |
| 5.4 | 157 |
| 5.6 | 167.5 |
| 5.8 | 178 |
| 6.0 | 189.5 |

808-J Fathometer

| Corrn. Fms. | To Depth Fms |
|----------------|-----------------|
| 0.6 | 30 |
| 0.7 | 32.5 |
| 0.8 | 37 |

Period 26 July - 1 August 1948

808-J Fathometer

| Corrn. Fms. | To Depth Fms. |
|----------------|------------------|
| 0.5 | 30 |
| 0.7 | 35 |
| 0.8 | 41.5 |
| 0.9 | 48.5 |
| 1.0 | 56.5 |
| 1.1 | 65.5 |
| 1.2 | 79.5 |
| 1.3 | 100 |

TIDE NOTE

Station: Primary Tide Station, Pensacola, Florida

Lat: 30° 24' 12"

Long: 87° 12' 45"

Plane of Reference: MLW

Height of Staff at Reference Plane: 8.0 ft.

Time Correction: Minus 2.0 hrs.

Range Factor: 1

Source of Data: Hourly heights furnished by Washington Office.

Reference: Ltr. 36-McC, from Director, dated 24 December 1947

GEOGRAPHIC NAMES

Survey No.

H7603

Name on Survey

| 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 |
|-----------------------|----------------------|--------------------------------|----------------------------------|--------------------------------|--|-------------------------|-------------------------|-----------------------|----|
| Florida | | | title only | | | | | USGB | 1 |
| <u>Gulf of Mexico</u> | | | " " | | | | | | 2 |
| <u>Cape San Blas</u> | | | " " | | | | | | 3 |
| | | | | | | | | | 4 |
| | | | | | | | | | 5 |
| | | | | | Names underlined in red are approved. 4/13/48. L. Heck | | | | 6 |
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Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. **H7603**

Records accompanying survey:

Boat sheets ...1.; sounding vols. .20...; wire drag vols.0;
 bomb vols. 0.....; graphic recorder rolls 13 env.;
 special reports, etc. 6 Records EPI Pos. 1 Junction Comparison Overlay
 ...1 Depth Curve Work Sheet on Celephane (2 Sections).....

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

| | |
|---|------------------------------|
| Number of positions on sheet | 94-1948 wk. 2129-1947 wk. |
| Number of positions checked | ..185.. |
| Number of positions revised | ..26.. |
| Number of soundings revised (refers to depth only) | ...69.. |
| Number of soundings erroneously spaced | ...6.. |
| Number of signals erroneously plotted or transferred |0.. |
| Topographic details | Time0.. |
| Junctions | Time ..24 hrs. |
| Verification of soundings from graphic record | Time ..48 hrs. |

Verification by R. K. De Lawder..... Total time 205 hrs. Date 4/19/50

Reviewed by G. F. Jordan..... Time 44.. Date 7/21/50..

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7603

FIELD NO. HY-20147

Florida, Gulf of Mexico, Southwest of Cape San Blas
Surveyed from August 1947 to August 1948 Scale 1:200,000
Project No. CS-328

Soundings:

Control:

808-J Fathometer
NMC-1 Fathometer

Electronic Position Indicator

Chief of Party - F. L. Peacock
Surveyed by - F. L. Peacock, E. B. Latham, C. I. Aslakson,
G. R. Shelton, W. J. Chovan, J. D. Thurmond,
W. N. Martin and L. S. Baker

Protracted by - W. N. Martin

Soundings plotted by - W. N. Martin, R. E. Elkins and R. K.
DeLawder

Verified and inked by - R. K. DeLawder

Reviewed by - G. F. Jordan, 21 July 1950

Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline is omitted on this offshore small-scale survey.

This survey was controlled by two Electronic Position Indicator (EPI) stations established on shore about 152 miles apart and located by triangulation. A discussion of the control and the problems encountered is included in the Descriptive Report. Further consideration of EPI calibrations and corrections by the verifier and reviewer was considered unnecessary except as noted in paragraph 3 below.

2. Bottom Configuration and Depth Curves

This survey, together with H-7604 (1947-48) on the south, covers an area of approximately 20,000 square miles on the continental shelf and slope between the depths of 25 and 1730 fms. Between 80 and 400 fms. the bottom is unmarked by irregularities, and the gradient increases with the depth. The bottom inshore and offshore from these depths is marked by significant configurations. Some of the configurations are revealed by an inspection of the

depth curves on the smooth sheet, but not all the physiographic details are revealed on this small-scale plotting sheet. A more complete delineation of bottom irregularities would in part require a larger scale plotting of the area having depths less than 80 fathoms and the addition of soundings scaled from the fathograms.

In the shoaler depths of 25 to 80 fms. the bottom irregularities consist of ridges, elongate depressions, domes, gradient changes and the nose-like protuberance of 40- to 60-fm. curves into depths of 70 to 90 fathoms. The domes fall 13 to 20 miles apart in a linear direction in the vicinity of the 70-fm. curve and are accompanied by gradient changes in the bottom. Troughs and adjacent ridges paralleling the depth curves occur frequently in the shoaler depths. Some of the features not clearly revealed by the smooth sheet are as follows:

- a. H-7603 - A trough 18 ft. deep and an adjacent ridge 8 ft. high are recorded in lat. $29^{\circ} 17'$, long. $85^{\circ} 44'$ in 40-fm. depths where the general sea bottom elevation drops 20-feet.
- b. H-7603 - A trough 38 ft. deep is revealed at the bottom of the south slope of a protuberance delineated by the 60-fm. curve in lat. $29^{\circ} 20.5'$, long. $86^{\circ} 03.5'$.
- c. H-7604 - Three symmetrical domes were crossed by sounding lines on H-7604 in lat. $28^{\circ} 23.0'$, long. $85^{\circ} 01.7'$ - lat. $28^{\circ} 38.8'$, long. $85^{\circ} 10.0'$ - lat. $28^{\circ} 45.7'$, long. $85^{\circ} 20.3'$. These domes are respectively 10 ft. high with a 2700-ft. base, 16 ft. high with a 4200-ft. base and 10 ft. high with a 2500-ft. base.
- d. H-7603 - The three encircled soundings in the vicinity of lat. $29^{\circ} 10'$, long. $85^{\circ} 40'$ represent high points on a ridge which terminates with a hook in the 80-fm. curve.

In the deeper depths of 400 to 1730 fathoms the bottom is marked by the continental slope escarpment, large areas of depression, the valley heading toward De Soto Canyon and crustal faults on and above the escarpment. The continental slope terminates with an escarpment having a maximum gradient of 35 degrees in lat. $28^{\circ} 12'$, long. $86^{\circ} 52'$. The survey reveals one area of depression beginning along the bottom of the escarpment and separated from another area of depression by a ridge which is at progressive distances of 8 to 28 miles from the escarpment. The ridge disappears at the northwestern limits of H-7604 in the valley which is shown

in part in the southwestern corner of H-7603 and which terminates in De Soto Canyon developed on H-6690 (1941). The continental slope and escarpment is lined with crustal faults paralleling the depth curves. The faults appear as crustal slips, ridges, troughs and benches. One fault appears to extend for approximately 30 miles along the western limits of both surveys where a ridge 20 to 50 ft. high is indicated by shoal soundings of 719 to 773 fathoms.

The depth curves are complete and are adequately delineated for navigational purposes.

3. Sounding Line Crossings

The depths at sounding line crossings are for the most part in excellent agreement. This agreement resulted from a considerable study and adjustment of EPI procedures and calibrations and a detailed consideration of fathometer corrections prior to receipt of the survey in the Washington Office. A few revisions were made during verification where sections of sounding lines were either replotted on dead-reckoning or rejected because of inadequate EPI control. Some revisions or rejections were made in the plotted soundings because of fathometer difficulties.

4. Adjoining Surveys

Adequate junctions were effected with H-6690, H-6691 and H-6692 of 1941 on the north, with H-6548 (1940) on the west, and with H-7604 (1947-48) on the south. The junction with H-7679 (1948-49) on the east will be considered in the review of that survey. Contemporary surveys on the northeast have not been received.

5. Comparison with Prior Surveys

H-483 (1854) 1:1,200,000 scale; H-1354 (1875) 1:600,000 scale;
H-2920c (1882-84) 1:1,200,000 scale

Soundings on these reconnaissance surveys are from dead-reckoning lines. Differences with present depths amount to 20 fms. in depths of 80 to 100-fms. and are undoubtedly due to errors in position of the prior sounding lines. There are no shoal soundings involved. The present survey supersedes the prior surveys except for the bottom characteristics carried forward.

6. Comparison with Chart 1263 (Print of May 29, 1950)
Chart 1114 (Print of Aug. 15, 1949)
Chart 1115 (Print of May 1, 1950)

A. Hydrography

The charted hydrography originates entirely with the present survey before verification. No significant revisions were made during verification other than the rejection of a 36-fm. sounding at lat. 29° 14', long. 85° 42' (Chart 1115), which actually falls in comparable depths to the eastward. The compiler's attention is directed to the uncharted 37-fm. shoals falling between the 40- and 50-fm. curves in the vicinity of lat. 29° 16.5', long. 85° 51'. *37's added to chart 1115*

B. Aids to Navigation

No aids to navigation are charted in this offshore area. No features which might be considered to be dangers to navigation were revealed by the survey.

7. Condition of the Survey

- a. The sounding records and Descriptive Report are complete and comprehensive.
- b. The smooth sheet was accurately and neatly plotted.

8. Compliance with Project Instructions

The survey complies adequately with the project instructions.

9. Additional Field Work

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

H R Edmonston
H. R. Edmonston
Chief, Nautical Chart Branch

Examined and approved:
Robert W Knox
R. W. Knox
Chief, Division of Charts

L S Hubbard
L. S. Hubbard
Chief, Section of Hydrography

W M Scaife
W. M. Scaife
Chief, Division of Coastal Surveys

839
TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography:~~ 14 April 1948

Division of Charts: H. W. MURRAY

Plane of reference approved in
20 volumes of sounding records for

HYDROGRAPHIC SHEET 7603

Locality - SW. of Cape San Blas, Gulf of Mexico

Chief of Party: F. L. Peacock in 1947
Plane of reference is mean low water, reading
8.0 ft. on tide staff at Pensacola
9.0 ft. below B. M. 7 (1923)

Height of mean high water above plane of reference is 1.3 feet.

Condition of records satisfactory except as noted below:

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

NAUTICAL CHARTS BRANCH

SURVEY NO. H7603

Record of Application to Charts

| DATE | CHART | CARTOGRAPHER | REMARKS |
|---------|-------|-----------------|--|
| 17-2-50 | 1115 | Meylsson | Before After Verification and Review Part. Appd |
| 21-2-50 | 1263 | Meylsson | Before After Verification and Review Part Appd (Complete except for changes made in review) |
| 2/5/51 | 1003 | Wittmann | Before After Verification and Review Completely |
| 7/16/52 | 1114 | Boehlert | Before After Verification and Review |
| 10-2-53 | 1115 | Conf. M. Brogan | Before After Verification and Review Completely appd. JUN 27 1953 |
| | | | Before After Verification and Review |
| | | | Before After Verification and Review |
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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.