

4951

Diag. Ch. No. 1220

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey *Hydrographic*  
Field No. .... Office No. ....

LOCALITY

State *Del - Md.*  
General locality *Atlantic Coast*  
Locality *Fenwick I. to  
Ocean City*  
1929

CHIEF OF PARTY

*C. Shaw*

LIBRARY & ARCHIVES

DATE .....

4951

Original

Original

C. & G. SURVEY  
L & A  
JAN 23 1930  
Acc. No.

DESCRIPTIVE REPORT

to accompany

Sheet No. 3 - Project No. 41

Delaware - Maryland

Ship RANGER

Charles Shaw Commanding

1929

DESCRIPTIVE REPORT

to accompany

Sheet #3

Project No. 41, 1929

Delaware - Maryland

AUTHORITY:

Directors orders dated July 1, 1929.

LIMITS:

This sheet comprises all the hydrography within the area between shore and a distance of 7 to 8 miles offshore, where a junction with the LYDONIA'S 1929 work was obtained and between latitude <sup>38°</sup> 28' - 28' 5 on the north and <sup>38°</sup> 26' - 23'-3/4 on the south; except two shoals one of which was developed by the LYDONIA in 1929 and the other in previous years.

The sheet also includes a development of Isle of Wight Shoal on the southeast corner, an inshore area about 2 miles square on the southwest corner and a narrow strip of launch work parallel to the beach south to Ocean City, Maryland.

SURVEY METHODS:

The inshore work was done by ship's 22 foot motor dinghy, and called sheet #3C; also the development of Fenwick Island Shoal was done by the motor dinghy and called sheet #3B.

On account of the distance from shore and poor visibility during the whole season, the ship's pulling boats had to be anchored and located on Fenwick Island Shoal for control of that hydrography. Also Fenwick Island Shoal gas and whistle buoy was located and used.

The remainder of the hydrography on this sheet is handlead with the exception of a small area near the southern edge, which is Q day fathometer work. On J day the fathometer was run and simultaneous comparisons made with the handlead and recorded. This was done to see if the fathometer was functioning properly. Such good results were obtained that it was later used in the deeper water on Q day.

The usual comparisons, temperatures, salinities and dial speed was obtained during the work on Q day and may be found in the sounding records and fathometer report accompanying this sheet.

JUNCTIONS:

Junction was made with previous work on the north. A slight overlap was obtained with the LYDONIA'S work on the east and south. The limits of the LYDONIA'S soundings and previous season's developments within the area of this sheet were overlapped slightly..

DANGERS:

Fenwick Island Shoal lies about 5 miles east of Fenwick Island lighthouse and is marked near the southwest edge by a lighted gas and whistle buoy. Two wrecks were located on it, one having 8 feet on it and the other 16 feet. Swirls marked the location of both.

of  
Outside/the wrecks the least depth found on the shoal was 15 feet.

A very careful search was made of least depth on the wrecks. The vicinity of the swirls was carefully sounded. The launch dragged anchor until it caught in the wreck, then by going ahead on engine and swinging on anchor the soundings were obtained. Midway between

the location of the two wrecks (positions 1c and 1d) is the charted position of a wreck. Nothing could be found here. Fishermen who were familiar with the location of the two wrecks described above say that one wreck was blown up by the Coast Guard. This may be the one located position 1d. And the charted wreck may be either of the two found but slightly out of position.

Isle of Wight Shoal:

Isle of Wight Shoal was carefully developed by the ship. No indications could be found of the 16 foot spot charted on this shoal. A buoy marking the western edge of this shoal was cut in from shore signals. The least depth found was 21 feet. If the charted positions of soundings in this vicinity were moved about 300 meters southeast they would agree much closer with our soundings, excepting of course, the 16 foot spot which would then fall on 25 or 26 feet soundings instead of being where about 32 feet is indicated.

Shoal in Lat.  $38^{\circ} - 25\frac{1}{2}'$ , Long.  $74^{\circ} - 55\frac{1}{2}'$ :

Least depth found here was 24 feet lying in lat.  $38^{\circ} - 25'$  plus 950 meters and long.  $74^{\circ} - 55'$  plus 550 meters. Here also closer agreement would be had with charted soundings if the charted work was moved about 300 meters southeast.

Shoal in lat.  $38^{\circ} - 27'$ , long.  $75^{\circ} - 00'$ :

This shoal is quite flat and extensive. A close development of this area was made and least depth of 28 feet found.

Soundings taken in previous years agree fairly well with this survey except a charted 30 feet sounding in lat.  $38^{\circ} - 26.7'$ , long  $75^{\circ} - 00'$  which falls on 42 feet of water. This 30 foot sounding is undoubtedly meant for the shoal to the westward where a least depth of 33 feet is shown.

East of Fenwick Island Shoal:

A close development of a shoal area in lat.  $38^{\circ} - 28\frac{1}{2}'$ , long.  $74^{\circ} - 54'$  was made and a least depth of 29 feet found. A 30 foot sounding on chart 1219 falls very close to this shoal and the 33 foot sounding on chart 1220 falls just west of the shoal in 38 feet of water. However it is thought this 33 foot sounding was probably taken on the shoal originally.

Chart 1220 also shows 33 feet very near to the small shoal in lat.  $38^{\circ} - 27'.8$ , long.  $74^{\circ} - 54'.8$ . However 35 feet seems to be the least depth now.

Although extensively developed no evidence was found of the 28 foot spot shown on chart 1220 in lat.  $38^{\circ} - 28'.5$ , and long.  $74^{\circ} - 53'.2$ .

OTHER DISCREPANCIES:

A charted 28 foot depth falls in 36 feet at lat.  $38^{\circ} - 28'$  and long.  $75^{\circ} - 02'$ . A 32 foot depth was found about 200 meters west of this 28 foot depth. Judging by the slope of the bottom here it is probable that there is a 28 foot least depth.

About 2,100 meters southeast of  $\Delta$  We is a charted 25 foot depth where about 34 feet is indicated. Probably this 25 foot depth is shown slightly too far to the north and is really on the north end of the long shoal coming up from the southward.

The 28 foot charted depth about 400 meters southwest of  $\circ$  So is probably shown too far to the westward and is really the tip of the southwest tip of Fenwick Island Shoal.

Numerous other apparent discrepancies between this survey and previous depths can be explained if the charted soundings may be assumed liable to some error in position.

INSHORE WORK:

Launch work was carried from a junction with the ship work in to as close to the beach as the best weather would permit; which allowed for a development of the 1 fathom curve. A very close development of the shoal to the east of  $\Delta$  Horse gave a least depth of 17 feet.

Two fish traps were sketched in on the boat sheet in their correct location but the north trap extends farther to the east than shown, altho the eastern limit was not located.

CROSSINGS:

Positions	Soundings	Explanation
22 - 23c	37	Steep slope
82j	32	
135 - 138D 28 - 38H	D day about 3 ft. deeper than H day	Long distance from shore signals probably caused two lines to plot closer together than actually were.
140 - 141D	45	Edge of shoal - steep.
17 - 18 b	34	
75 - 76H	60	60 foot sounding used.
54 - 55H	64	
115 - 116H	38	Steep
38 - 39D	31	
147H	36	On edge of Fenwick Id. Shoal. Launch work buoy control - shipwork shore fixes.
103a	25	

CROSSINGS: (cont'd)

Positions	Soundings	Explanation
100L 89 - 90c	27 33	Slight displacement in position due to fix would cause this.
178P 170 - 171P	36 31	On edge of Isle of Wight Shoal. Leadline undoubtedly read one fathom wrong.

*W M Gibson*  
W. M. Gibson,  
Jr. H. & G. Engineer.

*approved:*  
*Charles Shaw*  
*H. V. G. Eng'r.*  
*Coast Ship Ranger*



TIDAL NOTE:

Portable automatic tide gauges were maintained at Ocean City, Maryland by LYDONIA and at Lewes, Delaware by RANGER. From Sept. 22 to October 4 the Ocean City gauge was out of commission due to storm destructions. It was found that there was about an hour difference in time of tide between Lewes, and Ocean City and that Atlantic City, N. J. and Ocean City, Md. were nearly the same. So Atlantic City tides were used for all work after September 22. See Directors letter dated November 20, 1929. On all other days Ocean City tides were used, with no corrections.

Plane of reference Ocean City - data not available.  
Highest tide observed " " "  
Lowest " " " " "

*Wm Gibson*

W. M. Gibson,  
Jr. H. & G. Engineer.

STATISTICS

Sheet No. 3

Delaware - Maryland

1929

Date	Vol.	Day	Sdgs.	Pos.	Miles.	Remarks
Sep. 4	1	A	427	110	19.9	Ship sheet 3A
9	1	B	272	74	13.0	
10	1	C	353	98	19.3	
12	1 & 2	D	791	261	52.8	
13	2	E	321	101	22.0	
17	2	F	350	87	18.7	
24	2	G	118	29	6.1	
25	2 & 3	H	501	148	22.6	
26	3	J	H342 F77	95	17.6	
27	3	K	125	26	5.8	
Oct. 7	3	L	442	104	17.2	
8	4	M	110	35	6.3	
9	4	N	587	147	28.0	
11	4	P	993	216	39.0	
19	5	Q	H246 F401	120	32.6	
24	5	R	147	44	7.5	
25	5	S	551	120	25.0	
28	6	T	566	142	26.2	
31	6	U	<u>363</u>	<u>65</u>	<u>12.2</u>	
Totals -			H7605 F478	2022	388.8	

(Continued)

Copy ✓

STATISTICS

(Continued)

	Date	Vol.	Day	Sdgs.	Pos.	Miles	Remarks
Sept.	13	1	a	437	119	17.6	Motor dinghy Sheet 3B
	25	1	b	584	165	19.9	
Oct.	11	1	c	10	1		Location of wreck and swirl.
"	16	1	d	<u>1</u>	<u>1</u>	<u>    </u>	
	Totals -			952	286	37.5	
Oct.	8	1	a	195	34	6.9	Motor dinghy Sheet 3C
	9	1	b	750	163	25.5	
	19	2	c	480	133	17.0	
	24	2	d	133	32	4.0	
	25	2	e	469	86	19.0	
	28	2	f	<u>66</u>	<u>15</u>	<u>2.6</u>	
	Totals -			2,093	463	75.0	
	Grand totals -			10,560	2,771	501.3	Sheet 3.

Description of hydrographic stations:

Data not available.

Landmarks:

Only prominent landmarks already charted.

Abstract of temperature and salinities:

Depth fms.	Temp.	Salinity	Lat.	Long.	Time
0	18.9	32.5	38° - 29'	75° - 01'	9:30 A.M. 9-27-29
6-3/8	18.8				
6-4/8	18.3				
2	15.6	31.8	38° - 24'	74° - 56.5'	1:51 P.M. 10-19-29
7	15.5				
11	15.6				

# FATHOMETER CORRECTIONS

Sheet 3A - 1929

Q Day

Delaware

Ship RANGER - Charles Shaw, Comd'g.

## Q day:

The dial setting was the same as that used on J day Sheet 3A 1929. The flash seemed to be steadier when using the 5 tube circuit installed by Dr. Dorsey in June 1929, than when using the standard circuit. For this reason the 5 tube circuit was used.

Comparisons with hand lead were frequently obtained during the day. The dial speed was measured with a speed indicator both before and after work and found to be 180 r.p.m.

The fathometer is calibrated for a speed of 182 r.p.m. and a velocity of sound in sea water of 810 fathoms per second. Then  $\frac{180}{182} \times 810 = 801$  fathoms per second or the assumed velocity of sound. Specific gravity was measured with a hydrometer and found to be 1.0233. From table 3 of the Hydrographic Manual the salinity was computed and found to be 31.8.

## Serial Temperatures:

Two serial temperatures were observed at depths of 11 fathoms (bottom), 7 fathoms and 2 fathoms with a deep sea thermometer with a reversing frame.

## Scale Corrections:

The following scale corrections were taken from the fathometer report of Sheet No. 1 Florida 1929. This correction is due to the distance between hydrophones and oscillator being 55 feet instead of 40 feet for which the instrument is calibrated.

Depth	Scale Correction in feet.
6	-2.4
7	-1.5
8	-0.9
9	-0.4
10	0.0
11	+0.3
12	+0.5

Velocity Corrections:

The following table of velocity corrections was compiled from the table 4a and 4b of the Hydrographic Manual using temperatures from the temperature curve.

Velocity 801 fms per second		Lat. 38 - 24				
Dial Speed 180 r.p.m.		Long. 74 - 56.5				
Salinity 34.8						
Depth	Tempt. Cent.	Mean Temp. Cent.	Factor	Vel. Cor. ft.	Scale Cor. ft.	Scale & Vel. Cor. Ft.
0	16.0					
2	15.6	15.9				
3	15.5	15.8	+ 0.029	+1.0	-2.4	-1.4
7	15.5	15.7	0.029	1.2	-1.5	-0.3
8	15.5	15.7	0.029	1.4	-0.9	+0.5
9	15.5	15.6	0.029	1.6	-0.4	+1.2
10	15.6	15.6	0.029	1.7	0.0	+1.7
11	15.6	15.6	0.029	1.9	+0.3	+2.2
12	15.6	15.6	0.029	2.1	+0.5	+2.6

Index Correction:

86 Comparisons were made with hand lead during the day. The mean of those of depth of 6-5/6 fathoms and greater was +0.8 feet. The mean of those less the 6-5/6 fathoms was +0.3 feet.

On September 26 the mean index corrections obtained from 76 hand lead comparisons was -0.1 feet.

Total fathometer correction:

The algebraic sum of scale, velocity and index correction was taken and plotted in the form of a curve. In reducing the sounding records the total fathometer correction was entered to integral feet in the manner prescribed for the entry of tide reducers in Par. 135 of the Hydrographic Manual.

*W. M. Gibson*  
 W. M. Gibson,  
 Jr. H. & G. Engineer.

No.	Fath.	Scale & Vel	Cor Sdg	H. L.	HL - Fath														
1	65	-0.4	64.6	62	-2.6														
3	63	-0.7	62.3	60	-2.3	80													
	83	0.8	83.8	82	-1.8		90	1.2	91.3	93	1.8								
	92	1.3	93.3	92	-1.3		74	+0.3	74.3	75	0.7								
	94	1.6	95.6	93	-2.6		72	-0.0	72.0	74	2.0								
	92	1.3	93.3	93	-0.3		71	-0.1	70.9	72	1.1								
	100	1.7	101.3	93	-0.3		70	-0.3	65.7	72	2.3								
	100	1.7	101.3	100	-1.7	82	65	-0.4	64.6	71	2.4								
4	100	1.7	101.3	102	0.3				64.6	70	1.4								
12	100	1.7	101.7	102	0.3														
	95	1.7	100.7	101	0.3														
	94	1.6	95.6	100	0.4														
	94	1.6	95.6	95	-0.6														
	93	1.5	94.5	95	0.5														
	92	1.3	93.3	93	-0.3														
	90	1.2	91.2	92	0.8														
	85	1.1	90.1	91	0.9														
14	85	1.1	90.1	91	0.9														
	90	1.2	91.2	90	-1.2														
	85	1.1	90.1	90	-0.1														
	84	1.0	85.0	90	1.0														
15	83	0.8	83.8	85	1.2														
	83	0.7	82.7	84	1.3														
	82	0.8	83.8	84	0.2														
	82	0.7	82.7	82	-0.7														
24	83	-0.7	62.3	62	-0.7														
	63	-0.7	62.3	62	-0.3														
	62	-1.0	61.0	61	0.0														
	62	-1.0	61.0	61	0.0														
	6.2	-1.0	61.0	62	1.0														
	6.3	-0.7	62.3	63	0.7														
	6.5	-0.4	6m4.6	65	0.4														
	7.1	-0.2	70.8	72	1.2														
37	93	1.5	94.5	95	0.5														
47	65	-0.4	64.6	65	0.4														
	63	-0.7	62.3	62	-0.3														
	62	-1.0	61.0	60	-1.0														
49	80	0.5	80.5	81	0.5														
	73	0.1	73.1	75	1.9														
	75	0.3	75.3	80	0.7														
	80	0.5	80.5	81	0.5														
	71	-0.2	70.8	73	2.2														
	72	-0.1	71.9	73	1.1														
	72	-0.1	71.9	74	2.1														
	73	0.1	73.1	75	-0.1														
52	70	-0.3	65.7	72	2.3														
	64	-0.6	63.4	63	-0.4														
	63	-0.7	62.3	63	0.7														

Index Cornn over 64m 51 +0.8  
 " less 6 - 5 = +0.3



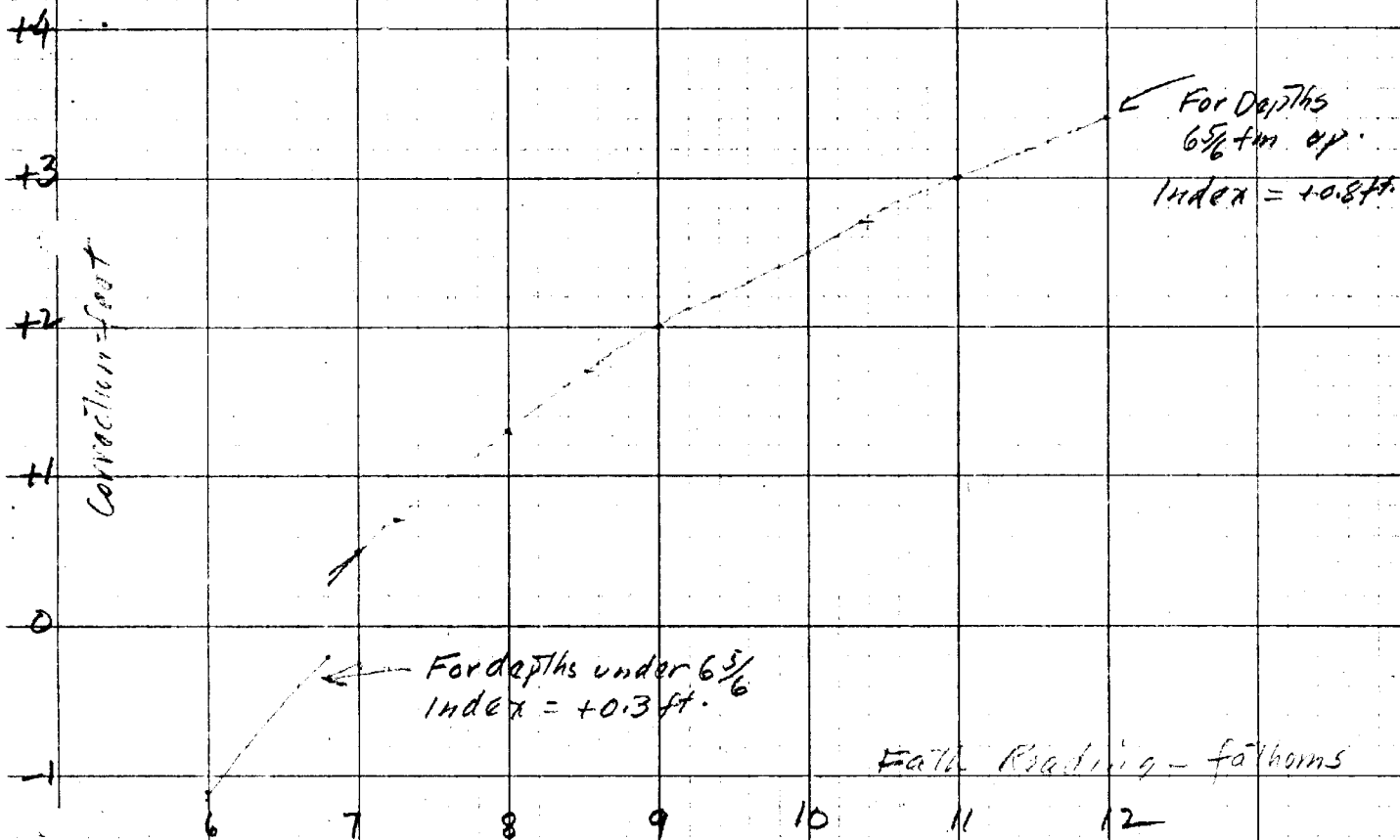


# Total Fathometer Correction Curve

Q Day

Sheet 3a

Delaware 1929



By W.M.G.  
L.M.E.W.

Temperature Curve

C Day Sheet 3a Delaware 1979

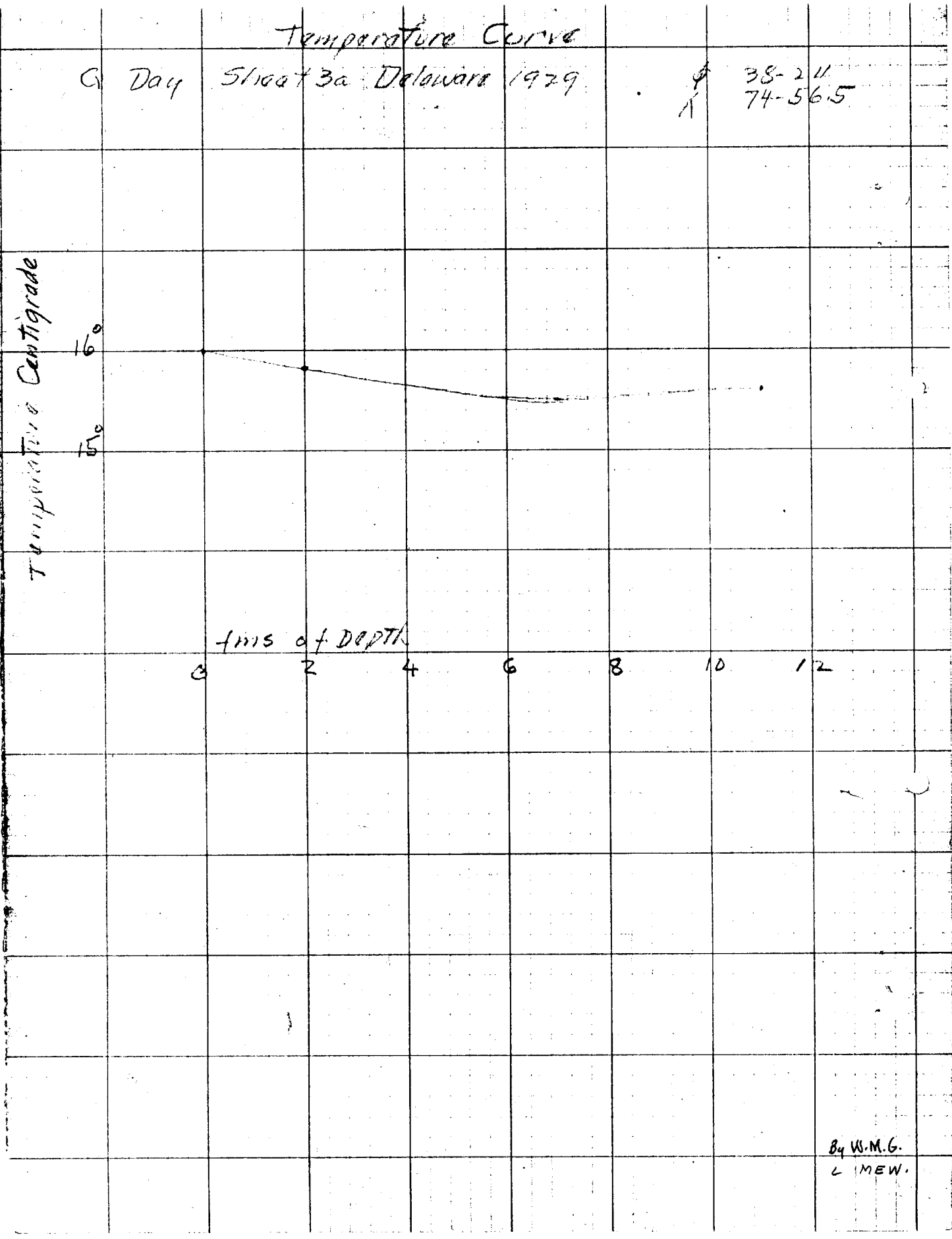
38-211  
74-56.5

Temperature Centigrade

60  
50

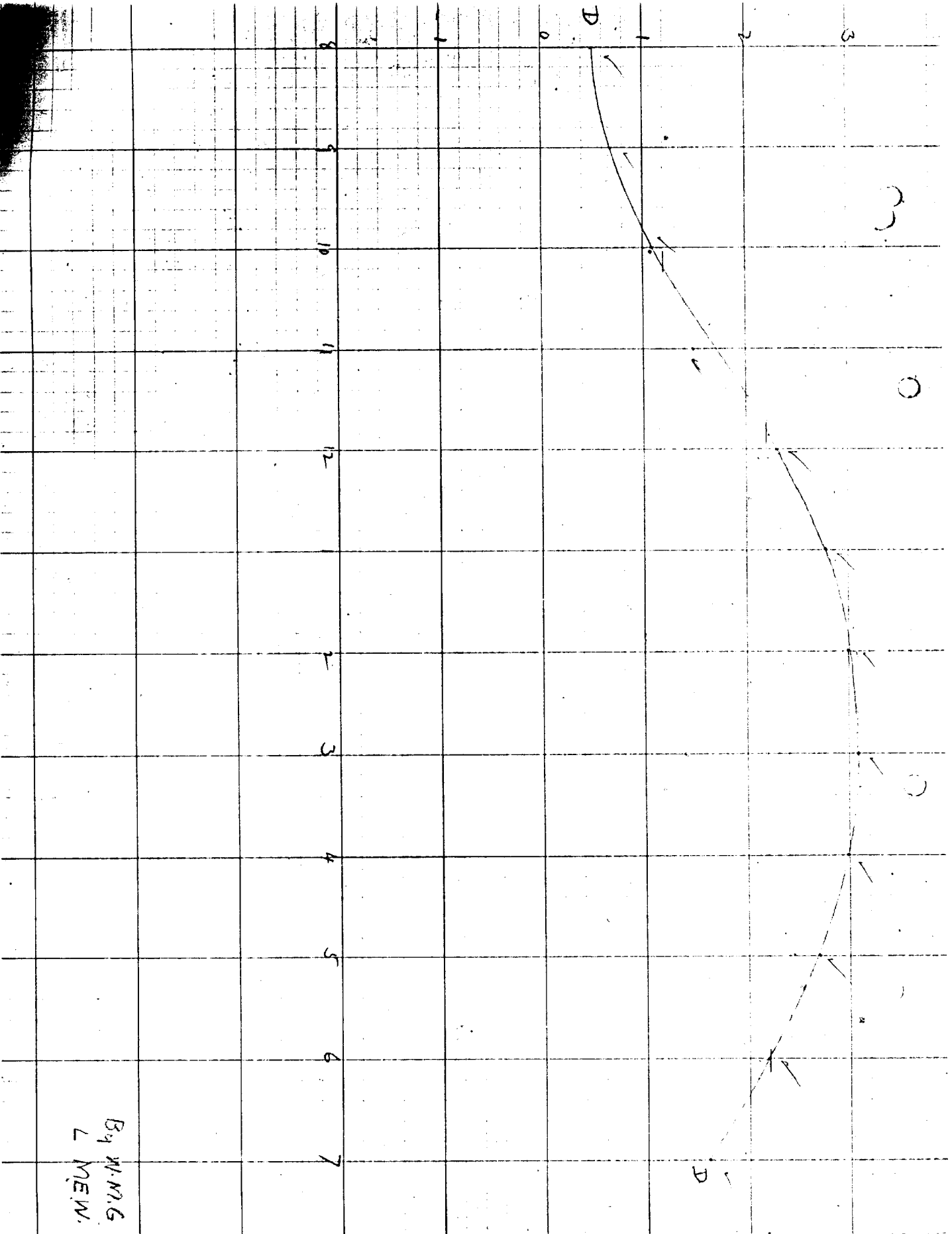
fms of DEPTH

0 2 4 6 8 10 12



By W.M.G.  
L MEW.

Ship Sheet # 3A  
Maryland 1929  
Ranger



By W.M.G.  
 L M.E.W.

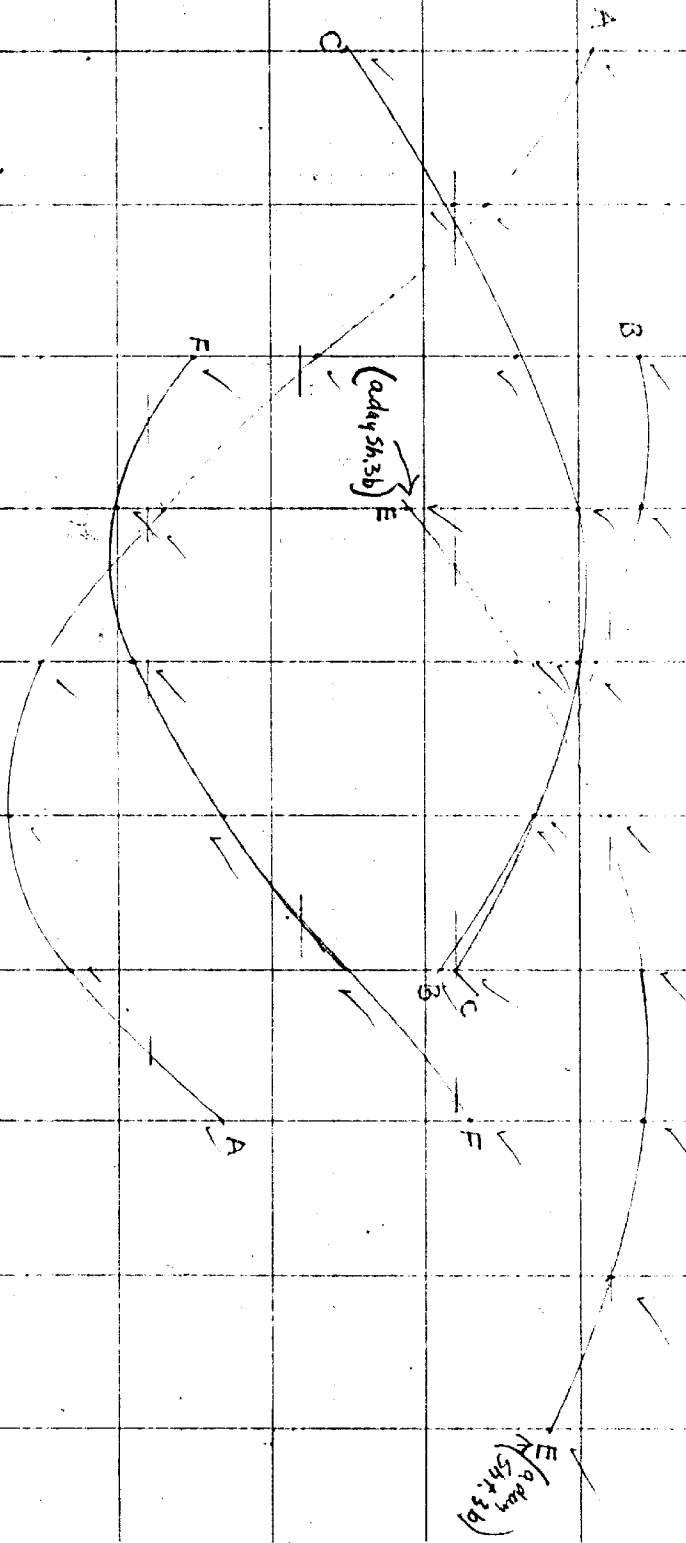
TIDE REDUCERS

MARYLAND

SHIP SHEET #3A

RANGER 1192.9

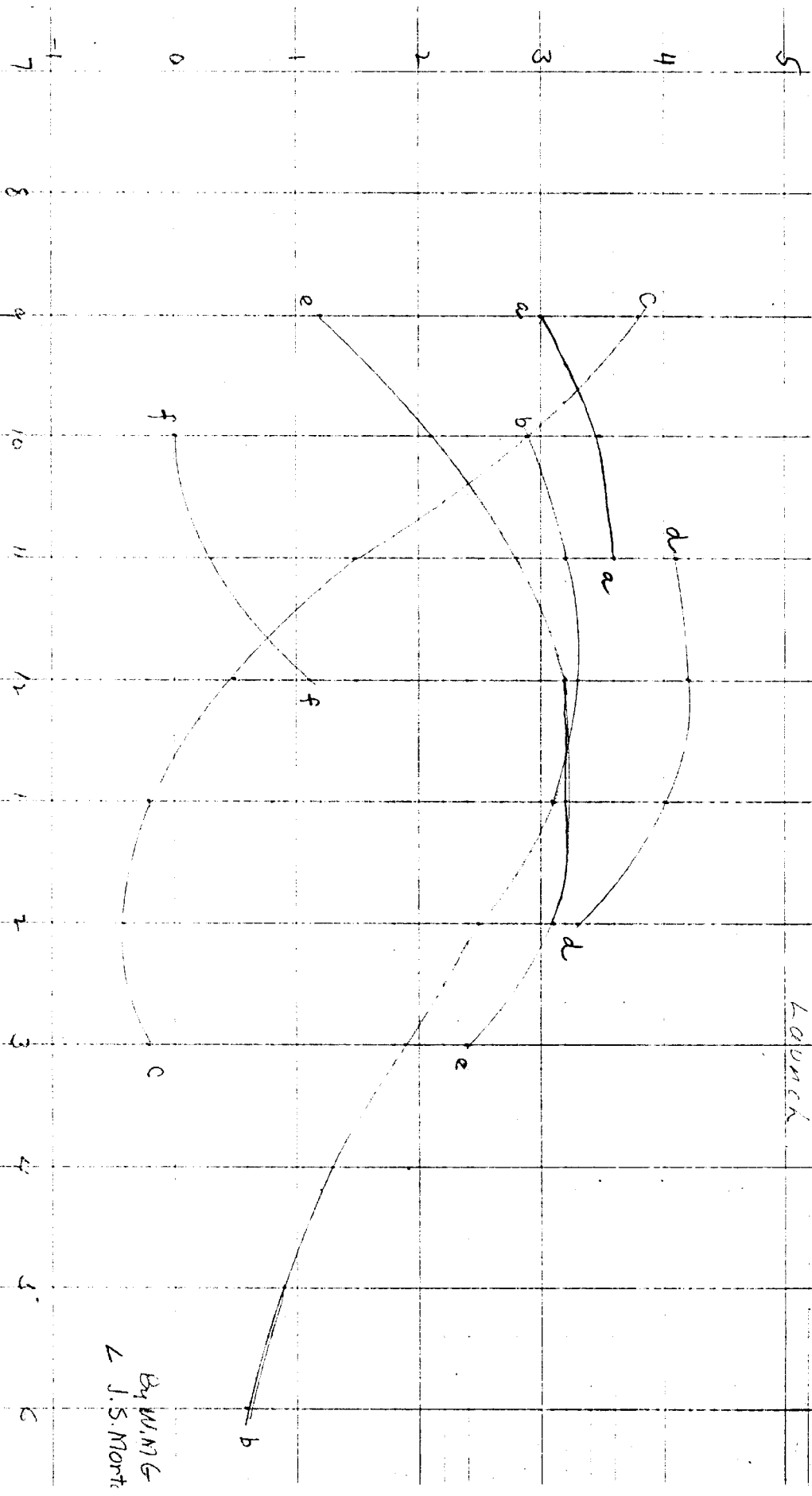
C. Shaw, Comdr.



Sheet 3 C

Delaware - Maryland 1929

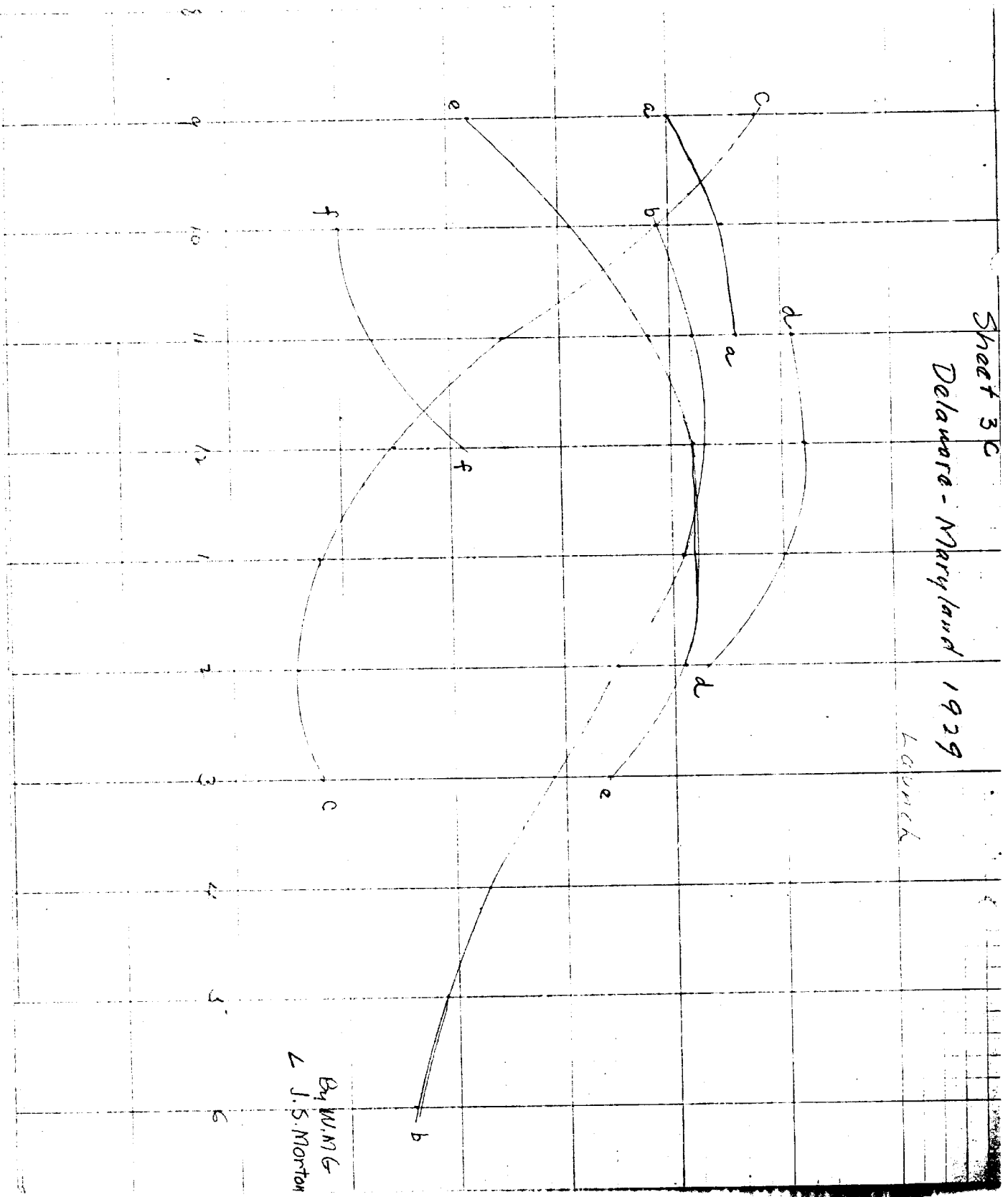
LAUNCH



By W.M.G.  
L. J.S. North

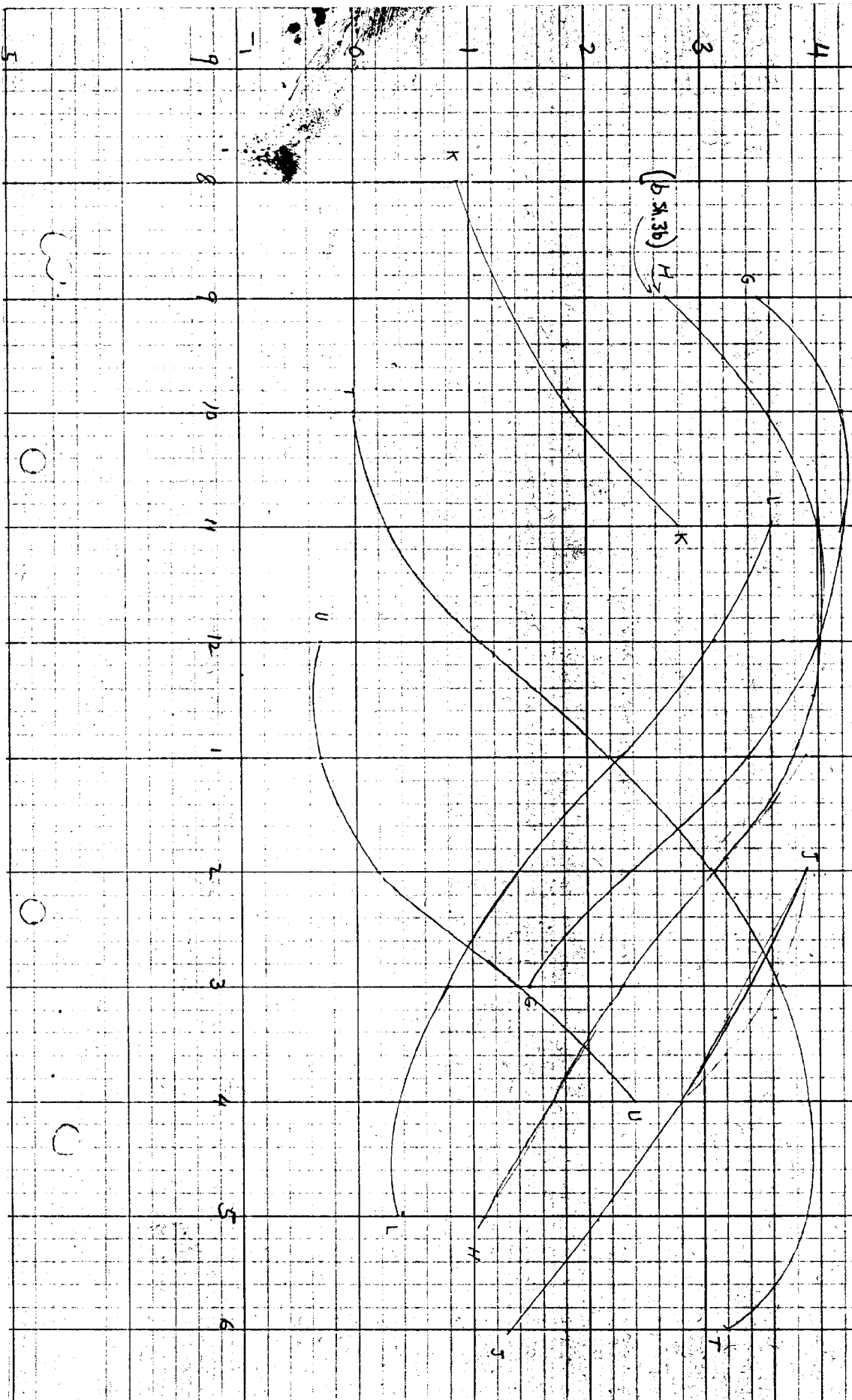
Sheet 3C  
Delaware - Maryland 1929

Leavick

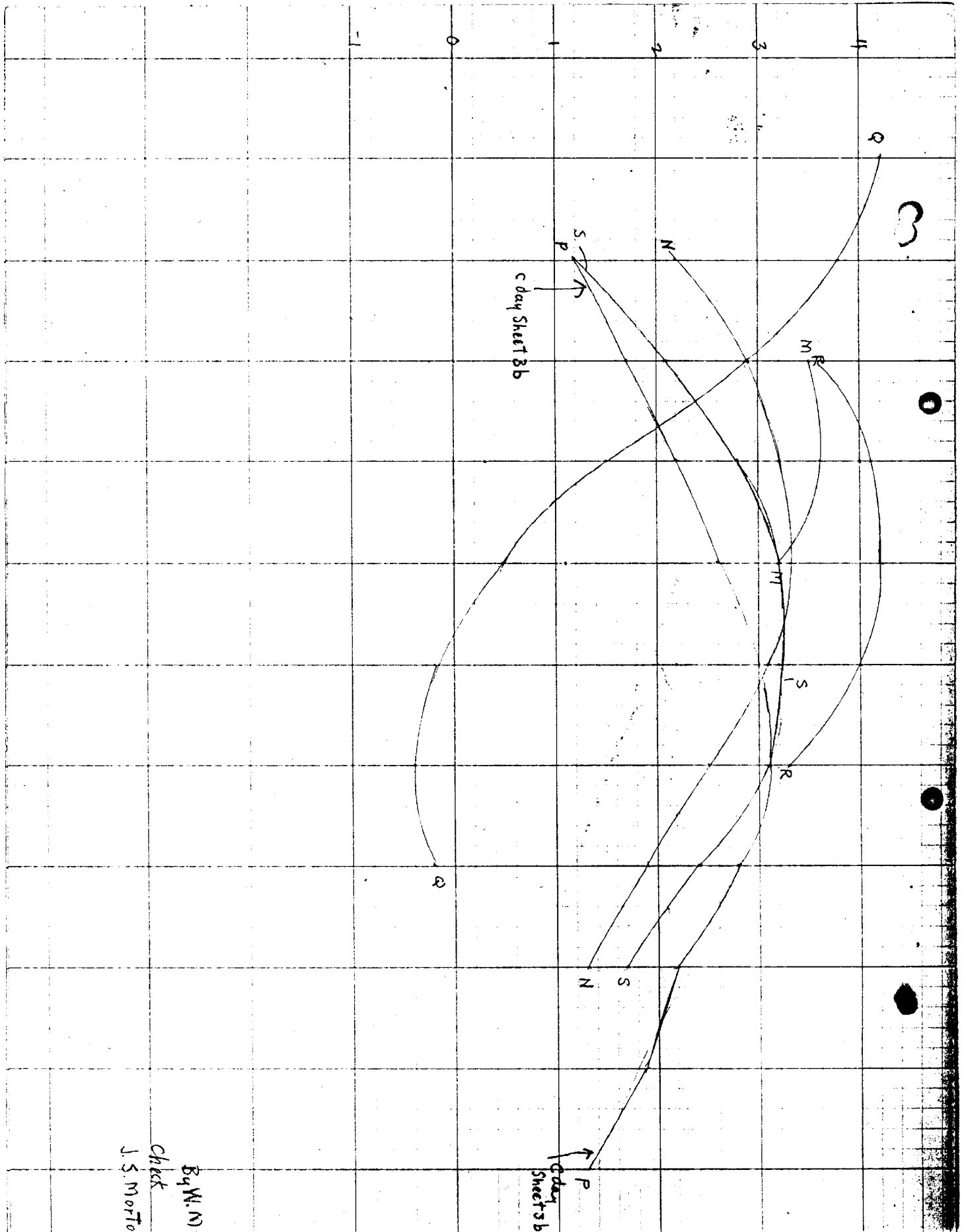


By W.M.G.  
L. J. S. Morton

Ocean City Tides 1929  
Sheet 3 Delaware - Maryland 1929







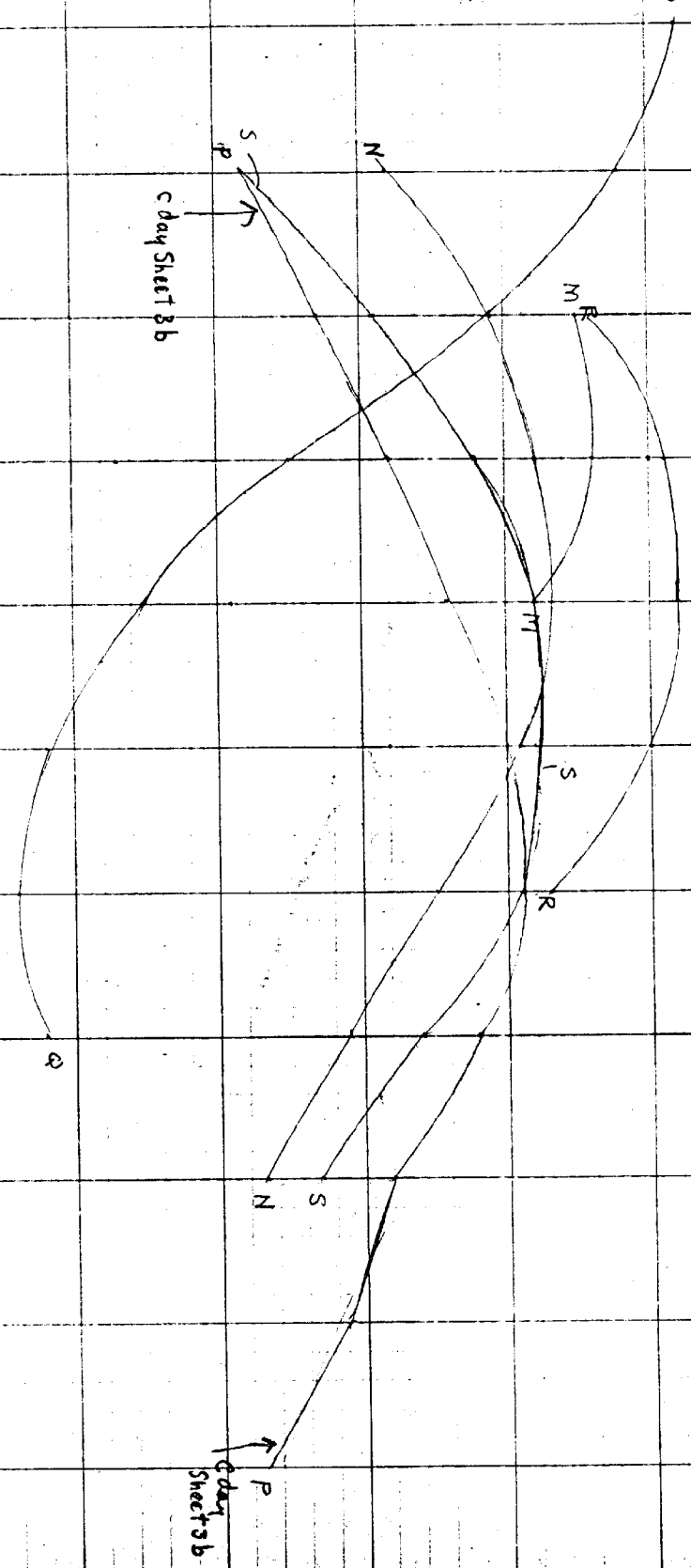
By W.M.N.  
 Check  
 J.S. Morton

c day  
 Sheets b  
 P

c day  
 Sheet 8b  
 P

3

0



c day Sheet 3b

c day Sheet 3a

By W.M.G.  
 Check  
 J.S. Morton

Sheet No. 3 - Project No. 41 and accompanying records  
have been inspected and are approved.

*Charles Shaw*

Charles Shaw,  
Commanding Ship RANGER.

January 18, 1930.

H 4951

Chief of Party - Charles Shaw  
Surveyed by - Charles Shaw  
Protracted by - J. S. Massey  
Soundings Pencil'd by - J. S. Massey and W. E. Wememals  
Verified and Plotted by - John E. Ladd

1. The records conform to the requirements of the General Instructions
2. The plan and character of development fulfills the requirement of the General Instructions.
3. The plan and development satisfy the specific instruction, except as noted later in this report.
4. The sounding line crossings are adequate
5. The usual depth curves could be drawn.
6. The field plotting was complete to the extent prescribed in the General Instructions. The sheet was very accurately plotted by the field man and only a very small number of portions had to be replotted.

6 (cont.)

The spacing and penning of the soundings were also very accurately done.

7. There was no adjacent sheet of recent years except H 4944, which was <sup>not</sup> completed at this time, so that a study of overlaps and junctions was impossible.

8. (a) The plotted locations of two sounding lines, ending with Positions 28 and 29 and 60 to 61 e seem to be in error, as the former appears to be too far out from the shore, causing 3 and 4 ft soundings to plot beyond 7 and 8 feet soundings.

(b) It would appear that the 29 ft. sounding between Pos. 92 and 93T was one fathom too deep, possibly being read ~~wrong~~ by the leadsmen as it does not agree with the soundings around it, nor with the chart. It may however be a continuation of the shoaling about 400 meters to ~~the~~ the westward.

(retained, sounding 61.00 ...)

8 (c) except for the 8 ft. sounding on the wreck on Finnicks Island Shoal, the shallowest spot found was 14 ft. at  $38^{\circ}27'$  plus 481 meters and  $74^{\circ}56'$  plus 15 meters, where as, there is a charted depth of only 11 ft. at about  $38^{\circ}27'$  plus 555 meters and  $74^{\circ}56'$  plus 360 meters for the shallowest depth on the shoal. at this 11 ft spot of the chart this survey records a 23 ft sounding.

(d) The least depth found on the Isle of Wight Shoal was 21 ft. where as the chart shows a 16 ft. as the least depth for this area. In both cases, (the two mentioned shoals) as mentioned in the descriptive these would be a better agreement if the charted depths were moved about 300 meters south-east

8. (e) there is a poor agreement with two joining lines at  $74^{\circ}E$  and  $32^{\circ}E$ , showing a difference of 6 ft. at about the same spot. also a  $31^{\circ}E$  and  $75^{\circ}E$ . the same difference exists except that it was necessary to

8 (c) cont.

plot the shoals of the two soundings of a 7 ft difference as they fell on the same spot on the sheet.

9

The plan and extent of development satisfy the specific instructions except that the lower end of the spit starting at about  $38^{\circ}33'$  and  $75^{\circ}01'$  and running south-west and showing a charted least depth of 11 ft was not developed on this sheet nor on the sheet done by the Lydonia, (H 4944), covering the adjacent area to the south and east during the same season.

Wm. S. Ladd  
jr. Comd. Eng.  
May 26, 1930

IN REPLY ADDRESS THE DIRECTOR  
U. S. COAST AND GEODETIC SURVEY  
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. 11-DEM

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

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4951

Fenwick Island Lighthouse to Ocean City, Coast of Maryland and Delaware

Surveyed in 1929

Hand lead and fathometer soundings

Instructions dated July 1, 1929 (RANGER)

Chief of Party, Charles Shaw

Surveyed by C. S. and R. C. Overton

Protracted by J. S. Massey

Soundings plotted by J. S. Massey and M. E. Wennermark

Verified and inked by J. G. Ladd

1. The records are clear and well kept and conform to the requirements.
2. The plan, character and extent of the survey satisfy the general and specific instructions.
3. In general the sounding line crossings are satisfactory. Most of the worst crossings have been listed in the descriptive report. These were examined and no rejections were made, as none are considered serious discrepancies, the shoalest soundings being plotted in each case. Most of the soundings were obtained with the hand lead and they check closely with the fathometer soundings.

The two fathometer soundings of 40 and 37 feet in Lat. 38° 24', Long. 74° 59' are shoaler than the surrounding depth but were accepted as the cross line shows a 41 foot hand lead sounding at the same point.

4. The information is sufficient for completely drawing the usual depth curves.
5. The junction with H. 4942, on the northwest, is satisfactory.

The junction on the north with the survey of 1920, H. 4164, is satisfactory, except that the northern end of the thirty foot curve on Fenwick Island Shoal is not well defined.



The junction with the work of the LYDONIA, H. 4944, is satisfactory as far south as Lat. 38° 22'. South of this point there is a gap between the two surveys. There are some shoals in this gap, which are shown on H. 212 from additional work of 1896, in the vicinity of Lat. 38° 22', Long. 75° 02'.5. The control of the line, on which these soundings were obtained, is not good and these shoals should be closely examined when this work is extended further south.

6. Comparison with previous work:

The three principal shoals on this sheet, Fenwick Island Shoal, the shoal in Lat. 38° 25'.5, Long. 74° 55'.5, and Isle of Wight Shoal were developed in 1896 and the work is plotted on H. 212. In each case shoaler depths are shown on the old work but a general shifting of all of these shoals in a southeasterly direction seems to have occurred since the time of the old survey.

Numerous other shoal depths shown on chart 1220 were not verified by the present survey. These discrepancies are discussed in detail in this descriptive report and all of the old soundings are from the survey of 1848, H. 212. All of these were examined and verified from the original records and all are correct as shown on H. 212 with the exception of the 28 foot sounding in Lat. 38° 28'.3, Long. 74° 53'.3, which was found to have been erroneously plotted as 4 3/4 fathoms instead of 11 3/4 fathoms.

While there is not always definite proof of the non-existence of these spots, considering the fact that there is strong evidence that the area is changeable, and the greater reliability of the recent survey, it is recommended that this survey, H. 4951, supersede all previous work. (Approved by A. M. Sobierlaksi.)

7. The usual amount of field plotting was carefully and accurately done by the field party.

8. Character and scope of surveying - excellent.

The ground is uniformly covered, shoal development is considered sufficient, and in most cases a real effort was made to investigate questionable soundings on the old surveys.

9. No additional work is recommended within the limits of this work,

but the area south of Lat. 38° 22' and west of Long. 75° 02'  
should be closely developed.

10. Reviewed by R. L. Johnston, August 26, 1930.

Approved:

A. M. Sobieralski  
Chief, Section of Field Records (Charts)

F. B. Borden  
Chief, Section of Field Work (H. & T.)

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

C. & G. SURVEY  
JAN 23 1930  
ACC. NO.

REG. NO. 4951

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. 3

REGISTER NO. 4951

State Maryland - Delaware

General locality Atlantic Coast.

Locality Fenwick Island <sup>L.H.</sup> to Ocean City Md.

Scale 1:20,000 Date of survey Sept. <sup>4</sup> - October <sup>31</sup>, 19 29

Vessel RANGER

Chief of Party Charles Shaw

Surveyed by Charles Shaw

Protracted by J. S. Massey

Soundings penciled by J. S. Massey, M. E. Wennemark.

Soundings in ~~fathoms~~ feet

Plane of reference M. L. W.

Subdivision of wire dragged areas by

Inked by John G. Ladd

Verified by John G. Ladd

Instructions dated July 1, 1929, 19

Remarks: 3 boat sheets (3A, 3B, 3C)

Control on North American Datum

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 4951.

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

Number of positions on sheet	2771.
Number of positions checked	..405
Number of positions revised	...10
Number of soundings recorded	10560
Number of soundings revised	...20
Number of signals erroneously plotted or transferred	....

Date:..... May 21 ..... 1930 .....

Cartographer:..... John G. Ladd .....

(FOR FILES FIELD RECORDS SECTION)

March 22, 1930

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in  
9 volumes of sounding records for

HYDROGRAPHIC SHEET

4951

Locality:

East Coast of Maryland

Chief of Party:

Plane of reference Charles Shaw, in 1929

ft. on tide staff mean low water, reading

4.1 ft. ~~below B. M.~~ above datum of tabulation at Atlantic City, N.J.  
15.8 32

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks,

Chief, Division of Tides and Currents.