5992

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

DESCRIPTIVE REPORT

Topographic / Hydrographic } Sheet No. 49

State VIRGINIA

LOCALITY

~~East of Chesapeake Bay entrance~~

~~Latitude 36°45' to 37°04'~~

~~Longitude 75°00' to 75°34'~~

offshore Cape Charles

1935

CHIEF OF PARTY

H. A. Seran

U. S. GOVERNMENT PRINTING OFFICE

5992

Form 537
Ed. Dec., 1930

REG. NO.

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. 49

REGISTER NO. 5992

State VIRGINIA

General locality ~~East of Chesapeake Bay Entrance.~~ Offshore Cape Charles 21

Locality ~~Lat. 36°45' to 37°04'; Long. 75°00' to 75°34'~~

Scale 1:40,000 Date of survey Aug. & Sept., 1935

Vessel U.S.C. & G.S.S. OCEANOGRAPHER

Chief of Party H. A. Seran

Surveyed by H. A. Seran

Protracted by J. S. Morton

Soundings penciled by R. A. Marshall & J. S. Morton.

Soundings in ~~fathoms~~ feet

Plane of reference M.L.W.

Subdivision of wire dragged areas by

Inked by C. F. McKinney

Verified by C. C. McGlothlin

Instructions dated April 27, 1933 & January 10, 1935.

Remarks: R. A. R.

U. S. GOVERNMENT PRINTING OFFICE, 1932

D E S C R I P T I V E R E P O R T

TO ACCOMPANY

H Y D R O G R A P H I C S H E E T

NO. 49

Project No. 142 Scale 1:40,000 Virginia Coast 1935

Ship "OCEANOGRAPHER" H. A. Seran, Commanding

INSTRUCTIONS:

This work was executed in accordance with the Director's Instructions dated April 27, 1933 and January 10, 1935.

LIMITS:

The area covered by this survey is opposite the entrance to Chesapeake Bay, Virginia, latitude 36°45' to 37°04'; Longitude 75°00' to 75°34'.

This sheet makes junction on all sides with work executed in 1935. On the north it joins Sheet No. H-5991 48; on the east, Sheet No. H-5995 123; on the south, Sheet No. H-5993 49½; and on the west, Sheets Nos. H-5988 46 and H-5990 47, (executed by the party of the "LYDONIA".)

SURVEY METHODS:

The details of the method used in computing and adjusting the entire system of buoys are contained in the report on that subject accompanying this season's records. The buoys used for control on this sheet are on the supplementary line between buoys DOG and GAMMA on the primary loop. The distance used in computing the position of buoy RUN was measured by bombing. For the other buoys, SWAN, TAR and WISE, the distance was measured by the taut wire method.

Standard methods of R.A.R, with floating stations, were used for controlling the sounding lines; the R.A.R. being strengthened

by gyro bearings whenever the buoys were visible. The "GILBERT" and the "WELKER" were used as station ships. In the smooth plotting of the sheet, the positions as obtained by R.A. R. were checked by plotting the dead reckoning and, where the R.A.R. positions were obviously in error, the dead reckoning positions were used. For each line of soundings all the distance arcs and bearings were plotted and then the D.R. plotted on tracing paper. The D.R. tracing was placed over the sheet and the most logical location of each position accepted, considering the line as a whole.

The bearings, as a whole, furnish a very good check on positions and were given considerable weight in adjusting the positions. There were, however, two weaknesses in bearings which were considered. Prior to September 16, at which time the compass was overhauled by a Sperry representative, the gyro compass was giving some trouble. Also, when the telescopic pelorus was used, it was necessary to change the focus between the time of observing on the buoy and reading the compass circle.

There are several probable sources of error in the distance arcs (errors which become apparent when there are bearings or, when the line passes between the stations), such as, error in the velocities, variation in the part of the sound wave which trips the thyratron at the stations, lag in the chronograph, etc., but the error in the relation of the magnetaphone to the buoy anchor is believed to be the most considerable source of error. The weakness in the computation of this data is the determination of the direction of the buoy from the buoy anchor, especially when the wind and current are opposed. The average scope of the buoys on this sheet is about 90 meters, so the possible error can be as great as 180 meters.

This source of error was considered in the smooth plotting and in some cases the position of the magnetaphone shifted to fit the adjusted positions. This was done for the arcs on positions 40-55K and all of M day. For M day the magnetaphone data was recomputed entirely, using the current to determine the direction of buoy from buoy anchor instead of the wind, which was used in the station ship computation. The new values are listed on a separate sheet of paper which is included in this report. Other times when a change in the magnetaphone data would probably improve the agreement of the distance arcs with the bearings and dead reckoning are: All of A day, 1 to 53 B day, the last part of F and beginning of G days, all of H day and 77 to 92 J day. The bearings on all of A day and 1-53B day were not used because of poor agreement with distance arcs. The bearings may be correct and the magnetaphone data wrong, but the change in location of positions would be small because the arc intersections were "strong" at this time.

The soundings on this sheet are, for the most part, red light fathometer soundings, obtained with the 515 type fathometer, hammer oscillator. The exception to this is the development of the two shoals on the northwest corner of the sheet, which was done with hand lead. The corrections to the fathometer sdgs. were determined by comparisons with hand lead or wire sdgs. Details of the computation of corrections may be found in the report covering that subject submitted with this season's work.

R.A.R. VELOCITIES:

The velocities of sound used in plotting this sheet are the theoretical velocities taken from the British Admiralty Tables based on observations of bottom temperatures and salinities by the station ships and the "OCEANOGRAPHER".

The work on this sheet was begun on August 14, 1935, and completed on Sept. 20, 1935, with considerable periods of time in which no work was accomplished due to adverse weather conditions and time taken to taut wire buoys previously planted.

This necessitated the grouping of velocities according to the time periods due to the marked seasonal change.

First, all velocities were plotted graphically according to depth, using different colors for time periods to determine what "time" divisions would be necessary. It was found that by using four time divisions; August 14 to August 23, August 27 to August 29, September 4, and September 18 to September 20, the mean velocity at a given depth would not differ from any single observation by more than about two meters per second, except in the cases of some apparently erroneous observations which were rejected. The basis for this division was taken from the observations by the station ships, which were continuous and at the same depth.

Separate overlays of the boat sheet were made for each time division and the velocities plotted where observed and "velocity curves" drawn showing changes of one meter per second. Next an overlay of each overlay was made and radial lines drawn from the station ships at intervals of ten degrees and these radial lines were divided into units of two inches each. At each of these points along the radials the mean velocity from the station to that point was plotted and "mean velocity curves" drawn in. These second overlays were put over the boat sheet and the velocities for each position were determined by the "mean velocity curves" from each station.

DISCREPANCIES:

The following are a list of discrepancies noted in the soundings of ~~sa~~ crossing or closely adjacent lines with recommendations for disposition:

1. On position 81C, latitude 37°01'; longitude 75°32', there is a 50 ft. sdg. which is considered questionable. This sound-

ing was obtained with fathometer (the reading before correction being 7fms. 3 ft.) and is below the lower limit of accurate soundings with this type of fathometer. The area was later developed with hand lead and the least depth found was 57 ft., which agrees exactly with the least depth on this shoal as shown on Chart No. 1229. The facts are submitted without recommendation. The 57 foot sounding accepted as the least depth in this area.

2. The location of positions 56 - 71K appear to be in error and it is recommended that they be adjusted as indicated on the tracing attached to this sheet. The fact that there is error in the intersection of the arcs on this day is born out by the considerable discrepancies between the bearings and the arc intersections on the other cross lines run on this date. With the adjustment indicated there are only two crossings which are not in close agreement. Between positions 59 and 60K, a 123 ft. sounding falls on a 129 ft. sounding between positions 82 - 83G. This can be corrected by a slight shift of the positions on "G" day to the westward. Between 69 - 70K a 133 ft. sounding falls on a 127 ft. sounding, between 110 - 111F. This is on the edge of a steep bank and can be corrected by a slight shift of either line.

See Descriptive Report

adjusted by moving the soundings that were in disagreement, see verifier's report.

3. The following are a list of crossings which disagree by more than five feet but which can be explained by a slight shift in the location of positions, or error in the fathometer soundings. The fathometer correction was found to vary considerably with any variation in the voltage on the line. The voltage on this fathometer had to be controlled in the engine room as there were no facilities for controlling the speed of the dial on the bridge. While close watch was kept on the voltmeter and any considerable variation was noted and corrected, it is possible that a small variation in the voltage

See Descriptive Report

could cause differences in crossings of as much as 6 or 7 ft. by being out in opposite directions.

The following discrepancies were adjusted by shifting the soundings affected. see par. 4 of the review.

No.	Location (lat. long.)	Pos. No.	Sdg.	Pos. No.	Sdg.
1.	37°04' 75°28.5	118-119J	97'	2-3A	84'
	Shift A day to east.				
2.	37°03' 75°28.5	117-118J	87'-83'	27-28B	95'-99'
	Irregular bottom, probably error in fathometer reading or correction. B day may be shifted a little.				
3.	37°03' 75°18'	36-37K	117'	37-38B	111'
	117' sounding probably read 1 fm. deep. Adjacent sdg. 110'.				
4.	37°03 75°30'	1-2C	-	78-79B	-
	Close parallel lines over irregualr bottom. Either line may be shifted a little in N-S direction. Retain shoal sdgs.				
5.	37°02' 75°28.5	116-117J	83'	6-7C	98'
	Shift C day soundings to west.				
6.	37°02' 75°28.5	115-116J	97'	85-86C	80-77'
	Shift C day to east.				
7.	37°01' 75°22'	123-124J	110'	100C	97'
	Shift C day to east.				
8.	36°59' 75°28	97-114J	-	-	-
	Shift J day a little to NW to improve the crossings in this area.				
9.	36°54' 75°12	51-53K	-	-	-
	Soundings appear to be low but location of position on K day may be shifted some because of poor agreement of arc intersections with bearings.				
10.	36°52' 75°23'	18-19K	99'	60H	90'
	Apparently a fathometer error, a mean of the two probably the best.				
11.	37°52' 75°21	"P"	88'-91'	101-102H	97'
	Irregular bottom, retain all shoal soundings.				
12.	36°48.5 75°12.5	5-6-P	92'	93-94L	86'
	Shift L day to north.				
13.	36°50' 75°22.5	72-74P	-	-	-
	Soundings appear to be too shoal. Should be increased 3-4 ft.				

COMPARISON WITH PREVIOUS SURVEYS:

This sheet was compared with Charts Nos. 1225 and 1109 and was found to be in very good general agreement.

On Chart No. 1225, the shoal at latitude 37°01', longitude 75°32' shows a minimum depth of 57 ft. This is identical with the least depth found while investigating this shoal with hand lead this season. However, there is a questionable 50 ft. fathometer sounding recorded in this area.

Chart No. 1109, at latitude 37°00', longitude 75°28', shows 11 fms. and minimum depth found this season is 61 ft. At lat. 36°52', longitude 75°20', the chart shows ~~15~~ 14 fms. and minimum depth for this season's work is 68 ft. At latitude 36°53', longitude 75°04', chart shows 16 fms. while shoalest water found in that area this season was 102 feet. a depth of 96 feet was found at Lat. 36°52' Long. 75°05' and shoaler depths to the SW of this position. The difference in location is probably due to less accurate control on the older surveys.

MISCELLANEOUS:

The distance arcs from the station ship "WELKER" are shown in red ink and from the "GILBERT" in green ink. Bearings are shown by a broken black line.

Where fathometer soundings were taken in conjunction with handlead soundings, only the hand lead soundings are plotted.

There is attached to the sheet an overlay traced from Sheet No. 49½ H-5993(1935) showing some soundings which come within the limits of this sheet. This extra development was executed in searching for a 6¼ fathom spot mentioned in the Director's letter, dated June 3, 1935. Not found. See Desc. Rep. H-5993, page 12 The letter is included in the descriptive report accompanying Sheet No. 49½ H-5993(1935). This shoal had previously been removed from the chart.

Approved, Forwarded:

H. A. Seran, Comdr., C&GS.,
Commanding Ship OCEANOGRAPHER

Respectfully Submitted,

Jeremiah S. Morton, Lieut. (jg)
Ship OCEANOGRAPHER

No regular system of corrections could be devised for the entire sheet, therefore, each day was treated as a separate unit and the fathometer corrections were obtained from the comparisons taken on said day. In some cases differences between comparisons, taken within a short time of each other, differed by as much as a fathom, while in others a uniform change was noted thruout the day; therefore, various methods of obtaining and applying corrections were used on different days.

The following is a summary of the different methods of obtaining and applying corrections:

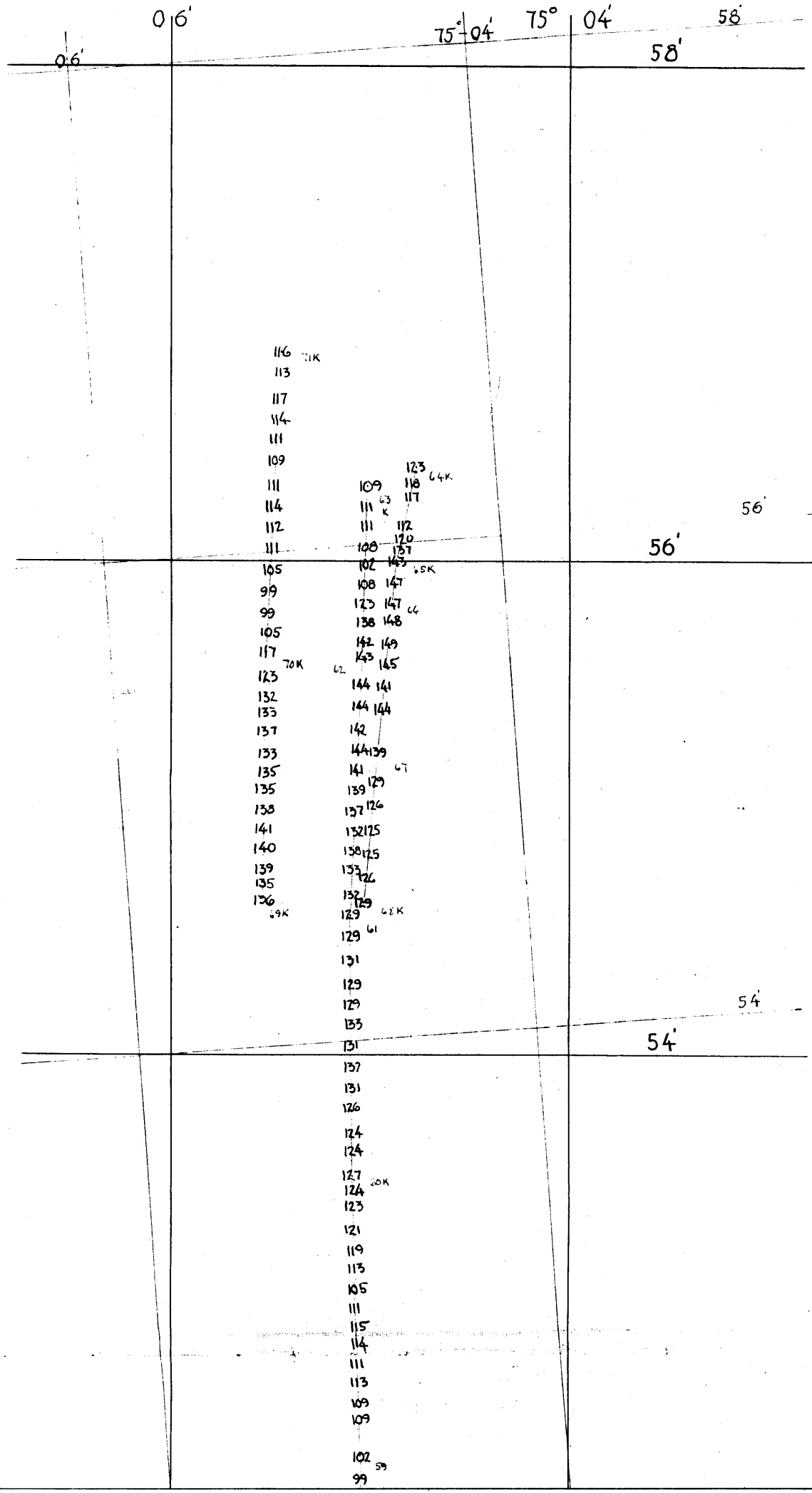
A, B, D, P DAYS:

On each of these days a mean of the differences between the handlead and fathometer soundings was obtained and used as a correction thruout said day.

C DAY: Corrections were increased gradually between the first and second comparison. From the time of the second comparison until the end of the day a mean of the differences between hand lead and fathometer of all comparisons was used as a correction.

E DAY: Corrections were increased gradually between the first comparison and the correction used at the time of the second comparison; then a mean correction, obtained from the next three comparisons, was used until the time of hand lead sounding. Between 10:44 and 11:10, the correction used was obtained by taking a mean of the differences between hand lead and fathometer soundings in series of comparisons immediately preceding and following this period.

A mean of the differences between hand lead and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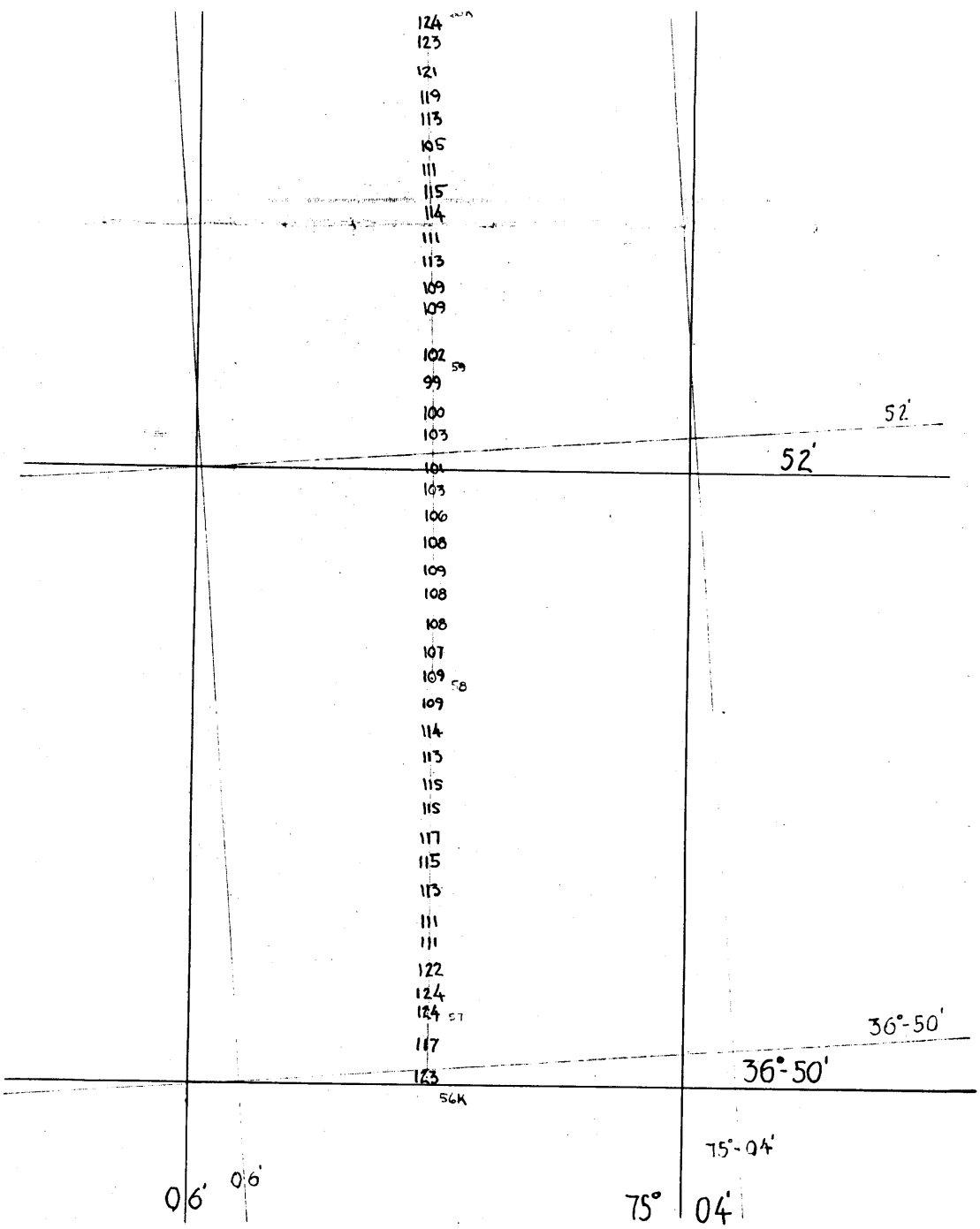

OVERLAY

Traced from Sheet No. 49
OCEANOGRAPHER 1935
Scale 1:40,000

Lat. & Long. in black shows present location of pos. 56-71K.
Lat. & Long. in red shows recommended location of pos. 56-71K.

fathometer soundings in the comparisons between 13:05 and 13:10 was considered as a correction at 13:10. This difference was averaged with those obtained in comparisons during the remainder of the day, and the mean used as a correction during this period.

F DAY: Between the times 05:30 to 13:51 and 15:02 to 18:31, a mean of the differences between the hand lead and fathometer soundings for the respective periods was applied as a correction.

G DAY: Due to the fact that the fathometer voltage dropped immediately after the first comparison; corrections previous to the second comparison were taken from the latter one. Corrections were then increased gradually between and in accordance with the next two comparisons.

Between 08:08 and 08:48 the correction was in accordance with the low voltage comparison. (See page 60 of the sounding vol.)

Between 08:56 and the end of the day a mean, of the difference between the hand lead and fathometer in all comparisons taken, was used as a correction.

H, J, K, L, M, N DAYS:

On each of these days, curves were drawn from points. These points were obtained by using the differences between the hand lead and fathometer soundings as ordinates and the times when the comparisons were taken as abscissas. Times, between which different corrections would apply, were scaled from these curves.

Respectfully submitted,

R. A. Earle

R. A. Earle, Lieut. (jg), C&GS.,
Ship OCEANOGRAPHER

Approved, forwarded:

H. A. Seran

H. A. Seran, Comdr., C&GS.,
Commanding Ship OCEANOGRAPHER

STATISTICS FOR SHEET, FIELD NO. 49 -----

1935 - Date	Da. letter	No. Positions	No. Sdgs. Fath.	No. Sdgs. H.L.	Statute Miles Sdg. Line
Aug. 14	A	26	287		27.6
15	B	140	1408		138.5
16	C	110	1169		115.2
20	D	117	1102	84	95.5
21	E	150	1202	194	98.1
22	F	127	1193		116.4
23	G	100	958		96.1
27	H	120	1153		110.4
28	J	124	1159		106.9
29	K	71	630		61.6
Sept. 4	L	105	1106		102.2
18	M	74	756		71.2
19	N	119	1223		116.3
20	P	83	626		60.8
T O T A L ---		1466	13972	278	1316.8

RELATION OF MAGNETAPHONE TO BUOY ANCHOR

WELKER At Buoy SWAN September 18, 1935

Buoy Anchor to Mag.

Time	Dir.	Distance
11:00	174°	195 m
12:00	149°	155 m
13:00	136°	160 m
14:00	132°	245 m
15:00	111°	320 m
16:00	118°	315 m
17:00	118°	315 m
18:00	123°	310 m

These computations are based on observations made by the WELKER while on station, but it is assumed that the direction of buoy from the buoy anchor was that of the current rather than the wind, as was assumed in the original computation.

HYDROGRAPHIC SURVEY NO. H5992

Smooth Sheet yes

Boat Sheet 1

Sounding Records 11 Vols. _____

Descriptive Report yes

Title Sheet yes

List of Signals Buoy locations filed as Vol 4 & 5 H5989

Landmarks for Charts (Form 567) -

Statistics yes

Approved by Chief of Party no

Recoverable Station Cards (Form 524) -

Special Chart for Lighthouse Service (Circular Nov. 30, 1933) -

Remarks

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. H5992

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

Number of positions on sheet	1466
Number of positions checked	15
Number of positions revised	0
Number of soundings recorded	14250
Number of soundings revised	119
Number of signals erroneously plotted or transferred	None

Date: 23 Oct., 1936

Verification by L.C. McGlamery — Time: 5 days 2 hours

Revised " C.F. McKenney. — Time: 6 days 4 hours.

Review by R.J. Christman — Time: 16½ hrs.

GEOGRAPHIC NAMES

Survey No. H5992

Name on Survey	A: On Chart No. 1222	B: On previous survey No.	C: On U. S. quadrangle Maps	D: From local information	E: On local Maps	F: P. O. Guide or Map	G: Rand McNally Atlas	H: U. S. Light List	K	
Cape Charles	*		~	✓			✓	✓		1
										2
										3
										4
										5
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										27

Names underlined in red approved on 5/16/36 by [illegible]

M 234

FORM M-238

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
DESCRIPTIVE REPORT } No. H 5992
~~PHOTOSTAT OF~~ ~~No. T~~

received APR 17 1936
registered MAY 8 1936
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	[illegible]	[illegible]	D. R.
24			
25			
26			
30			
40			
62			
63			
✓ 82	A. L. Shalowitz	A.L.S.	D. R.
83			
88			
90			

RETURN TO

82	C. K. GREEN

C. K. Green May 12 - '36

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Ed. Feb. 1935

TIDE NOTE FOR HYDROGRAPHIC SHEET

August 21, 1936.

Division of Hydrography and Topography:

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

Plane of reference
~~Tide Reducers are~~ approved in
8 volumes of sounding records for

HYDROGRAPHIC SHEET 5992

Locality Off Cape Charles, Virginia Coast

Chief of Party: H. A. Seran in 1935
Plane of reference is mean low water reading
1.2 ft. on tide staff at Cobb Island
5.6 ft. below B.M. 1

Tides on this sheet were considered as occurring 15 minutes earlier than at Cobb Island and the range south of Lat. 37° was considered to be 0.8 of that at Cobb Island.

Height of mean high water above plane of reference above 37° Lat. is 4.1 ft., south of 37° Lat. 3.3 ft.

Condition of records satisfactory except as noted below:

Chief, Division of Tides and Currents.

U. S. GOVERNMENT PRINTING OFFICE

TIDAL DATA SHEET NO. 49 H5992

H5992

The tide gage used in determining the reducers for this sheet was located on Cobb Island, Lat. 37°-18.1, Long. 75°-46.7. The reducers were computed in accordance with the Director's letter dated September 27, 1935. North of latitude 37° the tide was considered to occur 15 minutes earlier than at the Cobb Island station and to have the same range. South of Latitude 37° the tide was considered to occur 15 minutes earlier than, and to have 0.8 the range of, the tide at the station.

Height of M.L.W. on staff	---- 1.2 ft.
Highest tide observed	---- 6.9 ft., 6-19 & 9-14, 1935.
Lowest tide observed	---- 0.1 ft., 7-16, 1935.

23 October, 1936

Report on H 5992
Verifying and Inking

1. The records conform to the requirements of the General Instructions except that the recorder did not use the proper abbreviations for the bottom characteristics. ✓
2. The usual depth curves can be completely drawn within the limits of the sheet, however some of the curves do not look logical but are satisfactory for practical purposes. ✓
3. The field plotting was completed to the extent prescribed in the Hydrographic Manual. ✓
4. The office draftsman did not have to do over any part of drafting done by the field part except as noted ✓

on the statistic sheet.

5. The junctions with contemporary adjacent sheets will be made after a study of the overlaps in the receiving section of this sheet and surrounding sheets. ✓

6. This is an offshore sheet and no shoreline nor topographic signals were shown. Neither are there any aids to Navigation shown on the sheet. ✓

7. The field party did not put the degree and minute symbols on the smooth sheet. They also inked all arcs in the same color inks. ✓

8. On position 81 C, lat. 37° 01' long. 75° 32'. There is a 50 foot sounding which is considered questionable. This sounding was obtained with the fathometer. This area was later developed with the hand lead and the least depth found was 57 feet. In view of the above facts and in view of the

Descriptive Report, the verification registed the 50 ft. sounding and plotted the 57 foot sounding on the smooth sheet.

9. The recommendations made by the chief of Party under "Discrepancies" of the Descriptive Report were adjusted by moving the soundings in place of the positions.

Respectfully submitted,

E.C. McGlasson

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5992 (1935) FIELD NO. 49

Offshore Cape Charles, Virginia
Surveyed in Aug. - Sept. 1935, Scale 1:40,000.
Instructions dated Apr. 27, 1933, Jan. 10, 1935 (Oceanographer)

Hand Lead and Fathometer Soundings RAR control.

Chief of Party - H. A. Seran
Surveyed by - H. A. Seran
Protracted by - J. S. Morton
Soundings penciled by - R. A. Marshall, J. S. Morton
Verified and inked by - G. C. McGlosson and C. F. McKenney

1. Condition of Records.

The records are neat and legible and conform to the requirements of the Hydrographic Manual except that some of the bottom characteristics do not follow the standard abbreviations, such as "F" for fine; "Br" for "bn"; "cr" and "corse" for "crs";and "Gry" for "gy."

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

2. Compliance with Instructions for the Project.

The plan, character, and extent of the development are in accordance with the instructions for the project.

3. Shoreline and Signals.

This is an offshore survey and no shoreline is shown on the sheet. The survey buoys were located by taut wire and bomb distances with sun azimuths. The computed geographic positions of the buoys are filed under Miscellaneous Data 1935, S-1351.

4. Sounding Line Crossings

The sounding line crossings in general are satisfactory. The discrepancies noted on page 6 of the Descriptive Report were adjusted by shifting the individual soundings instead of replotting the lines, as recommended.

5. Depth Curves.

Within the area of the present survey the usual depth curves can be satisfactorily drawn.

6. Junctions with Contemporary Surveys

a. Junctions with H-5993 (1935) to the south; with H-5990 (1935) and H-5988 (1935) to the west; and with H-5991 (1935) to the north are satisfactory.

b. The junction with H-5995 (1935) to the eastward is satisfactory. There are a few apparent discrepancies which are accounted for by the irregular bottom in this area. The curves on the two sheets in the overlapping area have been brought into agreement by plotting soundings on H-5995 (1935) in the vicinity of the 20 fathom curve in fathoms and quarters.

7. Comparison with Prior Surveys.

a. H-237(1849-50), H-1498a(1880-3), H-1531(1882),H-1721(1886), H-3314 (1911).

These surveys are on scale 1:400,000, a copy of Sailing Chart A , on scale 1:1,200,000, scale 1:200,000, and scale 1:200,000 respectively. They are of a reconnaissance nature, showing very few soundings within the area of the present survey. They are in fair agreement with the present survey, but have no special features that require consideration in this review. They need not be considered in future charting.

b. H-4089 (1919), H-4193 (1921) and H-4178 (1921)

These surveys on a scale of 1:40,000 and 1:120,000 overlap an appreciable portion of the present survey with sounding lines spaced about one mile apart and controlled by precise dead reckoning. A comparison with the present survey shows a fair general agreement. However, in view of the much closer development and better control of the present survey it should supersede the above prior surveys in future charting.

c. H-4090 (1919)

This survey on a 1:80,000 scale contains but two sounding lines. They are controlled by precise dead reckoning and are in fair general agreement with the present survey. In view of the development, better control and larger scale the present survey should supersede H-4090 (1919) in future charting.

d. H-4255 (1922)

This survey is on a 1:120,000 scale. The soundings thereon have been adjusted to those on H-4255a (1925), (discussed in

in the following paragraph) and shown on H-4255b (1922-25), which superseded H-4255 (1922). No further discussion is therefore needed in this review.

e. H-4255a (1925)

This survey on a 1:120,000 scale consists of a resurvey of H-4255 (1922), (for detail, see D. R. and review therein). Since the work on H-4255 (1922) has been adjusted to this survey and both are shown on H-4255b (1922-25), a comparison of this survey (H-4255a) with the present survey is considered under H-4255b (1922-25).

f. H-4255b (1922-25)

This sheet is a bromide print of H-4255a (1925) on the same scale with the survey of 1922 (H-4255) adjusted thereto and shown in brown, (see D. R. for H-4255a (1925) for further details). A comparison with the present survey shows a fair general agreement. The present survey however, with its much larger scale, and greater development should supersede H-4255b (1922-25) in future charting.

8. Comparison with Chart 1109 (new print dated, Aug. 29, 1936.)

a. Hydrography

Within the area of the present survey the chart is based on surveys discussed in the foregoing paragraphs and contains no other information that needs consideration in this review.

b. Aids to Navigation

No aids to navigation are charted within the area of the present survey.

9. Field Plotting.

The field plotting was very satisfactory.

10. Additional Field Work Recommended

The survey is satisfactory and no further work is required.

11. Superseding Old Surveys.

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

H- 237 (1849-50)	in part	H-4090 (1919)	in part
H-1498a(1880-3)	"	H-4178 (1921)	"
H-1531 (1882)	"	H-4193 (1921)	"
H-1721 (1886)	"	H-4255 (1922)	"
H-3314 (1911)	"	H-4255a(1925)	"
H-4089 (1919)	"	H-4255b(1922) and (1925)	in part

12. Reviewed by R. J. Christman, Oct. 31, 1936.

Inspected by A. L. Shalowitz

Examined and approved:

C. K. Green,
Chief, Section of Field Records.

L. O. Colbert
Chief, Division of Charts.

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

Chief, Division of H. & T.

Applied to Chart 1222 - Feb 1937 - R.M.Z.
" " " 1109 - " R.M.Z