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U. S. COAST & GEODETIC SURVEY
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Form 504
Rev. Dec. 1933
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

Topographic } Sheet No. 41 - 42 - 43
Hydrographic }

State TEXAS

LOCALITY
Gulf of Mexico
~~Approaches to Galveston Bay.~~

Bolivar Peninsula to Heald Bank^H 6251

Approaches to Galveston Bay H-6252

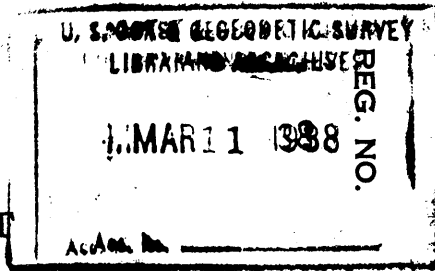
Galveston I. to San Luis Pass H-6253

193 7

CHIEF OF PARTY

Frank S. Borden, H. & G. Engineer.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY



HYDROGRAPHIC TITLE SHEET

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

Field No. 41

REGISTER NO. H-6251

State TEXAS

General locality GULF OF MEXICO

Locality BOLIVAR PENINSULA TO HEALD BANK.

Scale 1:40,000 Date of survey April 20 - May 28, 1937

Vessel HYDROGRAPHER

Chief of Party Frank S. Borden

Surveyed by G. L. Anderson, P. C. Doran, F. R. Gossett,
J. N. Jones, K. B. Jeffers and J. T. Jarman.

Protracted by Paul Taylor

Soundings penciled by Paul Taylor

Soundings in ~~fathoms~~ feet Feet

Plane of reference Mean Low Water

Subdivision of wire dragged areas by None

Inked by L. A. McGann & F. W. Giberman

Verified by L. A. McG

Instructions dated February 17 and March 20, 1937

Remarks: Two boat sheets : 41 & 41A. Sheet 41A is 1:20,000
expansion on 34 foot shoal.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

HYDROGRAPHIC TITLE SHEET

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

Field No. 42

REGISTER NO. H-6252

State TEXAS

General locality GULF OF MEXICO

Locality APPROACHES TO GALVESTON BAY

Scale 1:40,000 Date of survey May 11 - June 16, 1937

Vessel HYDROGRAPHER

Chief of Party Frank S. Borden

Surveyed by G. L. Anderson, P. C. Doran, F. R. Gossett,
J. N. Jones, K. B. Jeffers and J. T. Jarman.

Protracted by Karl B. Jeffers

Soundings penciled by Karl B. Jeffers

Soundings in fathoms feet feet

Plane of reference Mean Low Water

Subdivision of wire dragged areas by None

Inked by Kelly

Verified by Kelly

Instructions dated February 17 and March 30, 1937

Remarks: _____

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

U. S. COAST & GEODETIC SURVEY
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MAR 1 1938
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. 43

REGISTER NO. H-6253

State TEXAS

General locality GULF OF MEXICO

Locality ~~OFF~~ GALVESTON ISLAND ^{To} ~~AND~~ SAN LUIS PASS

Scale 1:40,000 Date of survey June 25 - July 26, 1937

Vessel HYDROGRAPHER

Chief of Party Frank S. Borden

Surveyed by G. L. Anderson, P. C. Doran, F. R. Gossett,
J. N. Jones, K. B. Jeffers, J. T. Jarman & P. Taylor.

Protracted by Karl B. Jeffers

Soundings penciled by Karl B. Jeffers

Soundings in ~~fathoms~~ feet Feet

Plane of reference Mean Low Water

Subdivision of wire dragged areas by None

Inked by Leonard A. McGann

Verified by Leonard A. McGann

Instructions dated February 17 and March 20, 1937

Remarks: _____

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SHEETS

AS FOLLOWS.

REGISTER NUMBER	FIELD NUMBER	SCALE	LOCALITY (SEE SKETCH ON PAGE 2)	OFFICE WORK AND DESCPT. REPORT BY
H-6251	41	1:40,000	Bolivar Peninsula to Heald Bank	Paul Taylor
H-6252	42	1:40,000	Approaches to Galveston Bay	K. B. Jeffers
H-6253	43	1:40,000	Off Galveston Island and San Luis Pass	K. B. Jeffers

GENERAL STATEMENT:

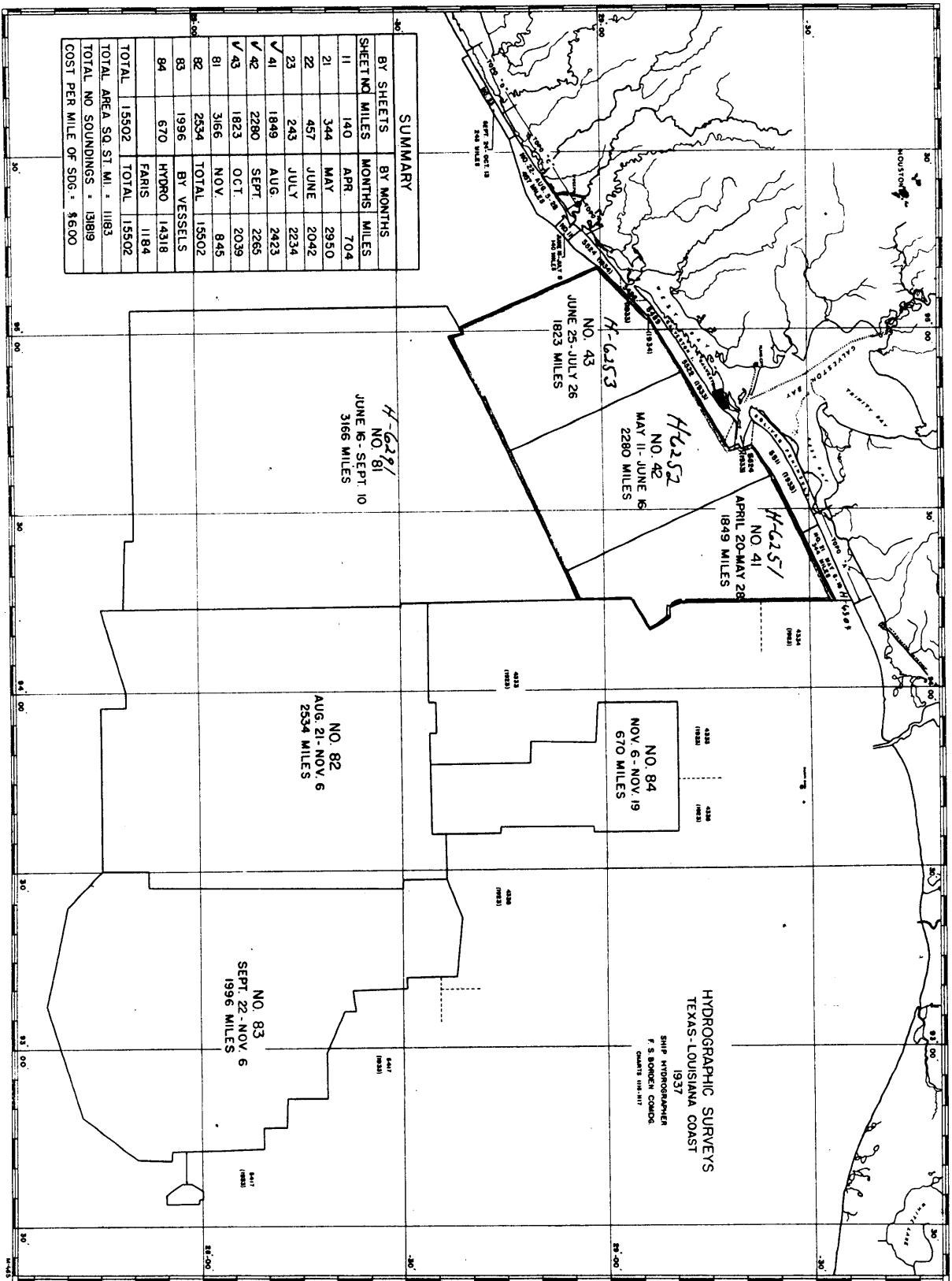
These three adjoining surveys comprise the season's inshore ship hydrography. They are similar in character both as regards general depths and bottom configuration and methods employed in making the surveys. For these reasons the descriptive reports have been combined. An index of surveys showing the location of each and the junctions it makes with other surveys is shown on the following page.

INSTRUCTIONS:

Instructions for Project HT 214 were issued February 17, 1937.

SURVEY METHODS:

1. CONTROL: A special report on control for the seasons work will be submitted giving in detail the methods employed and the results obtained. The control is based on triangulation executed by E. O. Heaton in 1933 and adjusted to the North American 1927 datum. Shore signals were built where necessary by the launch party. Those near triangulation stations were located by at least fourth order accuracy. On Sheet No. ^{H-6253}43 some topographic stations were transferred from topographic sheet No. 4852.



SUMMARY

BY SHEETS	BY MONTHS	BY MONTHS	MILES
SHEET NO.	MILES	MONTHS	MILES
11	140	APR	295.0
21	344	MAY	295.0
22	457	JUNE	2042
23	243	JULY	2234
✓ 41	1849	AUG.	2423
✓ 42	2280	SEPT.	2265
✓ 43	1823	OCT.	2039
81	3166	NOV.	845
82	2534	TOTAL	15502
83	1996	BY VESSELS	
84	670	HYDRO	14318
		FARIS	1184
TOTAL	15502	TOTAL	15502
TOTAL AREA SQ. ST. MI.			1183
TOTAL NO. SOUNDINGS			13819
COST PER MILE OF SDG.			\$4600

HYDROGRAPHIC SURVEYS
 TEXAS-LOUISIANA COAST
 1937
 SHIP HYDROGRAPHER
 F. S. BROWN, COMMANDER
 USN 1057

A system of buoy lines was established normal to the shore with three lines of buoys on each sheet. The buoys were located by adjusted taut wire - sun azimuth traverse loops fixed at the inshore ends by sextant angles on objects ashore. There were nine lines of buoys and seven closed traverse loops. Due to a lack of taut wire the line TAG to DOC on Sheet 43^{H-6253} was located by full speed double runs using logs and revolution counter. Buoy TAG at the outer end however was located on another loop of taut wire traverse. Therefore the dead reckoning simply amounts to proportioning the distance between two fixed points. The traverses on the three sheets total approximately 395 statute miles with an average closure of 0.75 meters per mile.

Buoy DID on the 34 foot shoal on Sheet 41^{H-6251} was planted subsequent to the removal of other buoys in this locality. It was located by use of depth curves as described in another part of this report. (See Sheet 41)^{H-6251}

In general, sounding lines were controlled by three point fixes on buoys or shore signals. Occasional fixes of a single angle and gyro bearing, or depression angle and gyro bearing were necessary.

2. SOUNDINGS: All soundings were taken with the Dorsey Fathometer No. 1. The hand lead was used only for comparisons when the ship was dead in the water. The vertical cast soundings on A day Sheet 43^{H-6253} were taken under ideal conditions as each buoy was planted. A comparison of reduced fathometer soundings with reduced vertical cast soundings shows a maximum difference of 0.8 feet and an average difference of 0.2 feet. Other vertical cast comparisons were taken at

various times without fixed positions and are therefore not plotted on the sheet. Soundings were recorded to the nearest half foot.

3. FATHOMETER CORRECTIONS: A detailed discussion of fathometer corrections will be found in another part of this report. Two corrections were entered in the sounding volumes; the first is the Temperature and Salinity correction and the second combines the Index, Draft, and Settlement corrections. All reducers were entered in tenths of feet.

4 CROSS LINES: Cross lines were run in accordance with instructions. An effort was made to cross each days sounding on another day in order to check the accuracy of reducers. On the three sheets there is a total of approximately 1100 crossings, of which 85% are in perfect agreement and the rest with a few exceptions differ by only one foot. All crossings of more than one foot occur in places where slopes are steep and bottom very uneven. / It is believed that an expanded plotting would show better crossings in these places. These crossings are detailed under DISCREPANCIES. / In some places soundings were plotted in half feet in order to smooth out the depth curves.

A study of crossings on last years work indicated the advisability of recording Dorsey Fathometer soundings in half feet and this years work very ably substantiates this contention. In many places where soundings fail to cross exactly it will be found that the actual difference is only a few tenths of a foot.

5. TIDE REDUCERS: All soundings on these surveys were reduced to Mean Low Water at the Galveston South Jetty Lighthouse tide station. Early in the season it was learned that the Corps of Engineers, U. S. Army, was maintaining a gauge at South Jetty Light and

forwarding all records to the Coast Survey office in Washington. Copies of the hourly height tabulations were requisitioned from Washington and curves plotted for reduction of soundings. These curves, with tables of reducers, are attached to this report.

The cooperation of the Army Engineers, especially Mr. Cotton, who was in charge of the tidal survey, is greatly appreciated. The gauge at South Jetty Light was turned over to this party on October 15th and continued in operation until the close of the field season.

Two fathometer tide stations were observed on Sheet 43, the first on the night of July 7 and 8 and the second the night^{H-6253} of July 9 and 10. Fathometer soundings were recorded in tenths of feet in the sounding volumes and were later transcribed in a tide record book. This particular time was chosen because a maximum range of tide was expected with one low and one high during the period of observation, and the weather was suitable for the experiment. The first station observed was at the offshore limit of the 40,000 scale sheets in 11 fathoms and the second was near the inshore limit of hydrography in about 6 fathoms. When these observations were compared with those at South Jetty Light very little difference in time or range was found. Special report on Fathometer Tide Observations obtained at the offshore station referred to above is given on page 112 of Field Engineers Bulletin No. 11, December, 1937.

6. BOTTOM CHARACTERISTICS: Samples from the bottom were obtained from buoy anchors and at various ship anchorages when temperature and salinity observations were made. Some bottom characteristics are recorded only on temperature and salinity forms and therefore will not be found in the sounding records.

DISCREPANCIES: H-6251

SHEET 41: Fixes on "H" day, obtained by bearings, log distances and one sextant angle were plotted using all data available and then adjusted between good sextant fixes where possible. Where any question arose in regards to a fix the sextant angle was usually favored in preference to bearings, however, bearings were not rejected if they came to within about 50 meters of the final point selected for the position.

The line between positions 67H and 81H, where no sextant fixes were obtained for the entire length of the line due to fog and where frequent changes of course were made, was plotted from all data available and accepted as shown.

The remainder of the sheet was plotted with very few questions arising and very few fixes rejected in the volumes. The largest number of changes made were the names of buoys confused by the recorder.

Survey buoy DID on the shoal located in approximate latitude $28^{\circ} 58.3' N$, longitude $94^{\circ} 18.6' W$, which was established after the original survey was completed and the original control buoys removed, was located by fitting the contours of a close development on a twenty thousand scale to the contours of the original development plotted on the same scale. The new Lighthouse Buoy was then located by relating it directly to Buoy DID. This close development of Thirty Four Foot Shoal is shown in an insert on the smooth sheet. The original plotting for the location of the buoys is sent in as boat sheet ^{H-6251} 41A.

^{H-6252}
SHEET 42: Discrepancies in recorded times or fixes are noted in the sounding volumes and adjustments are explained in detail. There are no discrepancies that need to be discussed in this report.

^{H-6253}
SHEET 43: The cross line on the 40 foot shoal in latitude 29° 03' and longitude 94° 56' failed to cross. The next sounding after the 40 is 44 and the cross line apparently was on the slope.

Buoy USE does not appear on this sheet. It was used to control some of the hydrography on the southeast corner of the sheet. In plotting the smooth sheet buoy USE was plotted on a dogear tacked to the table with the smooth sheet.

There are no other discrepancies that need to be discussed in this report. Incidental adjustments in plotting are indicated in the sounding volumes.

COMPARISON WITH ADJACENT SURVEYS AND CHARTS:

^{H-6251}
SHEET 41: The junction of soundings on this sheet is almost perfect with the leadline work on boat sheet number 21, (^{H-6304} Launch FARIS, 1937), to the northward. (Smooth sheet number 21 has not been plotted at this time). The fathometer work on sheet number 42 to the westward and sheet number 81 to the southward also show almost perfect junctions. The soundings are about one foot shoaler than inshore sheet number 5511 (1933), and from one to three feet shoaler than the adjoining soundings on sheets number 4333 and ^{H-6314} 4334 (1923). These discrepancies are consistent with previous findings whenever soundings obtained with the Dorsey Fathometer overlap soundings obtained with previous hand lead work. The hydrography was carried inshore to include the five fathom curve to insure accurate charting of this important curve.

In a comparison of soundings with Chart Number 1280 very few changes were noted except in the vicinity of Thirty Four Foot Shoal where a least depth of 33½ feet was found whereas on the chart a depth of 40 feet is the shoalest sounding shown in this vicinity.

This survey was extended beyond the limits called for in the instructions to cover the greater part of Heald Bank. This was done in order to have a basic survey made with the Dorsey Fathometer so that future aids to navigation may be more easily located by matching contours with an isolated survey of the bank. No attempt was made at this time to find the least depth, the shoal having been previously surveyed adequately.

^{H-6252}
SHEET 42: ^{H-6251, H-6253 H-6291} The junction with sheets 41, 43, and 81 are satisfactory. The inshore hydrography overlaps previous surveys to include the five fathom curve to insure that there will be no "jumps" in this important curve when charted. The soundings on the overlap are, in general, one to two feet shoaler than those obtained on the previous survey. This has been the case wherever Dorsey Fathometer soundings overlay hand lead soundings.

The depths as charted on Charts 1116 and 1117 are in agreement with the present survey. The ten fathom curve is changed considerably as the survey was extended over the unsurveyed area southwest of Heald Bank.

The seven fathom sounding in latitude $29^{\circ} 02'$ and longitude $94^{\circ} 36.5'$ is moved about $1\frac{1}{2}$ miles to the southwest.

Junctions at the entrance to the jetties is not considered here as there has been much dredging there and surveys by the Army Engineers cover the area.

^{H-6253}
SHEET 43: ^{H-6252 H-6291} Sheet 43 joins sheet 42 and 81 satisfactorily. The inshore hydrography includes the five fathom curve overlapping previous surveys with overlapping soundings somewhat shoaler than hand lead soundings as noted previously on sheet 42.
^{H-6252}

Soundings agree in general with those on Chart 1117. There is some change in the ten fathom curve as the survey was extended into previously unsurveyed areas.

A $6\frac{3}{4}$ fathom sounding in latitude $29^{\circ} 05'$ and longitude $94^{\circ} 53'$ on Chart 1117 was located by this survey in latitude $29^{\circ} 03.5'$ and longitude $94^{\circ} 56.5'$.

DANGERS:

The $33\frac{1}{2}$ foot bank located and developed on Sheet 41 is the only danger to navigation found in these three surveys. This bank has been marked by the Lighthouse Service and position of the buoy is shown on Sheet 41.

BOTTOM CONFIGURATION:

The configuration of the bottom on these three surveys is generally smooth and even. However, the shoal area at Heald Bank extends southwestward across Sheet 41. An area of extremely irregular bottom was found on the south end of Sheet 41 and southeast corner of Sheet 42. A long and narrow ridge extends several miles to the southwestward from this shoal. Much of the local fishing is done along the south edge of this ridge particularly in the area south of the 34 foot shoal where small marker buoys have been planted. The bottom is all hard and is composed mostly of broken shell and coral.

Respectfully submitted,

H-6251
Sheet 41

H-6252, H-6253
Sheet 42 and 43

Paul Taylor,
Aid. U.S.C. & G. Survey

Karl B. Jeffers
Karl B. Jeffers, Jr. H. & G. Eng.,
U. S. C. & G. Survey.

STATISTICS

	No. Vols.	No. Positions	No. Miles	No. Soundings
^{H-6251} Sheet No. 41	9	2,212	1,849	19,265
^{H-6252} Sheet No. 42	10	2,605	2,280	23,418
^{H-6253} Sheet No. 43	9	2,054	1,823	19,304
Total	28	6,871	5,952	61,987

GEOGRAPHIC POSITIONS

TRIANGULATION
(Hydrographic name underlined)

Station Name	Latitude			Longitude		
	°	'	m	°	'	m
<u>Aero</u> , 1931-33	29	16	260.3	94	50	366.9
<u>Bolivar Point L. H.</u> , 1900	29	21	1834.9	94	46	7.1
<u>Buccaneer</u> , 1933	29	17	757.3	94	47	461.0
<u>Cotton Concentration Co. W. T.</u> , 1933	29	17	1200.1	94	49	1230.8
High Island Hotel <u>Cupola</u> , 1900	29	33	681.0	94	23	867.6
Santa <u>Fe</u> Building <u>Cupola</u> Final, 1933	29	18	698.4	94	47	1309.5
<u>Galves Hotel</u> Stack, 1933	29	17	1040.9	94	47	173.6
<u>Gilchrist</u> , 1933	29	30	1564.6	94	29	174.0
<u>High Grade Packing Co. W. T.</u> , 1933, Sh. 42	29	17	589.4	94	50	918.8
<u>Highland 2</u> , 1872 (Sheet 41)	29	33	1579.5	94	23	260.2
<u>North Jetty Light</u> , 1933	29	20	1343.0	94	40	1198.9
<u>Parr's Grove</u> , 1932	29	25	1241.5	94	41	352.5
<u>Patton</u> , 1932	29	27	1382.2	94	37	625.7
Mexican <u>Petroleum Corp.</u> Stack, 1933	29	18	1615.5	94	46	558.7
Fort Crocket E. <u>Radio Tower</u> , 1933	29	16	1310.8	94	48	530.8
Road, 1934	29	36	1035.0	94	13	1422.4
<u>San Luis C. G. Station</u> <u>Cupola</u> , 1933	29	06	1501.2	95	04	1543.5
<u>Sealy Hospital</u> <u>Cupola</u> , 1933	29	18	1274.4	94	46	1072.1
Shell, 1934	29	35	795.4	94	16	1376.8
<u>South Jetty Light</u> , 1933	29	19	1208.7	94	41	887.3
Turn, 1934	29	34	490.7	94	19	1440.9

HYDROGRAPHIC SIGNALS
(Located by Theodolite Cuts etc.)

Name	Latitude			Longitude			
	°	'	"	°	'	"	
Corn	29	10	1213	94	58	1457	Topo. T-4852
Eck	29	14	1072	94	52	1411	Hydro. Control Page 2
Lum	29	03	156	95	08	1547	Hydro. Control Page 4
Over	29	31	1551	94	26	278	Topo, 1937
Quan	29	00	1302	95	12	825	Hydro. Control Page 5
Ray	29	11	849	94	58	385	Topo. T-4852
Tank	29	10	791	94	59	632	Topo. T-4852
Two	29	29	1225	94	31	1540	Hydro. Control Page 1
Wind	29	08	1185	95	02	210	Topo. T-4852

BUOYS

Buoy Name	Latitude			Longitude			Trav. No.
	°	'	M	°	'	M	
ABE	29	18	1362	94	28	760	2
ACE	29	31	1558	94	20	163	Graphic
ADD	28	59	1017	94	26	422	3 & 4
AFT	28	09	703	93	20	1210	15
AID	28	43	486	94	58	488	9
AIM							
AIR	28	59	1279	94	50	1422	8
ANT	28	42	801	94	19	1569	6
APE	27	58	1498	94	38	576	Graphic
BAN	28	41	18	94	57	2	9
BAR	28	09	765	93	14	461	15
BAD							
BEE	29	16	1057	94	27	529	2
BIM	29	29	1402	94	19	35	1
BIT	28	38	1832	94	19	1562	6
BUD	29	02	434	94	52	386	8
BUM	29	02	434	94	27	1020	3 & 4
BUT	28	09	1670	94	19	1260	13
CAD	28	35	790	93	42	26	17
CAN	28	34	1169	94	19	1555	6
CAP	29	04	1589	94	29	18	3 & 4
CAR	29	04	1534	94	53	955	8
CAT	29	27	1177	94	17	1428	1
COB	29	14	761	94	26	270	2
COG	27	58	333	94	18	1027	Graphic

BUOYS - Page 2

Buoy Name	Latitude		Longitude		Trav. No.		
	O	M	O	M			
CUP	28	39	1145	94 59	1431	11	
CUR	28	14	1242	93	14	556	15
DAD	29	12	532	94	25	122	2
DAM	28	39	1678	93	42	125	17
DAN	28	19	1703	93	14	674	15
DEN	28	30	411	94	19	1538	6
DID	28	58	705	94	18	1178	Plotting contours
DOC	29	07	680	94	54	1527	Graphic
DOE	29	07	720	94	30	641	3 & 4
DOG	29	25	1009	94	16	1209	1
EAR	28	30	507	94	25	49	6
EEL	29	23	683	94	15	968	1
EGG	29	09	1688	94	31	1228	4
ELF	29	10	332	94	24	26	2
ELK	28	40	1363	94	249	1601	12
ELI	28	25	222	93	14	813	15
ELM	29	09	1825	94	56	588	Graphic
EMU	28	44	728	93	42	9	17
END							
FAD	28	48	1282	94	30	98	6
FAN	28	30	356	93	14	1451	15
FAR	29	08	95	94	22	1535	2
FAT	28	45	962	94	47	814	10
FEZ	29	12	803	94	33	82	3 & 4
FIG	29	21	479	94	14	785	1

BUOYS - Page 3

Buoy Name	Latitude			Longitude			Trav. No.
	°	'	"	°	'	"	
FOG	28	37	448	94	49	1279	12
POP	28	48	1766	93	41	1572	17
FOX	27	54	1240	93	35	1496	Graphic
GAG	28	30	311	94	09	1361	13
GAL	28	43	1669	94	50	1562	9
GAS	27	54	1327	93	36	364	Graphic
GAY	28	45	816	94	29	1616	6
GEM	29	05	1678	94	21	1378	2
GIG	28	33	1559	94	50	58	12
GIN	28	53	942	93	41	1535	17
GO	29	14	1680	94	34	670	3 & 4
GUE	29	19	10	94	13	421	1
GUS	28	09	1674	94	17	1256	14
HAG	29	03	1382	94	20	1232	2
HAM	28	30	220	93	04	1242	13
HAT	28	42	680	94	29	1624	6
HAW	28	58	136	93	41	1461	17
HAY	28	30	329	93	27	1060	15
HEALD	29	05	420	94	13	1257	
HIT	28	46	954	94	52	390	9
HOB	28	30	311	94	50	149	11
HOW	29	17	698	94	35	1124	3 & 4
HUB	29	28	1292	94	26	290	Graphic
ICE	29	26	1093	94	25	54	1
IF	28	30	146	93	59	868	13
IMP	28	39	679	94	29	1513	6

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BUOYS - Page 4

Buoy Name	Latitude			Longitude			Trav. No.
	°	'	m	°	'	m	
INK	29	19	1455	94	36	1383	Graphic
INN	28	49	229	94	53	864	9
IRE	27	59	471	95	27	605	Graphic
IS	29	01	1117	93	41	1436	17
IT	28	30	333	94	54	1581	11
IVY	29	01	668	94	19	828	2
JAG	29	05	285	93	41	1432	17
JAM	28	09	805	93	07	351	16
JET	29	13	369	94	49	910	Graphic
JIB	28	30	301	94	59	1318	11
JIM	28	36	958	94	29	1548	6
JIP	28	30	142	93	54	450	13
JOB	28	51	1269	94	54	1385	9
JOY	29	24	837	94	23	1473	1
JUG	28	59	142	94	18	470	3
KAY	29	09	1549	93	41	1497	17
KEG	28	30	104	93	48	228	15
KEN	28	54	515	94	56	266	9
KEY	29	22	733	94	22	1311	1
KID	28	33	668	94	59	1329	11
KIM	28	24	1371	93	54	364	13
KIN	28	56	1519	94	17	187	3
KIP	28	53	1204	94	29	1624	6
KIT	29	10	1710	94	48	594	5
LA	29	05	271	93	57	53	17
LAD	29	08	1199	94	47	147	5

g La

BUOYS - Page 5

Buoy Name	Latitude			Longitude			Trav. No.
	°	'	"	°	'	"	
LAG	28	30	34	93	41	1827	15
LAP	28	19	530	93	54	548	13
LAW	28	38	1250	94	59	1355	11
LAX	29	20	629	94	21	1150	1
LIE	28	30	424	94	34	1551	11
LIP	28	56	1662	94	57	800	9
LOW	28	55	1332	94	20	43	5
LUM	29	03	156	95	08	1547	Graphic
LSH CAN	29	05	451	94	13	626	Comp.
MA	28	29	1838	93	35	1589	15
MAC	29	18	543	94	20	1023	1
MAD	28	13	1256	93	54	575	13
MAN	29	05	139	93	51	1366	17
MAP	28	59	1027	94	58	1363	9
MAY	28	54	781	94	23	1032	3 & 4
MIN	29	06	645	94	45	1383	5
MOB	28	09	1138	94	53	450	14
MUD	28	30	511	94	40	112	11
NAN	29	02	294	95	00	332	Graphic
NET	28	53	325	94	26	1618	3 & 4
NEW	28	33	524	94	40	184	7
NIL	29	04	127	94	44	937	5
NIP	28	24	1810	94	40	41	13
NOD	28	30	335	93	21	1011	15
NOW	29	05	253	93	46	1120	17

Buoy Name	Latitude			Longitude			Trav. No.
	°	'	"	°	'	"	
NUN	29	16	564	94	19	855	1
NUT	28	09	1267	94	13	228	13
OAK	28	51	1688	94	30	401	4 & 5
OAR	28	21	346	94	39	1623	13
ODD	28	36	977	94	40	74	7
OH	28	30	297	93	14	888	15
OHM	28	09	1143	94	06	867	13
OIL	29	14	149	94	18	474	2
OLD	29	04	1391	95	01	963	Graphic
OX	29	01	1394	94	43	597	5
PAD	28	17	781	94	39	1620	13
PAL	28	54	552	94	31	863	4 & 5
PAR	28	39	1089	94	39	1585	7
PAT	28	42	973	94	53	1376	9
PAY	28	59	775	94	42	217	5
PIE	29	11	1268	94	16	1596	2
POP	27	53	1138	93	18	13	Graphic
POT	28	09	931	94	00	345	13
QUI	28	56	1297	94	32	1294	3
RAG	28	57	281	94	40	1509	5
RAN	28	13	1024	94	39	1613	13
RAP	27	53	314	93	27	745	Graphic
RAW	28	09	689	93	54	613	13
RAY	28	42	1285	94	39	1529	7
RED	29	09	531	94	15	1084	2
REX	28	59	450	94	34	172	4 & 5

BUOYS - Page 7

Buoy Name	Latitude		Longitude		Trav.No.
	°	' m	°	' m	
RIM	29	00 1403	95	07 987	Graphic
SAG	29	01 1476	94	35 671	4 & 5
SAP	28	45 1448	94	39 1523	7
SAW	28	58 433	95	06 530	Graphic
SEA	28	09 697	93	00 251	16
SIR	28	54 1558	94	39 1180	5
SOD	29	07 293	94	14 795	2
SON	28	30 516	94	30 168	6
SOP	28	09 1214	94	39 1633	13
SUP	28	09 519	93	47 1154	15
TAB	28	09 767	92	53 231	
TAG	28	47 129	94	44 255	10
TAP	28	09 520	93	40 1584	15
TAX	29	04 750	94	36 1213	4 & 5
TEN	28	09 1220	94	46 1024	14
TOM	28	55 1491	95	05 78	9
TON	28	52 990	94	38 880	5
TUG	29	05 598	94	13 656	2
UGH	27	49 745	93	03 4	Graphic
UKE	29	06 1722	93	38 00	4 & 5
UNA	28	09 375	93	34 292	15
UNO	28	30 510	94	44 1410	
UP	28	53 578	95	03 1141	9
URN	29	17 1369	94	15 1381	1
US	28	09 1097	95	04 158	14
USE	28	49 1785	94	37 442	5

BUOYS - Page 8

Buoy Name	Latitude			Longitude			Trav. No.
	°	'	"	°	'	"	
VAN	29	03	679	94	16	598	2
VAT	28	49	898	94	45	650	8
VET	27	55	551	93	44	637	Graphic
VEX	28	51	396	94	33	1208	5
VIC	28	09	1141	94	59	1126	14
VIE	28	50	1534	95	02	666	9
VIM	29	09	854	94	39	488	4 & 5
VIZ	27	51	1440	93	24	1146	Graphic
WAD	29	12	86	94	40	1047	4 & 5
WAG	28	48	1491	94	39	1555	10
WAR	28	48	655	95	01	132	9
WAS	27	51	1485	93	17	1486	Graphic
WAX	28	00	420	95	00	24	Graphic
WAY	27	52	788	93	48	1516	Graphic
WIG	29	26	155	94	32	458	Graphic
WIT	28	51	1780	94	46	1086	8
XI	28	52	1386	94	19	1573	6
YAM	29	14	1215	94	41	1552	Graphic
YAP	27	49	707	92	53	275	
YAW	28	09	1302	94	33	331	13
YET	28	45	1532	94	59	1016	9
YES	28	49	508	94	19	1541	6
YEW	28	09	560	93	27	657	15
YIP	29	23	227	94	30	1288	2
YON	28	54	990	94	48	105	8
ZEP	28	09	1376	94	26	749	13

BUOYS - Page 9

Buoy Name	Latitude	Longitude	Trav. No.
	° ' "	° ' "	
ZIP	28 56 1679	94 24 1406	3 & 4
ZOE	28 57 155	94 49 803	8
ZOO	29 20 1678	94 29 1032	2
ZUS	28 45 1535	94 19 1567	6

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FATHOMETER CORRECTIONS
AND
DATA FOR REDUCTION OF BOMB DISTANCES

Season 1937

Ship HYDROGRAPHER

F. S. Borden, Comdg.

Fathometer corrections were divided into the following components: Index, Draft, Settlement (squat) and Velocity (or Temperature and Salinity) . These components were determined as follows:

INDEX:

For the Dorsey #1 Fathometer the index correction is (-)1.0 feet. This is the mean of 34 observations taken during the season.

As a rule, observations were made only under favorable conditions in fairly shoal water, and with a carefully checked lead line.

The draft correction used in computing the index correction was taken from the draft curve. The velocity correction was taken from temperature and salinity observations made at or near the time of the comparison.

This index correction is the same as determined during the 1936 season.

For the Dorsey #2 Fathometer no index correction was determined. This is largely due to its relatively large fluctuations with the amplification and also to the fact that this fathometer was a new installation which was in the experimental stage until the last part of the season.

For the reduction of soundings taken with the Dorsey #2 Fathometer, direct comparisons with the soundings of Dorsey #1 Fathometer soundings were used to determine the index correction for that particular time.

DRAFT:

The draft of the transceiver varied from 11.9 to 12.9 feet. This draft was plotted for each day of the season using measurements taken from the rails directly above the transceiver, to the water. As a rule a straight line, between readings, taken alongside the dock, at the beginning and end of each trip to the working grounds, was used. The readings alongside the dock are more reliable due to the difficulty of obtaining good readings with even a very light swell.

Readings taken at sea show an average draft slightly higher than that alongside the dock which is contrary to the fact that the average salinity was higher at sea.

The fathometer initial was set for a draft of 12 feet. The draft correction, therefore, is equal to the transceiver draft minus 12 feet.

It is believed that the draft curves as drawn are accurate within 0.1 foot for any day.

SETTLEMENT (SQUAT):

No determination of the squat of the HYDROGRAPHER at various speeds was made during this season, the values used were determined during the 1936 season.

TEMPERATURE AND SALINITY:

For sheets Nos. 41, 42 and 43 a mean temperature and salinity curve was drawn from all observations made on each trip to the working grounds.

From these curves the average temperature and salinity was computed and a correction determined for various depths for each period.

The correction entered in the records was scaled from smooth curves through these computed points.

For sheets Nos. 81, 82, 83, and 84 theoretical velocity curves were constructed for each trip using all observations obtained.

From these curves the mean velocity was scaled for each five fathoms depth. Fathometer corrections were computed from these velocities for three periods: June 16 - 25, July 20 - Oct. 30, and Nov. 4 - 19.

The dial speed of both fathometers is 820 fm./sec. (1499.6 m./sec.). This speed was checked during and after the close of the season by Dr. C. G. Mc Ilwraith and found to be correct within close limits.

REDUCTION OF BOMB DISTANCES:

The mean velocity curves were used for the reduction of bomb distances.

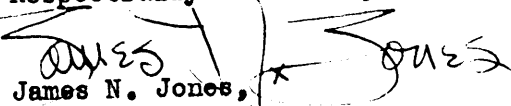
The average depth between each bomb position and each sonobuoy was computed and a velocity corresponding to this average depth was scaled from the curve for the trip unless the observations for the trip were incomplete, in which case the mean of the period July 20 to Oct. 30 was used.

All data used in computing these corrections are appended to this report, with the exception of the temperature salinity and theoretical velocity observations, which are included in a special report on Temperature and Salinity Observations, Gulf of Mexico, and East Texas Coast, Ship HYDROGRAPHER, Season 1937. Also included in the above mentioned report are curves showing seasonal variations of temperature, salinity and velocity and other data which may prove valuable in a study of these corrections.


Appended to this report are the following data:

1. Computations of Index Correction, Dorsey Fathometer #1,
(one sheet)
2. Transceiver Draft Data (3 sheets)
3. Transceiver Draft Curves (1 double sheet)
4. Trip Temperature and Salinity Curves (20 sheets)
5. Computation of Fathometer Corrections (T. & S.)
Sheets 41, 42, and 43 (6 sheets)
H-6251, 6252, 6253
6. Fathometer Corrections (T. & S.) Sheets 41, 42, and 43
(1 graph)
H-6251, 6252, 6253
7. Table of Fathometer Corrections, Sheets 41, 42 and 43
(1 sheet)
H-6251, 6252, 6253
8. Trip Velocity Curves (14 sheets)
9. Tabulated Velocities and Computation of Fathometer Cor-
rections (T. & S.) for Sheets 81, 82, 83 and 84 (1 double
sheet)
10. Fathometer Corrections (T. & S.) Sheets 81, 82, 83 & 84
11. Table of Index, Draft & Settlement Corrections, Sheets
81, 82, 83 and 84 (1 sheet)
12. Table of Temperature and Salinity Corrections, Sheets
81, 82, 83 and 84.

Respectfully submitted,


James N. Jones,
Jr. H. & G. Engineer,
U. S. C. & G. Survey.

Approved:


Frank S. Borden,
Commanding HYDROGRAPHER.

COMPUTATIONS OF INDEX CORRECTION
Dorsey Fathometer #1 (Dial Speed 820 fm/sec.)

SHEET #41

Date d. h.	Fath. Sdg. Fm.Ft.	Mean T	Mean S	f.	Corr T&S	Fath.Sdg. Corr.T&S	V.C. Fm.Ft.	I	D	I
4/21 19:00	7-3.5	20.8	26.0	.008	0.3	7-3.8	7-3.2	-.6	.8	-1.4
4/22 05:47	7-4.0	20.7	26.5	.008	0.3	7-4.3	7-3.4	-.9	.8	-1.7
4/22 06:30	7-5.8	20.7	26.5	.008	0.3	8-0.1	7-5.6	-.5	.8	-1.3
5/4 06:00	5-2.1	22.5	33.7	.016	0.3	5-2.4	5-2.0	-.4	.5	-0.9
5/5 19:00	7-3.8	22.2	30.0	.013	0.5	7-4.3	7-4.0	-.3	.4	-0.6
5/6	11-3.5	22.2	35.0	.017	1.0	11-4.5	11-3.8	-.7	.4	-1.1
5/7	8-4.0	22.2	31.5	.014	0.6	8-4.7	8-4.3	-.3	.3	-0.6
5/8	9-5.4	22.6	32.5	.016	0.8	10-0.2	9-5.5	-.7	.3	-1.0
(MEAN										-1.1)

SHEET #42 (1937)

5/13 19:00	8-5.5	23.5	32.5	.017	0.7	9-0.2	8-5.2	-1.0	.1	-1.1
5/24 19:00	8-5.8	25.0	33.0	.020	0.9	9-0.7	8-5.6	-1.1	.1	-1.2
5/25 19:15	8-3.9	25.2	32.2	.020	0.8	8-4.7	8-4.4	-0.3	.1	-0.4
6/7 19:35	9-5.8	26.8	32.2	.022	1.1	10-0.9	9-5.8	-1.1	.6	-1.7
6/10 19:00	7-0.0	27.5	32.0	.023	0.7	7-0.7	7-0.2	-0.5	.4	-0.9
6/11 19:30	11-1.3	27.0	32.2	.023	1.3	11-2.6	11-1.5	-1.1	.1	-1.2
6/11 08:20	11-2.9	27.0	32.2	.023	1.3	11-4.2	11-3.4	-0.8	.4	-1.2
6/12 11:30	11-3.0	27.0	32.2	.023	1.35	11-4.35	11-3.15	-1.2	.0	-1.2
(MEAN										-1.1)

SHEET #43 (1937)

6/25 15:00	6-5.4	29.4	33.5	.027	0.8	7-0.2	6-5.7	-0.5	.1	-0.6
7/6 19:30	10-4.7	28.9	34.7	.027	1.4	11-0.1	10-5.4	-0.7	.7	-1.4
7/8 05:30	11-5.6	28.9	34.5	.027	1.6	12-1.2	12-0.8	-0.4	.7	-1.1
7/13 19:30	10-0.85	28.8	34.2	.027	1.32	10-2.2	10-2.0	-0.2	.4	-0.6
7/23 19:30	10-3.2	28.0	36.7	.027	1.4	10-4.6	10-4.5	-0.1	.5	-0.6
7/25 19:30	6-5.2	25.0	36.1	.022	0.6	6-5.8	6-5.5	-0.3	.3	-0.6
(MEAN										-0.8)

SHEET #81 (1937)

6/17 20:00	19-0.3	25.1	34.8	.021	2.1	19-2.4	19-2.1	-0.3	.5	-0.8
6/19 16:00	20-0.2	25.5	34.8	.022	2.4	20-2.6	20-1.1	-1.5	.4	-1.9
6/19 17:15	20-1.2	25.5	34.8	.022	2.4	20-3.6	20-2.0	-1.6	.4	-2.0
6/21 19:30	13-0.2	28.1	32.3	.023	1.5	13-1.7	13-0.8	-0.9	.3	-1.2
6/22 20:00	15-5.0	26.4	33.8	.022	1.8	16-1.8	16-0.0	-1.8	.2	-2.0
6/24 19:30	17-1.7	26.8	35.0	.024	2.2	17-3.9	17-2.8	-1.1	.1	-1.2
6/25 05:30	17-3.8	27.3	34.2	.024	2.3	18-0.1	17-5.5	-0.6	.0	-0.6
6/25 07:30	20-0.7	27.1	34.5	.024	2.6	20-3.3	20-2.1	-1.2	.0	-1.2
7/27 19:30	19-3.1	27.7	36.1	.026	2.7	19-5.8	19-4.9	-0.9	.2	-1.1
7/28 19:30	18-1.0	27.7	36.1	.026	2.5	18-3.5	18-3.1	-0.4	.1	-0.5
(MEAN										-1.2)

SHEET #84 (1937)

11/8 18:00	11-5.0	23.1	35.0	.0185	1.2	12-0.2	12-0.0	-0.2	.6	-0.8
11/17 18:00	12-0.7	22.0	35.4	.0164	1.0	12-1.7	12-1.8	0.1	.5	-0.4
(MEAN										-0.6)

MEAN OF ALL OBSERVATIONS USED IN REDUCTION OF RECORDS IS -1.0 FEET

TRANSCEIVER - DRAFT - DATA
(Rail to Transceiver = 22.13 Ft.)

	DATE		Rail - Water			Draft Marks		Trans-	REMARKS
	1937		Stb.	Port	Mean	Fwd.	Aft	ceiver	
	d.	h.						Draft	
	4/19	* 15:00	9.5	9.6	9.55	11.2	14.1	12.58	Excellent
	4/20	* 08:00	9.18	9.22	9.20	11.2	14.7	12.93	Excellent-Season begins.
TRIP # 1	4/22	06:00	9.4	9.5	9.45	-	-	12.68	1' swell Fair
	4/23	06:00	9.4	9.4	9.4	-	-	12.73	1½' swell Fair
	4/24	* 09:00	9.5	9.5	9.5	11.2	14.0	12.63	Slight chop
	4/26	* 06:00	9.5	9.55	9.52	11.2	13.9	12.61	Excellent
	4/30	* 10:00	9.4	10.1	9.75	11.4	13.3	12.38	Excellent
	5/4	* 06:00	9.4	9.7	9.55	11.4	13.6	12.58	
TRIP # 2	5/7	19:00	9.7	9.8	9.75	-	-	12.38	Slight swell Good
	5/13	19:00	10.0	10.5	10.25	-	-	11.88	Poor
	5/14	* 08:00	10.2	9.9	10.05	10.7	13.7	12.08	Excellent
	5/19	* 06:00	9.5	9.9	9.7	-	-	12.43	Excellent
	5/19	19:00	9.1	9.7	9.40	-	-	12.73	1½' swell Poor
	5/20	05:00	9.6	9.9	9.75	-	-	12.38	2' swell Poor
	5/20	19:00	9.4	9.9	9.65	-	-	12.48	1½' swell Poor
TRIP # 3	5/21	11:00	10.05	10.15	10.1	-	-	12.03	Fair
	5/24	05:00	10.1	9.8	9.95	-	-	12.18	Poor
	5/24	19:00	10.4	9.8	10.1	-	-	12.03	Poor
	5/25	19:00	10.5	9.1 ?	9.8	-	-	12.33	2' swell Poor
	5/28	* 18:00	10.4	10.0	10.2	10.7	13.1	11.93	Excellent
	6/3	* 05:00	10.2	9.8	10.0	-	-	12.13	Excellent
	6/3	* 07:00	10.2	9.6	9.9	10.3	13.6	12.23	Excellent
	6/3	* 09:00	9.65	9.15	9.4	11.6	14.0	12.73	Excellent
	6/3	16:00	9.6	9.3	9.45	-	-	12.68	Fair
TRIP # 4	6/5	* 09:00	9.3	9.6	9.45	11.3	13.6	12.68	Excellent
	6/7	* 05:00	9.65	9.30	9.48	11.7	13.5	12.65	Excellent
	6/11	08:00	9.9	9.3	9.6	-	-	12.53†	2' swell Poor
	6/11	20:00	10.2	9.9	10.15	-	-	11.98	1½' swell Poor
	6/12	11:30	10.1	10.0	10.05	-	-	12.08	9M gal. water pumped overboard 10:00-10:30 Fair
	6/12	19:00	9.85	10.50	10.18	11.2	12.6	11.95	Excellent
	6/16	* 06:00	9.6	9.45	9.56	11.2	13.6	12.57	Excellent
	6/17	20:00	9.7	9.5	9.6	-	-	12.53	Light swell Fair
	6/19	05:30	9.8	9.4	9.6	-	-	12.58	Light swell Fair
	6/19	05:30	9.6	9.5	9.55	-	-	12.58	Light swell Fair
	6/19	16:00	8.9	10.5	9.7	-	-	12.43	Light swell Fair
TRIP # 5	6/21	19:30	9.5	10.0	9.75	-	-	12.38	Light swell Fair
	6/23	19:30	9.8	9.6	9.7	-	-	12.32 ?	Light swell Fair
	6/25	07:30	10.4	9.75	10.07	-	-	12.06	Light swell Fair
	6/25	15:00	10.2	10.0	10.1	-	-	12.03	Light swell Fair
	6/25	* 18:00	{ 10.1	{ 10.3	10.17	-	-	11.96	Excellent
			{ 9.95	{ 10.35					

TRANSCEIVER - DRAFT - DATA
(Rail to Transceiver = 22.13 Ft.)

	DATE		Rail - Water		Draft Marks		Transceiver Draft	REMARKS	
	1937		Stb.	Port	Mean	Fwd.			Aft.
	d.	h.							
TRIP # 6	7/1 *	13:00	9.95	10.60	10.27	-	-	11.86	Excellent
	7/1 *	15:00	9.7	9.9	9.8	-	-	12.33	Excellent
	7/5 *	16:00	9.1	9.6	9.32	11.1	14.5	12.81	Excellent
	7/6	19:30	9.0	9.6				12.58	1' swell Fair
	7/10 *	12:00	9.55	9.55	9.55	11.5	14.4	12.58	Excellent
	7/12 *	06:00	9.8	9.55	9.64	11.2	13.4	12.49	Excellent
	7/13	19:30	9.6	9.6	9.55	-	-	12.58	1 1/2' swell Poor
	7/15 *	13:00	9.75	10.0	9.87	11.7	13.1	12.26	Excellent
TRIP # 7	7/19 *	06:00	9.25	9.85	9.50	11.2	14.0	12.63	Excellent
	7/20 *	06:00	9.4	9.4	9.51	11.25	13.9	12.62	Excellent
	7/23	19:00	9.7	9.6	9.65	-	-	12.48	1' chop Fair
	7/25	19:30	9.3	10.1	9.70	-	-	12.43	Light chop Fair
	7/27	19:30	9.6	10.2	9.90	-	-	12.23	Light chop Fair
	7/30 *	08:00	9.95	10.45	10.20	11.1	12.5	11.93	Excellent
	TRIP # 8	8/2 *	10:00	9.6	9.95	9.78	11.1	12.2	12.35
8/2 *		11:00	9.3	9.4	9.35	11.0	14.8	12.78	Excellent
8/4 *		06:00	9.6	9.1	9.34	11.3	14.6	12.79	
8/9		17:00	9.8	9.3	9.56	-	-	12.57	Fair
8/13		20:00	10.0	10.1	10.05	-	-	12.08	Fair
8/14 *		07:00	9.9	10.15	10.05	11.6	12.4	12.08	Excellent
TRIP # 9	8/19 *	05:30	9.7	9.2	9.45	11.8	13.7	12.68	Excellent
	8/24	19:30	9.8	9.6	9.7	-	-	12.43	Fair
	8/25	20:00	9.8	9.8	9.8	-	-	12.33	Fair
	8/28	19:00	10.0	10.1	10.05	-	-	12.08	Mod. swell. Poor
	8/29 *	06:00	10.15	10.2	10.18	11.1	12.4	11.95	Excellent
	9/2 *	09:15	10.05	9.3	9.68	-	-	12.45	Excellent
	9/2 *	10:00	9.55	9.0	9.28	-	-	12.85	Excellent
TRIP # 10	9/6 *	06:00	9.45	9.15	9.30	11.0	14.9	12.83	Excellent
	9/7	19:00	9.2	9.2	9.2	-	-	12.93	Mod.Swell & chop Poor
	9/12	20:00	10.2	9.6	9.9	-	-	12.23	Mod.Swell Fair
	9/16 *	07:00	9.9	10.1	10.0	11.4	13.2	12.13	Excellent
	9/20 *	17:00	9.35	9.8	9.58	11.5	13.3	12.55	Excellent
TRIP # 11	9/25	18:00	9.6	9.9	9.75	-	-	12.38	Poor
	9/30 *	07:30	10.4	9.9	10.12	--	-	12.01	Excellent
	9/30 *	10:49	9.95	9.65	9.8	-	-	12.33	
TRIP # 12	10/4 *	17:00	9.1	9.6	9.35	-	-	12.78	Excellent
	10/9	12:00	9.5	9.6	9.55	-	-	12.58	Choppy Poor
	10/14 *	07:30	9.55	10.3	9.92	-	-	12.21	Excellent

TRANSCEIVER - DRAFT - DATA
(Rail to Transceiver = 22.13 Ft.)

	DATE		Rail - Water			Draft Marks		Transceiver Draft	REMARKS
	1937		Stb.	Port	Mean	Fwd.	Aft.		
	d.	h.							
TRIP # 13	10/18 *	14:30	9.15	9.85	9.50	-	-	12.63	Excellent
	10/31 *	13:00	9.82	10.55	10.18	-	-	11.95	Excellent
	11/4 *	13:00	9.9	9.6	9.75	-	-	12.38	Excellent
TRIP # 14	11/4 *	15:00	9.05	9.55	9.30	-	-	12.83	Excellent
	11/11 *	21:00	9.9	9.6	9.75	-	-	12.38	Excellent
	11/15 *	06:00	9.5?	9.6?	9.55	-	-	12.58	Fair - Choppy
	11/19 *	14:45	9.3	10.25	9.78	-	-	12.35	Excellent - Season ends

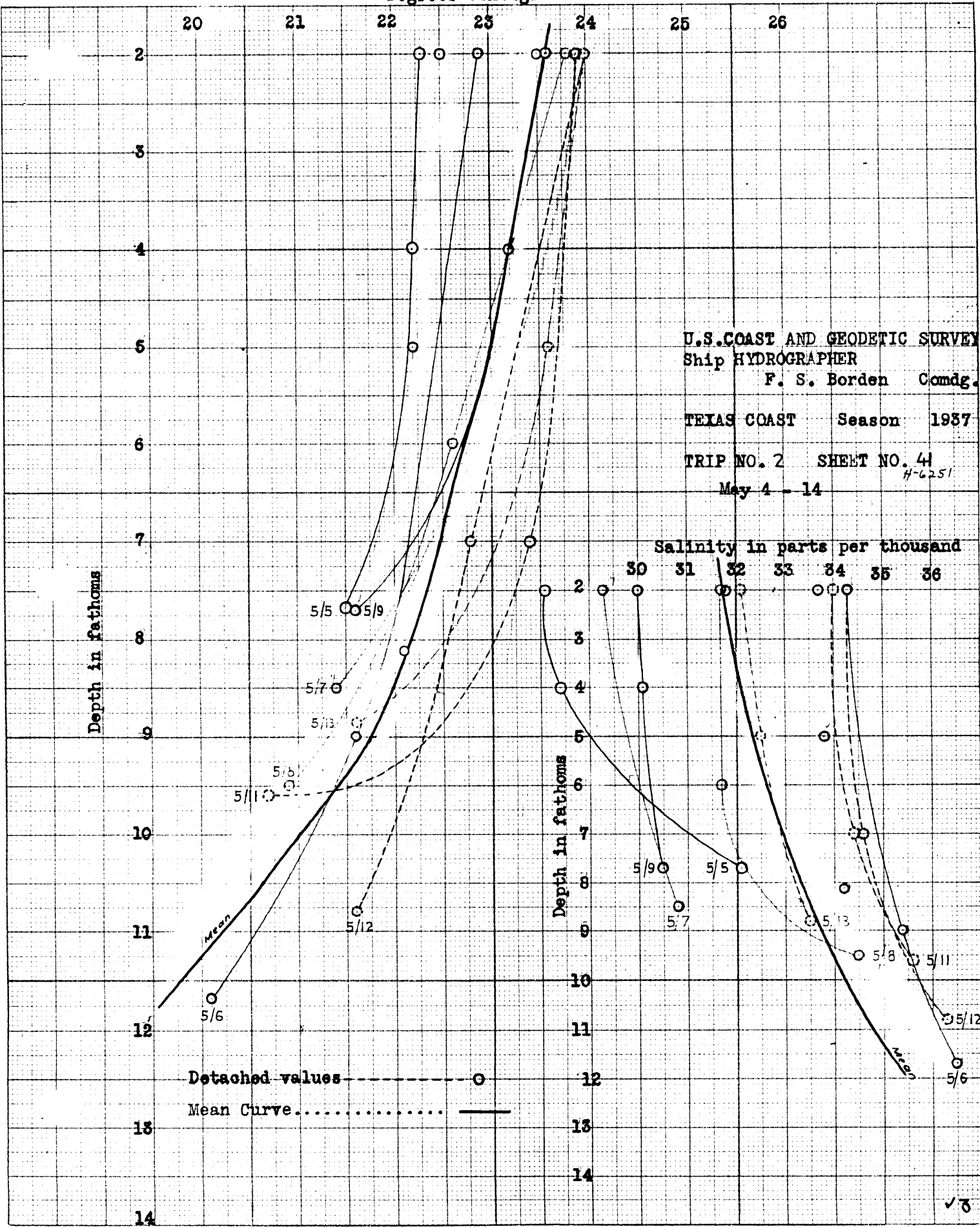
Comp. JNJ
/ JTJ

Oct. 13

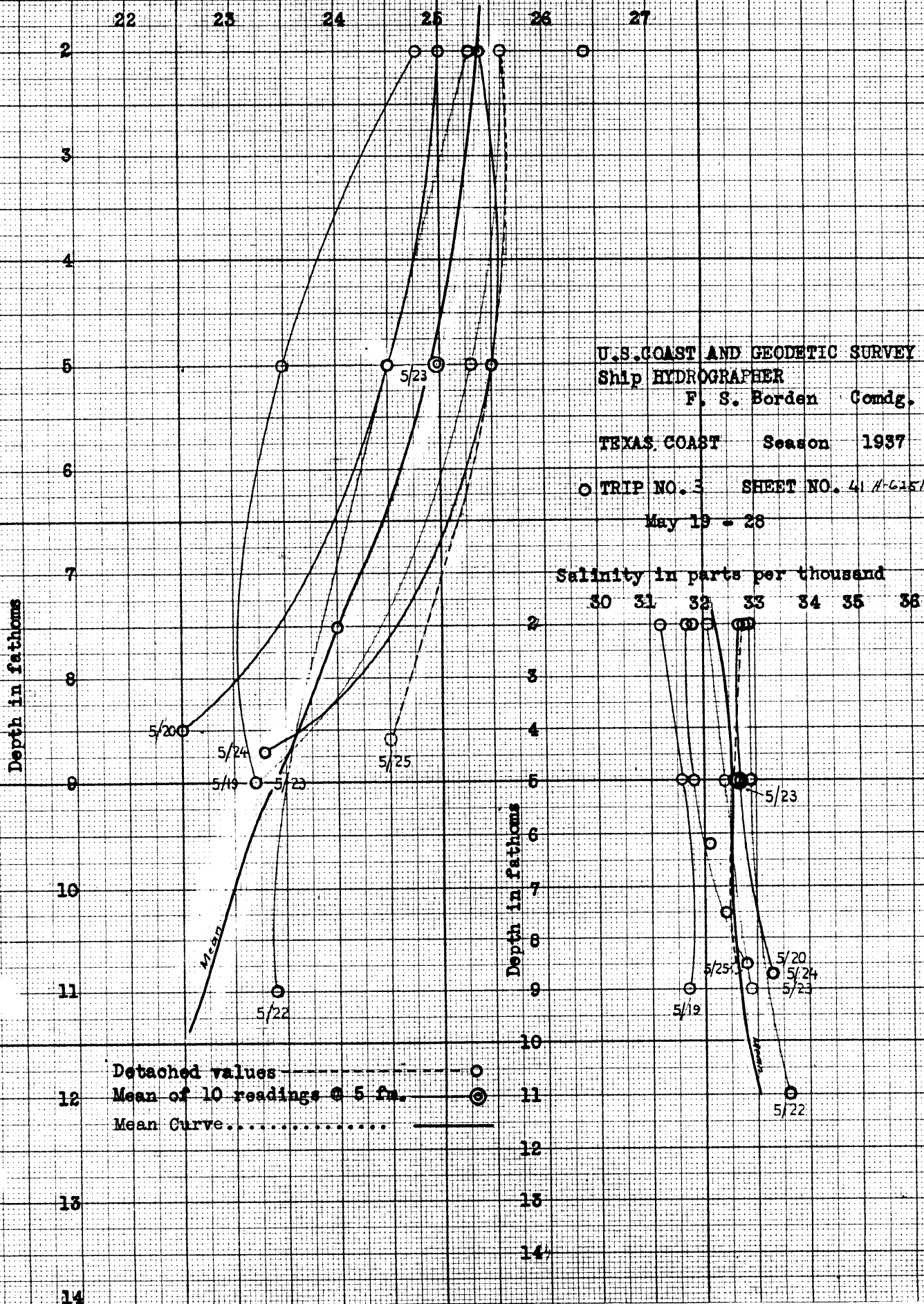
* Observations alongside dock.

NOTE: DRAFT CORRECTION = Transceiver Draft - 12 Ft.

TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES
Degrees Centigrade



TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES
Degrees Centigrade

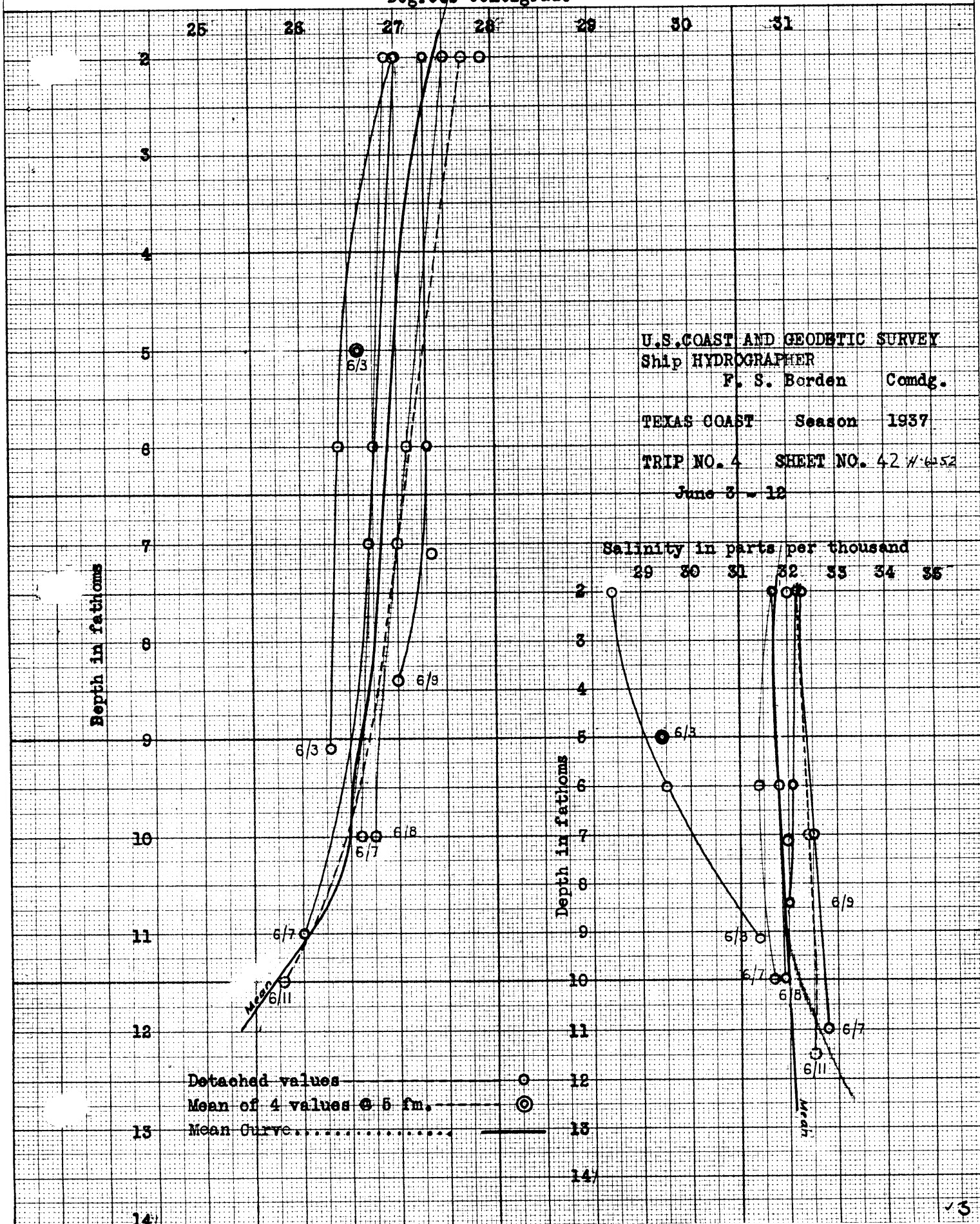


U.S. COAST AND GEODETIC SURVEY
Ship HYDROGRAPHER
F. S. Borden Comdg.
TEXAS COAST Season 1937
TRIP NO. 3 SHEET NO. 41 H-6251
May 19 - 26

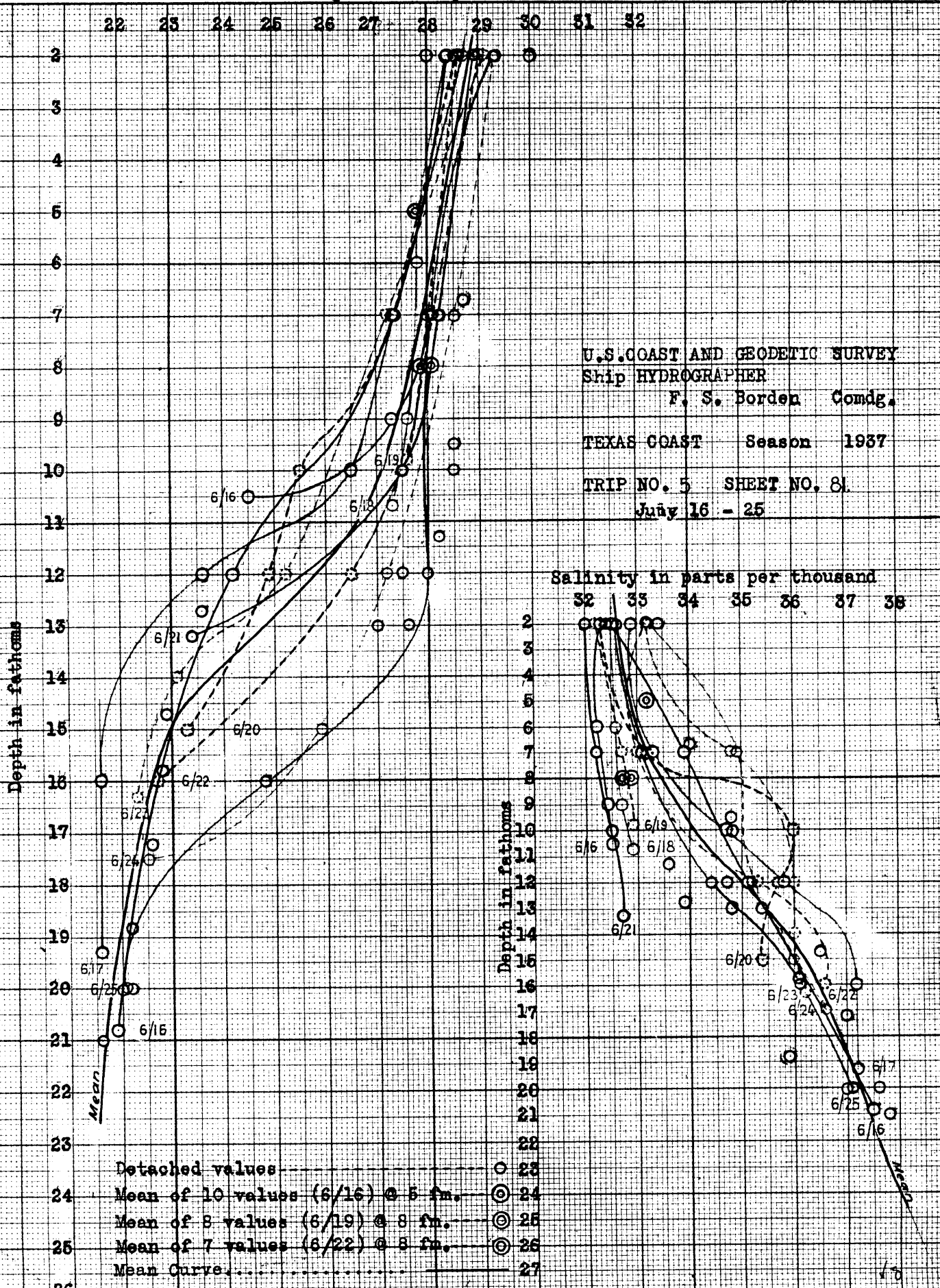
Salinity in parts per thousand
30 31 32 33 34 35 36

Detached values ----- ○
Mean of 10 readings @ 5 fm. --- ⊙ ---
Mean Curve ———

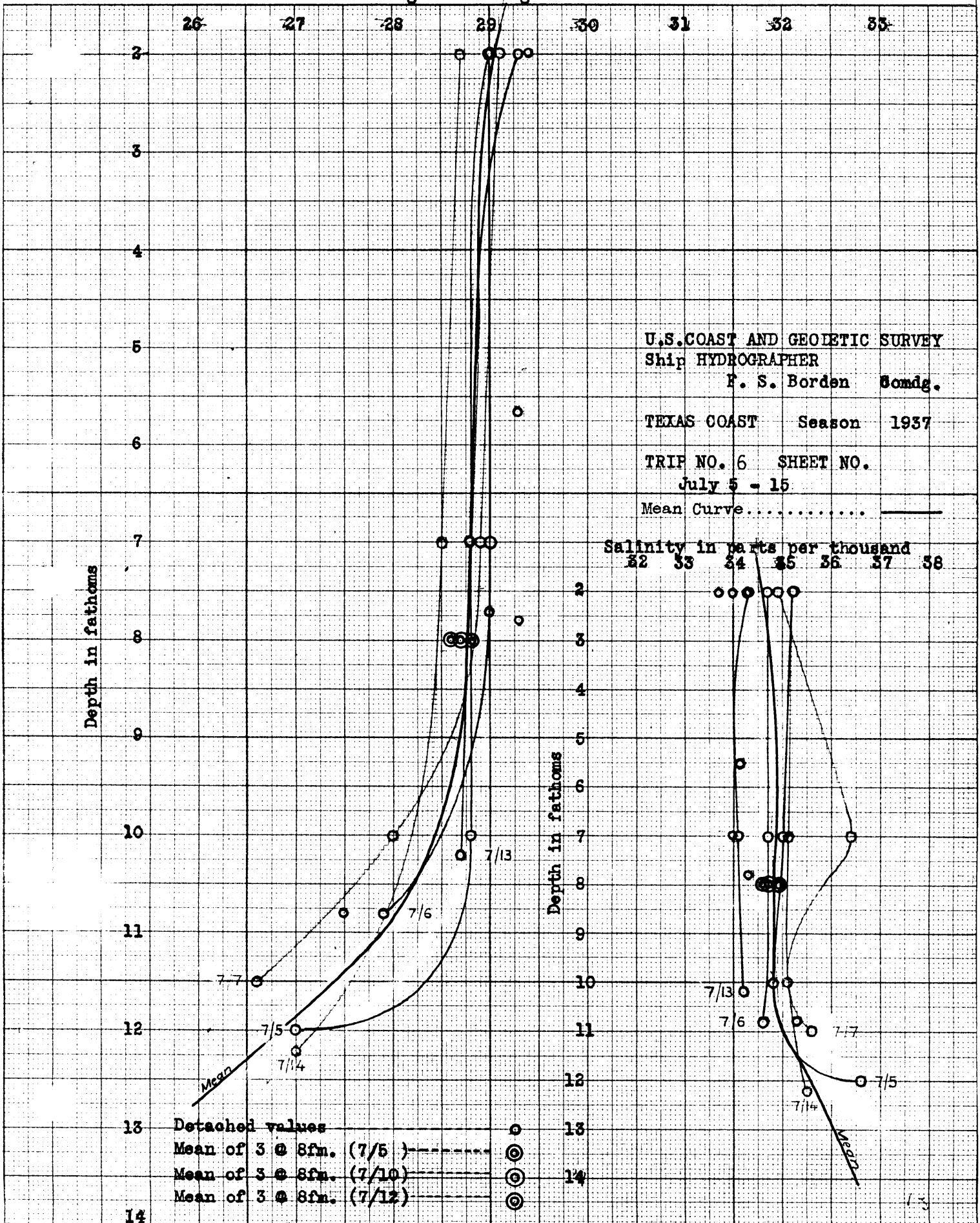
TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES
Degrees Centigrade



TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES
Degrees Centigrade



TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES
Degrees Centigrade



Depth in fathoms

Salinity in parts per thousand

Depth in fathoms

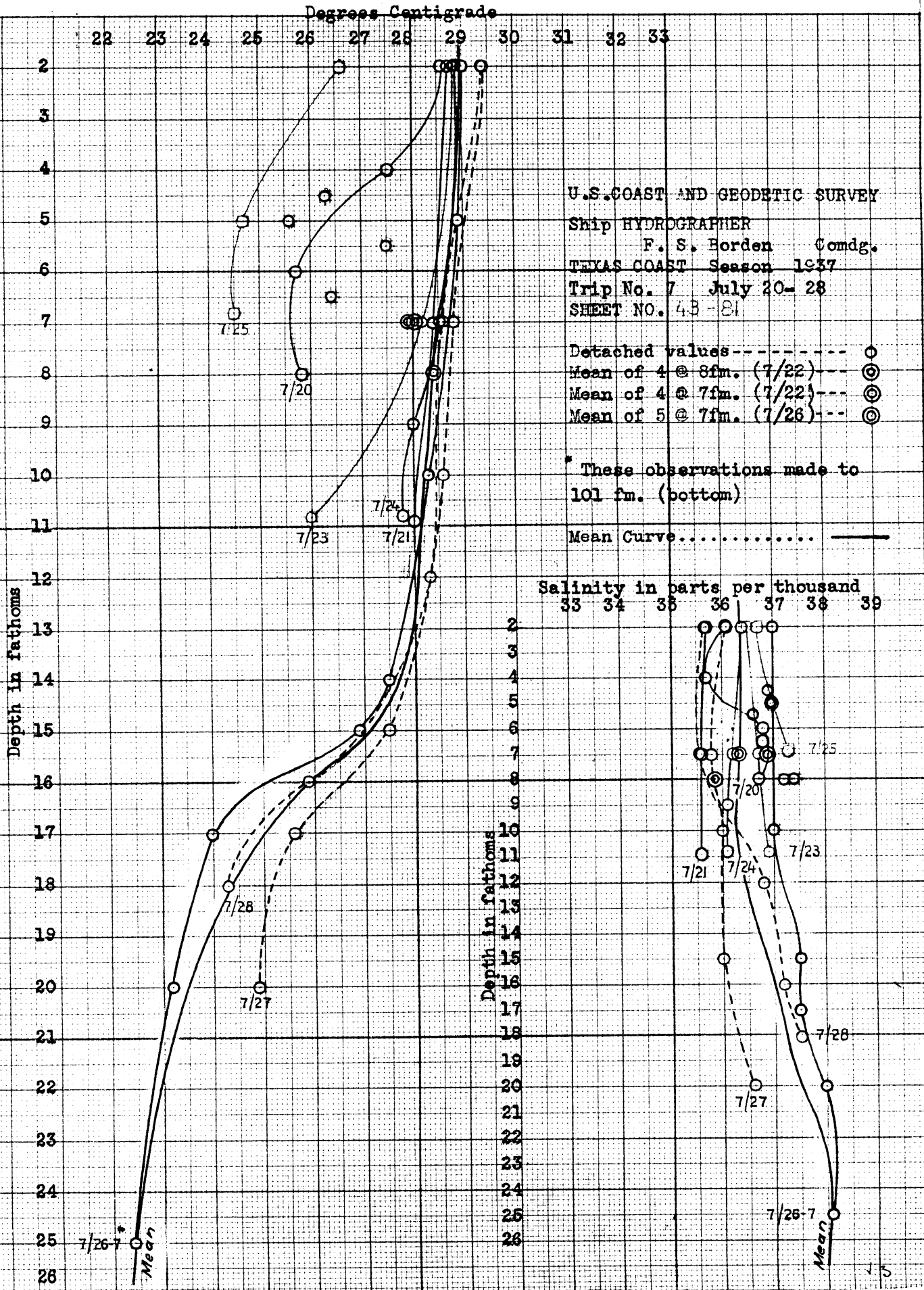
Detached values

Mean of 3 @ 8fm. (7/5)

Mean of 3 @ 8fm. (7/10)

Mean of 3 @ 8fm. (7/12)

TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES



U.S. COAST AND GEODETIC SURVEY
 Ship HYDROGRAPHER
 F. S. Horden Comdg.
 TEXAS COAST Season 1937
 Trip No. 7 July 20-28
 SHEET NO. 48-81

○ Detached values
 ⊙ Mean of 4 @ 8fm. (7/22)
 ⊙ Mean of 4 @ 7fm. (7/22)
 ⊙ Mean of 5 @ 7fm. (7/26)

* These observations made to 101 fm. (bottom)

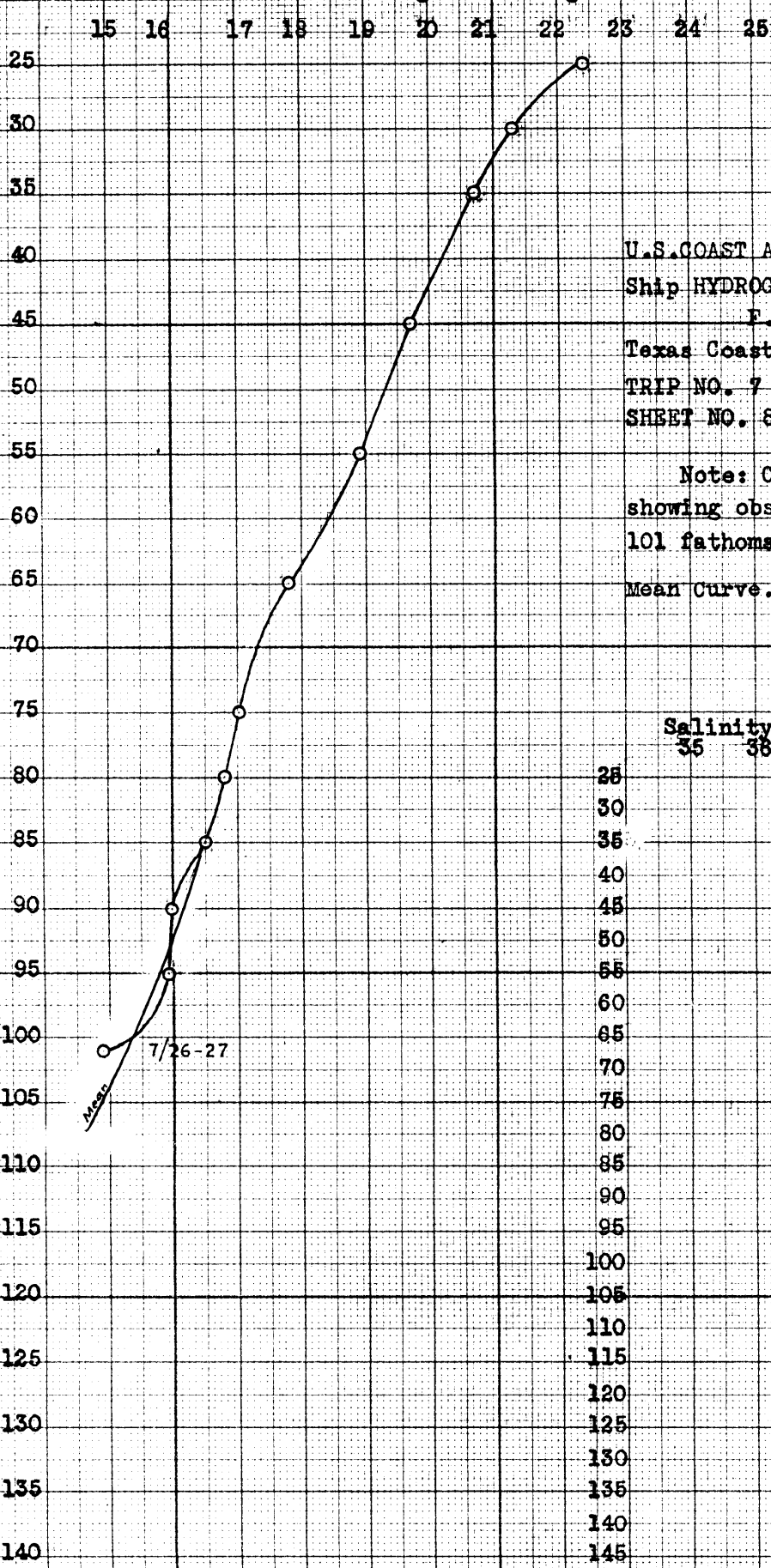
Mean Curve.....

Salinity in parts per thousand
 33 34 35 36 37 38 39

Depth in fathoms

TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES

Degrees Centigrade

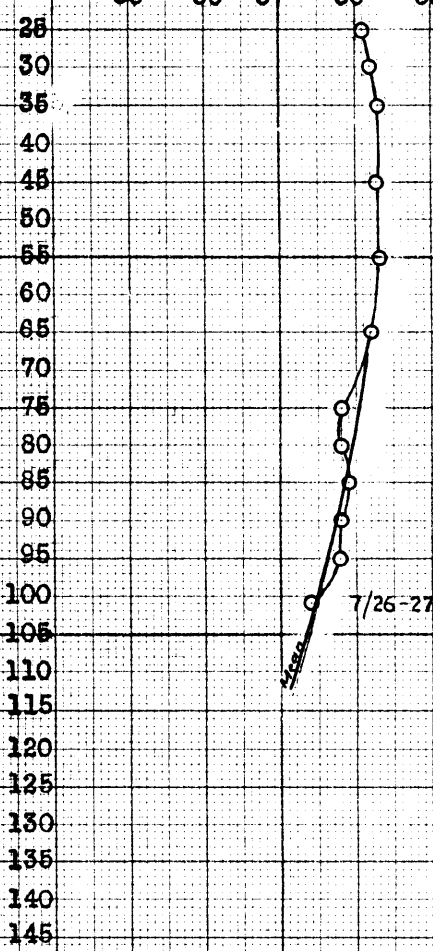


U.S. COAST AND GEODETIC SURVEY
 Ship HYDROGRAPHER
 F. S. Borden Comdg.
 Texas Coast Season 1937
 TRIP NO. 7 July 20 - 28
 SHEET NO. 81

Note: Continuation sheet
 showing observations made to
 101 fathoms.

Mean Curve.....

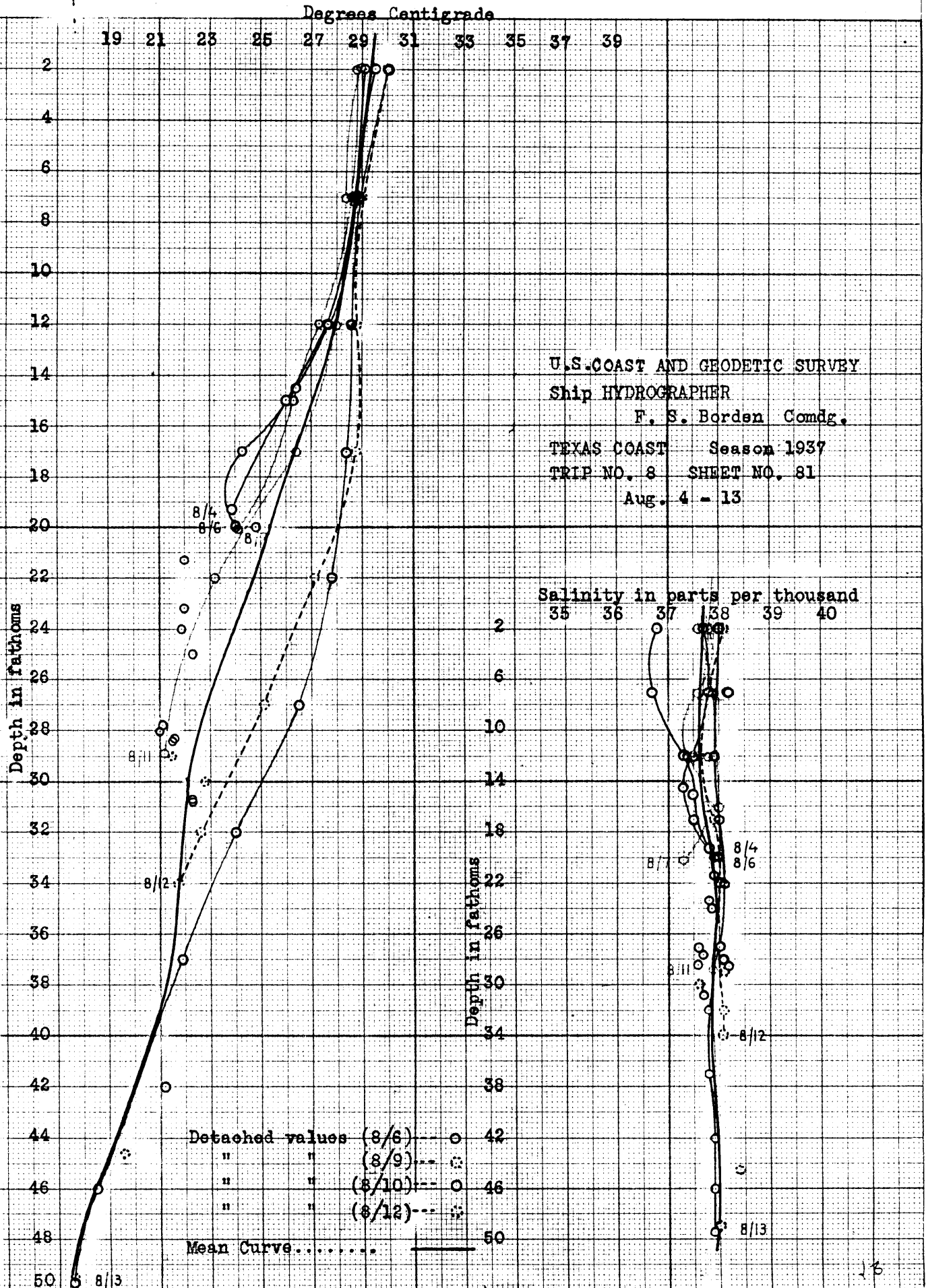
Salinity in parts per thousand



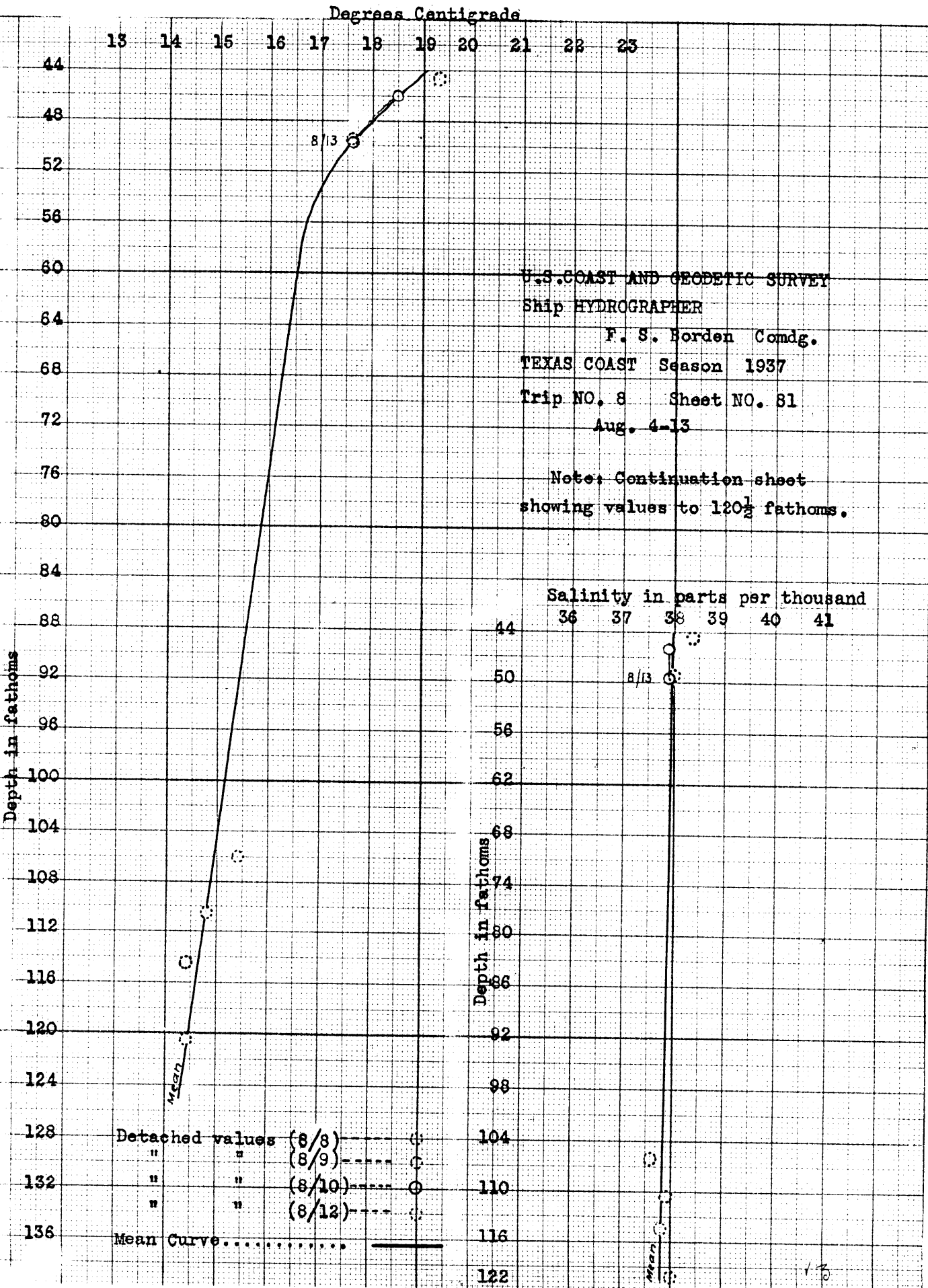
7/26-27

7/26-27

TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES

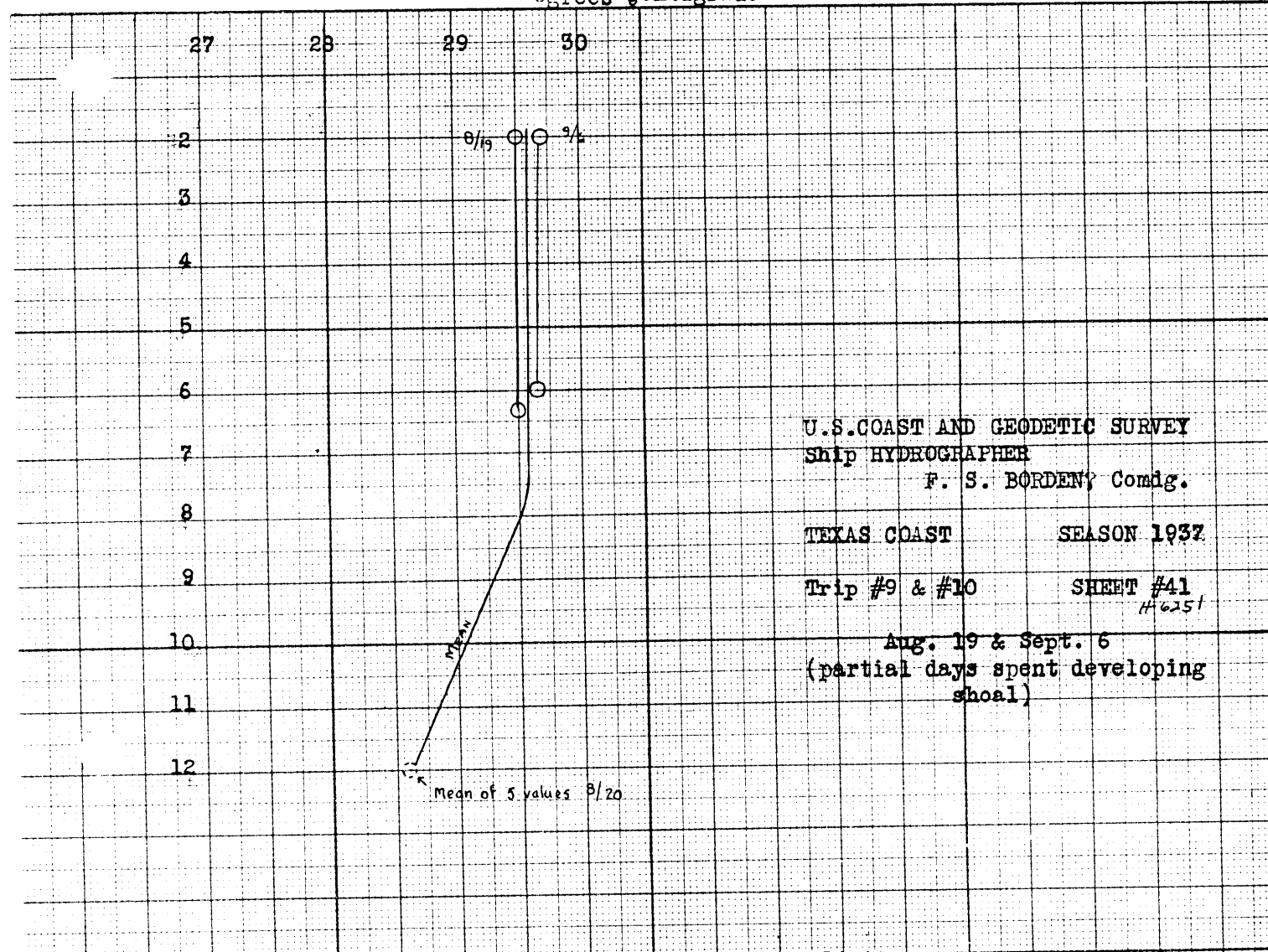


TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES

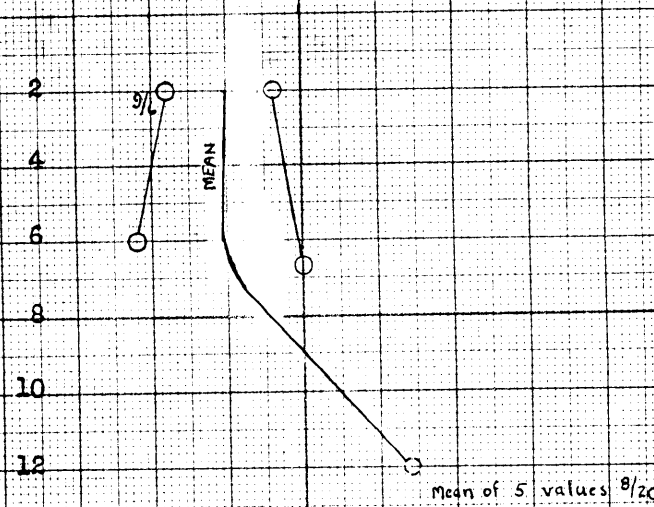


TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES

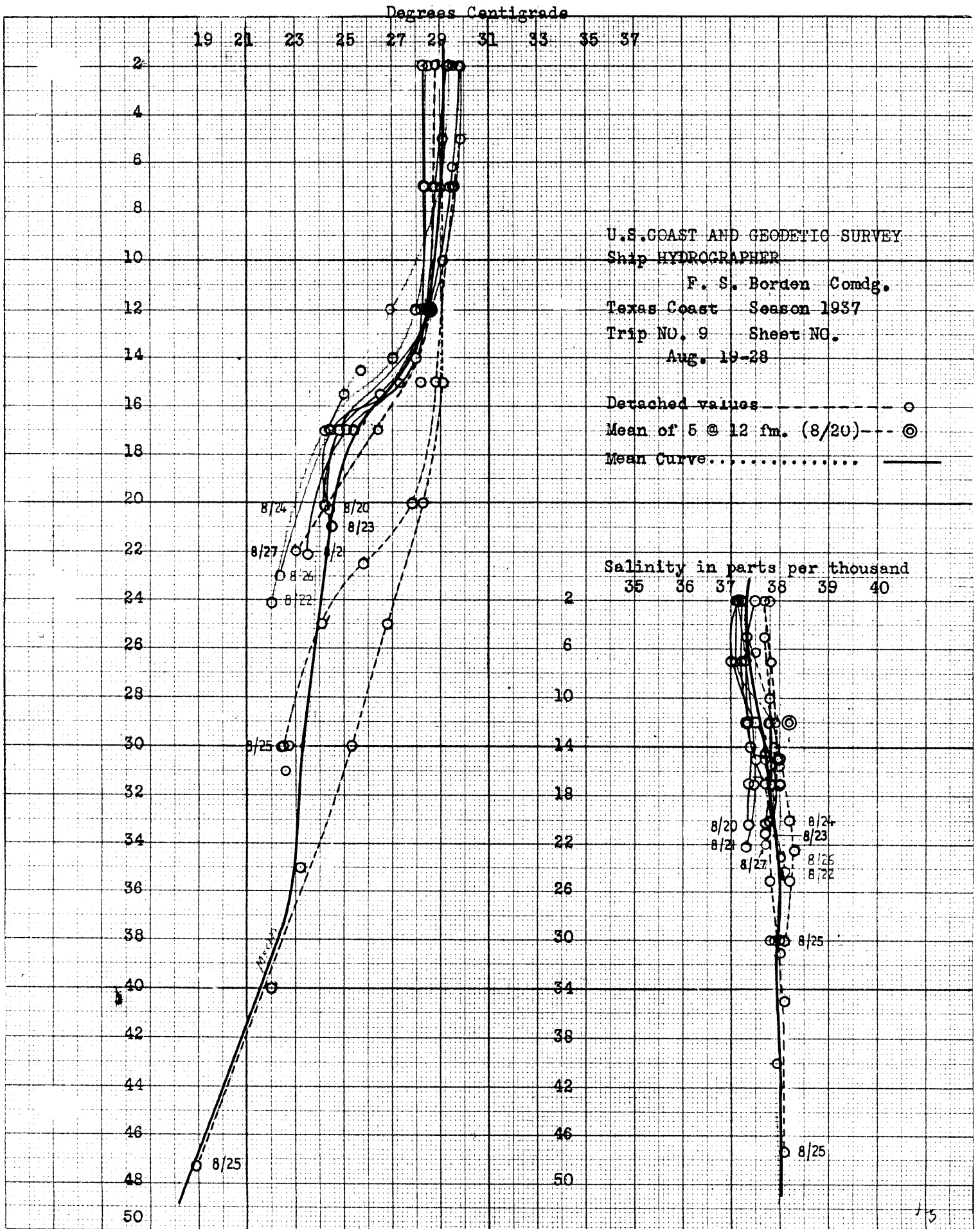
Degrees Centigrade



Salinity, parts per thousand
 36 37 38 39

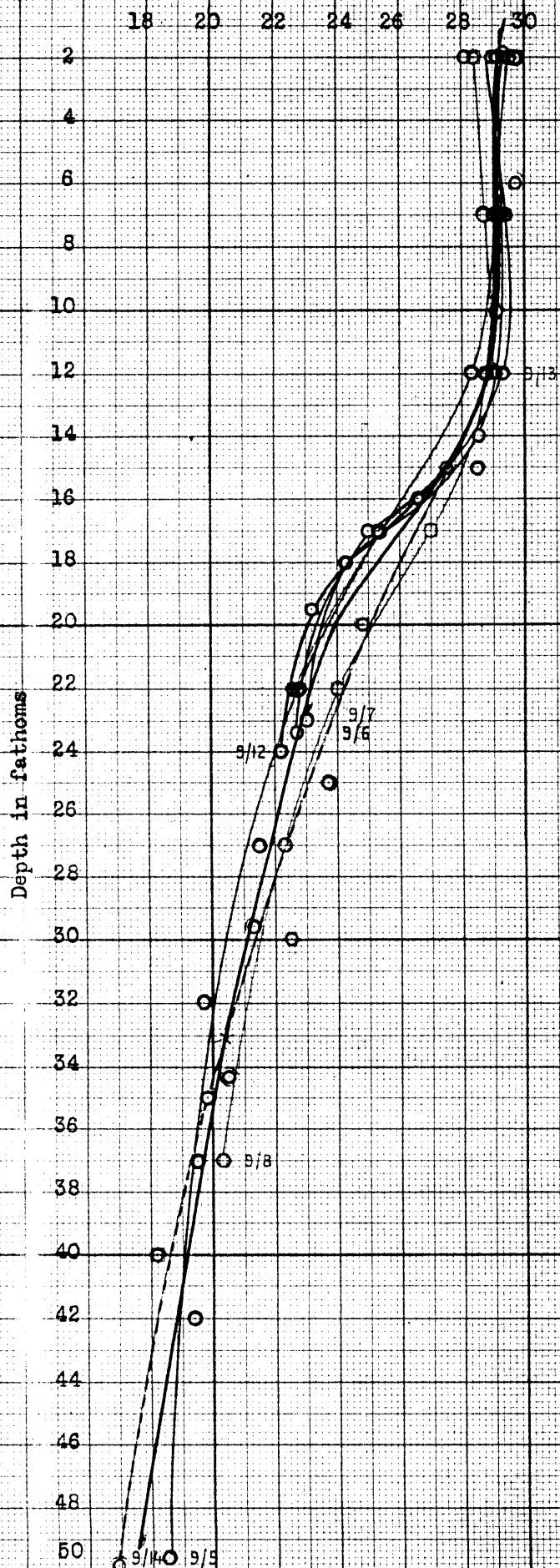


TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES



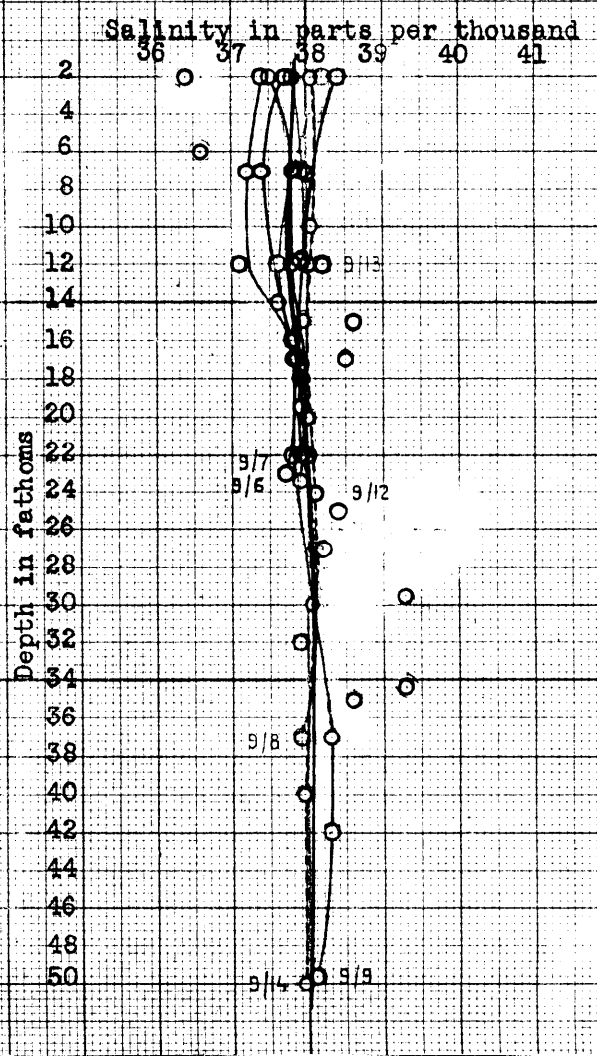
TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES

Degrees Centigrade



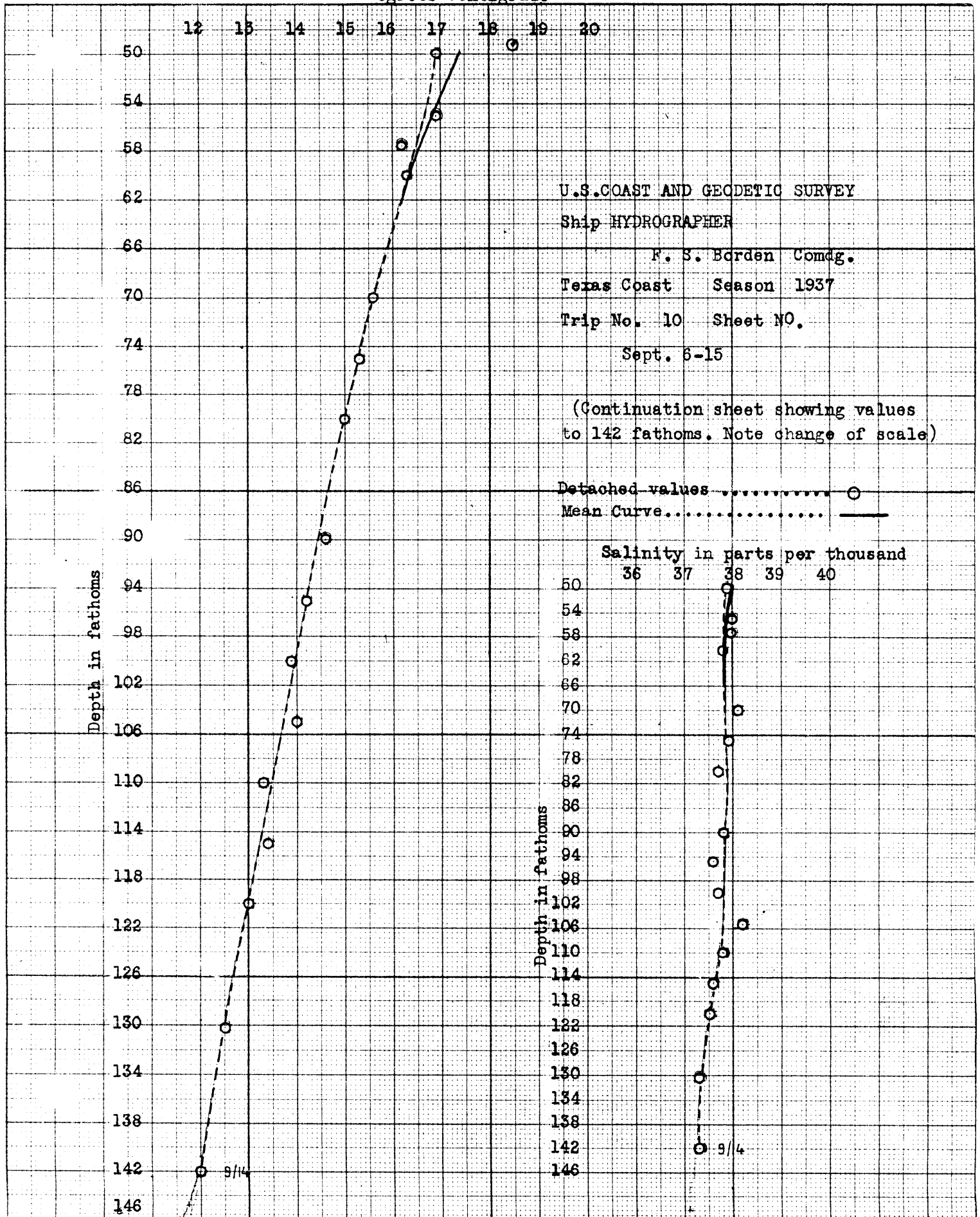
U.S. COAST AND GEODETIC SURVEY
 Ship HYDROGRAPHER
 F. S. Borden Comdg.
 Texas Coast Season 1937
 Trip NO. 10 Sheet NO.
 Sept. 6-15

Detached values..... ○
 Mean Curve..... —



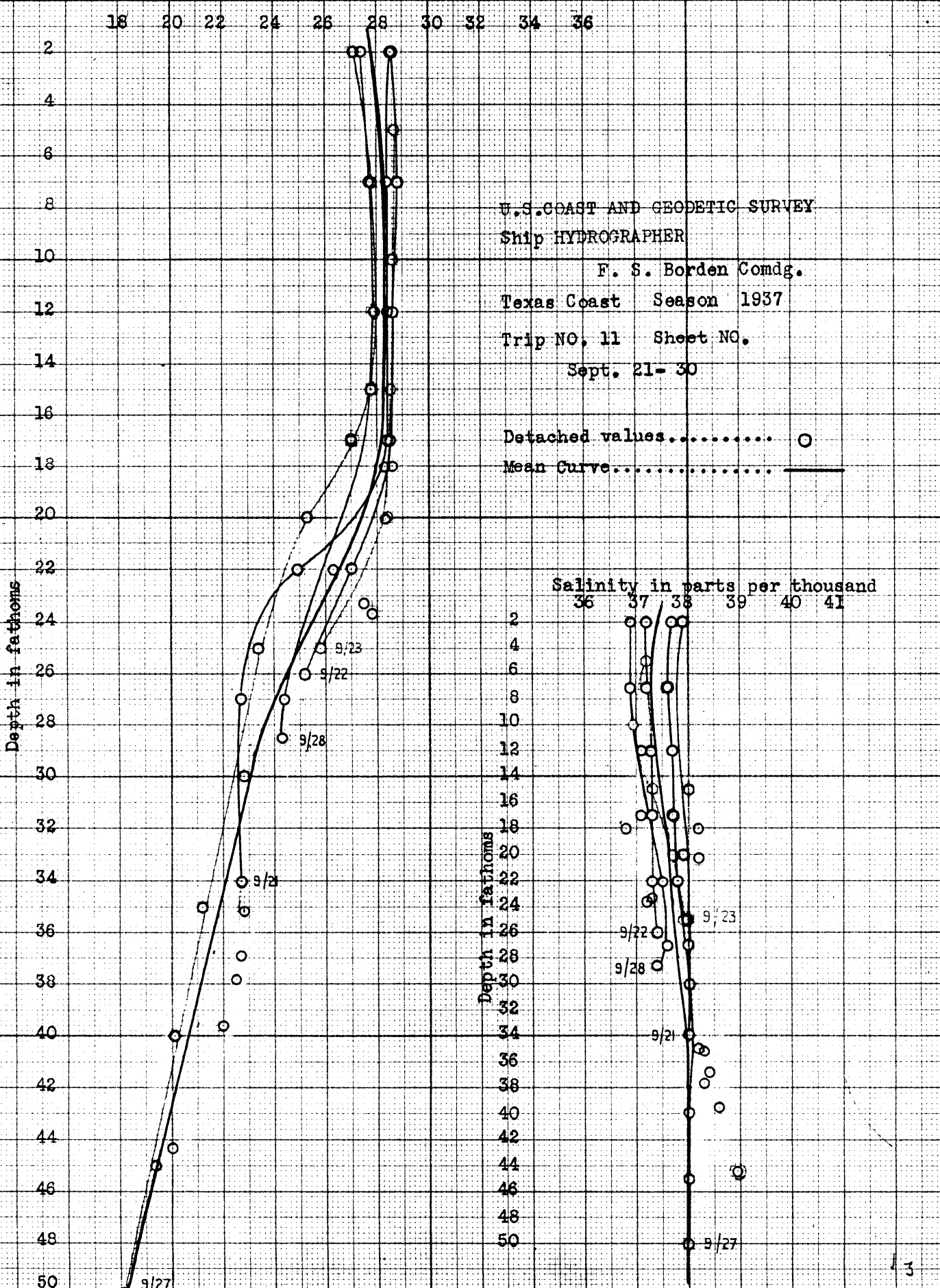
TRIP GRAPH OF WATER TEMPERATURES AND SALINITIES

Degrees Centigrade



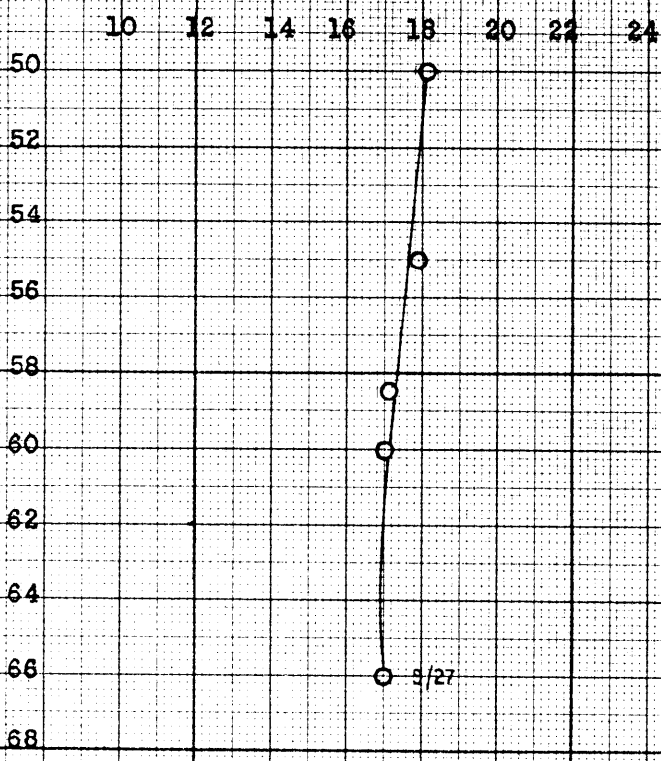
TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES

Degrees Centigrade



TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES

Degrees Centigrade



U.S. COAST AND GEODETIC SURVEY

Ship HYDROGRAPHER

F. S. Borden Comdg.

Texas Coast Season 1937

Trip NO. 11 Sheet NO.

Sept. 21-30

Detached values..... O

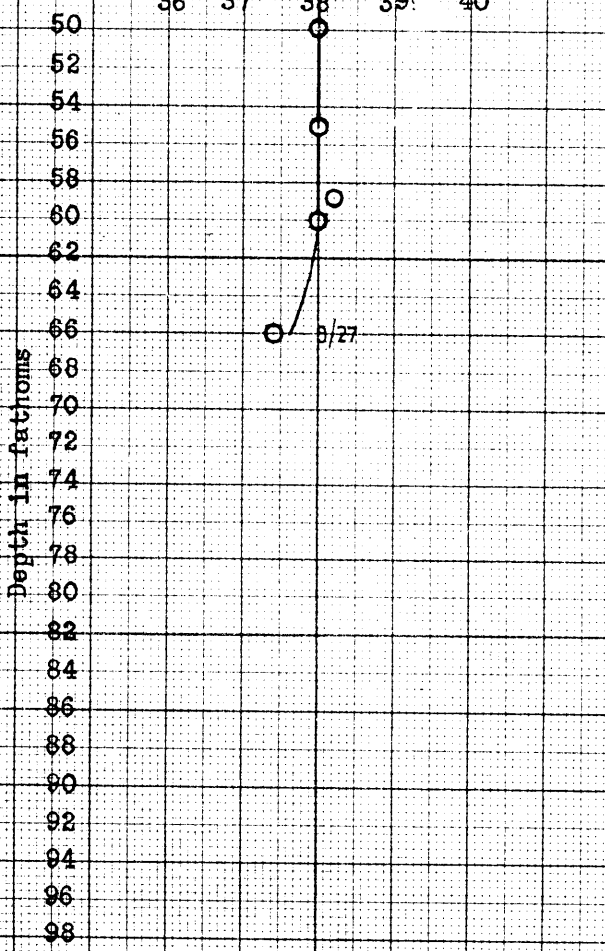
(Continuation sheet showing values to 66 fathoms)

Depth in fathoms

50
52
54
56
58
60
62
64
66
68
70
72
74
76
78
80
82
84
86
88
90
92
94
96

Salinity in parts per thousand

36 37 38 39 40

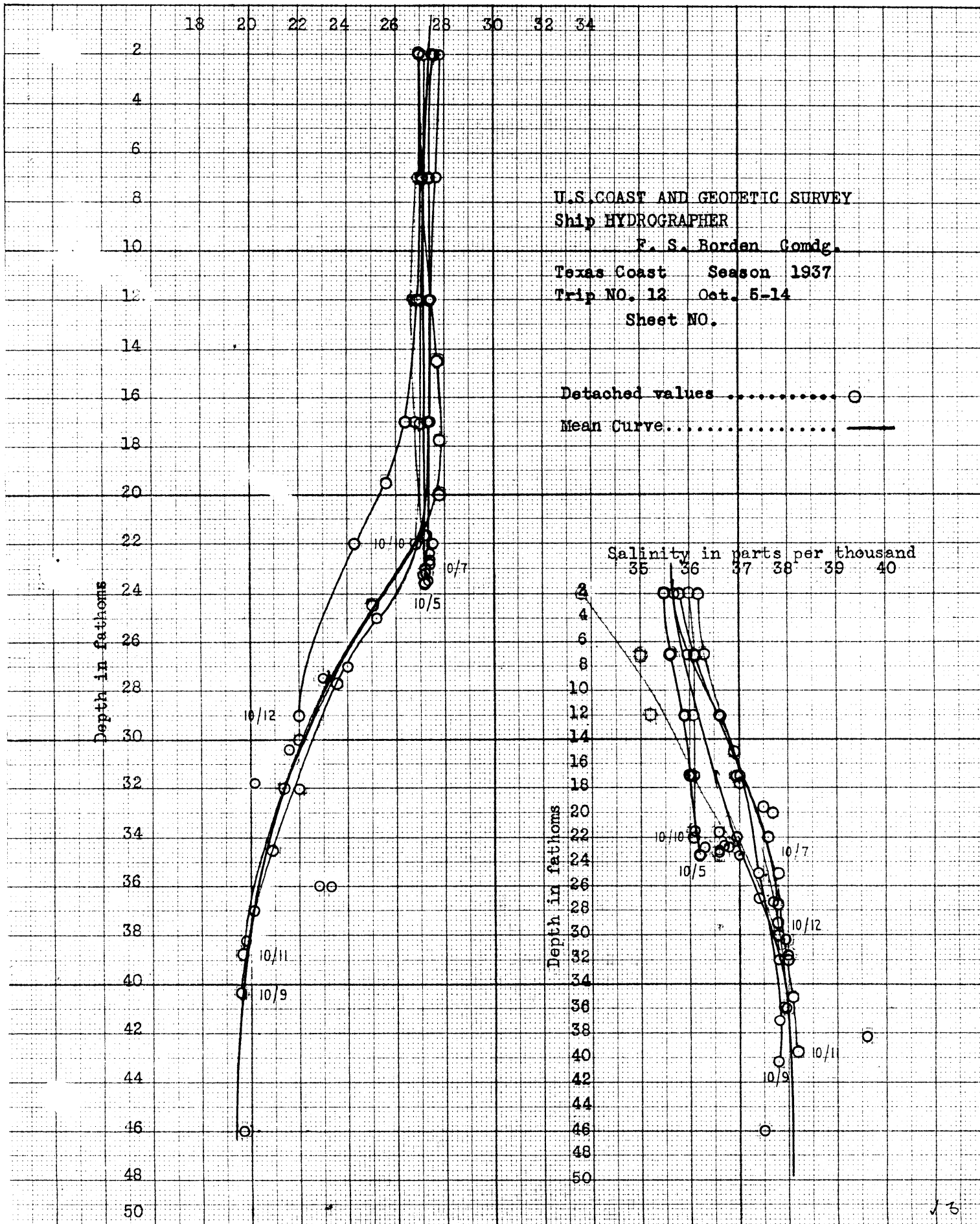


Depth in fathoms

50
52
54
56
58
60
62
64
66
68
70
72
74
76
78
80
82
84
86
88
90
92
94
96
98

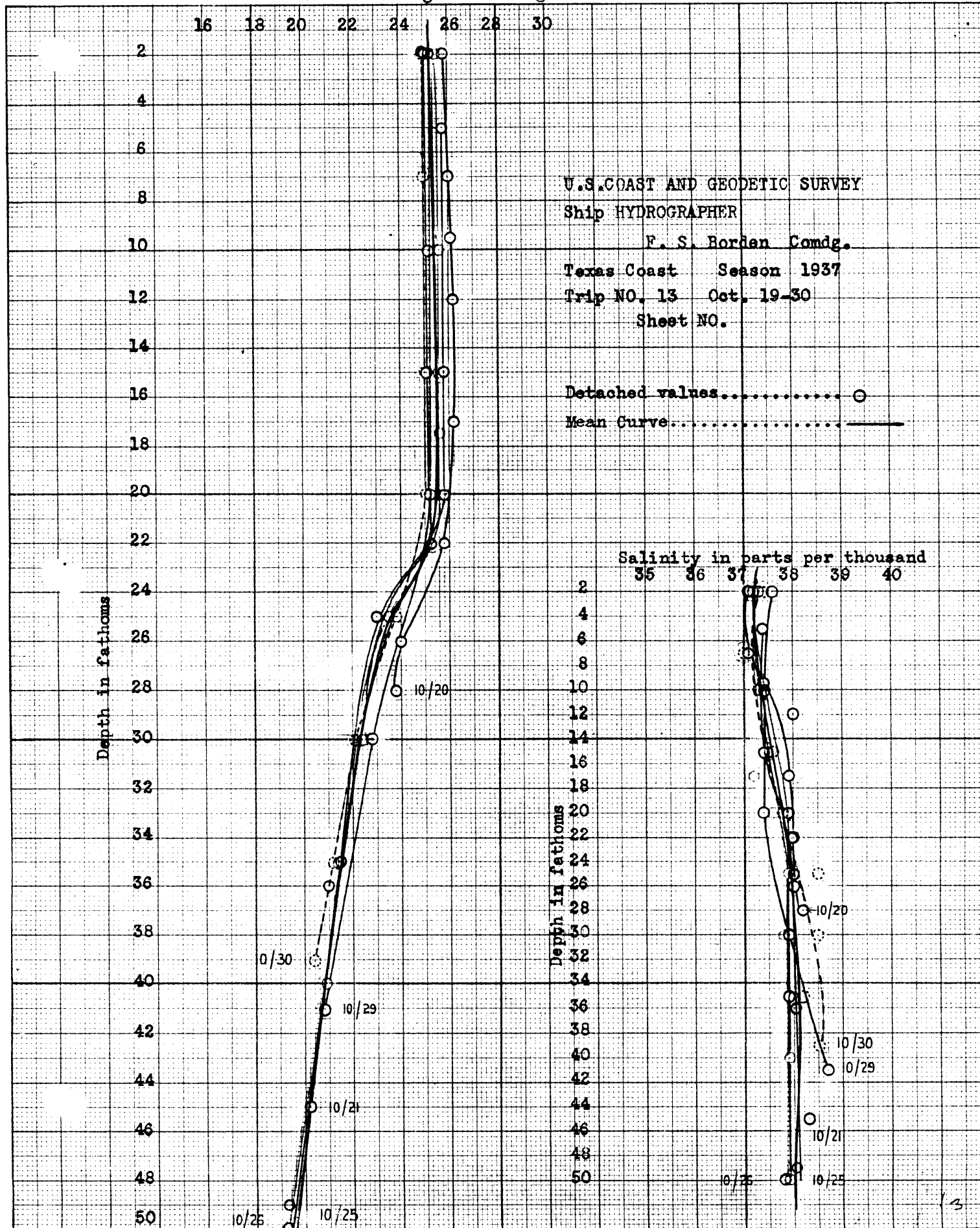
TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES

Degrees Centigrade



TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES

Degrees Centigrade



TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES

Degrees Centigrade

12 14 16 18 20 22

50
52
54
56
58
60
62
64
66
68
70
72
74
76
78
80
82
84
86
88
90
92
94
96
98
100

U.S. COAST AND GEODETIC SURVEY
Ship HYDROGRAPHER
F. S. Borden Comdg.
Texas Coast Season 1937
Trip NO. 13 Oct. 19-30
Sheet NO.

Detached values.....○

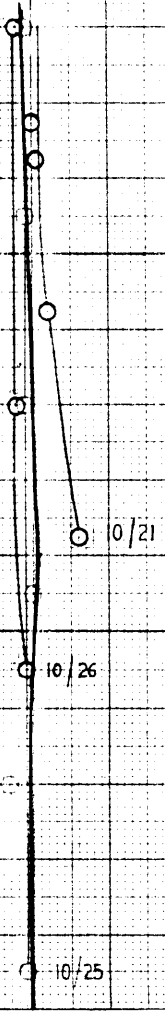
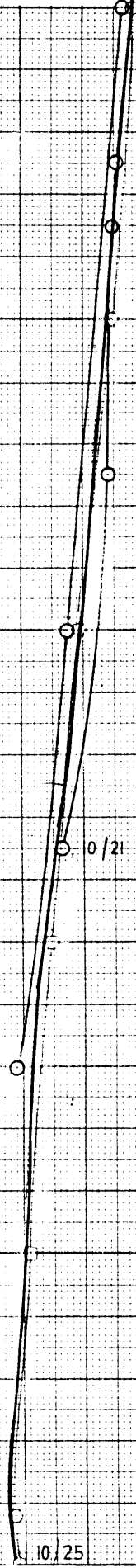
(Continuation sheet showing values to 100 fathoms)

Mean Curve.....—

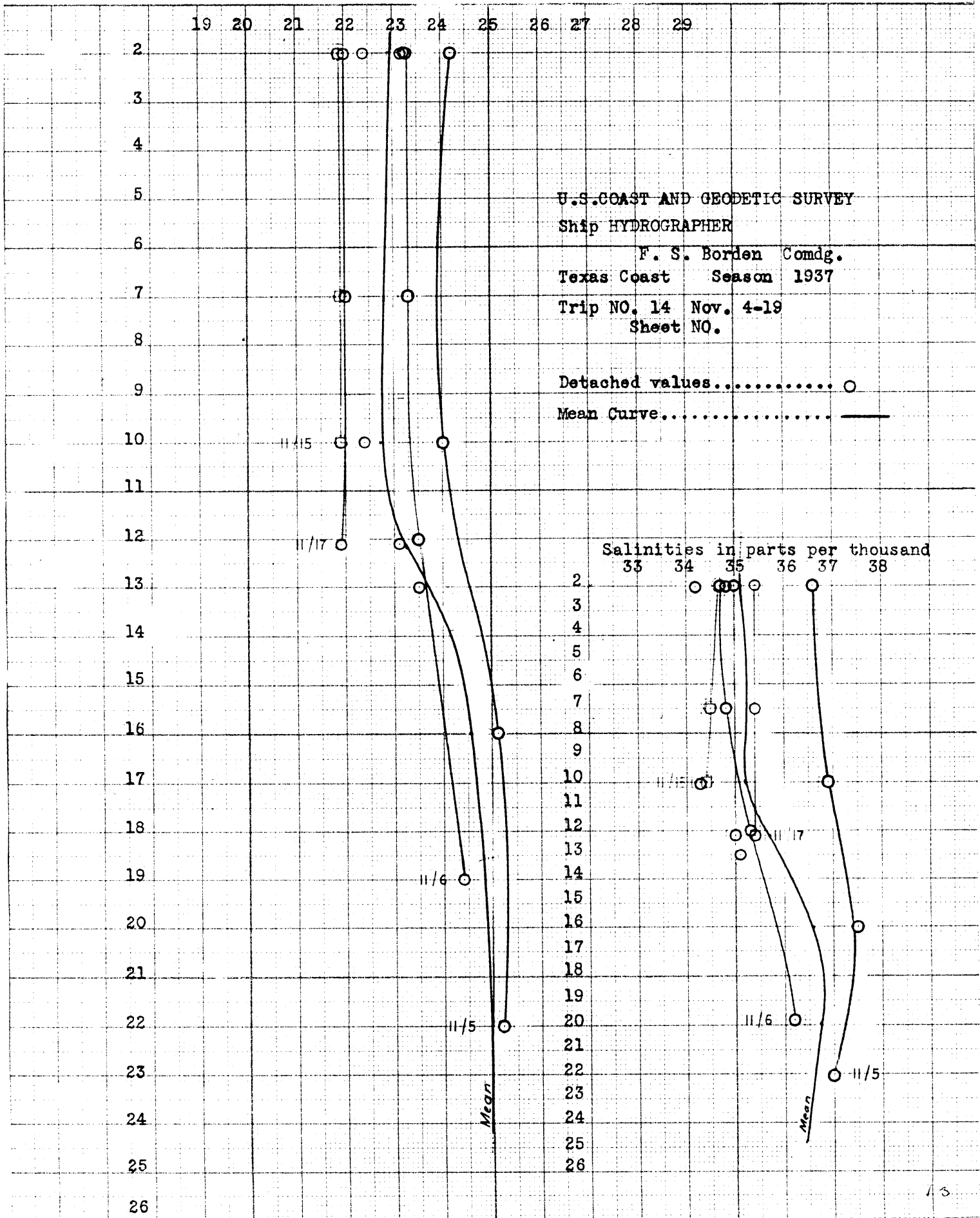
Salinity in parts per thousand

35 36 37 38 39 40

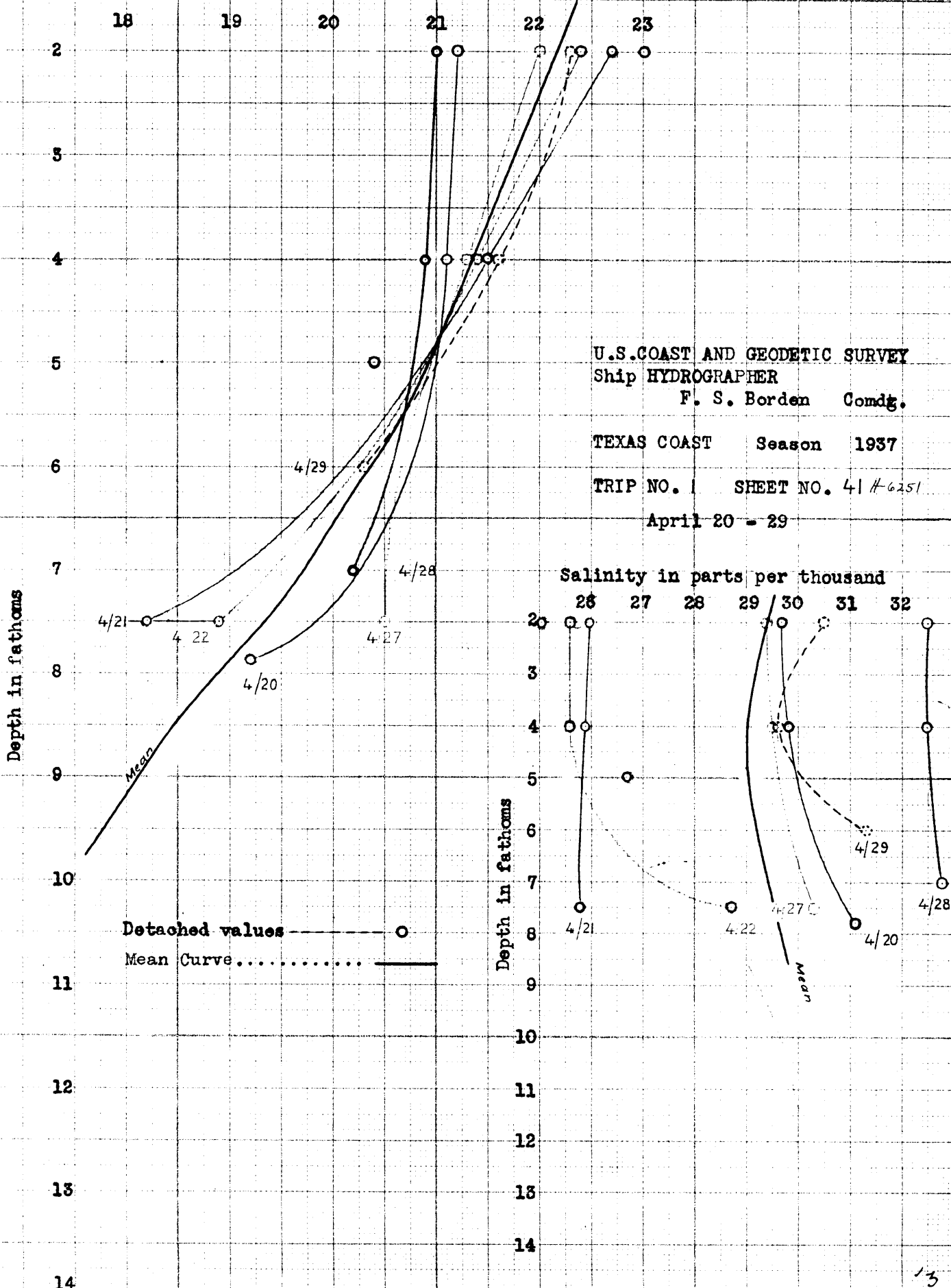
50
52
54
56
58
60
62
64
66
68
70
72
74
76
78
80
82
84
86
88
90
92
94
96
98
100



TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES
Degrees Centigrade



TRIP GRAPHS OF WATER TEMPERATURES AND SALINITIES
Degrees Centigrade



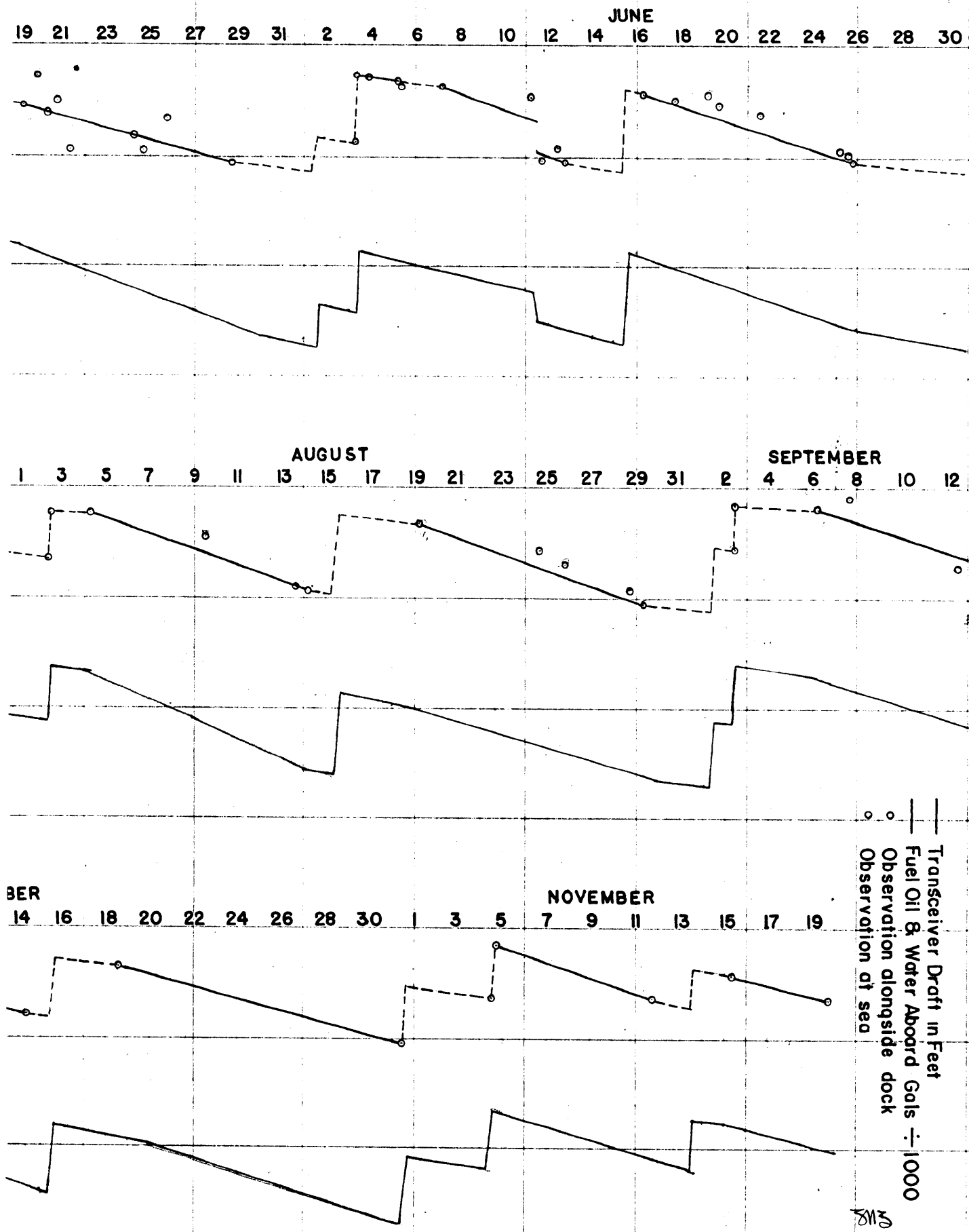
U.S. COAST AND GEODETIC SURVEY
Ship HYDROGRAPHER
F. S. Borden Comdg.
TEXAS COAST Season 1937
TRIP NO. 1 SHEET NO. 41 #6251
April 20 - 29

Detached values
Mean Curve

TRANSCIEIVER DRAFT CURVES 1937

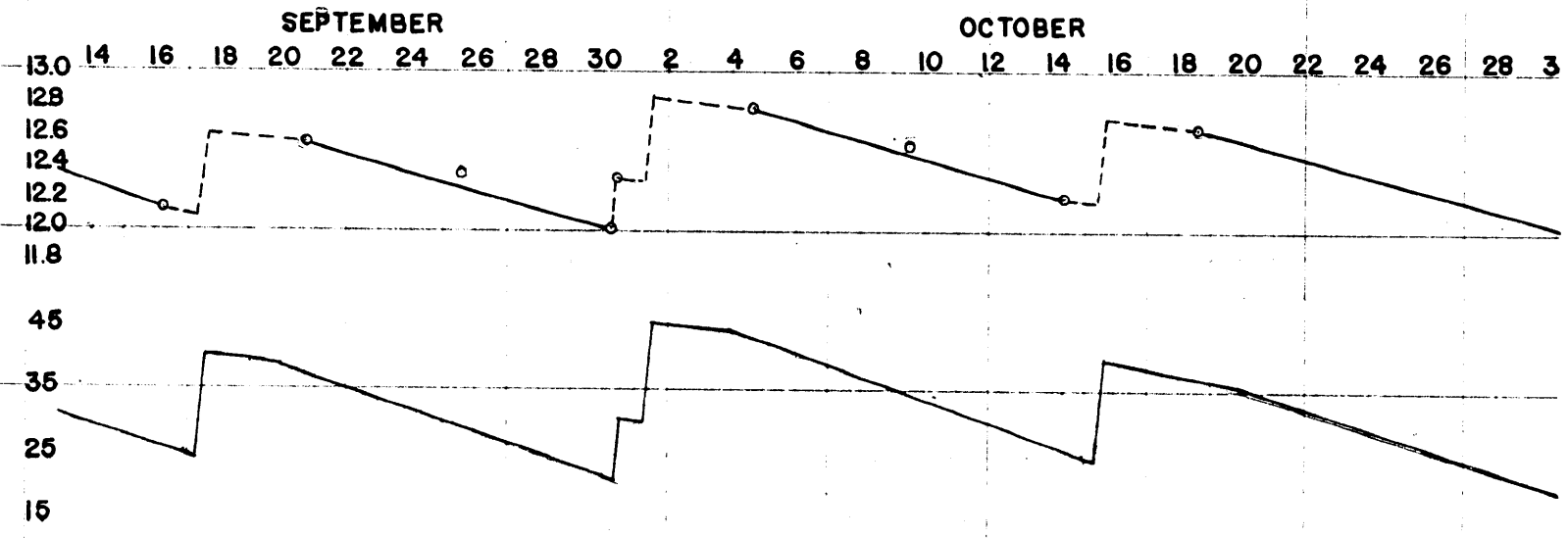
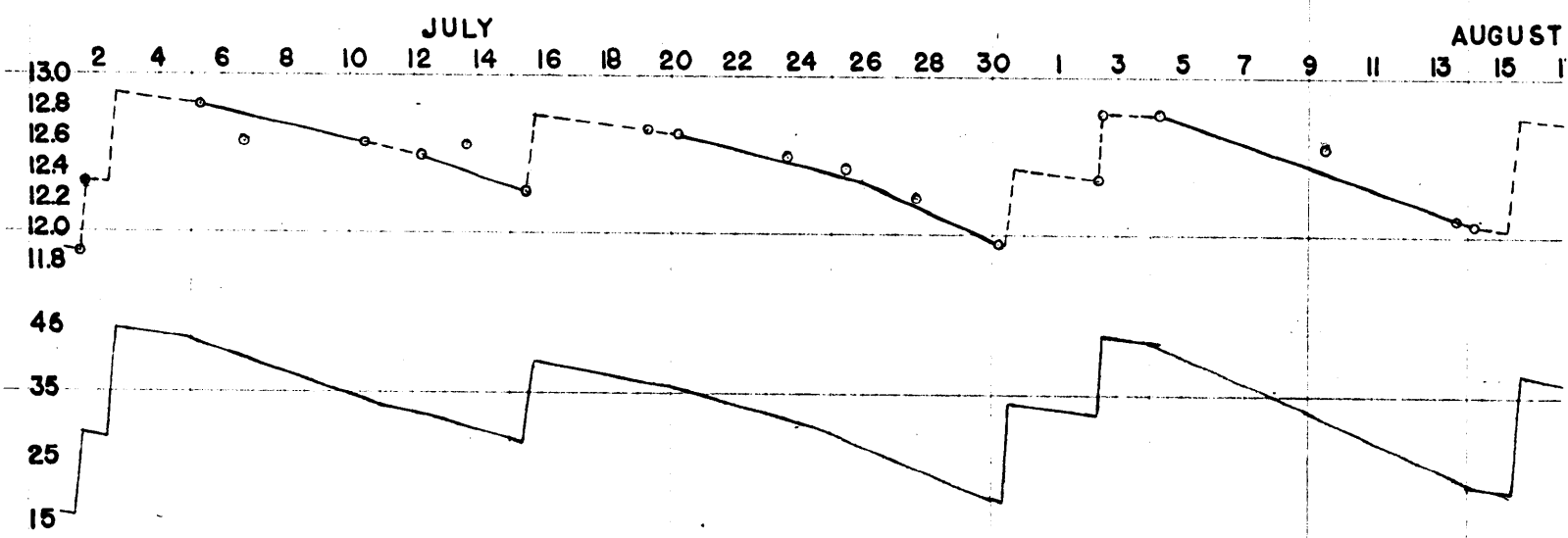
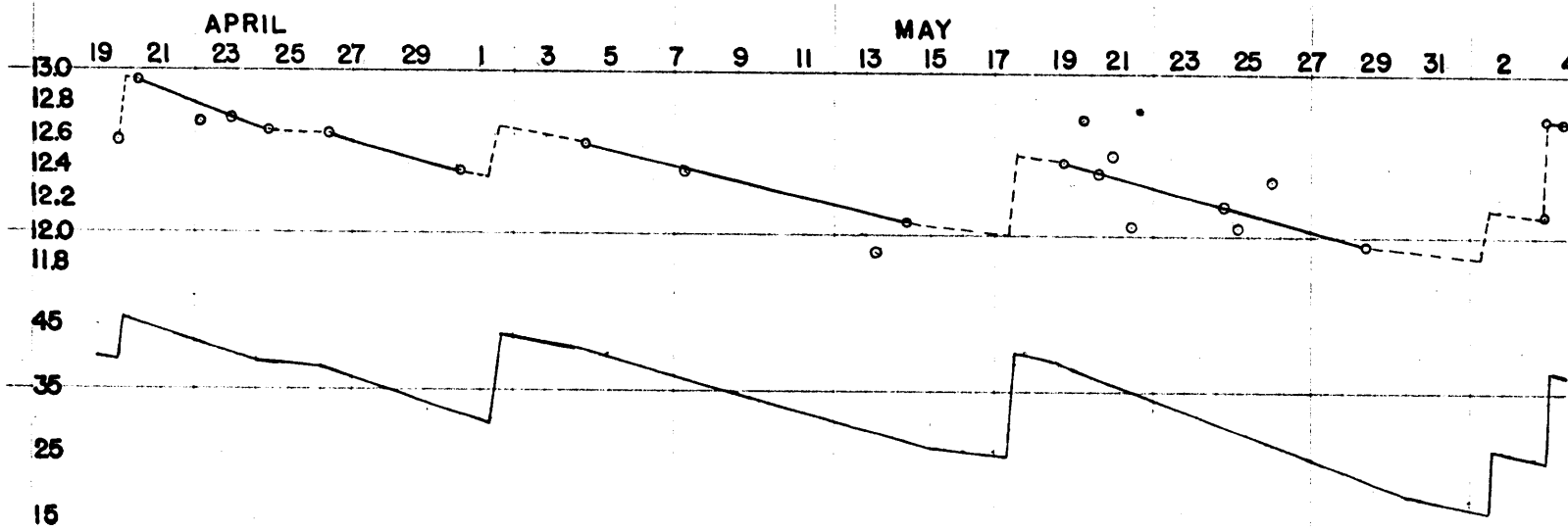
Ship HYDROGRAPHER

F. S. BORDEN Commdg.



— Transceiver Draft in Feet
 — Fuel Oil & Water Aboard Gals ÷ 1000
 ○ Observation alongside dock
 ○ Observation at sea

518



COMPUTATION OF FATHOMETER CORRECTIONS

DORSEY FATHOMETER # 1

Dial speed 1499.6 m./s.

H-6251, 6252, 6253
SHEETS 41 - 42 & 43

TRIP # 1 (From mean curve)

APRIL 20 - 29

Depth Ft.	Effective Depth	OC T	Mean T	S	Mean S	f	Corr. Ft.
12	0	22.2	-	29.0	-	-	-
18	6	21.8	22.0	29.0	29.0	+0.0120	+0.072
24	12	21.4	21.8	29.0	29.0	+0.0117	+0.140
30	18	20.9	21.6	29.0	29.0	+0.0112	+0.202
36	24	20.3	21.3	29.0	29.0	+0.0107	+0.256
42	30	19.7	21.0	29.0	29.0	+0.0101	+0.303
48	36	19.0	20.8	29.0	29.0	+0.0095	+0.342
54	42	(18.2)	20.4	29.0	29.0	+0.0090	+0.378
60	48	(17.5)	20.1	29.0	29.0	+0.0086	+0.413
66	54					+(0.0083)	+0.449

Comp JNJ
/ GLA

COMPUTATION OF FATHOMETER CORRECTION

DORSEY FATHOMETER # 1

Dial speed 1499.6 m./s.

H-6251, 6252, 6253
SHEETS 41 - 42 & 43

TRIP # 2 (From mean curve)

May 4 - 14

Depth Ft.	Effective Depth	°C T	Mean T	S	Mean S	f.	Corr. Ft.
12	0	23.6	-	32.8	-		
18	6	23.4	23.5	32.8	32.8	+.0173	+.104
24	12	23.2	23.4	32.8	32.8	+.0172	+.206
30	18	23.0	23.3	32.8	32.8	+.0171	+.304
36	24	22.7	23.2	32.8	32.8	+.0169	+.406
42	30	22.5	23.1	32.8	32.8	+.0167	+.502
48	36	22.2	22.9	32.8	32.8	+.0163	+.586
54	42	21.8	22.8	32.8	32.8	+.0161	+.676
60	48	21.0	22.6	32.8	32.8	+.0157	+.754
66	54	20.3	22.4	32.8	32.8	+.0153	+.838
72	60	19.4	22.2	32.8	32.8	+.0152	+.912

Comp JNJ
✓ GLA

COMPUTATION OF FATHOMETER CORRECTIONS

DORSEY FATHOMETER # 1

Dial speed 1499.6 m./s.

H. 6251, 6252, 6253
SHEETS 41 - 42 & 43

TRIP # 3 (From mean curve)

May 19 - 28

Depth Ft.	Effective Depth	$T^{\circ}C$	Mean T	S	Mean S	f.	Corr. Ft.
12	0	25.5	-	32.4	-		
18	6	25.3	25.4	32.4	32.4	+.0202	+.121
24	12	25.2	25.3	32.4	32.4	+.0201	+.241
30	18	25.0	25.2	32.4	32.4	+.0200	+.360
36	24	24.6	25.1	32.4	32.4	+.0198	+.478
42	30	24.2	24.9	32.4	32.4	+.0195	+.585
48	36	23.8	24.8	32.4	32.4	+.0193	+.694
54	42	23.5	24.7	32.4	32.4	+.0190	+.798
60	48	23.1	24.5	32.4	32.4	+.0188	+.903
66	54	22.6	24.3	32.4	32.4	+.0186	+1.000
72	60	22.2	24.1	32.4	32.4	+.0182	+1.092

Comp. JNJ
KBJ

COMPUTATION OF FATHOMETER CORRECTIONS

DORSEY FATHOMETER # 1

Dial speed 1499.6 m./s.

H-6251, 6252, 6253
SHEETS 41 - 42 & 43

TRIP # 4 (From mean curves)

JUNE 3 - 16

Depth Ft.	Effective Depth	OC T	Mean T	S	Mean S	f.	Corr. Ft.
12	0	27.5	-	32.0	-		
18	6	27.4	27.4	32.0	32.0	+.0231	+.139
24	12	27.2	27.4	32.0	32.0	+.0231	+.278
30	18	27.1	27.3	32.0	32.0	+.0230	+.414
36	24	27.0	27.2	32.0	32.0	+.0228	+.547
42	30	26.9	27.2	32.0	32.0	+.0228	+.684
48	36	26.7	27.1	32.0	32.0	+.0227	+.817
54	42	26.4	27.0	32.0	32.0	+.0225	+.945
60	48	26.2	26.9	32.0	32.0	+.0223	+1.07
66	54	26.0	26.8	32.0	32.0	+.0222	+1.20
72	60	25.7	26.7	32.0	32.0	+.0220	+1.32
78	66	25.2	26.6	32.0	32.0	+.0219	+1.45

Comp. JNJ
✓ KBJ

COMPUTATION OF FATHOMETER CORRECTIONS

DORSEY FATHOMETER # 1

Dial speed 1499.6 m./s.

H. 625, 6252, 6253
SHEETS 41 - 42 & 43

TRIP # 6 (From mean curves)

JULY 5 - 15

Depth Ft.	Effective Depth	°C T	Mean T	S	Mean S	f.	Corr. Ft.
12	0	29.0	-	34.6	-		
24	12	28.9	28.9	34.8	34.7	+0.0271	+0.325
36	24	28.8	28.9	34.9	34.8	+0.0272	+0.653
48	36	28.8	28.9	34.8	34.8	+0.0272	+0.979
60	48	28.4	28.8	34.8	34.8	+0.0271	+1.30
72	60	26.8	28.5	35.6	34.9	+0.0266	+1.60
74	72	25.0	27.9	36.5	35.1	+0.0259	+1.89
96	84	(24.5)	27.5	(36.5)	35.3	+0.0254	+2.13

Comp. JNJ
JTD

COMPUTATION OF FATHOMETER CORRECTIONS

DORSEY FATHOMETER # 1

Dial speed 1499.6 m./s.

H-6251, 6252, 6253
SHEETS 41 - 42 & 43

TRIP # 7 (From mean curve)

JULY 20 - 30

Depth Ft.	Effective Depth	°C T	Mean T	S	Mean S	f.	Corr Ft.
12	-	29.0	-	36.4			
24	12	28.9	29.0	36.4	36.4	+0.0286	+0.343
36	24	28.7	28.9	36.3	36.4	+0.0283	+0.679
48	36	28.4	28.8	36.3	36.3	+0.0282	+1.01
60	48	28.2	28.6	36.3	36.3	+0.0279	+1.34
72	60	28.1	28.6	36.4	36.3	+0.0280	+1.68
84	72	27.7	28.4	36.7	36.4	+0.0278	+2.00
96	84	25.9	28.1	37.0	36.5	+0.0272	+2.28
108	96	24.4	27.7	37.2	36.5	+0.0266	+2.55
120	108	23.5	27.3	37.5	36.7	+0.0261	+2.82
132	120	22.9	26.9	37.9	36.8	+0.0256	+3.07
144	132	22.8	26.5	38.1	36.9	+0.0250	+3.30
156	144	22.3	26.2	28.0	37.0	+0.0247	+3.56

Comp. JNJ
✓ JTJ

AUGUST 19 and SEPTEMBER 6

12	0	29.6	-	37.0	-		0
24	12	29.6	29.6	37.0	37.0	+0.0298	+0.36
36	24	29.6	29.6	37.0	37.0	+0.0298	+0.72
48	36	29.5	29.6	37.3	37.1	+0.0299	+1.08
60	48	29.1	29.5	37.7	37.2	+0.0296	+1.42

✓ 303

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

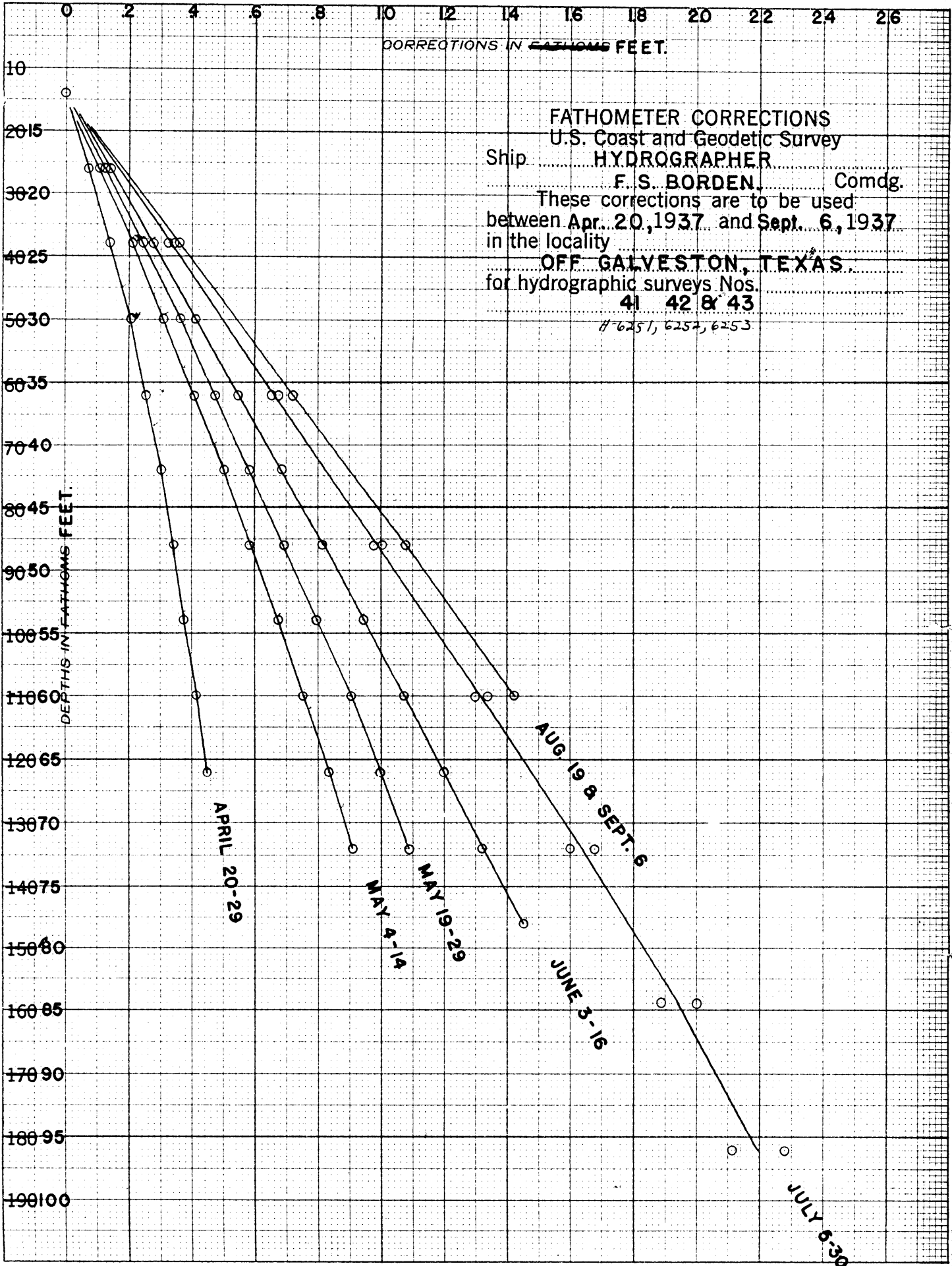
CORRECTIONS IN FATHOMS FEET.

FATHOMETER CORRECTIONS

U.S. Coast and Geodetic Survey
 Ship HYDROGRAPHER
 F. S. BORDEN, Comdg.
 These corrections are to be used
 between Apr. 20, 1937, and Sept. 6, 1937
 in the locality
 OFF GALVESTON, TEXAS.
 for hydrographic surveys Nos.
 41 42 & 43
 #6251, 6252, 6253

(For deep water add to these figures)

DEPTH IN FATHOMS FEET.



EUGENE DIEZGEN (C) 1475 A

1813

T&S Corr. in Feet	Apr. 20-30	May 4-14	May 19-29	June 3-16	July 5-30	Aug. 19 & Sept. 6
1	27 1/2 ft.	22 ft.	20 1/2 ft.	19 1/2 ft.		
.2	38 1/2 "	28 "	25 1/2 "	24 "		
.3	53 1/2 "	34 "	30 1/2 "	28 "	25 1/2 "	
.4	(70) "	40 "	36 "	32 1/2 "	28 1/2 "	27 1/2 "
.5	(84) "	47 "	41 1/2 "	37 "	32 1/2 "	31 "
.6		54 "	47 "	41 1/2 "	36 1/2 "	34 1/2 "
.7		61 1/2 "	53 "	46 "	39 1/2 "	37 1/2 "
.8		69 "	58 1/2 "	51 "	43 1/2 "	41 "
.9		(76) "	64 1/2 "	55 1/2 "	47 "	44 1/2 "
1.0			71 "	60 "	51 "	47 1/2 "
.1				65 "	55 "	51 "
.2				69 "	58 "	54 1/2 "
.3				74 "	62 "	58 "
.4				79 "	66 "	61 1/2 "
.5					69 "	(65) "
.6					74 "	
.7					78 "	
.8					82 "	
.9					86 "	
2.0					90 "	
.1					94 "	
.2					(98) "	

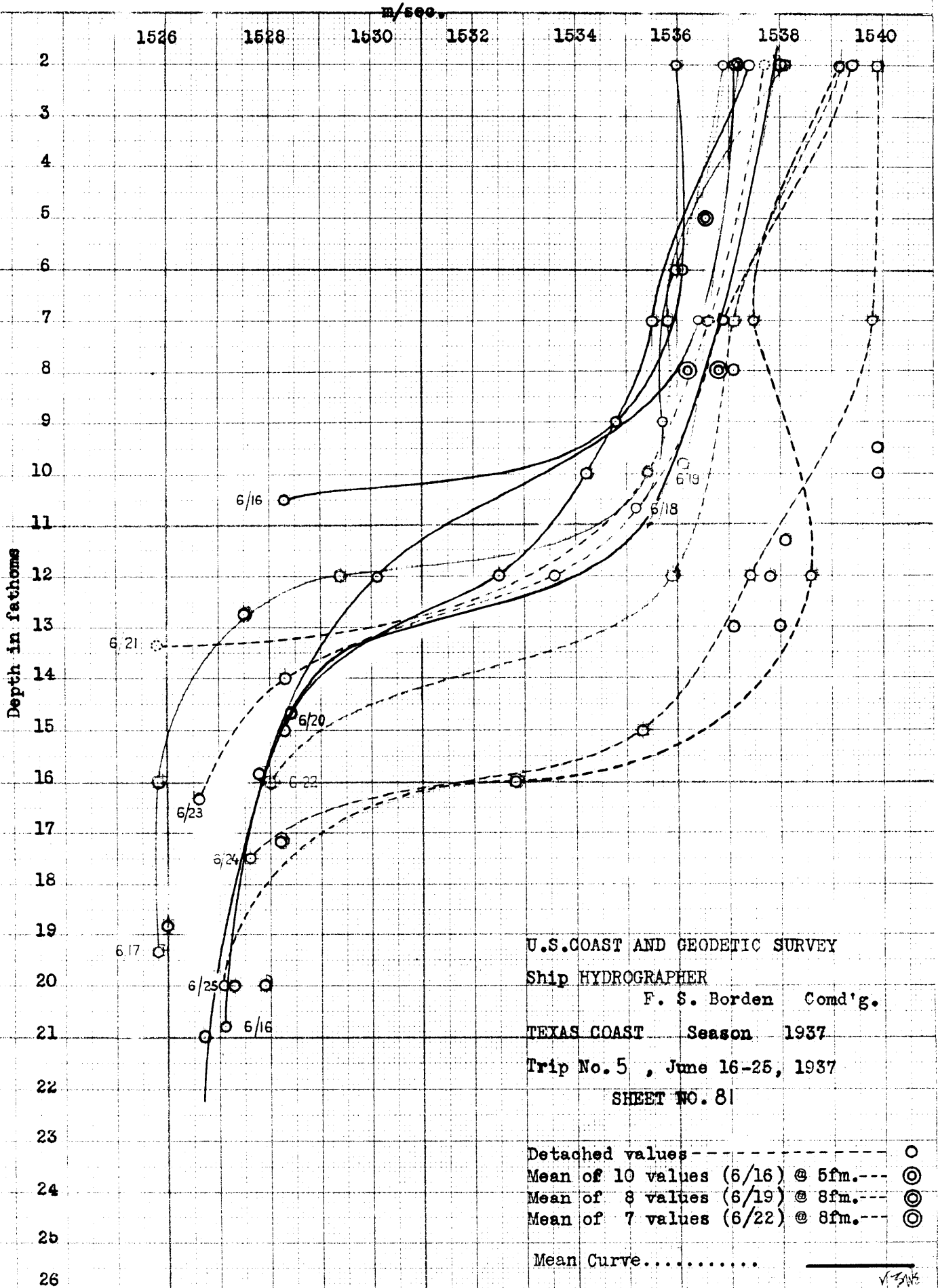
TABLE OF
FATHOMETER CORRECTIONS
H-6251, 6252, 6253
Sheets Nos. 41, 42, & 43
1937

SHEET 41 H 6251							SHEET 42 # 6252							SHEET 43 # 6253						
Date	Day	I	D	S	I/D/S	Feet	Date	Day	I	D	S	I/D/S	Feet	Date	Day	I	D	S	I/D/S	Feet
April 11	20	A	-1.0	0.9	0.8	0.7	May 11	A	-1.0	0.2	0.8	0.0	July 5	B	-1.0	0.8	0.8	0.6		
April 21	B	"	0.9	"	0.7	May 12	B	"	0.1	"	-0.1	July 6	C	"	0.7	"	0.5			
April 22	C	"	0.8	"	0.6	May 13	C	"	0.1	"	-0.1	July 7	D	"	0.7	"	0.5			
April 23	D	"	0.7	"	0.5	May 19	D	"	0.4	"	0.2	July 8	E	"	0.6	"	0.4			
April 26	E	"	0.6	"	0.4	May 20	E	"	0.4	"	0.2	July 9	F	"	0.6	"	0.4			
April 27	F	"	0.6	"	0.4	May 21	F	"	0.3	"	0.1	July 12	G	"	0.4	"	0.2			
April 28	G	"	0.5	"	0.3	May 22	G	"	0.3	"	0.1	July 13	H	"	0.4	"	0.2			
April 29	H	"	0.5	"	0.3	May 23	H	"	0.2	"	0.0	July 14	J	"	0.3	"	0.1			
May 4	J	"	0.5	"	0.3	May 24	J	"	0.1	"	-0.1	July 15	K	"	0.3	"	0.1			
May 5	K	"	0.5	"	0.3	May 25	K	"	0.1	"	-0.1	July 20	L	"	0.6	"	0.4			
May 6	L	"	0.4	"	0.2	May 26	L	"	0.0	"	-0.2	July 21	M	"	0.6	"	0.4			
May 7	M	"	0.4	"	0.2	May 27	M	"	0.0	"	-0.2	July 22	N	"	0.5	"	0.3			
May 8	N	"	0.3	"	0.1	May 28	N	"	0.0	"	-0.2	July 23	P	"	0.5	"	0.3			
May 9	P	"	0.3	"	0.1	June 3	P	"	0.7	"	0.5	July 24	Q	"	0.4	"	0.2			
May 10	Q	"	0.2	"	0.0	June 7	Q	"	0.6	"	0.4	July 25	R	"	0.4	"	0.2			
May 11	R	"	0.2	"	0.0	June 8	R	"	0.6	"	0.4	July 26	S	"	0.3	"	0.1			
May 12	S	"	0.1	"	-0.1	June 9	S	"	0.5	"	0.3									
May 21	T	"	0.4	"	0.3	June 10	T	"	0.4	"	0.2									
May 28	U	"	-0.1	"	-0.3	June 11	U	"	*	"	*									
Aug. 19	V	"	0.6	"	0.4	June 12	V	"	0.0	"	-0.2									
Sept. 6	W	"	0.8	"	0.6	June 16	W	"	0.5	"	0.3									

*June 11
I/D/S 0.2' to 10:00
" 0.1' to 10:30
" 0.0 to 11:00
" -0.1' rest of day
9000 gals. of water pumped
overboard during period of
change

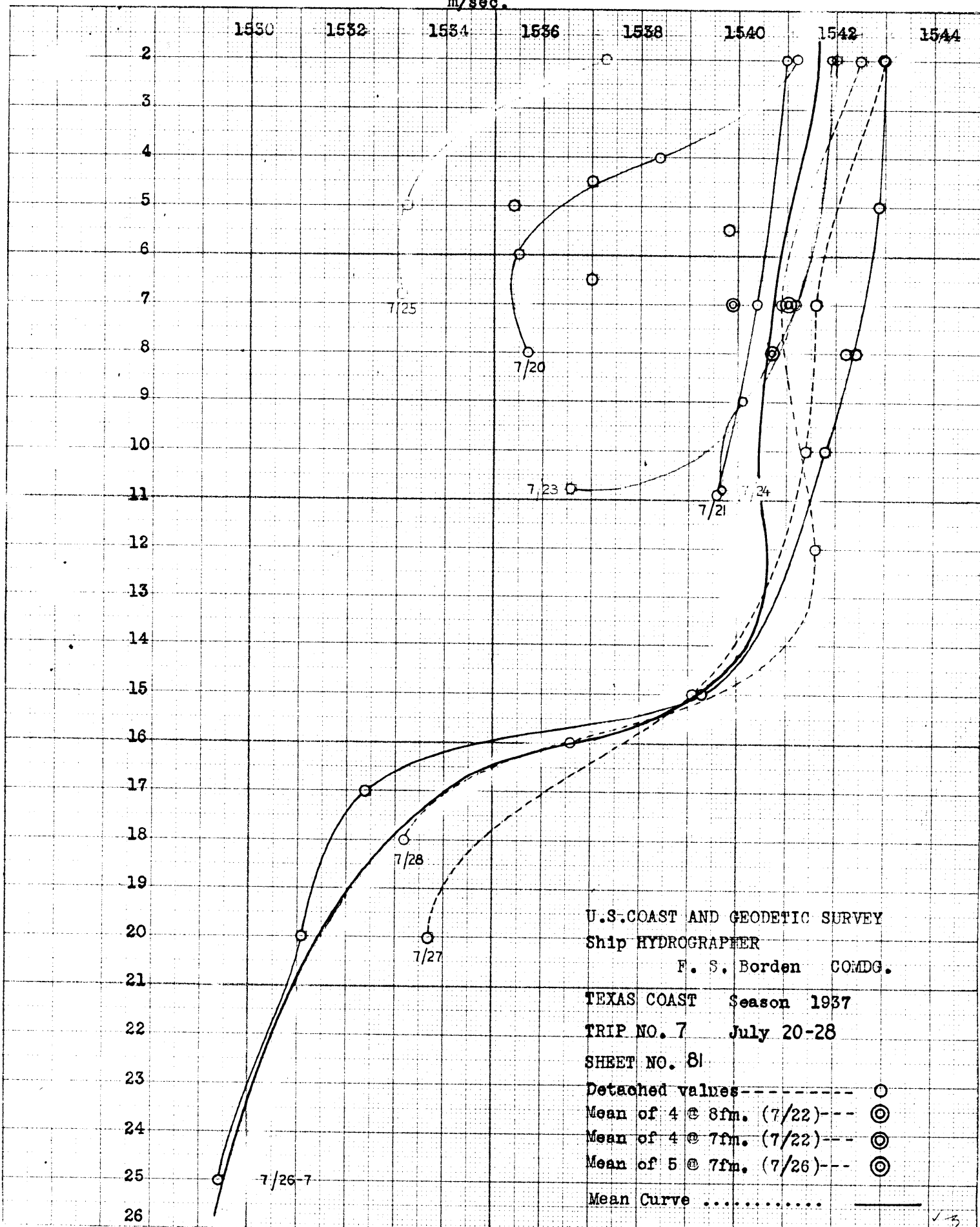
Values for S
0.8' (full speed) 120 rpms
0.6' @ 100 rpms
0.4' @ 80 rpms

TRIP VELOCITY GRAPH



TRIP VELOCITY GRAPH

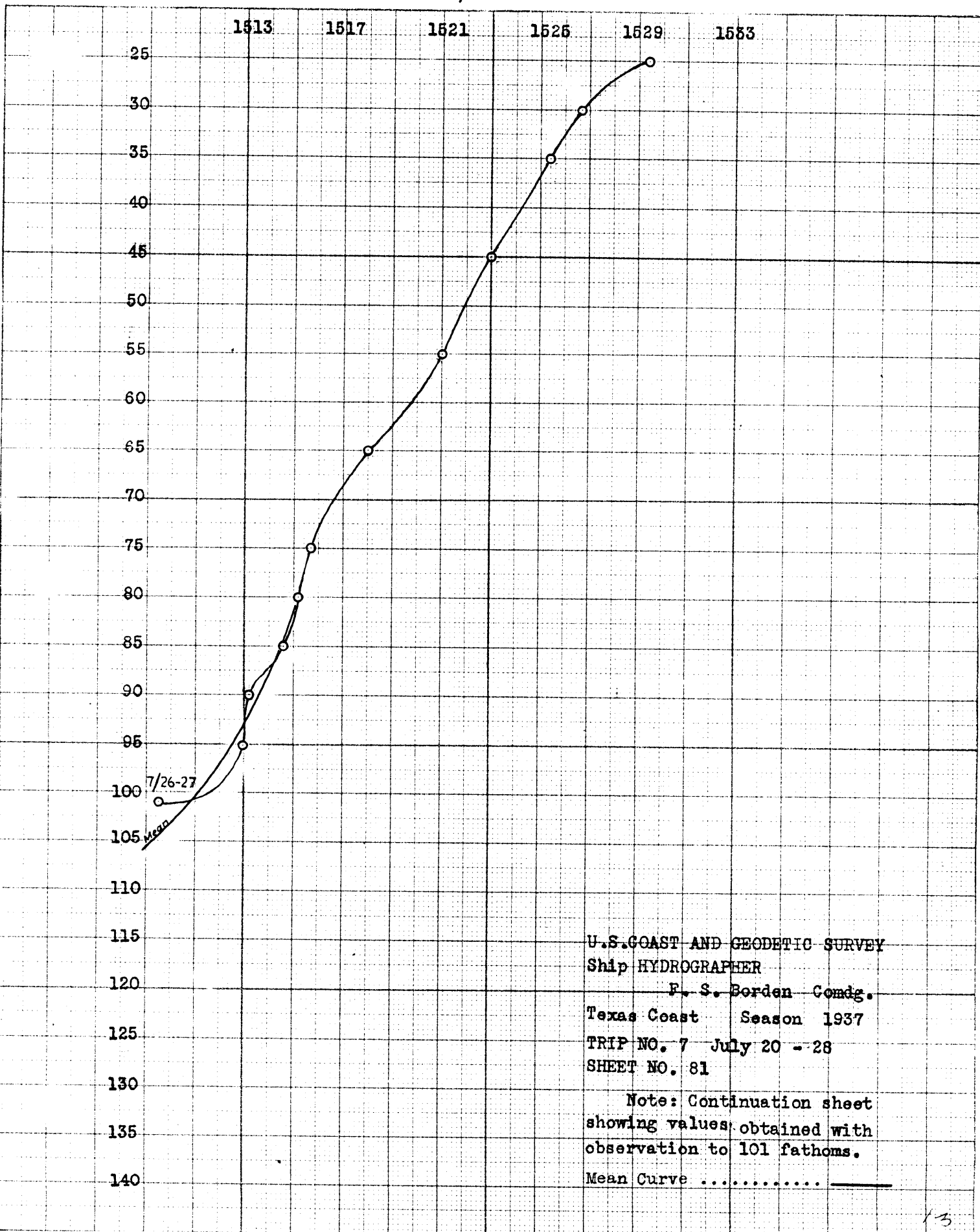
m/sec.



U.S. COAST AND GEODETIC SURVEY
 Ship HYDROGRAPHER
 F. S. Borden COMDG.
 TEXAS COAST Season 1937
 TRIP NO. 7 July 20-28
 SHEET NO. 81
 Detached values ----- ○
 Mean of 4 @ 8fm. (7/22) --- ⊙
 Mean of 4 @ 7fm. (7/22) --- ⊙
 Mean of 5 @ 7fm. (7/26) --- ⊙
 Mean Curve ———

TRIP VELOCITY GRAPH

m/sec



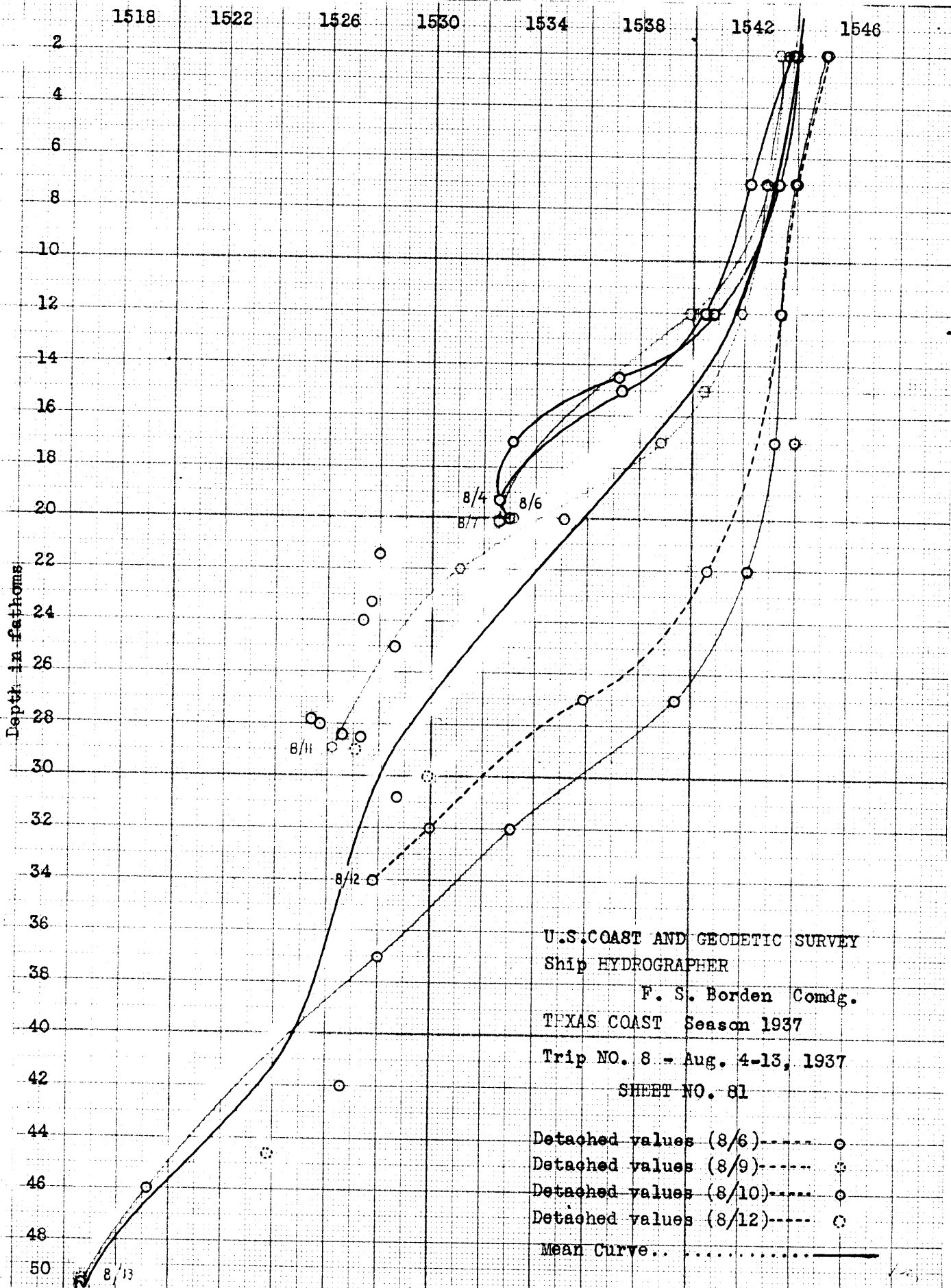
U.S. COAST AND GEODETIC SURVEY
 Ship HYDROGRAPHER
 F. S. Borden Comdg.
 Texas Coast Season 1937
 TRIP NO. 7 July 20 - 28
 SHEET NO. 81

Note: Continuation sheet
 showing values obtained with
 observation to 101 fathoms.

Mean Curve

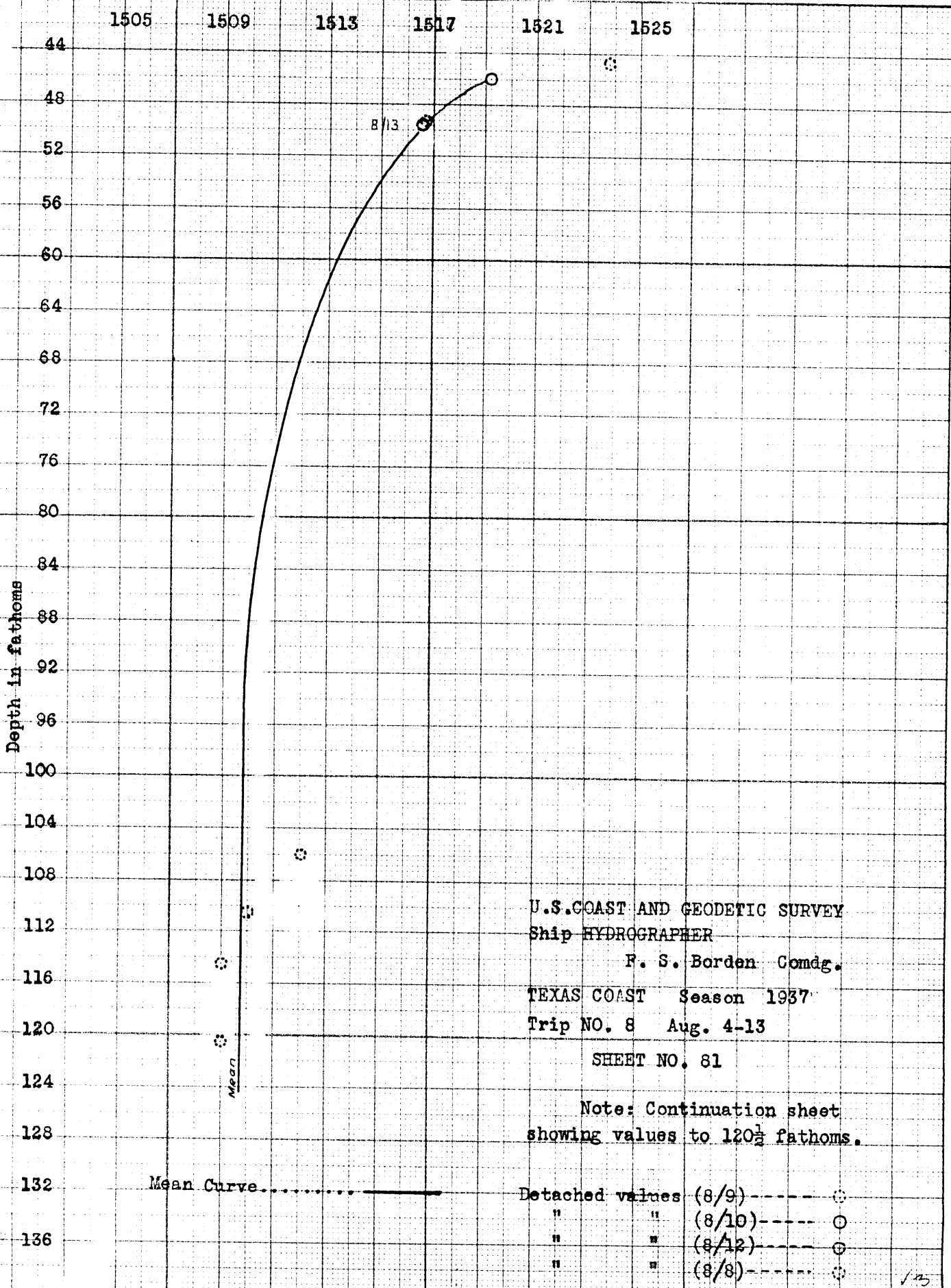
TRIP VELOCITY GRAPH

m/sec.



TRIP VELOCITY GRAPH

m/sec.



U.S. COAST AND GEODETIC SURVEY
Ship HYDROGRAPHER

F. S. Borden Comdg.

TEXAS COAST Season 1937

Trip NO. 8 Aug. 4-13

SHEET NO. 81

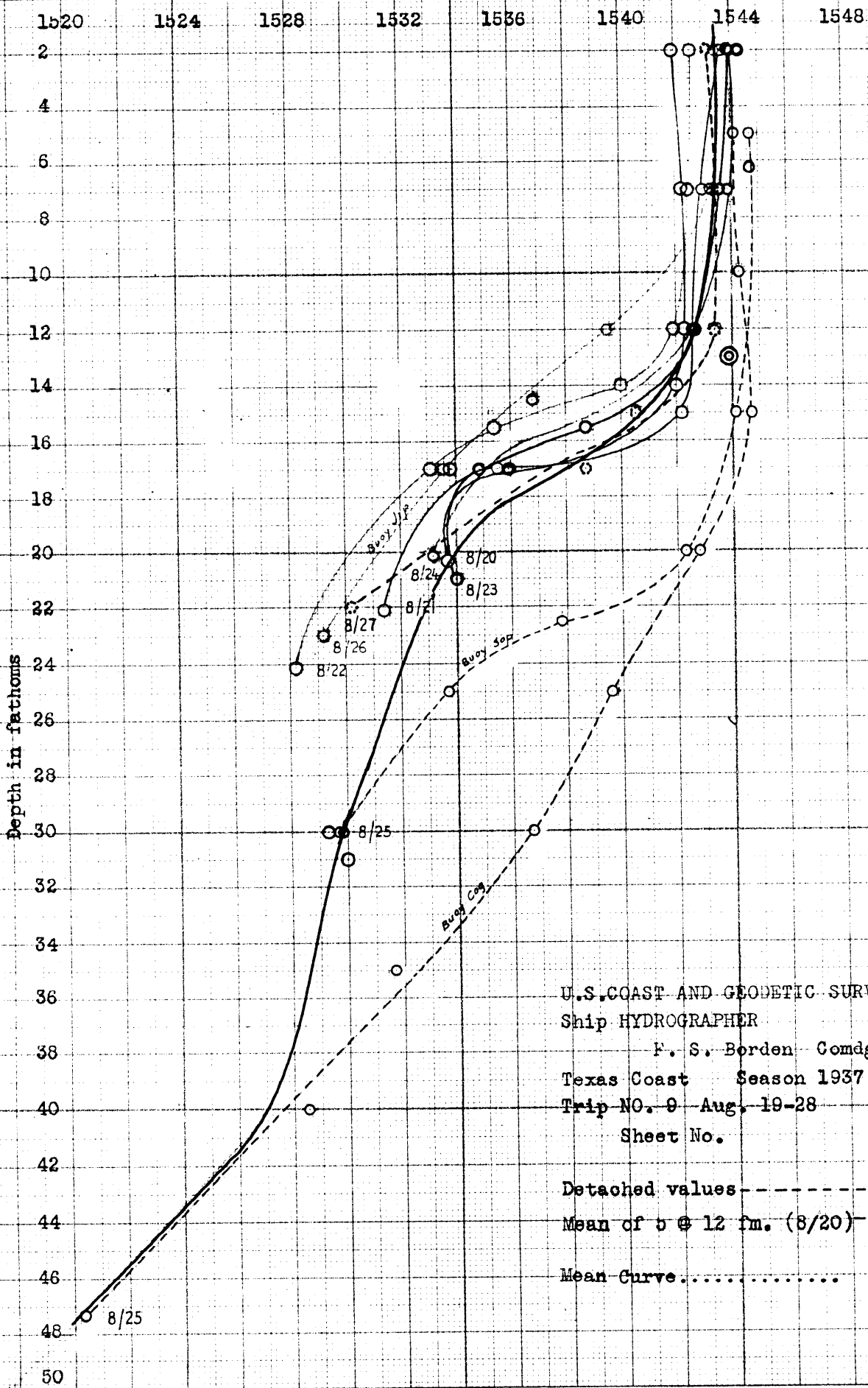
Note: Continuation sheet
showing values to 120½ fathoms.

Mean Curve.....

Detached values (8/9)-----○
" " (8/10)-----○
" " (8/12)-----○
" " (8/8)-----○

TRIP VELOCITY GRAPH

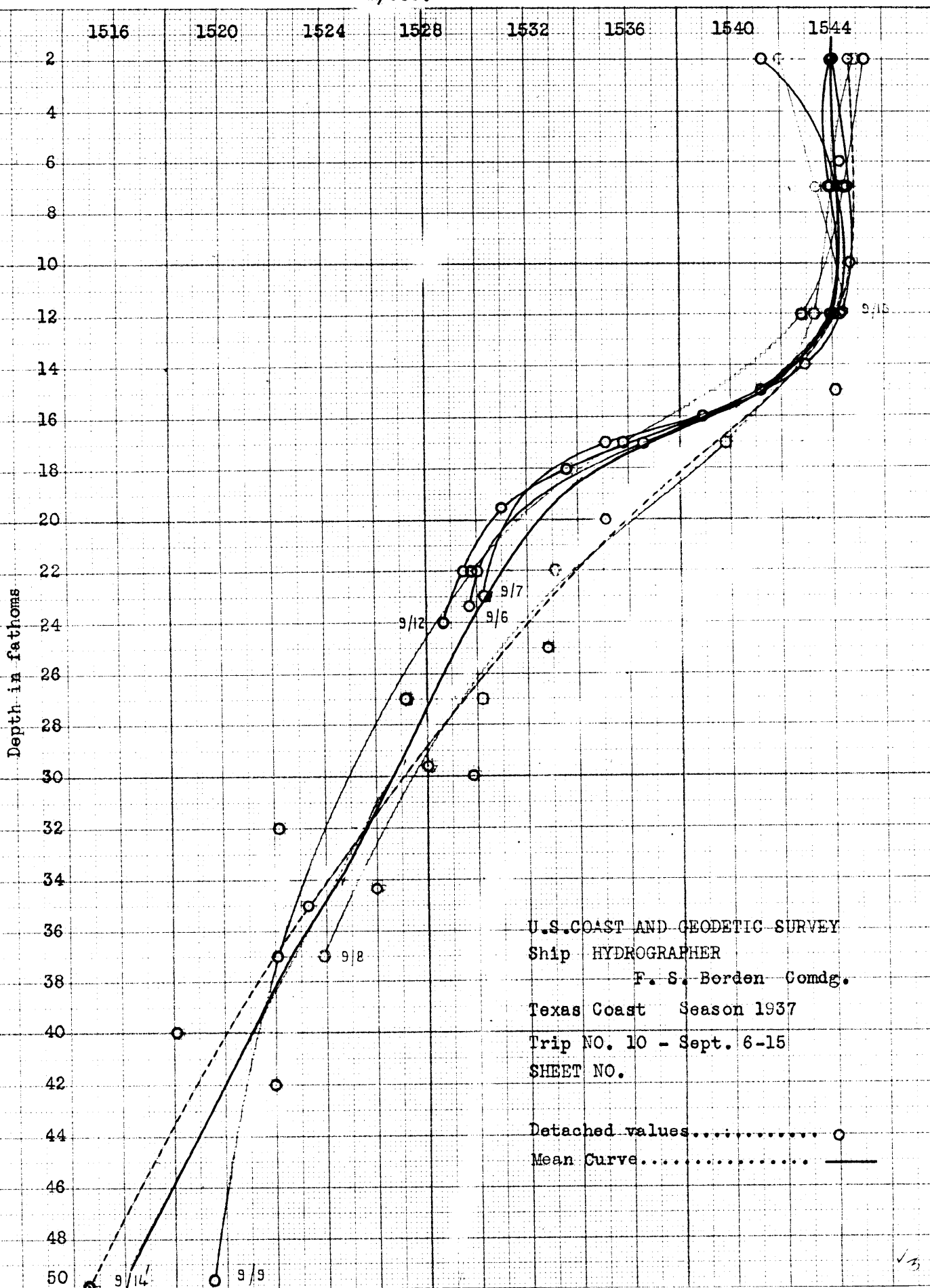
m/sec.



U.S. COAST AND GEODETIC SURVEY
 Ship HYDROGRAPHER
 F. S. Borden Comdg.
 Texas Coast Season 1937
 Trip NO. 9 Aug. 19-28
 Sheet No.

Detached values ----- ○
 Mean of b @ 12 fm. (8/20) --- ●
 Mean Curve..... —

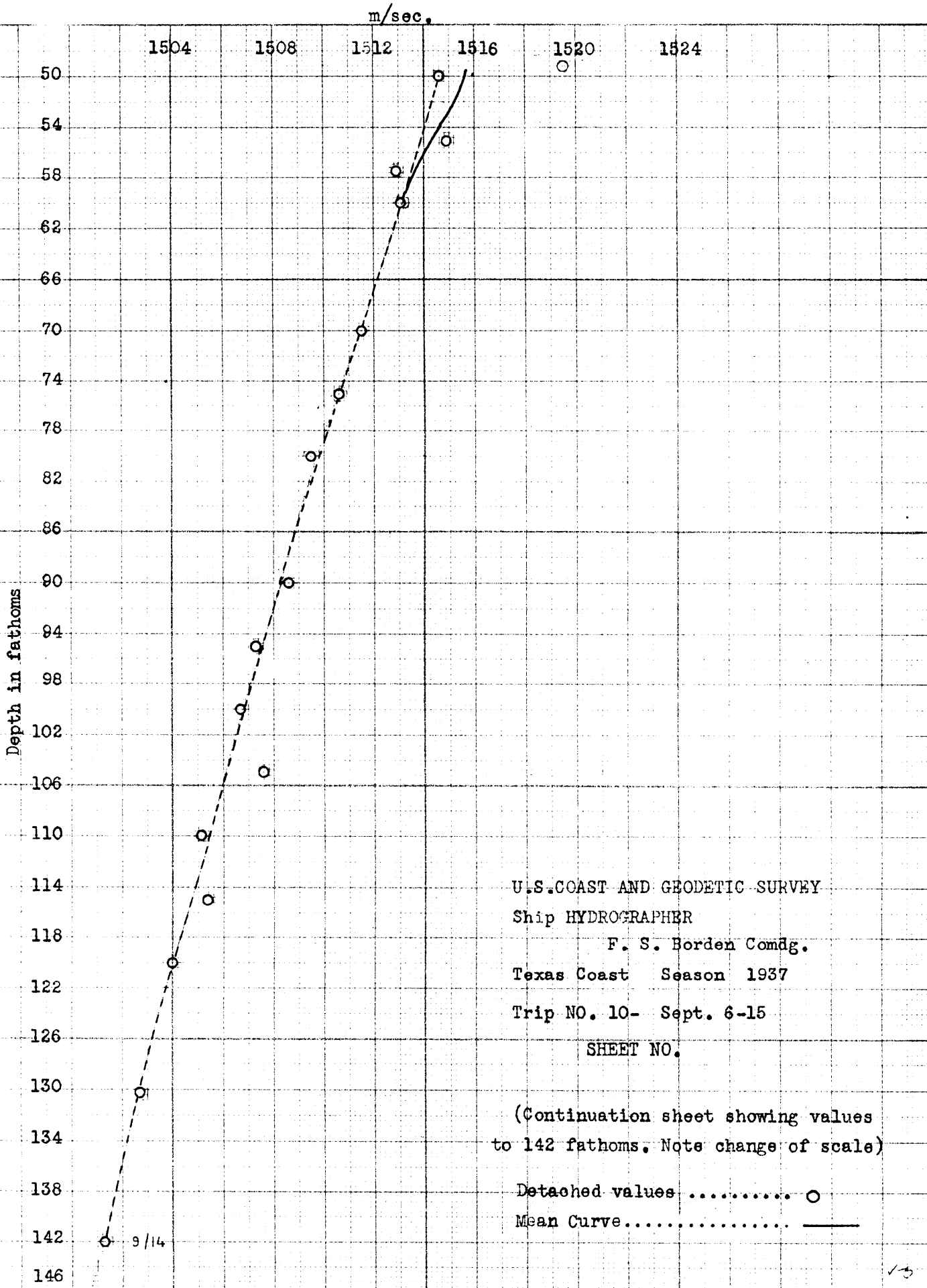
TRIP VELOCITY GRAPH
m/sec.



U.S. COAST AND GEODETIC SURVEY
 Ship HYDROGRAPHER
 F. S. Borden Comdg.
 Texas Coast Season 1937
 Trip NO. 10 - Sept. 6-15
 SHEET NO.

Detached values..... ○
 Mean Curve..... —

TRIP VELOCITY GRAPH



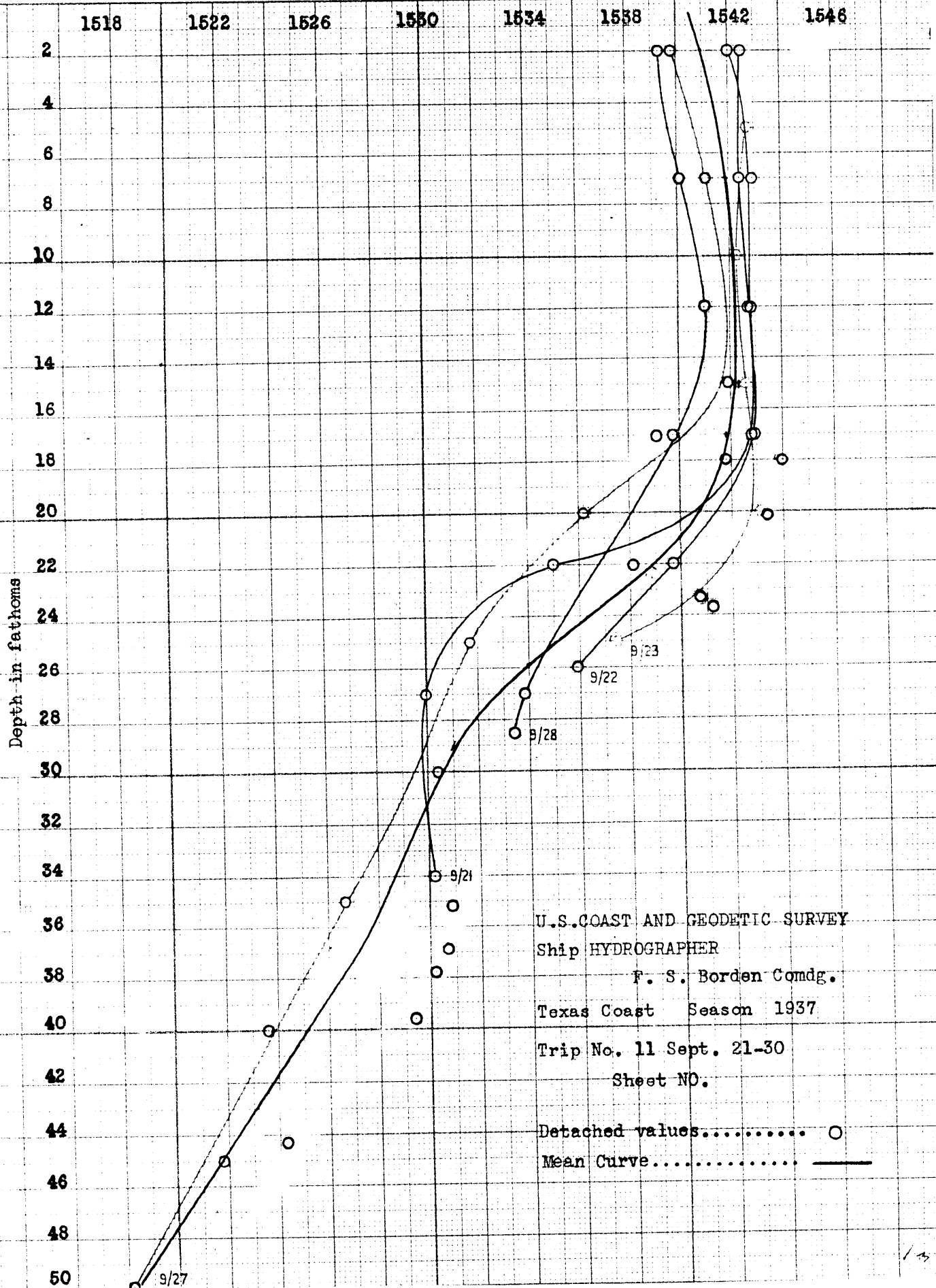
U.S. COAST AND GEODETIC SURVEY
 Ship HYDROGRAPHER
 F. S. Borden Comdg.
 Texas Coast Season 1937
 Trip NO. 10- Sept. 6-15
 SHEET NO.

(Continuation sheet showing values to 142 fathoms. Note change of scale)

Detached values ○
 Mean Curve..... —

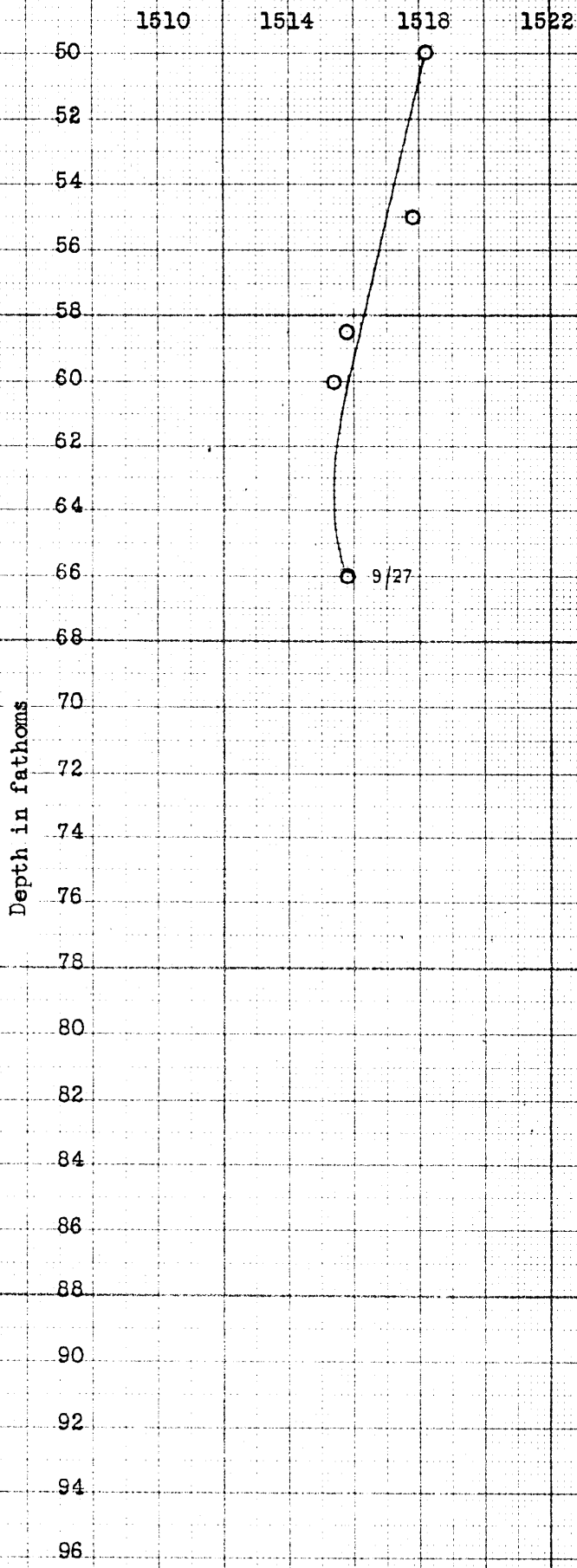
TRIP VELOCITY GRAPH

m/sec.



U.S. COAST AND GEODETIC SURVEY
 Ship HYDROGRAPHER
 F. S. Borden Comdg.
 Texas Coast Season 1937
 Trip No. 11 Sept. 21-30
 Sheet NO.
 Detached values..... ○
 Mean Curve..... —

TRIP VELOCITY GRAPH
m/sec.



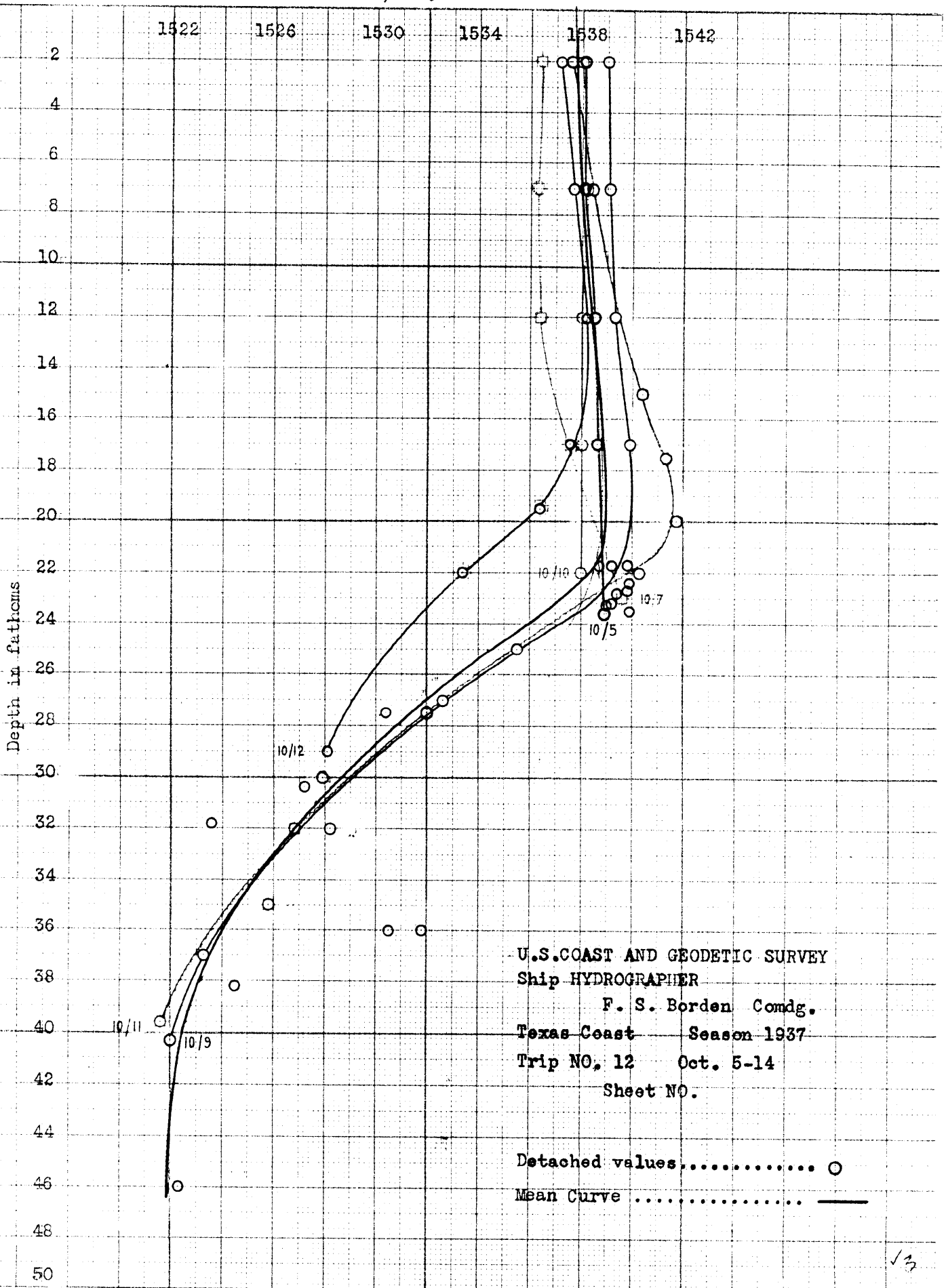
U.S. COAST AND GEODETIC SURVEY
Ship HYDROGRAPHER
F. S. Borden Comdg.
Texas Coast Season 1937
Trip NO. 11 Sept. 21-30
Sheet NO.

Detached values..... O

(Continuation sheet showing values to 66 fathoms)

TRIP VELOCITY GRAPH

m/sec.



U.S. COAST AND GEODETIC SURVEY
Ship HYDROGRAPHER

F. S. Borden Comdg.

Texas Coast Season 1937

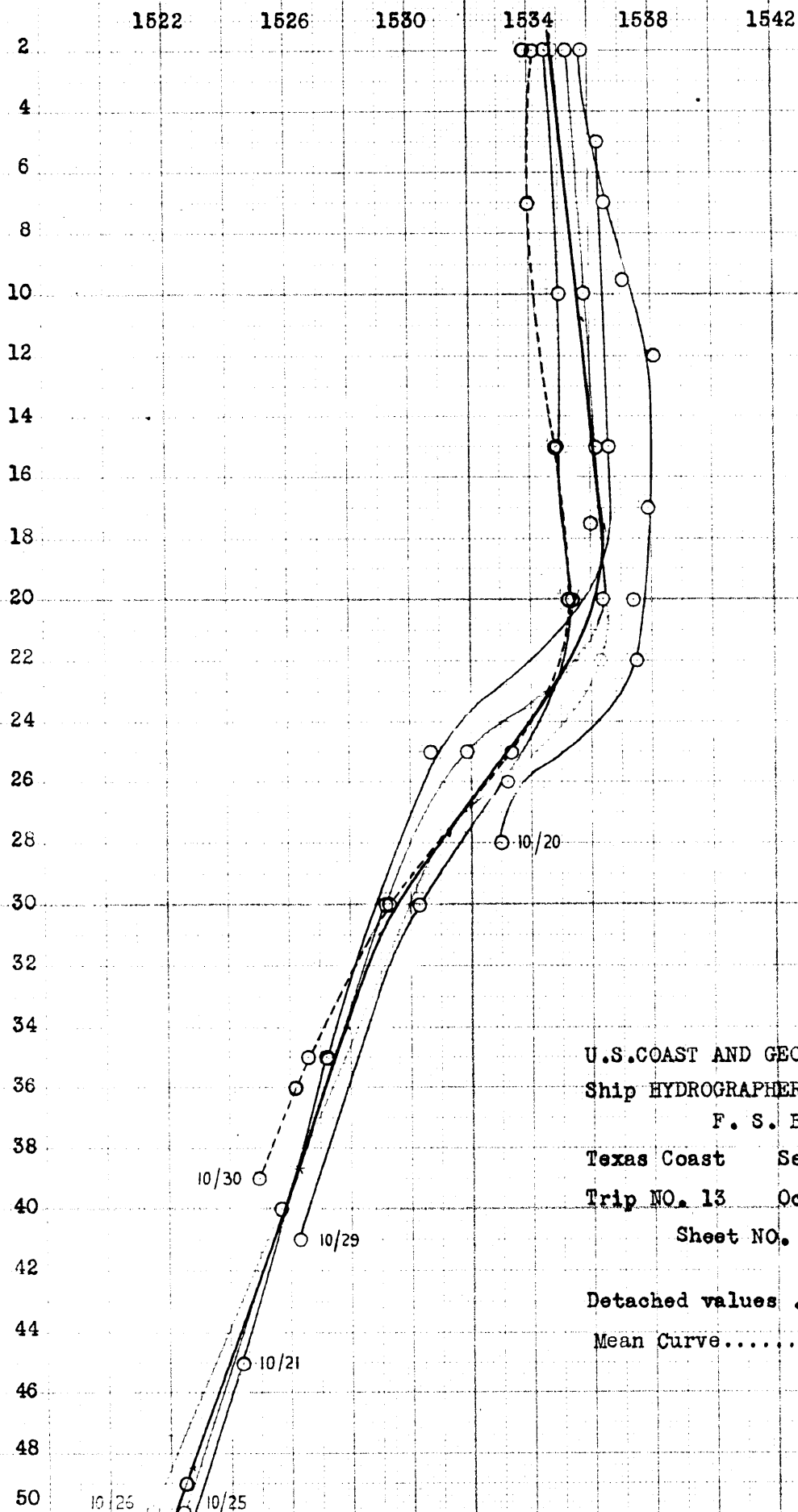
Trip NO. 12 Oct. 5-14

Sheet NO.

Detached values ○

Mean Curve —

TRIP VELOCITY GRAPH
m/sec.



U.S.COAST AND GEODETIC SURVEY
 Ship HYDROGRAPHER
 F. S. Borden Comdg.
 Texas Coast Season 1937
 Trip NO. 13 Oct. 19-30
 Sheet NO.

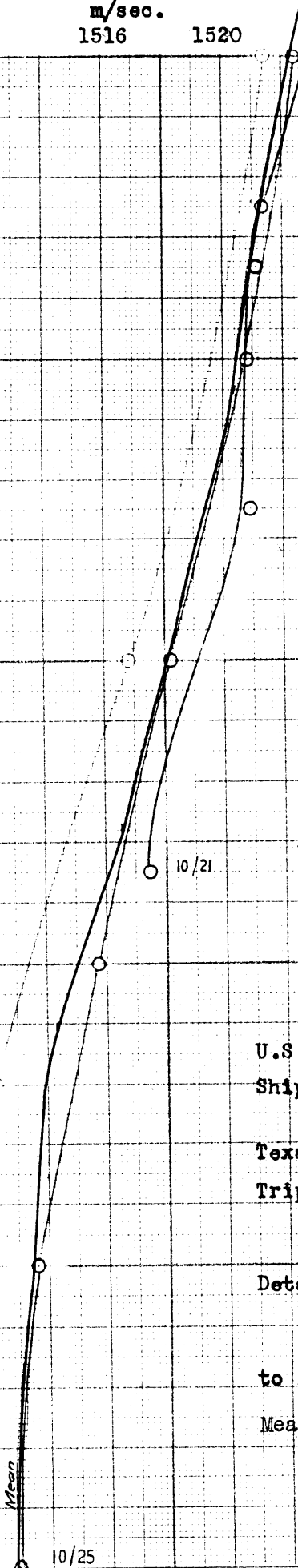
Detached values ○
 Mean Curve..... ———

TRIP VELOCITY GRAPH

m/sec.

1508 1512 1516 1520 1524 1528

50
52
54
56
58
60
62
64
66
68
70
72
74
76
78
80
82
84
86
88
90
92
94
96
98
100



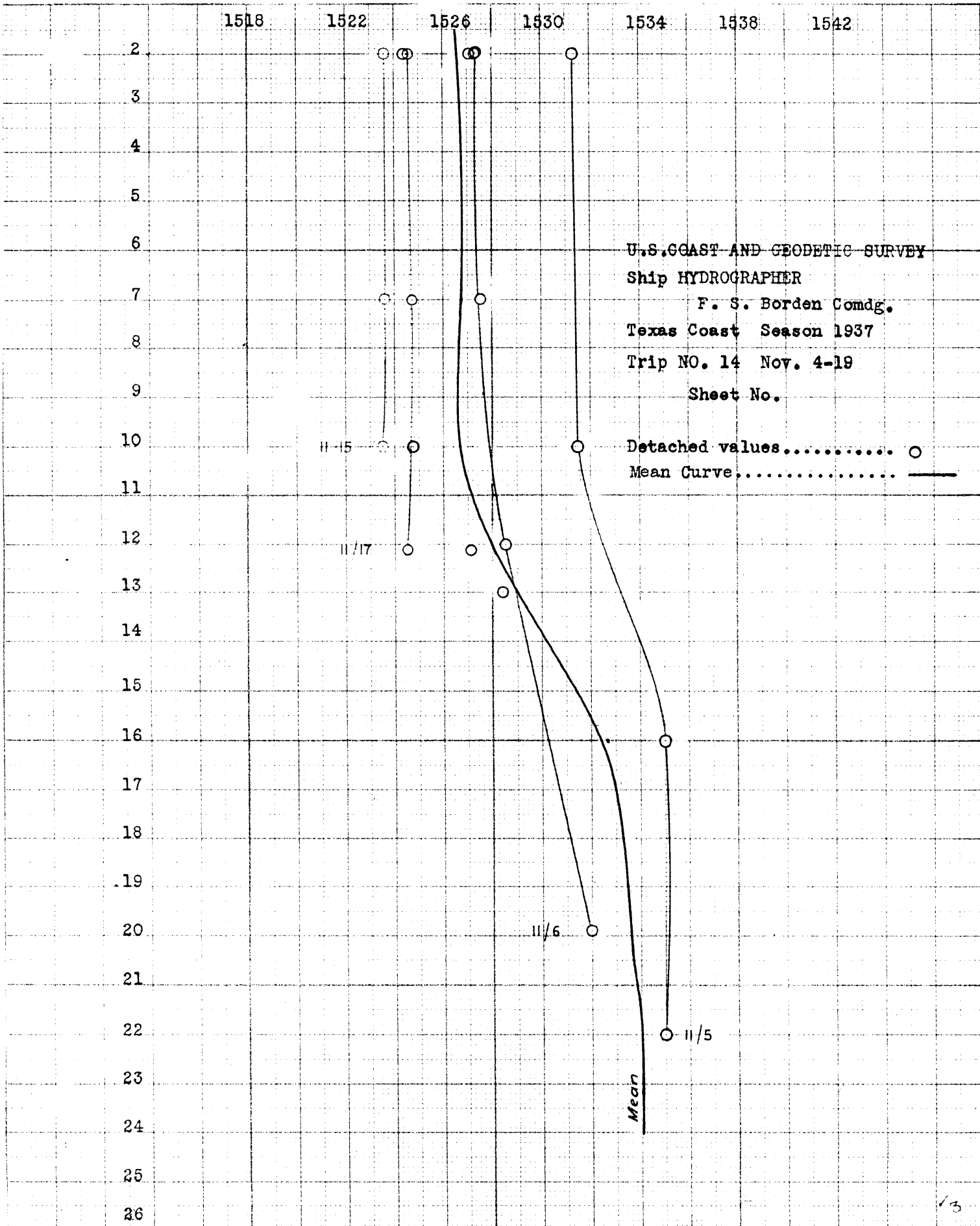
U.S.COAST AND GEODETIC SURVEY
 Ship HYDROGRAPHER
 F. S. Borden Comdg.
 Texas Coast Season 1937
 Trip NO. 13 Oct. 19-30
 Sheet NO.

Detached values ○

(Continuation sheet showing values to 100 fathoms)

Mean Curve..... —

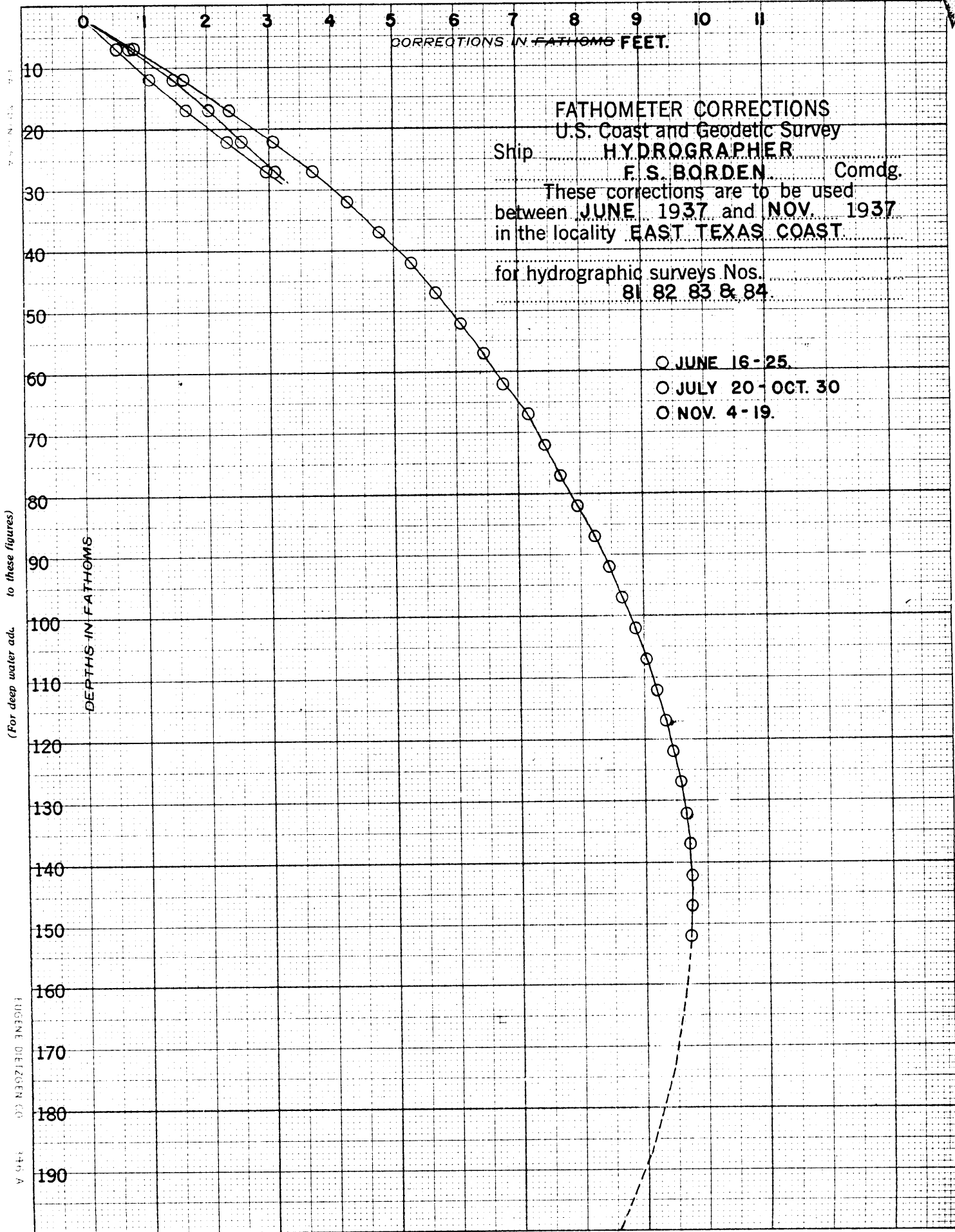
TRIP VELOCITY GRAPH
m/sec



4	Oct. 19-30	Nov. 4 - 19	MEAN July 20 - Oct. 30		Effective Depth of Sounding Depth 12 feet (Draft)	Fathometer Corrections June 16-25	Fathometer Corrections July 29-Oct. 30	Fathometer Corrections Nov. 4 - 19
Velocity	Velocity	Mean V.	Velocity	Mean V.				
1535	1527		1541.1		0	0	0	0
35	27	1527	41.0	1541.0	30	.74	.81	.53
36	28	27.3	40.7	40.9	60	1.43	1.61	1.07
36	32	28.5	37.6	40.1	90	2.01	2.37	1.67
35	34	29.6	34.3	38.9	120	2.56	3.06	2.32
32	34	30.3	30.7	37.6	150	3.09	3.70	2.97
29			27.6	36.1	180		4.26	
27			25.6	34.8	210		4.78	
25			23.3	33.6	240		5.28	
23			20.4	32.2	270		5.68	
22			18.9	31.0	300		6.08	
21			17.8	29.9	330		6.45	
20			16.8	28.8	360		6.76	
19			15.8	28.0	390		7.15	
17			14.7	27.1	420		7.42	
16			13.7	26.2	450		7.68	
15			13.3	25.5	480		7.96	
14			12.3	24.8	510		8.22	
13			11.3	24.1	540		8.46	
13			11.0	23.4	570		8.66	
12			10.2	22.8	600		8.88	
			08	22.1	630		9.03	
			08	21.5	660		9.20	
			07.5	20.9	690		9.33	
			07	20.3	720		9.45	
			07	19.8	750		9.58	
			03	19.2	780		9.67	
			02	18.6	810		9.71	
			01	18.0	840		9.74	
			00	17.4	870		9.74	
			00	16.8	900		9.71	

TABULATED VELOCITIES AND COMPUTATION
OF
FATHOMETER CORRECTIONS (T. & S.) FOR
Sheets Nos. 81, 82, 83 and 84.

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)



Correction Feet	June 16-25 Depth	July 20-Oct. 30 Depth	Nov. 4-19 Depth	Correction Feet	July 20-Oct. 30 Depth
T. & S.	Fms. - Ft.	Fms. - Ft.	Fms. - Ft.	T. & S.	Fms. - Ft.
1.0	11 4	8 4	9 2	6.6	60 0
1.1	12 3	9 2	10 0	6.7	61 2
1.2	13 2	10 0	10 5	6.8	62 4
1.3	14 1	10 4	11 4	6.9	64 1
1.4	15 0	11 2	12 3	7.0	65 4
1.5	16 0	12 0	13 2	7.1	67 3
1.6	16 5	12 4	14 1	7.2	69 0
1.7	17 4	13 2	15 0	7.3	71 0
1.8	18 3	14 0	15 5	7.4	73 0
1.9	19 2	14 4	16 4	7.5	75 0
2.0	20 2	15 2	17 3	7.6	77 0
2.1	21 1	16 0	18 2	7.7	79 0
2.2	22 0	16 5	19 1	7.8	81 0
2.3	22 4	17 3	20 0	7.9	83 0
2.4	23 3	18 1	21 0	8.0	85 0
2.5	24 2	18 5	22 0	8.1	87
2.6	25 1	19 3	23 0	8.2	89
2.7	26 0	20 1	24 0	8.3	91
2.8	26 5	20 5	25 0	8.4	93
2.9	27 4	21 3	26 0	8.5	95
3.0	28 2	22 1	27 0	8.6	97
3.1	29 0	23 0	28 0	8.7	99
3.2	29 5	23 5	29 0	8.8	101
3.3		24 4		8.9	103
3.4		25 3		9.0	115
3.5		26 2		9.5	180
3.6		27 1		9.0	195
3.7		28 0		8.5	210
3.8		28 5			
3.9		29 4			
4.0		30 3			
4.1		31 2			
4.2		32 1			
4.3		33 0			
4.4		34 0			
4.5		35 0			
4.6		36 0			
4.7		37 0			
4.8		38 0			
4.9		39 0			
5.0		40 0			
5.1		41 1			
5.2		42 2			
5.3		43 3			
5.4		44 4			
5.5		45 5			
5.6		47 0			
5.7		48 1			
5.8		49 2			
5.9		50 4			
6.0		52 0			
6.1		53 2			
6.2		54 4			
6.3		56 0			
6.4		57 2			
6.5		58 4			

TABLE OF

TEMPERATURE & SALINITY CORRECTIONS

Sheets Nos. 81, 82, 83, & 84

1937

Date	SHEET 81 Day	I.D.S. Feet	I/D/S Feet
June 16	A	-1.0	0.5
" 17	B	"	0.5
" 18	C	"	0.4
" 19	D	"	0.3
" 20	E	"	0.3
" 21	F	"	0.2
" 22	G	"	0.2
" 23	H	"	0.1
" 24	J	"	0.1
" 25	K	"	0.0
July 27	L	"	0.2
" 28	M	"	0.1
" 29	N	"	0.0
Aug. 4	P	"	0.8
" 5	Q	"	0.7
" 6	R	"	0.6
" 7	S	"	0.6
" 8	T	"	0.5
" 9	U	"	0.4
" 10	V	"	0.4
" 11	W	"	0.3
" 12	X	"	0.2
" 13	Y	"	0.1
" 22	Z	"	0.4
" 23	A'	"	0.4
" 24	B'	"	0.3
" 25	C'	"	0.2
" 26	D'	"	0.2
" 28	E'	"	0.0

SHEET 82

Aug. 21	A	-1.0	0.5
" 22	B	"	0.4
" 26	C	"	0.2
" 27	D	"	0.1
" 28	E	"	0.0
Sept. 6	F	"	0.8
" 7	G	"	0.7
" 8	H	"	0.7
" 9	J	"	0.6
" 10	K	"	0.5
" 11	L	"	0.5
" 12	M	"	0.4
" 13	N	"	0.3
" 14	P	"	0.3
" 15	Q	"	0.2
" 21	R	"	0.5
" 22	S	"	0.4
" 23	T	"	0.4
" 24	U	"	0.3
" 25	V	"	0.3
" 27	W	"	0.2
" 28	X	"	0.1
Oct. 5	Y	"	0.7
" 6	Z	"	0.6
" 7	A'	"	0.6
" 8	B'	"	0.5

Date	SHEET 83 Day	I.D.S. Feet	I/D/S Feet
Sept. 22	A	-1.0	0.4
" 28	B	"	0.1
" 29	C	"	0.1
Oct. 8	D	"	0.5
" 9	E	"	0.5
" 10	F	"	0.4
" 11	G	"	0.4
" 12	H	"	0.3
" 13	J	"	0.3
" 20	K	"	0.5
" 21	L	"	0.5
" 24	M	"	0.3
" 25	N	"	0.3
" 26	P	"	0.2
" 27	Q	"	0.2
" 28	R	"	0.1
" 29	S	"	0.1
" 30	T	"	0.0
Nov. 5	U	"	0.8
" 6	V	"	0.7

SHEET 84

Nov. 6	A	-1.0	0.7
" 7	B	"	0.6
" 8	C	"	0.6
" 9	D	"	0.5
" 10	E	"	0.5
" 11	F	"	0.4
" 15	G	"	0.6
" 17	H	"	0.5

Values for S

0.8' (full speed)	120 rpm's
0.6' @	100 rpm's
0.4' @	80 rpm's
0.2' @	60 rpm's
0.0 @	40 rpm's

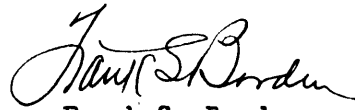
TABLE OF INDEX, DRAFT
AND SETTLEMENT CORRECTIONS
Sheets Nos. 81, 82, 83, & 84

1937

APPROVAL SHEET

All records related to the three sheets covered by this Descriptive Report have been examined by me and are approved. It will be noted that this report includes a list of positions of all control stations and buoys used during the season, also that the enclosed report by Lieut. (j.g.) J. N. Jones on "Fathometer Corrections and Data for Reduction of Bomb Distances" has appended to it complete data of this nature for all of the season's offshore sheets. This report is therefore considered as a basic report for all of the offshore work and will be referred to frequently in Descriptive Reports of other sheets.

February 28, 1938.


Frank S. Borden,
Chief of Party.

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. **H6251**

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

Number of positions on sheet	2212
Number of positions checked	56
Number of positions revised	7
Number of soundings recorded	19265
Number of soundings revised	40
Number of signals erroneously plotted or transferred	—

Date:

Verification by *Leonard G. McKean* Time: *75 1/2 hours.*

Review by *Harold W. Murray* Time: *10 1/2 "*

HYDROGRAPHIC SURVEY NO. H-6251

Smooth Sheet Yes

Boat Sheet Two

Records; Sounding 9 Vols., Wire Drag Vols., Bomb Vols.

Descriptive Report Yes (Shared with H-6252 & H-6253)

Title Sheet Yes

List of Signals Yes (Vol.#1)

Landmarks for Charts (Form 567) No

Statistics No

Approved by Chief of Party Yes

Recoverable Station Cards (Form 524) None

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

Hydrography: Total Days 21 ; Last Date Sept. 6, 1937

Remarks _____

Verifier's Report on H 6251 (1937)

The records conform to the requirements of the Hydrographic Manual Instructions.

Topographic Signals on H 6251 (1937) originate with T-4862 (1933) and T-6609 (1937)

On V and W days all positions were taken with a bearing on and a distance to buoy D10. The information necessary to check these distances is not complete as the height of the observer when taking the depression angle is not always known. It will be noted that for equal angles, or practically equal, widely different distances are given in some cases. H.I. of the deck is between 28 and 29 feet but the H.I. on the crow's nest could not be found in the records. *accepted.*

Soundings for the most part were inked by J. W. Kiberman. The soundings on the shoals were inked by L. A. Mulsam.

The maximum discrepancy of crossing is $1\frac{1}{2}$ feet occurring at four crossings.

Junctions. Junction with H. 4334 (1923) $\frac{1}{40,000}$ scale, on the east is satisfactory. The junction with H-4333 (1923) $\frac{1}{80,000}$ scale is not good and for this reason a so-called "butt" junction has been made. There is considerable overlap between H-6251 (1937) and H 4333 (1923) on Heald Bank, much of the overlap being in disagreement. H-4333 was enlarged by photostats to scale of H-6251.

The junction with H 5511 (1933) 1/20,000 on the north is poor. A butt junction has been made. H-5511 was reduced by photostat to scale of H-6251. No attempt has been made to join the 30-foot curve between H-6251 and H-5511 or the 60-foot curve between H-6251 and H-4333.

The 25-foot minimum sounding on Heald Bank obtained during the survey of H-4333 has been carried forward to H-6251. There is some disagreement as to the position of this shoal between H-4333 and H-6251. Since the methods of surveying of H-6251 are more accurate than those of H-4333, this 25 foot minimum sounding has been shown on this shoal on H-6251 in what is believed to be its correct position.

Leonard A. McIsaac
August 26, 1938.

Remarks

Decisions

	Remarks	Decisions
1	<i>For Title</i>	
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3	<i>For Title</i>	
4		<i>See T-4862</i>
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GEOGRAPHIC NAMES

Survey No. **H6251**

Name on Survey

On Chart No. 1117
 On previous survey No. H-4333
 On U. S. quadrangle Maps
 From local information
 On local Maps
 P. O. Guide or Map
 Rand McNally Atlas
 U. S. Light List

	A	B	C	D	E	F	G	H	K	
<u>Gulf of Mexico</u>	✓									1
<u>Heald Bank</u>	✓							/		2
<u>Texas</u>	✓									3
<u>Bolivar Peninsula</u>	✓									4
										5
										6
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										8
										9
										10
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										25
	Names determined and approved									26
	by <u>JHE</u> on <u>3/23/51</u>									27

Field Records Section (Charts)

H6252

HYDROGRAPHIC SHEET NO.

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

Number of positions on sheet	2605
Number of positions checked	6
Number of positions revised	1
Number of soundings recorded	23,418
Number of soundings revised	166
Number of signals erroneously plotted or transferred	0

Date: December 8, 1931

Verification by Francis B. Kelly

Review by J. A. McCormick, Dec. 21, 1938

Time: 148 hrs.

Time: 25 hrs.

Remarks

Decisions

	Remarks	Decisions
1	For Title	
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GEOGRAPHIC NAMES
 Survey No. **H6252**

Name on Survey	Sources										JSCP
	A	B	C	D	E	F	G	H	K		
<u>Gulf of Mexico</u>											1
<u>Texas</u>	✓										2
<u>Galveston</u>	✓		✓				✓	✓			3
<u>Galveston Bay</u>	✓	✓	✓				✓	Galveston Hbr.	✓		4
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Names underlined in red approved											26
by <u>WHE</u> on <u>3/23/38</u>											27

Verifiers Report for H 6252 (1937)

The records conform to the requirements of the Hydro Manual. all shore signals with one exception (O let) are Δ stations, all offshore signals are buoys. The location data for O let & the buoy is filed in a cabinet in the library (acc no 5570)

all junctions with adjoining sheets have been plotted on H 6252 regardless of scale. The junction with H 6251 on the east, with H 6291 on the south and with H 6253 on the west are very good. Point junctions have been made, on the north, with H 5424, H 5511 & H 5522. Only the overlapping soundings which agree, have been shown since there was considerable disagreement between the hand lead & the fathometer soundings. The inch sheets were from 1 to 3 feet deeper

In general only every other sounding was included on H 6252

Francis S. Kelly

Dec 8, 1938

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY DESCRIPTIVE REPORT PHOTOSTAT OF	}	No. H-6251 to H-6253 No. H-	{	received Mar. 7, 1938 registered Mar. 17, 1938 verified reviewed approved
---	---	---	---	---

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

ROUTE		Initial	Attention called to
20			
22			
24			
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30			
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63			
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83			
88			
90			

RETURN TO

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



GEOGRAPHIC NAMES
 Survey No. **H6253**

Name on Survey	Source of Name										No.
	A	B	C	D	E	F	G	H	K		
<u>Gulf of Mexico</u>	/										1
<u>Texas</u>	/										2
<u>Galveston Island</u>	/										3
<u>San Luis Pass</u>	/										4
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Names underlined in red appear											26
by <u>JHE</u> on <u>3/23/38</u>											27

HYDROGRAPHIC SURVEY NO. H-6253

Smooth Sheet Yes

Boat Sheet Yes

Records; Sounding 9 Vols., Wire Drag Vols., Bomb Vols.

Descriptive Report Yes (Shared with H-6251 & H-6252)

Title Sheet Yes

List of Signals Yes (Vol.#1)

Landmarks for Charts (Form 567) None

Statistics None

Approved by Chief of Party Yes

Recoverable Station Cards (Form 524) None

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

Hydrography: Total Days 17 ; Last Date July 26, 1937

Remarks _____

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. **H6253**

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

Number of positions on sheet <i>2054</i>
Number of positions checked	... <i>60</i> ..
Number of positions revised <i>1</i> ..
Number of soundings recorded	... <i>19304</i>
Number of soundings revised <i>9</i> ..
Number of signals erroneously plotted or transferred <u> </u>

Date: *September 14, 1938*

Verification by *Leonard A. McLean*

Time: *74 1/4 hours*

Review by *Harold W. Murray*

Time: *7 "*

Verifier's Report on H-6253(1937)

The records conform to the requirements of the Hydrographic Manual instructions.

The topographic signals on H 6253(1937) originate with T-4852(1933), T-4866(1933), T-4867(1933-34), T-4853(1933) falls within the area of H 6253(1937) but no signals of T-4853 have been transferred or used.

The maximum discrepancy of soundings at crossings is 1 foot.

Junctions with unshore hydrographic sheets have been completed; junctions with the others are awaiting verification of those sheets.

Butt junctions have been made with H-5521(1934); H-5488(1933-34), H-5489(1933-34) and H-5521(1933-1934) In general, overlapping soundings are not shown as the hand-lead soundings of the foregoing sheets do not agree with the fathometer soundings of H 6253.

Photostatic reductions of H-5521, ^{H-5488} H-5489 and H-5522 were made in order to effect a junction, ~~while a photostatic enlargement of H-6253 was made in order to join H-5488 on 1/10,000 scale.~~

Where sounding lines of H-5489, and H-5522 are shown on H 6253 every other sounding is shown.

Every other sounding is shown with the junction between H-5488 and H-6253.

Leonard A. McLean
September 14, 1938.

08071

Remarks

Decisions

	Remarks	Decisions
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3		<i>see H-5488</i>
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TIDE NOTE FOR HYDROGRAPHIC SHEET

March 25, 1938

Division of Hydrography and Topography:

Division of Charts: Attention: Mr. E. P. Ellis

Plane of reference

~~Tide Reducers~~ approved in
9 volumes of sounding records for

HYDROGRAPHIC SHEET 6251

Locality Bolivar Peninsula to Heald Bank, Texas Coast

Chief of Party: F. S. Borden in 1937

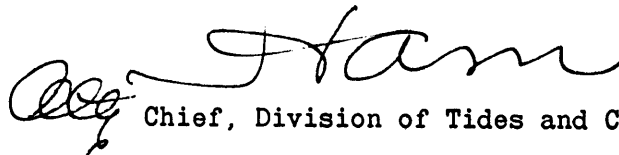
Plane of reference is mean low water reading

2.4 ft. on tide staff at South Jetty

6.2 ft. below B.M. 2

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

Condition of records satisfactory except as noted below:


Chief, Division of Tides and Currents.

FAC

TIDE NOTE FOR HYDROGRAPHIC SHEET

March 25, 1938

Division of Hydrography and Topography:

✓ Division of Charts: Attention: Mr. E. P. Ellis

Plane of reference

~~This reference is~~ approved in
10 volumes of sounding records for

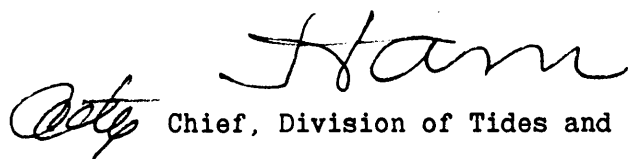
HYDROGRAPHIC SHEET 6252

Locality Approaches to Galveston Bay, Texas

Chief of Party: F. S. Borden in 1937
Plane of reference is mean low water reading
2.4 ft. on tide staff at South Jetty
6.2 ft. below B.M. 2

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

Condition of records satisfactory except as noted below:


Chief, Division of Tides and Currents.

LCC

TIDE NOTE FOR HYDROGRAPHIC SHEET

March 25, 1938.

Division of Hydrography and Topography:

✓ Division of Charts: Attention: Mr. E. P. Ellis.

Plane of reference
~~Plane of reference is approved in~~
9 volumes of sounding records for

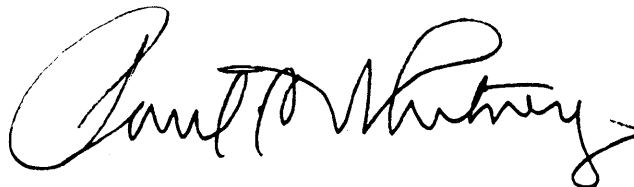
HYDROGRAPHIC SHEET 6 253

Locality Galveston Island to San Luis Pass, Texas

Chief of Party: F. S. Borden in 1937
Plane of reference is mean low water reading
2.4 ft. on tide staff at South Jetty
6.2 ft. below B.M. 2

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

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6251 (1938) FIELD NO. 41

Bolivar Peninsula to Heald Bank, Gulf of Mexico, Texas
Surveyed in April - May 1937, Scale 1: 40,000
Instructions dated Feb. 17, 1937 (HYDROGRAPHER)

Dorsey Fathometer Soundings. 3 Point fixes on shore and buoy signals.

Chief of Party - F. S. Borden.

Surveyed by - G. L. Anderson, P. C. Doran, F. R. Gossett, J.N. Jones
 K. B. Jeffers and J. T. Jarman.

Protracted by - Paul Taylor.

Soundings plotted by - Paul Taylor.

Verified and inked by - G. W. Giberman and L. A. McGann.

1. Condition of Records.

The records are neat and legible and conform to the requirements of the Hydrographic Manual.

The Descriptive Report is clear and very comprehensive and satisfactorily covers all items of importance.

2. Compliance with Instructions for the Project.

The plan, character and extent of the survey satisfy the instructions for the project.

3. Shoreline and Signals.

- a. This is an offshore survey and no shore line is shown.
- b. The control is mainly furnished by buoy signals and has been supplemented by signals on T-4862 (1933) and T-6609 (1937).

The buoy signals were located by adjusted taut wire-sun azimuth traverse loops fixed at the inshore ends by sextant angles on objects ashore, the data being filed in cahier marked "Report on Hydrographic Signal" (HYDROGRAPHER, F. S. Borden, 1937 -Library No. S 1570).

4. Sounding Line Crossings.

General agreement of sounding line crossings is excellent.

5. Depth Curves.

The usual depth curves may be satisfactorily drawn.

6. Junctions with Surveys.

- a. The junctions on the north with H-6304 (1937), on the west with H-6252 (1937) and on the south with H-6291 (1937) will be considered in the reviews of those surveys.
- b. The junction on the east with H-4334 (1923) is satisfactory.
- c. The junction on the east with H-4333 (1923) is only partially satisfactory since the present survey depths in some areas vary 1 to 3 feet shoaler than the 1923 depths. These discrepancies are consistent with previous findings wherever soundings obtained with the Dorsey Fathometer overlap soundings obtained with previous hand lead work. But a fringe of soundings are shown at the present survey limits. For charting purposes, the present survey should be used to its eastern limits and charting then continued from the 1923 survey.

The extensive present survey overlap in the vicinity of Heald Bank was for the purpose of accurately locating the bank only which was found to be about 320 m. southwest of its position on the 1923 survey. The least depth found on the 1923 survey has been carried forward on the present survey but transferred in relation to the hydrography. The present survey with these additions is sufficient for charting purposes in this area. (See par. 6e).

- d. The junction on the north with H-5511 (1933) is satisfactory as to extent but the present survey Dorsey Fathometer depths consistently vary about 1 foot shoaler than 1933 hand lead depths as would be expected. Inasmuch as the 30 foot curve is common to both surveys and cannot be adjusted, only a fringe of soundings from the 1933 survey is shown on the present survey. For charting purposes, the present survey should be used to its northern limits and charting then continued from the 1933 survey.
- e. The junction on Heald Bank with H-5912 (1935) is extensive. Agreement of depths in the common area is poor probably due to changes in bottom, the present survey depths varying 1 to 5 feet shoaler except in a few spots which are in close agreement. Only a fringe of soundings has been shown at the present survey limits. For charting purposes, the present survey should be used to its limits and charting then continued from H-5912.

7. Comparison with Prior Surveys.

- a. H-657 (1858) and H- 1350 (1875-77), Scales 1:600,000 Approx.

These small scale surveys are controlled by Dead Reckoning, are sparsely covered and of a reconnaissance nature. Agreement of depths is fair only and should be superseded by the present survey within the common area for future charting.

- b. H-1556a and b (1883 and H-1596a (1884), Scales 1 to 80,000.

These surveys taken together and consisting of lines spaced 1 to 3 miles apart cover the entire area of the present survey and form the basis of the present chartings except on Heald Bank. The comparison given in the Descriptive Report, Page 6, last paragraph is adequate. It is noted, however, that the shoal development on Heald Bank is shown approximately $\frac{1}{8}$ mile W.S.W. of that on H-1556a. The above surveys should be superseded by the present survey within the common area for future sounding.

- c. H-4333 (1923) and H-5912 (1935, Scales 1:80,000 and 40,000

The extensive overlaps of these surveys in the vicinity of Heald Bank were discussed in Par. 6c and 6e of this review.

8. Comparison with Charts 1116 (New print dated April 21, 1938) Chart 1280 (New print dated Nov.13,1937) and Chart 1282 (New print dated July 5, 1938).

- a. Hydrography.

Hydrography shown on the charts originates solely with surveys discussed in preceding paragraphs of this review.

- b. Aids to Navigation.

The aids agree closely with their charted positions and satisfactorily mark the features intended. Attention is called, however, to the fact that the buoys marking Heald Bank are three miles from the shoalest part of the bank.

9. Field Plotting.

Field protracting and plotting of soundings were excellent.

10. Additional Field Work Required.

This is an excellent survey and no additional field work is required.

11. Superseding Prior Surveys.


Within the area covered the present survey with the indicated additions, supersedes the following surveys for charting purposes:

H- 657 (1858)
H- 1350 (1875-77)
H- 1556a (1883)
H- 1556b (1883)
H- 1596a (1884)
H- 4333 (1923)
H- 5912 (1935)

12. Reviewed by Harold W. Murray, September 7, 1938.

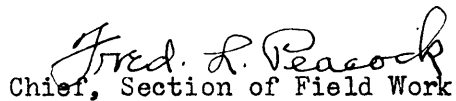
Inspected by E. P. Ellis.

Examined and approved:

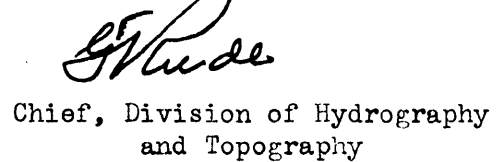


Thos. B. Reed
Chief, Section of Field Records

K.T. Adams
Chief, Division of Charts



Fred. L. Peacock
Chief, Section of Field Work



G. F. Wade
Chief, Division of Hydrography
and Topography

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6252 (1937) FIELD NO. 42

Approaches to Galveston Bay, Gulf of Mexico, Texas.

Surveyed in May - June, 1937, Scale 1:40,000

Instructions dated Feb. 17 and March 30, 1937 (HYDROGRAPHER)

Dorsey Fathometer Soundings.

3 Point fixes on shore and buoy signals.

Chief of Party - F. S. Borden

Surveyed by - Officers of Ship HYDROGRAPHER

Protracted by - K. B. Jeffers

Soundings plotted by - K. B. Jeffers

Verified and inked by - F. B. Kelly

1. Condition of Records

The records are neat and legible and conform to the requirements of the Hydrographic Manual except that the special chart was not furnished for use of the Lighthouse Service in locating floating navigational aids (Circular Nov. 30, 1933).

The Descriptive Report is complete and satisfactorily covers all items of importance.

2. Compliance with Instructions for the Project.

The survey satisfies the instructions for the project.

3. Shoreline and Signals.

a. This being an offshore survey, no shoreline is shown.

b. Location data for shore signal "Eck" (lat. 29°14.6', long. 94°52.9') and all buoy signals is filed in a cahier under the library accession number S-1570.

4. Sounding Line Crossings.

Sounding line crossings are excellent.

5. Depth Curves.

The usual depth curves may be satisfactorily drawn.

6. Junctions with Contemporary Surveys.

a. Overlaps on the north with H-5424 (1933-34), H-5511 (1933) and H-5522 (1933) show the older surveys to be 1 to 3 feet deeper than the present work in many places. These differences are probably due partly to natural changes and partly to the difference in sounding equipment (Dorsey fathometer on present survey -

hand lead on the inshore surveys). As the present survey undoubtedly gives a better representation of the present condition of the area, conflicting depths from the inshore surveys have been omitted in the inking of the overlap on the present work.

- b. The junctions with H-6251 (1937) on the east, H-6253 (1937) on the west and H-6291 (1937) on the south are satisfactory.

7. Comparison with Prior Surveys.

- a. H-637 (1858), Scale 1:635,000

The above survey contains a few track soundings in the area common to the present work. They are in fair agreement with the depths on the present survey, but are of no current value and should be disregarded in future charting.

- b. H-471 (1855), Scale 1:20,000 H-1556a & b (1883), Scale 1:80,000
H-472 (1855), Scale 1:20,000 H-1597a (1884), Scale 1:80,000
H-1350 (1875-77), Scale 1:600,000 H-1597 b (1884), Scale 1:80,000

The present survey falls entirely within the combined area of the above surveys, which are the principal sources of information charted in this area. The major portion of the depths on the old surveys are in surprisingly good agreement with those on the present work. Artificial changes in the vicinity of the Galveston jetties are probably responsible for an apparent deepening of 4 to 6 feet in the inshore area to the southwest of the jetties. The present survey, because of its later information, more accurate control and much closer development, should supersede the above surveys in future charting of the common area.

8. Comparison with Chart 520 (New Print dated Feb. 10, 1938).
Chart 1116 (New Print dated April 21, 1938).
Chart 1117 (New Print dated Feb. 7, 1938).
Chart 1280 (New Print dated Nov. 13, 1937).
Chart 1282 (New Print dated July 5, 1938).

- a. Hydrography.

Within the area of the present survey the charts are based on surveys discussed in the foregoing paragraphs and, in the vicinity of the Galveston jetties, on U.S. Engineers' surveys, the latest of which is shown on B.P. 30053 of August, 1936. The Engineers' survey is on a scale of 1:10,000 and is in good agreement with the present work. It should be used in conjunction with the present survey in future charting of the common area.

b. Aids to Navigation.

Charted positions of navigational aids in the area are in substantial agreement with the positions on the survey

c. Controlling Depths.

The present survey shows a controlling depth of 33 feet over the Galveston bar. The controlling depth is constantly changing and is reported at monthly intervals by the U. S. Engineers' .

9. Field Plotting.

The field plotting was satisfactory.

10. Additional Field Work Recommended.

This is an excellent survey and no additional field work is required.

11. Superseded Old Surveys.

Within the area covered the present survey supersedes the following surveys for charting purposes:

H- 471 (1855) in part	H-1556 a & b (1883) in part
H- 472 (1855) in part	H-1597 a & b (1884) in part
H- 637 (1858) in part	
H-1350 (1875-77) in part	

12. Reviewed by - J. A. McCormick, December 21, 1938.

Inspected by E. P. Ellis,

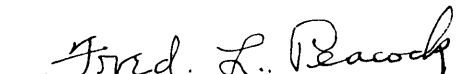
Examined and approved:




Thos. B. Reed
Chief, Section of Field Records



K.T. Adams
Chief, Division of Charts



Fred. L. Beacock
Chief, Section of Field Work



G. H. Stude
Chief, Division of Hydrography
and Topography.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6253 (1937) FIELD NO. 43

Galveston Island to San Luis Pass, Gulf of Mexico, Texas
Surveyed in June - July 1937, Scale 1:40,000
Instructions dated February 17, 1937 (HYDROGRAPHER)

Dorsey Fathometer Soundings.

3 Point fixes on shore and buoy signals.

Chief of Party - Frank S. Borden.

Surveyed by - G. L. Anderson, P. C. Doran, F. R. Gossett, J. N. Jones,
K. B. Jeffers, J. T. Jarman and P. Taylor.

Protracted by - Karl B. Jeffers.

Soundings plotted by - K. B. Jeffers.

Verified and inked by - L. A. McGarr.

1. Condition of Records.

The records are neat and legible and conform to the requirements of the Hydrographic Manual.

The Descriptive Report is clear, comprehensive and satisfactorily covers all items of importance.

2. Compliance with Instructions for the Project.

The plan, character and extent of the survey satisfy the instructions for the project.

3. Shoreline and Signals.

a. This is an offshore survey and no shoreline is shown.

b. The control is mainly furnished by buoy signals supplemented by signals on T-4852 (1933), T-4866 (1933) and T-4867 (1933-34).

The buoy signals were located by adjusted taut wire - sun azimuth traverse loops fixed at the inshore ends by sextant angles on objects ashore, the data being filed in cahier marked "Report on Hydrographic Signals" (HYDROGRAPHER, F. S. Borden, 1937 - Library No. S 1570).

4. Sounding Line Crossings.

Agreement of sounding line crossings is excellent.

5. Depth Curves.

The usual depth curves may be satisfactorily drawn.

6. Junctions with Contemporary Surveys.

a. The junctions on the east with H-6252 (1937) and on the

south with H-6291 (1937) will be considered in the reviews of those surveys.

- b. The junctions on the north with H-5521 (1934), H-5522 (1933-34), H-5488 (1933-34) and H-5489 (1933-34) are satisfactory as to extent but within the common area, many of the present survey depths vary 1 to 2 feet shoaler. This is a frequent occurrence when the Dorsey Fathometer soundings join hand lead soundings. A fringe of soundings has been shown at the present survey limits and in some cases where the agreement is satisfactory soundings have also been transferred to the present survey in the common area. For charting purposes, the present survey including the transferred soundings should be used to its northern limits and charting then continued from the adjacent inshore sheets.
- c. There are no contemporary surveys to the westward of the present survey.

7. Comparison with Prior Surveys.

- a. H-472 (1855), H-473 (1855) and H-1597a (1884), scales 1:20,000 1:20,000 and 1:80,000.

Portions of each of these surveys, taken together cover most of the present survey in the area north of lat. 28° 54'. Agreement of depths is varied; some areas are in fair agreement, some vary 1 to 4 feet deeper and others vary 1 to 10 feet shoaler than the present survey depths. The 40 foot spot (charted) originating with a single sounding on line on H-1597a in lat. 29° 05', long. 94° 53', falls in depths of 50 feet on the present survey. The present survey, however, shows a similar 40 foot spot about 3-1/2 miles S. W. Since the nearby soundings are in excellent agreement with those surrounding the old shoal it is doubtlessly the same shoal. The present survey should supersede the portions of the old surveys within the common limits.

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

Several soundings controlled by dead reckoning from this "deep sea sounding" survey fall within the limits of the present survey. They are in fair agreement with the present survey depths, except the 11 fathom sounding (on Chart 1116) in lat. 28° 45.5', long. 94° 41.3', which is about 1 fathom shoaler. The present survey should supersede the old survey within the common limits.

- 8. Comparison with Chart 1282 (New print dated July 5, 1938)
Chart 1283 (New print dated April 11, 1938)
Chart 1117 (New print dated February 7, 1938)

Hydrography shown on the charts, originates with surveys discussed in preceding paragraphs of this review except the line of soundings

(Chart 1117) following the 94° 44' meridian. The authority for this line cannot be readily ascertained. It may possibly originate with British Admiralty sources since the line is partially shown on Chart 392, edition of 1882, but is more completely shown on Chart 1639, edition of 1922. These soundings vary about 5 feet deeper than the present survey depths and should be superseded in future charting.

9. Field Plotting.

Field protracting and plotting were exceptionally accurate and conform to the requirements of the Hydrographic Manual.

10. Additional Field Work Required.

This is an excellent survey and no additional field work is required.

11. Superseded Prior Surveys.

Within the area covered, the present survey supersedes the following surveys for charting purposes:

H-472 (1855) in part
H-473 (1855) in part
H-1350 (1875-77) in part
H-1597a (1884) in part

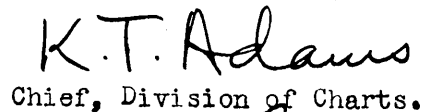
12. Reviewed by - Harold W. Murray, Sept. 24, 1938.

Inspected by - E. P. Ellis.

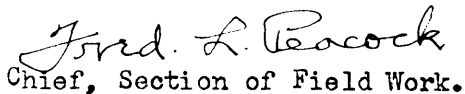
Examined and approved:




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



K. T. Adams
Chief, Division of Charts.



Fred. L. Beacock
Chief, Section of Field Work.



G. W. Wade
Chief, Division of H. & T.

Hydro. Sheets 6251 and 6252 applied to Cht. 1280 Jan. 5, 1939 K.R.
" Sheet 6253 applied (in part) to Cht 1283 April - 1939 - J.H.
" " 6251, 6252, 6253 applied to cht. 1282 May 1939 E.M.A.
" " 6252 " " " 520 " " E.M.A.
" " 6251-2-3 " " " 1117 Aug 1939 J.W.
6252 60 fathom curve revised 29° X 94° 30' SWS 6-23-54 Cht 1280

H-6252 - appd segs to Supplement 1962-5 hydro in new compilation
for chart extent of 518 east of 94° 38' W. Lamer 6/29/65