9643

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. HSB-05-1-76

Office No. H-9643

LOCALITY

State ..... Maryland

General Locality ..... Baltimore Harbor

Locality ..... Bear Creek

1976

CHIEF OF PARTY
W. R. Daniels

LIBRARY & ARCHIVES

DATE ..... June 16, 1978

☆ U.S. GOV. PRINTING OFFICE: 1976—669-441

9643

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO. H-9643

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. HSB-05-1-76

State: Maryland

General locality: Baltimore Harbor

Locality: Bear Creek

Scale: 1:5,000 Date of survey: (JD 232) Aug. 19, 1976-Nov. 3, 1976 (JD 308)

Instructions dated: July 9, 1975* Project No.: OPR-514-AHP-75

Vessel: Launch 1282

Chief of party: LCDR W. R. DANIELS

Surveyed by: L.C. Gilden, LTJG K. W. Perrin

Soundings taken by echo sounder, hand lead, pole: all

Graphic record scaled by: JMR, LCG, KWP, RS, ER, FR

Graphic record checked by: JMR, LCG, KWP, RS, ER, FR

Protracted by: N/A Automated plot by: AMC CALCOMP 618

Verification by:

Soundings in ~~fathoms~~ feet at MLW ~~MLLW~~

REMARKS: Time meridian is 0°

* Change to Project Instruction Change No. 1 dated July 30, 1975 and Change No. 2 dated ~~20~~ 20-July-1976.

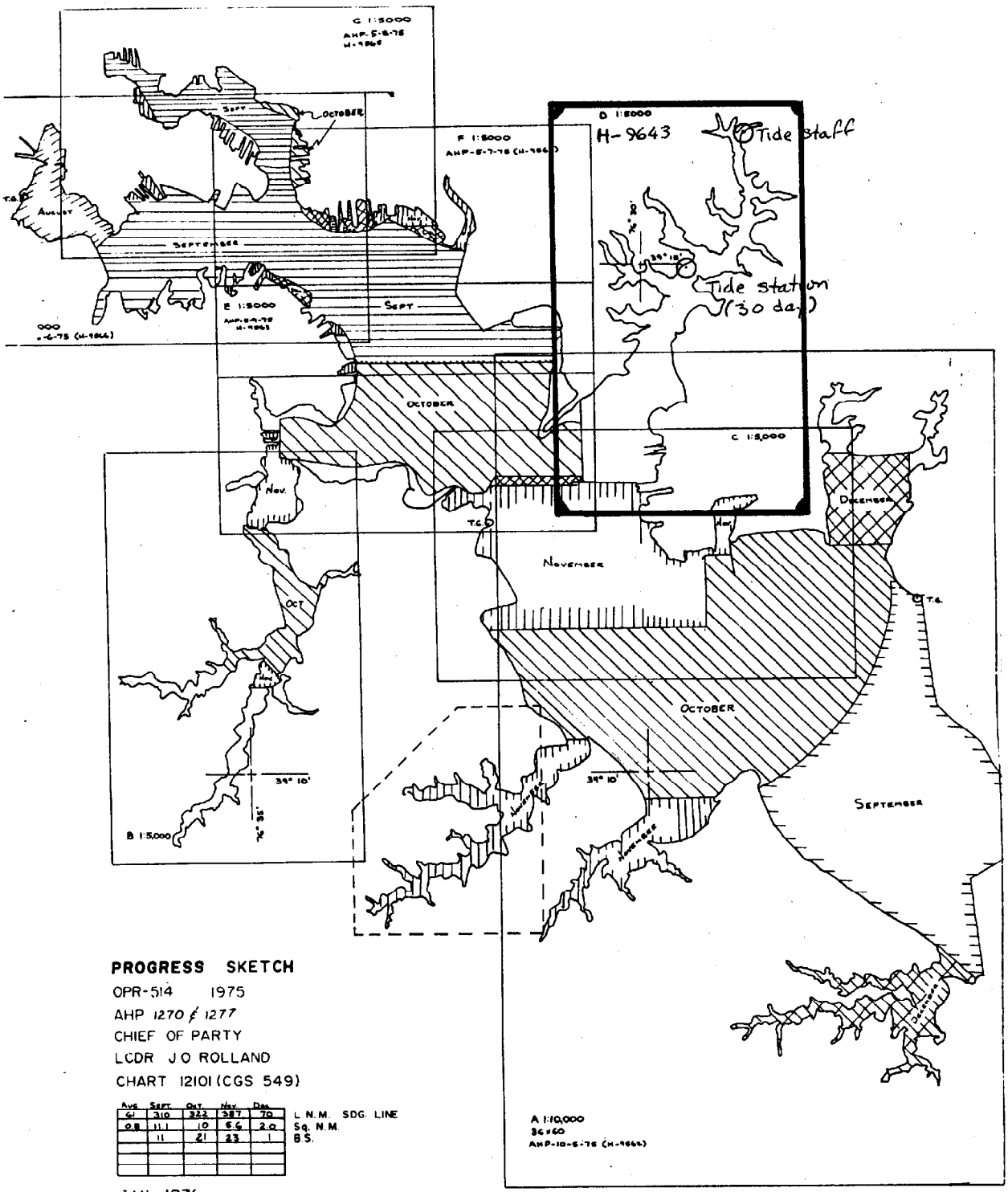
Notes in red by verifier

Applied to stds 7-11-79

CAG

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537.

☆ U.S. GPO: 1974-0-768-081/1207



PROGRESS SKETCH

OPR-514 1975

AHP 1270 & 1277

CHIEF OF PARTY

LCDR J O ROLLAND

CHART 12101 (CGS 549)

Aug	Sept	Oct	Nov	Dec
61	310	322	387	70
0.8	111	10	6.6	2.0
	11	21	23	1

L.N.M. SDG. LINE
Sq. N.M.
B.S.

JAN. 1976

23 L.N.M. SDG. LINE

0 Sq. N.M.

18 B.S.

DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SURVEY H-9643
Field No. HSB-5-1-76

Scale: 1:5,000 1976 HFP Launch 1282
Chief of Party: William R. Daniels K.W. Perrin, OIC

A. PROJECT

This survey is a part of project OPR-514-AHP-75, Baltimore Harbor, Maryland and was accomplished in accordance with project instructions dated 9 July 1975 and Change no. 1 to project instructions dated 30 July 1975, and Change No. 2 dated 20-July-1976.

B. AREA SURVEYED

This survey covers the area of Bear Creek, Baltimore, Maryland.

The area of the survey is enclosed by the approximate limits.

Latitude N	Longitude W
39°12'45"	76°28'00"
39°16'30"	76°31'00"

The survey was conducted from August 19, 1976 thru November 3, 1976.

C. SOUNDING VESSEL

Launch 1282 was the sounding vessel used to accomplish all hydrography.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

All soundings were recorded to the nearest two tenths of a foot. For depths less than 2.0 feet or when the echo sounder had an unreadable trace, pole soundings were taken. For depths greater than 2.0 feet, echo sounders were used to obtain soundings. Lead lines were used along faces of docks and piers when the Launch was unable to get alongside.

The echo sounder in Launch 1282 was a Raytheon DE-723, serial no. 1272 from Aug. 19, 1976 thru Aug. 30, 1976. The echo sounder Raytheon DE-723 serial #925 was used in Launch 1282 from Sept. 1, 1976 thru Sept 21, 1976. The echo sounder Raytheon DE-723 Serial # 1279 was used from Sept 22, 1976 thru the end of the survey. The graphic records were scanned and checked scanned by trained per-

sonnel in accordance with the requirements specified in the provisional Hydrographic Manual.

Bar checks were taken daily on days that hydrography was actually run when possible to ensure an accurate echo sounder correction to depth.

The echo sounder initial was checked and kept at zero usually not varying more than 0.1 feet. F scale checks were made frequently each day.

E. HYDROGRAPHIC SHEET

This survey consists of a 1:5,000 scale boat sheet with an insert showing soundings at the shipyard at the mouth of Bear Creek and one overlay showing D.P's from wire drag.

All soundings, bottom samples and buoys were put on one sheet.

The 1:5,000 boat sheet projection was drawn up by AMC and checked by party personnel.

All records and boat sheets will be sent to Processing Division at the Atlantic Marine Center, Norfolk, VA, for verification and smooth plotting.

F. CONTROL STATIONS

All triangulation stations for Del Norte were located by Photo Party 61 and recovered by Launch 1282. Pier corners and other well-defined points on the manuscripts were used for signal locations and electronic control sites as per Change no. 1 to project instructions. Methods of location and a list of geographic positions are included in the Horizontal Control Report prepared by Photo Party 61.

G. HYDROGRAPHIC POSITION CONTROL

The entire survey was done by range-azimuth methods, one Del Norte distance and one intersecting azimuth angle. "See Boat Sheet" methods were used when line of sight prevented use of the theodolite for obtaining the azimuth angle.

Del Norte serial #2490 was used on the shore station from Aug. 19, 1976 thru the end of survey except for half a day on Nov. 3, 1976 when Del Norte serial #189B was used.

Del Norte serial #187A was used on Launch 1282 during the entire survey.

DMU serial #122 was used from August 19, 1976 thru Nov. 3, 1976 and DMU serial #123 was used from Nov.3, 1976 thru the end of the survey.

Del Norte was calibrated twice daily to ensure its accuracy; once in the morning and once in the evening. The Del Norte calibration was made over a measured baseline to enable two calibrations a day.

The azimuth angle was obtained with the use of a theodolite Wild T-2-85658. The instrument was initialed at the beginning of each setup and the initial was checked frequently to ensure its accuracy.

H. SHORELINE

Shoreline details were taken from the following T-sheets: TP-00839, TP-00843, TP-00844 and TP-00851. All sheets are at the scale of 1:5,000. Field edit of all sheets was completed by Photo Party 61.

I. CROSSLINE

The percentage of crosslines run was 9.6% of the regular system of soundings lines. The agreement between the crosslines and the sounding lines were excellent with differences of not more than 1 foot.

J. JUNCTIONS

This survey H-9643, HSB-5-1-76 has no junctions with any prior surveys. The project area does junction with two contemporary surveys H-9563, AHP-5-9-75 and H-9582 AHP-5-10-75. The junction soundings are good with differences of not more than 1 foot. The differences may be lesser after velocity and settlement and squat correctors are applied.

K. COMPARISON WITH PRIOR SURVEYS

The survey H-9643, HSB-5-1-76 was compared with two prior surveys. The survey H-2358 (1:10.000) Sept 16, 1898, and the survey H-4371 (1:10,000) August 3, 1924. When compared with the new survey, only minor changes in depth in Bear Creek had occured with most of the change occuring as a change in the shoreline. Many changes have occurred from filling of spoil, dredging and sedimentation.

Three Pre-survey Review items occur on this sheet. They are as follows:

#17 8 foot reported (1964) possible ruins and 10 foot reported (1964). The area was surveyed with fathometer and wire dragged to try and locate any possible ruins. The area indicated as 10 ft. reported is 10 and 11 feet in the entire area. There were no soundings found less than 9 feet in the area reported as 8 ft. The area was wire dragged with no ruins or obstructions being found. An area of 100 meter radius was covered. It is recommended that the chart be changed to show the present soundings and that the 8 ft. rep. and possible ruins be removed from the chart.- ~~Recommend retention.~~ ~~Concur~~ - See further Dept. QC Critique

minor pile studs found by chain drag

#27 Piling P.A. These pilings in the vicinity of Lat. 39°15.25', Long. 76°29.48' are present as charted. There are a total of 10 piles. Each pile was located. It is recommended that the chart show the positions of the piles as located and that the designation PA be removed from the chart. ✓ concur JPS

#30 Platform charted at Lat. 39°15.46'N, Long. 76°28.85'W is present as charted. It is recommended that the symbol and designation remain as charted. ✓ Do not concur, See QC Critique

Lat 39°15.46', long 76°28.86' on present survey - 25 meters north of chtd. pos.

Visible Wrecks enclosed by Triangles

The visible wreck charted at Lat. 39°14.78'N, Long. 76°30.35'W was wire dragged for but no wreck was located. An area of 125 meters radius from the wreck was covered. According to a local resident Mr. J. E. Murphy at 8122 Bullneck Road, Baltimore, Maryland, the wreck and all remains had been removed. It is recommended that the wreck symbol be removed from the chart. ✓ concur JPS

Dashed Circled Items

The area of the submerged wreck and piles charted at Lat. 39°14.51'N, Long. 76°30.27'W is foul with submerged piles and cement blocks. Recommend the area be indicated as foul on the chart as on boat sheet. Concur JPS

L. COMPARISON WITH CHART

The survey H-9643, HSB-5-1-76 was compared with NOS chart No. 12281 (545); Aug. 16, 1975. The major change between the chart and the new survey was that the main channel from Lloyd Point up to Lynch Cove has shown shoaling in the area. General charted depths of 15-17 ft. are shown on present survey as 11 & 12 ft.

A number of new piers have been constructed since the last edition of the chart. These piers have been located on the present survey and should be charted.

M. ADEQUACY OF SURVEY

The survey H-9643, HSB-5-1-76 is complete and adequate and should supersede all prior surveys.

N. AIDS TO NAVIGATION

All floating and non floating aids to navigation were located to verify their charted position. The buoys and markers adequately serve the purpose for which they were established. In a comparison with the G.P.'s of the buoys from the chart and the G.P.'s determined during the survey, the following results were obtained:

Buoy N "4" was located 15 meters WSW of charted position.
Buoy C "7" was located 18 meters S of charted position.
Buoy C "1" was located 25 meters E of charted position.
Buoy C "3" was located 23 meters E of charted position.
Buoy N "6" charted at Lat. 39°13.04'N, Long. 76°30.36'W no longer exists.

Buoy N "8" charted at Lat 39°13.05'N, Long. 76°30.20'W no longer exists.

Buoy C "3" charted at Lat. 39°12.82'N. Long. 76°30.65'W no longer exists.

There is a fixed bridge shown on the chart to be under construction at Lat. 39°14'10"N, Long. 76°29'55"W. This bridge is completed with a vertical clearance of 54 feet at the center. (53ft per C.G.)

O. STATISTICS

	LAUNCH 1282
miles sounding line	112.0 nm
miles crossline	10.7 nm
% crossline	9.6 %
miles wire drag	11.0 nm
Total area of boat sheet	2.5 snm
Total number of positions	2557
Number of tide gages	2
Number of bottom samples	67

P. MISCELLANEOUS

A number of strays indicated on the fathogram were searched for on JD 289 with a wire drag. The drag failed to catch anything even though the strays were being recorded during the drag investigation. A true determination of the cause

of the strays could not be made, however, the drag did disprove the existence of obstructions.

On Launch 1282 a modified sweep was utilized to search for submerged objects. The sweep consisted of two trawl boards 18" x 24", with 65 feet of small chain between them. The trawl boards were bridled and towed in such a manner as to drag along the bottom. The distance between the two boards while dragging is approximately 40 to 45 feet. The distance of the drag astern of the vessel was determined in a ratio of 1:3; water depth/length of tow line. Upon snagging an object the tow lines would come together slowly allowing sufficient time for the coswain to stop the vessel. The sweep was then pulled aboard until the snagged object was close enough to the vessel to get a sounding pole or leadline sounding on the object.

Q. RECOMMENDATIONS

None

R. AUTOMATED DATA PROECESSING

The raw data from this survey will be put on paper tape in logger format by field party personnel. All data will be sent to the Atlantic Marine Center to be verified and smooth plotted.

S. REFERENCE TO REPORTS

See Report on Horizontal Control by Photo Party 61, (OPR-514, 1975).

Respectfully submitted,

Robert Lewis

for/ Kenneth W. Perrin, Lt., NOAA

FIELD TIDE NOTE

Field Tide Reductions of soundings were based on predicted tides from Baltimore, Maryland corrected to Ft. Carroll, Maryland and were interpolated by PDP8/E computer utilizing AM 500. All times of both predicted and recorded tides are GMT.

One Bristol bubbler tide gage was installed at one location in the project area. One ADR Tide gage was installed near the project area. The locations and periods of operation are as follows:

Site	Location	Period
Bear Creek Marina #857-4726	Lat. 39°15'N Long. 76°29.3'W	8 Days Aug 5, 1976-Oct. 30, 1976
Bear Creek Tide Staff	Lat. 39°15.29'N Long. 76°28.75'W	4 Days Sept. 28 - Oct. 1, 1976
Hawkins Point #857-4779	Lat. 39°13'N Long.76°32°W	83 Days Aug. 12 - Nov. 3, 1976

Bear Creek Marina

Gage (S/N 63 A 17968) was installed Aug. 5, 1976 and began operation Aug. 8, 1976. The staff was installed Aug. 5, 1976 and leveled Aug. 13, 1976. Very good records were obtained for 86 days with 1 1/2 days interruption 10/7/76 - 10/8/76. The manigram reads the same as the staff.

Bear Creek Tide Staff

A tide staff was installed at the upper end of Bear Creek as per project instructions. The staff was read during periods of hydrography. The staff was installed and leveled 9/28/76. The staff was used for 4 days.

Hawkins Point

Gage (S/N 700GAS833M20) was installed and began operation Aug. 12, 1976. The staff was installed and leveled Aug. 12, 1976. Very good records were obtained for 29 days. The gage gained 3 hours from Aug 27, 1976 thru Aug. 31, 1976 and lost 5 hours from Aug. 31, 1976 thru Sept. 3, 1976. Gage (S/N 6804A4960M8) was installed in place of previous gage on Sept. 10, ,976. Very good records were obtained for 54 days. 10 hours were lost between Oct. 12 and Oct. 15, 1976. Marigram reads the same as the staff.

Levels

In a comparison of level records the tide staff at all

locations had a neligable shift of less than 0.002 feet.

Zoning

Zoning of the survey area is recommended.

Hydrgraphic Surveys Branch
439 W. York Street
Norfolk, Virginia 23510

September 15, 1977

TO: Chief, Tides Branch, C331

FROM: Robert Lewis
William R. Daniels, CAM11
Chief, Hydro, Surveys Branch

SUBJECT: Request for Tidal Data - OPR-514-Survey H-9643

Please provide smooth tide correctors and zonning information to AMC, Processing Division, CAM3 for Survey H-9643.

Two tide stations were established by the hydro party within the limits of this survey:

SITE	LOCATION	PERIOD
Bear Creek Marina #857-4726 Bubbler	lat. 39° 15.0' long. 76° 29.3'	86 days 8/5/76 - 10/30/76
Upper Bear Creek Staff	lat. 39° 16.29' long. 76° 28.74'	4 days 9/28/76 - 10/1/76

Two ADR gages were installed by the hydro party at Hawkins Pt. #857-4821 and North Point #857-4779. These gages were in operation during the entire season

The following times of hydrography include 2 hours before and after actual times:

JULIAN DAY (1976)	HYDRO BEGINS (GMT)	HYDRO ENDS (GMT)
232	1200	2000
237	1200	2000
238	1100	2200
239	1100	1800
243	1200	2000
244	1200	2100
245	1200	1900
246	1400	2100
247	1100	2200
251	1100	2100
252	1200	2100
253	1100	1700

JULIAN DAY (1976)	HYDRO BEGINS (GMT)	HYDRO ENDS (GMT)
257	1200	2100
264	1200	2100
265	1200	1700
267	1200	2100
271	1200	2100
272	1300	2100
273	1100	2100
274	1200	2000
275	1100	2100
278	1100	2100
279	1000	2100
286	1200	2200
287	1600	2200
288	1000	1600
289	1100	2100
292	1100	1700
302	1100	1600
303	1100	2000
308	1100	2200

OPR 514

SOUNDING CORRECTION ABSTRACT

VESSEL HSB-Leh 1282

FIELD NO. HSB-05-1-76

REGISTRY NO. H- H-9643

Julian Date	From Time (GMT)	To Time (GMT)	Velocity Corr. Table No.	(Note: TRA Corr. is the algebraic sum of these columns) Draft Corr.	Instrument Error Corr.	Initial Corr.	S&S Corr.	TRA Corr. ft/fms	Remarks
232	141815		0001	0.0	0.0	0.0	+0.4	+0.4	Standard spd.
	151200		0001	0.0	0.0	0.0	+0.3	+0.3	Slow spd
	151400		0001	0.0	0.0	0.0	+0.4	+0.4	Standard Spd.
	155100		0001	0.0	0.0	0.0	+0.3	+0.3	Slow spd.
	155200		0001	0.0	0.0	0.0	+0.4	+0.4	Standard Spd.
	165130		—	—	—	—	—	0.0	~~Patch~~ D.P. P.le
	165300		0001	0.0	0.0	0.0	+0.4	+0.4	Standard Spd.
237	143300		0000	—	—	—	—	0.0	D.P.
	145615		0001	0.0	0.0	0.0	+0.3	+0.3	Slow Spd.
	145815		0001	0.0	0.0	0.0	+0.4	+0.4	Standard Spd
	164700		0001	0.0	0.0	0.0	+0.3	+0.3	Slow Spd.
	↓	(See TC/TI Listing for complete corrections & Tables)							

+.4 in general +.2 +00 mech

15

Settlement and Squat Test

25 June 1976

J.D. 177

Launch 1282
(85 hp)

Three runs were made at 3 mph, 5 mph, 10 mph, 15 mph and 20 mph these speeds are the boat's range of hydro speeds.

The procedure was to have a person with a level on shore and a person holding a level rod on the boat. The vessel would run by the observer at each speed and a reading was taken from the level rod. After a comparison of data was made, the average value for each hydro speed was determined. A curve constructed and a settlement and squat table was prepared. The changes in tidal heights were taken into consideration.

Run #1

Note at no time did the tide change more than 0.1 foot during each S&S run

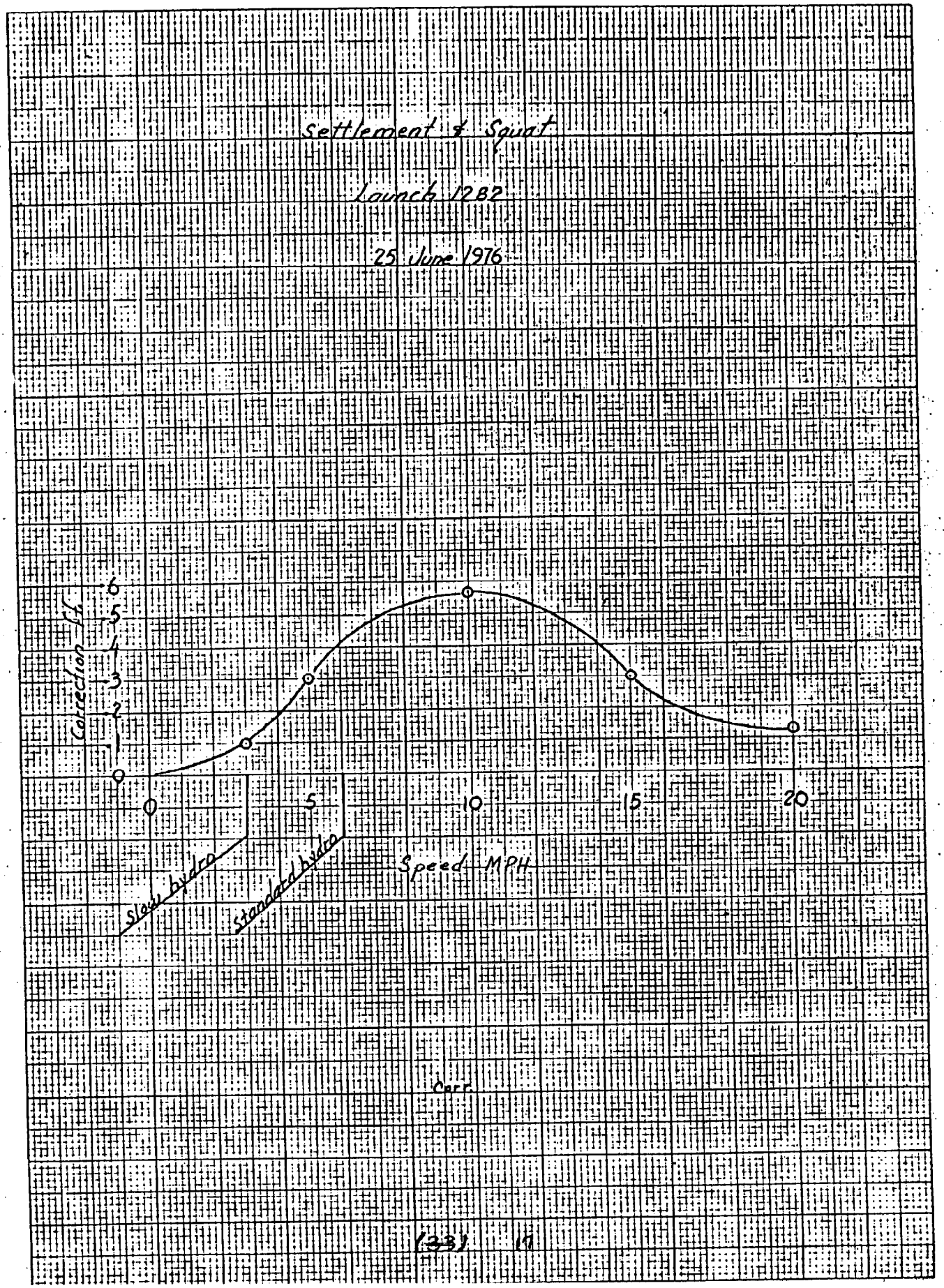
	3 mph	5 mph	10 mph	15 mph	20 mph
Still	9.5'	9.5'	9.5'	9.5'	9.5'
Underway	9.6'	9.8'	10.1'	9.8'	9.7'
S&S Corr.	0.1'	0.3'	0.6'	0.3'	0.2'

Run #2	3 mph	5 mph	10 mph	15 mph	20 mph
Still	9.7'	9.7'	9.7'	9.7'	9.7'
Underway	9.8'	10.0'	10.3'	10.0'	9.8'
S&S Corr.	0.1'	0.3'	0.6'	0.3'	0.1'

Run #3	3 mph	5 mph	10 mph	15 mph	20 mph
Still	9.7'	9.7'	9.7'	9.7'	9.7'
Underway	9.8'	10.0'	10.2'	10.0'	9.8'
S&S Corr.	0.1'	0.3'	0.5'	0.3'	0.1'

Average Correctors For Each Speed:

3 mph	0.1
5 mph	0.3
10 mph	0.57
15 mph	0.3
20 mph	0.13


Settlement & Squat
Launch 1282
25 June 1976
Correction ft
6
5
4
3
2
1
0
0
5
10
15
20
Speed MPH
Slow hydro
Standard hydro
Corr.

SETTLEMENT & SQUAT TEST
Oct, 1976
J. D. 280
Launch 1282
85 hp Outboard

Three runs were made at slow, standard and fast speed. These speeds are the boats range of hydro speed.

The procedure was to have a person with a level on shore and a person holding a level rod on the boat. The vessel would run by the observer at each speed and a reading was taken from the level rod. After a comparison of data was made, the average value for each hydro speed was determined. A curve constructed and a settlement and squat table was prepared. The changes in tidal heights were taken into consideration.

Run #1

Note: At no time did the tide change during each S + S run.

	Slow	Standard	Fast
Still	7.18'	7.18'	7.18'
Underway	7.25'	7.35'	7.45'
S + S corr.	0.07'	0.17'	0.27'

Run #2

	Slow	Standard	Fast
Still	7.18'	7.18'	7.18'
Underway	7.23'	7.36'	7.48'
S + S corr	0.05'	0.18'	0.30'

Run #3

	Slow	Standard	Fast
Still	7.20'	7.20'	7.20'
Underway	7.26'	7.35'	7.45'
S + S	0.06'	0.15'	0.25'

Average Correctors for each speed

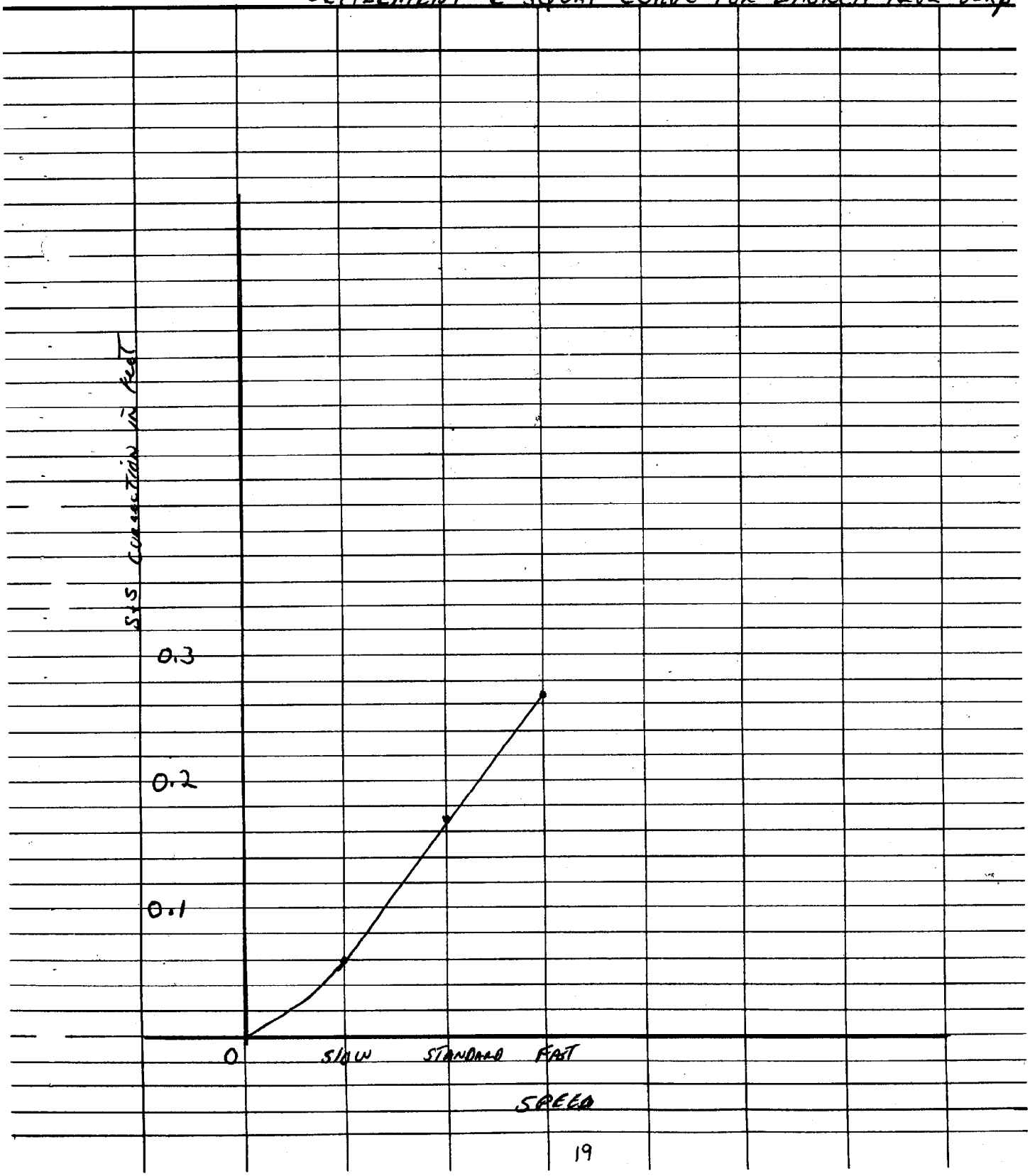
Slow 0.06', standard 0.17', fast 0.27' error

NOAA 59-11

☆U.S. GOVERNMENT PRINTING OFFICE: 1974-665-073/1044 Region 6

6 Oct. 1976

SETTLEMENT & SQUAT CURVE FOR LAUNCH 1282 BSlp



SETTLEMENT & SQUAT TEST
Nov. 10, 1976
J.D. 315
Lanuch 1282
140 hp Outboard

Four runs were made at various speed 1000 rpm, 1500 rpm, 2000 rpm, 2500 rpm, and 3000 rpm. The boats speeds range for hydrography is 1000 rpm to 2000 rpm. Two runs were made made in one direction and two runs were made in the opposite direction.

The procedure was to have a person with a level on shore and a person holding a level rod on the boat. The vessel would run by the observer at each speed and a reading was taken from the level rod. After a comparison of data was made, the average value for each hydro speed was determined and a curve constructed, and a settlement and squat table was prepared. The changes in tidal heights were taken into consideration.

Note: At no time did the tide change during each S & S run.

Run #

	1000	1500	2000	2500	3000
Still	9.65	9.65	9.65	9.65	9.65
Underway	9.70	9.80	9.90	9.95	10.00
S & S corr	0.05	0.15	0.25	0.30	0.35

Run #2

	1000	1500	2000	2500	3000
Still	9.70	9.70	9.70	9.70	9.70
Underway	9.75	9.85	9.95	10.00	10.00
S&S Corr.	0.05	0.15	0.25	0.30	0.30

Run #3

	1000	1500	2000	2500	3000
Still	9.70	9.70	9.70	9.70	9.70
Underway	9.75	9.85	9.95	10.00	10.05
S&S Corr.	0.05	0.15	0.25	0.30	0.35

Run #4

	1000	1500	2000	2500	3000
Still	9.75	9.75	9.75	9.75	9.75
Underway	9.80	9.90	10.00	10.05	10.05
S&S Corr.	0.05	0.15	0.25	0.30	0.30

Average correctors for each speed

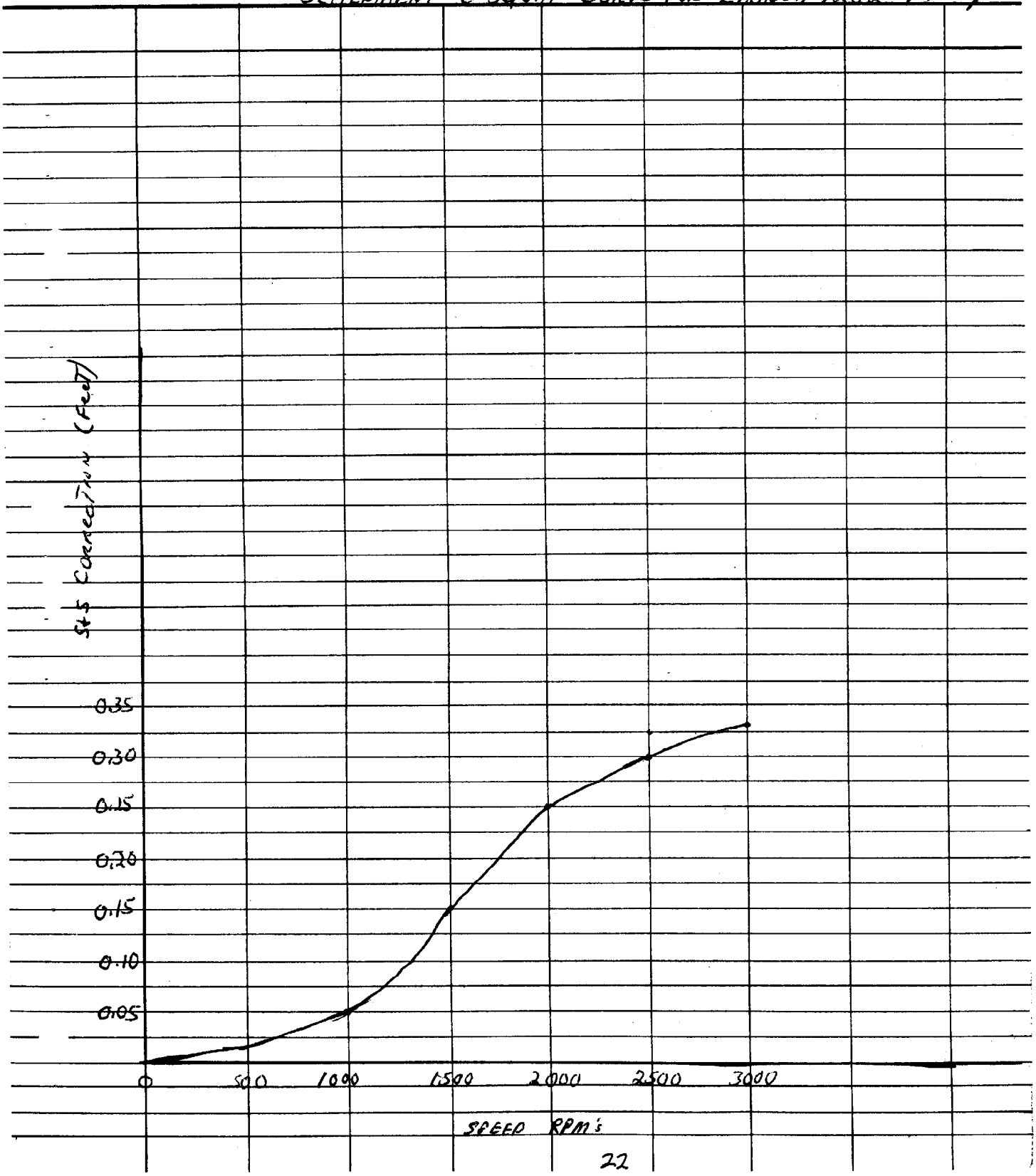
1000	1500	2000	2500	3000
0.05	0.15	0.25	0.30	0.33

NOAA 59-11

☆ U.S. GOVERNMENT PRINTING OFFICE: 1974-665-073/1044 Region 6

10 Nov. 1976

SETTLEMENT & SQUAT CURVE FOR LAUNCH 1282 140 L/P



NOAA 59-11

LAUNCH 1282 Bias Check Fathometer #1272

T.O	5	10	15	20	25	30	35	40
223	~~0.8~~	~~0.8~~	~~0.8~~	~~1.0~~	~~1.2~~	1.0	1.0	1.4
	~~0.8~~	0.2	0.6	0.6	~~0.8~~	–	1.2	1.4
224	~~0.0~~	~~0.0~~	0.2	0.4	0.6	0.8	1.2	
	0.2	0.2	0.2	0.4	0.6	0.8	1.2	
229	0.2	0.2	0.3	0.5	0.6	0.9		
	0.1	0.2	0.2	0.3	0.5	0.8		
230	0.1	~~0.0~~	0.2	0.2	0.3			
	0.2	0.4	0.5	~~0.8~~	0.5			
231	0.3	0.3	0.4	0.3	0.2			
	0.1	~~0.1~~	~~0.1~~	~~0.1~~	~~0.1~~			
232	0.2	0.3	0.6	0.5	0.7			
	~~0.5~~	~~0.5~~	0.6	0.6	0.			
233	0.2	0.2	0.2	0.4	0.4			
	0.2	0.2	0.2	0.4	0			
23~~6~~	0.2	0.2	0.2	0.3	0			
	0.2	0.2	0.2	0.2	0.3			
237	0.2	0.2	0.4	0.4	0.6	0.8	0.8	
	0.2	0.2	0.4	0.2	0.2	0.8	0.8	
239	0.2	0.2	~~0.1~~	0.2	0.4	0.4	~~0.6~~	
	0.4	0.4	0.4	0.2	0.4	0.6	0.8	
243	0.2	0.2	0.4	0.4	0.4	0.4		
	0.2	0.4	0.4	0.2	0.4	0.6		
244	0.2	0.2	0.2	0.4	0.2			
	0.1	~~0.1~~	~~0.1~~	0.2	~~0.1~~			
AVERAGE	0.2	0.24	0.34	0.35	0.44	0.77	1.0	1.4

☆ U.S. GOVERNMENT PRINTING OFFICE: 1974-665-073/1044 Region 6

Launch 1282 Bar Check Fathometer #925

J.D.	5	10	15	20	25	30	35
251	0.4	0.2	0.4	0.6	0.6	0.6	~~0.4~~
	0.4	0.2	0.6	0.6	0.6	0.8	0.6
252	~~0.0~~	~~0.0~~	~~0.2~~	0.4	0.6	0.6	0.8
	0.4	0.2	0.4	0.4	~~0.4~~	0.8	0.8
264	0.2	0.2	0.4	0.4	0.6	0.8	0.8
	0.2	0.4	0.4	0.6	0.6	0.8	0.8
265	0.4	0.4	0.6	~~0.8~~	~~0.8~~	~~1.0~~	~~1.0~~
	0.4	0.4	0.6	0.6	~~0.8~~	~~1.0~~	~~1.0~~
Average	0.34	0.29	0.49	0.51	0.6	0.73	0.76

OAA 59 11

☆ U.S. GOVERNMENT PRINTING OFFICE: 1974-665-073/1044 Region 6

Launch 1282 — BAR CHECK ABSTRACT — Fathometer "1279

	S.O.	5	10	15	20	25	30	35
	266	~~0.2~~	~~0.0~~	0.2	~~0.2~~	~~0.0~~		
		0.2	~~0.0~~	0.2	~~0.0~~			
	268	0.4	0.2	0.2	0.6			
		0.4	0.4	0.4	0.7			
	271	0.4	0.2	0.2	0.5			
		0.2	0.2	0.2	0.5			
	272	0.2	0.4					
		0.2	0.4					
	273	0.2	0.2					
		~~0.0~~	0.2					
	275	0.2	0.3	~~0.1~~	~~0.0~~			
		0.4	0.4	~~0.1~~	~~0.0~~			
	278	0.4	~~0.0~~	0.4	~~0.2~~			
		0.4	0.2	0.2	~~0.2~~			
	279	0.2	~~0.0~~	~~0.0~~	0.6			
		0.2	0.4	~~0.0~~	0.6			
	286	0.4	0.4	0.6	0.6	0.8	0.8	
		0.2	0.4	0.4	0.4	0.8	0.8	
	287	~~0.0~~	0.2	0.4				
		0.2	0.4	0.4				
	293	0.2	0.4	0.4	0.4	~~0.2~~	~~0.2~~	~~0.2~~
	296	0.2	0.2	0.2	0.4	0.6		
		0.4	0.4	0.2	0.4	0.6		
	300	0.4	0.5	~~0.1~~	0.3	0.7		
		~~0.5~~	0.6	0.6	~~1.1~~	~~1.1~~		
	301	~~0.0~~	0.4	0.6	0.4	0.6		
		0.2	0.2	0.6	0.4	0.6		
	306	0.2	0.6	0.4	0.4	0.4		
		0.2	0.4	0.4	0.6	0.4		
	307	0.2	~~0.4~~	0.4	0.4			
		0.2	0.4	0.4	0.4			
	308	0.2	0.4	0.4	0.8	1.0		
		~~0.6~~	0.4	0.4	0.6	1.0		
Averages		0.27	0.35	0.37	0.50	0.68	0.80	

25

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

-0.5 0 0.5 1.0 1.5

CORRECTIONS IN FEET, ~~FATHOMS~~

Fathometer 1272

FORM C&GS-117 (4-62)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

VELOCITY CORRECTIONS

Ship LAUNCH 1282

LCDR William Daniels Comdg.

These corrections are to be used

between Aug 10 1976 and Sept 1 1976

in the locality Baltimore Harbor
Baltimore, Maryland

for hydrographic surveys Nos. H-9563
H-9643

Depth	Correction
0-2.2	0.0
2.3-12.7	0.2
12.8-25.5	0.4
25.6-28.6	0.6
28.7-32.2	0.8
32.3-35.4	1.0
35.5-37.6	1.2
37.7-39.9	1.4
40.0 — Deeper	1.6

(For deep water add a 0 to these figures)

DEPTHS IN ~~FATHOMS~~ FEET

5 10 15 20 25 30 35 40 45 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190

KEUFFEL & ESSER CO. MADE IN U.S.A. 20 X 20 TO THE INCH 4D 1240 7 X 10 INCHES

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

-.5 0 .5 1.0 1.5

CORRECTIONS IN FEET. [redacted]

Fathom Line = 925

FORM C&GS-117 (4-62) U.S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY

VELOCITY CORRECTIONS

Ship Launch 1282

Lcdr William R Rawls Comdg.

These corrections are to be used

between Sept 6 1976 and Sept 22 1976

in the locality Baltimore Harbor, Maryland

for hydrographic surveys Nos. H-9581, H-9563, H-9643

Depth	Corrections
0.0 - 0.5	0.0
0.6 - 3.0	+0.2
3.1 - 17.0	+0.4
17.1 - 27.8	+0.6
27.9 - 39.0	+0.8
39.1 - Deeper	+1.0

(For deep water add a 0 to these figures)

DEPTHS IN [redacted]

5 10 15 20 25 30 35 40

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190

KEUFFEL & ESSER CO. MADE IN U.S.A.

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

-0.5 0 0.5 1.0 1.5

CORRECTIONS IN FEET. Fathometer 1279

Form C&GS 517 (4-43) U.S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY

VELOCITY CORRECTIONS

Ship Launch 1282

LCDR William Downes Comdr.

These corrections are to be used

between Sept 22 1976 and Nov 10 1976

in the locality Baltimore Harbor, Maryland

for hydrographic surveys Nos. H-9562, H-9563 H-9643

Depth	Correction
0.0 – 1.2	0.0
1.3 – 5.4	0.2
5.5 – 19.5	0.4
19.6 – 24.5	0.6
24.6 – 32.0	0.8
32.1 – Deeper	1.0

DEPTHS IN Feet

(For deep water add 1.0 these figures

5 10 15 20 25 30 35 40 45 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190

KEUFFEL & ESSER CO. 20 X 20 TO THE INCH 358 10

VELOCITY TABLES

H-9643
HSB-05-1-76

```
000022 0 0000 0001 000 128200 009643
000127 0 0002
000255 0 0004
000286 0 0006
000322 0 0008
000354 0 0010
000376 0 0012
000399 0 0014
999999 0 0016
000005 0 0000 0002 000 128200 009643
000030 0 0002
000170 0 0004
000278 0 0006
000390 0 0008
999999 0 0010
000012 0 0000 0003 000 128200 009563
000054 0 0002
000195 0 0004
000245 0 0006
000320 0 0008
999999 0 0010
```

H-9643

HSB-05-1-76

ELECTRONIC CONTROL SYSTEM

The electronic equipment used for the electronic control during the survey project was Del Norte. The Del Norte equipment used was a Del Norte #187A, Del Norte #189D and a Del Norte #249D. The antennas used were a omni-directional antenna #176 on the Master Unit and a directional antenna #172 on the Slave Unit. The DMU used was serial #122 and serial #123.

The Del Norte was calibrated twice daily, at the beginning and end of each day; to ensure accuracy of the control. The method of calibration used was either using two known triangulation points with a known inverse distance between the two or by measuring a baseline with a set distance and calibrating between these two points. The latter method enabled the twice a day calibration. There were no noticeable changes in the Del Norte when calibrating from one day to the next.

The only factor that attributed to Del Norte failure in the field during operations was low power from the power supply (batteries).

ELECTRONIC CORRECTOR

ABSTRACT

H-9643 (HSB-05-1-76)

JULIAN DAY	R_1	R_2
All days	000000	000000

SIGNAL LIST

H-9643 (HSB-05-1-76)

534	7	39	13	31419	076	29	00618	139	0000	000000	Sparrows Point Tank,1958,1975	
535	7	39	13	38690	076	29	50140	254	0003	000000	End of pier	TP-00844
604	7	39	14	15855	076	30	59999	139	0000	000000	Stack	TP-00843
750	7	39	14	29400	076	30	20070	254	0003	000000	End of pier	TP-00843
751	7	39	14	24230	076	29	42140	243	0000	000000	Dolphin	TP-00844
752	7	39	13	06960	076	30	01400	254	0003	000000	Dolphin-outer face	TP-00843
753	7	39	12	53520	076	29	51110	243	0000	000000	N. corner of pier	TP-00844
754	7	39	12	59690	076	29	52030	254	0003	000000	N. corner of pier	TP-00844
755	7	39	13	11520	076	30	00530	254	0003	000000	S. corner of pier	TP-00843
756	7	39	13	16750	076	29	45170	254	0003	000000	Corner of blkhd	TP-00844
757	7	39	13	14900	076	30	00854	254	0003	000000	S.W. corner of pier	TP-00843
758	7	39	13	11830	076	30	00570	243	0000	000000	N. corner of pier	TP-00843
759	7	39	14	09680	076	30	03730	254	0003	000000	Center end of pier	TP-00843
760	7	39	14	45486	076	29	55543	254	0003	000000	End of pier	TP-00844
761	7	39	14	52370	076	29	30580	243	0000	000000	Dolphin	TP-00844
762	7	39	14	55390	076	29	29670	254	0003	000000	End of pier	TP-00844
763	7	39	14	53220	076	29	30040	243	0000	000000	Dolphin	TP-00844
764	7	39	15	01960	076	30	12840	254	0003	000000	End of pier	TP-00839
765	7	39	14	50240	076	30	09410	243	0000	000000	End of pier	TP-00843
766	7	39	15	12790	076	30	13960	254	0003	000000	Platform- east face	TP-00839
767	7	39	15	19760	076	30	16970	243	0000	000000	Corner bend in pier	TP-00839
768	7	39	15	11510	076	30	28300	254	0003	000000	End of pier	TP-00839
769	7	39	15	02580	076	30	25610	243	0000	000000	End of pier	TP-00839
770	7	39	14	46480	076	30	17610	254	0003	000000	End of pier	TP-00843
771	7	39	14	53200	076	30	15420	243	0000	000000	End of pier	TP-00843
772	7	39	15	02010	076	29	19390	254	0003	000000	S. corner of pier	TP-00851
773	7	39	15	04440	076	29	14430	243	0000	000000	Day beacon	TP-00851
774	7	39	15	23400	076	29	34400	254	0003	000000	Corner of pier at bend	TP-00851
775	7	39	16	23270	076	28	39230	254	0003	000000	End of pier	TP-00851
776	7	39	16	21390	076	28	44180	243	0000	000000	Corner of blkhd	TP-00851
777	7	39	16	20580	076	28	50870	254	0003	000000	End of pier	TP-00851
778	7	39	16	14650	076	28	46730	254	0003	000000	End of pier	TP-00851
779	7	39	15	44250	076	28	41870	254	0003	000000	End of pier	TP-00851
780	7	39	15	40010	076	28	38320	243	0000	000000	Dolphin	TP-00851
781	7	39	15	30820	076	28	44100	254	0003	000000	Center end of pier	TP-00851
782	7	39	15	38530	076	28	39090	243	0000	000000	Dolphin	TP-00851
783	7	39	15	19610	076	28	49360	254	0003	000000	Center face of pier	TP-00851
784	7	39	15	31090	076	29	01560	254	0003	000000	End of pier	TP-00851
785	7	39	15	24340	076	28	47830	243	0000	000000	N.W. Corner of pier	TP-00851
786	7	39	15	39780	076	29	53940	254	0003	000000	End of pier	TP-00851
787	7	39	15	32940	076	29	44200	243	0000	000000	Pile	TP-00851
788	7	39	15	07199	076	29	20895	254	0003	000000	End of pier	TP-00851
789	7	39	14	32838	076	30	14344	254	0003	000000	End of pier	TP-00843
793	7	39	12	46640	076	30	04720	254	0003	000000	Drydock Light "P4"	TP-00843

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [X] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [X] TO BE CHARTED
- [ ] TO BE REVISED
- [ ] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office): Hydro. Surveys Branch

STATE: Maryland

LOCALITY: Baltimore Harbor

DATE: 11/30/76

The following objects HAVE [ ] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.: 514

JOB NUMBER:

SURVEY NUMBER: H-9643

DATUM: NA 1927

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° ′	LATITUDE ″ D.M. Meters	POSITION LONGITUDE ° ′	LONGITUDE ″ D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
RB Bn	Red/Black Day Beacon	39 15	04.440	76 29	14.430		scaled from Man. TP-00851	12281
"5"	Black day beacon "5"	39 14	40,800	76 29	35.400		hydro position range azimuth	12281
Qk Fl R "P4"	Spparows Point Dock Light	39 12	46.640	76 30	04.720		scaled from Man. TP-00843	12281

RESPONSIBLE PERSONNEL		
TYPE OF ACTION	NAME	ORIGINATOR
OBJECTS INSPECTED FROM SEAWARD		☐ PHOTO FIELD PARTY ☐ HYDROGRAPHIC PARTY ☐ GEODETIC PARTY ☐ OTHER *(Specify)*
POSITIONS DETERMINED AND/OR VERIFIED		FIELD ACTIVITY REPRESENTATIVE
		OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'

(Consult Photogrammetric Instructions No. 64,

OFFICE

I. OFFICE IDENTIFIED AND LOCATED OBJECTS
Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object.
EXAMPLE: 75E(C)6042
8-12-75

FIELD

I. NEW POSITION DETERMINED OR VERIFIED
Enter the applicable data by symbols as follows:

F - Field	P - Photogrammetric
L - Located	Vis - Visually
V - Verified	
1 - Triangulation	5 - Field Identified
2 - Traverse	6 - Theodolite
3 - Intersection	7 - Planetable
4 - Resection	8 - Sextant

A. Field positions* require entry of method of location and date of field work.
EXAMPLE: F-2-6-L
8-12-75

*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

FIELD (Cont'd)

B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.
EXAMPLE: P-8-V
8-12-75
74L(C)2982

II. TRIANGULATION STATION RECOVERED
When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery.
EXAMPLE: .Triang. Rec.
8-12-75

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH
Enter 'V-Vis.' and date.
EXAMPLE: V-Vis.
8-12-75

**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

☆ U.S. GOVERNMENT PRINTING : 1974-665-073/1030 Region 6

APPROVAL SHEET

SURVEY H-9643 (HSB-05-1-76)

The hydrographic records transmitted with this report are complete and adequate.

All field work was completed by LTJG K. W. PERRIN, with no direct supervision given by me during field work.

This survey is complete and adequate with no additional field work recommended.

Approved and forwarded,

WILLIAM R. DANIELS
LCDR, NOAA
Chief, Hydrographic Surveys Branch

November 30, 1977

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center:

Hourly heights are approved for Form 362

Tide Station Used (NOAA Form 77-12): 857-4726 Bear Creek Marina

Period: Augst 19 - November 3, 1976

HYDROGRAPHIC SHEET: H-9643

OPR: 514

Locality: Baltimore Harbor, Maryland

Plane of reference (mean ~~lower~~ low water): 1.2 ft.

Height of Mean High Water above Plane of Reference is 1.1 feet

Remarks: Zone Direct.

Chief, Tides Branch

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-9643

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO.	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	
BEAR CREEK ✓										1
CHINK CREEK ✓										2
SCHOOLHOUSE COVE ✓										3
COUNTRY CLUB COVE ✓										4
LYNCH COVE ✓										5
CHESTERWOOD ✓										6
BULLNECK CREEK ✓										7
LONG POINT ✓										8
PEACHORCHARD COVE ✓										9
CATTAIL POINT ✓										10
CLEMENT COVE ✓										11
LOVEL POINT ✓										12
COFFIN POINT ✓										13
SOLLERS POINT ✓										14
SPARROWS POINT ✓										15
LLOYD POINT ✓										16
Marine Channel ✓										17
~~Sollers Point Shoal~~										18
DUNDALK ✓										19
						APPROVED				20
						Chas. E. Herrington				21
						CHIEF GEOGRAPHER - C3x8				22
						15 NOV 1978				23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

☆ U.S. G.P.O. 1972-769-565/516 REG:#6

APPROVAL SHEET
FOR
SURVEY H-9643

A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position printout has/~~has not~~ been made. A new final sounding printout has/~~has not~~ been made.

B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Hydrographic Manual. Exceptions are listed in the Verifier's Report.

Date: 5-26-78

Signed: Billy J. Stephenson

Title: Chief, Verification Branch

NOAA FORM 77-27 (5-77) | U. S. DEPARTMENT OF COMMERCE NOAA | HYDROGRAPHIC SURVEY NUMBER

HYDROGRAPHIC SURVEY STATISTICS

H-9643

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS & PRELIMINARY OVERLAYS 1 Boat sheet 1 pos, 1 excess	1
DESCRIPTIVE REPORT	1	SMOOTH OVERLAYS: POS. ARC, EXCESS	2

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						1 misc. data
CAHIERS	2 with printouts					
VOLUMES	8					
BOXES			1- Smooth			

T-SHEET PRINTS (List) [3 small overlays]

SPECIAL REPORTS (List)

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS PRE-VERIFICATION	AMOUNTS VERIFICATION	AMOUNTS TOTALS
POSITIONS ON SHEET			2376
POSITIONS CHECKED		2376	
POSITIONS REVISED		63	
SOUNDINGS REVISED		0	
SOUNDINGS ERRONEOUSLY SPACED		1500	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		0	
	TIME – HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)		5	
VERIFICATION OF CONTROL		0	
VERIFICATION OF POSITIONS		61	
VERIFICATION OF SOUNDINGS		80	
COMPILATION OF SMOOTH SHEET		66	
APPLICATION OF TOPOGRAPHY		34	
APPLICATION OF PHOTOBATHYMETRY		0	
JUNCTIONS		2	
COMPARISON WITH PRIOR SURVEYS & CHARTS		11	
VERIFIER'S REPORT		13	
OTHER		20	
TOTALS		292	

Pre-Verification by: F. Saunders	Beginning Date: 09/19/77	Ending Date: 09/19/77
Verification by: F. Saunders, F. Lamison, R. Roberson	Beginning Date: 10/17/77	Ending Date: 06/01/78
Verification Check by: H. Smith	Time (Hours): 6	Date: 05/10/78
Marine Center Inspection by: Hydrographic Inspection Team	Time (Hours): 24	Date: 05/26/78
Quality Control Inspection by: F.P. SAULSBURY	Time (Hours): 211	Date: 9/18/78
Requirements Evaluation by: J Baumgardner	Time (Hours): 3	Date: 12/1/78

Carstens 45 hr 11/13/78

REGISTRY NO. _____

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey, the following shall be completed:

CARDS CORRECTED

DATE_____ TIME REQUIRED_____ INITIALS_____

REMARKS:

REGISTRY NO. H-9643

The magnetic tape containing the data for this survey has not been corrected to reflect the changes made during evaluation and review.

When the magnetic tape has been updated to reflect the final results of the survey, the following shall be completed:

MAGNETIC TAPE CORRECTED

DATE_____ TIME REQUIRED_____ INITIALS_____

REMARKS:

During update the 20-foot sounding, formerly smooth plotted in the vicinity of latitude 39°12.82', longitude 76°30.70', should be placed in the excessed sounding data bank. This sounding was excessed subsequent to the completion of work on H-9643 to effect the junction with H-9563 (1975-76).

ATLANTIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO. H-9643 FIELD NO. HSB-5-1-76

Maryland, Baltimore Harbor, Bear Creek

SURVEYED: August 19 through November 3, 1976

SCALE: 1:5,000 PROJECT NO.: OPR-514

SOUNDINGS: Raytheon DE-723, Pole, and Leadline CONTROL: Del Norte Range-Azimuth, "See Boat sheet"

Chief of Party	W. R. Daniels
Surveyed by	K. W. Perrin
	L. C. Gilden
	J. Griffin
	E. T. Hardison
	G. D. Hendrix
	F. D. Lamison
	J. M. Robinett
	R. Treciokas
Automated Plot by	CALCOMP-618 Plotter (AMC)
Verified and Inked by	R. G. Roberson
	May 31, 1978

1. Introduction

No unusual problems were encountered during the verification process. See Q.C. Critique for unusual problems encountered during Q.C.

2. Control and Shoreline

a. Control is adequately discussed in Sections F and G of the Descriptive Report.

b. Shoreline originates with reviewed photogrammetric manuscripts TP-00839, 00843, 00844, and 00851 of 1974-75. A note by the hydrographer on the boat sheet indicates the possibility of a shoreline change at approximately latitude 39° 16' 11", longitude 76° 28' 51", and the removal of piers at latitude 39° 15' 30", longitude 76° 28' 35". ✓

3. Hydrography

a. Crosslines are in good agreement. Depths varied from one to two feet. See QC Critique

b. The standard depth curves were adequately delineated except in the vicinity of latitude 39° 13' 05/15", longitude 76° 30' 05", where ships and drydocks were moored.
See Q.C. Critique

c. Developments were adequate to delineate the bottom configuration and least depths. See Q.C. Critique

4. Condition of Survey

This survey meets the requirements prescribed by the Hydrographic Manual except as follows:

a. Daily bar checks were not taken as required by Section 1.5.2 of the Hydrographic Manual.

b. The change in shoreline at approximately latitude 39° 16' 11", longitude 76° 28' 51" was not disposed of as required by Section 1.6.2 of the Hydrographic Manual. See Q.C. Critique also in lat. 39°15.72' long. 76°28.14' and lat. 39°14.95, long. 76°28.94'

5. Junctions

Adequate junctions were effected with the following surveys:

H-9563 (1975) to the west not reg. 7/3/78
H-9582 (1975) to the south ✓ O.K.

6. Comparison With Prior Surveys

H-2352 (1898) 1:10,000 - not available during Q.C.
H-4371 (1924) 1:10,000

H-2352 was ordered but not received by this office; therefore, it was not considered during verification. Survey is reportedly lost - Nov '78

Comparison with H-4371 is generally good with depths varying from one to four feet. In the vicinity of Sparrows Point Drydock (latitude 39° 12' 48", longitude 76° 30' 58") depths are as much as twelve feet deeper. Between the two piers at latitude 39° 13' 15", longitude 76° 29' 58" depths vary as much as 21 feet. In the area of 39° 13' 15" to 30", 76° 29' 45" to 76° 30' 00" there has been considerable filling. On a line between latitude 39° 13' 30", longitude 76° 29' 30" and latitude 39° 14' 00", longitude 76° 30' 15" the previously existing bridges have been removed.

The present survey is adequate to supersede the prior surveys in the common area.

7. Comparison With Chart 12281 (30th Edition, August 16, 1975)

a. Hydrography

Comparison with the chart is good. There is much cultural

development in the survey area and particular attention should be paid to additional piers, stakes, etc. located by the hydrographer. This advice was followed during O.C.I. & several items were added to the smooth sheet from the boat sheet & sdg. vols. that were overlooked in verif. Numerous short piers, groins, and jetties (to one-fourth inch in length) charted in the survey area but not located by the hydrographer or shoreline manuscripts may no longer be extant or may be submerged. These features should be evaluated for future charting disposition. Evaluated during O.C.I. Mast should be disregarded

The following items are not considered verified or disproved by the present survey. The charting authority for these items should be evaluated for each of these items ~~in~~ in light of this survey's findings regarding future charting disposition.

See O.C.Critique for comments on items 1 thru 22

(1) Two sunken wrecks in the vicinity of latitude 39° 14' 12", longitude 76° 30' 03". chtd from misc. source - foul area on present survey. ~~adequate~~ EL-672/48

(2) Two submerged wrecks in the vicinity of latitude 39° 14' 25", longitude 76° 30' 22.5". chtd from misc. source, should be deleted from chart, shoreline adequate

(3) Unknown charted feature at latitude 39° 15' 01", longitude 76° 30' 12". - brought forward during O.C.I. from T-5421(1933) probable ruins of piers & structures

(4) Piles at latitude 39° 15' 13.5", longitude 76° 30' 30". No charting value.

(5) Four pilings at latitude 39° 15' 04.5", longitude 76° 28' 21". fall within designated foul area on pres. survey.

(6) Three piles in the vicinity of latitude 39° 15' 08", longitude 76° 29' 10". misc. source - depths 1'

(7) Pier at latitude 39° 15' 12", longitude 76° 28' 55". Misc. source - ~~charted as ruins~~ depths 1ft - disregard (Added piles per survey)

(8) Submerged wreck at latitude 39° 15' 21", longitude 76° 29' 45" - shown as piles on survey. misc. source

(9) Submerged wreck ~~s~~ at latitude 39° 15' 34.5", longitude 76° 29' 40.5" - shown as piles on survey. from misc source

(10) Two submerged wrecks in the vicinity of latitude 39° 15' 28", longitude 76° 28' 22.5". Retain {1 wreck from BD-55144(1951) not on pres sur. {other wrk from T-5421(1933) carr. fwd as wreckage.

(11) Submerged wreck at latitude 39° 15' 43", longitude 76° 28' 10". misc. source, if still here - has no chtg value - in 1 ft. depths

(12) ~~Two~~ Pilings at latitude 39° 16' 14", longitude 76° 28' 52". ~~height fwd from T-5420(1933) as ruins on pres. survey slightly inshore of charted piles~~ close inshore - unimportant Disregard

(13) Piles at latitude 39° 15' 54", longitude 76° 28' 48". misc. source

(14) Marine railway at latitude 39° 15' 43.5", longitude 76° 28' 46". misc. source - not on pres survey

(15) Submerged wreck at latitude 39° 15' 30", misc. source longitude 76° 29' 38.5".

(16) Submerged wreck at latitude 39° 15' 09", longitude 76° 30' 14". misc. source

(17) THREE Piles charted in latitude 39° 14' 34", longitude 76° 29' 45". fall on land on present survey - disregard

(18) Submerged wreck at latitude 39° 14' 34", longitude 76° 30' 24". misc. source

(19) Submerged wreck at latitude 39° 14' 31", longitude 76° 29' 48". CL-672(1938) Retain

(20) Submerged wreck at latitude 39° 14' 31", longitude 76° 30' 24". misc source

(21) Submerged wreck CL-672(1946) at latitude 39° 14' 30.5", longitude 76° 30' 17". Area dragged on pres. survey - chart as shown on pres. survey.

(22) Four piles at latitude 39° 13' 39", longitude 76° 29' 51". Brought fwd. 4 dols from T-11811(1960-61)

Attention is directed to the following items:

(1) Pier ruin charted in latitude 39° 15' 03", longitude 76° 29' 19" is considered to be adequately delineated by the present survey and should be shown accordingly. concur JPS

(2) The delineated area with 10-1/2 rep 1971 charted in the vicinity of latitude 39° 15' 05", longitude 76° 29' 03" should be charted based on present survey depths. concur JPS

(3) Pier charted in latitude 39° 14' 58", longitude 76° 29' 56" is confirmed by the present survey and should be retained as charted. This feature is not delineated on the shoreline manuscript used with the present survey. See O.C. Comment Disagree, chart as shown on the present survey JPS.

(4) Six-foot rep 1973 charted in latitude 39° 13' 41", longitude 76° 29' 37" should be deleted and present survey depths charted. concur JPS

PSR, item # 17

(5) Eight rep (1964) possible ruins charted in latitude 39° 13.77', longitude 76° 29.9' is considered to be verified by the present survey in latitude 39° 13' 43", longitude 76° 29' ~~09~~ 54". See Section K of the Descriptive Report. *See Q.C. Critique left sdg 75 meters south of chtd 8 sdg.*

(6) Pier in latitude 39° 14' 16", longitude 76° 30' 14" is charted in the area of hulk (wreck) on the present survey. The chart should be revised to reflect the change. *concur*

(7) Pier charted in latitude 39° 13' 52.5", longitude 76° 30' 03" should be revised to ruins as shown on the present survey. *Pier is probably remains of trolley car bridge—Shown solid on boat sheet—ruins on T-sheet — Tsheet delineation shown on Smooth Sheet*

(8) Rep dredged to 22 feet 1963 charted in latitude 39° 13', longitude 76° 30' should be revised to show present survey depths. *concur JPS*

(9) Rep dredged to 21 feet 1961 charted in latitude 39° 1~~2~~3', longitude 76° 30' should be revised to show present survey depths. *concur JPS*

(10) That portion of the charted Discontinued Spoil Area which falls in the southwestern area of the present survey should be deleted and present survey depths charted. *concur JPS*

Except as noted above, the present survey is adequate to supersede the charted hydrography in the common area.

b. Controlling Depths

The charted controlling depth of the portion of Marine Channel on the survey is 22 feet; however, an examination of the hydrography shows shoaling and the controlling depth should be noted as *shown on the present survey* ~~19 feet (position 445, latitude 39° 12' 55.09", longitude 76° 30' 34.71")~~. *concur JPS*

c. Aids to Navigation

Aids to navigation located by the hydrographer were adequate to serve their intended purpose.

8. Compliance With Project Instructions

This survey adequately complies with the Project Instructions.

9. Additional Field Work

This is a good basic survey. No additional field work is recommended.

Inspection Report
H-9643

Any verification errors regarding procedures and presentation of survey data detected during inspection by the Hydrographic Inspection Team have been corrected before submission for administrative approval. HIT comments regarding quality of field work, compliance with instructions, and adequacy of the survey have been incorporated within the Verifier's Report.

H.I.T. corrections were apparently not made, no check of called for corrections was made per conversation with R.D.S.

JPS

Examined and Approved:
Hydrographic Inspection Team
Date:

Robert A. Trauschke, CDR, NOAA
Chief, Processing Division

Charles H. Nixon, CAPT, NOAA
Chief, Operations Division

R. D. Sanocki
Technical Assistant
Processing Division

Maureen R. Kenny
C. Douglas Mason, LT, NOAA
Chief, Electronic Data
Processing Branch

Guy F. Trefethen
Team Leader
Verification Branch

Approved/Forwarded

Robert C. Munson
RADM, NOAA
Director, Atlantic Marine Center

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Rockville, Md. 20852

C352/FPS

September 18, 1978

TO: A. J. Patrick
Chief, Marine Surveys Division

THRU: Chief, Quality Control Branch

FROM: F. P. Saulsbury
Quality Evaluator

SUBJECT: Quality Control Report for H-9643 (1976), Maryland, Baltimore Harbor, Bear Creek

A quality control inspection of H-9643 was accomplished to monitor the survey for obvious deficiencies with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, shoreline transfer, smooth plotting, decisions and actions taken by the verifier, and the cartographic presentation of data. In general, it was found to conform to the National Ocean Survey's standards and requirements except as stated in the Verifier's Report, the HIT Report, and as follows:

1. Some acquired data were not shown on the boat sheet, not logged in the printout, and were not plotted on the smooth sheet. Trawl drag hangs were not smooth plotted and one boat sheet of drag work did not accompany the survey records. Useful information was manually plotted on the smooth sheet during quality control inspection.

The hydrographer appeared to have transferred shoreline and contemporary topographic information directly in black ink to the boat sheet. This information is required to be transferred in blue ink and subsequently inked in black as it is verified by the hydrographer. The hydrographer added new piers (not on contemporary topographic surveys) in black instead of red ink on the boat sheet, failed to describe some detached positions, and failed to plot some items described in the sounding volumes.

While this does not relieve the verifier of responsibility of plotting survey information on the smooth sheet, it probably contributed to the many items overlooked in verification, which had to be added during quality control inspection.

The hydrographer appears to have disregarded many charted features such as piers, ruins, and wrecks that did not appear on contemporary topographic surveys. Generally no field investigation or mention of these charted items is found in the survey records.

2. A few depth curves were added where omitted and revised where in conflict with soundings. The low water curve is generally not shown because a small range of tide precluded shoal water development. Small portions of the 6-foot depth curve are not shown because of inadequate development.

3. A holiday in the vicinity of latitude 39°13.21', longitude 76°30.10' was eliminated during quality control inspection by adding a previously overlooked "split" line of hydrography. This line of soundings had neither been logged nor smooth plotted during verification.

Explanatory notes were added to the four additional holidays in the same general vicinity indicated above.

Additional development would have been beneficial in the vicinity of latitude 39°12.86', longitude 76°30.00'.

4. The junction on the south with H-9582 (1975) is adequate. Overlapping curves were made coincidental during quality control inspection. The junction with H-9563 (1975) to the west will be checked in the inspection of that survey.

5. Conflicts in sounding line crossings, in latitude 39°15.18', longitude 76°28.69' where 1- to 5-foot soundings crossed 7- to 8-foot soundings and in latitude 39°14.95', longitude 76°28.92' where 1-foot soundings crossed 4- to 9-foot soundings, were reconciled during quality control inspection.

Two lines of hydrography near a structure in the vicinity of latitude 39°12.86', longitude 76°29.93' were smooth plotted in inappropriate positions, the shoaler soundings offshore of the deeper soundings, and were revised during quality control inspection.

6. Several piers transferred to the smooth sheet from contemporary topographic surveys were obliterated in whole or in part by soundings which should have been excessed or manually moved to clear the piers.

The descriptions accompanying topographic features were frequently placed in water and interfered with hydrographic information. Descriptions of alongshore topographic items should be placed on land so as to neither obscure nor interfere with hydrographic information nor be obscured by hydrographic information.

Piers, piles, dolphins, and descriptive notes overlooked in the transfer of topographic information to the smooth sheet were added during quality control inspection.

The pile, previously plotted on the smooth sheet in latitude 39°14.05', longitude 76°30.20' was deleted since no information of its source could be found in the survey records.

7. All piers originating with hydrographic information and not shown on contemporary topographic surveys were either added to the smooth sheet in red or revised from black ink to red ink during quality control inspection. Twelve piers were so added or revised.

8. Elevations of many piles, stakes, pipes, etc., were either applied without tide correctors or were overlooked entirely in verification and were revised or added during quality control inspection. Detached positions locating these items were generally logged but recorded soundings were without tide correctors.

9. Buoy N"10" was neither logged nor smooth plotted in verification and was added during quality control inspection from a detached position in the sounding volume.

10. Some previously excessed soundings considered to be meaningful were added to the smooth sheet during quality control inspection.

Soundings plotting on land were resolved by rejecting the sounding, revising the position to fall in water, or, where in marsh, revising the shoreline in dashed red ink to accommodate the sounding during quality control inspection.

11. As previously stated in this report, useful trawl board drag work was added to the survey during quality control inspection. Detached positions locating obstructions and hangs are plotted on the smooth sheet, not on the position overlay, and are identified with small red position numbers.

12. A submerged wreck (position 2464) plotted in latitude 39°14.54', longitude 76°30.20' is described in the drag volume as having a least depth of 6 feet and falling in 8-foot depths. Adjacent survey depths of 6 to 7 feet contradict the wire-drag notes. To reflect the most conservative condition, the 2-foot projection of the wreck above the bottom was applied to 6-foot survey depths and a least depth of 4 feet was shown on the wreck. Correction

The same reasoning was applied to the obstruction (position 2531) plotted in latitude 39°13.77', longitude 76°29.92' and annotated as covering 9 feet at M.L.W. Correction

13. Comparison with Chart

The following items were not investigated on the present survey. Items originating with a miscellaneous source are included, some with recommendations for disposition, others to bring them to the compiler's attention for a disposition:

a. Two sunken wrecks charted from a miscellaneous source in the vicinity of latitude 39°14.20', longitude 76°30.05' fall within a shoal inshore area designated as foul on the present survey.

b. The sunken wreck charted from a miscellaneous source in latitude 39°14.41', longitude 76°30.39' now falls approximately 50 meters inside a changed M.H.W. line on the present survey and should be disregarded when charting this area.

c. The sunken wreck charted from a miscellaneous source in latitude 39°14.43', longitude 76°30.39' falls on the shoreline on the present survey and, if in continued existence, has no charting significance.

d. The pier ruins charted in latitude 39°15.01', longitude 76°30.20' and 100 meters northward from T-5421 (1933) were carried forward as submerged ruins to the present survey. No investigation of possible submerged remains was made.

e. The two piles charted from a miscellaneous source in latitude 39°15.22', longitude 76°30.50' fall within a designated shallow area on the present survey, do not appear on the contemporary topographic survey, and are considered to no longer exist.

f. Four piles charted from a miscellaneous source in the vicinity of latitude 39°15.06', longitude 76°28.37' fall within a designated foul area on the present survey. Depths in this area have shoaled from 6- to 7-foot depths to present depths of 1 to 2 feet. The present survey designation is adequate for charting.

g. The three piles charted in the vicinity of latitude 39°15.13', longitude 76°29.18' fall in present survey depths of 1 to 2 feet.

h. The pier charted from a miscellaneous source in latitude 39°15.20', longitude 76°28.91' falls close inshore in shoal depths and should be disregarded.

i. Submerged wreck charted from a miscellaneous source in latitude 39°15.34', longitude 76°29.74'. A row of piling falls in this area on the present survey.

j. The submerged wreck charted from a miscellaneous source in latitude 39°15.57', longitude 76°29.69' falls amidst piling on the present survey and should be disregarded.

k. The submerged wreck charted from Bp-55144 (1951) in latitude 39°15.49', longitude 76°28.33'.

l. The submerged wreck charted from T-5421 (1933) in latitude 39°15.48', longitude 76°28.37' represents three wrecks shown on T-5421. A dashed line outlining the area of the three wrecks and annotated as wreckage was carried forward to the present survey.

m. The submerged wreck charted from a miscellaneous source in latitude 39°15.71', longitude 76°28.17' falls in present survey depths of 1 foot and, if in continued existence, is considered an insignificant item with no charting value.

n. Two piles charted from a miscellaneous source in latitude 39°15.90', longitude 76°28.79'.

o. Marine railway charted from a miscellaneous source in latitude 39°15.72', longitude 76°28.78'.

p. The submerged wreck charted from a miscellaneous source in latitude 39°15.50', longitude 76°29.64' falls near an area of pier ruins on the present survey. This wreck charted before 1921 should be superseded by present survey information.

q. The submerged wreck charted from a miscellaneous source in latitude 39°15.14', longitude 76°30.22'.

r. Three piles charted from a miscellaneous source in latitude 39°14.57', longitude 76°29.79' now plot behind a changed M.H.W. line on the present survey and are to be disregarded.

s. Submerged wreck charted from a miscellaneous source in latitude 39°14.57', longitude 76°30.40'.

t. Submerged wreck charted from Chart Letter 672 (1938) in latitude 39°14.51', longitude 76°29.80'.

u. Submerged wreck charted from a miscellaneous source in latitude 39°14.51', longitude 76°30.40'.

v. Four piles charted from T-11811 (1960-61) in the vicinity of latitude 39°13.66', longitude 76°29.86' were carried forward to the present survey as four submerged dolphins.

w. The charted pier ruins in latitude 39°15.01', longitude 76°29.97' originate with a pier shown on T-5421 (1933). These ruins plot behind an accreted M.H.W. line on the present survey and should be disregarded in charting.

x. The danger curve charted in latitude 39°14.30', longitude 76°30.07' originates with a stranded hulk on T-4065a (1924) and should be disregarded. Present survey sounding lines provided no indication of a danger here.

14. The pier charted from T-11811 (1960-61) in latitude 39°14.94', longitude 76°29.96' is being replaced by a new pier under construction during the present survey and should be charted as shown on the present survey.

15. Presurvey Review Item 17 (part I) - 8 feet Reported (1964) Possible ruins, charted in latitude 39°13.77', longitude 76°29.90' from Notice to Mariners 35 of 1964 was investigated with a trawl board drag on the present survey. The hydrographer stated that no ruins or obstructions were found. However, when trawl board drag work was plotted during quality control inspection, several hangs were found in this area. A 9-foot sounding was found in latitude 39°13.72, longitude 76°29.90' 95 meters south of the 8 feet reported.

Presurvey Review Item 17 (part II) - 10 feet Reported (1964) charted from Chart Letter 1133 (1964) in latitude 39°13.80', longitude 76°30.00' was found as reported. Chart depths in this area as shown on the present survey.

Presurvey Review Item 27 - The piling P.A. charted in the vicinity of latitude 39°15.25', longitude 76°29.47' originate with Chart Letter 1408 (1973). Ten piles, baring 10 feet at M.H.W., were accurately located in this vicinity on the present survey and should be charted accordingly.

Presurvey Review Item 30 - The platform charted from an unknown source in latitude 39°15.46', longitude 76°28.85' was verified by detached position on the present survey 25 meters north of its charted position and should be charted as shown on the present survey.

Presurvey Review dashed circle item, submerged wreck and piles, charted from an undetermined source in the vicinity of latitude 39°14.51', longitude 76°30.27' was investigated on the present survey with a trawl board drag and the area was found to be foul with submerged piles and cement blocks. Chart area as shown on the present survey.

16. Survey H-2352 (1898), the charting source for soundings in the northern portion of Bear Creek was not available for comparison during quality control inspection.

Comparison with H-6210 (1937) overlooked in verification was made during quality control inspection.

Several items were brought forward to the present survey from the following prior topographic surveys:

T-5421 (1933)
T-11811 (1960-61)
T-11816 (1960-61)

In general the pier ruins and piling charted from the 1933 topographic surveys fall close inshore in shoal water and should be disregarded. Because of their age their present existence is doubtful. They are not considered to be of importance to navigation and would add unduly to congestion on the chart. Only a few of these features have been retained on the present survey.

17. The shape charted in latitude 39°14.94', longitude 76°28.82' from T-00844 is considered to be in error on that survey. Photographs reveal this feature to be about 40 meters to the southward as shown on the present survey. NM Correction

18. A shoreline comparison was made with maintenance prints of the 1974-75 manuscripts covering the area. These are filed as Bp's 100559, 100563, 100564, and 100571.

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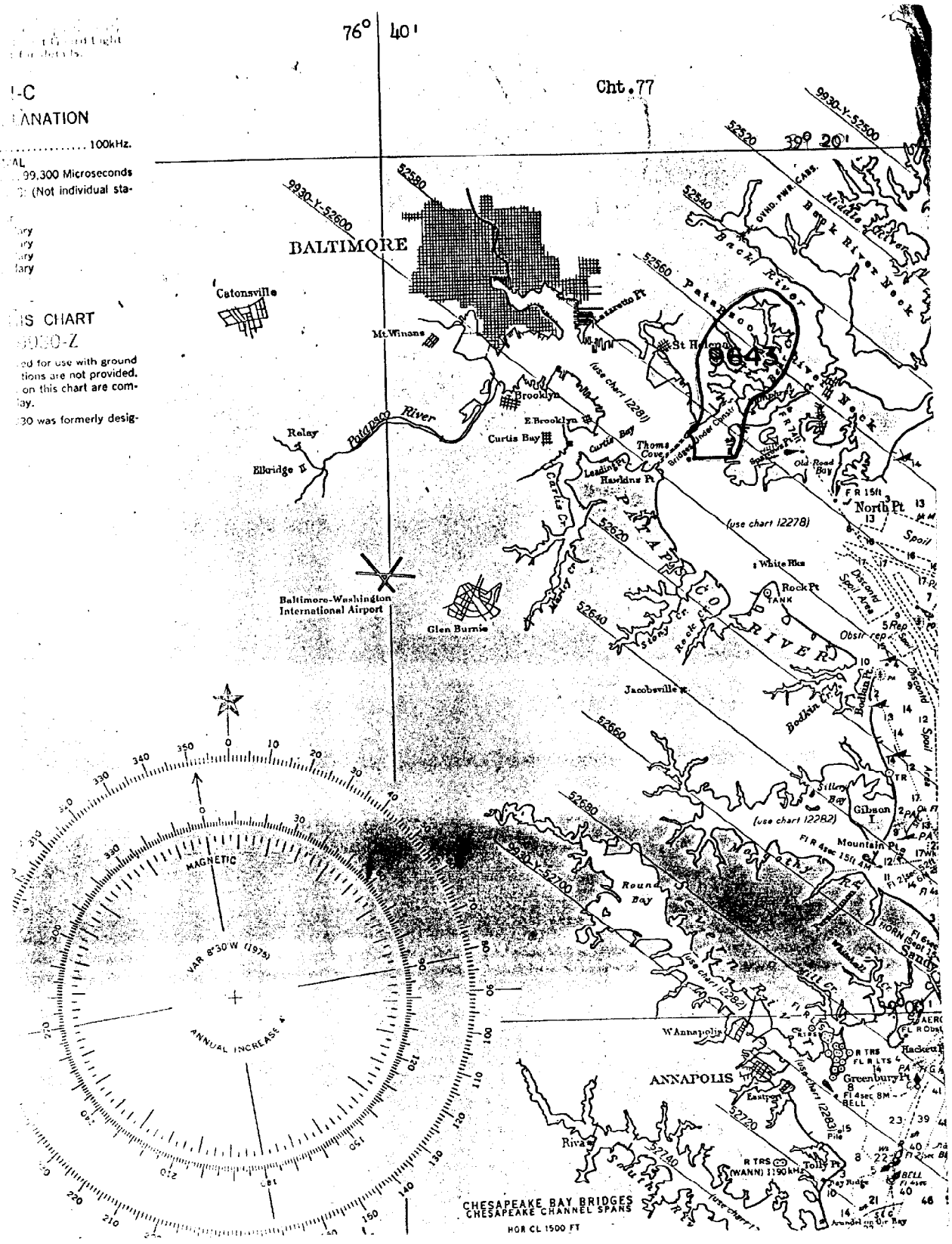

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FORM C&GS-8352
(3-25-63)

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9643

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 Revie

CHART	DATE	CARTOGRAPHER	REMARKS
12281	8/20	Marguerite J Moore	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 47
12278	8/27	Marguerite J Moore	Full ~~Part Before A~~fter Verification Review Inspection Signed Via
			Drawing No. 63 thru Chart 12281
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
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FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975.

USCOMM-DC 8558-P63