

6405

U. S. COAST & GEODETIC SURVEY
HYDROGRAPHIC ARCHIVES

APR 21 1939

Acc. No. _____

Form 504
Rev. April 1935
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

~~Topographic~~ }
Hydrographic } Sheet No. H-6405 /

State TEXAS

LOCALITY

GULF OF MEXICO

OFFSHORE APPROACHES

ARANSAS PASS

- 1938

CHIEF OF PARTY

G. C. MATTISON.

U. S. GOVERNMENT PRINTING OFFICE

6405

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

U. S. COAST & GEOD. SURV.
LIBRARY
APR 21 1939
Acc. No. _____

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. 82

REGISTER NO. H-6405 **H6405**

State TEXAS

General locality GULF OF MEXICO

Locality Off shore approaches to Aransas Pass

Scale 1:80,000 Date of survey July 28-November 9 1938

Vessel HYDROGRAPHER

Chief of Party G. C. Mattison

Surveyed by L.P. Raynor, G. L. Anderson, P. C. Doran, E. B. Lewey, J. T. Jarman, C. W. Clark and G. W. Moore.

Protracted by J. T. Jarman

Soundings penciled by J. T. Jarman

Soundings in ~~fathoms feet~~ Fathoms and sixths.

Plane of reference Mean Low Water.

Subdivision of wire dragged areas by _____

Inked by Francis B. Kelly

Verified by "

Instructions dated Feb. 17, 1937, Suppl. February 23, 1938

Remarks: Forwarded with this sheet are the following records: 12 vol. soundings, 2 vol. Bomb record, 1 smooth sheet, 1 Boat sheet and 1 Descriptive Report including a set of tide curves.

✓

Notes by Chief of Party


The commanding officer kept in constant touch with the field and office work on this sheet. Although the fathometers did not operate satisfactorily, it is believed that a good survey was made. The fact that the various shoals were found, and that development of the shoals indicated that while the fathometer might operate erratically, it seemed to pick up the shoals without difficulty. It is quite certain that all shoal indications were recorded. ✓

It is recommended that all previous charted soundings be disregarded, except the 25-fathom spot in the southwest corner of the sheet. This area will be further developed during the coming season on the adjoining sheet. Local fishermen report a shoal with that approximate depth in that vicinity. Lat. 27° 06.5'
Long. 96° 44.5'
Just inside
limits of
present
survey.

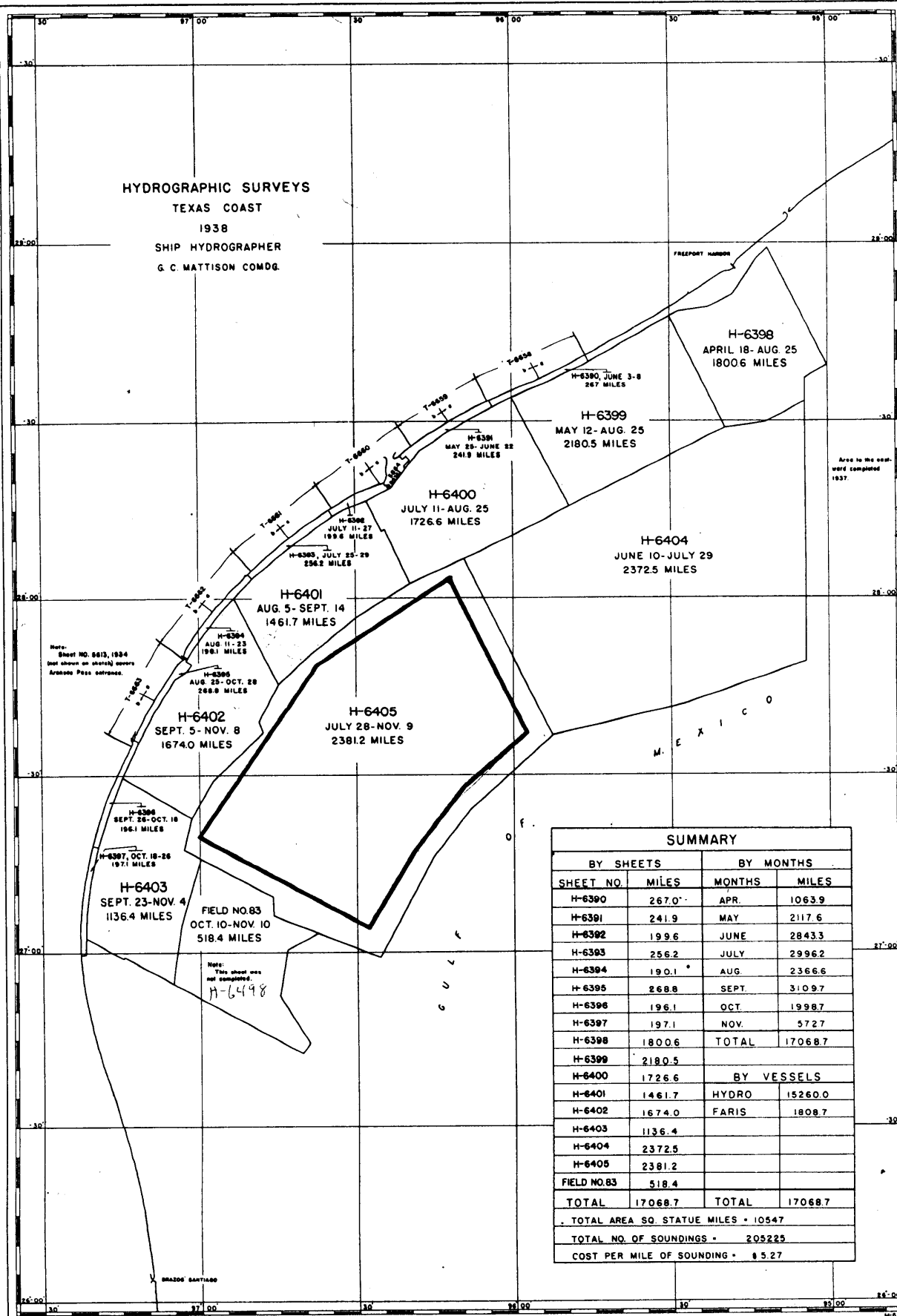
A fisherman's chart was examined on which a $27\frac{1}{2}$ fathom depth was indicated in Latitude $27^{\circ}12'$, Longitude $96^{\circ}38'$. The chart was quite old and dilapidated. It was rather difficult to determine if the depth applied to that position, as a faint line extended from the general locality of the 25 fathom charted shoal. In order to be on the safe side the locality was developed. No shoal indications were found, and it is believed that it referred to the locality of the 25 fathom charted shoal. This same chart was pretty well covered with explanatory notes in this general vicinity, which were quite confusing. 43 to 49 fms.
on present
survey.

Fishermen report that the 16- and 20-fathom shoals shown on Chart No. 1117 in Latitude $27^{\circ}45'$, Longitude $96^{\circ}23'$, and Latitude $27^{\circ}35'$, Longitude $96^{\circ}34'$ do not exist. They have combed the two localities with drag lines and have been unable to find any shoal indications. Inasmuch as these same fishermen reported the shoals we did ~~not~~ find, it is quite certain that their information can be relied on.

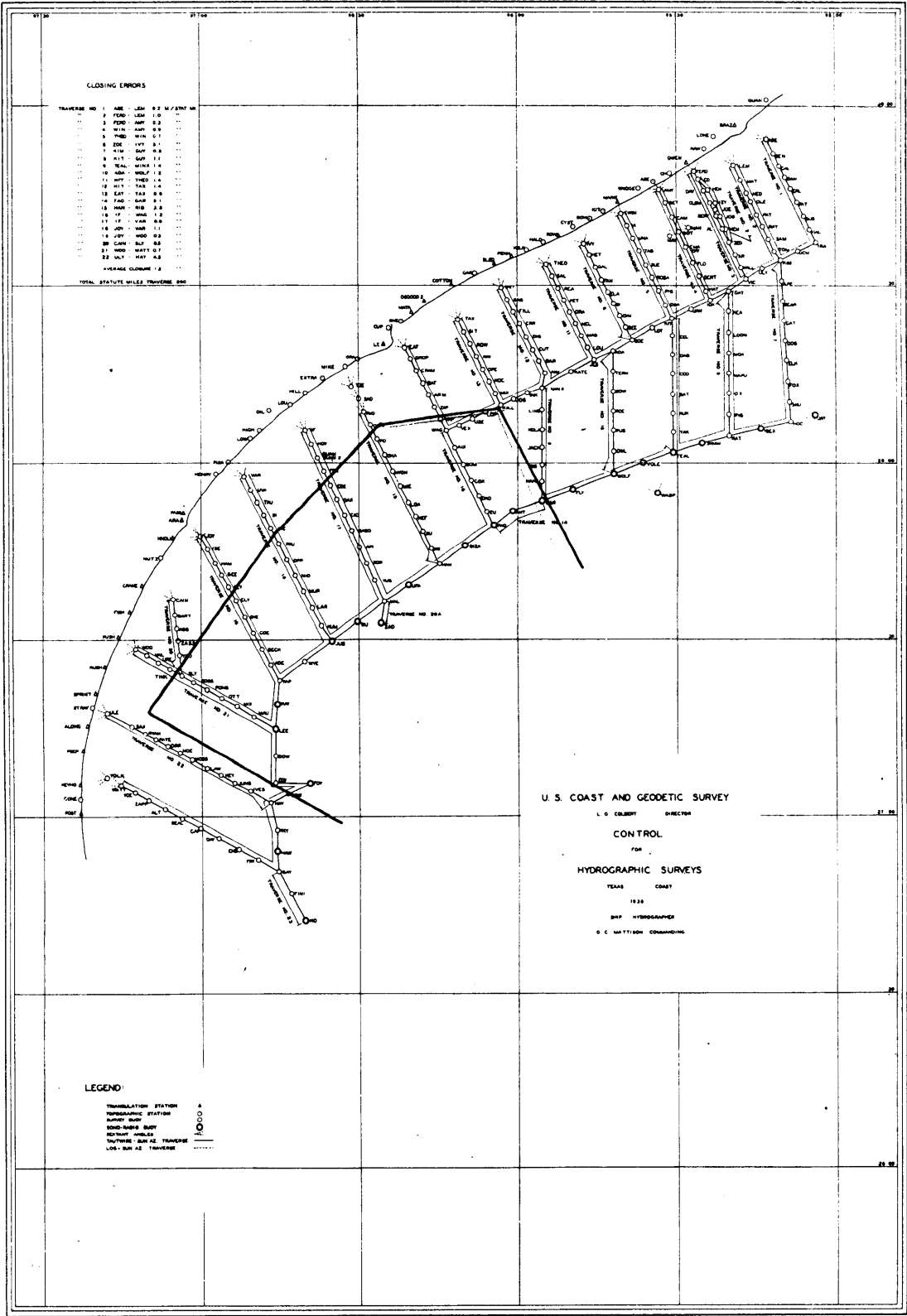
The sheet and records have been examined and are approved. ✓


E. C. Mattison,
Commanding Officer,
Ship HYDROGRAPHER.

HYDROGRAPHIC SURVEYS
TEXAS COAST
1938
SHIP HYDROGRAPHER
G. C. MATTISON COMDG.



SUMMARY			
BY SHEETS		BY MONTHS	
SHEET NO.	MILES	MONTHS	MILES
H-6390	267.0	APR.	1063.9
H-6391	241.9	MAY	2117.6
H-6392	199.6	JUNE	2843.3
H-6393	256.2	JULY	2996.2
H-6394	190.1	AUG.	2366.6
H-6395	268.8	SEPT.	3109.7
H-6396	196.1	OCT.	1998.7
H-6397	197.1	NOV.	572.7
H-6398	1800.6	TOTAL	17068.7
H-6399	2180.5		
H-6400	1726.6	BY VESSELS	
H-6401	1461.7	HYDRO	15260.0
H-6402	1674.0	FARIS	1808.7
H-6403	1136.4		
H-6404	2372.5		
H-6405	2381.2		
FIELD NO. 83	518.4		
TOTAL	17068.7	TOTAL	17068.7
TOTAL AREA SQ. STATUTE MILES - 10547			
TOTAL NO. OF SOUNDINGS - 205225			
COST PER MILE OF SOUNDING - \$ 5.27			



CLOSING ERRORS

TRAVERSE NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	AVERAGE	
1	AMB	LEA	8.2	M/207	0.0																			
2	FENO	LEA	1.0																					
3	FENO	AMB	8.2																					
4	WIN	AMB	8.9																					
5	FENO	WIN	0.7																					
6	DEE	WY	3.1																					
7	WIL	WY	0.8																					
8	RIT	WY	1.1																					
9	WAL	WY	1.4																					
10	AMB	WY	1.2																					
11	WY	WY	1.4																					
12	WY	WY	1.4																					
13	WY	WY	1.4																					
14	WY	WY	1.4																					
15	WY	WY	1.4																					
16	WY	WY	1.4																					
17	WY	WY	1.4																					
18	WY	WY	1.4																					
19	WY	WY	1.4																					
20	WY	WY	1.4																					
21	WY	WY	1.4																					
22	WY	WY	1.4																					
TOTAL STATUTE MILES TRAVERSE 800																								

LEGEND

- TRANSMISSION STATION
- HYDROGRAPHIC STATION
- SOUNDING
- SONG MARKS
- NAVIGATIONAL MARKS
- TRAVERSE
- LOS - SUN AZ TRAVERSE

U. S. COAST AND GEODETIC SURVEY
 L. O. COLBERT DIRECTOR
 CONTROL
 FOR
 HYDROGRAPHIC SURVEYS
 TEXAS COAST
 1920
 BRP. HYDROGRAPHER
 G. C. MATTHEW COMMANDING

DESCRIPTIVE REPORT

to accompany

Hydrographic Sheet No.H-6405

DATE OF INSTRUCTIONS

This survey was made in accordance with Instructions for Project No. 214 dated February 17, 1937 and Supplemental Instructions dated February 23, 1938.

GENERAL STATEMENT

This sheet is an off shore survey extending from approximately the 20-fathom curve beyond the 100-fathom curve, and developing the continental shelf in the area covered. The general locality of the survey and its relation to adjacent sheets is shown on the attached sheet layout diagram.

SURVEY METHODS

1. Control

The control for the hydrography on this sheet consists of a system of buoys located by taut wire and sun azimuth traverses. Each traverse is a closed loop beginning and ending near the shore at buoys located by sextant angles on shore control, and each loop extends out to approximately the 35-fathom curve. The positions of the buoys in the traverses were computed. The locations of buoys are described in detail in a separate report "Location of Hydrographic Signals, Ship HYDRO-GRAPHER, 1938". All buoys used on this sheet were located by the above method except buoy Mark which was located graphically by the intersection of two bomb arcs from buoys Jub and Zad. Location

Library
Acc.No. S-1642
Sheet No.
377
SHS
6404
1938
M

data for buoy Mark will be found in Vol. 1 of bomb records near the end of U' day. A list of all buoys on this sheet giving their geographic positions is attached to the front of Vol. 1, soundings. There is attached to this report a sketch showing the buoy control system for the season, and on which the buoys for this sheet have been indicated.

List also attached to back this report.

Sounding lines were controlled by visual three point fixes on hydrographic buoys out to approximately the 30-fathom curve. Between this point and approximately 45 fathoms, three point fixes, single sextant angles, gyro bearings, depression angles, R.A.R. and precise dead reckoning were used to control sounding lines. One or several of the above methods were used depending on the control at hand. R.A.R. and precise dead reckoning were used in the above area only at night or on days of poor visibility when the buoys could not be sighted. Beyond approximately 45 fathoms offshore lines were controlled by R.A.R. using four sonic buoys placed in depths ranging from 35 to 40 fathoms. The R.A.R. was supplemented by precise dead reckoning.

2. Smooth plotting

All visual work including three point fixes, gyro bearings, single angles, and depression angles were plotted in the usual manner using an overlay tracing. The R.A.R. occurring on the lower half of the area was plotted directly on the sheet. Some difficulty was experienced in keeping the sheet clean since three quarters of the plotting time was required to plot the R.A.R. Plotting and adjustment of the offshore R.A.R. work is described

in detail in a following paragraph entitled "Plotting and adjustment of offshore sounding lines".

Records containing visual work were checked with the usual check marks during the plotting. However the following system of notation was used for R.A.R. and for all visual work such as bearings, single angles, etc. occurring in conjunction with the R.A.R.

✓ values, are lines of position through or very near the accepted fix.

? values, are lines of position which are given some weight in fixing an accepted position, or which lie within probable limits of error of bombs or bearings.

R values, are those which are considered to be too wide for use in fixing positions.

Bomb distances in connection with R.A.R. were plotted in seconds using a scale graduated for plotting a variable number of meters per second. As no long bomb distances were obtained, the arcs were plotted directly from the buoys. The sheet was checked at regular intervals and distortion was found to be negligible. Distance arcs were drawn and labeled on the sheet with a hard pencil to be used when verifying. Since there is a large amount of field work on hand with only a limited number of officers available, considerable time was saved by plotting in seconds instead of reducing the distance to meters, and then converting the result to the scale of the meter bar, and having each operation checked. R.A.R. station symbols and R.A.R. station

names have been inked on the sheet in distinctive colors.

Bomb arcs have been inked in the same color as the circle at buoy from which the distance arc is shown. See attached copy of Director's letter No. 80 LEF, dated February 17, 1938.

(a) Plotting and adjusting offshore sounding lines.

All offshore lines are in the form of loops having a definite departure and coming back to a tie in. In plotting these lines, the visual fixes were plotted as far out as they gave good control at both ends of each loop. The bomb arcs were then plotted on the sheet, and also all additional data such as single angles, gyro bearings, etc. If the bomb arcs and other location data gave definite positions which checked time and course, they were accepted. From the last definite position, it was necessary to carefully plot the dead reckoning on tracing paper out to the turn in the line, and then back to a definite position on the return line. The dead reckoning loop was then adjusted to fit between the fixed offshore positions at each end of the loop. An examination of positions in the adjusted dead reckoning loop when placed over the plotted bomb arcs indicated those bomb arcs which were good, and a further adjustment was then made to include those arcs which appeared to be correct.

In many of the offshore loop positions, there were more than one set of arc intersections, making it difficult to decide which set of intersections to use. In such cases the en-

tire loop, from a sextant fix near the beginning to another sextant fix near the end of the line, was first adjusted by dead reckoning and then those bomb positions held which appeared to be correct. The dead reckoning was then re-adjusted between positions which were held.

Notes have been entered in the record books at the beginning of each loop stating briefly the method used in fixing positions of the loop. After offshore lines had been plotted and adjusted from all control data available, and after the soundings had been plotted, the crossings and depth curves were examined to see if further adjustments were necessary.

In general, the R.A.R. gave fair control out to about the 60-fathom curve, ^{beyond which} seldom more than one R.A.R. buoy gave the correct bomb distance. While R.A.R. indicated the general trend of a line, positions were seldom definite unless the R.A.R. was supplemented by adjusted dead reckoning. All bomb arcs which were given any weight in locating positions have been inked on the sheet.

Bomb distances appeared to be affected (besides temperature, salinity and depth) by the size of the bomb, abrupt changes in bottom configuration, and adjustment of sono-radio buoys. The size of the bomb used usually varied from a detonator when close to the buoy to gradually increased sizes as distance from the sono-radio buoys increased. Increases in bomb sizes over 1 pint did not seem to have an additional effect.

A weak bomb usually gave a return that was too long. Bottles (1/4 pint) and half pints when fired too close to sono-radio buoys usually gave returns that were too short. Changes of bomb sizes depended upon consistency of returns and check with other available position data. There were only a few instances of interference by intervening shoals this season, but it was noticed that in depths near 100 fathoms where the bottom slope becomes very steep (edge of continental shelf) that very few returns came through, and those that did were usually wild. Adjustment of the sensitivity of the sono-radio buoys, not only affected the size of bomb necessary but also appeared to govern the part of the wave front which tripped the buoy. Less time was spent in adjustment of sono-radio buoys this season than in the past. Four sono-radio buoys were placed for each area, and if enough returns did not come through, the line was supplemented by dead reckoning.

(b) Bomb records

The velocities used in the bomb records were obtained from the trip curves (see temperature and salinity data for season) using the mean depth between the sonic buoys and the ship at each bomb position for determining the velocity. The mean depths which were scaled from the boat sheet are shown in red in the margin of the bomb records.

Bomb distances were verified from the tapes by the officer scaling tapes when there was doubt about a scaled value. While plotting the smooth sheet, those tapes were checked which the plotted position indicated was in error.

(c) Gyro Compass Bearings

Gyro compass corrections were determined at frequent intervals by sun azimuth, comparison of gyro bearings and sun azimuths on lines of buoys, and observing gyro bearings at the time of sextant fixes. The gyro corrections which apply to this sheet are noted in the record with red pencil on the days to which they apply.

Not all gyro bearings can be depended upon. In order to secure good bearings it is necessary that the observer be experienced, since the bearing must be watched 15 or 20 seconds before and after the mark, and a mean of the repeater oscillations secured. In rough weather, even an experienced observer is likely to obtain wild bearings.

(d) Soundings

The soundings on this sheet were secured with the Dorsey No. 1, and the Dorsey No. 2 fathometers. Vertical casts for fathometer comparisons were obtained daily on coming to anchor at the close of the day's work, and occasional comparisons were obtained at other convenient times. The index corrections for the Dorsey No. 2 fathometer were computed from all available comparisons and mean values used. At one place in the record (Vol. 5 pos. 34Q through 69Q) the mean index correction was arbitrarily changed, the change being based on two comparisons secured while the line was being run. This change was made in order to improve crossings and the changes are shown in the record book in red. (See note in Vol. 11, page 41 and also fur-

ther comments under the heading "Discrepancies". The first paragraph under "Discrepancies" should also be noted since it deals with the gradual failure of fathometer equipment during course of work on this sheet.)

(e) Fathometer corrections

An abstract of fathometer corrections used is attached to this report. For computation of the fathometer corrections, and the velocities used in the bomb records see season's temperature and salinity data submitted in a separate report.

Library
Acc. No. S-1663
Shelf No.
877
SHS
6390-6405
1938
M

(f) Tide Reducers

The standard automatic tide gage No. 268 on the U. S. E. D. dock at Aransas Pass was used for the tide reducers. The tide on the sheet is assumed to occur one hour earlier and to have a fifty percent greater range than at the gage. The curves used in obtaining the reducers are attached to this report. For days on which the record was missing at the Aransas Pass gage, the Galveston standard gage was used. See copy of Director's letter No. 30 MoC dated October 20, 1938.

(g) Depth Units

Soundings were plotted in fathoms and sixths of fathoms to a depth of 100 fathoms and in whole fathoms in greater depths. See attached copy of Director's letter 22-AB 1994 HY dated January 22, 1938.

All soundings plotted in fms. and sixths in office. Inspection of inked sheet indicates 40 fm. or at most 50 fm. curve should have been the outermost limit.
J.A.M.

(h) Bottom Samples

Bottom samples were obtained from the buoy anchors

while picking up buoys, at each ship's anchorage, at temperature ✓
and salinity stations, and while taking vertical casts.

It should be noted by the cartographer that an off-
shore bottom specimen was obtained at a deep water serial in ^N Lat. 26° 59', ^W Long. 96° 25.5' (gy M). The location of this ^{Falls within limits of sheet. Added.} specimen falls off the sheet but attention is called to it for ^{J.A.M.} charting purposes.

DISCREPANCIES

It should be noted that fathometer equipment was
gradually failing during the progress of this sheet. The No. 1
Dorsey fathometer was read to depths of 50 to 60 fathoms at the
beginning of work on this sheet but at the end it was impossible
to read it to depths over 16 fathoms. A contributing factor to
the above was the failure of the amidships transceiver located
between frames 43 and 44. This failure occurred during the latter
part of August and it was then necessary to shift to the forward
transceiver located between frames 23 and 24. The Dorsey No. 1,
although gradually failing was giving results in the deeper water
up to the failure of the amidships transceiver. After the change ✓
over to the forward transceiver, it was impossible to accurately
read the Dorsey No. 1 in depths greater than 20 fathoms, and this
value gradually dropped to 16 fathoms as the work progressed. The
explanation is advanced that the forward transceiver is influenced
by the pitching of the ship, adjacent waters being so disturbed
and mixed with air that the returns were affected by it. The
above was particularly noticeable as the limiting depth was

10

neared on the indicator dial, the return oscillating unsteadily over three or four divisions of the dial, and so many strays being present that it was difficult to pick out the correct return. The above oscillating of the return and the strays seemed to approach a maximum as the limiting depth was neared, the return being less affected in shoaler depths. It was noticed that good steady returns could be secured well beyond the limiting depth with the vessel at anchor but the moment the vessel got underway the trouble noted above commenced. The Dorsey No. 2 was also affected by failing equipment, the No. 1 and No. 2 indicators being connected to the same amplification units. After the change over from the amidships to forward transceiver, the returns on the No. 2 indicator were less steady than formerly and more strays were present but on the whole it seemed to be less affected than the Dorsey No. 1, and could be read with a fair degree of accuracy. The Dorsey No. 2 used on conjunction with the oscillator was affected only by the failing equipment.

It should also be noted that when ever a change over occurred from the Dorsey No. 1 to the Dorsey No. 2 with transceiver, or from the Dorsey No. 2 with transceiver to the Dorsey No. 2 with oscillator, that the first two or three soundings recorded immediately after the change over usually appeared to be in error, being from 1 to 2 feet shoaler than the soundings recorded before the change over. It has been suggested that this discrepancy is influenced by difference in signal characteristics of the two type fathometers, the personal equation of the reader, fluctuation of index correction, and the gradual failure of equipment. A

11

study of the smooth sheet in the areas affected indicate that the gradual failure of equipment is probably most responsible. By drawing depth curves in affected areas for each foot of depth, the soundings in error are usually indicated and in the majority of cases they are the last two or three soundings recorded before the change over occurred. This ^{fact} can be explained because it was the practice to read one type of fathometer until difficulties were experienced before changing over to the other type. It is believed that the personal equation of the fathometer readers is responsible to a certain extent also. A practice was made of reading the Dorsey No. 1 to the nearest half foot since the indicator dial is graduated in fathoms and feet. The Dorsey No. 2 is graduated in fathoms only but in comparatively smooth weather, an effort was made to read it to the nearest foot ✓ by estimation particularly after the maximum depth of the Dorsey No. 1 became 16 fathoms. In rough weather the Dorsey No. 2 was read only to the nearest half fathom. From the foregoing it is obvious that the fathometer reader can be held partly responsible for the discrepancy since the practice of estimating feet might easily cause a disagreement of a foot or two at a change over. However, it should also be noted that ^{o†} the great number of fathometer change overs occurring during the progress of this sheet only 14 have been noted where discrepancies occurred. Those change overs at which discrepancies appeared are noted below with proper recommendations:

D1 is the notation for the Dorsey No. 1 ✓

D 2 is the notation for the Dorsey No. 2 with transceiver. ✓

D 2 0 is the notation for the Dorsey No. 2 with oscillator. ✓

D₁ to D₂0

Vol. 3 page 12 46 K to 47 K
Lat. 27° 42.5'N Long. 96° 58.3'W

This discrepancy, which is a shoaling of 1 foot is not apparent on the smooth sheet but it is noticeable in the record book. The soundings as shown on the smooth sheet do not distort the depth curves and should be acceptable. ✓ Accepted.

D₂0 to D₂T

Vol. 3 page 21 69 K to 70 K
Lat. 27° 46.1'N Long. 96° 03.2' W

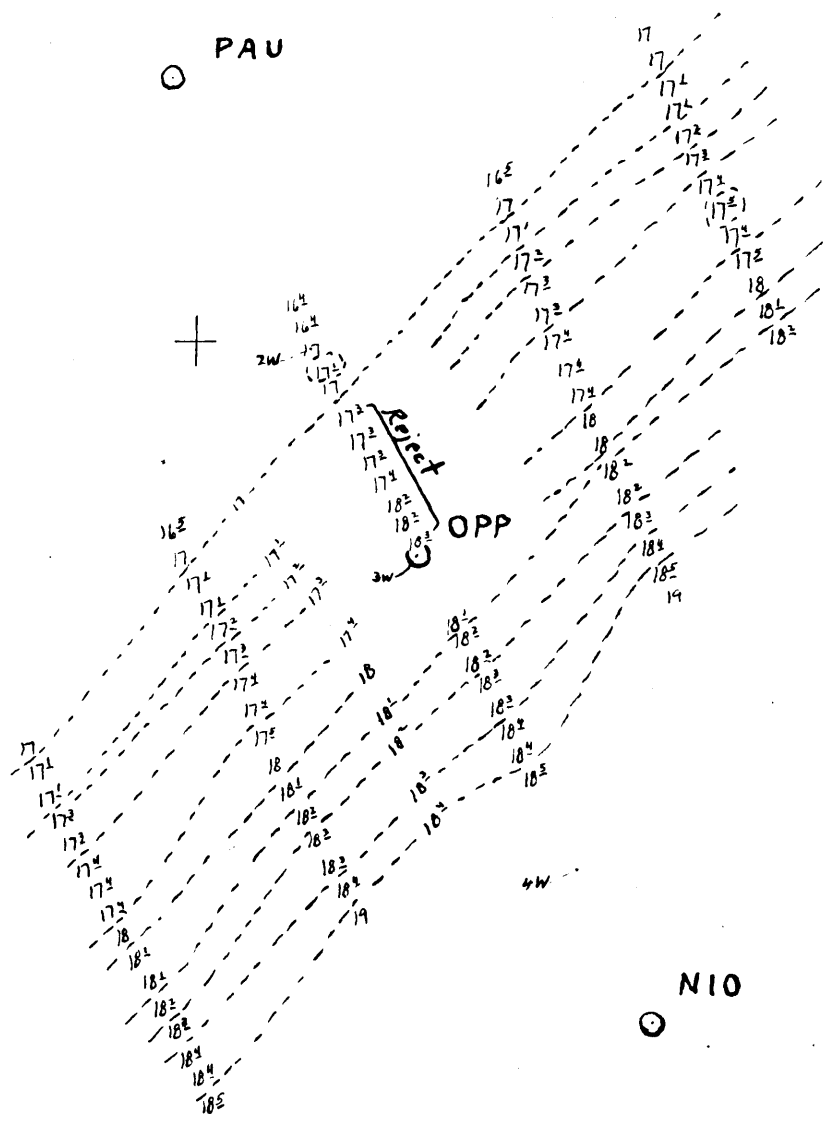
This discrepancy which is a shoaling of 1 foot does not show on the smooth sheet but is noticeable in the record book. It is probably an error of estimation of feet by the fathometer reader. Depth curves are not distorted and soundings as shown on the smooth sheet should be acceptable. ✓ Accepted.

D₁ to D₂0

Vol. 4 page 8 39 M to 40 M
Lat. 27° 41.5'N Long. 96° 16.3' W

This discrepancy which is a shoaling of 1 foot is on a line which is approaching a shoal. It is possible that it is correct, but the probability is that it is due to faulty equipment or an error in estimation of feet. No recommendation. ✓ Accepted.

[Handwritten signature]



96° 40'
 + 27° 45'

Retained.
 J. H. N.

By rejecting soundings indicated, depth curves can be drawn with out any distortion.

D₁ to D₂T
 Vol. 6 page 66
 3W to 4W
 Lat. 27° 43.5' N
 Long 96 43.3' W

Plate 1.

D₂O to D₁

Vol. 4 page 9 41 M to 42 M
Lat. 27° 40.5' N Long. 96° 16.3' W

There are three soundings in question here secured with the Dorsey No. 1 fathometer on a shoal. The change over to the forward transceiver from the amidships had not occurred at this date and these soundings are probably correct. Furthermore, the area was thoroughly developed at a later date.

Retained.

D₁ to D₂T

Vol. 6 page 66 3 W to 4W
Lat. 27° 43.5' N Long. 96° 43.3' W

This discrepancy occurred after the change over from the amidships transceiver to the forward transceiver. ~~which occurred on Q day.~~ Depth curves drawn for each foot of depth indicate that the last seven soundings before the change over are in error and it is recommended that they be rejected. See note in record, and also note on smooth sheet. A tracing of the area is ~~indicated~~ ^{incorporated} with this report showing that the depth curves will not be distorted if the seven soundings recommended for rejection are removed. (See plate 1).

Retained.

D₁ to D₂T

Vol. 7 page 32 44 X to 45 X
Lat. 27° 47.5' N Long. 96° 39.2' W

The last sounding secured by the D₁ fathometer is 1 foot deeper than the sounding immediately following secured by the D₂T fathometer. Recommend that the last sounding secured by the D₁ fathometer be rejected.

Rejected.

D₂T to D₁

Vol. 7, page 43

27 Y to 28 Y

Lat. 27° 36' N

Long. 96° 45.6' W

This discrepancy is not apparent on smooth sheet but it is noticeable in the record. First two soundings secured with the D₁ are probably 1 foot too deep. There is no serious displacement of depth curves and it is not necessary to reject the soundings.



D₂T to D₂O

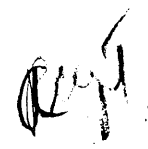
Vol. 11, page 9

7 R' to 8 R'

Lat. 27° 27.5' N

Long. 96° 24.7' W

This discrepancy is not apparent on the smooth sheet but is noticeable in the record. Depth curves indicate that the last sounding with the D₂T is probably 1 foot too deep. Retained. Recommend rejection.



D₂T to D₁

Vol. 7 page 30 40 X to 41 X
Lat. 27° 48.8' N Long. 96° 40.6' W

Depth curves drawn for each foot of depth indicate that the first three soundings secured with the D₁ fathometer are probably 1 foot too deep. Recommend rejection. (See note in record.)

accept
Retained.

D₁ to D₂T

Vol. 7 page 36 5 Y to 6Y
Lat. 27° 37.5' N Long. 96° 44.7' W

Depth curves drawn for each foot of depth indicate that the last seven soundings secured with the D₁ fathometer just before change over are slightly deep. These soundings have been indicated in the record and on the smooth sheet. It is recommended that they be rejected.

accept
Retained.

D₂T to D₁

Vol. 7 page 67 4B' to 5B'
Lat. 27° 32.4' N Long. 96° 51.4' W

Depth curves indicate that last three soundings secured with D₁ fathometer are probably 1 foot too deep. Other soundings between 3B' and 4B' appear to slightly displace depth curves but only the last three soundings secured with the D₁ fathometer are recommended for rejection. (See note in record book.)

accept
Retained.

D₂T to D₁

Vol. 8 page 19 4D' to 5D'
Lat. 27° 32.8' N Long. 96° 49.9' W

Depth curves indicate that the first four soundings

secured with the D₁ fathometer are probably too deep. Other soundings between 5D' and 7D' appear to slightly displace the depth curves but only the first four soundings secured with the D₁ fathometer are recommended for rejection. This is a case where the change over from the D₁ fathometer to the D₂ fathometer occurred slightly beyond the limiting depth of the D₁ fathometer for that time. This discrepancy along with the previous one are on adjoining lines and in the same general locality. (See notes in the record.)

accept

Retained.

D₁ to D₂T

Vol. 8 page 38

Pos. 1F'

Lat. 27° 30.3' N

Long. 96° 53.3' W

Only one sounding was secured with the D₁ fathometer which is near its limiting depth. This sounding is probably one foot too deep but there is no serious displacement of depth curves. No recommendations.

accept

Retained.

D₂T to D₂O

Vol. 9 page 49

23 N' to 24 N'

Lat. 27° 05.8' N

Long. 96° 42.1' W

Last two soundings secured by the D₂T fathometer appear to be one foot too deep. There is no serious displacement of depth curves and no recommendation is made.

accept

Retained.

D₂O to D₂T

Vol. 10 page 32

73 P' to 74 P'

Lat. 27° 20.7' N

Long. 96° 34.7' W

Although there is an apparent jump in soundings at the time of change over, bottom appears to be bumpy as evidenced

by an apparent shoaling between Pos. 72 P' and 73 : ' and soundings should probably be accepted as recorded. Accepted.

D₂T to D₂O

Vol. 11 page 9 7 R' to 8 R'
Lat. 27° 27.5' N Long. 96° 24.7' W

This discrepancy is not apparent on the smooth sheet but is noticeable in the record. Depth curves indicate that the last sounding with the D₂T is probably 1 foot too deep. Recommend rejection. Rejected.

D₂T to D₂O

Vol. 11 page 9 8 R' to 9 R'
Lat. 27° 27' N Long. 96° 24.5' W

An inspection of the record shows that trouble was being experienced with the fathometer and depth curves indicate that the two (52⁵) soundings secured with the D₂T fathometer are 1 to 2 feet too deep. Recommend that they be rejected. Retained.

D₂T to D₂O

Vol. 11 page 45 14 S' to 15 S'
Lat. 27° 06' N Long. 96° 41' W

Only one sounding was secured with the D₂O (44⁵) and depth curves indicate that it is in error. There is a probability that the D₂O fathometer was not giving good soundings or it would have been continued in use. However, the bottom appears to be bumpy as evidenced by an apparent shoaling at pos. 15 S' and immediately thereafter. Consequently no recommendation is made and the sounding is pointed out for office disposition. Rejected.

R

D₂T to D₂O

Vol. 11 page 45

15 S' to 16 S'

Lat. 27° 05.2' N

Long. 96° 40.7' W

At this point there is a three foot shoaling immediately after the change over. This condition may exist since the last two D₂T fathometer soundings are shoaling, and the shoaling continues with the oscillator. No recommendation is made and the soundings are pointed out for office disposition.

Accepted.

There are six uncharted shoals shown on this sheet. Due to shortage of time and press of work, they have been shown on 1:80,000 scale with one exception. They can be shown on the above scale accurately enough for charting purposes and the only advantage to be gained by showing them on a larger scale would be to give a better picture of bottom configuration for the benefit of fishermen. The exception is a shoal shown by means of sub-plan on 1:20,000 scale which was developed by radial lines from a buoy, the lines being controlled by gyro bearings and depression angles. The extent of this shoal was too small to be shown on 1:80,000 scale. Tracings of the five shoals shown on 1:80,000 scale showing protracted positions connected with lines are included with the sheet for the convenience of the verifier. The six shoals with their location and least depths follow:

Verification and review complete. Tracings destroyed. J.A.M.

Lat. 27° 45.0' N

31⁴/₁₀ least depth ✓

Long. 96 13.3 W

Lat. 27 40.3 N

31¹/₁₀ least depth ✓

Long. 96 16.3 W

Lat. 27° 35.4' N

Long. 96 27.0 W

31⁵/₂ least depth ✓

(See note in record concerning this least depth) Statement on p. 45, vol. 6 regarding method of location. location satisfactory. J. A. M.

Lat. 27 34.2 N

Long. 96 28.7 W

31¹/₂ least depth ✓

Lat. 27 32.3 N

Long. 96 28.0 W

31¹/₂ least depth ✓

Lat. 27 26.3 N

Long. 96 31.3 W

30⁴/₂ least depth ✓ Sub-plan.

It should be borne in mind by the office verifier that the hydrographic buoys mentioned in paragraph entitled "Control" were anchored with a scope of cable approximately twice the depth of their respective locations. This condition caused jumps in time whenever a change of fix occurred in visual work, and caused considerable differences on weaker intersections of arcs or bearings.

The line 34 Q through 45 Q gave uniformly bad crossings, the soundings appearing to be too deep. An examination of the record disclosed that trouble was being experienced with the fathometer and also that two fathometer comparisons had been secured in the locality shortly after the trouble was experienced. Therefore an arbitrary index correction was applied to soundings between 34 Q and 69 Q based on the fathometer comparisons. (See note Vol. 5 page 41). The corrected soundings then gave better crossings the largest being only 1.6% of the depth. However, depth curves drawn for each fathom of depth indicate that the

27° 32.5'
96° 14.0'

soundings between 34 Q and 45 Q are still too deep. Should the soundings between the two latter positions be rejected, the depth curves can be drawn smoothly and evenly without any distortion.

Reject only the 50's.
Pos. 36 to 38 rejected.

Crossings are remarkably good on this sheet, the majority of them being 1 and 2 feet and the largest being 6 feet which is only 1.6% of the depth. The latter occurs in Lat. 27° 17', Long. 96° 26.9'. There is evidence of a bumpy bottom in this area and it is possible that the crossing exists as shown on the sheet.

6 ft?
Crossing satisfactory.

The development in Lat. 27° 12' Long. 96° 38' was in search of a 27½ fathom spot reported by fishermen. It is obvious that the shoal does not exist. However, soundings on this day (W') do not agree very well with soundings secured on previous days, the discrepancy being as much as six feet in places. An examination of the record shows that these soundings were secured on next to the last day of the season. This was an extremely rough day, it being necessary to discontinue work on the following day due to rough weather. The soundings in question were secured with the D₂T fathometer which gave an unsteady return on rough days and the soundings were only read to the nearest half fathom. Furthermore, the fathometers were at a low ebb at this time. A combination of the above facts is probably responsible for the obviously bad soundings secured. Should the office so desire, the bad soundings on this day (W') can be rejected without serious damage to the sheet.

Retained.

Some explanation is required regarding the note in Vol. 9, page 69, P' day. The gyro compass failed some time between

position 23 P' and 24 P'. Before the mishap had been discovered the ship was well off course. However, a shift was made to the steering compass and the remainder of the loop finished. That night it was found that insufficient data was available to plot the entire loop, R.A.R. positions being too indefinite at the offshore end of the loop and the dead reckoning being doubtful due to lapse of time before discovery of gyro failure. Consequently positions between 16 P' and 27 P' were rejected and 27 P' was renumbered 17 P'. See note regarding steering compass on pages 5 and 6, Vol. 10.

DANGERS, CHANNELS AND ANCHORAGES

This sheet is an offshore survey with no dangers to navigation. The entire area is navigable, and anchorage is good where ever the depth permits.

COMPARISON WITH PREVIOUS SURVEYS

This sheet covers a part of the Gulf in which there has been very little previous surveying. Sheet 1350 surveyed in 1875-6-7 by means of precise dead reckoning on a scale of 1:600, 000 is the only known survey covering the area. Soundings on 1350 agree remarkably well with the present survey. Only five soundings on the above survey disagree sharply with the present sheet.

Few soundings
from H-1465
and H-1484a
overlap west
corner.

They are as follows:

Lat. $27^{\circ} 17.6' N$ ✓

Long. $96^{\circ} 24.0' W$ ✓

This sounding is a charted 61 fathoms surrounded by depths of 70 fathoms on the present survey.

Lat. 27° 17.4' N ✓

Long. 96 18.0 W ✓

This sounding is a charted 76 fathoms surrounded by depths of 95 fathoms on the present survey.

Lat. 27° 39.7' N ✓

Long. 95 54.1 W ✓

This sounding is a charted 52 fathoms surrounded by depths of 66 fathoms on the present survey.

Lat. 27° 43.3' N ✓

Long. 95 57.0 W ✓

This sounding is a charted 38 fathoms surrounded by depths of 48 fathoms on the present survey.

Lat. 27° 47.1' N ✓

Long. 95 59.3 W ✓

This sounding is a charted 33 fathoms surrounded by depths of 37 fathoms on the present survey.

The above soundings were probably secured by means of sounding tubes and are incorrect. They should be removed from the chart and soundings of the present survey substituted.

More likely vertical casts with error in position rather than depth. J.N.M.

The old soundings which appear on ~~the~~ chart, and are not shown on any of the bureau's hydrographic sheets are all in error and should be superceded by soundings of the present survey.

A list of these soundings with their location follows:

Lat. 27° 26.7' N ✓

Long. 96 20.7 W ✓

This sounding is a charted 53 fathoms surrounded by

depths of 59 fathoms on the present survey.

Lat. 27° 30.7' N ✓

Long. 96 12.0 W ✓

This sounding is a charted 55 fathoms surrounded by depths of 69 fathoms on the present survey.

Lat. 27° 32.7' N ✓

Long. 96 03.7 W ✓

This sounding is a charted 62 fathoms surrounded by depths of 82 fathoms on the present survey.

Lat. 27° 34.8' N ✓

Long. 95 55.8 W ✓

This sounding is a charted 62 fathoms surrounded by depths of 100 fathoms on the present survey.

Lat. 27° 34.8' N ✓

Long. 96 33.5 W ✓

This sounding is a charted 20 fathoms surrounded by depths of 32 fathoms on the present survey.

Developed on present survey.

Lat. 27° 45.0' N ✓

Long. 96 23.0 W ✓

This sounding is a charted 16 fathoms surrounded by depths of 32 fathoms on the present survey.

Developed on present survey.

GEOGRAPHIC NAMES

This is an offshore sheet, and there are no new geographic names.

STATISTICS

Statute miles of sounding lines	2381.2
Number of positions	2384
Number of soundings	26383
Number of bomb positions	509
Number of sounding volumes	12
Number of bomb records	2
Control buoys used including sonics	58
Sonic buoys used	11
Area square statute miles	2986.3

REMARKS

This is an excellent survey, there being a remarkably close agreement between soundings which was secured in spite of adverse weather and slow failure of fathometer equipment. The largest discrepancy noted is only 1.6% of depth and it will probably be ironed out in the final verification. It is interesting to note that all discrepancies occurred after the change over from the amidships to forward transceiver.

Respectfully submitted

J. T. Jarman
 J. T. Jarman, Ensign,
 U.S. Coast & Geodetic Survey.

NOTE:

Above values computed with a settling value at full speed. Apply correction from table below when vessel is operated at reduced speeds:

0.8 ft (full speed)	120 R.P.M.
0.6 "	100 R.P.M.
0.4 "	80 R.P.M.
0.2 "	60 R.P.M.
0.0 "	40 R.P.M.

I. D. S. CORRECTIONS

SHEET 82 H 6405

Date	Day	I (ft)	D (ft)	St. (ft)	I/D/S D ₁ (ft)	I/D/S D ₂₀ (ft)	I/D/S D _{2T} (fms.ft)
Sept. 6	Y	1.5	0.0	0.8	0.7	0.7	3 5.3
" 7	Z	1.5	0.0	0.8	0.7	0.7	3 5.3
" 14	A'	1.5	0.1	0.8	0.6	0.6	3 5.4
" 15	B'	1.5	0.1	0.8	0.6	0.6	3 5.4
" 16	C'	1.5	0.0	0.8	0.7	0.7	3 5.3
" 17	D'	1.5	0.0	0.8	0.7	0.7	3 5.3
" 18	E'	1.5	0.1	0.8	0.8	0.8	3 5.2
" 19	F'	1.5	0.2	0.8	0.9	0.9	3 5.1
" 20	G'	1.5	0.2	0.8	0.9	0.9	3 5.1
" 21	H'	1.5	0.3	0.8	1.0	1.0	3 5.0
" 22	J'	1.5	0.4	0.8	1.1	1.1	3 4.9
" 23	K'	1.5	0.4	0.8	1.1	1.1	3 4.9
" 26	L'	1.5	0.1	0.8	0.8	0.8	3 5.2
" 27	M'	1.5	0.2	0.8	0.9	0.9	3 5.1
Oct. 7	N'	1.5	0.3	0.8	0.4	0.4	3 5.6
" 8	P'	1.5	0.2	0.8	0.5	0.5	3 5.5
" 9	Q'	1.5	0.2	0.8	0.5	5.0	3 5.5
" 10	R'	1.5	0.1	0.8	0.6	4.9	3 5.4
" 11	S'	1.5	0.1	0.8	0.6	4.9	3 5.4
" 14	T'	1.5	0.1	0.8	0.6	4.9	3 5.4
" 15	U'	1.5	0.0	0.8	0.7	4.8	3 5.3
Nov. 9	W'	1.5	0.4	0.8	1.1	4.4	3 4.9

I. D. S. CORRECTIONS

SHEET 82 H6405

Date	Day	I (ft)	D (ft)	St. (ft)	I/D/S D ₁ (ft)	I/D/S D ₂₀ (ft)	I/D/S D _{2T} (fms.ft)
July 28	A	1.4	0.2	0.8	0.4	0.4	3 5.6
" 29	B	1.4	0.1	0.8	0.5	0.5	3 5.5
Aug. 4	C	1.4	0.8	0.8	0.2	0.2	4 0.2
" 5	D	1.4	0.8	0.8	0.2	0.2	4 0.2
" 6	E	1.4	0.7	0.8	0.1	0.1	4 0.1
" 7	F	1.4	0.7	0.8	0.1	0.1	4 0.1
" 8	G	1.4	0.6	0.8	0.0	0.0	4 0.0
" 9	H	1.4	0.5	0.8	0.1	0.1	3 5.9
" 10	J	1.5	0.0	0.8	0.7	0.7	3 5.3
" 17	K	1.5	0.3	0.8	0.4	0.4	3 5.6
" 18	L	1.5	0.2	0.8	0.5	0.5	3 5.5
" 19	M	1.5	0.2	0.8	0.5	0.5	3 5.5
" 20	N	1.5	0.1	0.8	0.6	0.6	3 5.4
" 21	P	1.5	0.0	0.8	0.7	0.7	3 5.3
" 22	Q	1.5	0.0	0.8	0.7	0.7	3 5.3
" 23	R	1.5	0.1	0.8	0.8	0.8	3 5.2
" 24	S	1.5	0.2	0.8	0.9	0.9	3 5.1
" 30	T	1.5	0.3	0.8	0.4	0.4	3 5.6
" 31	U	1.5	0.2	0.8	0.5	0.5	3 5.5
Sept. 2	V	1.5	0.2	0.8	0.5	0.5	3 5.5
" 3	W	1.5	0.1	0.8	0.6	0.6	3 5.4
" 4	X	1.5	0.1	0.8	0.6	0.6	3 5.4

T and S Corrections
SHEET 82
K6405

T and S in feet	July 19-30		Aug. 2-11		Aug 16-25		Aug. 29 to Sept. 9		Sept. 13-24		Sept. 26 to Oct. 2		Oct. 6-11		Oct. 13-16		Nov. 8-11	
	fm.	ft.	fm.	ft.	fm.	ft.	fm.	ft.	fm.	ft.	fm.	ft.	fm.	ft.	fm.	ft.	fm.	ft.
2.1	14	4	15	1	14	1	14	2 1/2	14	15	1	15	15	1	15	0 1/2	17	2 1/2
2.2	16	2 1/2	15	5	14	4	15	5 1/2	15	15	4 1/2	15	15	4 1/2	14	4	18	1
2.3	17	1	16	3	15	2	16	3	16	16	2	16	16	2	16	2	19	0
2.4	17	5 1/2	17	3	15	5 1/2	16	0 1/2	16	16	5 1/2	16	16	5	17	0	19	4
2.5	18	3 1/2	17	5 1/2	16	3	16	3 1/2	17	17	3 1/2	17	17	3	17	3 1/2	22	0
2.6	19	2 1/2	18	3 1/2	17	1	17	1 1/2	17	18	1	18	18	0 1/2	18	1	22	4
2.7	20	0 1/2	19	2 1/2	17	4	17	5 1/2	18	18	5	18	18	4 1/2	18	5	25	0
2.8	20	5	20	1	18	1	18	3	18	19	2 1/2	19	19	1 1/2	19	2 1/2	25	0
2.9	24	0	23	3	18	5	19	0 1/2	19	20	0	20	19	5	20	0	25	0
3.0	24	0	23	3	21	2	19	4	20	22	0	21	21	5	22	0	25	4
3.1							20	1										
3.2	27	4	27	2 1/2	25	0	24	3 1/2	24	25	4	25	25	1	25	0	29	0
3.5	31	1 1/2	31	0 1/2	28	5	28	5 1/2	27	29	2	28	28	1	28	0	32	4
4.0	34	5	34	3	32	5	33	2	31	33	3 1/2	31	31	1	31	0	36	2
4.5																		
5.0	38	3	38	2	37	0	37	3 1/2	36	37	5	34	34	5	34	5	40	0
5.5	42	0	42	0	41	1	42	0	42	42	0	42	38	4	42	0	44	0
6.0																		
7.0																		
8.0																		
9.0																		
10.0																		
9.0																		

NOTE: For corrections on any trip deeper than shown
for that trip use curves for trip No. 18

U. S. Coast and Geodetic Survey Ship HYDROGRAPHER,
Box 565, Galveston, Texas.

C O P Y

March 9, 1939.

To: The Director,
Coast and Geodetic Survey,
Washington, D. C.

From: Commanding Officer,
Coast and Geodetic Survey
Ship HYDROGRAPHER.

Subject: Depth Units and Sounding Corrections.

Reference: Circular letter 22-AB, 293, date August 24, 1938.

After a study of the fathometer corrections used during the previous season on the HYDROGRAPHER and considering the recommendations contained in the above reference and attached graph the following units were used for correcting the fathometer sounding obtained during the 1938 season:

Tenths of feet to 20-4/8 fathoms
Half feet to 42 fathoms
Feet beyond 42 fathoms

Some difficulty was experienced in the operation of the fathometers on the HYDROGRAPHER during the latter part of the 1938 season. When the operation of the fathometers are normal it is believed that the correction units stated above are about right.

While computing and entering the different fathometer corrections the question arose whether to follow the units specified in paragraph 135 of the Hydrographic Manual in entering each individual correction. The method used on this vessel in reducing the 1938 season records was to compute and enter individual corrections to the nearest unit and after all corrections were entered in the sounding record, they were combined and then paragraph 135 of the Hydrographic Manual followed in making the total correction to the sounding.

As an example in entering in integral feet the tide correction of -0.2 to 0.5 feet was entered as 0.0 feet and 0.5 to 1.5 feet was entered as 1.0 feet. When combining all corrections to the sounding and the sounding is reduced in integral feet 0.8 to 1.7 feet is called 1.0 foot.

G. C. Mattison,
Commanding HYDROGRAPHER.

C O P Y

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

30-McC

October 20, 1938.

To: Commanding Officer,
U. S. C. & G. S. S. HYDROGRAPHIC,
P. O. Box 565,
Galveston, Texas.

From: The Director,
U. S. Coast and Geodetic Survey.

Subject: Tide Data, Texas.

Further reference is made to your letter of September 24, 1938, requesting data for the reduction of soundings off the coast of Texas.

In view of the fact that tide records could not be obtained by use of the fathometer and that no outside tide stations were successfully maintained except for short intervals, it will be necessary to rely on the records of the Aransas Pass station for tide reducers. Hourly heights for this station for the period April 24-August 2, 1938, have been tabulated in this office and are inclosed herewith. The tabulated heights are referred to the zero of the tide staff, which is 2.2 feet below mean low water.

For the hydrographic work of the previous season the tides offshore were assumed to occur one hour earlier and with a range 50% greater than the tides at our primary station in Galveston Harbor. Since the records show the tide at Aransas Pass to be practically the same as at the Galveston primary station, the same allowances for time and range can be assumed to apply to the Aransas Pass records in obtaining tide reducers for this season's work.

(s) L. O. Colbert,
Director.

C O P Y

C O P Y

DEPARTMENT OF COMMERCE
OFFICE OF THE DIRECTOR U. S. COAST AND GEODETIC SURVEY
WASHINGTON

80-LEF

February 17, 1938.

To: Commanding Officer,
U. S. Coast and Geodetic Survey
Ship HYDROGRAPHER,
Galveston, Texas.

From: The Acting Director,
U. S. Coast and Geodetic Survey.

Subject: Plotting R.A.R. sheets.

After carefully considering your 1936 practice in the plotting of R.A.R. sheets (that is, the omission of distance arcs and position intersection arcs), this office is of the opinion that certain distinct advantages accrue from showing such information on the final sheet.

You will, therefore, be guided by the following instructions relative to the plotting of R.A.R. smooth sheets:

1. Distance arcs shall be drawn with black pencil and shall not be inked. It will be necessary to use a fairly hard pencil for this purpose in order that excessive smudging will not take place while plotting the survey. The appropriate station names should be penciled along the various arcs as frequently as needed for identification as well as the distances in meters or times in seconds, whichever the case may be.

2. The station symbols and names shall be inked; preferably using a different color for each station occurring on any one sheet. Where necessary to duplicate colors because of the large number of stations, stations given the same color should be selected with a view to eliminating confusion in so far as possible.

3. Position intersection arcs shall be inked in the color of their respective stations.

4. On your 1937 R.A.R. surveys which may have been smooth plotted without showing distances and intersection arcs, the preliminary aluminum mounted sheets should be retained until the surveys have been reviewed in this office.

(s) J. H. Hawley,
Acting Director.

C O P YC O P Y

OFFICE OF THE DIRECTOR

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

22-AB

1995 HY 4

January 22, 1938.

C
O
P
Y

To: The Commanding Officer,
U.S.C. & G.S. Ship HYDROGRAPHER,
P.O. Box 565,
Galveston, Texas.

From: The Acting Director,
U. S. Coast and Geodetic Survey.

Subject: Depth Units for Offshore Surveys.

Referring to your letter of January 13, 1938, you will please pencil the soundings on your offshore sheets in fathoms and sixths of fathoms, with the denominator of the fraction omitted. In other words, the method will be the same as you have used on your boat sheets, with the addition of the fraction bar beneath the number of feet in excess of the whole number of fathoms. This method of plotting the soundings shall be continued offshore to depths, where because of lack of accuracy of the fathometer, the fraction becomes a meaningless refinement.

For the reason stated in the last paragraph of your letter, it is desired that the soundings on hydrographic sheet Field No. 84 be plotted in feet.

(Signed) J. H. Hawley,
Acting Director.

C
O
P
Y

Mark	Lat. 27° 26'	601 m.	Graphic
	Long. 96 31	631	
Kum	27 32	770	Buoy traverse No.
	96 37	288	17 & 18
Lar	27 35	524	"
	96 38	1260	
Loa	27 53	1091	Buoy traverse No.
	96 20	1266	15
Lop	28 08	1092	Buoy traverse No.
	96 06	307	13
Mie	27 56	354	Buoy traverse No.
	96 22	286	15
Mur	27 38	391	Buoy traverse No.
	96 40	624	17 & 18
Nio	27 41	104	"
	96 42	36	
Nyon	27 58	1575	Buoy traverse No.
	96 23	1108	15
Oka	28 01	1180	"
	96 25	343	
Opp	27 43	1378	Buoy traverse No.
	96 43	919	18
Pau	27 46	938	Buoy traverse No.
	96 45	242	17 & 18
Po	28 04	310	Buoy traverse No.
	96 26	1091	15
Ufa	27 39	821	Buoy traverse No.
	96 20	1259	16 & 17
Use	28 07	1082	Buoy traverse No.
	96 08	831	13
Val	27 36	670	Buoy traverse No.
	96 25	748	16 & 17
Vex	28 06	913	Buoy traverse No.
	96 11	92	13

Wag	Lat.	28° 05'	731 m.	Buoy traverse No.
	Long.	96 13	907	13
Wo		27 32	1819	Buoy traverse No.
		96 30	872	17
Wye		27 26	1025	Buoy traverse No.
		96 40	636	18
Aix		28 02	1307	Buoy traverse No.
		96 12	40	14
Ant		27 52	01	Buoy traverse No.
		96 01	165	14
Api		27 45	508	Buoy traverse No.
		96 30	517	16 & 17
Bago		27 48	146	"
		96 31	1118	
Bom		27 59	1816	Buoy traverse No.
		96 10	807	16
Cic		27 50	1586	Buoy traverse No.
		96 33	69	16 & 17
Cox		27 57	578	Buoy traverse No.
		96 09	26	16
Dao		27 54	1136	"
		96 07	771	
Dax		27 53	1088	Buoy traverse No.
		96 34	648	16 & 17
Ede		27 56	340	"
		96 35	1110	
Eu		27 51	1582	Buoy traverse No.
		96 05	1555	16
Fao		27 49	1002	Buoy traverse No.
		96 04	1080	16
Gar		27 53	1724	Traverse No. 9
		95 55	730	
Giza		27 46	303	Traverse No. 16
		96 09	1522	

Han	Lat.	27° 42'	1687 m.	Traverse No. 16
	Long.	96 14	1586	
Iki		27 45	1096	Traverse No. 15.
		96 16	944	
Jiu		27 48	542	"
		96 18	40	
Jub		27 29	1546	Traverse No. 17 & 18
		96 35	509	
Ket		27 50	1805	Traverse No. 15
		96 19	700	
Kill		28 09	1584	Traverse No. 12
		96 03	404	
Yug		27 39	1490	Traverse No. 16 & 17.
		96 27	953	
Zor		27 42	1023	Traverse No. 16 & 17.
		96 28	1542	
Yap		27 23	694	Traverse No. 13
		96 45	210	
Ade		27 25	1164	Traverse No. 18 & 19.
		96 47	936	
Beck		27 28	512	"
		96 49	99	
Coe		27 30	1765	"
		96 50	856	
Dye		27 33	1329	"
		96 52	167	
Ely		27 36	866	""
		96 53	1066 1106	
Kay		27 19	445	Traverse No. 19.
		96 45	1065	
Lee		27 15	171	Traverse No. 19 & 21
		96 46	22	
Mau		27 17	346	"
		96 50	08	

Nix	Lat. 27° 18'	1560 m	Traverse No. 19 & 21.
	Long. 96 53	378	
Ott	27 20	564	"
	96 56	186	
Pons	27 21	1214	"
	96 58	1300	
Ross	27 22	1832	"
	97 01	582	
Sly	27 24	344	"
	97 03	1164	
Dow	27 10	673	Traverse No. 21
	96 45	1501	
Edy	27 05	1642	"
	96 45	1567	
Foy	27 05	1402	"
	96 39	773	
Zad	27 32	1523	Traverse No. 20a.
	96 25	1203	

July 28, 1938

①

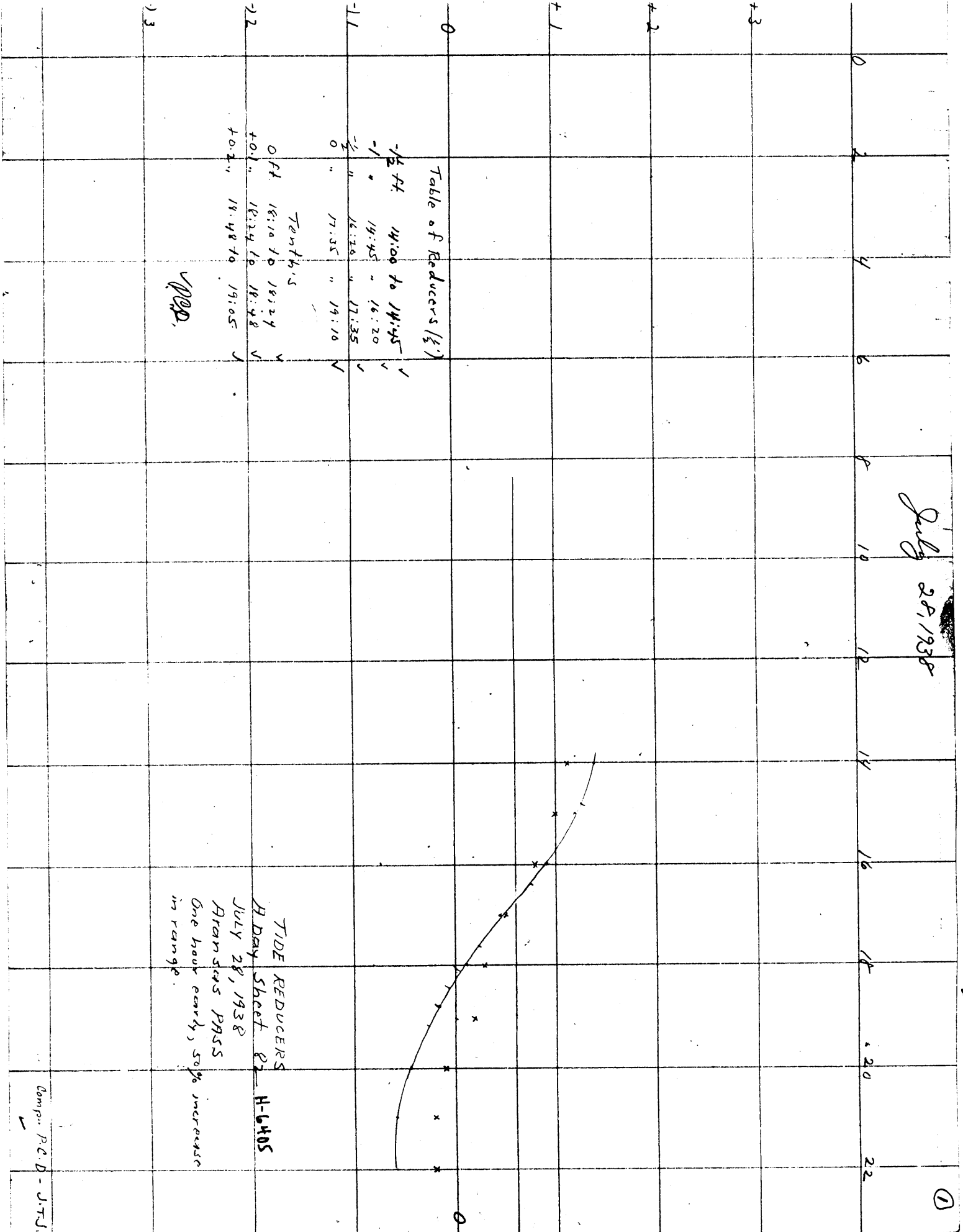


Table of Reducers (1/2')

-1/2 ft.	14:00 to 14:45	✓
-1 "	14:45 " 16:20	✓
-1/2 "	16:20 " 17:35	✓
0 "	17:35 " 19:10	✓

Tenth's

0 ft.	18:10 to 18:24	✓
+0.1 "	18:24 to 18:48	✓
+0.2 "	18:48 to 19:05	✓

✓ P.P.P.

TIDE REDUCERS
 A Day Sheet P2 - H-6405
 July 28, 1938
 Arans's's PMS
 One hour early, 50% increase
 in range.

July 29, 1939

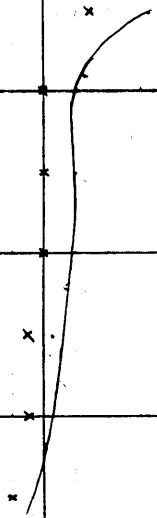


TABLE OF REDUCERS

(2')

-12 ft. 5:00 to 5:45 ✓
-1. Remainder ✓

Tenth's
-12 ft 5:45 to 8:20 ✓
-11. 8:20 to 10:00 ✓

✓ P.O.B.

Tide Reducers
Bday Sheet 82-16405
July 29, 1939
ARCHERS PASS
One hour early, 50% increase
in range.

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. **H.6.4.05**

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

Number of positions on sheet	2384
Number of positions checked	... 11 ...
Number of positions revised	... 0 ...
Number of soundings recorded	26383
Number of soundings revised	... 10 ...
Number of soundings erroneously spaced	... 11 ...
Number of signals erroneously plotted or transferred	... 0 ...

Date:

Verification by *Francis B. Kelly* **162 hrs.**
N. Holmes **3 1/2 hrs.** Time: **165 1/2 hrs.**

Review by *J.A. McCormick* **1/11/40** Time: **9 hrs.**

HYDROGRAPHIC SURVEY NO. M-6405

Smooth Sheet Yes

Boat Sheet Yes

Records; Sounding 12 Vols., Wire Drag Vols., Bomb 2 Vols.

Descriptive Report Yes

Title Sheet Yes

List of Signals Vol. #1

Landmarks for Charts (Form 567) None

Statistics Total statistics only

Approved by Chief of Party Yes

Recoverable Station Cards (Form 524) ---

Special Chart for Lighthouse Service None
(Circular Nov.30, 1933)

Hydrography: Total Days 44 ; Last Date Nov. 9, 1938

Remarks _____

Verifiers Report for H 6405 (1938)

The records conform to the requirements of the General Instruction

There are no tape signals on the sheet the control being furnished by hydro buoys

The verifier's disposition of all discrepancies is noted in the D.R. opposite the notation concerning them. The tendency was to accept the soundings slightly in error, according to the field plotter, rather than leave blank spaces on the sheet. The majority of the errors were insignificant and were only apparent when the depth curves for every foot were drawn.

The junction with all adjoining sheets were satisfactory. Field sheet No 83 on the south has not as yet been received in the office. H 6401 (1938) on the north west & H 6403 (1938) on the south west have not as yet been filed.

The soundings are shown in fathoms & sixths, all sixths above 100 fathoms were added in the office from the records.

Francis B. Kelly

Jan 5, 1940

Remarks

Decisions

	Remarks	Decisions
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		

GEOGRAPHIC NAMES

Survey No. **H6405**

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.
									1
									2
									3
									4
									5
									6
									7
									8
									9
									10
									11
									12
									13
									14
									15
									16
									17
									18
									19
									20
									21
									22
									23
									24
									25
									26
									27

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
 DESCRIPTIVE REPORT } No. H-6405
~~PHOTOSTAT OF~~ } ~~No. H-6405~~

{ received April 24, 1939
 { registered May 2, 1939
 { 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	✓ <i>HP</i>		<i>Fathometer operation Pages 9-11</i>
22	✓ <i>HP</i>		
27	✓ <i>HP</i>		
25			
26			
30			
40			
62			
63			
82			
83			
88			
90			

RETURN TO

82	T. B. Reed
----	------------

✓ *TBR*

TIDE NOTE FOR HYDROGRAPHIC SHEET

Division of Hydrography and Topography: July 7, 1939.

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

Plane of reference approved in
12 volumes of sounding records for

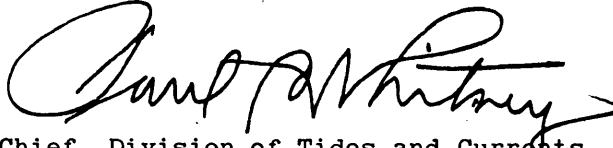
HYDROGRAPHIC SHEET 6405

Locality Offshore approaches to Aransas Pass, Texas Coast.

Chief of Party: G. C. Mattison in 1938
Plane of reference is mean low water reading
2.2 ft. on tide staff at Port Aransas
5.0 ft. below B. M. 1

Height of mean high water above plane of reference is 1.1 ft.

Condition of records satisfactory except as noted below:


Chief, Division of Tides and Currents.

DIVISION OF CHARTS

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6405 (1938) FIELD NO. 82.

Texas, Gulf of Mexico, Offshore approaches to Aransas Pass.
Surveyed in July-Nov., 1938, Scale 1:80,000.
Instructions dated Feb. 17, 1937; Feb. 23, 1938 (HYDROGRAPHER).

Soundings:

Control:

Dorsey Fathometer.

R.A.R. and three point fixes
on buoy signals.

Chief of Party - G. C. Mattison
Surveyed by - Officers of Ship HYDROGRAPHER
Protracted by - J. T. Jarman
Soundings plotted by - J. T. Jarman
Verified and inked by - F. B. Kelly
Reviewed by - J. A. McCormick, January 11, 1940.
Inspected by - H. R. Edmonston

1. Shoreline and Signals.

Shoreline is well outside the limits of the smooth sheet.
Buoy signals were located by taut wire, sun azimuth traverse,
computations for which are filed in the library under
Accession No. S-1642, Shelf No. 877-SHS-6404-1938-M.

2. Depth Curves.

Satisfactory.

3. Sounding Line Crossings.

Satisfactory.

4. Junctions with Contemporary Surveys.

Junctions with H-6402 (1938) on the west, H-6400 (1938)
on the north and H-6404 (1938) on the northeast are satis-
factory. H-6401 (1938) on the north and H-6403 (1938) on
the southeast had not been verified at the date of this re-
view nor had the offshore survey on the southwest been re-
ceived from the field.

5. Comparison with Prior Surveys.

a. H-1465 (1880), 1:40,000; H-1484a (1881), 1:40,000.

A very few soundings from these old surveys fall within
the western limits of the present survey and are in
good agreement with soundings on the latter. The
present survey is self-sufficient and supersedes the
overlapping portions of the old survey.

b. H-1350 (1875-77), 1:600,000.

The above survey includes the area covered by the present survey but its soundings are so widely spaced that only about 30 fall within the common area. Dead reckoning and astronomic fix control on the old survey is undoubtedly responsible for major discrepancies between old and new surveys discussed in the descriptive report, pages 21 and 22. Most of the soundings on H-1350, surprisingly, are in fairly good agreement with those on the present survey. H-1350 is superseded by the present survey in the area common to both.

6. Comparison with Chart 1117 (New Print of February 7, 1939).

Soundings charted in the area covered by the present survey are from surveys discussed in the foregoing paragraphs and from unidentified sources which are presumed to be British Admiralty or U.S. Hydrographic Office charts. Soundings from the latter sources are in poor agreement with those on the present survey, probably because of inaccuracies in location, and should be removed from the chart (see descriptive report, pages 22 and 23).

7. Condition of Survey.

Satisfactory.

8. Compliance with Instructions for the Project.

Satisfactory.

9. Additional Field Work Recommended.

The Chief of Party states in the descriptive report (front) that the 25 fathom depth charted from outside sources in lat. $27^{\circ}06.5'$, long. $96^{\circ}44.5'$ was to be further developed during the 1939 season. Additional office recommendations are unnecessary.

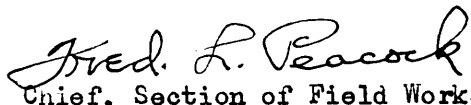
Examined and Approved:



T. B. Reed,
Chief, Section of Field Records.



Chief, Division of Charts.



Chief, Section of Field Work.



Chief, Division of H. & T.

applied to chart 1286
" " " 1117

5/2/40

J.H.S.

5/10/40

J.H.S.