

8767

Diag. Cht. No. 1279.

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Hydrographic
HY-40-4-62 &
Field No. HY-40-5-62 Office No. H-8767

LOCALITY

State Texas - Louisiana
General locality Gulf of Mexico
Locality Sabine Bank

19 62

CHIEF OF PARTY

R. M. Stone

LIBRARY & ARCHIVES

DATE April 5, 1965

USCOMM-DC 37022-P66

1928

HYDROGRAPHIC TITLE SHEET

H-8767

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

FIELD NO.

*
HY-40-4-62, HY-40-5-62

State Texas - Louisiana

General locality Gulf of Mexico

Locality Sabine Bank

Scale 1:40,000 Date of survey August 21 - September 27, 1962

Instructions dated May 15, 1962 Project No. OPR-427

Vessel USC&GS SHIP HYDROGRAPHER & LAUNCH HY-2

Chief of party Raymond M. Stone, CDR, USC&GS

Surveyed by P.A. Stark, J.E. Guth, F.D. Moran, R.A. Ganse, D.G. Popajoy, M.H. Schilly

Soundings taken by echo sounder, ~~DE-723~~ DE-723 Survey Fathometer

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

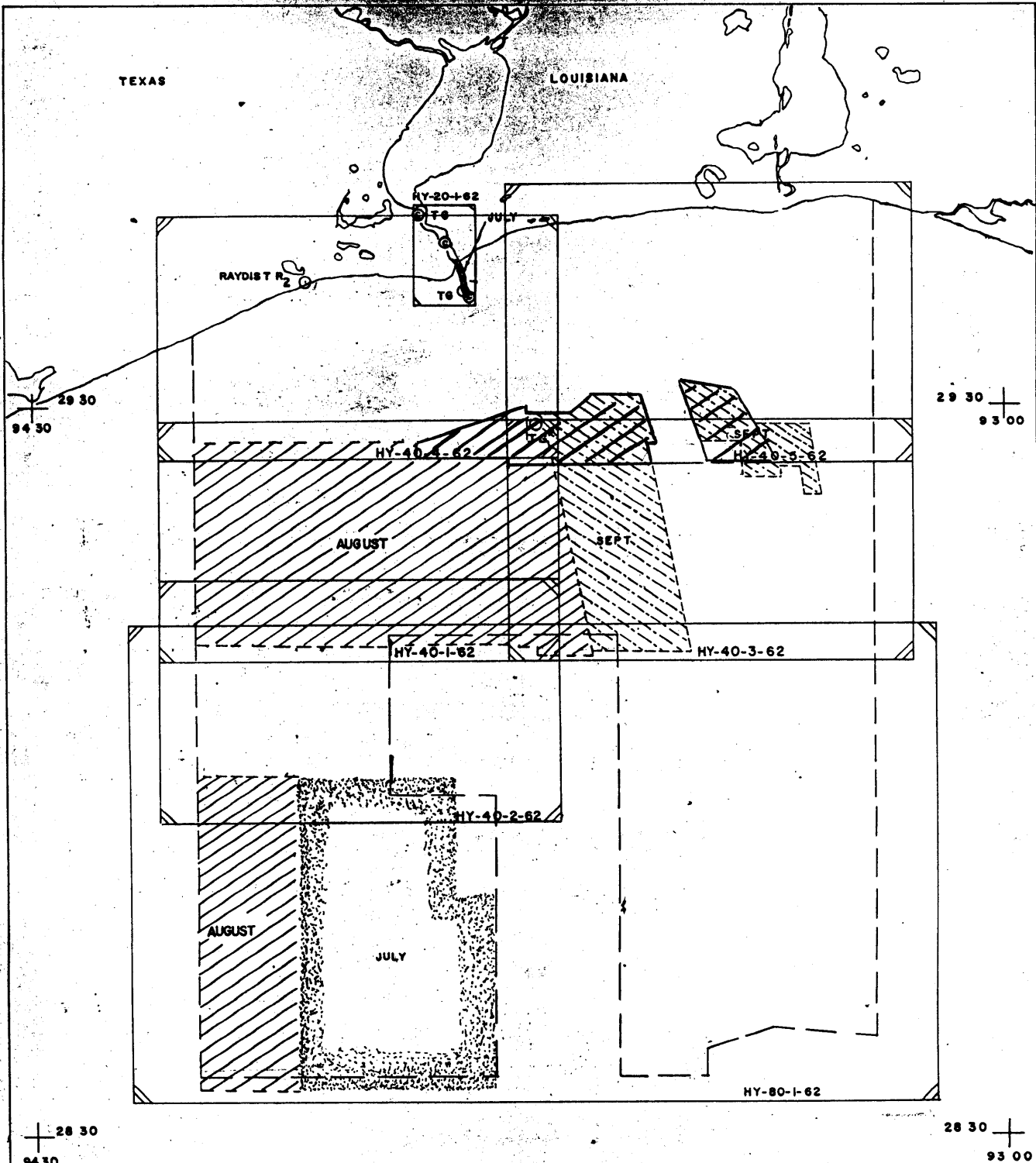
Protracted by was Gerber Digital Plotter Seattle
To be plotted, by machine, in Washington Office

Soundings penciled by Not applicable

Soundings in ~~21666~~ feet at MLW ~~HOOD~~

REMARKS: This survey is an offshore survey, controlled by Raydist. The data was recorded during the 1962 field season, partially in sounding volumes and partially by the DATEX Automatic Digital Recording System. After all fathograms had been check-scanned, Raydist corrections determined, all errors rectified, a smooth punch tape (with smooth printout) for automatic processing and plotting of this survey was prepared by ship's personnel. The sounding volumes (with completely reduced soundings) and the original DATEX printout serve as the complete and official survey record.

* Bureau Letter 211 dated March 19, 1964 (copy appended to this report).



PROGRESS SKETCH
 TO ACCOMPANY SEASON'S REPORT
USC & GSS HYDROGRAPHER
GULF OF MEXICO
PROJECT OPR-427
 COMBINED OPERATION
 TEXAS - LOUISIANA
 SCALE OF C&GS CHART NO. 1116

CDR R.M. STONE, COMD'G.
 JULY 17 - SEPTEMBER 28, 1962

UNITED STATES GOVERNMENT

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

Memorandum

TO : Commanding Officer
USCGSS HYDROGRAPHER

DATE:
March 19, 1964
211

FROM : Chief, Operations Division

SUBJECT: Incomplete surveys, OPR-427

Your suggestion to combine the two existing incomplete boat sheets into one complete sheet is approved. The combined sheet has been assigned H-8767 as a registry number. You shall make tracings of junction soundings for transfer to the new boat sheets.

All data pertinent to HY-40-4-62 and HY-40-5-62 shall be forwarded to the Washington Office for smooth plotting on the Gerber Plotter.

Horace G. Conerly

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SURVEY H-8767 (HY-40-4-62, HY-40-5-62)

1962

Ship HYDROGRAPHER

Scale 1:40,000

Raymond M. Stone, CDR, USC&GS

Chief of Party

A. PROJECT:

This survey was accomplished under Project OFR-427, Sabine Bank, Texas - Louisiana; original Instructions dated May 15, 1962.

B. AREA SURVEYED:

This is an offshore survey in the Gulf of Mexico, vicinity of Sabine Bank, Texas and Louisiana, between meridians $93^{\circ}52'$ and $93^{\circ}22'$ West and between latitudes $29^{\circ}26'$ and $29^{\circ}32'$ North. (This survey covers a partial area originally assigned on Boatsheets HY-40-4-62 and HY-40-5-62). The total area covered by the ship is 37.5 square nautical miles. Launch hydrography consists of 34.9 square nautical miles.

Hydrography was accomplished during the period August 21 through September 27, 1962.

The survey ^{overlaps} ~~junctions with~~ the following prior surveys:

- (1) H-4364, scale 1:40,000, year 1924
- (2) H-4332, scale 1:40,000, year 1922 - 23

The survey also joins the following contemporary surveys on the south: (1) HY-40-1-62 (H-8712); (2) HY-40-3-62 (H-8738).

1962-63

See
Review
Part
5

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY H-8767

(HY-40-4-62 and HY-40-5-62), 1962, cont'd.

C. SOUNDING VESSELS:

Hydrography was accomplished using the USC&GS Ship HYDROGRAPHER and Launch HY-2.

D. SOUNDING EQUIPMENT:

All hydrography was accomplished using Raytheon Survey Fathometer, Model DE-723, serial numbers 61-29 and 216 (HYDROGRAPHER); 217 (Launch HY-2). Instrument #61-29 is provided with an encoder for use with the DATEX System. Instrument #216, less encoder, was used to back-up #61-29.

The Fathometer initial setting for ship hydrography was maintained at 12.0 feet. Initial setting for launch hydrography was 0.0 feet.

Depths encountered ranged from 16 to 45 feet.

Echo sounder corrections were determined as follows: (Refer to "Report on Corrections to Echo Soundings (Fathometer Report), Project OPR-427, USC&GS SHIP HYDROGRAPHER, 1962)

- (a) Transducer draft corrections were derived from draft measurements made at the beginning and end of each trip to and from the survey area.
- (b) Settlement and Squat corrections were derived from tests conducted on September 13 and October 24, 1950.
- (c) Echo sounder instrument corrections were determined by making simultaneous comparisons (vertical casts) at the beginning of the season and at various intervals thereafter.
- (d) Phase corrections were derived from phase comparisons made in areas of smooth bottom during periods of calm weather.
- (e) Sound velocity corrections were determined from temperature and salinity observations and bar checks, supplemented by Velocimeter observations. (Refer to "Report on Temperature and Salinity Observations and Velocimeter Casts, Project OPR-427, USC&GS SHIP HYDROGRAPHER, 1962.

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY H-8767

(HY-40-4-62 and HY-40-5-62), 1962, cont'd.

E. SMOOTH SHEET:

The smooth sheet ~~will~~^{was} be mechanically plotted in the ^{Seattle} Washington Office utilizing the smooth punch tape prepared by ship's personnel. Comments relative to this smooth punch tape are found in Section O and in the "Smooth Tape Addendum" at the end of this report.

F. CONTROL:

All hydrography was controlled by Raydist, using the duplex antennae system. The R₁ (RED) Station was located in the vicinity of Freeport, Texas. The Raydist mast was erected over station BELA, 1962, Latitude 28° 58' 41.138" North, Longitude 95° 15' 15.023" West. This site was located by the East Coast Field Party in June, 1962, using third-order traverse methods, and was originally described at HUB A, 1962. The station was later marked with a standard triangulation disk and described as BELA, 1962, by the HYDROGRAPHER.

The R₂ (GREEN) Station was located in the vicinity of Sabine Pass, Texas. The Raydist mast was erected over triangulation station GREEN, 1962, Latitude 29° 40' 04.228" North, Longitude 94° 04' 27.040" West. GREEN, 1962, was established by ship's personnel during July, 1962. Third-order methods were employed and the station was marked with a standard triangulation disk.

Raydist corrections were derived from three-point sextant fix calibrations on a 1:20,000 scale calibration sheet of the Sabine Pass area furnished by the Washington Office, and from observations on offshore oil well structures located and checked by Raydist prior to commencing hydrography. For detailed information regarding Raydist corrections and calibrations, refer to "Raydist Report, USC&GS SHIP HYDROGRAPHER, Project OPR-427, 1962. An abstract of Raydist corrections is appended to this report.

G. SHORELINE:

There is no shoreline within the area of the survey.

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY H-8767

(HY-40-4-62 and HY-40-5-62), 1962, cont'd.

H. CROSSLINES:

Approximately 7% of all sounding lines were run as crosslines. All crossings are in good agreement. ✓

I. JUNCTIONS:

Due to the small size and irregularity of the surveyed area, only random junctions were made with prior and contemporary surveys mentioned in Section B of this report. These junctions are considered adequate within the survey itself. Random discrepancies ranging from 1 - 2 feet were exhibited on H-4332 (1922-1923), 1 - 3 feet on H-4364 (1924), and 1 foot on H-8712 (1962) and H-8738 (1962).

See
Review
Parts
5 & 6

J. COMPARISON WITH PRIOR SURVEYS:

None of the items listed in Presurvey Review, OPR-427, 1962 was investigated on this survey. Good agreement was found to exist between this survey and all surveys mentioned in Section B of this report.

One pre-survey
review item
within the area
of this survey.
See Review
Part. 7

Random discrepancies ranged from 1 - 3 feet.

K. COMPARISON WITH THE CHART:

Comparison of this survey with Chart 1279, 6th Edition, August 28/61, revised 3/4/63 and Chart 1116, 11th Edition, March 9, 1964, indicates generally good agreement; random soundings from this survey being generally 1 foot deeper than the charted soundings.

See
Review
Part
6

L. ADEQUACY OF SURVEY:

This survey is complete within itself and adequate to supersede prior surveys of the area for charting. ✓

M. AIDS TO NAVIGATION:

The HYDROGRAPHER located, with Raydist control, the following ✓

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY H-8767

(HY-40-4-62 AND HY-40-5-62), 1962, cont'd.

offshore oil well drilling structures, all of which are listed in Notice to Mariners No. 31, dated August 4, 1962, and Local Notice to Mariners, 8th Coast Guard District, dated January 1, 1964; and Notice to Mariners No. 5, dated February 1, 1964:

<u>Number</u>	<u>Latitude</u>	<u>Longitude</u>
PH-WC-118-1	29° 29.93 ¹ ✓	93° 38.42 ⁰
PH-WC-118-2	29° 30.26 ⁵	93° 38.33 ¹ ✓
PH-WC-118-3	29° 30.87 ³	93° 38.60 ⁵⁸
SU-WC-149-A	29° 26.48 ⁶	93° 25.68 ¹ ✓ ← Δ STA.

SUPERIOR A-2,
1963

N. STATISTICS: COMBINED SHEETS HY-40-4-62 AND HY-40-5-62

Vessel - Ship HYDROGRAPHER

Number of Positions	526
Miles of Sounding Line	293.7
Area in Square Nautical Miles	37.5

Vessel - Launch HY-2

Number of Positions	530
Miles of Sounding Line	273.7
Area in Square Nautical Miles	34.9
Number of Bottom Samples	2

(Refer to Tabulated List of Bottom Samples,
INDEX, HYDROGRAPHIC INFORMATION - Page 26).

The ship's work consisted of two days using sounding volumes and four days using the DATEX System while all launch work was accomplished in sounding volumes.

O. MISCELLANEOUS:

This survey was recorded partially in sounding volumes and partially by the DATEX System. The two methods require slightly different shipboard processing.

The DATEX record, consisting of a punched tape and a printout, contains errors which must be rectified before subsequent pro-

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY H-8767

(HY-40-4-62 and HY-40-5-62), 1962, cont'd.

cessing by computer and Gerber plotter can be accomplished. All errors are determined, including those for depth and position, and entered by hand on the printout which serves as the original source of survey data. From the corrected printout a final, smooth punch tape is made using a manual logger. This tape, used for subsequent processing, shows the echo sounder depths, the "draft", tide (MLW arbitrarily set at 60.0) and velocity factors.

Sounding volume records must be converted to punch tape for automatic processing. Since all corrections were entered in the volumes and the soundings were reduced therein, the manually-logged smooth tape provides the correct depth with "draft" shown as 00.0, tide shown as 60.0, and the velocity factor shown as 1.000.

The manual logger format differs from the DATEX format in placement and content of data as shown below.

DATEX Format (original printout)

Time	Depth	Echo Sounder	R1	R2	Position Number	Day Number	Units	Draft	Tide	Velocity Factor	Ship's Head
040000	021.7	00	3586.6	1201.9	017	004	0	11.3	999	1.055	347

00 = FDR
 01 = DE-723, A-Phase
 02 = DE-723, B-Phase
 etc.

0 = Feet
 1 = Fathoms

Depths encoded by DE-723 are shown as though they were A-phase depths, from 0 to 50, although the actual phase is indicated by the third entry. The corrections to soundings manually set on

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY H-8767

(HY-40-4-62 and HY-40-5-62), 1962, cont'd.

the DATEX parameter board are shown on the format as:

- (a) Draft
- (b) Tide
- (c) Velocity Factor

(a) Draft Correction - In the automatic recording system it was necessary to combine the echo sounder instrument correction, phase correction (if applicable), initial or index, settlement and squat correction, and draft correction and enter the resulting algebraic sum as "draft" on the parameter board.

(b) Tide Correction - In the absence of current, telemetered tides, 999 was used.

(c) Velocity Factor - Section D of this report stated the methods used to determine sound velocity corrections. The automatic recording system necessitated the computation of velocity factors from the velocity corrections. These factors will be applied by multiplication to each uncorrected sounding by the automatic processing equipment to determine the true depth below the transducer.

Actual tide
corrs. entered
later
during processing
aboard ship.

The Day Number is a numerical representation of the day letter.

Position Numbers identify fixes and are consecutively numbered beginning each day.

Manual Logger Format (final, smooth tape)

Time	Echo Sounder	Depth	Position Number	Draft	Tide	Velocity Factor	Units	R1	R2	Ship's Head	Day of the Year
040000	01	21.7	0017	11.3	59.6	1.055	0	3586.60	1201.90	347	246

00 = PDR
01 = DE-723

0 = Feet
1 = Fathoms

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY H-8767

(HY-40-4-62 and HY-40-5-62), 1962, cont'd.

To be manually logged, the depth must first be changed to the entire depth, since no provision is made to show phase. (If encoded on B-phase, for example, the DATEX depth must be increased by 40 since the depth recorded would be as though on A-phase).

Corrections for "draft" and the velocity factor are entered as on the DATEX record. To conform with the revised computer processing program established by the Washington Office, MLW was arbitrarily set at 60.0, and tide corrections are referred to that datum.

Position Numbers are consecutive for the entire sheet. Day numbers referring to day letters have been replaced by "Day of the Year" numbers, as shown on U.S. Government calendars.

For complete information on the use of the DATEX recording system on OPR-427, refer to "Report on Automatic Hydrographic Digital Recording System, August - September, 1962", and to the report of the same title dated 1963. Also refer to "Report on Corrections to Echo Soundings, (Fathometer Report), Project OPR-427, USC&GS SHIP HYDROGRAPHER", dated 1962. See also the "Smooth Tape Addendum" at the end of this report.

P. RECOMMENDATIONS:

None.

Q. REFERENCES TO REPORTS:

The status of reports relating to this survey is as follows:

<u>Title of Report</u>	<u>Date Forwarded W/O</u>
Coast Pilot Report, USC&GS SHIP HYDRO- GRAPHER, 1962	----- 10/2/62
Report on Automatic Hydrographic Digital Recording System, Project OPR-427, USC&GS SHIP HYDROGRAPHER, August - September 1962	----- 12/13/62
Raydist Report, Project OPR-427, USC&GS SHIP HYDROGRAPHER (July - September 1962)	----- 12/19/62
Report on Corrections to Echo Soundings (Fathometer Report), Project OPR-427, USC&GS SHIP HYDROGRAPHER (July - September 1962)	----- 3/8/63

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY H-8767

(HY-40-4-62 and HY-40-5-62), 1962, cont'd.

Report on Temperature and Salinity Observations and Velocimeter Casts, Project OPR-427, USC&GS SHIP HYDROGRAPHER, 1962 Season's Report, USC&GS SHIP HYDROGRAPHER, 1962 Field Season — 3/8/63

Report on Automatic Hydrographic Digital Recording System, 1963 Field Season, USC&GS SHIP HYDROGRAPHER, April - October, 1963 — 3/8/63

Tidal Data — Hourly Heights, Abstract of Tide Reducers, Smooth Tide Curves (this was forwarded with transmittal letter to the Marine Data Division as requested, by letter, from the Washington Office). — 12/5/63

— 12/31/63

Respectfully submitted:

Darrell W. Crawford

Darrell W. Crawford, LTJG, USC&GS

Approved and Forwarded:

William E. Randall

William E. Randall, CDR, USC&GS

TIDE NOTE - 1962

SHEETS (HY-40-4-62), (HY-40-5-62)

REGISTRY NO. H-8767

Tide Station: Pleasure Pier, Galveston, Texas
Latitude : 29° 17.0' North
Longitude : 94° 47.0' West

Plane of Reference: MLW = 2.4 feet on tide staff*

Time Meridian: 90° West

Time Correction: Minus one half hour*

Height Correction: / 0.5 foot on HW heights

* Bureau Letter 2221-42-982h, dated February 15, 1963

In compliance with the above noted letter, (copy appended to this report), tide values as recorded at the Pleasure Pier, Galveston, Texas, tide station were used in reduction of all soundings on this survey obtained during 1962. An abstract of Tide Corrections is appended to this report.

UNITED STATES GOVERNMENT

Memorandum

TO : Commanding Officer
USC&GS Ship HYDROGRAPHER

DATE: February 15, 1963

FROM : Chief, Marine Data Division

In reply refer to:
2221-42-982h

SUBJECT: Tide Data, Project OPR-427

There are enclosed hourly heights of the tide for the Pleasure Pier, Galveston, Texas for the dates listed in your letter of January 17, 1963. In order to refer these tabulated heights to mean low water subtract 2.4 feet.

Listed below are the sheet numbers and corrections to apply to the Pleasure Pier tides.

Sheet No.	Time Correction	Height Correction
HY 30-1-62	-1 Hour	none
HY 40-2-62	-1 Hour	none
HY 40-1-62	-1 Hour	none
HY 40-4-62	- $\frac{1}{2}$ Hour	+0.5 foot on HW Heights
HY 40-3-62	- $\frac{1}{2}$ Hour	+0.5 foot on HW Heights
HY 40-5-62	- $\frac{1}{2}$ Hour	+0.5 foot on HW Heights

For sheet HY 20-1-62 use $-\frac{1}{2}$ hour correction in time and +0.5 foot to the high water heights outside the Sabine Pass entrance. Inside the entrance use Pleasure Pier tides direct.

Kenneth S. Ulm
Kenneth S. Ulm

Enclosures

ABSTRACT OF TIDE CORRECTIONS

(H-8767)

Ship HYDROGRAPHER

HY-40-4-62

Date (1962)	Time (90° WMT)	Correction (Feet)	
		Actual	Tape/Printout
August 21	0900 - 0952	- 1.6	60.0 *
	1042	- 1.4	60.0
	1117	- 1.2	60.0
	1150	- 1.0	60.0
	1300	- 0.8	60.0
August 24	0532 - 0810	- 2.2	60.0
	0930	- 2.0	60.0

* Soundings recorded and completely reduced in sounding volumes.
For automatic processing 60.0 was arbitrarily selected as MW.

ABSTRACT OF TIDE CORRECTIONS

(H-8767)

Launch HY-2

HY-40-4-62

Date (1962)	Time (90° WMT)	Correction (Feet)	
		Actual	Tape/Printout
August 23	0325 - 0730	- 2.0	60.0 *
	1012	- 1.8	60.0
	1055	- 1.6	60.0
	1118	- 1.4	60.0
	1155	- 1.2	60.0
	1230	- 1.0	60.0
	1303	- 0.8	60.0
	1341	- 0.6	60.0
	1658	- 0.4	60.0
	September 12	0650 - 0900	- 1.6
0945		- 1.8	60.0
1042		- 2.0	60.0
1109		- 2.2	60.0
1400		- 2.4	60.0
1430		- 2.2	60.0
1453		- 2.0	60.0
1515		- 1.8	60.0
1535		- 1.6	60.0
1558		- 1.4	60.0
1620		- 1.2	60.0
1642		- 1.0	60.0
1710		- 0.8	60.0
1745		- 0.6	60.0
1832		- 0.4	60.0
September 14	0641 - 0719	- 1.6	60.0
	0830	- 1.4	60.0
September 15	0900 - 1000	- 1.2	60.0

* Soundings recorded and completely reduced in sounding volumes.
For automatic processing 60.0 was arbitrarily selected as MLW.

ABSTRACT OF TIDE CORRECTIONS

(H-8767)

Ship HYDROGRAPHER

HY-40-5-62

Date (1962)	Time (90° WMT)	Correction (Feet)	
		Actual	Tape/Printout
September 24	2130 - 2159	- 2.2	/ 57.8
	2220	- 2.4	/ 57.6
	2257	- 2.6	/ 57.4
	2328	- 2.8	/ 57.2
	2400	- 3.0	/ 57.0
September 25	0000 - 0041	- 3.2	/ 56.8
	0304	- 3.4	/ 56.6
	0340	- 3.2	/ 56.8
	0421	- 3.0	/ 57.0
	0526	- 2.8	/ 57.2
	0807	- 2.6	/ 57.4
	1110	- 2.4	/ 57.6
	1741 - 2025	- 1.2	/ 58.8
	2100	- 1.4	/ 58.6
	2130	- 1.6	/ 58.4
	2158	- 1.8	/ 58.2
	2223	- 2.0	/ 58.0
	2250	- 2.2	/ 57.8
	2313	- 2.4	/ 57.6
2348	- 2.6	/ 57.4	
2400	- 2.8	/ 57.2	
September 26	0000 - 0036	- 2.6	/ 57.4
	0108	- 2.8	/ 57.2
	0150	- 3.0	/ 57.0
	0342	- 3.2	/ 56.8
	0438	- 3.0	/ 57.0
	0530	- 2.8	/ 57.2
	0610	- 2.6	/ 57.4
	0700	- 2.4	/ 57.6
	1840 - 2200	- 1.2	/ 58.8
	2240	- 1.4	/ 58.6
	2310	- 1.6	/ 58.4
	2340	- 1.8	/ 58.2
	2400	- 2.0	/ 58.0

ABSTRACT OF TIDE CORRECTIONS

(H-8767)

Ship HYDROGRAPHER

HY-40-5-62

Date (1962)	Time (90° WMT)	Correction (Feet)	
		Actual	Tape/Printout
September 27.	0000 - 0005	- 2.2	+ 57.8
	0030	- 2.4	+ 57.6
	0100	- 2.6	+ 57.4
	0132	- 2.8	+ 57.2
	0228	- 3.0	+ 57.0
	0315	- 3.2	+ 56.8
	0402	- 3.0	+ 57.0
	0440	- 2.8	+ 57.2
	0508	- 2.6	+ 57.4
	0536	- 2.4	+ 57.6
	0615	- 2.2	+ 57.8
	0850	- 2.0	+ 58.0
	1015	- 2.2	+ 57.8
	1108	- 2.4	+ 57.6
	1150	- 2.6	+ 57.4
1240	- 2.8	+ 57.2	

ABSTRACT OF TIDE CORRECTIONS

(H-8767)

Launch HY-2

HY-40-5-62

Date (1962)	Time (90° WMT)	Correction (Feet)	
		Actual	Tape/Printout
September 13	0625 - 0710	- 1.8	60.0 *
	0855	- 1.6	60.0
	0950	- 1.8	60.0
	1045	- 2.0	60.0
	1128	- 2.2	60.0
	1230	- 2.4	60.0
	1304	- 2.6	60.0
	1402	- 2.8	60.0
	1430	- 2.6	60.0
	1458	- 2.4	60.0
	1523	- 2.2	60.0
	1548	- 2.0	60.0
	1610	- 1.8	60.0
	1632	- 1.6	60.0
	1650	- 1.4	60.0
	1710	- 1.2	60.0
	1730	- 1.0	60.0
1800	- 0.8	60.0	
September 14	0730 - 0832	- 1.4	60.0
	0952	- 1.2	60.0
	1022	- 1.4	60.0
	1050	- 1.6	60.0
	1130	- 1.8	60.0
	1207	- 2.0	60.0
	1245	- 2.2	60.0
	1328	- 2.4	60.0
	1403	- 2.6	60.0
	1525	- 2.8	60.0
	1611	- 2.6	60.0
	1640	- 2.4	60.0
	1700	- 2.2	60.0
	1717	- 2.0	60.0
	1739	- 1.8	60.0
1758	- 1.6	60.0	
1818	- 1.4	60.0	
1840	- 1.2	60.0	

* Soundings recorded and completely reduced in sounding volume.
For automatic processing 60.0 was arbitrarily selected as MLW.

ABSTRACT OF TIDE CORRECTIONS

(H-8767)

Launch HY-2

HY-40-5-62

Date (1962)	Time (90° WMT)	Correction (Feet)	
		Actual	Tape/Printout
September 15	1357 - 1430	- 2.8	60.0 *
	1626	- 3.0	60.0
	1718	- 2.8	60.0
	1743	- 2.6	60.0
	1810	- 2.4	60.0
	1833	- 2.2	60.0
	1858	- 2.0	60.0
September 25	0808 - 1100	- 2.4	60.0
	1307	- 2.6	60.0
	1356	- 2.4	60.0
	1439	- 2.2	60.0
	1500	- 2.0	60.0
	1528	- 1.8	60.0
	1557	- 1.6	60.0
	1740	- 1.4	60.0

* Soundings recorded and completely reduced in sounding volumes.
For automatic processing 60.0 was arbitrarily selected as MLW.

RAYDIST CORRECTIONS - SHIP

SHEETS (HY-40-4-62), (HY-40-5-62)

REGISTRY NO. H-8767

<u>Date</u>	<u>Time</u>		<u>Correction</u>	
	<u>From</u>	<u>To</u>	<u>R1</u>	<u>R2</u>
Aug. 21	0001	0700	- 0.5	≠ 0.2
21	0820	1405	- 0.4	- 1.8
21	2050	2400	- 0.4	≠ 0.1
22	0001	0532	- 0.4	≠ 0.1
24	0001	0130	- 0.4	≠ 0.2
24	0130	0515	- 0.4	≠ 0.3
24	0600	0830	- 0.3	≠ 0.3
Sept. 24	1945	2400	≠ 0.2	≠ 0.8
25	0001	0840	≠ 0.2	≠ 0.8
25	1725	2400	≠ 0.3	≠ 0.7
26	0001	0650	≠ 0.3	≠ 0.7
26	1830	2400	- 0.8	- 2.3
27	0001	2400	- 0.8	- 2.3

RAYDIST CORRECTIONS - LAUNCH

SHEETS (HY-40-4-62), (HY-40-5-62)

REGISTRY NO. H-8767

Date	Time		Correction	
	From	To	R ₁	R ₂
Aug. 16	0930	1250	- 0.4	- 0.1
16	1251	1718	- 2.4	- 2.1
17	0600	1040	- 1.2	✓ 1.1
17	1041	1930	- 2.2	✓ 2.1
18	1115	1856	- 2.5	0.0
19	0811	0827	- 0.7	✓ 0.1
19	0828	0829	- 0.7	✓ 2.1
19	0830	0832	- 0.7	✓ 6.1
19	0833	0915	- 0.7	✓ 8.1
19	0916	1600	- 0.7	✓ 0.1
20	0620	1445	- 0.5	✓ 0.6
21	1445	1510	- 0.8	✓ 0.3
21	1530	1918	- 0.1	- 0.3
21	1919	1946	✓ 1.9	- 1.3
22	0600	0624	0.0	0.0
22	0625	1836	✓ 2.0	0.0
23	0530	0720	0.0	✓ 0.1
23	0721	0738	0.0	✓ 2.1
23	0739	0905	- 3.0	- 0.9
23	0910	1637	- 0.6	- 0.1
Sept. 12	0540	1714	- 0.6	- 1.1
12	1715	1744	- 0.6	- 4.1
12	1745	1811	- 0.6	- 2.1
13	0610	1804	- 0.6	- 1.2
14	0640	1820	✓ 0.4	- 0.4
15	0850	1000	- 0.6	✓ 0.5
15	1400	1425	- 0.7	- 0.5
15	1426	1430	- 3.7	- 0.5
15	1431	1505	✓ 0.2	- 0.6
15	1506	1508	- 2.8	✓ 2.4
15	1508	1841	✓ 0.2	- 0.6
15	1842	1845	✓ 1.2	- 1.6
16	0700	0950	✓ 0.6	✓ 1.4
25	0900	1600	- 0.5	- 0.6
26	0745	1605	- 0.8	- 0.9
26	1606	1805	- 0.8	✓ 1.1

VELOCITY CORRECTIONS(For Conventional Method of Recording in Sounding Volumes)

Ship Hydrography on Sheets: (HY-40-1-62)
 (HY-40-2-62)
 (HY-40-3-62)
 (HY-40-4-62)
 (HY-40-5-62)

DE-723 Fathometer Nos. 216 & 61-29

<u>Depth</u>	<u>Velocity Correction</u>	<u>Depth</u>	<u>Velocity Correction</u>
0 to 13.7 ft	0.0 ft*	40.1 to 43.2 ft	+1.5 ft*
17.3 ft	+0.2 ft	52.3 ft	-2.0 ft
20.9 ft	0.4 ft	61.2 ft	-2.5 ft
24.5 ft	0.6 ft	61.3 to 70.0 ft	+3.0 ft
28.1 ft	0.8 ft		
31.6 ft	1.0 ft		
35.3 ft	1.2 ft		
38.8 ft	1.4 ft		
38.9 to 40.0 ft	+1.6 ft		

*Velocity Corrections were applied in the sounding volumes to the nearest 0.2 feet in depths 0 to 40 feet, and to the nearest 0.5 feet in depths over 40 feet.

Ship Hydrography on Sheet: (HY-80-1-62)

DE-723 Fathometer Nos. 216 & 61-29

<u>Depth</u>	<u>Velocity Correction</u>	<u>Depth</u>	<u>Velocity Correction</u>
0 to 2.7 fms	0.0 fms	10.1 to 12.0 fms	+0.5 fms
4.4 fms	+0.1 fms	14.0 fms	0.6 fms
6.2 fms	0.2 fms	16.2 fms	0.7 fms
8.1 fms	0.3 fms	18.4 fms	0.8 fms
8.2 to 10.0 fms	+0.4 fms	over 18.4 fms	+0.9 fms

VELOCITY (BAR CHECK) CORRECTIONS(For Conventional Method of Recording in Sounding Volumes)Launch Hydrography on Sheet: (HY-80-1-62)808J Fathometer No. 57-34

<u>Depth</u>	<u>Velocity (Bar Check) Correction</u>
0 to 7.9 ft	- 0.2 ft
16.7 ft	0.0 ft
over 16.7 ft	+ 0.2 ft

Launch Hydrography on Sheets: (HY-40-1-62)

(HY-40-3-62)

(HY-40-4-62)(HY-40-5-62)DE-723 Fathometer No. 217

<u>Depth</u>	<u>Velocity (Bar Check) Correction</u>	<u>Depth</u>	<u>Velocity (Bar Check) Correction</u>
0 to 6.1 ft	0.0 ft	18.1 to 21.4 ft	+ 1.2 ft
7.5 ft	+ 0.2 ft	24.9 ft	1.4 ft
9.3 ft	0.4 ft	28.7 ft	1.6 ft
11.8 ft	0.6 ft	32.7 ft	1.8 ft
14.7 ft	0.8 ft	36.8 ft	2.0 ft
14.8 to 18.0 ft	+ 1.0 ft	36.9 to 41.0 ft	2.2 ft
		over 41.0 ft	+ 2.5 ft

ABSTRACT OF VELOCITY FACTORS

SHEETS (HY-40-4-62), (HY-40-5-62)

REGISTRY NO. H-8767

Applicable Depth	Depth Below Transducer	Determination of Velocity Factor at Depth							Mean Velocity Factor
		July 24	Aug.2	Aug.2	Aug.2	Aug.3	Aug.19	Sept.15	
4 fms	2 fms	1.055	1.056	1.055	1.056	1.056	1.057	1.056	1.056
6	4	1.055	1.056	1.055	1.056	1.056	1.057	1.056	1.056
8	6	1.055	1.056	1.055	1.055	1.055	1.057	1.056	1.055
10	8	1.054	1.056	1.054	1.055	1.055	1.057	1.056	1.055
12	10	1.054		1.054	1.054	1.055			1.054
14	12	1.054		1.054	1.054	1.054			1.054
16	14			1.053	1.053				1.053
18	16			1.052	1.052				1.052

The following Velocity Factors were used during the season, in connection with recording on the DATEX printout:

<u>Hydrographic Sheet</u>	<u>Period (1962)</u>	<u>Velocity Factor</u>	<u>Depth Range</u>
HY-40-4-62	Aug. 21 - Aug. 24	1.055	26 to 43 feet
HY-40-5-62	Sept. 24 - Sept.27	1.054	25 to 43 feet

FINAL INSTRUMENT CORRECTION

(For Conventional Method of Recording in Sounding Volumes)

Ship Hydrography on Sheets:
 (HY-40-1-62)
 (HY-40-2-62)
 (HY-40-3-62)
 (HY-40-4-62)
 (HY-40-5-62)
 (HY-80-1-62)

DE-723 Fathometer No. 61-29 (For Soundings on "A" SCALE Only)

Date (1962)	Draft Corr'n (Ft)	Instr. Corr'n (Ft)	Phase Corr'n (Ft)	Settlement & Squat (Speed of Vessel)		FINAL CORRECTION (Speed of Vessel)			
				(Half Ah)	(Full Ah)	(Half Ah)	(Full Ah)	(Half Ah)	(Full Ah)
				(80 RPM) (Ft)	(120 RPM) (Ft)	(80 RPM) (Ft)	(120 RPM) (Fms)	(80 RPM) (Ft)	(120 RPM) (Fms)
July 23	∕0.1	-1.7	0.0	0.0	∕0.8	-1.6	-0.3	-0.8	-0.1
July 24	-0.1	1.7	0.0	0.0	0.8	-1.8	-0.3	-1.0	-0.2
July 25	-0.4	1.7	0.0	0.0	0.8	-2.1	-0.4	-1.3	-0.2
July 26	-0.6	1.7	0.0	0.0	0.8	-2.3	-0.4	-1.5	-0.2
July 27	-0.8	1.7	0.0	0.0	0.8	-2.5	-0.4	-1.7	-0.3
Aug 1-2	∕0.2	1.7	0.0	0.0	0.8	-1.5	-0.2	-0.7	-0.1
Aug 3-4	0.0	1.7	0.0	0.0	0.8	-1.7	-0.3	-0.9	-0.2
Aug 5-6	-0.2	1.7	0.0	0.0	0.8	-1.9		-1.1	
Aug 7-8	-0.4	1.7	0.0	0.0	0.8	-2.1		-1.3	
Aug 9-10	-0.6	1.7	0.0	0.0	0.8	-2.3		-1.5	
Aug 14	∕0.3	1.7	0.0	0.0	0.8	-1.4		-0.6	
Aug 15-16	∕0.2	1.7	0.0	0.0	0.8	-1.5		-0.7	
Aug 17-18	0.0	1.7	0.0	0.0	0.8	-1.7		-0.9	
Aug 19-20	-0.2	1.7	0.0	0.0	0.8	-1.9		-1.1	
Aug 21-22	-0.4	1.7	0.0	0.0	0.8	-2.1		-1.3	
Aug 23-24	-0.6	1.7	0.0	0.0	0.8	-2.3		-1.5	
Sept 7-8	∕0.6	1.7	0.0	0.0	0.8	-1.1		-0.3	
Sept 9-10	∕0.4	1.7	0.0	0.0	0.8	-1.3		-0.5	
Sept 11-12	∕0.2	1.7	0.0	0.0	0.8	-1.5		-0.7	
Sept 13-14	0.0	1.7	0.0	0.0	0.8	-1.7		-0.9	
Sept 15-16	-0.2	1.7	0.0	0.0	0.8	-1.9		-1.1	
Sept 24-25	∕0.2	1.7	0.0	0.0	0.8	-1.5		-0.7	
Sept 26-28	0.0	-1.7	0.0	0.0	∕0.8	-1.7		-0.9	

FINAL INSTRUMENT CORRECTIONS

(For Digital Method of Recording on Datex Printout)

Ship Hydrography on Sheets:

(HY-40-1-62)

(HY-40-2-62)

(HY-40-3-62)

(HY-40-4-62)

(HY-40-5-62)

(HY-80-1-62)

DE-723 Fathometer No. 61-29

(For Soundings on "A" & "B" Scale)

Date (1962)	Draft of Trans- ducer (Ft)	Instr. Corr'n (Ft)	Phase Corr'n (Ft)	Settlement & Squat (Speed of Vessel)		FINAL CORRECTION (Speed of Vessel)			
				(Half Ah) (80 RPM) (Ft)	(Full Ah) (120 RPM) (Ft)	(Half Ah) (80 RPM) (Ft)	(Full Ah) (120 RPM) (Fms)	(Half Ah) (80 RPM) (Ft)	(Full Ah) (120 RPM) (Fms)
Aug 1 - 2	12.2	-1.7	0.0	0.0	0.8	10.5	1.8	11.3	1.9
Aug 3 - 4	12.0	1.7	0.0	0.0	0.8	10.3	1.7	11.1	1.8
Aug 5 - 6	11.8	1.7	0.0	0.0	0.8	10.1		10.9	
Aug 7 - 8	11.6	1.7	0.0	0.0	0.8	9.9		10.7	
Aug 9 - 10	11.4	1.7	0.0	0.0	0.8	9.7		10.5	
Aug 14	12.3	1.7	0.0	0.0	0.8	10.6		11.4	
Aug 15-16	12.2	1.7	0.0	0.0	0.8	10.5		11.3	
Aug 17-18	12.0	1.7	0.0	0.0	0.8	10.3		11.1	
Aug 19-20	11.8	1.7	0.0	0.0	0.8	10.1		10.9	
Aug 21-22	11.6	1.7	0.0	0.0	0.8	9.9		10.7	
Aug 23-24	11.4	1.7	0.0	0.0	0.8	9.7		10.5	
Sept 7-8	12.6	1.7	0.0	0.0	0.8	10.9		11.7	
Sept 9-10	12.4	1.7	0.0	0.0	0.8	10.7		11.5	
Sept 11-12	12.2	1.7	0.0	0.0	0.8	10.5		11.3	
Sept 13-14	12.0	1.7	0.0	0.0	0.8	10.3		11.1	
Sept 15-16	11.8	1.7	0.0	0.0	0.8	10.1		10.9	
Sept 24-25	12.2	1.7	0.0	0.0	0.8	10.5		11.3	
Sept 26-28	12.0	-1.7	0.0	0.0	0.8	10.3		11.1	

FINAL INSTRUMENT CORRECTIONS

(For Digital Method of Recording on Datex Printout)

Ship Hydrography on Sheets:

(HY-40-1-62)
 (HY-40-2-62)
 (HY-40-3-62)
 (HY-40-4-62)
 (HY-40-5-62)
 (HY-80-1-62)

DE-723 Fathometer No. 216

(For Soundings on "A" Scale Only)

Date (1962)	Draft of Trans- ducer (Ft)	Instr. Corr'n (Ft)	Phase Corr'n (Ft)	Settlement & Squat (Speed of Vessel)		FINAL CORRECTION (Speed of Vessel)			
				(Half Ah) (80 RPM) (Ft)	(Full Ah) (120 RPM) (Ft)	(Half Ah) (90 RPM) (Ft)	(Full Ah) (120 RPM) (Fms)	(Half Ah) (90 RPM) (Fms)	(Full Ah) (120 RPM) (Fms)
Aug 1 - 2	12.2	-1.0	0.0	0.0	0.8	11.2	1.9	12.0	2.0
Aug 3 - 4	12.0	1.0	0.0	0.0	0.8	11.0	1.8	11.8	2.0
Aug 5 - 6	11.8	1.0	0.0	0.0	0.8	10.8		11.6	
Aug 7 - 8	11.6	1.0	0.0	0.0	0.8	10.6		11.4	
Aug 9 - 10	11.4	1.0	0.0	0.0	0.8	10.4		11.2	
Aug 14	12.3	1.0	0.0	0.0	0.8	11.3		12.1	
Aug 15-16	12.2	1.0	0.0	0.0	0.8	11.2		12.0	
Aug 17-18	12.0	1.0	0.0	0.0	0.8	11.0		11.8	
Aug 19-20	11.8	1.0	0.0	0.0	0.8	10.8		11.6	
Aug 21-22	11.6	1.0	0.0	0.0	0.8	10.6		11.4	
Aug 23-24	11.4	1.0	0.0	0.0	0.8	10.4		11.2	
Sept 7-8	12.6	1.0	0.0	0.0	0.8	11.6		12.4	
Sept 9-10	12.4	1.0	0.0	0.0	0.8	11.4		12.2	
Sept 11-12	12.2	1.0	0.0	0.0	0.8	11.2		12.0	
Sept 13-14	12.0	1.0	0.0	0.0	0.8	11.0		11.8	
Sept 15-16	11.8	1.0	0.0	0.0	0.8	10.8		11.6	
Sept 24-25	12.2	1.0	0.0	0.0	0.8	11.2		12.0	
Sept 26-28	12.0	-1.0	0.0	0.0	0.8	11.0		11.8	

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HYDROGRAPHIC INFORMATION

SHEETS (HY-40-4-62), (HY-40-5-62)

1962 Season

USC&GS Ship HYDROGRAPHER

R. M. Stone, CDR, USC&GS

<u>Subject</u>	<u>Date</u>	<u>Day Number or Letter</u>	<u>Position Number</u>
Bottom Sample (HY-40-4-62)	9/14/62	257 - "e"	5220
Bottom Sample (HY-40-5-62)	9/14/62	257 - "b"	5374

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OBJECTS LOCATED

VIA RAYDIST CONTROL

SHEETS (HY-40-4-62), (HY-40-5-62)

REGISTRY NO. E-8767

1962 SEASON

USC&GS Ship HYDROGRAPHER

R. M. Stone, CDR, USC&GS

Name of Object	Date (1962)	Day Number or Day Letter	Time	
			From	To
Offshore Oil Rig:				
(PH-WC-118-1)	Sept. 25	268 or "B"	062301	063416
(PH-WC-118-2)	Sept. 25	268 or "B"	064032	064406
(PH-WC-118-3)	Sept. 25	268 or "B"	065059	065444
(SU-WC-149-A) Δ STA. SUPERIOR A-2, 1963	Sept. 27	270 or "D"	055715	055956
Navigational Buoy:				
Sabine Bank Lighted Whistle Buoy #2 (Red) (Fl. R. 5 sec) (Radar Refl.) Coast Guard Light List Volume II, #6456	Sept. 25	268 or "B"	045159	045841
Black bell buoy #1	Sept. 13	a-day Launch HY-2	1710	
Black Whistle buoy #3	NOT LOCATED			

SMOOTH TAPE ADDENDUM

SHEETS (HY-40-4-62), (HY-40-5-62)

REGISTRY NO. H-8767

A smooth punch tape was cut by ship's personnel, using the corrected original DATEX printout, for use in machine plotting the smooth sheet in the Washington Office. This smooth tape was proof read and found to contain no errors.

Position #0001 through #0042 on the smooth tape and printout are HYDROGRAPHER positions from the sounding volumes (HY-40-4-62) renumbered to run consecutively to conform with the automatic system of numbering.

Position #0043 through #0526 on the smooth tape and printout are HYDROGRAPHER positions from the original DATEX printout (HY-40-5-62) renumbered to run consecutively to conform with the automatic system of numbering.

Position #5001 through #5238 on the smooth tape and printout are Launch HY-2 positions from the sounding volumes (HY-40-4-62) renumbered, while position #5239 through #5624 are Launch HY-2 positions from sounding volumes (HY-40-5-62).

The 5000 designation was used to distinguish launch work from ship work.

All position numbers in the original records were renumbered to agree with numbers shown on the smooth punch tape, as above.

For all work recorded in sounding volumes (listed above) corrections were applied in the conventional manner. Therefore, on the smooth tape, since soundings are completely reduced, the draft corrections are shown as "000"; the tide corrections as "60.0" (representing MLW); and the velocity factors as "1.000". Soundings on the smooth tape for the remaining portion of the survey recorded by the DATEX system are not completely reduced. Thus, the actual tide and draft corrections and velocity factors are entered on the smooth punch tape. All entries on the smooth tape are compatible with established programs for computer processing and automatic plotting.

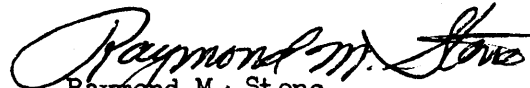
September 27, 1963

APPROVAL SHEET

Field No. HY-40-5-62

The field work accomplished on this survey, during the 1962 season, (September 13 - September 27, 1962), was under my immediate supervision. Daily inspections of the boat sheet, Datex printout records, and fathograms were made as the survey progressed.

As of the date of my detachment from the Ship HYDROGRAPHER on September 27, 1963, the survey was still in progress. The boat sheet, and all Datex printout records on hand have been reviewed and are approved by me.



Raymond M. Stone,
CDR, USC&GS
Commanding Officer,
USC&GS Ship HYDROGRAPHER


September 27, 1963

APPROVAL SHEET

Field No. HY-40-4-62

The field work accomplished on this survey, during the 1962 season, (August 21 - September 15, 1962), was under my immediate supervision. Daily inspections of the boat sheet, sounding volumes, Datex print-out records, and fathograms were made as the survey progressed.

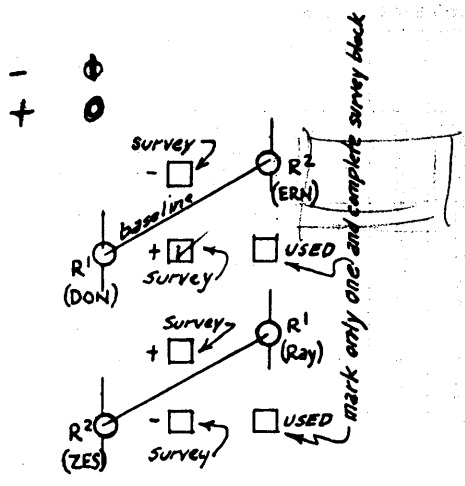
As of the date of my detachment from the Ship HYDROGRAPHER on September 27, 1963, the survey was still in progress. The boat sheet, all sounding volumes, and Datex printout records on hand have been reviewed and are approved by me.


Raymond M. Stone,
CDR, USC&GS
Commanding Officer,
USC&GS Ship HYDROGRAPHER

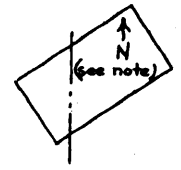
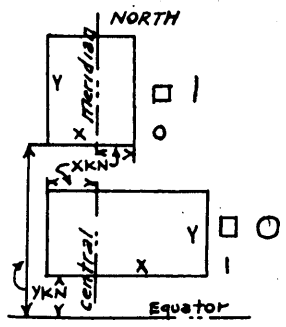
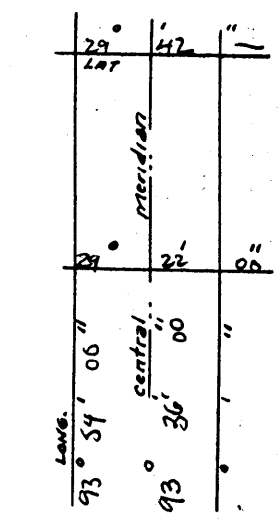
FIELD NO.	FIELD ENTRY-HEADER		GEO. POSITION		PRO-GRAM IDENTITY	COMPUTER CENTER ENTRY	
	ENTERED	DATE	DEGREE	MIN. SECONDS		CONVERSIONS: MACHINE WORDS	CODE: <input checked="" type="checkbox"/> FP <input type="checkbox"/> OTHER
✓	ALX	21 Aug.	28 58 41 1 38		RPD	104321138	1 2 3 4 5 6 7 8 9 10
	MASTER R1 HYDRO NAME	BELA, 1962	LAT.				
✓			29 40 04 2 2 8		RBD	342915023	11 12 13 14 15 16 17 18 19 20
	SLAVE R2 HYDRO NAME	GREEN, 1962	LAT.				
✓			94 04 2 70 40				1 2 3 4 5 6 7 8 9 10
✓	AZIMUTH FROM R1 TO R2		LONG.				11 12 13 14 15 16 17 18 19 20
✓	AZIMUTH FROM R2 TO R1		23 60 0 34 79 9		RAD	849634799	21 22 23 24 25 26 27 28 29 30
✓	BASELINE DISTANCE IN METERS		METERS				21 22 23 24 25 26 27 28 29 30
✓	SOUNDING REDUCERS (ECHO) 0 = NO CORRECTION TO BE APPLIED BY COMPUTER 1 = VELOCITY CORR. TO BE ADDED 2 = VELOCITY FACTOR IS MULTIPLIED		137,775.051		SMP	137775051	31 32 33 34 35 36 37 38 39 40
✓	ARC OF DISTANCE MEASUREMENT 1 - STD. METER 1 - LANE =		45.399000		IVL		41
✓	TIDE BASE ENTERED INTO TAPE		600		CNV	453990000	42 43 44 45 46 47 48 49 50 51
✓	H-IDENTIFICATION NUMBER		8767		DBS		52 53 54
✓	LOCATION OF SURVEY IN RESPECT TO THE ELECTRONIC BASELINE --A OR +A		1 0		TBS		55 56 57
					JN		58 59 60 61 62
					AAA		63

PARAMETER CARD NO. 2		COMPUTER CENTER	FIELD
SEMI-MAJOR AXIS OF THE EARTH	METERS	RDA	6378206.4
X CONSTANT ADDED TO ADJUST ZERO ORIGIN OF PLOTTER	METERS	XKN	29,232.0
Y CONSTANT SUBTRACTED TO ADJUST ZERO ORIGIN OF PLOTTER	METERS	YKN	3,249,732.7
CENTRAL MERIDIAN OF PROJECTION	CONVERT TO SECONDS	CMR	336,160
PLOTTER SCALE ÷ SURVEY SCALE	10498.6876	SCA	1:40,000
CODE TO ADJUST X OR Y OF PLOTTER TO NORTH OF SURVEY SHEET	SHORT LONGITUDE: LONG LONGITUDE:	NYX	NYX

COMPUTATIONS:
 ENTERED: ALX
 CHECKED: WLM
 DATE: 21 Aug.
 ENTERED: (600)
 CHECKED: (600)
 DATE:
 This is for parameter IA
 Red () is for Parameter IB



Identify survey in respect to baseline.
 Label smooth sheet limits - all corners.



A survey whose projection does not conform to either 1 or 0 must be prepared for manual plotting.

Field Entry - Header

Electronic Control Station locations (Master R 1, etc.)
 Enter the adjusted geographic positions together with the azimuth and baseline distance of each station grouping.

Sounding reducers (ECHO)

Identify the type of sounding correctors punched into the tape.

Code 0 = means that the sounding valve in the tape has been manually corrected for the velocity corrector and needs no further manipulation by the computer.

Code 1 = means that the valve in the tape has been entered from the tabulated velocity abstract (approved) and is to be added to the depth by the computer.

Code 2 = means that the velocity corrector has been entered from a prepared abstract of velocity factors (approved) and must be a multiplication operation by the computer.

Arc of Distance

Indicate the width of one lane of measurement in meters and the arc interval to be plotted on the smooth sheet.

Tide Base

The tide base is a constant and shall be entered only where tidal reducers are to be applied. Normally the value is 60.0 ft. or fm. If not entered, 00.0 is to be entered.

The Hydrographic Identification Number is assigned by the Washington Office.

Identify the survey location in respect to the electronic baseline so that the proper adjustment can be made in the computer routines (see margin for illustration. The Office will circle the proper entry.)

Parameter Card No. 2

Computer Center

Entries shall be made by the personnel of the Computer Center and from Special Publications 8, 5 and 241.

Field

Identify the Central Meridian of the projection for the survey smooth sheet.

Identify the survey scale.

Identify the survey orientation from the marginal illustration.

Computer Center Entry

Program Identity

Labels provide English language translations of data to the program and represent a machine word.

Parameter Card # 3

H-8767

ϕ
29° 22' 00"

λ
93° 16' 00" (2' interval)

X coordinate (19)

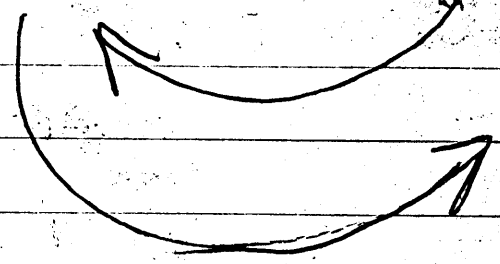
Y coordinate (9) ~~10~~

↓ low

↓ int. $\frac{60}{120}$

1057200006

3357600006



1200000003

X coord.

Y coord.

↓
19 ✓

↓
09 ✓

entered ROL
✓ WMM

29
3600
17400
87

2200
1320

104400
320

• 1.05720.0006

60

ADDENDUM

H-8767

This survey combined two sheets - HY-40-4-62 and HY-40-5-62.

Some relogging of data was done on this sheet by the Digital Data Processing Office but all discrepancies have been resolved and records brought up to date accordingly. There are no radical changes from existing charts or prior surveys and the verification of this sheet took approximately 1/2 month.

TIDE NOTE FOR HYDROGRAPHIC SHEET

6/25/65

Nautical Chart Division:

Plane of reference approved ~~in~~
~~volume of sounding records for~~

HYDROGRAPHIC SHEET 8767

Locality: Sabine Bank, Texas

Chief of Party: R. M. Stone in 1962

Plane of reference is mean low water

Tide Station Used (Form C&GS-681): Galveston Pleasure Pier

Height of Mean High Water above Plane of Reference ~~is 2.6 feet~~ at the working
grounds is 2.6 feet.

Remarks

J. M. Symons

Chief, Tides and Currents Branch

H-8767

LIST OF CHANGES MADE TO FINAL CARD LISTING

DURING REVIEW

(Soundings are listed according to type of correction.)

IMPROPER SCANNING OF FATHOGRAM

<u>Position No.</u>	<u>Time</u>	<u>Original Sdg. (ft.)</u>	<u>Changed to (ft.)</u>
✓ 5120	095200	30	31
✓ 5087X-1	152700	29	30
✓ 5064-3	130300	35	33
✓ 5039	102900	25	24
✓ 5037-1	101800	24	26
✓ 5200-2	164300	36	35
✓ 5270-3	093900	30	23
✓ 5319-1	133500	25	24
✓ 5391-1	100700	30	27
✓ 450	051903	31	34
✓ 5504	145200	33	28
✓ 5550	100100	31	27

← This sdg.
not plotted.
Beu.

LEAST DEPTH ON SHOAL RESCANNED

<u>Position No.</u>	<u>Time</u>	<u>Original Sdg. (ft.)</u>	<u>Changed to (ft.)</u>
✓ 5270-5	094100	16	15
✓ 5534-2	181000	19	18
✓ 5623-2	162600	24	23

SOUNDINGS CHANGED TO SMOOTH DEPTH CURVES

<u>Position No.</u>	<u>Time</u>	<u>Original Sdg. (ft.)</u>	<u>Changed to (ft.)</u>
✓ 5048-4	112300	24	25
✓ 5021-1	074700	25	24
✓ 5006-3	062200	30	31

8

Listed by RGA
Check by GAK.

SOUNDINGS CHANGED TO SMOOTH DEPTH CURVES (cont'd)

<u>Position No.</u>	<u>Time</u>	<u>Original Sdg. (ft.)</u>	<u>Changed to (ft.)</u>
✓ 5381-4	091600	31	30
✓ 153-2	060700	30	31
✓ 158	071000	30	31
✓ 5408-3	122600	31	30
✓ 237-4	230900	36	37
✓ 403-3	020300	36	37
✓ 423-3	031800	36	37
✓ 5534	180800	25	24

NOT PLOTTED - OBSTRUCTS OTHER DATA

<u>Position No.</u>	<u>Time</u>	<u>Original Sdg. (ft.)</u>	<u>Remarks</u>
✓ 5169-3	Does Not appear in card listing.	26	Erased sounding - does not appear in card listing but card must not have been pulled.
✓ 5504	145200	28	
✓ 5376	084200	26	
✓ 5275-5	101700	20	
✓ 5357-4	162800	31	
✓ 5361-1	164900	31	
✓ 5386-5	094500	28	
5622- 8 ⁵	162330	29	
✓ 5410-2	123300	23	

CHANGES MADE TO PROVIDE BETTER CROSSINGS AND JUNCTIONS

<u>Position No.</u>	<u>Time</u>	<u>Original Sdg. (ft.)</u>	<u>Changed to (ft.)</u>
✓ 162-2	073600	39	40
✓ 162-3	073700	39	40
✓ 162-4	073800	39	40
✓ 162-5	073900	39	40
✓ 163-1	074100	39	40
✓ 163-2	074200	39	40
✓ 163-3	074300	39	40
✓ 163-4	074400	39	40
✓ 276-1	015300	39	40

CHANGES MADE TO PROVIDE BETTER CROSSINGS AND JUNCTIONS (cont'd)

<u>Position No.</u>	<u>Time</u>	<u>Original Sdg. (ft.)</u>	<u>(Changed to (ft.))</u>
✓ 288-3	025300	39	40
✓ 289	025400	39	40
✓ 479-2	074700	36	37
✓ 473	071900	36	37

NOT PLOTTED - JUNCTION WITH H-8738 (1962-63)

<u>Position No.</u>	<u>Position No.</u>	<u>Position No.</u>	<u>Position No.</u>
✓ 5256-1	✓ 73-2	✓ 150-2	✓ 242-3
✓ 5268	✓ 80	✓ 160-3	✓ 244-1
✓ 5283	✓ 80-1	✓ 213-1	✓ 244-2
✓ 5295-1	✓ 81	✓ 227	✓ 252-3
✓ 59	✓ 81-1	✓ 234	✓ 255-1
✓ 65-1	✓ 102-4	✓ 236-1	✓ 291-1

MISCELLANEOUS CHANGES MADE

<u>Position No.</u>	<u>Time</u>	<u>Remarks</u>
✓ 5452-1 1/2	151030	Add 1/2 ahead sdg. of 31 ft.
✓ 5612-5	152300	Add 27 ft. sdg.
✓ 5613	152400	Correct time to that shown here; no sdg. on fix.
✓ 490-3	084300	Change 36 ft. to ²⁷ 37 ft.) Final cards
✓ 490-4	084400	Change 37 ft. to 27 ft.) erroneously punched - raw data printout o.k.

CARRIED FORWARD FROM PRIOR SURVEYS

<u>SDG. (FT.)</u>	<u>SOURCE</u>	<u>LAT.</u>	<u>LONG.</u>
✓ 18	H-4364 (1924)	29° 29.78	93° 36.53
Numerous bottom characteristics carried forward from both H-4364 (1924) and H-4332 (1922-23)			

H-8767 (1962)

INFORMATION FOR FUTURE PRE-SURVEY REVIEWS

Future surveys of Sabine Bank may indicate a continuation of the bank's apparent migration to the westward.

The width of the main passage through the bank, about 3 miles to the east of Sabine Bank Lighthouse, may continue to decrease.

In addition, general shoaling can be expected on either side of the bank.

The least depths on the bank may possibly be found to the west or west-southwest of those now shown on the present survey. The amounts of change to be expected are discussed in the review of the present survey. If comparable least depths are not found, then the present survey depths should be adequately disproved to prevent the necessity of their being carried forward.

The 18-ft. sounding in Lat. $29^{\circ}29.78'$, Long. $93^{\circ}36.53'$ carried forward to the present survey from H-4364 (1924), should be verified or disproved on any future survey.

Dale E. Westbrook

May 5, 1965

OFFICE OF CARTOGRAPHY
REVIEW SECTION -- NAUTICAL CHART DIVISION
REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8767

FIELD NO. HY-40-4-62
HY-40-5-62

Texas--Louisiana, Gulf of Mexico, Sabine Bank

SURVEYED; August--September 1962 SCALE: 1:40,000

PROJECT NO. OPR-427

SOUNDINGS: Raytheon
DE-723 Depth Recorders

CONTROL: Raydist

Chief of Party-----R. M. Stone
Surveyed by-----P. A. Stark
J. E. Guth
F. D. Moran
R. A. Ganse
D. G. Popejoy
M. H. Schilly
Protracted by-----Gerber Digital Plotter
Soundings Plotted by-----Gerber Digital Plotter
Verified By-----R. D. Lynn
Reviewed by-----D. E. Westbrook
Inspected by-----R. H. Carstens

Date: May 4, 1965

1. Description of the Area

This survey covers the central portion of Sabine Bank, an elongated sandy shoal which lies in the Gulf of Mexico about 15 miles off the Texas-Louisiana coast.

Sabine Bank seems to be migrating slowly westward although its general configuration and least depths remain about the same. General shoaling in the area off the bank is indicated. A full discussion of the changeable nature of the area can be found in Part 6 of this review.

The bottom in the survey area is composed of mud, sand, and shells. The presence of subsurface oil deposits is indicated by several oil well drilling structures which have been located on the present survey.

2. Control and Shoreline

The control is adequately described in the Descriptive Report.

There is no shoreline within the limits of this survey.

3. Hydrography

A. Depths at crossings are in good agreement.

B. The usual depth curves were adequately delineated.

The 24-ft. and 36-ft. depth curves were added to more adequately portray the bottom topography.

C. The development of the bottom configuration is considered adequate except that the 20-ft. sounding in Lat. $29^{\circ}29.80'$, Long. $93^{\circ}36.80'$ should have been more completely developed to adequately verify or disprove the 18-ft. sounding shown nearby on H-4364 (1924).

4. Condition of the Survey

The sounding records, automated plotting, and the Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual, as amended by instructions promulgating the Automatic Digital Recording System.

However, the field verification of the machine plotted smooth sheet is not considered adequate. A discussion of the deficiencies found during review and several recommendations follow:

- A. The verifier's reports (Forms C&GS 946 and 946A) were not filled out and inserted in the Descriptive Report.
- B. Position numbers 35-42 were rejected and not plotted but no note covering this was found in the sounding volume for that day.
- C. Whistle Buoy "3" was hand plotted on the smooth sheet but no information on its location could be found in either the sounding records or the Descriptive Report. The only conclusion that could be drawn was that the buoy position had been scaled from the chart and plotted in variance with standard practice.
- D. Buoy symbols notes and numbers were not drafted in accordance with the Manual. In particular, the light characteristics of buoys such as F1 R5 sec are not to be shown on survey sheets. The buoy symbol adequately reveals that it is lighted. Further identification by number or classification is sufficient.
- E. Sabine Bank Lighthouse is a triangulation station, and although it was not used for control, should have been plotted as such on the smooth sheet in accordance with Par. 6-38 of the Hydrographic Manual.
- F. No reference station was named in the Hydrographic Survey Stamp No. 42. Since Sabine Bank Lighthouse, a triangulation station, falls within the area of this survey, the position of the lighthouse should have been entered into the stamp.
- G. The two bottom characteristics on the survey were not neatly inked and had to be redrafted.
- H. Buoy and oil well tower positions added to the survey by hand should have been given position numbers on the position overlay for identification

purposes. It is recommended that if a position number has not previously been given to a detached fix of this type, the verifier should assign a number using the last regular position in the records with the addition of a letter. For example, if two buoys have been located immediately after position 5572 in the records, then their positions should be designated as 5572A and 5572B in the records and also on the position overlay.

- I. Several important errors in fathogram scanning and one machine plotting error should have been found and corrected during verification.

The scanning errors are listed in the accompanying list of changes to the final card listing.

The machine plotting error was a 39-ft. sounding plotted as a 93-ft. The spacing along the line indicated that the printing head on the machine had temporarily jammed, and instead of plotting the 9 to the right of the 3, the machine plotted it to the left. The card listing was found to be correct.

- J. The location of oil well tower SU-WC-149-A (lat. $29^{\circ}26.46'$, Long. $93^{\circ}25.68'$) was shown in conflicting positions on H-8767 (1962) and H-8738 (1962-63). An investigation of the Datex records showed that the original calculation of the Raydist fix on H-8767 (the present survey) was in error. The tower's position on H-8738 was more nearly correct but was apparently transferred from the boat sheet as no positional data was available in that survey's records. The tower was located by triangulation in 1963; named SUPERIOR A-2, 1963, and has been plotted as such on both sheets H-8767 and H-8738.
- K. Most of the depth curves were drawn incorrectly on this survey. In general, the curves should have included all soundings of the value shown by the curve. However, many curves were drawn as short sections of line between soundings.

Portions of the curves have been corrected where considered necessary.

- L. More attention should be given during the verification process to the rejection of soundings which overlap excessively and to rescanning soundings on lines which obviously distort the depth curves. These corrections are difficult and time consuming to make during the review and should properly be made by the verifier between the preliminary and final plots.
- M. Overlapping and indistinct position numbers on the position overlay should be corrected by hand when they exist.
- N. The legibility of the black position dots on the overlay is not considered adequate on this survey. Because of this, position dots were inked by hand on the smooth sheet in red for ship work and blue for launch work.

The machine plotting of red dots and red position numbers on the overlay and red dots on the smooth sheet, as was done on H-8735 (1963), would be entirely satisfactory, and this practice should be continued.

- O. It is requested that the tracing paper preliminary plot or plots be transmitted to the Washington Office with the smooth sheet. These plots and any pertinent notes placed on them could be very helpful in evaluating the field work and verification of the survey.

Special care need not be taken by the verifier in working with these plots despite the fact that they will be transmitted to the Office. The preliminary plots would be destroyed immediately after the review is completed.

P. Junctional soundings from H-8738 on the south should have been transferred by the verifier and the curves made identical. This was done by the reviewer.

5. Junctions

An adequate junction was effected with H-8738 (1962-63) on the south.

The junction with H-8712 (1962), also on the south, will be discussed in the review of that survey.

The smooth sheets for the junctions on the north, east, and west have not as yet been received in the Washington Office.

6. Comparison with Prior Surveys

H-1596a (1:80,000) 1884
H-1645 (1:80,000) 1885
H-3669 (1:20,000) 1914
H-4332 (1:40,000) 1922-23
H-4364 (1:40,000) 1924

These surveys constitute the prior coverage of the present survey area. Although the newer surveys have substantially superseded those of 1884-85 for charting, all the prior surveys have been considered in determining the changes that have taken place in the area.

According to the Descriptive Report¹ for H-4332 (1922-23), the prevailing currents in this area are westerly. These currents seem to be causing Sabine Bank to migrate slowly to the westward. A detailed discussion of this migration is complicated by the general shoaling of the entire area surrounding the bank. A few general statements concerning the changes taking place can be made, however.

The shoalest portion of the bank on which Sabine Bank Lighthouse stands can be considered the most stable portion of the bank. Its movement to the westward is indicated to be only about 3 meters per year. On the other hand, the

18-ft. shoal in Lat. $29^{\circ}29.78'$, Long. $93^{\circ}36.53'$ is migrating west-southwestward at a rate of about 10 meters per year. The 18-ft. shoal in Lat. $29^{\circ}30.52'$, Long. $93^{\circ}27.58'$ is also migrating in the same direction at about the same rate.

Although some minor changes have occurred, the least depths along the crest of Sabine Bank have changed very little. These depths are generally within a foot or so of those previously determined, though shifted in position.

About 3 miles to the east of Sabine Bank Lighthouse is the main passage through the bank used as an approach to Sabine Pass. This passage is marked by Bell Buoy "1" and Whistle Buoy "2". Depths in this passage are slowly shoaling about 1-3 ft. in about 80 years.

The width of this passage has narrowed considerably over the years. In 1884, on H-1596a, depths of 30-ft. or greater once were available for a width of 4 miles through the passage. The present survey shows approximately the same depths to be available over a width of only 2 miles. At this rate, it may be only 50 years before this passage is closed to ships having a draft of 30 ft. or deeper.

In general, the area immediately to the north of Sabine Bank is shoaling at a relatively rapid rate of about 1 ft. in 15 years, while the area south of the bank is shoaling at less than 1 ft. in 40 years.

One sounding and several bottom characteristics from H-4364 (1924) and several bottom characteristics from H-4332 (1922-23) have been brought forward to supplement the present survey.

With the addition of the above items, the present survey is adequate to supersede the prior surveys within the common area.

7. Comparison with Chart 1279, 7th Ed., 1/25/65.

A. Hydrography

Most of the charted hydrography in the area of the present survey originates with the previously mentioned prior surveys which require no further consideration. This charted hydrography has been supplemented by a few soundings from the boat sheet of the present survey.

Attention is directed to the following: The 27 1/2 ft. reported sounding charted in Lat. $29^{\circ}31.20'$, Long. $93^{\circ}27.12'$ (Pre-Survey Review OPR-427, Item No. 3) originates with Chart Letter No. 355 of 1959, a report that the British S. S. SWAINBY grounded at this location. The development on both the present survey and the boat sheet of the 1964 survey to the north HY-40-2-64 (BP-67075), discredits the reported sounding. The 27 1/2 ft. sounding should, therefore, be deleted from the chart.

The present survey is adequate to supersede the charted hydrography within the common area.

B. Aids to Navigation

The aids shown on the present survey are in substantial agreement with their charted positions and adequately mark the features intended.

Whistle Buoy "3" charted in Lat. $29^{\circ}30.6'$, Long. $93^{\circ}27.4'$ was not located on the present survey.

8. Compliance with Instructions

The survey adequately complies with the Project Instructions except that the line spacing should have been reduced an amount necessary to fully develop the area of the 20-ft. sounding obtained in Lat. $29^{\circ}29.80'$, Long. $93^{\circ}36.80'$, verifying or disproving the existence of the 18-ft. sounding nearby on H-4364 (1924).

9. Additional Field Work

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

Examined and approved:

Wallace A. Bruden, Jr.
Chief,
Marine Chart Division

Raymond M. Stone
Acting Associate Director,
Office of Hydrography and
Oceanography

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. 8767

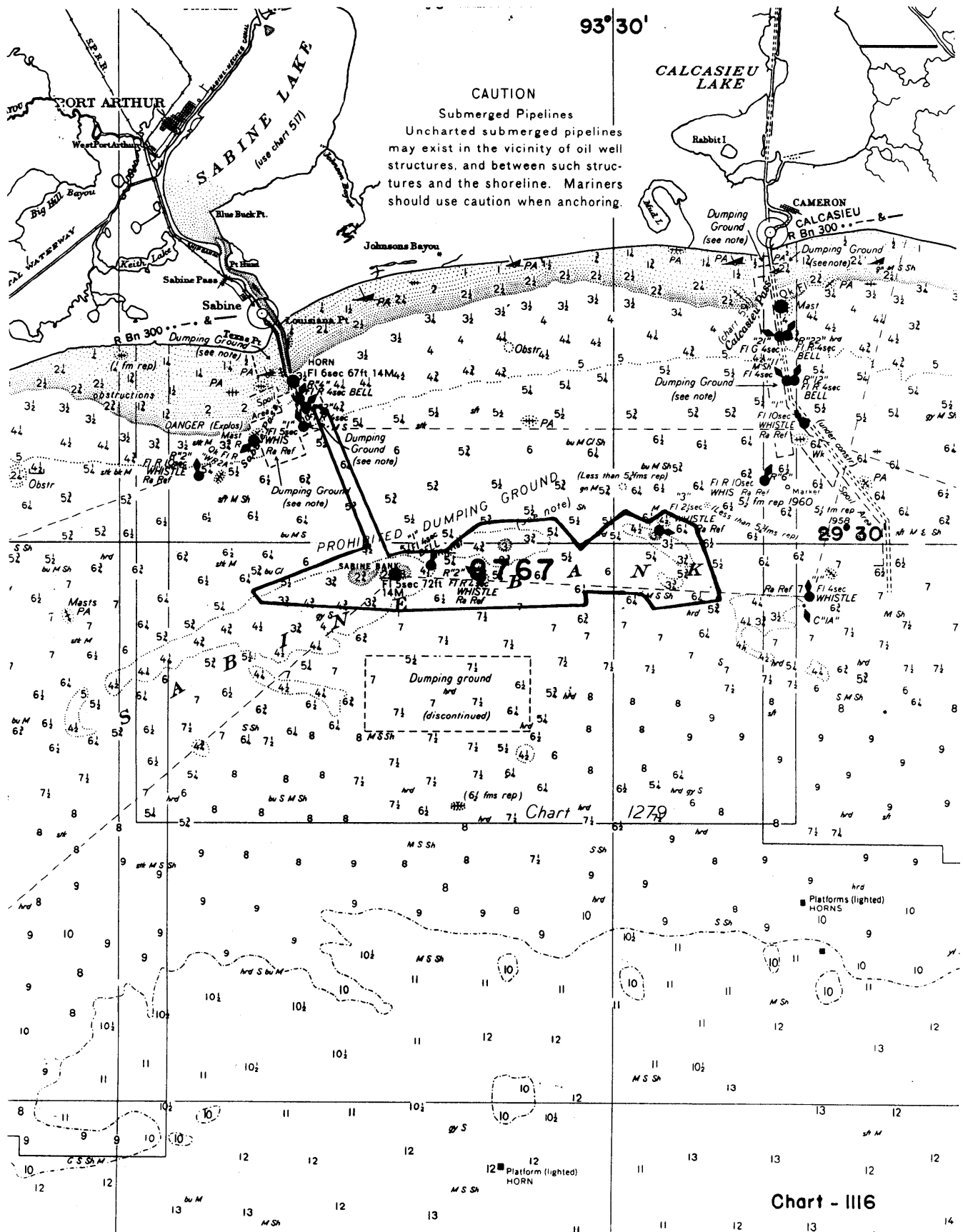
RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS		2	
DESCRIPTIVE REPORT		1	OVERLAYS		1	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	1 & Misc. Data.					
VOLUMES	4					
BOXES						
T-SHEET PRINTS (List)						
SPECIAL REPORTS (List)						

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				
POSITIONS CHECKED			—	
POSITIONS REVISED			—	
DEPTH SOUNDINGS REVISED			44	
DEPTH SOUNDINGS ERRONEOUSLY SPACED			—	
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED			—	
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS			—	
JUNCTIONS			8	
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS			—	
SPECIAL ADJUSTMENTS <i>Depth curves, etc.</i>			16	
ALL OTHER WORK			48	
TOTALS		80 hrs.	72 hrs.	
PRE-VERIFICATION BY	BEGINNING DATE		ENDING DATE	
VERIFICATION BY <i>Seattle Regional Office</i>	BEGINNING DATE		ENDING DATE	
REVIEW BY <i>Don D. Westbrook</i>	BEGINNING DATE		ENDING DATE <i>4 May 1965</i>	



CAUTION
 Submerged Pipelines
 Uncharted submerged pipelines may exist in the vicinity of oil well structures, and between such structures and the shoreline. Mariners should use caution when anchoring.

Chart - III6

