

8860

Diag. Cht. No. 77-3

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT (HYDROGRAPHIC)

Type of Survey HYDROGRAPHIC
Field No. WH-10-1-65
Office No. H-8860

LOCALITY

State Maryland
General Locality Chesapeake Bay
Locality Off Severn River

1965

CHIEF OF PARTY
J.P. Randall

LIBRARY & ARCHIVES

DATE April 28, 1967

☆ U.S. GOV. PRINTING OFFICE: 1976-869-441

Class IV {
12283 MP
12282 MP
12263 MSM
12270 MSM
12260 MSM

8860

HYDROGRAPHIC TITLE SHEET

H-8860

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

FIELD NO.

WH 10-1-65

State Maryland

General locality Chesapeake Bay

Locality Off Severn River and its tributaries

Scale 1:10,000 Date of survey Sept-Oct 1965

Instructions dated August 10, 1965 Project No. SP-7-65

Vessel USC&GS Ship WHITING

Chief of party LCDR J. P. Randall

Surveyed by LCDR J. P. Randall, Lt. R. J. Land, LT(jg) J. D. Boon
LT(jg) J. E. Dropp, LT(jg) R. M. Petryczanko, LT(jg) P.L.
Richardson, Ens. P. F. Dean

Soundings taken by echo sounder, ~~hand level~~, pole

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Protracted by Harry R. Smith Automated plot by

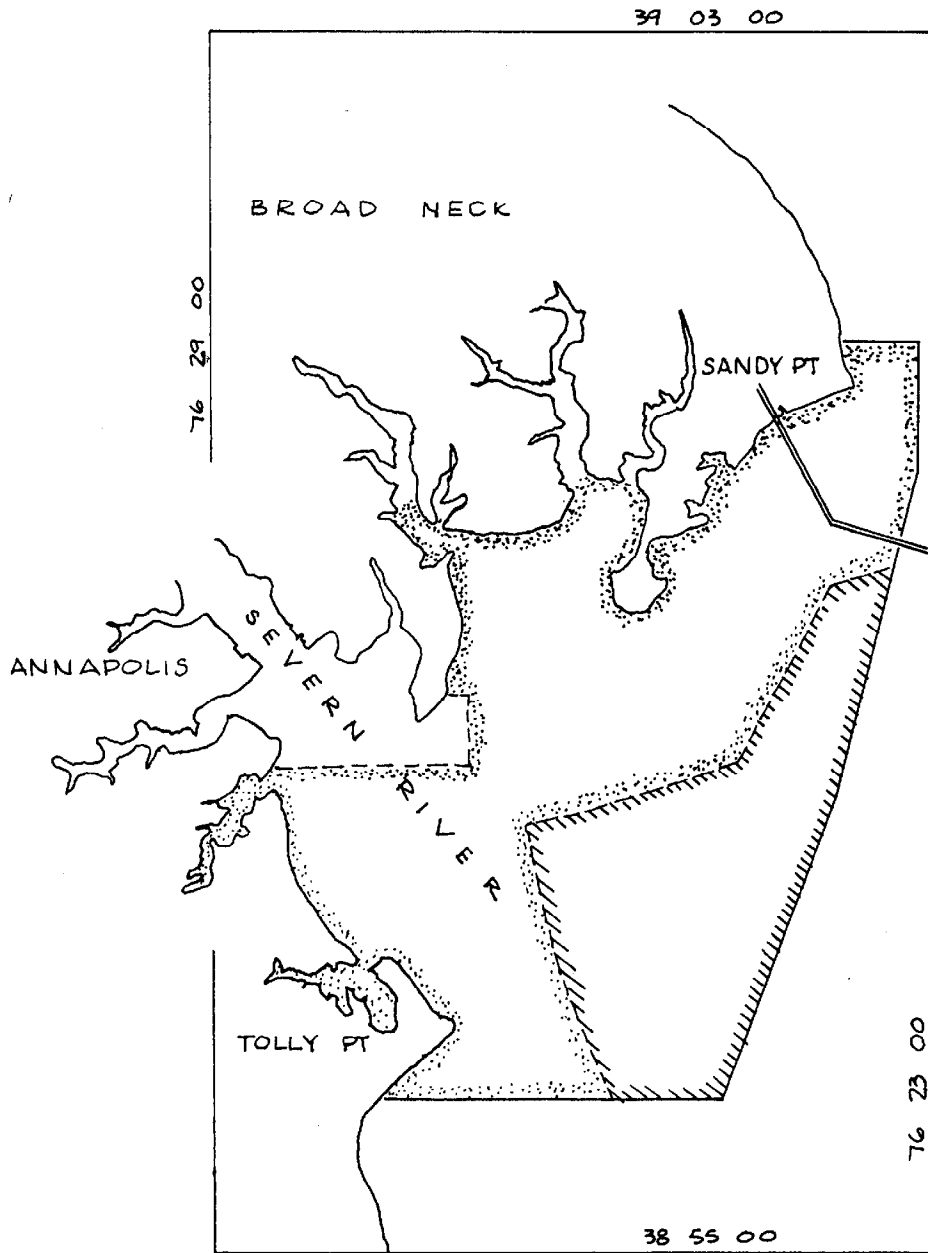
Soundings penciled by Harry R. Smith

Soundings in ~~X fathoms~~ feet at MLW ~~MKW~~

REMARKS:

App to Sta 208

S K E T C H O F
W O R K I N G G R O U N D S



- ⊛ LAUNCH & SKIFF WORK - SHEET A
- /// SHIP WORK - SHEET B



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

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-8860
Field No. WH 10-1-65

Scale: 1:10,000
Ship WHITING

J. P. Randall
Commanding 1965

Surveyed By:

LCDR. J. P. Randall
LT R. J. Land
LT(jg) J. D. Boon
LT(jg) J. E. Dropp
LT(jg) R. M. Petryczanko
LT(jg) P. L. Richardson
Ens P. F. Dean

A. Project

Authorization for this project is given in instructions for SP-7-65, Severn River, Annapolis, Maryland, dated August 10, 1965.

B. Area Surveyed

The survey is located in the designated anchorage area in Chesapeake Bay off the entrance to the Severn River. The area extends from Tolly Point to Sandy Point and is bounded by $\phi 38^{\circ} 56.00'$ to $\phi 39^{\circ} 01.00'$ and $\lambda 76^{\circ} 23.00'$ to $\lambda 76^{\circ} 29.25'$.

Hydrography was begun on 18 September and ended on 26 October 1965.

(1965)

The survey joins contemporary survey H-8859 (WH 5-1-65).
Prior surveys are:

| <u>Registry No.</u> | <u>Date</u> |
|---------------------|-------------|
| H-2650 | 1903 |
| H-5197 | 1932 |
| H-5198 | 1932 |

C. Sounding Vessels

The following vessels were used during this survey:

| <u>Vessel</u> | <u>Attached to</u> | <u>Color Day Letter</u> |
|---------------|--------------------|-------------------------|
| Whiting | Whiting | purple |
| ML 1 | Whiting | blue |
| ML 2 | Whiting | red |
| ML 3 | Party 245 | yellow BROWN |
| Skiff 1 | Whiting | green |
| Skiff 2 | Party 759 | orange |

D. Sounding Equipment

Soundings were recorded by both pole and by Ratheon DE-723 Fathometers as follows:

| <u>Vessel</u> | <u>Soundings</u> | <u>Depth Range</u> |
|---------------|------------------|--------------------|
| Whiting | DE-723 #251 | 19 to 50 |
| ML 1 | #250 | 4 to 45 |
| ML 2 | #262 | 4 to 15 |
| ML 3 | #139 | 20 to 35 |
| Skiff 1 | #213, pole | 4 to 25,0 to 14 |
| Skiff 2 | #139, pole | 4 to 30,0 to 14 |

Velocity corrections were obtained for the WHITING by means of simultaneous comparisons between fathometer and leadline. Squat and settlement values used were obtained November 1964 by rod and level.

Velocity corrections for launches were determined by means of bar checks which were made during the survey. Squat and settlement values were obtained April 1965 by rod and level. The fathometer aboard Skiff 1 was used so little that enough data was unavailable to compile accurate bar check corrections. Corrections were used from a different area where the skiff was equipped with the same fathometer. Skiff 1's flat bottom and slow speed made squat and settlement corrections negligible. Velocity corrections for ML #3 and Skiff 2 were obtained from Party 245.

See fathometer report for more detailed information.

E. Smooth Sheet

The smooth sheet ~~will~~^{was} be plotted by the processing office at the Atlantic Marine Center, Norfolk, Virginia.

F. Control

Hydrography was controlled both visually using three point fixes and electronically using Hiran. The shoreline, inlets and adjacent areas were covered visually. All hydrography run by the ship was controlled by Hiran. ML 1, the only other vessel that employed Hiran, used it on September 19, 20 and 22.

Hiran calibrations aboard the ship were accomplished by comparing simultaneous electronic and visual positions on a 1:10,000 calibration sheet. Visual positions were determined with a three-point sextant fix with one check angle using triangulation stations for signals. The positions were plotted on the calibration sheet and the corresponding Hiran values read from the sheet. The differences between these values and the Hiran values read simultaneously with the three-point fix were meaned and entered as the correction to the Hiran system.

The Hiran equipment on board ML #1 was calibrated twice daily by going alongside GREENBURY POINT SHOAL LIGHT for which the Hiran distance from KENT and MORR had been computed. It became apparent that the variations between the morning and evening calibrations were partially due to reflections from the light structure. Launch Hiran was not used after September 22 not even as a navigational aid because of the excess distortion in the area around Greenbury Point Navy Radio Facility and near the Chesapeake Bay Bridge.

Hiran shore stations MORR and KENT were located on Kent Island in Chesapeake Bay. MORR is on Kentmorr Marina property on the west shore 5 miles south of Chesapeake Bay Bridge at $\phi 38^{\circ} 54' 49.436''$, $\lambda 76^{\circ} 21' 49.685''$. It was located by Electro-chain traverse from David Taylor Model Basin, South Base, Eccentric. Station KENT is the RM #3 of triangulation station KENT ISLAND NORTH BASE and is $\frac{1}{2}$ mile south of the Chesapeake Bay Bridge. It is located at $\phi 38^{\circ} 58' 26.007''$, $\lambda 76^{\circ} 20' 28.850''$ by third order triangulation.

Visual signals include triangulation landmarks plotted on the boat sheet and photogrammetric signals pricked through from manuscripts T-12660 and T-12661. A photogrammetrist, Mr. Bob Tibbetts, of Photo Party 759 was assigned to the project by Washington.

G. Shoreline

The shoreline was transferred from manuscripts T-12660 and T-12661 (1965). (See review item 2)

H. Crosslines

Eight percent of the sounding lines were run as crosslines. The agreement was good, generally within one foot. There were wind-driven tides amounting to a several foot range that were not applied to boat sheet soundings. It is assumed that for smooth sheet plotting the difference between any two days of soundings will be resolved.

I. Junctions

The junction with H-8859, (1965) field no. WH-5-1-65 was very good; soundings agree within one foot.

J. Comparison with Prior Surveys

1. Presurvey review items:

(10) The wreck located at $\phi 38^{\circ} 57.68'N$, $\lambda 76^{\circ} 29.04'W$ was found, but is no longer visible. There remains only an engine resting on the bottom in 2 feet and covered by 1 foot of water. It is recommended that the symbol be changed to that of a submerged wreck, dangerous to surface navigation. *Plotted as WRECK AWASH AT MLW Vol. 13, p 38*
Origin T-5341 (1935)

The wreck at $\phi 38^{\circ} 57.98^5'N$, $\lambda 76^{\circ} 28.69'W$ was not found and is no longer visible. It is recommended that it be deleted, the *Concur*
Origin T-5341 (1935) geographic position of the wreck presently falls above the HWL.

Five wrecks lie east of hydrographic signal OIL. The largest and relatively only important one is 100 feet long and juts about 75 feet out from the shore into 8 feet of water at $\phi 38^{\circ} 57.65'N$, $\lambda 76^{\circ} 28.90'W$. Two small red reflectors 32 inches in diameter and mounted on a 2 foot steel dowl, mark its most offshore point. It is recommended that it be charted. *The location of these wrecks were recorded in vol 9, Page 19 H-8859 (1965) and the information transferred to vol 13, Page 38, H-8860.*

(11) Neither surface nor subsurface remains could be found of the charted visible wreck located at $\phi 38^{\circ} 57.41'N$, $\lambda 76^{\circ} 28.08'W$. It is recommended that it be deleted. *Concur RWD*
Source C/L 907/55

(12) The pier ruins indicated at $\phi 38^{\circ} 57.17'N$, $\lambda 76^{\circ} 28.00'W$ extending out to a duck blind (signal FIT) are as charted. Neither surface nor subsurface remains were found of the piles 40 meters to the southeast of the condemned pier ruins. It is recommended that they be deleted. *Pier origin - H-5198 (1932), Present survey verified existence of ruin; carried fwd. as pier ruin.*
Pile origin - C/L 358/1950. Considered disproved. RWD 2/78

(13) The two foul areas in vicinity of $\phi 38^{\circ} 56.92'N$, $\lambda 76^{\circ} 27.70'W$ were found to be extensions of the sand spits at the entrance to Lake Ogleton. Small stones approximately one inch in diameter covered parts of the shoal.

Origin, 1951 Air Photo Revision, BP 48762.

(14) Neither surface nor subsurface remains of the rectangular structure indicated at $\phi 38^{\circ} 59.41'N$, $\lambda 76^{\circ} 25.14'W$ were found although the area was searched thoroughly. It is recommended that it should be deleted. Existence doubtful. *Concur Red 2/78*
Origin - 1953 Air Photo Revision.

2. Presurvey Review - Comparison of encircled soundings

| | Location | Charted depths <i>From H-5198 (1932)</i> | Surveyed depth | |
|---------------------|---|---|---------------------|--|
| ↑ 1 | $\phi 38^{\circ} 57.09'N$ $\lambda 76^{\circ} 26.59'W$ | 18 | 20 19 | <i>Chart present survey depths</i> <i>An 18' sounding is 100 meters south of this position.</i> |
| 2 | $\phi 38^{\circ} 57.24'N$ $\lambda 76^{\circ} 26.32'W$ | 18 | " | 19 |
| 3 | $\phi 38^{\circ} 57.22'N$ $\lambda 76^{\circ} 26.67'W$ | 18 | " | 19 8 |
| 4 | $\phi 38^{\circ} 57.49'N$ $\lambda 76^{\circ} 26.62'W$ | 18 | " | 19 <i>An 18' sounding is 100 meters East of this position</i> |
| 5 | $\phi 38^{\circ} 57.81'N$ $\lambda 76^{\circ} 26.62'W$ | 18 | " | 18 |
| 6 | $\phi 38^{\circ} 57.83'N$ $\lambda 76^{\circ} 26.39'W$ | 18 | " | 18 |
| 7 | $\phi 38^{\circ} 57.88'N$ $\lambda 76^{\circ} 26.27'W$ | 18 | " | 17/18 <i>A 17' sounding is 100 meters West of this position.</i> |
| 8 | $\phi 38^{\circ} 57.87'N$ $\lambda 76^{\circ} 26.59'W$ | 17 | " | 18 |
| 9 | $\phi 38^{\circ} 57.78'N$ $\lambda 76^{\circ} 25.85'W$ | 18 | " | 20 19 |
| H-5198 (1932) 10 | $\phi 38^{\circ} 57.98'N$ $\lambda 76^{\circ} 25.78'W$ | 18 | " | 20 18 |
| 11 | $\phi 38^{\circ} 57.60'N$ $\lambda 76^{\circ} 25.24'W$ | 24 | " | 27/28 <i>A 24' sounding is 250 meters Northeast of this position.</i> |
| ↓ 12 | $\phi 38^{\circ} 59.48'N$ $\lambda 76^{\circ} 24.12'W$ | 16 | " | 21/24 3 |

NOTE: Reference item 11, a shoal sounding of 24 feet was recorded and proved by a development at $\phi 38^{\circ} 57.72'N$, $\lambda 76^{\circ} 25.12'W$ but not at the position indicated for item 11.

K. Comparison with the Chart

In general this survey closely agrees with the charts of the area and substantiates them. As stated in the Coast Pilot, the range of tide is small but the range of the wind-driven tides amounts to several feet. It is expected that when the recorded tides are used to reduce the soundings for the smooth sheet, many small discrepancies between different days of soundings and between the boat sheet and the chart will be resolved.

1. Near the entrance of Back Creek, off Chinks Point jetty at $\phi 38^{\circ} 58.20'N$, $\lambda 76^{\circ} 28.20'W$ there appears to have been some dredging as there are now depths down to 31 feet in an area charted at 6 to 10 feet.

2. Lake Ogleton $\phi 38^{\circ} 56.70'N$, $\lambda 76^{\circ} 27.80'W$ and Back Creek $\phi 38^{\circ} 57.90'N$, $\lambda 76^{\circ} 28.70'W$ appear to have shoaled by 1 to 2 feet. During the survey of these two areas, it was noted that there was a wind driven tide about $1\frac{1}{2}$ feet below mean water. It is expected the soundings will agree more closely with the chart when the observed tides are applied.

3. The shoal below Greenbury Point, $\phi 38^{\circ} 58.09'N$, $\lambda 76^{\circ} 27.43'W$ charted at 3 feet appears to have deepened to 4 feet.

4. The center of Whitehall Bay $\phi 38^{\circ} 59.45'N$, $\lambda 76^{\circ} 26.17'W$ shows evidence of shoaling. 11 foot soundings exist where 13 to 15 foot soundings are charted. *Final reduced soundings confirm 13-15' charted soundings.*

5. North Shoal, $\phi 38^{\circ} 59.34'N$, $\lambda 76^{\circ} 26.20'W$ now extends northeast of North Shoal Light (F 4 sec 12 ft "2") by 0.2nm and ~~5~~ to ~~6~~ foot soundings were observed in an area of previously charted 12 foot plus soundings.

6. The mouth of Mer^edith Creek $\phi 39^{\circ} 00.05'N$, $\lambda 76^{\circ} 25.55'W$ shows a charted sounding of $6\frac{1}{2}$ feet. This survey only revealed 1 to 2 foot depths, but the narrow channel could have fallen between two consecutive pole soundings. *Deep water found near east side of entrance.*

7. The two channel buoys at the mouth of Whitehall Creek $\phi 38^{\circ} 59.95'N$, $\lambda 76^{\circ} 25.77'W$ no longer adequately mark the shoals or channel. Buoy c "3" has remained in place but n "4" has moved from $\phi 38^{\circ} 59.85'N$, $\lambda 76^{\circ} 25.76'W$ to $\phi 38^{\circ} 59.88'N$, $\lambda 76^{\circ} 25.77'W$. C "3" is now in midchannel and the shoal extends southwest of N "4" 0.07nm. (See review Aids to Navigation item 6)

8. Goose Pond near Hackett Point $\phi 38^{\circ} 59.50'N$, $\lambda 76^{\circ} 25.20'W$ deepened from the charted depth of 1 to 2 feet to ~~2~~ to ~~3~~ feet in the center. This is probably explainable by wind-blown tides and will be resolved later.

9. ~~North of Chesapeake Bay Bridge at $39^{\circ}00.05'N$, $76^{\circ}23.70'W$ there is a shoal of 18 feet surrounded by depths to 31 feet. The charted depth is 17 feet.~~

10. A ⁸17 foot sounding was observed in the center of a buoyed channel with a charted depth of $18\frac{1}{2}$ feet at $38^{\circ}57.18'N$, $76^{\circ}26.47'W$. ~~A later development found no depths greater than an 18 foot sounding.~~

11. ²⁰¹⁸5A 17 foot sounding was discovered at $38^{\circ}57.98'N$, $76^{\circ}24.40'W$. During the development a 18⁷ foot shoal sounding was recorded at $38^{\circ}58.10'N$, $76^{\circ}25.36'W$. *Also another 17' sounding at $38^{\circ}58.01'$, $76^{\circ}25.50'$*

12. A development at $38^{\circ}58.25'N$, $76^{\circ}24.93'W$ was made to disprove a 13 foot stray recorded on the fathogram. *Disproved*

13. Two duck blinds were found. The first was east of Greenbury Point at $38^{\circ}58.72'N$, $76^{\circ}26.82'W$ in 2 feet of water. The second was off Bembe Beach near Chinks Point at $38^{\circ}57.67'N$, $76^{\circ}28.17'W$ in 6⁵ feet of water. *Signals FIT & WIG are also Duck Blinds*

14. Two posts in ^{Two}four feet of water and two feet above the surface at low water were located off Bembe Beach near Chinks Point at $38^{\circ}57.44'N$, $76^{\circ}28.15'W$. *Posts are Bare 2' at MHW.*

15. A ^{Pile}pele discovered in 15 feet of water and bare 2 feet at low water was located at $38^{\circ}57.28'N$, $76^{\circ}27.17'W$.

16. Four special purpose Navy buoys were located off Lake Ogleton at the following locations:

| Buoy | Location | |
|------|---------------------|---------------------|
| "M" | $38^{\circ}57.88'N$ | $76^{\circ}27.59'W$ |
| "N" | $38^{\circ}57.48'$ | $76^{\circ}27.15'$ |
| "O" | $38^{\circ}57.22'$ | $76^{\circ}27.60'$ |
| "P" | $38^{\circ}57.58'$ | $76^{\circ}28.02'$ |

The buoys are cube shaped, approximately 2 feet on a side and horizontally striped orange and white.

L. Adequacy of Survey

This survey is considered complete and adequate to supercede all prior surveys. ✓

M. Aids to Navigation

Four special purpose Navy buoys were located off Lake Ogleton at the following locations: ✓

| <u>Buoy</u> | <u>Latitude</u> | <u>Longitude</u> |
|-------------|-----------------|------------------|
| "M" | 38° 57.88', | 76° 27.59' |
| "N" | 38° 57.48', | 76° 27.15' |
| "O" | 38° 57.22', | 76° 27.60' |
| "P" | 38° 57.58', | 76° 28.02' |

The buoys are cube shaped, approximately two feet on a side and horizontally striped orange and white.

The two channel buoys at the mouth of Whitehall Creek ϕ 38° 59.95', λ 76° 25.77' no longer adequately mark the shoal or channel. Buoy C"3" has remained in place but N"4" has moved from ϕ 38° 59.85', λ 76° 25.76' to ϕ 38° 59.88', λ 76° 59.77'. C"3" is now in midchannel and the shoal extends southwest of N"4" 0.07nm. *See Review*

All other aids to navigation were found as indicated on charts 385 and 566. Determined positions agree closely with those given.

N. Statistics

The total area surveyed amounted to 7.8 square nautical miles, with 380.3 lineal miles of sounding lines and 31 bottom samples. Statistics for each vessel is as follows:

| <u>Vessel</u> | <u>No. Positions</u> | <u>Miles Sounding Lines</u> | <u>Total Miles</u> |
|---------------|----------------------|-----------------------------|--------------------|
| Whiting | 615 | 111.0 | 174.6 |
| Launch 1 | 1253 | 174.1 | 254.8 |
| Launch 2 | 104 | 11.5 | 49.5 |
| Launch 3 | 131 | 8.0 | 20.0 |
| Skiff 1 | 660 | 63.2 | 103.4 |
| Skiff 2 | <u>131</u> | <u>12.5</u> | <u>19.0</u> |
| Total | 2894 | 380.3 | 621.3 |

O. Miscellaneous

To be completed by smooth plotter.

P. Recommendations

To be completed by smooth plotter.

Q. Reference to reports.

Title and Date Forwarded to Washington Office

Aids to Navigation
Coast Pilot Report
Corrections to Echo Sounding (fathometer Report)
Electronic Control
Photogrammetry Report

Respectfully submitted



Philip L. Richardson
LTjg, ESSA-C&GS

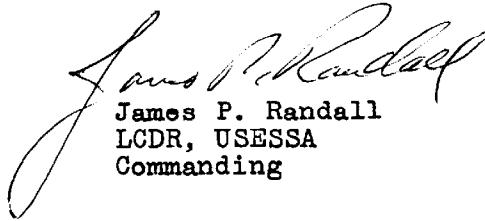
TIDE NOTE

The standard automatic tide gage at Annapolis, Maryland was used to record the tides during the Severn River survey. It is located in the vicinity of the powerhouse, USNA, at 38 59.1, and 76 29.2. Tides at the gage were recorded at 75 meridian time while the ship data was recorded using 60 meridian time. The plane of reference was located at 4.4 on the tide staff. No corrections for differences in time or height were applied.

A Bubbler gage was installed to back up the standard gage but valves were not used.

APPROVAL SHEET

This report is complete and adequate for the area surveyed. The report is approved and forwarded for inclusion in the Coast Pilot.


James P. Randall
LCDR, USESSA
Commanding

APPROVAL SHEET

The boatsheet and records for the area surveyed are complete and approved. The boatsheet and sounding volumes were examined daily during the survey.

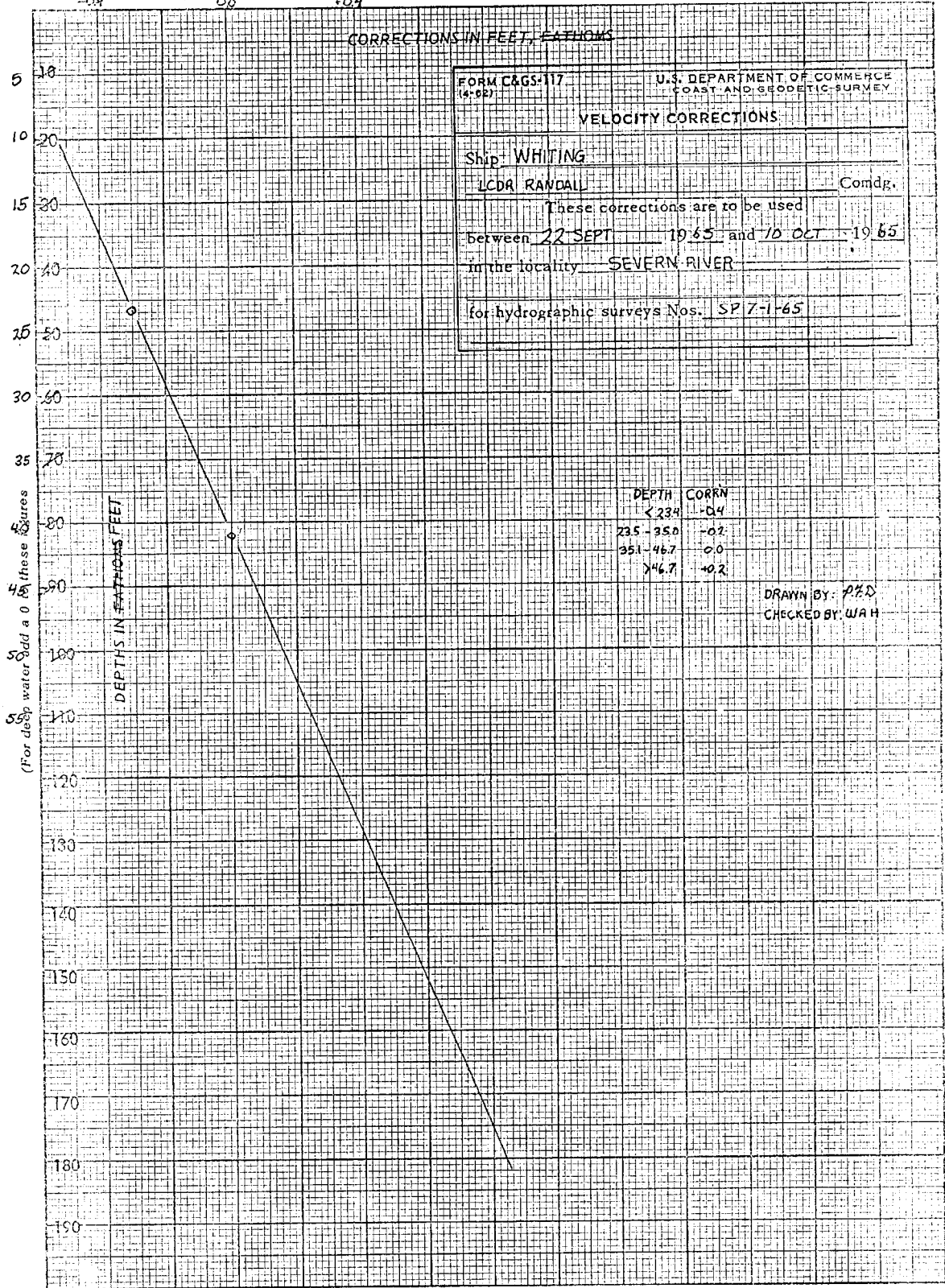
James P. Randall
LCDR ESSA-C&GS
Commanding Ship WHITING

LIST OF SIGNALS

| | |
|-------|---|
| ANN | T-12661 (Br "I") |
| ADD | T-12661 |
| AMY | T-12660 |
| ANT | T-12661 |
| ARM | T-12661 |
| BED | T-12661 |
| BOB | T-12661 |
| BON | T-12660 |
| BOX | T-12661 |
| BUM | T-12660 |
| CAM | T-12661 |
| CHAP | ANNAPOLIS NAVAL ACADEMY CHAPEL SPIRE 1933 |
| COD | T-12661 |
| COP | T-12661 |
| CRY | T-12660 |
| DOC | T-12661 |
| DOG | T-12661 |
| DOT | T-12661 |
| DUD | T-12660 |
| EBB | T-12661 |
| EGG | T-12661 |
| ELF | T-12660 |
| EVA | T-12661 |
| FIG | T-12661 |
| FIT | T-12661 |
| FLY | T-12661 |
| GAG | T-12661 |
| GAM | T-12661 |
| GIG | T-12660 |
| GIN | T-12661 |
| GREEN | GREENBURY POINT SHOAL LIGHT, 1961 |
| HALL | <u>WHITEHALL</u> LARGE HOUSE FRONT GABLE, 1932 |
| HEX | T-12660 |
| HOE | T-12661 |
| HUB | T-12661 T-12598 (1:5000) |
| HUG | T-12661 |
| HUM | T-12661 |
| IRA | T-12661 |
| IVY | T-12660 |
| JAW | T-12661 |
| JOE | T-12661 |
| JOY | T-12661 |
| JUT | T-12660 |
| KED | T-12660 |
| KEN | T-12661 |
| MAST | T-12661 GREENBURY PT. NAVAL STATION VERTICAL RADIO <u>MAST</u> 1957 |

| | |
|-------|--|
| KEY | T-12661 |
| LAB | <u>LABROT MANSION CENTER</u> |
| | Chimney Red Brick, 1932 |
| LAY | T-12661 |
| LEO | T-12661 |
| LET | T-12661 |
| MAR | T-12660 |
| MAW | T-12661 |
| MET | T-12661 |
| MUM | T-12661 |
| NAN | T-12661 |
| NAT | T-12661 |
| NIT | T-12660 |
| NOW | T-12661 |
| NUL | T-12661 |
| OBI | T-12660 |
| OHM | T-12661 |
| OIL | T-12661 |
| ORB | T-12661 |
| PAL | T-12660 |
| PIE | T-12661 |
| PLY | T-12661 |
| POT | T-12661 |
| RIG | T-12660 |
| RIO | T-12661 |
| ROT | T-12661 |
| RUM | T-12661 |
| SAG | T-12660 |
| SAL | T-12661 |
| SAND | <u>SANDY POINT LIGHTHOUSE, 1878-1961</u> |
| SIS | T-12661 |
| SKY | T-12661 |
| STATE | <u>ANNAPOLIS STATEHOUSE SPIRE 1933</u> |
| TANK | T-12661 T-12958 (1:5000) |
| THY | T-12661 |
| TRY | T-12661 |
| TUB | T-12661 |
| UGH | T-12661 |
| VIA | T-12661 |
| VIM | T-12661 |
| VEX | T-12661 |
| WAX | T-12661 |
| WEST | <u>CHESAPEAKE BAY BRIDGE WEST</u> |
| | TOWER, 1957 |
| WIG | T-12661 |
| YAM | T-12661 |
| YES | T-12661 |
| ZIG | T-12661 |
| ZOO | T-12661 |

Form 117 (4-62) U.S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY



20 X 20 TO 11" X 11" 43 1240
 MADE IN U.S.A.
 KEUFFEL & ESSER CO.

USCOMM-DC 16439-P62

XERO COPY

XERO COPY

71 11

WHITING

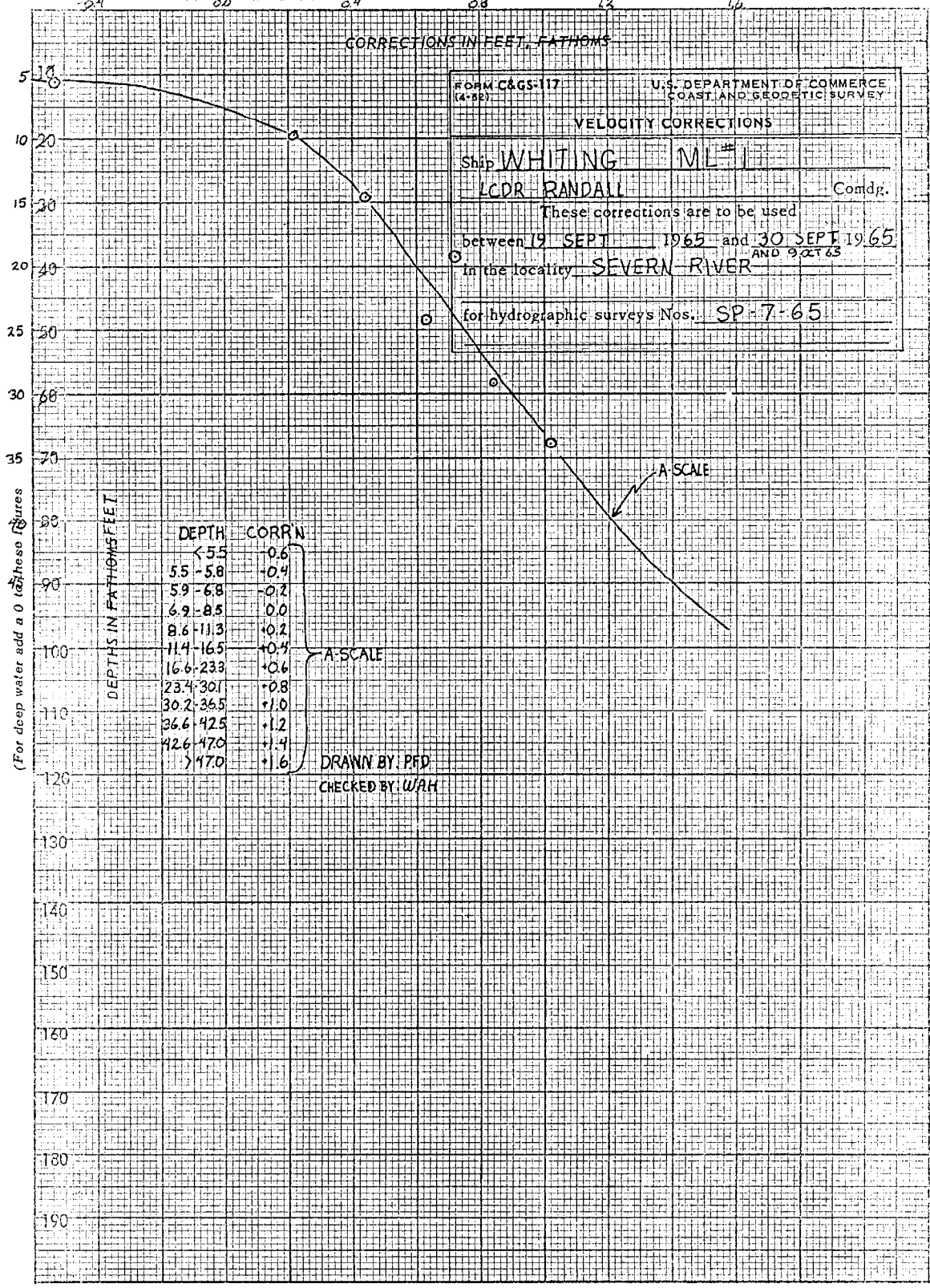
| VOL III p. 38d | | | VOL III p. 61 | | |
|----------------|-------|--------|---------------|-------|--------|
| 29 SEPT 65 | | | 10 OCT 65 | | |
| L.L | FATH | CORR'N | LL | FATH | CORR'N |
| 23.4 | 23.7 | | 41.0 | 40.8 | |
| 23.2 | 23.8 | | 41.0 | 40.9 | |
| 23.2 | 23.7 | | 40.8 | 41.0 | |
| 23.1 | 23.4 | | 41.0 | 41.0 | |
| 23.1 | 23.5 | | 41.0 | 41.0 | |
| 23.1 | 23.3 | | 41.0 | 41.1 | |
| 23.0 | 23.2 | | 41.0 | 41.1 | |
| 23.0 | 23.2 | | 41.2 | 41.1 | |
| 23.0 | 23.3 | | 41.2 | 41.3 | |
| 23.0 | 23.3 | | 41.8 | 41.7 | |
| TOTAL | 231.1 | 234.4 | 411.0 | 411.0 | |
| AVE | 23.1 | 23.4 | 41.1 | 41.1 | 0.0 |
| | | -0.3 | | | |

XERO COPY

XERO COPY

XERO COPY

(Scale 5 times speed of falling tide minus water used 5 times square of depth (depth in fathoms))



KEUFFEL & ESSER CO.
 MADE IN U.S.A.
 7 X 10 INCH
 20 X 20 TO 1 INCH 45 12 10

(For deep water add a 0 to these figures)

XERO COPY

XERO COPY

XERO COPY

ML#1

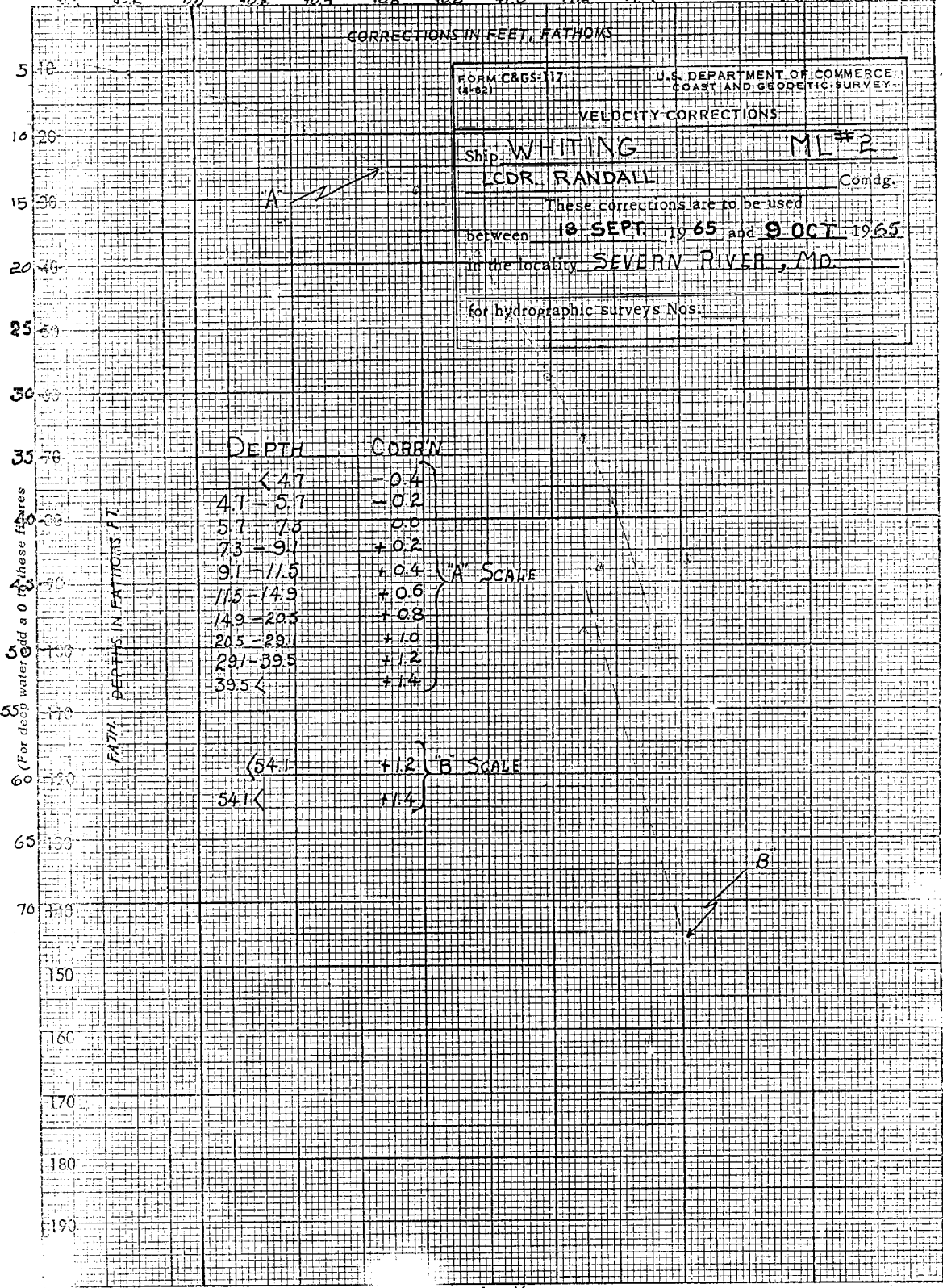
| DAY | VOL | PG | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 |
|-----------|-----|-----|-------|-------|-------|-------|-------|-------|-------|-------|----|----|----|----|----|----|----|
| a 19 Sept | I | 26 | 5.6 | 9.6 | - | 18.9 | 24.3 | 29.5 | 34.1 | 38.5 | | | | | | | |
| | | | - | 10.0 | 14.8 | 19.5 | 24.7 | 29.0 | 34.0 | 38.5 | | | | | | | |
| c 22 Sept | II | 31 | 5.5 | 9.8 | 14.6 | 19.7 | 24.3 | | | | | | | | | | |
| | | | 5.3 | 9.6 | 14.4 | 19.0 | 23.9 | | | | | | | | | | |
| c 22 Sept | II | 44 | 5.5 | 10.4 | 15.2 | | | | | | | | | | | | |
| | | | 5.6 | 10.2 | 15.0 | | | | | | | | | | | | |
| d 23 Sept | II | 52 | 6.0 | 9.6 | 14.4 | 19.4 | | | | | | | | | | | |
| | | | 6.0 | 9.7 | 14.4 | 19.2 | | | | | | | | | | | |
| d 23 Sept | III | 41 | 5.6 | 9.6 | 14.6 | 19.4 | | | | | | | | | | | |
| | | | 5.0 | 9.4 | 14.6 | 19.2 | | | | | | | | | | | |
| e 24 Sept | III | 43 | 6.0 | 9.4 | 14.2 | 19.0 | 24.0 | | | | | | | | | | |
| | | | 5.8 | 9.8 | 14.4 | 19.2 | 24.0 | | | | | | | | | | |
| f 27 Sept | IV | 3 | - | 10.0 | 14.6 | 19.6 | | | | | | | | | | | |
| | | | - | 10.2 | 14.6 | 19.2 | | | | | | | | | | | |
| g 28 Sept | IV | 42 | 5.4 | 9.8 | 14.4 | 19.2 | | | | | | | | | | | |
| | | | 5.4 | 9.8 | 14.6 | 19.2 | | | | | | | | | | | |
| g 28 Sept | V | 27 | 5.2 | 9.6 | 14.2 | 19.0 | | | | | | | | | | | |
| | | | 5.4 | 9.4 | 14.4 | 19.0 | | | | | | | | | | | |
| h 29 Sept | V | 29 | 5.5 | 9.6 | 14.6 | 19.5 | 24.4 | 29.0 | | | | | | | | | |
| | | | 5.5 | 9.6 | 14.4 | 19.2 | 24.2 | 29.0 | | | | | | | | | |
| h 29 Sept | VI | 11 | 5.4 | 9.6 | 14.5 | 19.4 | 24.4 | 29.2 | 34.0 | 39.0 | | | | | | | |
| | | | 5.5 | 10.0 | 14.4 | 19.2 | 24.2 | 29.0 | 33.8 | 38.6 | | | | | | | |
| J 30 Sept | VI | 21 | 5.5 | 9.8 | 14.6 | 19.3 | 24.3 | 29.2 | 34.0 | | | | | | | | |
| | | | 5.4 | 9.9 | 14.8 | 19.3 | 24.4 | 29.3 | 34.0 | | | | | | | | |
| J 30 Sept | VII | 64 | 5.6 | 10.0 | 14.6 | 19.6 | 24.6 | 29.2 | | | | | | | | | |
| | | | 5.6 | 10.0 | 14.8 | 19.5 | 24.6 | 29.2 | | | | | | | | | |
| | | Σ | 127.3 | 254.4 | 381.1 | 462.7 | 548.3 | 631.6 | 703.9 | 754.6 | | | | | | | |
| | | d | 5.53 | 9.78 | 14.56 | 19.28 | 24.31 | 29.16 | 33.98 | 38.65 | | | | | | | |
| | | cor | -0.53 | +0.22 | +0.44 | +0.72 | +0.69 | +0.84 | +1.02 | +1.35 | | | | | | | |

XERO COPY

XERO COPY

XERO COPY

Use 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal. W/4-5-1-65



U.A.H
J.M.P.

USCOMM-DC 16435-P62

11 x 17 1/2 x 22 1/2 (11 x 17 1/2)
7 3/8 x 10 INCHES
Kruppel & Eiser Co.

XERO COPY

XERO COPY

XERO COPY

WH-5-1-65

ML # II

VELOCITY CORRECTIONS - 18 SEPT. - 9 OCT. 1965

| VOL. PG. | DAY | RATE | | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45(A) | 45(B) | 50(A) | 50(B) | 55 |
|----------|-----|-------------|------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| | | DATE | | | | | | | | | | | | | | |
| I | w | Good | 9-18 | 5.2 | 9.8 | 14.4 | 19.4 | 24.1 | - | | | | | | | |
| | | | | 5.0 | 9.8 | 14.6 | 19.3 | - | | | | | | | | |
| I | w | Good | 9-18 | 5.1 | 9.9 | 14.3 | 19.2 | 24.2 | - | | | | | | | |
| | | | | 5.2 | 9.6 | 14.2 | 19.4 | 24.1 | - | | | | | | | |
| I | w | Good | 9-19 | 5.0 | 9.5 | 14.1 | 19.0 | 24.0 | 28.9 | 33.6 | 38.5 | - | | | | |
| | | | | 5.2 | 9.9 | 14.4 | 19.1 | 24.0 | 29.0 | 33.7 | 38.5 | - | | | | |
| II | w | Good | 9-19 | 5.2 | 9.5 | 14.4 | 19.2 | 24.1 | - | | | | | | | |
| | | | | 5.1 | 9.4 | 14.2 | 19.1 | 24.0 | - | | | | | | | |
| II | w | Good | 9-20 | 5.2 | 9.4 | 14.3 | 19.0 | 24.0 | 28.9 | 33.8 | 38.6 | - | | | | |
| | | | | 5.1 | 9.5 | 14.2 | 19.0 | 24.0 | 28.9 | 33.7 | - | | | | | |
| II | w | Good | 9-21 | 5.1 | 9.6 | 14.4 | 19.1 | 24.0 | - | | | | | | | |
| | | | | 5.2 | 9.6 | 14.4 | 19.1 | 24.0 | - | | | | | | | |
| III | w | Good | 9-21 | 5.3 | 9.8 | 14.4 | - | | | | | | | | | |
| | | | | 5.2 | 9.9 | 14.3 | - | | | | | | | | | |
| III | w | Good | 9-22 | 5.2 | 9.8 | 14.4 | 19.2 | 24.1 | 29.0 | 33.9 | 38.7 | - | | | | |
| | | | | 5.8 | 9.5 | 14.2 | 19.0 | 24.0 | 28.9 | 33.9 | 38.8 | - | | | | |
| III | w | Good | 9-22 | 5.2 | 9.8 | 14.3 | 19.1 | 24.1 | 29.0 | 33.9 | 38.8 | - | | | | |
| | | | | 5.5 | 9.8 | 14.3 | 19.2 | 24.0 | 29.0 | 33.9 | 38.8 | - | | | | |
| IV | w | Good | 9-23 | 6.0 | 9.8 | 14.4 | 19.2 | 24.1 | 28.8 | 33.7 | 38.7 | 43.6 | 43.8 | 48.6 | 48.8 | - |
| | | | | 6.0 | 9.9 | 14.5 | 19.1 | 24.0 | 29.0 | 33.7 | 38.7 | 43.5 | | 48.6 | 48.8 | - |
| IV | w | Good | 9-23 | 6.0 | 9.5 | 14.4 | 19.1 | 24.0 | 29.2 | 34.0 | 39.0 | - | | | | |
| | | | | 9.7 | 9.8 | 14.4 | 19.2 | 24.2 | 29.0 | 34.2 | 39.0 | - | | | | |
| IV | w | Good | 9-24 | 5.1 | 9.5 | 14.1 | 19.0 | 23.9 | 28.6 | 33.6 | 38.5 | 43.4 | 43.7 | - | | |
| | | | | 5.1 | 9.4 | 14.2 | 19.0 | 23.9 | 28.7 | 33.7 | 38.6 | 43.4 | - | | | |
| V | w | Good | 9-24 | 5.3 | 9.4 | 14.2 | 19.0 | - | | | | | | | | |
| | | | | 5.2 | 9.5 | 14.1 | 19.0 | - | | | | | | | | |
| V | w | Good | 9-27 | 5.1 | 9.7 | 14.2 | 19.0 | 23.9 | 28.8 | 33.7 | - | | | | | |
| | | | | | | | | | | | | | | | | |
| | | Σ | | 137.6 | 270.3 | 386.3 | 478.0 | 528.7 | 433.7 | 507.0 | 503.2 | 173.9 | 87.5 | 97.2 | 97.6 | |
| | | MEAN | | 5.29 | 9.66 | 14.31 | 19.12 | 24.03 | 28.91 | 33.80 | 38.71 | 43.48 | 43.75 | 48.60 | 48.80 | |
| | | Σ-R | | 119.6 | 270.3 | 386.3 | 478.0 | 528.7 | 433.7 | 507.0 | 503.2 | 173.9 | 87.5 | 97.2 | 97.6 | |
| | | MEAN | | 5.20 | 9.66 | 14.31 | 19.12 | 24.03 | 28.91 | 33.80 | 38.71 | 43.48 | 43.75 | 48.60 | 48.80 | |
| | | CORRN | | 0.20 | 0.34 | 0.69 | 0.88 | 0.97 | 1.09 | 1.20 | 1.29 | 1.52 | 1.25 | 1.40 | 1.20 | |
| | | *VALUES | | VARYING FROM MEAN > ±0.5 FT. REJECTED. | | | | | | | | | | | | |
| | | COMPILED BY | | CRO LEM | | | | | | | | | | | | |
| | | CHECKED BY | | R.R. CRO | | | | | | | | | | | | |

FORM C&GS-117
(4-52)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

VELOCITY CORRECTIONS

Ship WHITING ML-3
LCDR RANDALL Comdg.

These corrections are to be used
between OCTOBER 1965 and 19
in the locality SEVERN RIVER

for hydrographic surveys Nos. SP-7-65

| DEPTH | CORRECTION | |
|-------------|------------|--------|
| | DEPTH | CORR'N |
| <6.1 | | -0.2 |
| 6.1 - 11.5 | | 0.0 |
| 11.5 - 21.1 | | +0.2 |
| 21.1 - 39.9 | | +0.4 |

SNIP
U.S.N.

(For deep water add a 0 to these figures)

DEPTHS IN FATHOMS FT.

PUBLISHED BY THE U.S. GOVERNMENT PRINTING OFFICE
 1965 O-581-240
 PER. & ELDER CO.

BAR CHECK DATA - LAUNCH III

INITIAL SET AT 0.5'

| Vol. / PAGE | DAY / DATE | RATING | 5' | 10' | 15' | 20' | 25' | 30' | 35' | |
|-------------|------------|--------|-------|--------|--------|--------|--------|--------|--------|------|
| I / 3 | a / 9 / 20 | Good | ↓ | 5.0 | 10.0 | 15.0 | 19.9 | 24.8 | 29.7 | - |
| | | | ↑ | 5.0 | 9.8 | 14.6 | 19.4 | 24.6 | 29.6 | - |
| II / 19 | a / 9 / 20 | Fair | ↓ | 5.2 | 10.2 | 15.2 | 20.0 | 24.8 | - | - |
| | | | ↑ | 5.2 | 10.2 | 14.8 | 20.0 | 25.0 | - | - |
| III / 3 | d / 9 / 28 | Good | ↓ | 5.0 | 10.0 | 15.3 | 20.0 | 25.0 | 29.6 | - |
| | | | ↑ | 5.0 | 10.0 | 14.9 | 19.9 | 24.9 | 29.0 | - |
| IV / 7 | e / 11 / 5 | Good | ↓ | 5.1 | 9.9 | 14.9 | 19.9 | - | - | - |
| | | | ↑ | 5.0 | 9.8 | 14.9 | 19.9 | - | - | - |
| V / 3 | f / 10 / 6 | Good | ↓ | 5.4 | 10.0 | 14.8 | 19.8 | 24.8 | 29.6 | 34.4 |
| | | | ↑ | 5.4 | 10.2 | 15.2 | 19.8 | 24.8 | 29.6 | 34.4 |
| VI / 4 | g / 11 / 7 | Fair | ↓ | 5.4 | 10.4 | 14.8 | 19.7 | 24.8 | 29.6 | 34.4 |
| | | | ↑ | - | 10.2 | 14.2 | 19.5 | 24.5 | 29.5 | 34.2 |
| VII / 3 | h / 10 / 8 | Fair | ↓ | 5.2 | 10.2 | 15.0 | 19.8 | 25.0 | - | - |
| | | | ↑ | 5.4 | 9.6 | 14.5 | 19.8 | - | - | - |
| VIII / 50 | h / 10 / 8 | Fair | ↓ | 5.0 | 10.0 | 15.0 | 20.0 | 25.1 | 30.0 | - |
| | | | ↑ | 5.0 | 9.6 | 14.8 | 19.7 | 25.2 | - | - |
| | | # | 15. | 16. | 16. | 16. | 13 | 9. | 4. | |
| | | Σ | 77.3' | 160.1' | 237.9' | 317.1' | 323.3' | 266.2' | 137.4' | |
| | | M | 5.15' | 10.01' | 14.87' | 19.82' | 24.87' | 29.58' | 34.35' | |
| | | Cor'n | -0.15 | -0.01 | +0.13 | +0.18 | +0.13 | +0.42 | +0.65 | |

1775
CRO

XERO COPY

XERO COPY

SP-7-65
VELOCITY CORRECTION

ML 3

OCTOBER 1965

| Vol. - Pg | day - date | 4 | 9 | 14 | 19 | 24 |
|-----------|------------|-------------------------------|-------------------------------|-------|-------|-------|
| I 3 | b 10-26 | 4.5 | 7.0 ^{8.9} | 13.9 | 18.8 | 24.0 |
| | | 3.9 ^{4.0} | 8.9 | 13.8 | 18.7 | 23.9 |
| | Σ | 8.5 | 17.8 | 27.7 | 37.5 | 47.9 |
| | M | 4.25 | 8.90 | 13.85 | 18.75 | 23.95 |
| | Corr'n | -0.25 | +0.10 | +0.15 | +0.25 | +0.05 |

XERO COPY

XERO COPY

XERO COPY

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

CORRECTIONS IN FEET, FATHOMS

FORM CGS-17
(4-62)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

VELOCITY CORRECTIONS

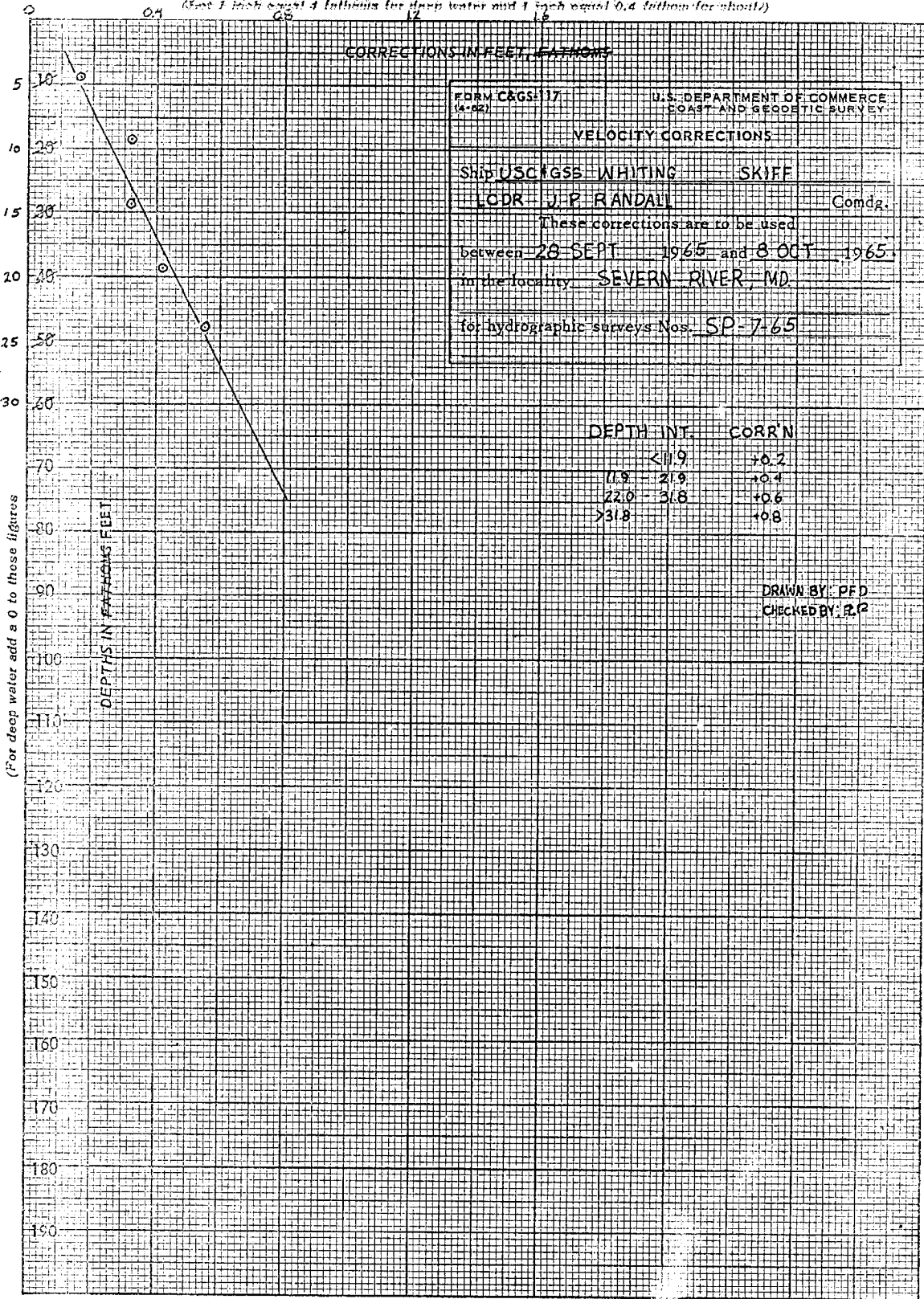
Ship USCGC WHITING SKIFF
 Comdg. LCDR J.P. RANDALL
 These corrections are to be used
 between 28 SEPT 1965 and 8 OCT 1965
 in the locality SEVERN RIVER, MD
 for hydrographic surveys Nos. SP-7-65

| DEPTH INT. | CORRN |
|------------|-------|
| <1.9 | +0.2 |
| 1.9 - 2.9 | +0.4 |
| 2.9 - 3.8 | +0.6 |
| >3.8 | +0.8 |

DRAWN BY: PFD
CHECKED BY: R.P.

(For deep water add a 0 to these figures)

DEPTHS IN FATHOMS FEET



XERO COPY

XERO COPY

XERO COPY

CORRECTIONS IN FEET, FATHOMS

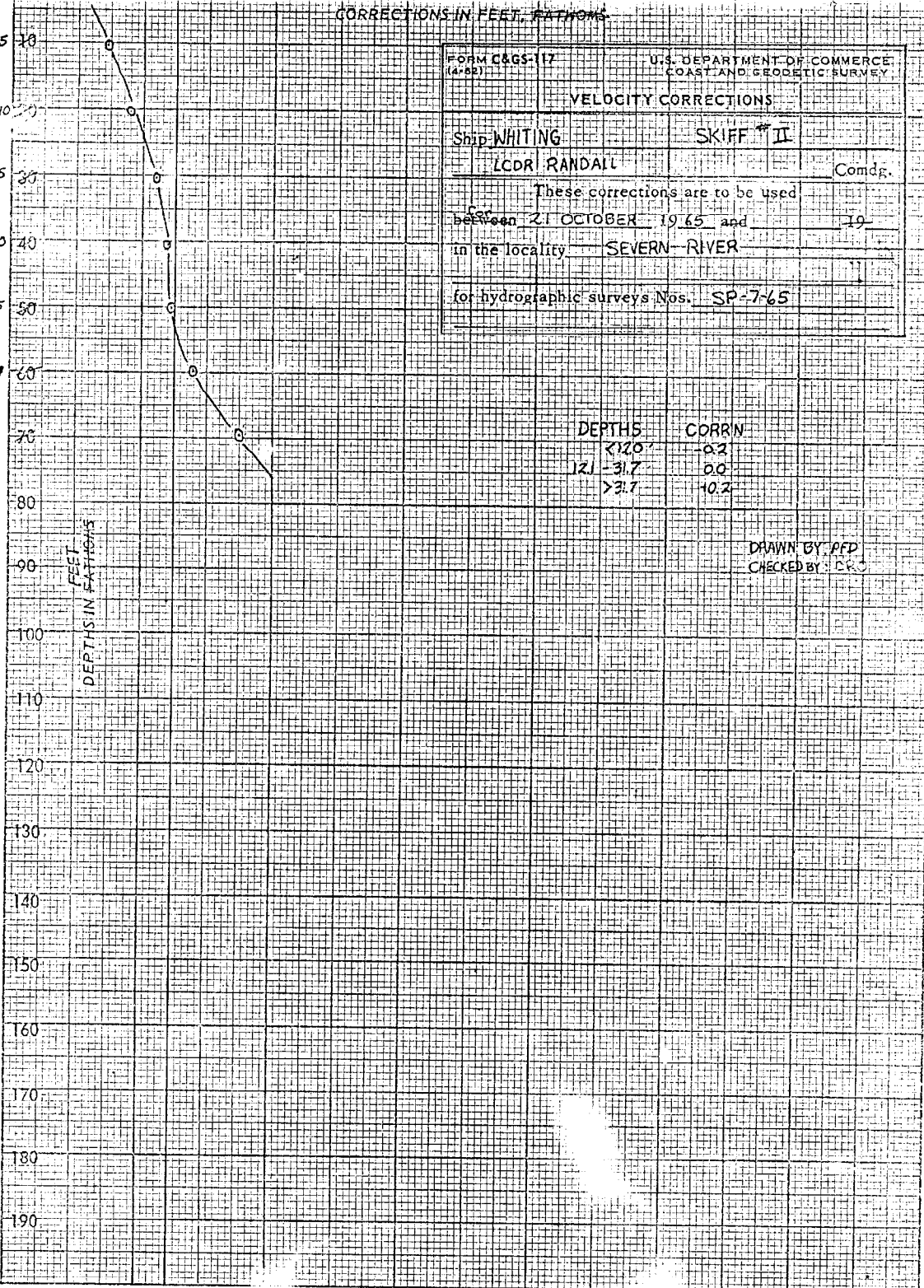
| | | |
|--|--|--|
| FORM C&GS-17 (4-58) | U.S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY | |
| VELOCITY CORRECTIONS | | |
| Ship WHITING | SKIFF # II | |
| LCDR RANDALL | Comdr. | |
| These corrections are to be used for between 21 OCTOBER 1965 and 19 in the locality SEVERN RIVER | | |
| for hydrographic surveys Nos. SP-7-65 | | |

| DEPTHS | CORRN |
|----------|-------|
| <120 | -0.2 |
| 121-31.7 | 0.0 |
| >31.7 | +0.2 |

DRAWN BY: PFD
CHECKED BY: CRG

(For deep water add a 0 to these figures)

DEPTHS IN FEET
FATHOMS



12 1/2 X 20 TO THE INCH 46 12-10
U.S. G.S. 7.5 15 (REVISED) MADE IN U.S.A.
FEL & ESSER CO.

BAR CHECK DATA - SKIFF

INITIAL SET AT 0.0'

| LOG / Page | DAY / date | Rating | 5' | 10' | 15' | 20' | 25' | 30' |
|------------|------------|--------|-------|--------|--------|-------|--------|--------|
| II / 23 | 6/10/18 | Fair | 5.4 | 10.2 | 15.4 | 20.4 | 25.4 | 30.4 |
| | | | 5.02 | 9.8 | 15.4 | 20.4 | 25.2 | — |
| II / 54 | 6/10/18 | Good | — | 10.0 | 14.7 | 19.8 | 24.8 | — |
| | | | — | 9.9 | 14.9 | 19.8 | 24.8 | — |
| II / 73 | 6/10/18 | Good | — | 10.4 | 15.2 | 20.2 | 25.2 | — |
| | | | — | 10.0 | 14.9 | 20.0 | 25.2 | — |
| II / 3 | 6/10/19 | Good | — | 10.2 | 14.8 | 20.0 | 24.8 | — |
| | | | — | 10.0 | 14.8 | 19.9 | 24.8 | — |
| II / 35 | 6/10/19 | Good | — | 10.0 | 14.8 | 19.8 | 24.8 | — |
| | | | — | 10.0 | 14.8 | 19.8 | 24.8 | — |
| II / 37 | 3/10/20 | Good | — | 9.8 | 15.0 | 20.0 | 24.8 | — |
| | | | — | 9.9 | 14.9 | 19.8 | 24.7 | 29.6 |
| | | | — | 9.8 | 14.9 | 19.2 | 24.6 | 29.6 |
| VI / 6 | 2/10/20 | Good | — | 10.0 | 15.2 | 20.0 | 24.9 | 29.9 |
| | | | — | 10.0 | 15.0 | 19.9 | 25.0 | 29.9 |
| VI / 3 | 11/10/20 | Good | — | 10.4 | 15.1 | 20.2 | 25.2 | 30.1 |
| | | | — | 10.4 | 15.4 | 20.2 | 25.2 | 30.0 |
| VI / 30 | 11/10/20 | Good | — | 10.5 | 15.4 | 20.2 | 25.2 | 30.1 |
| | | | — | 10.4 | 15.2 | 20.0 | 25.2 | 29.9 |
| | | | — | 10.2 | 15.1 | 19.9 | 24.9 | 29.9 |
| VIII / 3 | 11/10/28 | Good | — | 10.2 | 15.1 | 20.1 | 25.0 | — |
| | | | — | 10.6 | 15.4 | 20.4 | 25.0 | — |
| I / 12 | 1/11/3 | Fair | — | 10.5 | 15.4 | 20.0 | 25.0 | — |
| | | | — | 10.2 | 15.2 | 20.3 | 25.0 | — |
| III / 3 | 4/11/9 | Fair | — | 10.1 | 15.0 | 20.1 | 25.0 | — |
| | | | — | 10.4 | 15.0 | 19.9 | 25.0 | — |
| III / 52 | 4/11/10 | Good | — | 10.0 | 14.8 | 20.0 | 25.0 | — |
| | | | — | 10.0 | 14.8 | 20.0 | 25.0 | — |
| III / 22 | 4/11/10 | Fair | — | 10.0 | 14.8 | 20.0 | 25.0 | — |
| | | | — | 10.0 | 15.0 | 20.0 | 25.0 | — |
| | | # | 2. | 28. | 28. | 28. | 20. | 10. |
| | | Z | 1042. | 2839. | 4218. | 560.5 | 500.1. | 299.4. |
| | | M | 521. | 10.14. | 15.06. | 20.02 | 25.01. | 29.94. |
| | | Corr | -0.24 | -0.14 | -0.06 | -0.02 | -0.01 | +0.06 |

D.B.
CRO

SQUAT & SETTLEMENT

WHITING CSS 29

| <u>PORT</u> | SPEED | ROD | DIFF. | TIDE | S&S |
|-------------|-------|-------|-------|-------|------|
| | 0 | 1.500 | 0.00 | 6.00 | 0.0 |
| | #4 | 1.720 | +0.22 | -0.10 | +0.1 |
| | #6 | 2.250 | +0.75 | -0.10 | +0.6 |
| | #8 | 2.700 | +1.20 | -0.20 | +1.0 |
| | 0 | 1.720 | +0.22 | -0.25 | 0.0 |

| <u>STBD</u> | SPEED | ROD | DIFF. | TIDE | S&S |
|-------------|-------|-------|-------|-------|------|
| | 0 | 1.140 | 0.00 | 0.00 | 0.0 |
| | #4 | 1.690 | +0.55 | -0.10 | +0.4 |
| | #6 | 2.100 | +0.96 | -0.15 | +0.8 |
| | #8 | 2.375 | +1.24 | -0.20 | +1.0 |

| <u>AVERAGE</u> | SPEED | S&S |
|----------------|-------|------|
| | #4 | +0.2 |
| | #6 | +0.7 |
| | #8 | +1.0 |

| <u>CORRECTIONS</u> | | |
|--------------------|---------|--------|
| SPEED | SETTING | CORRN' |
| 0.0 | --3.8 | 0.0 |
| 3.8 | --4.2 | +0.2 |
| 4.2 | --5.0 | +0.4 |
| 5.0 | --6.0 | +0.6 |
| 6.0 | --7.2 | +0.8 |
| 7.2 | --10.0 | +1.0 |

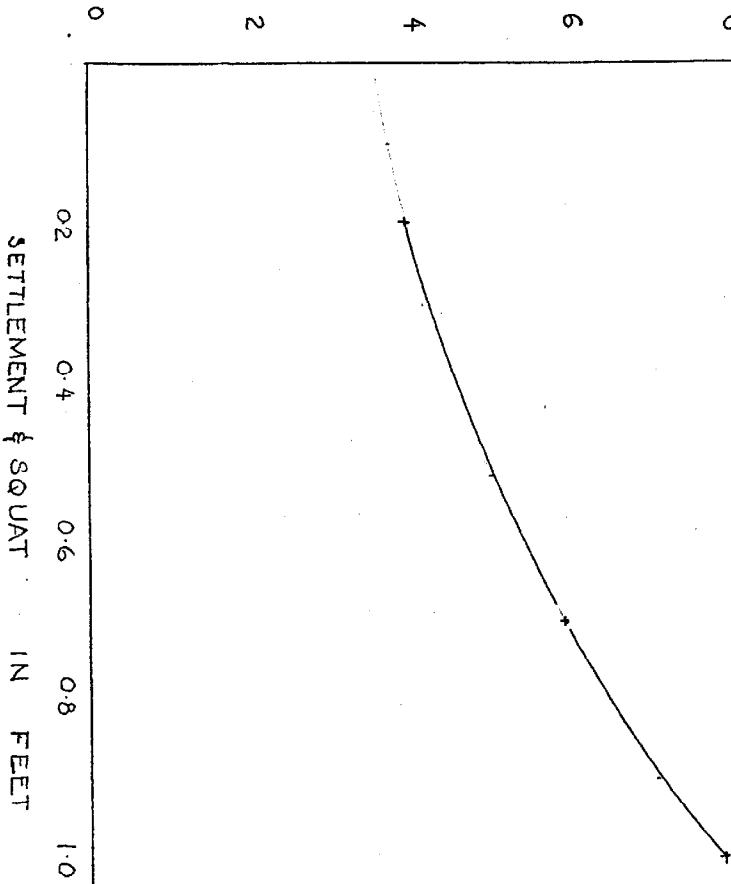
Calc. by: *VP*
 Chkd. by: *RP*

XERO COPY

XERO COPY

XERO COPY

SETTING ON BRIDGE CONSOLE



USCGESS WHITING
 CURVE SHOWING
 SETTLEMENT & SQUAT

| CONSOLE SETTING | CORRECTION |
|-----------------|------------|
| 0.0 - 3.8 | 0.0 |
| 3.8 - 4.2 | + 0.2 |
| 4.2 - 5.0 | + 0.4 |
| 5.0 - 6.0 | + 0.6 |
| 6.0 - 7.2 | + 0.8 |
| 7.2 > | + 1.0 |

Drawn by S.C.
 Checked by JDS

XERO COPY

XERO COPY

XERO COPY

SQUAT & SETTLEMENT

ML# 1+2

| f.p.m. | ROD | ΔTIDE | f.p.m. | Ave. Rod Ave TIDE | Ave. INIT | CORR'N |
|--------|-------|--------------------------------------|--------|----------------------|-----------|--------|
| 0000 | 6.530 | 0.000 | 0000 | 6.531 - 6.531 | | +0.000 |
| 1000 | 6.720 | 0.027 | 1000 | 6.693 - 6.531 | | +0.162 |
| 1500 | 6.500 | ^{0.079} 0.053 | 1500 | 6.697 - 6.531 | | +0.166 |
| 2000 | 6.750 | ^{0.105} 0.079 | 2000 | 6.645 - 6.531 | | +0.114 |
| 2500 | 6.100 | ^{0.132} 0.105 | 2500 | 6.446 - 6.531 | | +0.085 |
| 1500 | 6.850 | ^{0.157} 0.132 | | | | |
| 2500 | 6.640 | ^{0.183} 0.157 | | | | |
| 1500 | 6.910 | ^{0.209} 0.183 | | | | |
| 0000 | 6.830 | ^{0.235} 0.209 | | | | |
| 0000 | 6.860 | ^{0.393} 0.23 | | | | |
| 2500 | 6.830 | 0.417 | | | | |

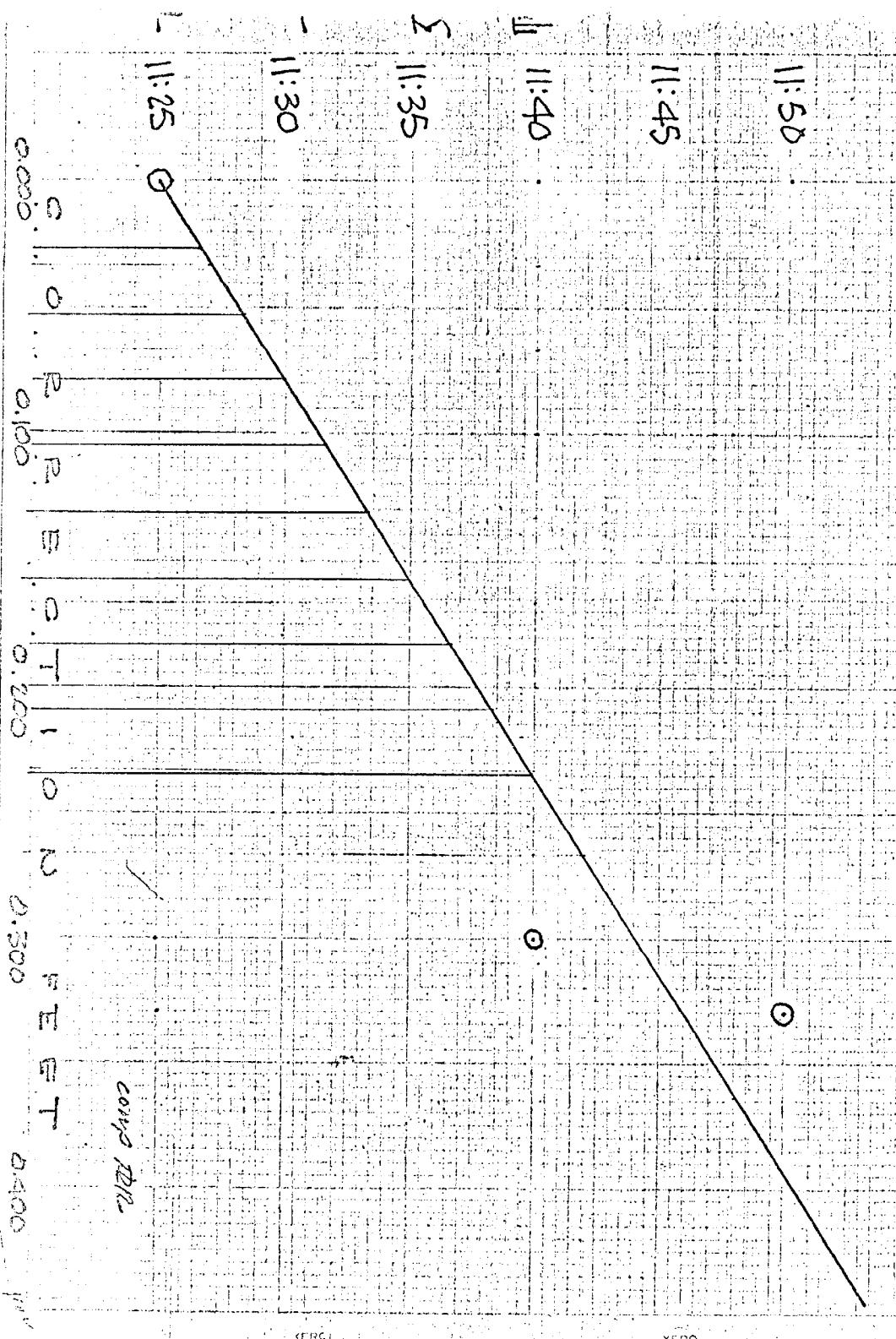
CORRECTIONS FROM GRAPH

| f.p.m. | CORR'N |
|-----------|--------|
| 000-500 | * |
| 500-2025 | *+ |
| 2025-2500 | * |

SQUAT^φ SETTLEMENT

APRIL 20 1965

TIME VS 0000 RPM BOD READINGS ML[#] |



comp 2212

CERCL
COPY

XERO
COPY

XERO COPY

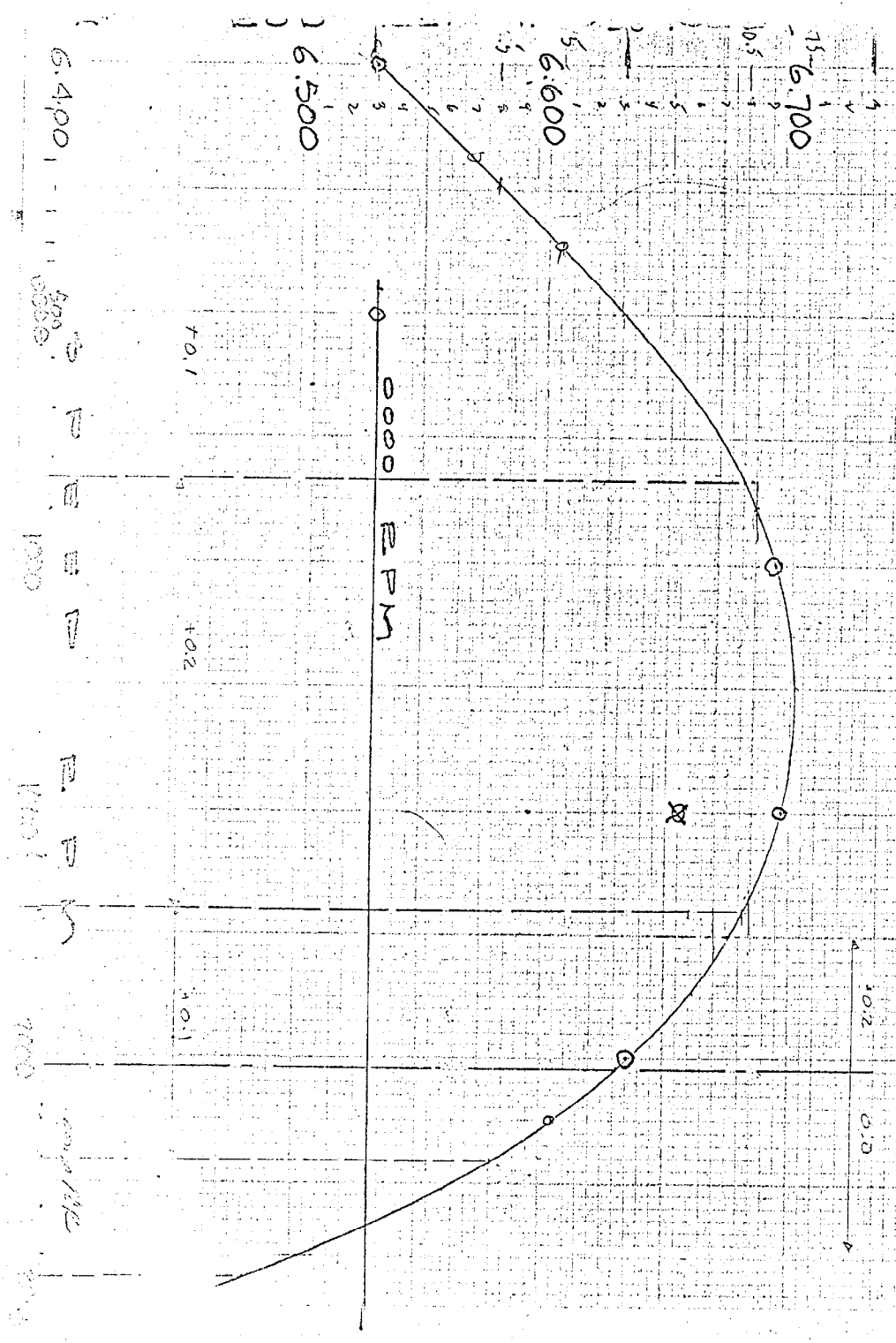
XERO COPY

XERO COPY

SQUAT & SETTLEMENT

CORRECTED (FORETIDE) ROD READINGS VS RPM ML#

APRIL 30 1965



XERO COPY

XERO COPY

6.400

6.500

6.600

6.700

0000 RPM

10.1

10.2

10.1

10.2

0.10

5000

4000

3000

2000

1000

0

1000

2000

3000

4000

5000

6000

7000

8000

9000

10000

11000

12000

TIDE NOTE FOR HYDROGRAPHIC SHEET

September 21, 1966

~~Atlantic Marine Center~~ Atlantic Marine Center

Plane of reference approved in
12 volumes of sounding records for

HYDROGRAPHIC SHEET 8860

Locality: Severn River, Chesapeake, Bay

Chief of Party: J. P. Randall (1965)

Plane of reference is mean low water

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

Annapolis, Maryland

Height of Mean High Water above Plane of Reference is as follows:

0.9 ft.

Remarks


Chief, Tides and Currents Branch

GEOGRAPHIC NAMES

H-8860

| Name on Survey | Source of Name | | | | | | | | | | | |
|-----------------------|----------------|------------------------|-------------------------|------------------------|---------------|-------------------|--------------------|-----------------|---|--|--|----|
| | A | B | C | D | E | F | G | H | K | | | |
| | ON CHART NO. | ON PREVIOUS SURVEY NO. | ON U.S. QUADRANGLE MAPS | FROM LOCAL INFORMATION | ON LOCAL MAPS | P.O. GUIDE OR MAP | RAND McNALLY ATLAS | U.S. LIGHT LIST | | | | |
| ANNAPOLIS ROADS | | | | | | | | | | | | 1 |
| BACK CREEK | | | | | | | | | | | | 2 |
| BAY RIDGE | | | | | | | | | | | | 3 |
| BEMBE BEACH (Pn) | | | | | | | | | | | | 4 |
| BOWDOIN POINT | | | | | | | | | | | | 5 |
| CHESAPEAKE BAY | | | | | | | | | | | | 6 |
| CHESAPEAKE BAY BRIDGE | | | | | | | | | | | | 7 |
| CHINKS POINT | | | | | | | | | | | | 8 |
| GREENBURY POINT | | | | | | | | | | | | 9 |
| GOOSE POND | | | | | | | | | | | | 10 |
| HACKETT POINT | | | | | | | | | | | | 11 |
| HIDDEN POINT (Pn) | | | | | | | | | | | | 12 |
| HORN POINT | | | | | | | | | | | | 13 |
| LAKE OGLETON | | | | | | | | | | | | 14 |
| LANDS END (Pn) | | | | | | | | | | | | 15 |
| MEREDITH CREEK | | | | | | | | | | | | 16 |
| MILL CREEK | | | | | | | | | | | | 17 |
| MOSS POND | | | | | | | | | | | | 18 |
| NORTH SHOAL | | | | | | | | | | | | 19 |
| OAK POINT | | | | | | | | | | | | 20 |
| POSSUM POINT | | | | | | | | | | | | 21 |
| SANDY POINT | | | | | | | | | | | | 22 |
| SHARPS POINT | | | | | | | | | | | | 22 |
| SEVERN RIVER | | | | | | | | | | | | 23 |
| TANGLEWOOD | | | | | | | | | | | | 23 |
| TOLLY POINT | | | | | | | | | | | | 24 |
| TOLLY POINT SHOAL | | | | | | | | | | | | 24 |
| WHITEHALL BAY | | | | | | | | | | | | 25 |
| WHITEHALL CREEK | | | | | | | | | | | | 25 |
| WHITEHALL FLATS | | | | | | | | | | | | 25 |

APPROVED

Chas. E. Hartington

CHIEF GEOGRAPHER - C3x5
23 JAN 1979

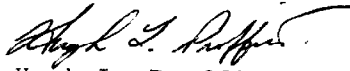
Redone

Norfolk Hydrographic Processing Branch
Addendum
To Accompany

HYDROGRAPHIC SURVEY H-8860 (Wh 10-1-65)

GENERAL

This appears to be an excellent basic survey except for apparent position displacement on development lines 1 through 12 k (blue). Soundings on these lines were not plotted as they were in disagreement with surrounding hydrography.



Hugh L. Proffitt
Branch Chief

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-8860

Records accompanying survey: Smooth sheets .1...;
 boat sheets .2...; sounding vols. 17...; wire drag vols: .0...;
 Descriptive Reports .1.; graphic recorder envelopes 1-Cahier;
 special reports, etc. Corrections to Echo Soundings,.....
 Hiran Report
 1-Each, Control Compilations T-12956, T-12957, T-12958, T-12660 & T-12661

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

| | |
|--|------------------|
| Number of positions on sheet | 2894. |
| Number of positions checked | ..184. 38 |
| Number of positions revised | ...13. |
| Number of positions revised (refers to depth only) | 66 |
| Number of soundings/erroneously spaced | |
| Number of signals erroneously plotted or transferred | |
| Topographic details | Time ..1. hr. 60 |
| Junctions | Time .10. hrs |
| Verification of soundings from graphic record | Time .18. hrs |
| Special adjustments | Time ..0. hrs |

Verification by Daq R. Munford... Total time 208 hrs Date 3/22/67

Reviewed by Fannie B. Powers Time 217... Date 7-15-71
 Insp Robert W. DeKazarian 206 12/27/78
R. H. Carstens 18 hrs 3/13/79
John Keller 2 hrs 3/29/79

OFFICE OF MARINE SURVEYS AND MAPS

HYDROGRAPHIC SURVEYS DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO., H-8860

FIELD NO. WH-10-1-65

Maryland - Chesapeake Bay - Off Severn River

SURVEYED: September 18 - October 26, 1965

SCALE: 1:10,000

PROJECT NO.: SP-7-65

SOUNDINGS: Pole, DE-723 Fathometers

CONTROL: Visual Fixes on
Shore Signals and
Hiran

| | |
|-----------------------------|---------------------|
| Chief of Party | J. P. Randall |
| Surveyed by | J. P. Randall |
| | R. J. Land |
| | J. D. Boon |
| | J. E. Dropp |
| | R. M. Petryczanko |
| | P. F. Dean |
| | P. L. Richardson |
| Protracted by | H. R. Smith (AMC) |
| Soundings Plotted by | H. R. Smith |
| Verified and Inked by | D. R. Munford |
| Reviewed by | F. P. Powers |
| | Date: July 13, 1971 |
| Inspected by | R. W. DerKazarian |

1. Description of the Area

This is an inshore survey of the Chesapeake Bay off Severn River entrance. It extends from Tolly Point to Sandy Point and extends on the southeast to latitude 38°56'00", longitude 76°24'50" and on the northeast to latitude 39°01'00", longitude 76°23'00".

The bottom in the shoaler areas is generally mud and sand and somewhat irregular. In the deeper areas the bottom is smooth and almost entirely covered with silt.

2. Control and Shoreline

The origin of control is adequately covered in part F of the Descriptive Report.

The shoreline originates with Class III reviewed photogrammetric manuscripts T-12660 and T-12661 of 1965 photography. Field edit has not been accomplished on these manuscripts.

Eastport Harbor Jetty Light "1" and Eastport Harbor Entrance Light "3" are shown erroneously on T-12661 as Day Bn No. 1 and 3.

3. Hydrography

a. Depths at crossings are in good agreement.

b. The usual depth curves are adequately delineated with the exception of the mean low water line which apparently falls very close to the shoreline.

c. The development of the bottom configuration and the investigation of least depths are considered adequate except at the entrance to Meredith Creek where the channel is not developed and in Fork Creek where numerous prior soundings were retained to supplement present depths.

4. Condition of Survey

The field work, sounding records, smooth plotting, and Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual.

5. Junctions

An adequate junction was completed with H-8859 (1965) on the northwest. Present depths on the east and south at the limit of the project are in harmony with charted depths.

6. Comparison with Prior Surveys

a. H-2402 (1898) 1:20,000

Much of this prior survey has been superseded by the subsequent surveys listed below. Comparison of the remaining portion and the present survey (deeper areas) reveals the present depths to be 2 to 6 feet shoaler than the prior depths. This difference is attributed to bottom changes and sounding methods, lead line on the prior work versus fathometer soundings on the present work. The present survey is better developed and depicts the bottom in greater detail. The present survey is adequate to supersede this prior survey in the common area.

- b. H-5197 (1932) 1:20,000
H-5198 (1932) 1:10,000

Comparison of the prior and present surveys reveals changes in the shoreline and in the bottom. Most of the shoreline and adjacent depth changes are cultural while the offshore changes appear to be natural. Extensive areas throughout the survey have increased in depth by 1 to 4 feet. Others have shoaled by 1 foot. Severn River channel has shoaled by as much as 7 feet in some areas.

Several low water areas on the prior surveys have deepened as much as 1 to 3 feet from Hackett Point (latitude 39°59.50', longitude 76°25.25') to the southeastern end of Greenbury Point (latitude 39°58.50', longitude 76°27.20'). These changes are attributed to natural causes. The islet in latitude 39°59.43', longitude 76°25.17' and the high water line at Hackett Point in latitude 39°59.43', longitude 76°25.67' have eroded away. Possum Point (latitude 38°59.65', longitude 76°27.0') has receded approximately 100 meters; two nearby low water shoals in latitude 38°59.50', longitude 76°26.98', not investigated by the present survey, are considered to be no longer existent.

A noticeable change in the vicinity of latitude 39°59.75', longitude 76°24.85' has taken place in the shoreline marsh area with the appearance of several new islets and the erosion of others. These changes are attributed to the effect of the Chesapeake Bay Bridge's causeway.

East of Chinks Point the area has deepened approximately 1 foot, prior depths indicated a shoal covered 1 foot.

The entrance into Lake Ogleton has undergone quite a change since the prior surveys. A prior point of land in latitude 38°56.95', longitude 76°27.65' presently is in the location of a dredged channel of at least 4 feet.

A pile on H-5197 (1932) in latitude 39°00.33', longitude 76°23.66' was not investigated by the present survey; however, the prior survey records indicate that the pile was a signal and temporary in nature. This pile and several others in the vicinity are considered no longer existent.

The present survey did not include hydrography into Mill Creek, Whitehall Creek, or Meredith Creek as outlined in the project instructions.

With the addition of several soundings in Back Creek, Lake Ogleton, and Tolly Point, and piling, rocks, and ruins carried forward, the present survey is adequate to supersede these prior surveys in the common area.

7. Comparison with Chart 385 (latest print date July 14, 1969)
566 (latest print date July 4, 1970)

a. Hydrography

The charted hydrography originates largely with the previously discussed prior surveys and the boat sheet of the present survey which require no further consideration, supplemented by verified soundings of the present survey, numerous chart letters, Notice to Mariners, photo revisions, and the various items discussed in paragraphs J and K of the Descriptive Report.

Attention is directed to the following:

(1) The following items were charted from the sources indicated subsequent to the date of the present survey and should be retained on the chart:

(a) The sunken wreck at latitude 38°56'32.8", longitude 76°25'38" from Notice to Mariners 43 of 1967.

(b) Numerous piles in the vicinity of latitude 38°57'55", longitude 76°28'53.8" to latitude 38°57'49.5", longitude 76°28'56" and three in latitude 38°57'48.5", longitude 76°28'48.2" from Chart Letter 1710 of 1965.

(c) The Obstr. (fish haven) at latitude 38°59'23.5", longitude 76°24'13" from Chart Letter 1246 of 1967.

(d) The visible wreck charted in latitude 38°57'42", longitude 76°29'00" from Notice to Mariners 43 of 1966.

(e) Six piles in the vicinity of latitude 38°57'42.5", longitude 76°29'06" from Chart Letter 1041 of 1966.

(2) The following items were charted from the sources indicated prior to the date of the present survey. They were not investigated by the hydrographer and should be retained on the chart.

(a) Three piles in the vicinity of latitude 38°58'07.2", longitude 76°28'47" from Chart Letter 882 of 1951.

(b) Four piles in the vicinity of latitude 38°58'03", longitude 76°28'47" from 1953 air photographs.

(c) Ten piling in the vicinity of latitude 38°58'06", longitude 76°28'43" from Bp-98142 (1963 air photographs).

(3) The low water feature and the two foul areas charted in the vicinity of latitude 38°56.92', longitude 76°27.72' from Bp-48762 (1951 air photo revision) fall in shoal depths of 1 to 2 feet on the present survey. The present survey adequately reveals the condition of the area and is adequate to supersede the charted features.

(4) The low water spot in latitude 38°56.82', longitude 76°27.92' is charted from the boat sheet of the present survey and is superseded by the smooth sheet information.

Except as noted above, the present survey is adequate to supersede the charted information.

b. Topography

The charted topography should be revised to agree with the topography on the present survey except for items listed below.

(1) The following items were charted from 1968 air photographs (Bp-98550) subsequent to the date of the present survey and should be retained on the chart:

(a) A pier in latitude 38°59'19.5", longitude 76°25'15".

(b) A shoreline change in the vicinity of latitude 38°59'51", longitude 76°25'39".

(c) Several piers in the vicinity of latitude 38°59'58", longitude 76°26'00".

(d) A pier-in-ruins in latitude 38°59'43.8", longitude 76°26'15".

(e) A shoreline change in latitude 38°56'10.8", longitude 76°27'25".

(f) Numerous shoreline changes and piers in and at the entrance to Lake Ogleton and Back Creek.

(2) The following items were charted from Chart Letter 1710 of 1965 subsequent to the date of the present survey and should be retained on the chart:

(a) Numerous piers and a pier-in-ruins in the vicinity of latitude 38°57'53", longitude 76°28'54".

(b) Two piers in latitude 38°57'45.7", longitude 76°28'49" and latitude 38°57'49", longitude 76°28'49".

(3) The fish nets in latitude 38°56'48.4", longitude 76°27'23.3" and latitude 38°56'08.5", longitude 76°27'27" were charted from Chart Letter 1618 of 1966 subsequent to the date of the present survey and should be retained on the chart.

(4) The following pier and piers-in-ruins apparently charted from 1953 air photographs were not investigated on the present survey and should be retained on the chart as pier ruins:

(a) The three piers-in-ruins in latitude 38°59'14", longitude 76°25'21.9".

(b) A pier in latitude 38°57'56.2", longitude 76°28'58".

(c) A pier-in-ruins in latitude 38°57'46", longitude 76°28'23.6".

(d) Two piers-in-ruins in the vicinity of latitude 38°56'43", longitude 76°27'20.5".

(e) A pier-in-ruins in latitude 38°57'38.4", longitude 76°28'24.2".

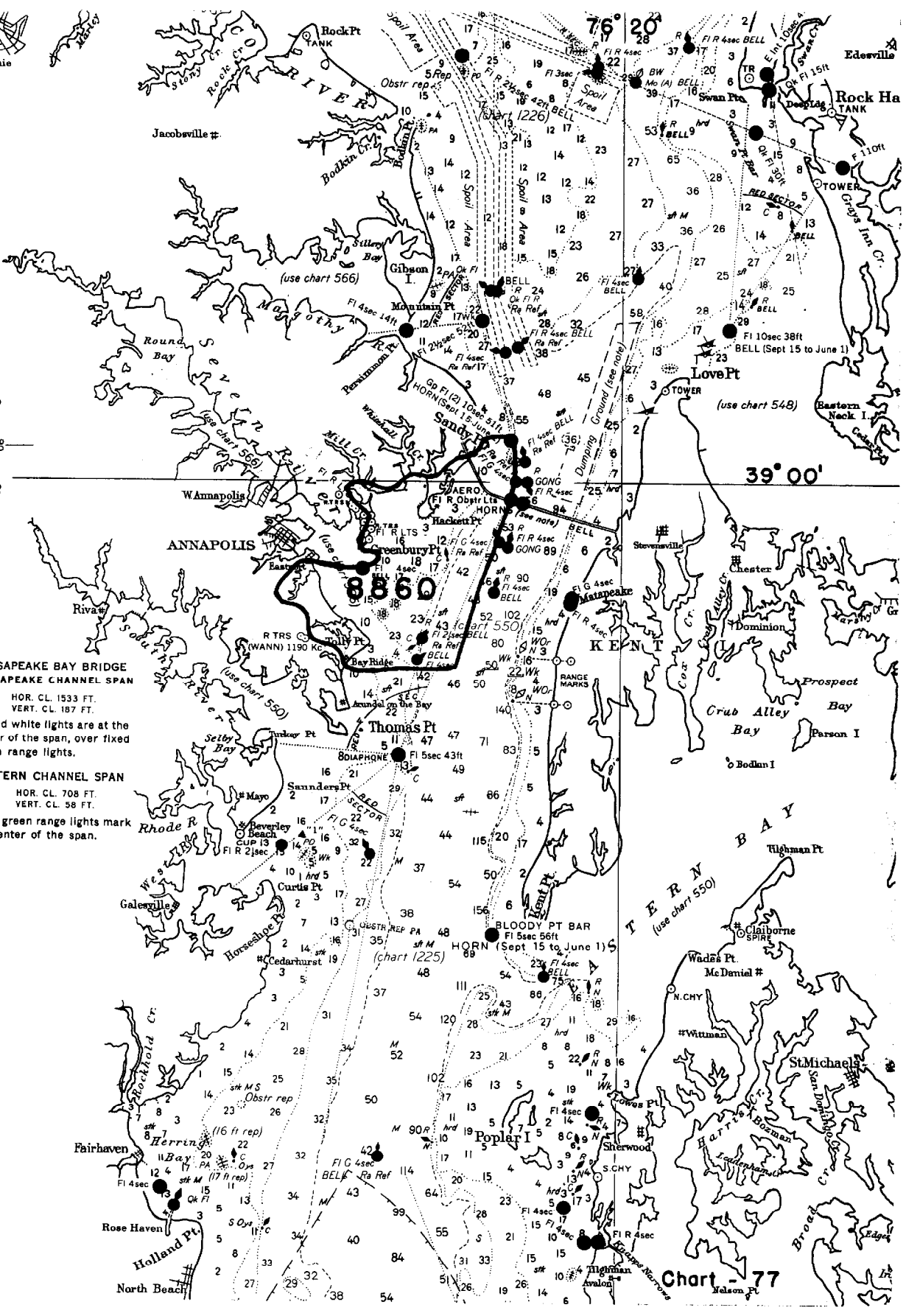
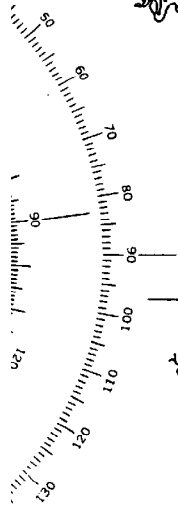
(5) The pier-in-ruins in latitude 38°59'42.7", longitude 76°27'25" from 1963 air photographs (Bp-98142) was not investigated on the present survey and should be retained as charted.

c. Aids to Navigation

The aids to navigation located on the present survey are in substantial agreement with the chart with the following exceptions:

(1) Lake Ogleton Entrance Daybeacons numbers 1 and 6 located on the present survey in approximate latitude 38°57'00", longitude 76°27'40" were changed to lights in accordance with Notice to Mariners 30 of 1966 subsequent to the date of the present survey.

(2) Lake Ogleton Entrance Daybeacons numbers 7, 8, 9, and 10 in approximate latitude 38°56'50", longitude 76°27'45" were established subsequent to the date of the present survey. They are presently charted from information published in Notice to Mariners 30 of 1966.



CHESAPEAKE BAY BRIDGE
CHESAPEAKE CHANNEL SPAN
 HOR. CL. 1533 FT.
 VERT. CL. 187 FT.

3 fixed white lights are at the center of the span, over fixed green range lights.

EASTERN CHANNEL SPAN
 HOR. CL. 708 FT.
 VERT. CL. 58 FT.

Fixed green range lights mark the center of the span.

Chart - 77

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8860

INSTRUCTIONS

- A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
- 1. Letter all information.
- 2. In "Remarks" column cross out words that do not apply.
- 3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review

| CHART | DATE | CARTOGRAPHER | REMARKS |
|--------------------------------------|----------|---------------------|--|
| 566 | 6/2/67 | W.A. Hall | Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>Partly app., Revised 15 dgs</i> |
| 77 | 8/4/67 | D. Svendsen | Full Part Before ^{before} Verification Review Inspection Signed Via Drawing No. <i>Chart 566 drawing #23</i> |
| 1225 | 8/18/67 | John P. Wein | Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>thru ch. 566 diag # 23</i> |
| 550 | 8-25-67 | Leopold R. Ebenhart | Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>566 #28</i> |
| 385 | 4/28/69 | Carroll Chapman | Full Part Before ^{AFTER} After Verification ^{before} Review Inspection Signed Via Drawing No. <i>partly appld</i> |
| 550 | 10-15-71 | H. Radde | Full Part Before After Verification ^{before} Review Inspection Signed Via Drawing No. <i>Exam. review for critical corr only NO CORR.</i> |
| 385 | 10-6-75 | W. G. Chandler | Full Part Before After Verification ^{before} Review Inspection Signed Via Drawing No. <i>A</i> |
| 566 | 11/6/75 | Richard Hogn | Full Part Before After Verification ^{before} Review Inspection Signed Via Drawing No. <i>Thru 385</i> |
| 1225 | 11/29/76 | Joseph Pirrono | Full Part Before After Verification ^{before} Review Inspection Signed Via Drawing No. <i>Thru 566</i> |
| 77 | 4-1-76 | Thomas P. Williams | Full Part Before After Verification ^{before} Review Inspection Signed Via Drawing No. <i>THRU CHT 1225</i> |
| 550 | 7/23/76 | Joseph Pirrono | <i>Partially applied</i> Full Part Before After Verification Review Applied thru 566 <i>566</i> |
| 12283 (385) | 1-9-80 | M. PANAS | FULLY APPLIED - DRUG # 70 |
| 12287 (566) | 1-9-80 | M. PANAS | FULLY APPLIED - DRUG # 36 |
| 12270 | 2-5-80 | M. A. Moore | FULLY APPLIED Thru Ch 12282 to Drug # 46 |
| 12263 | 2-5-80 | M. A. Moore | Fully Applied Thru Ch 12270 to Drug # 62 |
| 12260 | 2-5-80 | M. A. Moore | Fully Applied Thru Ch 12263 to Drug # 40 |